



FAIR OAK & HORTON HEATH PARISH COUNCIL

• 2 Knowle Park Lane, Fair Oak, Eastleigh, SO50 7GL ☎ (023) 8069 2403

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📱 @fairoakandhortonheathparishcouncil 📷 fairoakandhortonheath

SUMMONS

Dear Member

10 January 2023

You are hereby summoned to attend a meeting of the FULL COUNCIL held on **Monday, 16 January 2023 at 6.00 pm** at the Parish Office, 2 Knowle Park Lane, Fair Oak.

Melanie Stephens

Melanie Stephens, Parish Clerk

PUBLIC PARTICIPATION: This meeting is open to members of the public. If you wish to speak at the meeting, you should submit a request by email to clerk@fairoak-pc.gov.uk by 4 pm on Friday 13 January 2023.

AGENDA

APOLOGIES

1. DECLARATIONS OF INTEREST

To receive declarations of interest and dispensation requests.

2. MINUTES OF MEETINGS (PAPER A, PAGES 3 - 6)

- a) To approve the minutes of the Council meeting held on 19 December 2022 as a correct record; and
- b) To note the planning delegated decisions made during December 2022.

3. CHAIRMAN'S ANNOUNCEMENTS

4. CLERK'S UPDATE

5. FINANCE REPORT (REPORT B, PAGES 7 - 13)

To consider the report of the Finance Officer and approve the BACS payments.

6. KNOWLE PARK EAR MARKED CEMETERY SPACE (REPORT C, PAGES 14 - 103)

To consider the recommendations of the soils specialist regarding the ear marked cemetery space.

7. TWYNAMS FIELD (REPORT D, PAGES 104 - 119)

To consider proposal for the 'places for nature' project at Twynams Field.

8. ELECTRIC VEHICLE (EV) CHARGER INSTALLATION AT PARISH OFFICES, WOODLAND & HORTON HEATH COMMUNITY CENTRES (REPORT E, PAGES 120 -125)

To consider the installation of EV chargers at the Parish Offices, Woodland & Horton Heath Community Centres.

9. MEETING DATES (REPORT F, PAGE 126)

To agree the schedule of meetings for 2023-2024.

10. WORK PROGRAMME (REPORT G, PAGES 127)

To note the work programme and make any amendments as necessary.

To: Councillors

S Anderson
P Barrett
C Bird
N Couldrey
H Douglas (Chairman)
K Forfar
T Higby
M Marsh

Councillors (cont)

G Meech
H McGuinness
Vacancy
D Scott
M Smith
B Tennent
G Stupple

Officers:

J Cahill (Finance Officer)
M Leadbitter-Allen (Deputy Clerk)
M Johnson (Operations Manager)
M Stephens (Clerk)

**Minutes of the Full Council Meeting
held on Monday 19 DECEMBER 2022 at 6.00 pm
at the Parish Office, 2 Knowle Park Lane, Fair Oak**

P – present, Pt – part of the meeting, Ab – absent, Ap – apologies

P - Cllr Anderson	Ap - Cllr Scott	P - Cllr Meech
P - Cllr Forfar	Ap - Cllr Bird	P - Cllr Stuppel
Vacancy	Ap - Cllr Marsh	P - Cllr Douglas (Chairman)
P - Cllr Barrett	P - Cllr Smith	Ab - Cllr McGuinness
Ap - Cllr Higby	P - Cllr Couldrey (Vice Chair)	P - Cllr Tennent

Officers in attendance: Mrs L Greenslade, Deputy Clerk, Mrs C Giles, Communications & Events Officer, Mrs J Cahill, Responsible Finance Officer (RFO) & Mr M Gilham, Community Development Officer.

PUBLIC SESSION

None present.

61 DECLARATIONS OF INTEREST

None received.

62 MINUTES (PAPER A)

RESOLVED:

- (a) That the minutes of the Full Council meeting held on 14 November 2022, be signed by the Chairman as a correct record;
- (b) That the minutes of the Finance committee meeting and recommendations therein, of the meeting held on 6 December 2022, be signed by the Chairman as a correct record; and
- (c) That the delegated planning decisions for w/e 11 November and 2 December 2022 be noted.

63 CHAIRMAN'S ANNOUNCEMENTS

The Chairman made the following announcements: -

It was reported that Mike Gilham, Community Development Officer would be leaving the Council in January. A replacement would be advertised in due course.

That Kirsty Evans, Grounds Operative, would be seconded for two days a week for up to three months in the new year, to take the lead on the King's Coronation event on 6 May 2023.

64 CLERK'S UPDATE

The Deputy Clerk gave a presentation updating members on key activities taking place across the organisation. The presentation was attached as Appendix 1 to these minutes. Members were very appreciative of the efforts of the Operations Team for the Christmas Trail.

65 BUDGET/PRECEPT 2023/24 (REPORT B)

Members considered the budget and precept request for the 2023/24 financial year.

The precept request represented a 3.5% increase. The following significant items had been included in the budget:

- (a) £8,600 for an additional cutting deck,
- (b) £6,500 for greenhouse/potting shed and
- (c) £10,000 for a new digger.

The RFO confirmed that the overall precept figure would be £495,030.

RESOLVED:

- (a) That the precept for the 2023/24 financial year of £495,000 be agreed; and
- (b) That the fees and charges as set out in Appendix 2 of Report B be agreed.

66 FINANCE REPORT (REPORT C)

Members considered the report of the RFO.

RESOLVED:

- a) That the contents of the report be noted; and
- b) That the BACs payments be approved.

67 LIBRARY BUILDING IMPROVEMENT PROJECT

The Deputy Clerk reported that before any improvements to the building could be progressed the Council was waiting for a decision from the Local Area Committee to provide the shortfall of funding to the sum of £64,911 for the works.

RESOLVED:

That the decision be deferred.

68 WORK PROGRAMME & MEMBER TRAINING SCHEDULE (REPORT D)

RESOLVED:

- (a) That the work programme be noted; and
- (b) That amendments be made to the Councillor training programme to accommodate staffing resources.

69 EXCLUSION OF THE PUBLIC AND THE PRESS

That, under Section 1(2) of the Public Bodies Admissions to Meetings Act 1960, the public and the Press be excluded from the meeting for the following item of business on the grounds that it involves the likely disclosure of exempt

information which would be prejudicial to the public interest by reason of its confidential nature (staffing matters).

70 STAFFING SALARIES

Members considered the proposed staff salary increases for 2023/2024.

RESOLVED:

That the recommendations of the Finance Committee to increase staff salaries by 5% in the 2023/24 financial year be approved

Signed Chairman

This was all the business and the meeting closed at 6.17 pm

PLANNING APPLICATIONS

Planning application to w/e 30 December 2022

If any members of the public wish to raise an objection/comment, please email the linda.greenslade@fairoak-pc.gov.uk by 0900 hrs Monday 9 January 2023. These will be considered, and a formal delegated response submitted to the Borough Council on behalf of the Parish Council.

Application No: [T/22/94338](#)

Address: 35 Scotland Close, Fair Oak, SO50 7BR

Description: 1 no. Ash (T1) - Fell to ground level due to signs of ash die back.

Planning Specialist Contact Details

Email: trees@eastleigh.gov.uk

Application No: [H/22/94334](#)

Address: 1 Newbury Close, Fair Oak, SO50 8ES

Description: Two storey side extension and alteration to fenestration

Planning Specialist Contact Details

Email: claire.campbell-best@eastleigh.gov.uk

Application No: [H/22/94374](#)

Address: 110 Olympic Way, Fair Oak, SO50 8QR

Description: Rear single storey flat roof extension to replace an existing conservatory.

Planning Specialist Contact Details

Email: alexandra.stone@eastleigh.gov.uk

Application No: [T/22/94385](#)

Address: Badgers Track, Winchester Road, Fair Oak, SO50 7GQ

Description: 1 no. Ash (T1)- Fell due to being close and overhanging the outbuilding in the neighbouring garden (Oak Cottage) and overgrown its position.

1 no. Ash (T2, first ash tree on the left) - Reduce by 3.5m.

Planning Specialist Contact Details

Email: trees@eastleigh.gov.uk

Financial Statement Summary

- Total cash held across all bank accounts as at 31st December is £1,152,761
- Total receipts for December into the current account totalled £30,191
£23,585 relates to a receipt from Eastleigh Borough Council (Section 106) for Crowdhill Grounds Maintenance.
- Total current account payments for December totalled £55,266
(See attached breakdown)
- Total BACS invoice payments outstanding is £53,577
- There are no cheques that require signing this month.

Fair Oak & Horton Heath Parish Council

Bank - Cash and Investment Reconciliation as at 31 December 2022

Confirmed Bank & Investment Balances

Bank Statement Balances

		0.00	
31/12/2022	Current Account	502,280.27	
31/12/2022	Premier Account	338,423.39	
31/12/2022	Public Sector Deposit Fund	311,982.76	
	5.27	0.00	
31/12/2022	Petty Cash	74.80	
			1,152,761.22

Receipts not on Bank Statement

0.00

Closing Balance

1,152,761.22

All Cash & Bank Accounts

1	Current Account	502,280.27
2	Premier Account	338,423.39
3	Public Sector Deposit Fund	311,982.76
4	Petty Cash	74.80
	Other Cash & Bank Balances	0.00
	Total Cash & Bank Balances	1,152,761.22

Invoices Due for Payment by 31 January 2023

For Creditors

Pay by Electronic Payment

Invoice Date	Invoice No.	Ref No.	Invoice Detail	Authorise Ref	Date Due	Amount Due	Discount To Claim	Net Amount due
ACELIFTAWAY [ACE001]								
31/12/2022	95125		<i>Allotment Toilet</i>		30/01/2023	106.28		106.28
Total of Invoices Due (ACE001)						106.28	0.00	106.28
APPLETON SIGNS [APP001]								
01/08/2022	129283		<i>bench plaque</i>		01/08/2022	43.20		43.20
Total of Invoices Due (APP001)						43.20	0.00	43.20
COMPACT FORK TRUCKS [COMPACT]								
11/11/2022	11135		<i>Electric Vehicle</i>		11/11/2022	25,664.28		25,664.28
11/11/2022	11134		<i>Electric vehicle</i>		20/12/2022	26,627.70		26,627.70
Total of Invoices Due (COMPACT)						52,291.98	0.00	52,291.98
CWM AGGREGATES [CWM001]								
01/08/2022	17576A		<i>Shed mix</i>		01/08/2022	81.00		81.00
Total of Invoices Due (CWM001)						81.00	0.00	81.00
QIC systems [QIC]								
01/11/2022	5056		<i>monthly licence</i>		01/11/2022	307.50		307.50
06/11/2022	5056A		<i>Monthly licence</i>		06/12/2022	307.50		307.50
Total of Invoices Due (QIC)						615.00	0.00	615.00
SOURCE SUPPLIES [SOUR001]								
18/10/2022	271810		<i>cleaning products</i>		22/11/2022	39.54		39.54
18/10/2022	263515		<i>cleaning products woodlands</i>		18/10/2022	57.55		57.55
12/12/2022	275678		<i>cleaning products</i>		16/01/2023	106.74		106.74
16/12/2022	275887		<i>cleaning products</i>		13/01/2023	57.37		57.37
Total of Invoices Due (SOUR001)						261.20	0.00	261.20
THE FOUNTAIN CAFE [THE FOUNTA]								
19/12/2022	002		<i>Reachout cakes</i>		17/01/2023	70.80		70.80
19/12/2022	003		<i>Heart start events - cakes</i>		17/01/2023	21.00		21.00
19/12/2022	004		<i>Warm welcome space</i>		17/01/2023	86.40		86.40
Total of Invoices Due (THE FOUNTA)						178.20	0.00	178.20
Total of Invoices Due (Creditors)						53,576.86	0.00	53,576.86
TOTAL OF INVOICES DUE (ALL LEDGERS)						53,576.86	0.00	53,576.86

Receipts for Month 9

Nominal Ledger Analysis

<u>Receipt Ref</u>	<u>Name of Payer</u>	<u>£ Amnt Received</u>	<u>£ Debtors</u>	<u>£ VAT</u>	<u>A/c</u>	<u>Centre</u>	<u>£ Amount</u>	<u>Transaction Detail</u>
	Balance Brought Fwd :	526,626.76					526,626.76	
Banked: 01/12/2022		251.00						
EBC		251.00			1905	100	251.00	Greening Campaign Grant
					398		251.00	Greening Campaign Grant
					6001	100	-251.00	Greening Campaign Grant
Banked: 01/12/2022		84.00						
Mrs S		84.00			1200	250	84.00	Hall Hire
Banked: 01/12/2022		82.50						
Sales Recpts Page 372		82.50	82.50		100			Sales Recpts Page 372
Banked: 02/12/2022		5.53						
stripe		5.53			1550	100	5.53	Tennis
Banked: 02/12/2022		2,500.00						
FO Cricket Club		2,500.00			1310	100	2,500.00	FO Cricket Club annual
Banked: 08/12/2022		147.00						
Mr C		147.00			1200	250	147.00	Hall Hire
Banked: 10/12/2022		429.00						
Bench		429.00			1900	100	429.00	Bench
Banked: 12/12/2022		5.00						
ALLOTMENT		5.00			1500	500	5.00	B06
Banked: 14/12/2022		1,092.00						
Sales Recpts Page 373		1,092.00	1,092.00		100			Sales Recpts Page 373
Banked: 14/12/2022		57.00						
Mr P		57.00			1200	250	57.00	Hall Hire
Banked: 15/12/2022		23,585.00						
EBC		23,585.00			1905	100	23,585.00	Section 106 -Crowdhill Mainten
					320		23,585.00	Section 106 -Crowdhill Mainten
					6001	100	-23,585.00	Section 106 -Crowdhill Mainten
Banked: 15/12/2022		325.71						
A Diver		325.71			1900	100	325.71	Refund
Banked: 15/12/2022		0.10						
correction		0.10			4540	290	0.10	correction
Banked: 16/12/2022		1,530.00						
Community Library		1,530.00			1900	100	1,530.00	Library cleanng
Banked: 16/12/2022		27.00						
Fair oak infant		27.00			1900	100	27.00	Sports day field hire
Banked: 16/12/2022		53.50						
ALLOTMENT		53.50			1500	500	53.50	ALLOTMENT
Banked: 20/12/2022		63.00						

Receipts for Month 9

Nominal Ledger Analysis

<u>Receipt Ref</u>	<u>Name of Payer</u>	<u>£ Amnt Received</u>	<u>£ Debtors</u>	<u>£ VAT</u>	<u>A/c</u>	<u>Centre</u>	<u>£ Amount</u>	<u>Transaction Detail</u>
	J G	63.00			1200	250	63.00	hall hire
	Banked: 21/12/2022	76.00						
	T H	76.00			1200	250	76.00	Hall Hire
	Banked: 22/12/2022	138.00						
	Mr B	138.00			1530	510	138.00	Memorial
	Banked: 23/12/2022	356.00						
	Sales Recpts Page 374	356.00	356.00		100			Sales Recpts Page 374
	Banked: 31/12/2022	112.00						
	Sales Recpts Page 375	112.00	112.00		100			Sales Recpts Page 375
Total Receipts for Month		30,919.34	1,642.50	0.00			29,276.84	
Cashbook Totals		<u>557,546.10</u>	<u>1,642.50</u>	<u>0.00</u>			<u>555,903.60</u>	

Payments for Month 9

Nominal Ledger Analysis

<u>Date</u>	<u>Payee Name</u>	<u>Reference</u>	<u>£ Total Amnt</u>	<u>£ Creditors</u>	<u>£ VAT</u>	<u>A/c</u>	<u>Centre</u>	<u>£ Amount</u>	<u>Transaction Detail</u>
01/12/2022	Southern Electric	DD	53.00		8.83	4405	240	44.17	Electricity Pav
01/12/2022	H3G	DD	21.00		3.50	5006	900	17.50	Mobile Phone - MG
						316	0	-17.50	Mobile Phone - MG
						6000	900	17.50	Mobile Phone - MG
01/12/2022	Amazon	VISA	2.42			4540	290	2.42	Labels
01/12/2022	ACELIFTAWAY	94578	102.85	102.85		500			allotment toilet
01/12/2022	AGILICO	94579	322.50	322.50		500			Printer consumables
01/12/2022	bella crafts	94580	210.00	210.00		500			Craft workshop
01/12/2022	CARTERS OF SWANWICK	94581	27.68	27.68		500			Blade repair
01/12/2022	CEDERPEST	94582	114.00	114.00		500			pest control
01/12/2022	DAVID BOWEN	94583	3,400.00	3,400.00		500			Crowdhill playarea consultan
01/12/2022	EBC	94584	486.48	486.48		500			Dog Bins - Nov
01/12/2022	FIRECARE & SECURITY	94585	94.20	94.20		500			fire extinguisher installat
01/12/2022	NMS GROUP	94586	283.20	283.20		500			Sand and turf
01/12/2022	PROTEK	94587	216.00	216.00		500			Barrier repair
01/12/2022	QIC systems	94588	358.98	358.98		500			monthly licence
01/12/2022	REALTIS BUSINESS SOLUTIONS	94589	160.00	160.00		500			Tax digital subscription
01/12/2022	SOILS LTD	94590	816.00	816.00		500			Prelim Pile Report - Cafe
01/12/2022	ways to say thankyou	94591	75.00	75.00		500			Custom seed packets
01/12/2022	CDS Group	73850	5,454.48	5,454.48		500			Groundwater risk assessment
01/12/2022	hambrook garden	73851	49.99	49.99		500			Soil
01/12/2022	QIC systems	73852	307.50	307.50		500			monthly licence
01/12/2022	THE GINGER RABBIT	73853	325.00	325.00		500			Event
01/12/2022	Travis perkins	73854	53.27	53.27		500			Disc cutter
01/12/2022	QIC systems	5136	642.00	642.00		500			Dell PC
01/12/2022	ROD GASKINS	5137	1,586.44	1,586.44		500			Fuel leak repair - Isuzu
01/12/2022	SMART MARKETING	5138	78.00	78.00		500			Marketing support
02/12/2022	amazon	VISA	30.99			4450	230	30.99	Cutlery/jugs
07/12/2022	allstar	DD	573.81		95.64	4305	210	478.17	Fuel
07/12/2022	screwfix	DD	226.54		37.76	4540	290	188.78	materials
07/12/2022	amazon	VISA	51.90			5006	900	51.90	Red table cloth
						317	0	-51.90	Red table cloth
						6000	900	51.90	Red table cloth
08/12/2022	Peninsula	DD	21.60		3.60	4030	110	18.00	Employer EAP
08/12/2022	Gallagher	BILL	68.97			4320	210	68.97	motor insurance
09/12/2022	amazon	VISA	4.80			4480	280	4.80	NO smoking signs - Bus shelter
12/12/2022	british Gas	DD	133.87		22.31	4400	230	111.56	Gas - woodlands
12/12/2022	QIC	BILL	642.00		107.00	4134	110	535.00	Dell Laptop
12/12/2022	Arco	BILL	189.02		31.50	4110	110	157.52	Workwear
12/12/2022	QIC	BILL	-642.00		-107.00	4134	110	-535.00	Correction
12/12/2022	Arco	BILL	-189.02		-31.50	4110	110	-157.52	correction
12/12/2022	Arco	BILL	189.02		31.50	4110	110	157.52	Workwear
13/12/2022	amazon	VISA	107.92			4450	230	107.92	Plates , cups
14/12/2022	o2	DD	26.02		4.34	4125	110	21.68	Mobiles
15/12/2022	sage payroll	DD	32.40		5.40	4132	110	27.00	sage payroll

Continued on Page 22

Payments for Month 9

Nominal Ledger Analysis

<u>Date</u>	<u>Payee Name</u>	<u>Reference</u>	<u>£ Total Amnt</u>	<u>£ Creditors</u>	<u>£ VAT</u>	<u>A/c</u>	<u>Centre</u>	<u>£ Amount</u>	<u>Transaction Detail</u>
15/12/2022	southern electric	DD	2,097.66		349.61	4405	250	1,748.05	Electricity -HH
15/12/2022	payroll	BILL	20,205.18			4000	110	20,205.18	payroll
15/12/2022	Marks and spencer	VISA	29.50		4.92	4100	110	24.58	refreshments full council
15/12/2022	asda	VISA	5.00		0.83	4100	110	4.17	refreshments full council
16/12/2022	Peninsula	DD	356.50		59.42	4070	110	297.08	employer
16/12/2022	southern electric	DD	372.09		62.02	4405	230	310.07	Electricity - woodlands
16/12/2022	british Gas	DD	244.03		40.67	4400	150	203.36	Gas - Parish Office
19/12/2022	Overline	DD	159.44		26.57	4120	110	132.87	tel and broadband Office
19/12/2022	Overline	DD	99.40		16.57	4120	230	82.83	Tel and Broadband - woodlands
19/12/2022	Peninsula	DD	41.76		6.96	4070	110	34.80	Employer EAP
19/12/2022	Canva	VISA	10.99			4132	110	10.99	Canva
20/12/2022	BRSA	DD	126.34			4410	250	126.34	Water - HH
20/12/2022	BRSA	DD	78.00			4410	230	78.00	water Woodlands
20/12/2022	SE Gas	DD	958.76		159.79	4400	250	798.97	SE Gas
21/12/2022	hsbc	CHG	5.60			4095	110	5.60	bank charges
22/12/2022	BRSA	DD	13.98			4410	510	13.98	Water - cemetery
22/12/2022	Travis Perkins	VISA	1,003.20		167.20	4889	900	836.00	Splashpad fencing
						375	0	-836.00	Splashpad fencing
						6000	900	836.00	Splashpad fencing
22/12/2022	amazon	VISA	26.63			4450	230	26.63	plastic bowls, plates
23/12/2022	SSE Gas	DD	267.04		44.51	4400	230	222.53	Gas - woodlands
23/12/2022	HMRC	BILL	5,652.73			4000	110	5,652.73	PAYE
23/12/2022	Hampshire pensions	BILL	6,416.19			4010	110	6,416.19	Pensions
28/12/2022	Vodafone	DD	60.00		10.00	4133	110	50.00	gigicube
29/12/2022	BNP Paribas	DD	203.94		33.99	4120	110	169.95	tel system leasing
30/12/2022	BT Group	DD	1.87		0.31	4120	110	1.56	Tel and Broadband
30/12/2022	BT	DD	122.17		20.36	4120	110	101.81	tel and broadband
Total Payments for Month			55,265.83	15,163.57	1,216.61			38,885.65	
Balance Carried Fwd			502,280.27						
Cashbook Totals			557,546.10	15,163.57	1,216.61			541,165.92	

FULL COUNCIL – 16 JANUARY 2023**NEW CEMETERY KNOWLE LANE****1. RECOMMENDATION**

- 1.1 That the Council notes the contents of the report.
- 1.2 That the Council approves the creation of a budget code for future planning of the new cemetery.

2. PURPOSE

- 2.1 To present the results of the initial groundwater survey carried out to determine the suitability of the earmarked site at Knowle Lane for a new cemetery (namely the field adjacent to the allotments).
- 2.2 To advise the Council on the next steps should it still wish to develop the site for future cemetery use.

3. BACKGROUND

- 3.1 With the current burial rates at Fair Oak Cemetery, it is estimated that there are approximately 5 – 7 years of space available for burial before the cemetery will reach capacity.
- 3.2 In order to establish the suitability for cemetery provision at Knowle Park, a Tier 2 (Moderate Risk Site) Groundwater Risk Assessment was undertaken by the CDS Group (Cemetery Design Service). The final report and recommendations are attached at Appendix 1.
- 3.3 When the White Tree Farmland (now Knowle Park) was gifted to the Council, the Council made the decision to earmark the land currently used as allotment space and the field next to it, as cemetery space, once the current cemetery at Botley Road reached capacity.
- 3.4 The land earmarked for cemetery provision, the subject of the investigation, is set out in the map below, highlighted in red. The site is calculated as being approximately 0.25 ha.



4. SURVEY FINDINGS

- 4.1 The groundwater site survey was undertaken on 17 November 2022. As part of the investigation, five sampler boreholes were drilled across the site at a depth of 4 meters. Only one borehole (at the southern boundary) encountered a moderate water strike at a depth of 3.3.6 metres. The remainder were all found to be dry during drilling and monitoring.
- 4.2 It is proposed to develop the site into a traditional burial ground, assuming approximately 800 burial plots (1.5m x 3m) in an acre, this site has a maximum developable area (excluding buffer zones) of approximately 0.64 acres if the whole area were to be developed. On this basis, the maximum number of burial plots would be 512. However, if the site were to follow the EA's minimum good practice guidance, a 30m non-burial buffer would be required along the ditch to the west and the south, which would reduce the developable area down to 0.33 acres, thus lowering the maximum number of burial plots to 264.
- 4.3 Based on the proposed burial rate of 10 per annum, this site would have a lifespan of between 26-50 years.
- 4.4 Based on the decay rate date, this site would reach peak effluent release at Year 10, the peak effluent release on this site would be maintained for a short to a moderate period of time based on the predicted lifespan of the site and would therefore not be considered to be a declining source.
- 4.5 The groundwater assessment has been submitted to the Environment Agency for pre-app advice and The CDS group has proposed a reduced buffer zone for the site as highlighted in the groundwater risk assessment. A reply to the proposals is expected from the EA within 3 months.
- 4.6 Based on the soil samples taken on site, it is considered that the site should be suitable in terms of meeting the EA criteria for cemetery development.

5. FUTURE CEMETERY DEVELOPMENT

5.1 Prior to the current cemetery reaching capacity, the Council will need to plan and prepare the Knowle Lane site for burials. As part of their report, CDS Group recommend the future design and mitigation measures: -

- The surface water catch trenches to the north of the site are upstream and are designed to collect surface water from the slope, as such we do not consider there to be a need for a non-burial buffer to these features.
- The surface water catch trench along the site's southern boundary is a shallow feature, approximately 30cm deep and has been designated to catch surface water migrating across the site and to drain it to the ditch to the west. Given that this feature is shallow and can be removed or converted to a piped system we do not consider there to be a need for a non-burial buffer to this feature.
- The ditch to the west of the site and road drainage ditch to the south of the site in theory will require a 30m non-burial buffer in line with the current updates EA good practice requirements. However, given the negligible permeability of the soils encountered on site, along with the low burial rate and cation exchange capacity of the underlying soils, we would consider the 15m buffer, which is present due to the presence of the car park to the west and the additional non-burial land to the south to be a sufficient non-burial buffer providing protection to the shallow ditches from any migrating burial contaminants.

5.2 If the above recommendations are approved by the EA, then the maximum developable area of the site could be realised, providing 512 burial plots assuming double-depth burials would provide capacity for 1024 full-depth burials to take place on-site.

6. FINANCIAL IMPLICATIONS

6.1 The CDS Group have estimated a figure of around £20-£30,000 for the planning application, design work, construction drawings, tender packs and project management and a figure of between £20,000 -£40,000 for the construction phase of the cemetery.

7. SUMMARY

7.1 The investigations undertaken by CDS Group confirm that the Knowle Lane site is suitable for cemetery provision. It is estimated that the current cemetery at Botley Road will reach capacity in 5-7 years' time. Therefore, the Council must take appropriate steps to develop the second cemetery site prior to capacity being reached.

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A T2 Groundwater Risk Assessment Report for Fairoak Parish Council

Address: Land off Knowle Lane, Fairoak, SO50 7DZ.

Date: 30th November 2022

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Executive Summary

The site, which extends to approximately 0.25ha comprises an area of land laid to grass to the south of Knowle Park. The site is bound by allotments to the east, by Knowle Park to the north, by a car park to the west and by open land leading to the allotments to the south. It is proposed to develop the site into a new burial ground with associated infrastructure, landscaping and burial areas.

Historical maps show that the site has remained open undeveloped land from the late 1800's to the present day. No sources of either on site or offsite contamination have been identified which would be considered to pose a risk to the redevelopment of the site.

A geological and hydrogeological review of the sites properties has been undertaken which indicates that the site is underlain by the Wittering Formation, with an absence of mapped superficial deposits shown on site. The bedrock geology is designated as a Secondary A aquifer of medium vulnerability. The site itself is not situated within a groundwater source protection zone and no records of any groundwater abstraction have been identified within 1km of the site.

An intrusive investigation was undertaken on the 17th November 2022, with a series of 5 No. windowless sampler boreholes drilled across the site to maximum depths of 4.0m bgl.

The soils on site generally comprised a shallow covering of brown, clayey sandy Topsoil, overlying a firm orange brown Clay which in turn was found to overlie a firm to stiff orange brown mottled grey silty Clay overlying a laminated orange brown Clay/Silt with occasional sand laminations.

Groundwater strikes were only encountered at the location of WLS104, which was along the sites southern boundary. The strike was a moderate water strike within a band of granular soils encountered at a depth of 3.6m bgl, the water strike rose to 3.4m bgl after 1 hour. The remainder of the boreholes drilled across the site to depths of 4m bgl were all found to be dry during drilling and subsequent monitoring during the day.

The worst case depth to groundwater (3.4m bgl at WLS104) would be sufficient to provide the required 1m unsaturated zone thickness across the majority of the site which sits at a higher elevation.

It is proposed to develop the site into a traditional burial ground, assuming approximately 800 burial plots (1.5m x 3m) in an acre, this site has a maximum developable area (excluding buffer zones) of approximately 0.64 acres if the whole area were to be developed. On this basis, the maximum number of burial plots would be 512. However, if the site were to follow the EA's minimum good practice guidance, a 30m non burial buffer would be required along the ditch to the west and the south, which would reduce the developable area down to 0.33 acres, thus lowering the maximum number of burial plots to 264.

Based on the proposed burial rate of 10 per annum, this site would have a lifespan of between 26-50 years. Based on the decay rate date, this site would reach peak effluent release at Year 10, the peak effluent release on this site would be maintained for a short to moderate period of time based on the predicated lifespan of the site and would therefore not be considered to be a declining source.

A conceptual site model using the source-pathway-receptor linkage has been carried out for this site.

- There are no existing sources of onsite contamination, however the proposal to develop the site into a cemetery introduces a new source in the form of human remains (Nitrate, Ammonia, Formaldehyde and Bacterial contamination).

- The pathway for the migration of the source is through the clay based soils, which would offer a significant degree of protection due to the low permeability of the soils and cation exchange processes which would take place
- The receptors at risk from the proposed development are the surface water feature off site to the south and the underlying Secondary A aquifer.

The final assessment of risk for this site would class it as being moderate risk where burials rates are less than 30 per annum, increasing to a high risk where burial rates exceed 30 per annum.

On this basis and in accordance with the updated EA guidance, this site is not considered to fall under the new EA permitting regulations and will not require any further detailed assessment.

With regards to future design and mitigation measures we would highlight the following site specific factors for this site.

- The surface water catch trenches to the north of the site are upstream and are designed to collect surface water from the slope, as such we do not consider there to be a need for a non-burial buffer to these features
- The surface water catch trench along the sites southern boundary is a shallow feature, approximately 30cm deep and has been designated to catch surface water migrating across the site and to drain it to the ditch to the west. Given that this feature is shallow and can be removed or converted to a piped system we do not consider there to be a need for a non-burial buffer to this feature.
- The ditch to the west of the site and road drainage ditch to the south of the site in theory will require a 30m non-burial buffer in line with the current updates EA good practice requirements. However, given the negligible permeability of the soils encountered on site, along with the low burial rate and cation exchange capacity of the underlying soils we would consider the 15m buffer, which is present due to the presence of the car park to the west and the additional non burial land to the south to be a sufficient non burial buffer providing protection to the shallow ditches from any migrating burial contaminants.

If the above recommendations are approved by the EA, then maximum developable area of the site could be realised, providing 512 burial plots which assuming double depth burials would provide capacity for 1024 full depth burials to take place on site.

1 Introduction and Site Location

The CDS Group have been asked to carry out a Tier 2 site screening assessment for a proposed new cemetery. This site will be considered on the basis of groundwater risk and as part of this, a T2 study based on the criteria required by the Environment Agency has been carried out. This is because sites that do not meet the requirements of the Environment Agency should be ruled out at an early stage since the Agency as Primary Consultees are able to prevent any site being developed should the site be deemed to represent too great a risk in respect to water pollution.

The proposed development area has been assessed on a 1km area of influence: grid reference SU 50149 18059 and the nearest postcode is SO50 7DZ. The site is calculated as being approximately 0.25 ha.

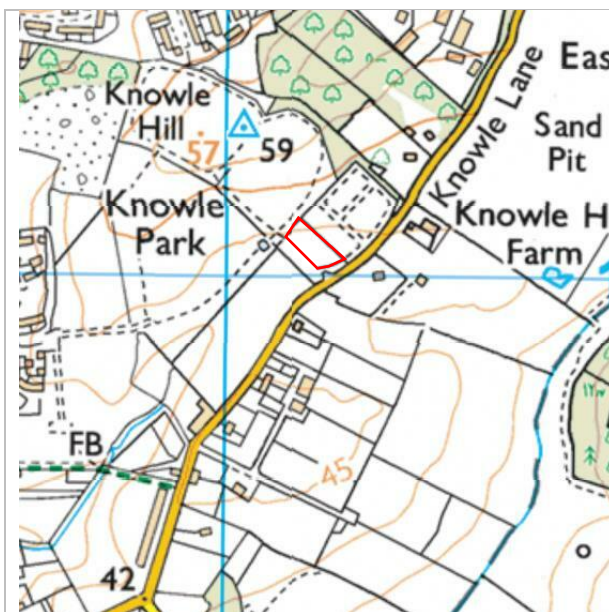


Figure 1. OS map of the site (boundary indicated in red)



Figure 2. Aerial Image of the site (boundary indicated in red)

This report will review the site proposed for use as a burial facility in accordance with the requirements of the Environment Agency's Tier 2 survey. For the purposes of this study the anticipated burial rate, based on data provided by the client for this site is estimated as being approximately 10 per year.

- 2019 – 13 burials and 13 cremated remains
- 2020 – 9 burials and 9 cremated remains
- 2021 – 9 burials and 14 cremated remains

2 Background and Guidance

This section sets out the relevant legal and policy advice relevant to the grant of planning permission for new and also the operation of existing cemeteries. New cemetery developments or extensions to existing cemeteries can be very emotive. However, these concerns are often disproportionate to the actual environmental risk.

Whilst the Local Planning Authority is the principal controlling body in determining approval for new sites or site extensions, significant information is required to ensure that the environmental risks are examined and that the Environment Agency's views are considered. Therefore, measures to prevent pollution must be undertaken and reported. Any regulatory decision-making is based on sound scientific knowledge. On this basis, a review of potential pollution from cemeteries was undertaken by the Environment Agency in collaboration with the British Geological Survey.

The aim was to review old and new cemeteries and measure the effects of contamination from viruses, bacteria and other microbiological pathogens and to assess the potential of chemical contaminants affecting groundwater supplies from decomposition processes. Preliminary results showed that the operating cemetery examined in the study (25 years old) did show some evidence of bacterial contaminants in groundwater derived from corpses. However, no viruses were detected and the overall contaminant loading was found to be low. The studies found that degradation and attenuation was occurring indicating that potential risks were low. Whilst the outcome of this research found contaminant risk to be low, it should be reviewed in the context that natural attenuation processes may have been optimum at these sites. Therefore, to optimise natural attenuation and reduce the risk of possible groundwater contamination, a series of guidelines have been drawn up that are directly applicable to cemeteries.

The most up-to-date guidance issued by the Environment Agency (EA) is provided in:

- [The Environment Agency's approach to groundwater protection](#) (February 2018 Version 1.2), which updated 'Groundwater protection: Principles and practice (GP3) (2013)';
- [Groundwater protection technical guidance](#), published March 2017.
- [Protecting groundwater from human burials](#), published April 2022.

The purpose of the published guidance is to help those operating cemeteries to understand how to manage cemeteries and burial of human and animal remains, to prevent or limit groundwater pollution.

Failure to manage and reduce any environmental risk to a minimum may result in action being taken under the Environmental Permitting (England and Wales) Regulations 2016, the Water Resources Act 1991 and the Anti-pollution Works Notice Regulations 1999.

The recently updated guidance, 'Protecting groundwater from human burials' has, for the first time, introduced the need for high risk cemetery sites to require an Environmental Permit to operate. This places additional financial implications on the operation of the cemetery as well as requiring the operators to ensure they meet the terms of the permit. It is therefore important that any new cemetery or extension to an existing cemetery is assessed at an early stage to understand whether the site would be liable to the new environmental permitting regulations.

2.1.1 Groundwater Protection Policy

Initial risk screening starts with the tools contained in the 'The Environment Agency's approach to groundwater protection' (previously Principles and Practice for the groundwater protection), Section L: Cemetery developments GP3.

Tools include Groundwater Vulnerability and Source Protection Zone (SPZs) maps. These maps highlight where there are likely to be particular risks posed to groundwater from surface activities. Groundwater Vulnerability (GWV) Maps show the damage from pollution to groundwater and the relative importance of the aquifer to water supplies. Risk assessment is made with reference to soil leaching potential and the levels of water tables above major and minor aquifers.

Source Protection Zones are delineated areas around groundwater abstractions used for public consumption and defined by travel, time of biological or chemical contaminants.

The zones are classified in three groups:

- Zone 1 High risk**
- Zone 2 Intermediate to high risk**
- Zone 3 Intermediate risk**

In its Position Statement L1 (p109 of 'The Environment Agency's approach to groundwater protection') the Agency advises that it will object to the grant of planning permission for any new cemetery, or the extension of an existing cemetery, within Zone 1 of an SPZ or 250 metres from a well, borehole or spring used to supply water that is used for human consumption, whichever is the greater distance.

Position Statement L3 advises on the protection of groundwater in highly sensitive locations. The Agency advises that it will apply a risk-based approach to assessing the suitability of sites outside of the zones noted in position statements L1 and L2 (concerning mass casualty emergencies). It will place a high priority on protecting groundwater within principal aquifers and groundwater catchments for drinking water supply; and seek to avoid new cemetery developments for greater than 100 graves in these high vulnerability areas except where the thickness and nature of the unsaturated zone, or the impermeable formations beneath the site protect groundwater, or the long-term risk is mitigated by appropriate engineering methods. It advises that all cemetery developments and burials must maintain an unsaturated zone below the level of the base of the grave(s) and that the Agency will work with the local authorities to identify alternative options where necessary.

Whilst groundwater is a major part of policy concerns, other water point sources are also considered as requiring an evaluation of risk. These sources include surface water in the form of ditches, spring lines and surface run-off.

The factors influencing the risk of groundwater vulnerability include:

- Soil nature and type
 - Physical, mechanical and chemical properties
- Geomorphology
 - Depth to water table and or height above aquifers
 - Groundwater flow mechanisms
 - Aquifer type
- Abstractions
- SPZs
- Proximity to water courses, ditches and drains

Therefore, prior to any consent being given by the Environment Agency, an assessment of risk should be undertaken. The degree of assessment is measured through a series of stages namely:

- Hazard identification
- Identification of consequences
- Magnitude of consequences
- Probability of consequences
- Significance of risk

2.1.2 Tiered risk assessment

The Environment Agency requires all new cemetery sites or extensions to existing cemetery sites to undergo a groundwater risk assessment using the Source-Pathway-Receptor approach, which includes the formation of a site specific conceptual model.

This is required to provide an assessment of the impact of proposed burials (source) on the underlying groundwater table or surface water features in close proximity (receptor). The nature of the site specific geological conditions, which act as the pathway between the source and receptor, can alter the severity of the potential pollution impact.

As such proposed burial sites are required to undergo a tiered risk assessment based on a wide range of factors including burial number, burial type, geological conditions and hydrogeological conditions.

There are 3 Tiers of Risk assessment which are used depending on the overall risk of the proposed development

Tier 1 Assessment – Site Screening Requirements

A Tier 1 report comprises a desktop study of all appropriate documentation including geological conditions, published soil data, groundwater data including aquifer designation and source protection zone classification. The site then undergoes a qualitative risk assessment to determine the potential impact of the proposed development on the identified sensitive receptors. If the risk is considered to be low the proposed development may be approved by the Environment Agency without further detailed assessment.

However, the following minimum good practice requirements should be met to minimise pollution risk:

You should **not** carry out any human burials within:

- an Inner Groundwater Source Protection Zone (SPZ I).
- 10 m distance from agricultural field drains.
- 30 m minimum distance from a watercourse, which includes ditches and open land drains, which may run dry for part of the year.
- 50 m of any well, spring or borehole irrespective of the waters use.
- 250 m of any well, spring or borehole where the water is intended for human consumption or used in food production.
- areas where karstic groundwater flow is identified.
- in areas prone to groundwater flooding.
- where the base of a grave cannot meet the minimum height requirement of 1m above the highest annual groundwater level.
- In unaltered or unweather bedrock.

Tier 2

Should the risks identified by the Tier 1 desktop suggest a potential pollutant impact, then further site specific “ground truthing” will need to be undertaken. A Tier 2 investigation requires a wide range of site specific information such as a site investigation using trial pits or boreholes to assess the nature of the ground conditions, depth to groundwater, permeability etc to provide a more detailed assessment of the conceptual model, source-pathway-receptor linkage and overall risk posed to the receptor

On further assessment of the ground model the risk assessment for the site can be re-assessed which may indicate the requirement for a pollutant flux model to be carried out to assess the impact of the modelled pollutants on the underlying groundwater and nearest compliance point.

Tier 3

If the risk is considered to be high, more detailed investigation work will be required to assess the impact of the proposed development. This would include at least 1 years groundwater monitoring to assess seasonal variations in groundwater levels from a minimum of 3 boreholes (1 upgradient and 2 down gradient). Post development, it is also required to undertake 3 years monitoring and sampling to assess any potential impact upon the receptor once the site is operational.

2.1.3 Environmental Permitting Regulations – April 2022

Burial of human corpses can result in discharge of hazardous substances and non-hazardous pollutants to groundwater. They are, therefore, covered by the requirements of the EU Groundwater Daughter Directive, issued under the Water Framework Directive 2006 and now transposed in England and Wales by the Environmental Permitting (England & Wales) Regulations 2016 (EPR 2016). It is an offence to cause or knowingly permit pollution of controlled waters other than under and in accordance with an environmental permit.

From 1 April 2022, you will need to apply for an environmental permit for a new cemetery development or extension to an existing cemetery if any of these apply:

- it presents a high risk to the environment due to its proposed location
- your site needs active pollution prevention mitigation measures or operational burial controls to protect the water environment
- the Environment Agency told you during the coronavirus pandemic that you would need to apply for a permit
- you submitted a planning application on or after 1 April 2022 and the Environment Agency told you that you would need to apply for a permit

As part of your planning application or permit application, you must carry out a groundwater risk assessment. A groundwater risk assessment will provide you with a site specific analysis of the risks your activity may pose. The Environment Agency will use this to help you operate your cemetery and protect the water environment.

2.2 Greywater Management

Groundwater protection is a statutory requirement for all cemetery sites under the Water Resources Act. The Environment Agency have also laid down strict guidelines for the development of new cemeteries and operation of all existing cemeteries with active burial and reopens, which include but are not limited to the following:

- Graves should not hold any standing water when dug.
- There should be at least 1 metre between base of grave and water table; more if the soil has high infiltration rates.
- Graves should be at least 250m away from wells and potable water supplies.
- Pumping out of graves and discharging “grey” water directly or indirectly into surface or groundwater sources if found to be polluted is an offence under the Groundwater Regulations 1998.
- No burials within 30 meters of land drains or watercourses.

During the winter months, it is a common requirement to pump water out of newly opened graves. There are a number of reasons why water enters graves, it is important therefore, to determine where the water is coming from. There are usually three main sources:

2.2.1 Surface Water

In the winter and during periods of heavy and sustained rainfall, surface water is likely to be the most common source of water seepage into graves particularly on site situated on relatively impermeable subsoils such as clay. The shallow soil profile soon becomes saturated and the soil exceeds field capacity, meaning that all the soil's pore space is filled with water. The greater the water input, the deeper this waterlogged layer becomes. Clay soils may only allow infiltration rates of between 2mm to 3 mm per hour, however, if the soil is consolidated, then this rate could be reduced to less than 1 mm per day leading to prolonged periods of standing water and rapid runoff from sites when rainfall begins.

In high rainfall events (10-15 mm per hour), the upper horizon (topsoil) soon becomes saturated as water movement downwards is impeded by the less impermeable soils below, eventually precipitation exceeds the speed of downward infiltration and excess surface water then moves horizontally and generally down slope over the surface, ponding in depressions such as over new graves or in areas where older graves have not been suitably topped-up. Furthermore, if the drainage network designed to capture surface water and drain it away from burial areas is not adequately maintained then these systems can backup leading to surface water flooding.

Excavating a new grave in a previously unoccupied plot of land will allow water to flow through the soil into the newly excavated grave. This water in most cases will be unpolluted, provided it is a new grave up-slope from existing graves. Pumping is an option and is likely to pose little pollution risk if discharged to land and allowed to soak away, alternatively water can be discharged into the surface water or foul-water drainage system although permission from the water company will be required.

If a grave is being re-opened, even if the soil has been compacted over the previous burial, it is likely some water will have gathered around the previous interment. In the worst cases this may extend up through the soil to the depth of the next burial. This water will be polluted and should be treated as grey water. It must not be discharged untreated into a surface water or groundwater outfall, nor should it be pumped onto the surface. If the burial is relatively recent, pathogen loading in the water could be high and may present an immediate biological risk to staff and visitors if discharged onto the surface. Even for an old burial the water is likely to be chemically contaminated, posing a risk to the receiving waters. In all cases such water should be disposed of either to a foul sewer (with appropriate permission) or be tankered away to a suitable water treatment works.

The better the compaction of the backfill over a grave, the less likely water is to move through the soil and gather around a coffin at burial depth. Equally, if the grave can be regularly topped up to avoid the formation of a depression over the grave then water will run off the surface and away from the grave rather than ponding over a grave in filtrating down to burial depth.

If the water in the burial has a sheen/odour and is anticipated to be 'greywater' then this water cannot be discharged onto land or into drains as this would breach guidelines with respect to discharge of suspected polluted water.

2.2.2 Groundwater

If, when digging a grave, water appears to enter the pit at lower levels and / or through the base of the pit it is almost certainly groundwater. The speed at which the water enters a pit or grave can vary depending the nature of the soils. If groundwater is encountered in a freely draining soil such as a fractured weathered bedrock or a highly permeable sand/gravel then the flow may well be rapid, filling the pit or grave quickly. However, if groundwater is encountered in an intergranular soil such as

fine sands/silt, then the rate of inflow may be slow and, in some cases, may not be instantly apparent. If left for an hour or so and re-examined, groundwater may appear as slow seepage into the pit or as a sheen of water droplets on the pit base and sides. However, both cases could indicate the presence of groundwater within burial depth and accordingly it is not appropriate to undertake a burial in such conditions as it would be considered in breach of two statutory requirements.

- Graves should not hold any standing water when dug.
- There should be at least 1 metre between base of grave and water table; more if the soil has high infiltration rates.

It should be noted, however, that on some sites a shallow perched water table may be encountered which has no direct connection to groundwater or surface water features. Often sites with a clay soil may contain pockets made up of sand and gravel known as "lenses". If a grave is dug into such a lens, it will cause the water to drain from the lens into the grave. The size of the lens will determine the speed and quantity of water ingress into the grave. Depending on whether the new burial is in close proximity to other burials and depending if other graves in the cemetery are at, or above, the level of these lenses, the water entering the burial may or may not be considered to be contaminated. When considering pumping out, this water should be managed as part of a health and safety management approach (see later discussion).

2.2.3 Intergrave Seepage

As discussed previously, surface water arising from periods of heavy or sustained rainfall on heavy clay soils will migrate to depressions, which in cemeteries are often associated with settlement of graves. The backfill material of a grave is usually less consolidated than the surrounding undisturbed soil due to the fact that the soils has been reworked and placed back leaving fissures and voids in the soils. If the surrounding matrix is less permeable, water will accumulate in the pore spaces and voids within the grave. This "free water" is mobile and is under a "head" of pressure which increases with depth.

If a new grave is dug downslope of, or adjacent to, an existing grave it is likely that seepage of "grey" water from the adjacent plot will occur. Based on the age of the adjacent burial (<10 years or younger), there is a significant risk that the water draining into the excavation will be contaminated. Recent evidence shows that this greywater may contain clostridium and streptococcal bacteria. Concern has now also been raised about the possible presence of the CJD vector.

Pumping "grey" water without adequate protection of water courses, staff and public is potentially dangerous and irresponsible. Environment Agency representative advice as of January 2007 is as follows:

"Grey water should be managed in the first instance by the prevention of surface water entering grave plots, old and new. This can be done by installing cut-off or surface management drainage systems. If water is subsequently pumped from the grave, the water must be stored and subsequently disposed of by a professional environmental waste management company. Alternatively, the water can be treated on site by either mobile or permanent treatment systems prior to discharge or recycling."

3 Desk Study Site Assessment

Envirocheck, British Geological Survey and Cranfield University data was used in this report.

3.1 Historical Land Use

The site is first shown on the 1885 map to comprise an open parcel of land, which comprises part of a larger field which extends to the north and east. The surrounding area predominantly comprises a mixture of open land and woodland, with Knowle Lodge mapped off site to the south. By the 1909 map, the site remains essentially unaltered, the land to the south has begun to develop, with footpaths and outbuildings mapped.

Between the 1909 map and 1941 map, the site again remains unaltered, where as the surrounding area has seen partial clearance of the woods to the north with new buildings constructed, further development to the south and east with numerous buildings developed which are assumed to be agricultural in nature along with areas of allotment gardens.

The site and immediate surrounding area remained unchanged upto the late 1990's when a large quarry and landfill was shown to the north east of the site. The site became developed at some point between 2005 and 2012, where the allotments to the east are mapped and the existing access point and carpark to the west of the site were also developed.

3.2 Soil Type

According to the Soil Survey of England and Wales, the soils on site are mapped as belonging to the 572j Bursledon as described in Figure 3 and Table 1.

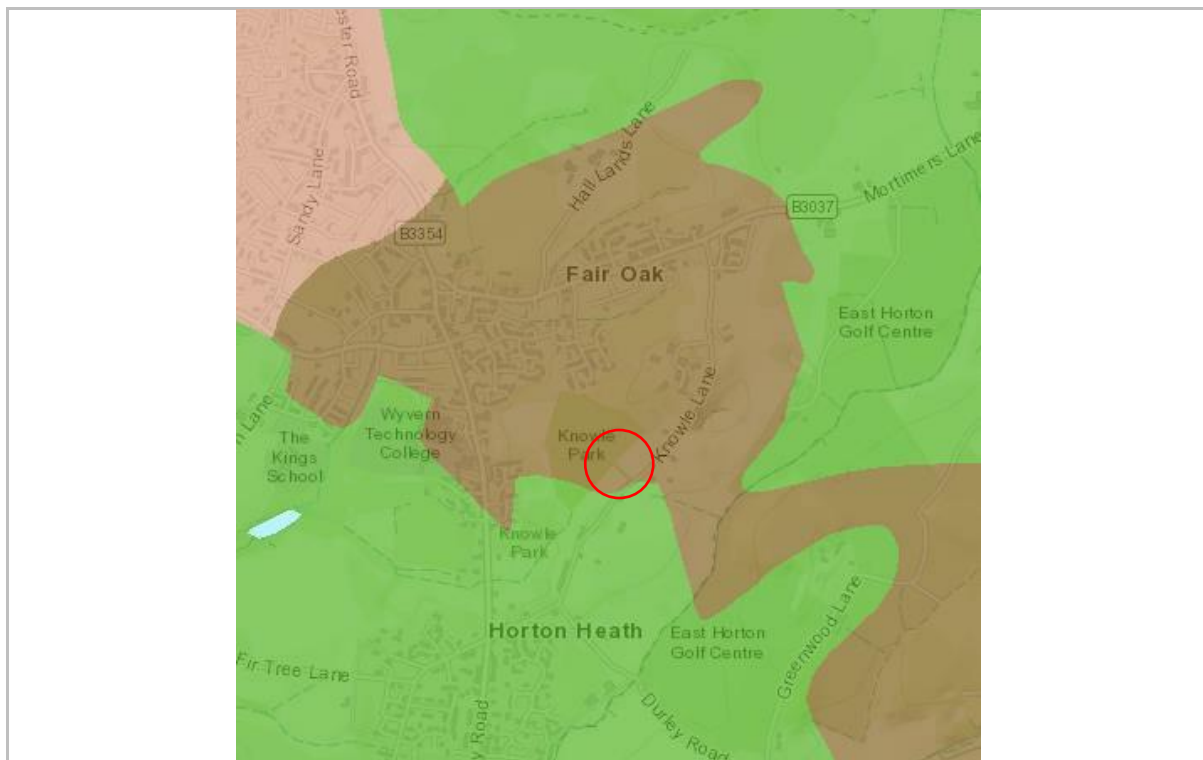


Figure 3. Soil Associations in the vicinity of the site.

Table 1. Soil Associations in the vicinity of the site

Soil Association	Description
572j Bursledon	Deep fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging associated with deep coarse loamy soils variably affected by groundwater. Some slowly permeable seasonally waterlogged loamy over clayey soils. Landslips and associated irregular terrain locally.

Suitability for use as cemeteries:

The soils on site are prone to seasonal waterlogging and are slowly permeable, as such the site would require some form of surface water drainage to improve surface conditions and reduce surface water flooding of burial plots which would cause distress.

3.3 Geology

The following headings cover the aspects of geology of the immediate area of the proposed development.

3.3.1 Artificial Ground

This is ground at or near the surface that has been modified by man. It includes ground that has been deposited (Made Ground), landscaped, disturbed, excavated (Worked Ground) or some combination of these.

As can be seen in Figure 4 below, there are no reworked ground or made ground soils mapped on site.

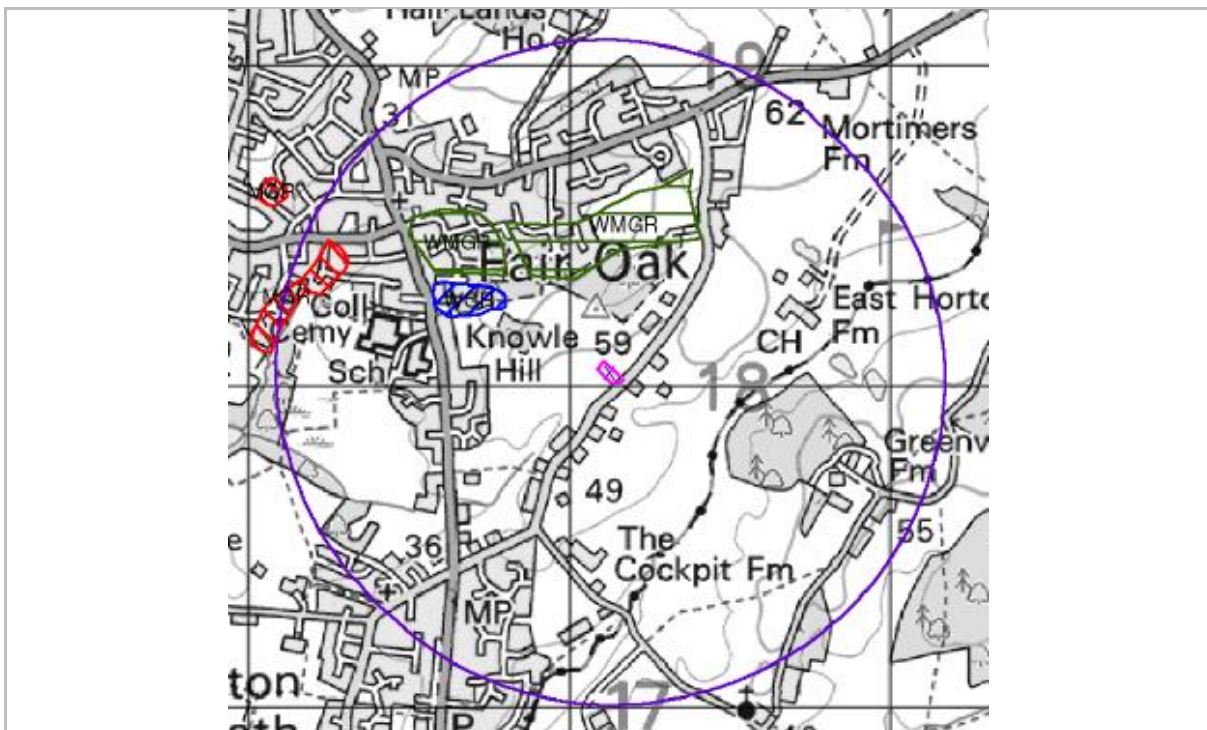


Figure 4. Artificial deposits within the vicinity of the site.

3.3.2 Superficial Deposits

These are relatively young geological deposits formerly known as 'Drift', which lie on the bedrock in many areas. They include deposits such as unconsolidated sands and gravels formed by rivers and clayey tills formed by glacial action. They may be overlain by landslide deposits, by artificial deposits or both.

As can be seen in Figure 5 below, there are no superficial soils mapped onsite or in the immediate surrounding area.

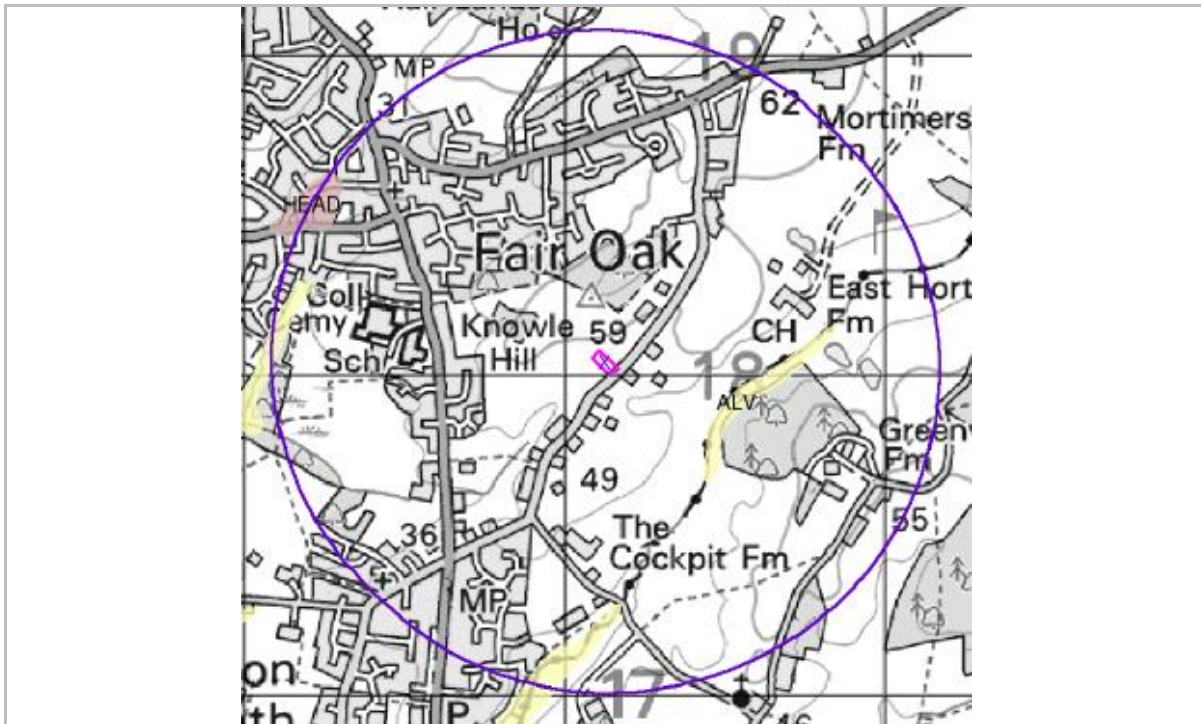


Figure 5. Superficial deposits within the vicinity of the site.

3.3.3 Bedrock Geology

Bedrock forms the ground underlying the whole of an area, commonly overlain by superficial deposits, landslide deposits or artificial deposits, in any combination.

As can be seen in Figure 6 below, the site is mapped on the Wittering Formation, which comprises Palaeogene marine deposits. The soil types are greenish and brownish grey clay with sand and silt lenses, interlaminated sands and clays, and fine medium sand with silty clay laminae or thin beds. Channel sands may be found that are restricted in lateral extent and may have a sharp interface with the adjacent sand laminated clay.

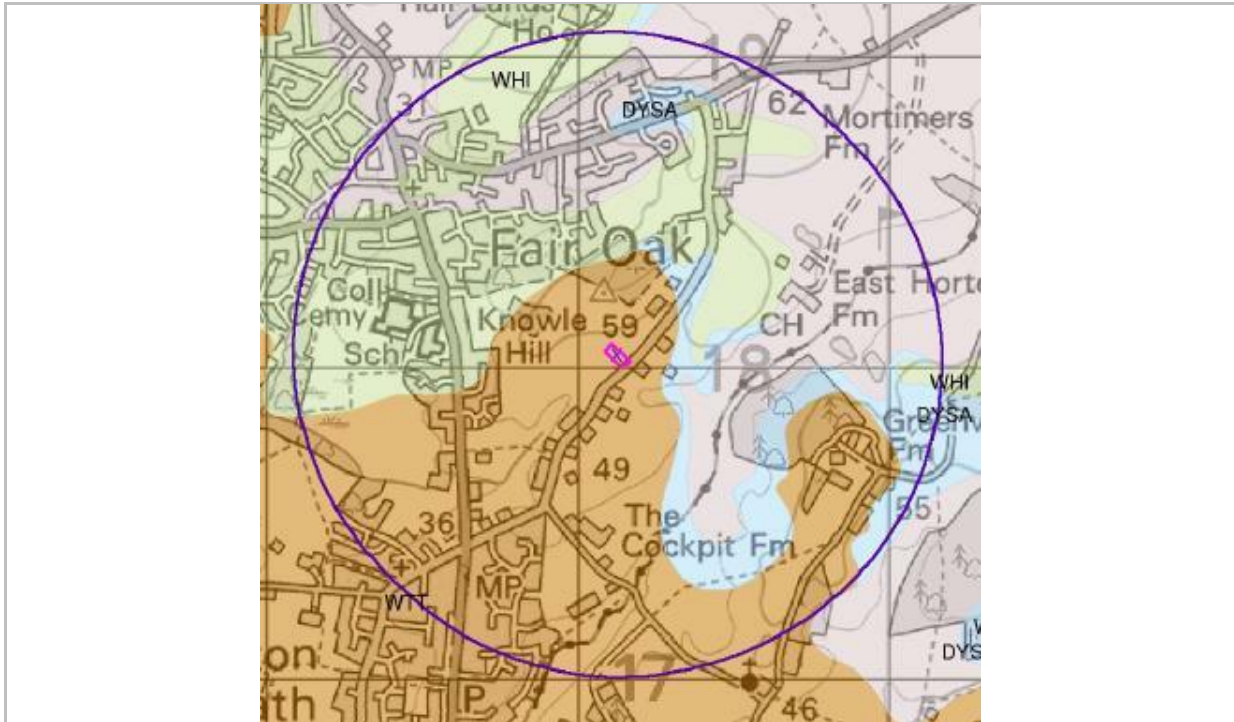


Figure 6. Bedrock Geology within the vicinity of the site.

3.4 Additional Geological Considerations

A summary of the potential geological hazards which could be found on site are explained in Table 2 below:

Table 2. Onsite Geological Hazards

Geological hazard	May be significant within site area (Yes/No)?	Comments
Potential Natural Ground Stability Hazards		
Shrink-Swell	Yes	The mapped geology on the site predominantly comprises clay based materials with interbedded silt and sand. As such we do consider there to be a potential risk associated with swelling and shrinkage of the soils which could impact memorials.
Landslides (slope instability)	No	The site is generally flat and level and as such there is no significant risk associated with landslides.
Soluble Rocks (dissolution)	No	The site is not situated on a geology which is susceptible to dissolution and as such there is no risk.
Compressible Ground	No	The site is not situated on a geology which is susceptible to compression and as such there is no risk.
Collapsible Deposits	No	The site is not situated on a geology which is susceptible to collapse and as such there is no risk.

Geological hazard	May be significant within site area (Yes/No)?	Comments
Running Sand	Yes	The site comprises interbedded Clay, Silt and Sand, where bands of sand are encountered within the Wittering Formation there is potential for running sand to be encountered associated with isolated perched water strikes.
Other Potential Hazards		
Mining	No	The site is not in an area at risk of mining. No historical evidence of mining was observed on site on the historical maps.
Flooding (Rivers and Sea)	No	The site is not mapped in an area at risk of flooding by rivers or sea.
Flooding (Surface Water)	No	The site is not mapped in an area at risk of surface water flooding.
Flooding (Groundwater)	No	The site is located in an area shown to be at limited risk of groundwater flooding.
Natural Land Gas	No	Unlikely to encounter gas.
Radon	No	Level of protective measures: NO

3.5 Hydrogeology

In lowland areas of the UK with little topographic variation, groundwater is likely to be found at shallow depths of only a few metres. Water table fluctuations will be small as they will be constrained by the ground surface and the base level of the local perennial streams and rivers. In upland areas, precipitation is usually high and the dominantly metamorphic and igneous rocks often have relatively shallow groundwater levels.

This is due to preferential groundwater storage in near-surface weathered and fractured zones with limited drainage into the underlying un-weathered lower permeability rock. Exceptions can occur where higher permeability rocks, such as sandstone or limestone, allow faster throughflow of groundwater towards the nearest stream or other discharge point.

Perched water tables occur where a less permeable horizon (e.g. a clay layer) in an otherwise permeable sequence retains a body of groundwater above the level of the regional water table. They usually occur at shallow depths in alluvial and glacial sediments and can be difficult to identify or to delimit.

An aquifer becomes confined when it is overlain by a less permeable horizon that restricts the upward movement of groundwater. When this less permeable horizon is penetrated (e.g. by drilling), the groundwater level rises above where struck to a level controlled by the hydrostatic pressure. If this is above ground level, overflowing artesian conditions will be encountered. Confined conditions should be anticipated, where possible, in order to plan for the problems they can generate.

Individual sites will always require more detailed assessments to determine the specific impact on groundwater resources. The maps represent conditions only at the ground surface. Where the soil and/or underlying formations have been disturbed or removed the vulnerability class may have been changed and site-specific data will be required. Sites in urban areas and restored or current mineral workings are classified as having high (urban) soil leaching potential until proved otherwise.

Table 3. Hydrogeology summary

Geological unit	Groundwater potential	Water level and strikes	Groundwater vulnerability classification
Wittering Formation	There is low to moderate risk of encountering a potentially multi-layered aquifer due to the interbedded nature of the soils and presence of channel sands. Waterstrikes are expected to be variable and would provide a limited volume.	There is an absence of mapped data in close proximity to the site to provide any meaningful assessment.	Secondary A Aquifer of High to Medium Vulnerability.

3.6 Groundwater Vulnerability

This section reviews all components of hydrology, geology and topsoil surface water drainage to assess risk notably to groundwater.

3.6.1 Source Protection Zones

The position of the site relevant to current groundwater protection zones is shown in Figure 7.

The proposed **development site lies outside of any Source Protection Zone. The nearest SPZ is approximately 2km to the northeast which is mapped as a subsurface activity.**

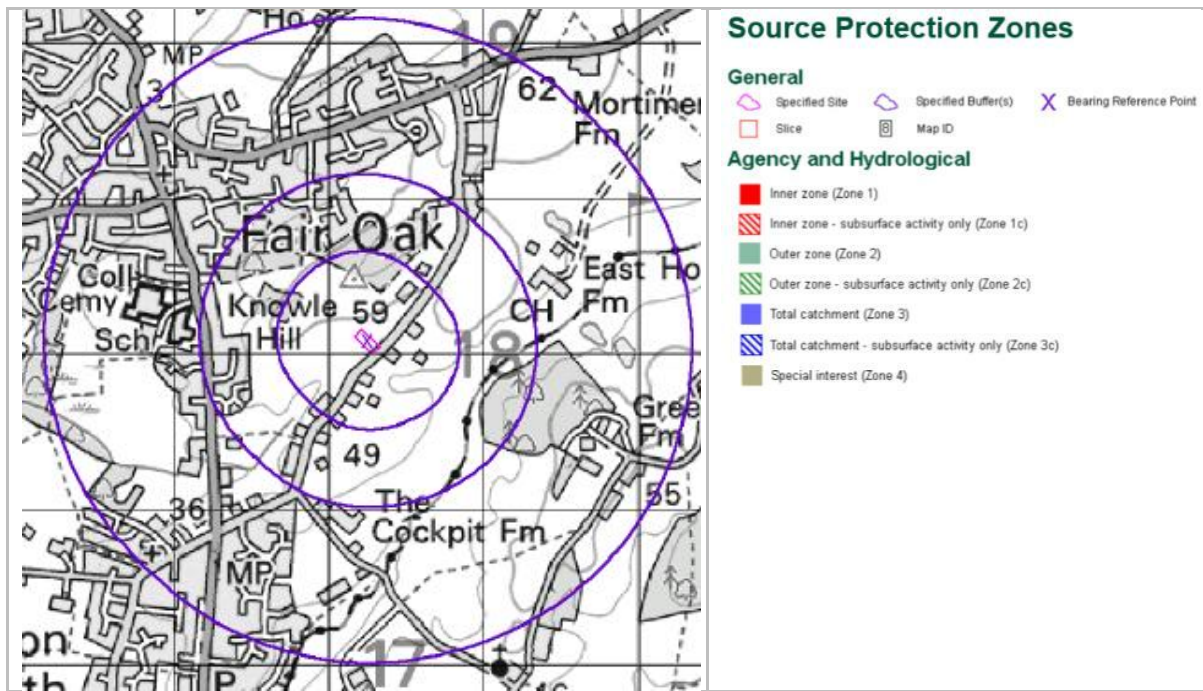


Figure 7. Groundwater Source Protection Zones associated with the site.

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Source Protection Zones (SPZs) provide an indication of the risk to groundwater supplies that may result from potentially polluting activities and accidental releases of pollutants. Generally, the closer the activity or release is to a groundwater source the greater the risk. Three zones (an inner, outer and total catchment) are usually defined although a fourth zone (zone of special interest) is occasionally defined.

The Agency has subdivided groundwater source catchments into four zones. Two of these are determined by the travel time of potential pollutants, the third by the source catchment area itself and the fourth is a "Zone of Special Interest". This fourth zone highlights areas where known local conditions mean that potentially polluting activities could impact on a groundwater source even though the area is outside the normal catchment of that source.

- **Zone I (Inner Protection Zone)** - This zone is defined by a travel time of 50-days or less from any point within the zone at, or below, the water table. Additionally, the zone has, as a minimum, a 50-meter radius. It is based principally on biological decay criteria and is designed to protect against the transmission of toxic chemicals and water-borne disease.
- **Zone II (Outer Protection Zone)** - This zone is defined by the 400-day travel time, or 25% of the source catchment area, whichever is larger. The travel time is derived from consideration of the minimum time required to provide delay, dilution and attenuation of slowly degrading pollutants.
- **Zone III (Total catchment)** - This zone is defined as the total area needed to support the abstraction or discharge from the protected groundwater source.
- **Zone of Special Interest** - For some groundwater sources an additional Zone of Special Interest may be defined. These zones highlight areas (mainly on non-aquifers) where known local conditions mean that potentially polluting activities could impact on a groundwater source even though the area is outside the normal catchment of that source.

3.6.2 Aquifer Vulnerability

The Groundwater Vulnerability maps are produced at a 1:100,000 scale. They show, by means of colour coding, those areas of the country where water-bearing rocks (aquifers) are present. They also show the vulnerability of groundwater to pollution. The aquifers are classified into Principal, Secondary and unproductive aquifers according to their physical properties and their consequent value as a resource.

The classification of the land surface reflects the ability of contaminants to leach through the covering soils and pose a potential risk to groundwater at depth. The maps also indicate areas where the presence of low permeability drift may provide additional groundwater protection.

These maps can therefore be used for an initial screening assessment of the vulnerability of groundwater to contaminants applied to the surface of the ground. They do not provide all information relevant to the determination of vulnerability, such as the depth to water table or nature of the drift deposits. Site-specific information would always be needed for a detailed assessment of vulnerability at a given location. The original groundwater vulnerability maps were produced some time ago.

Groundwater Vulnerability Maps provide information on how significant the ground waters are likely to be and if they are vulnerable to pollution occurring at the land surface. The maps have descriptions on them to explain the different aquifer and soil types. Areas shown as principal aquifers have strategic significance for water resource; they often support large abstractions for the public water supply. Secondary aquifers have a more localised significance to domestic, agricultural and industrial users (although they may still be used for drinking water). Unproductive aquifers do not store significant amounts of groundwater. However, in some areas they can support local supplies: e.g. small springs feeding individual properties.

3.6.3 Superficial Aquifer Designation

Figure 8 below shows that there are no mapped superficial aquifer on the subject site.

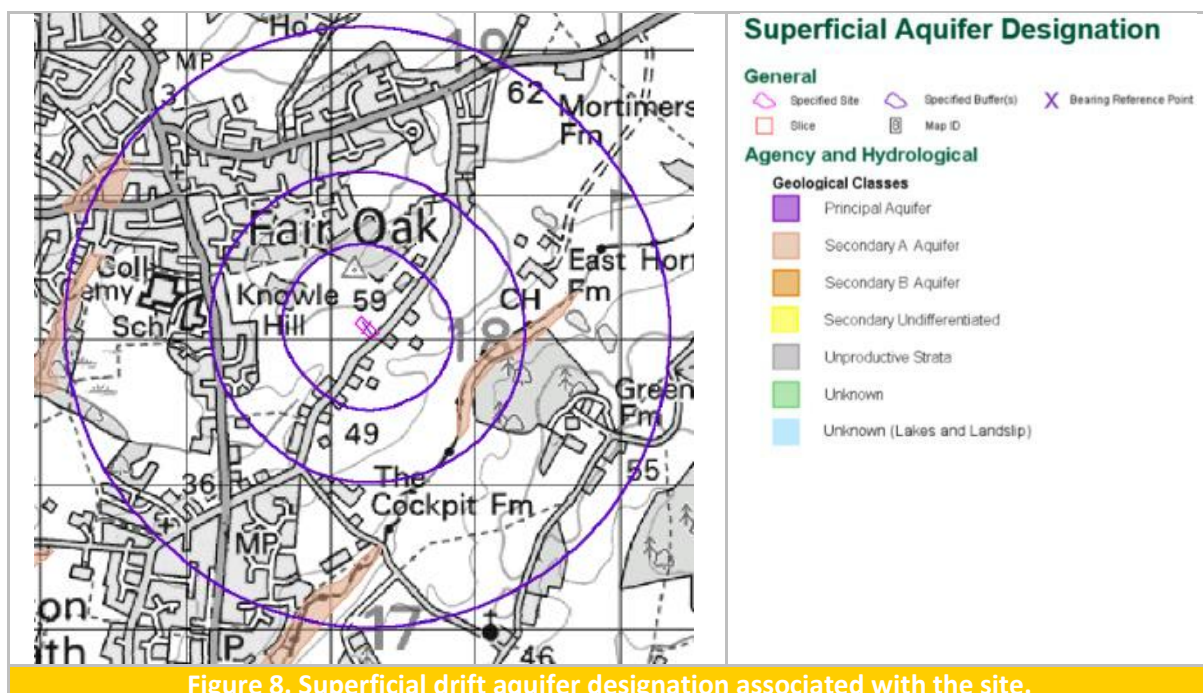


Figure 8. Superficial drift aquifer designation associated with the site.

3.6.4 Bedrock Aquifer Designation

Figure 9 below shows that the Wittering Formation is mapped as a Secondary A bedrock aquifer.

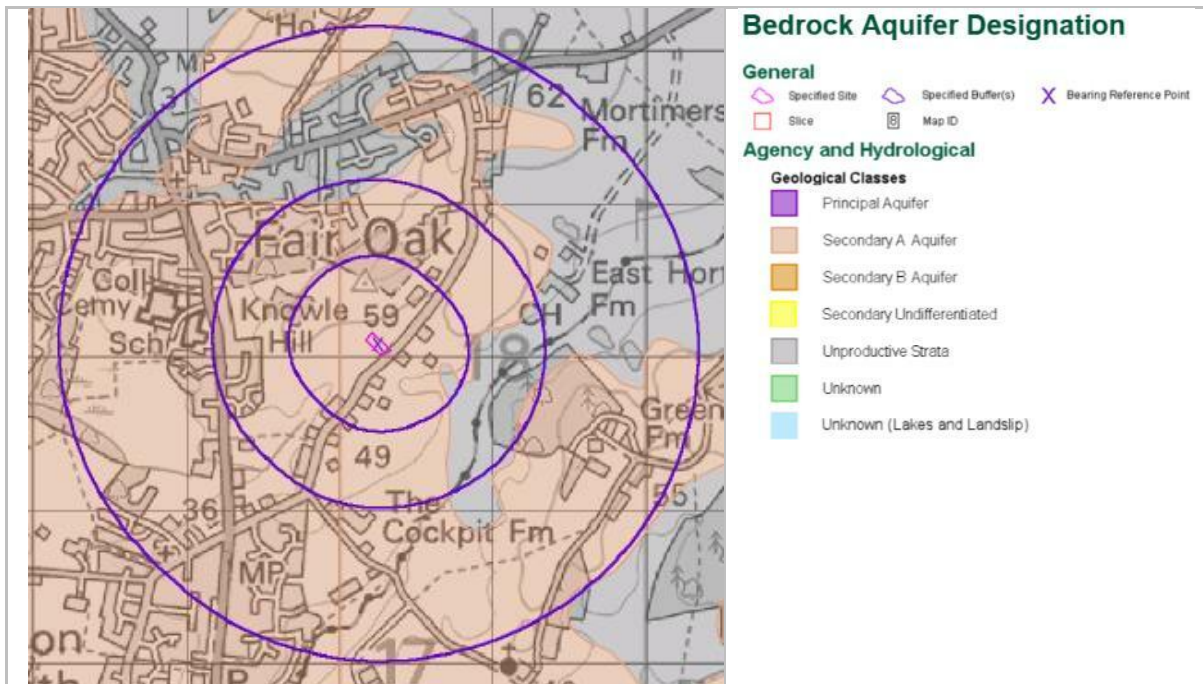


Figure 9. Bedrock aquifer designation

3.6.5 Groundwater Vulnerability

Figure 10 below indicates that the site should be considered to be a medium vulnerability Secondary aquifer with regards to the bedrock.

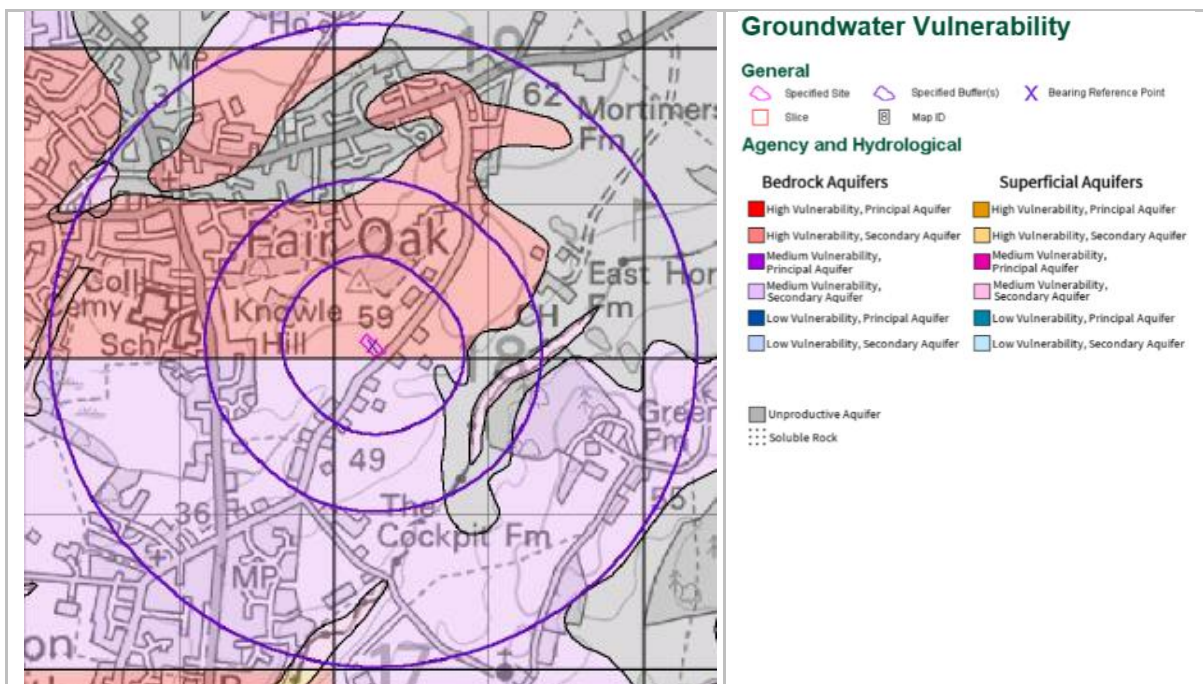


Figure 10. Groundwater vulnerability associated with the site.

3.6.6 Flood Risk – Rivers and Sea

The site is within Flood Zone 1 land which is at low risk- less than 1 in 1,000 in any given year (Figure 11). From this respect, the land is suitable for use as a cemetery. If areas of impermeable surfaces such as buildings, roads etc. are constructed on a greenfield site, a surface water management system designed in accordance with the principles of Sustainable Urban Drainage Schemes (SUDS) will be required.

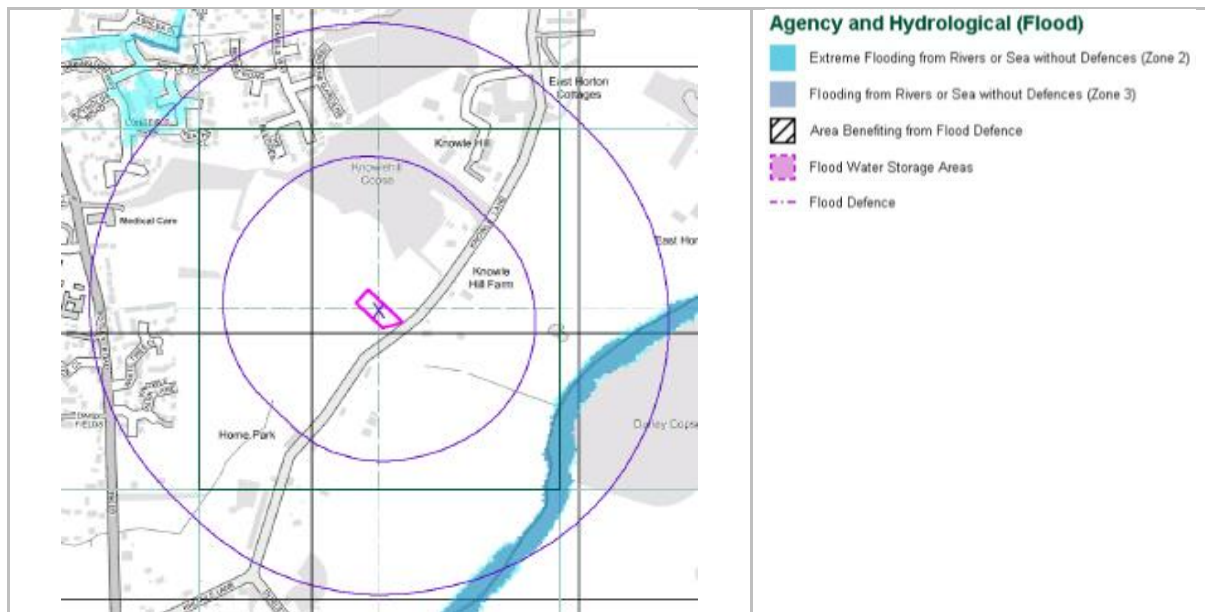


Figure 11. Map of Flood Risk Zones

3.6.7 Abstractions/Wells in the vicinity of the site

There are no listed groundwater abstraction points mapped within 500m of the site. The nearest is mapped 637m east of the site and relates to spray irrigation of a golf course, which is abstracted from surface water features.

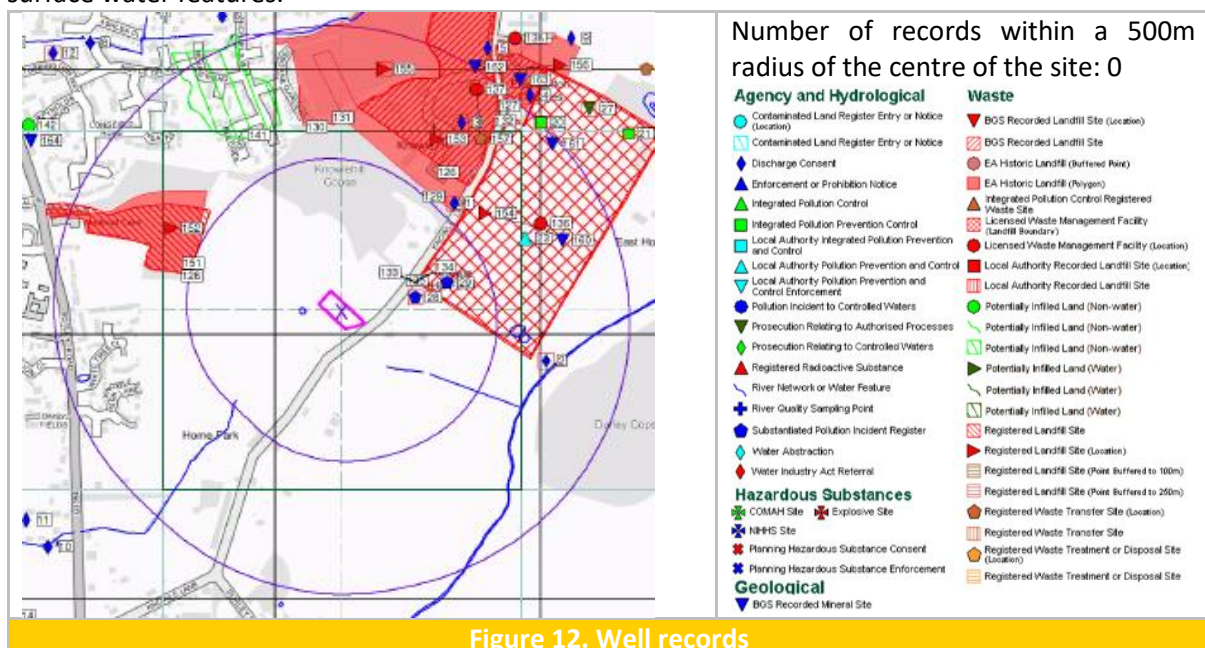


Figure 12. Well records

3.6.8 Borehole records in the vicinity of the site

There is an absence of useful borehole records in the immediate area, with only three boreholes mapped within 500m of the site. The nearest borehole, situated 224m to the north east was drilled through former landfill and contains little pertinent information. The other two boreholes situated 380m and 468m from the site also did not contain any information of use.

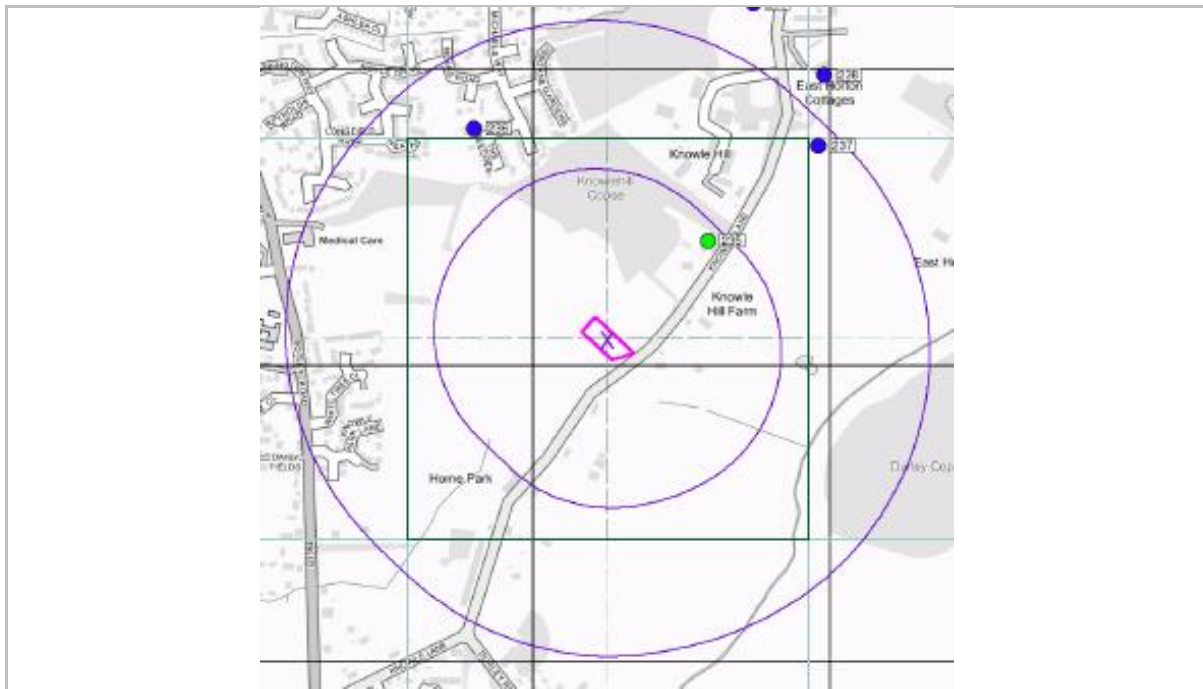


Figure 13. Borehole records

3.7 Meteorological Data

The site is situated in hydrological region 7 and has a Standard Average Annual Rainfall (SAAR) of 801 mm. A review of the nearest Met Office Rainfall station (Hurn) has been undertaken, and the last 5 years of annual rainfall data is summarised below:

- 2017 – 797.3mm
- 2018 – 824.7mm
- 2019 – 938.2mm
- 2020 – 950.2mm
- 2021 – 809.00mm
- 2022 – 453.4mm (Provisional upto October)

The data shows that over the last 3 years, the area received average volumes of rainfall, which suggests that the local water table and soil moisture should be around average. However the 2022 data, which is noted to be provisional, is significantly drier than the previous years, reflecting this years drought conditions.

3.8 Surface Water Flooding

The site is not mapped at risk of surface water flooding. Any construction/development works which might increase the risk of flooding on or off site needs to be identified and the risks assessed and mitigated using a suitable SUDS compliant approach.

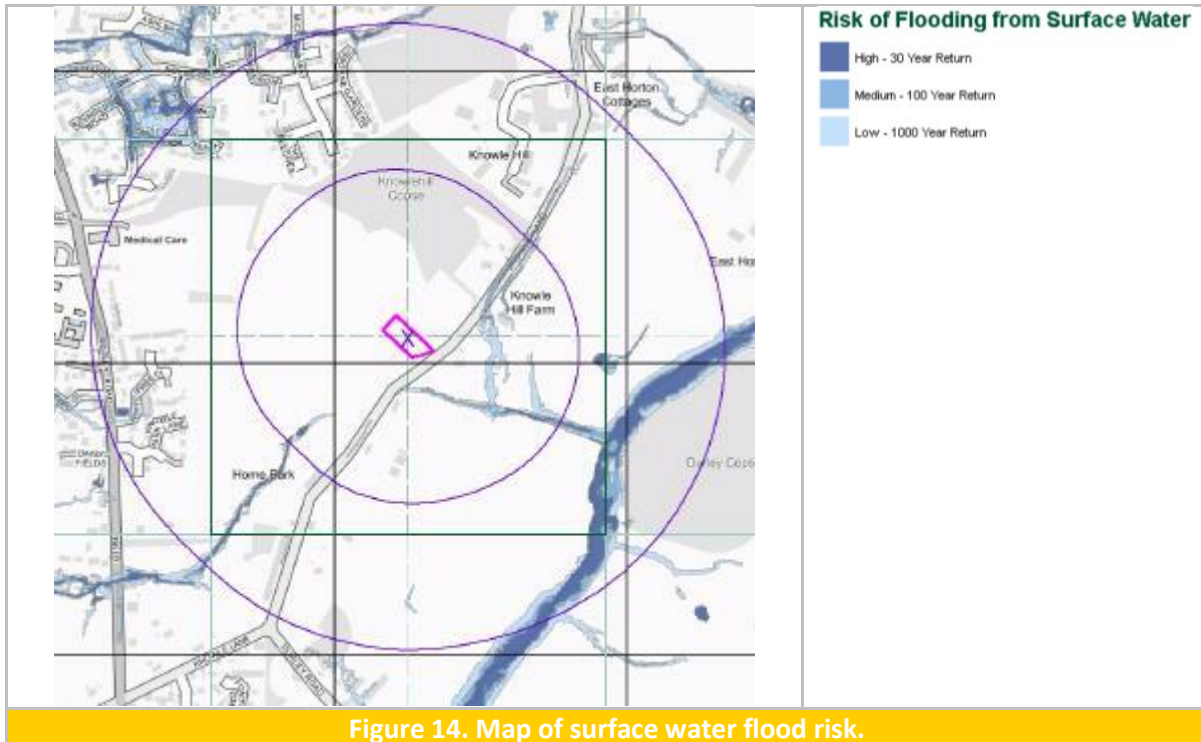


Figure 14. Map of surface water flood risk.

4 Intrusive Investigation

4.1 General Site Description

The site comprises a broadly rectangular parcel of land which at the time of our investigation was heavily waterlogged following heavy rainfall events and was covered in long grass. The site slopes gently down from the north to the south. The site is bounded to the north, east and south by a mature hedgerow, whereas a wooden fence line was situated along the sites western boundary.

To the north of the site Knowle Park is location which slopes down towards the site, two shallow surface water cut off ditches are located to the north of the site to collect surface water runoff from the slope and divert it to a adjacent pond and a ditch. To the east are allotment gardens and to the west is the existing car park.

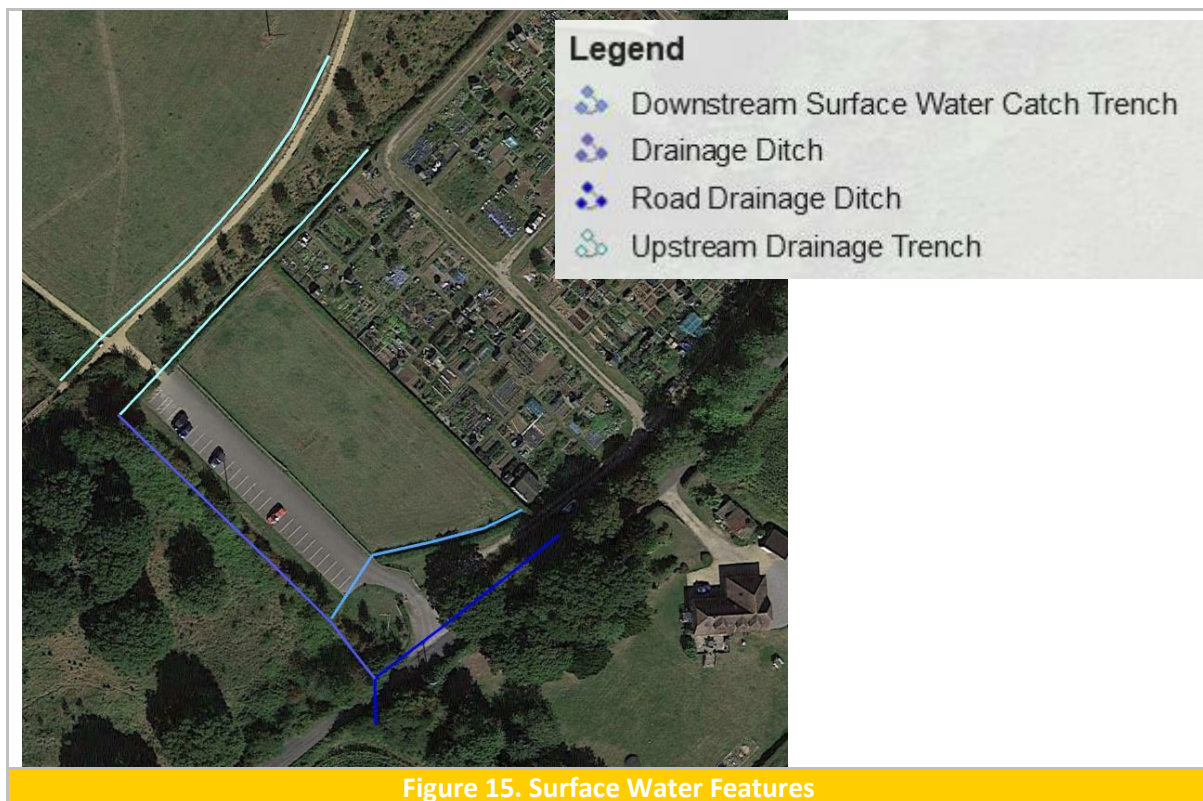
Along the sites southern boundary a further shallow surface water cut off drain is located, which collects the surface water runoff from the site and diverts it under the carpark to the ditch to the west. Further to the south an additional ditch is noted which comprises a highways drainage ditch, which was heavily silted up and partially blocked.

4.2 Surface Water Features

To the north of the site, approximately 2m and 15m from the sites boundary were two shallow surface water cut of ditches these are designed to collect surface water runoff from the slope and divert it to a pond and a ditch to the west. The ditch to the west is beyond the car park and drains to the south where it joins the highways ditch which flows downstream to the southwest. Along the sites southern boundary a further shallow surface water cut off drain is located, which collects the surface water runoff from the site itself and diverts it under the carpark to the ditch to the west.

The surface water features are shallow and are designed to capture surface water runoff only, the ditches to the north are upstream and are not considered to require a non-burial buffer. The ditch to the west beyond the car park is not considered to be at risk from burial contaminants and therefore a 10m non burial buffer should be sufficient. The ditch along the sites southern boundary could be removed as part of the development works and changed to a piped drainage channel, which would also remove the need for a non-burial buffer.

The nearest main surface water feature, situated approximately 100m south of the site comprises a drain which feeds in the tributary network of the River Hamble.



4.3 Site Topography

As shown in figure 16 below, the site slopes gently down to the southeast from approximately 47m AOD down to 45m AOD.

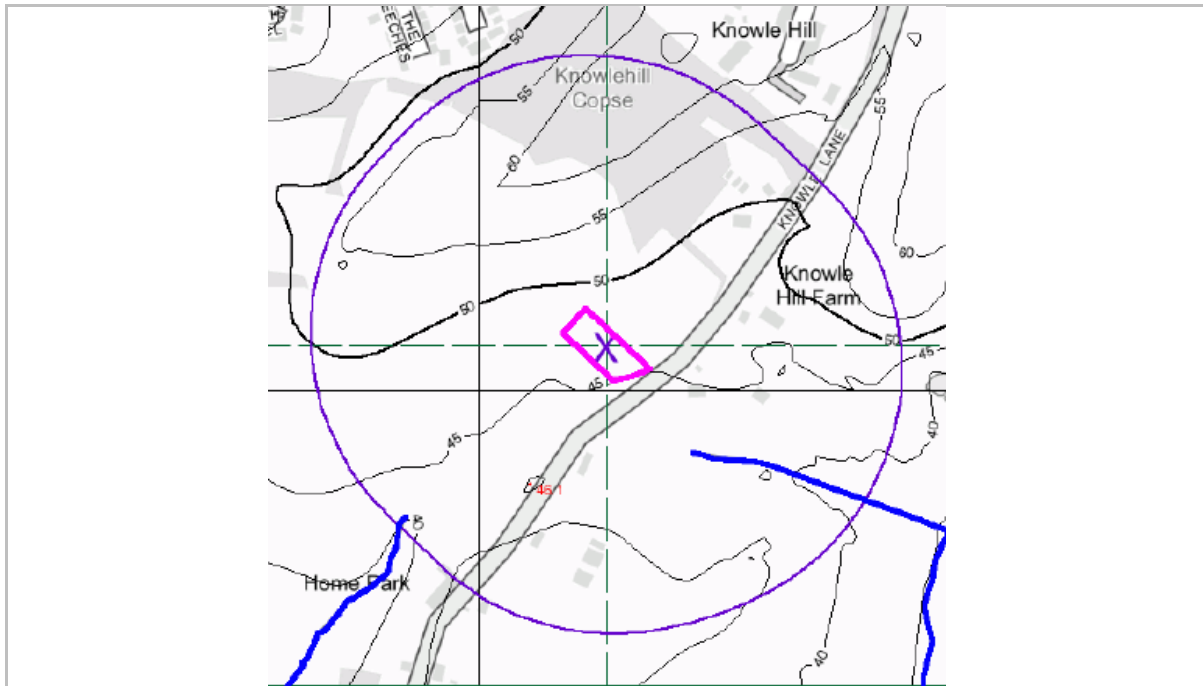


Figure 16. Site Topography

4.4 Site Investigation

An intrusive site investigation was undertaken on the 17th November 2022, with a total of 5 No. windowless sampler boreholes drilled across the site to provide an assessment of the ground conditions and to assess whether any shallow groundwater is encountered on site. The boreholes were drilled at the approximate locations shown below to maximum depths of 4.0m bgl. The boreholes were distributed across the entire site to assess soil variability and depth to groundwater.



Figure 17. Exploratory Hole Location Plan

4.5 Soils as Found

The soils on site generally comprised a shallow covering of brown, clayey sandy Topsoil, overlying a firm orange brown clay which in turn was found to overlie a firm to stiff orange brown mottled grey silty Clay overlying a laminated orange brown Clay/Silt with occasional sand laminations.

The following table provides a general summary of the soils as found on site.

Table 4. Soils as Found

Depth m bgl (Top to Base)	Soil Type	Description
GL to 0.3m/0.4m	Topsoil	Grass over waterlogged, brown clayey sandy TOPSOIL with frequent fine roots.
0.3m/0.4m to 0.55m/1.4m	Clay	Firm, brown sandy CLAY with occasional fine roots, flint gravel and black ironstaining (HEAD).
0.55m/1.4m to 2.6m/3.7m	Clay	Firm to stiff, orange brown mottled grey silty CLAY with occasional thin laminations of sand and vertical fissuring with grey gleying.
2.6m/3.7m to 4.0m	Silty Clay	Firm pale grey brown mottled orange interlaminated SILT/CLAY with occasional weak ironstone laminations.
3.6m/3.7m to 3.9m/4.0m+ (WLS104 and WLS105 only)	Sandy Gravel	Medium dense to dense (est) greenish grey silty sandy GRAVEL. Gravels comprise fine to coarse subangular flint and chert.

4.6 Groundwater

Water strikes were not observed or recorded at the locations of WLS101, WLS102 and WLS103 during the drilling of the borehole or during subsequent monitoring throughout the day. Limited ingress into the boreholes was noted from the heavily waterlogged topsoil during the drilling process due to the weight of the drilling rig compressing the shallow waterlogged soils.

At the locations of WLS104 and WLS105 the boreholes were noted to be dry down to depths of 3.0m bgl. Below this depth, the borehole penetrated through the clay and into a granular deposit, which at the location of WLS104 generated a water strike which rose to 3.4m bgl, whilst at the location of WLS105 was found to be dry.

4.7 Trench Stability

The excavations on site were undertaken in small diameter windowless sampler boreholes, which were found to be stable during the drilling, but do not necessarily reflect the conditions which could be encountered in open excavations.

At this stage, based on the soils encountered, we would anticipate burial excavations to be generally stable in the short term, however allowance should be made for close lateral support were personnel must enter any excavation.

5 Conceptual Model

The conceptual model, in the context of this groundwater risk assessment, summarises both the existing onsite and offsite sources of contamination identified as part of the desk study assessment and walkover survey as well as the potential future sources of contamination associated with the future potential development of the site into a burial ground.

The model is based on the Source-Receptor-Pathway linkages and seeks to identify receptors, such as ground water or surface water bodies which could be impacted by existing/future sources of contamination and the pathways the contamination could take.

5.1 On site Sources of Contamination

5.1.1 Existing

No evidence of any existing sources of onsite contamination were identified during our desk study assessment of the site. Ground investigation works have identified natural soils on site with no evidence of any sources of onsite contamination.

Therefore, we do not consider there to be any sources of onsite contamination which would pose a risk to the development of the site.

5.1.2 Future

The proposed development of the site into a new burial ground would introduce a range of potential contaminants including, Nitrates, Ammonia, Formaldehyde and bacterial contamination, all of which could have potential impacts on the water quality in the underlying superficial and bedrock aquifers as well as any local surface water bodies such as ponds, stream and rivers.

5.2 Off-site Sources of Contamination

No significant sources of offsite contamination have been identified which would have an impact on the proposed redevelopment of the site into a burial ground.

5.3 Pollutant Linkage Model

The identified pollutant linkages based on the desk study assessment and subsequent site investigation have been summarised below in the Site Specific Pollutant Linkage table and is based on the Source-Pathway-Receptor model:

Table 5. Site Specific Pollutant Linkages

Source	Pathway	Receptor	Assessment (Calculated Risk)
Onsite Sources of contamination	Direct ingestion, direct contact &	Future Site users.	The calculated risk is deemed to be low given the absence of onsite sources of contamination.

Source	Pathway	Receptor	Assessment (Calculated Risk)
arising from current or historical land use	inhalation of dust/vapours.	Construction workers.	The calculated risk is deemed to be low given the absence of onsite sources of contamination.
	Leaching and vertical & lateral migration	Controlled waters (watercourses and aquifers)	The calculated risk is deemed to be low given the absence of onsite sources of contamination.
	Direct infiltration in water supply pipes.	Service conduits.	The calculated risk is deemed to be low given the absence of onsite sources of contamination.
	Plant uptake.	Vegetation within landscaped areas.	The calculated risk is deemed to be low given the absence of onsite sources of contamination.
	Lateral migration through groundwater	Off-Site neighbouring properties.	The calculated risk is deemed to be low given the absence of onsite sources of contamination.
Potentially contaminated groundwater (onsite or offsite)	Direct ingestion, direct contact & inhalation of dust/vapours.	Future Site users.	The calculated risk is deemed to be low given the absence of onsite/offsite sources of contamination.
	Leaching and vertical & lateral migration	Controlled waters (watercourses and aquifers)	The calculated risk is deemed to be low given the absence of onsite/offsite sources of contamination.
Potential for ground gas	Vertical and lateral migration	Human Health and buildings	The calculated risk is deemed to be low given the absence of onsite/offsite sources of contamination.

5.3.1 Revised Conceptual Model based on Future Uses

If the site were to be developed into a burial ground, with an anticipated burial rate of 10 burials per annum, then the addition of a range of sources of contamination including, Nitrates, Ammonia, Formaldehyde and bacterial contamination would potentially have a limited impact on the Controlled waters (watercourses and aquifers) receptors, which in this case comprise the underlying Secondary A bedrock aquifer and land drainage to the south which eventually feeds into the tributaries of the River Hamble.

The pathway for the migration of the burial contamination would be through the underlying silty clayey soils, which would offer a significant degree of protection to the controlled waters through cation exchange processes and due to the negligible permeability and restricted movement of burial contamination

The following table provides an updated conceptual model to assess the impact of future burials on the subject site.

Table 6. Future Burial Pollutant Linkages

Source	Pathway	Receptor	Assessment (Calculated Risk)
Burials	Leaching and vertical & lateral migration	Aquifers (Bedrock and Superficial)	The calculated risk is deemed to be low to moderate given the variable nature of the soils encountered on site.
		Surface Water Features	The calculated risk is deemed to be low to moderate given the presence of the ditch to the west and road drainage ditch to the south of the site.

6 Burial Information

6.1 Number of Burials per Annum

The aim of this development is to provide much needed burial capacity for the local area. For the purposes of this groundwater risk assessment the anticipated burial rate, based on data provided by the client for this site, is estimated as being 10 per year.

Assuming approximately 800 burial plots (1.5m x 3m) in an acre, this site has a maximum developable area (excluding buffer zones) of approximately 0.64 acres if the whole area were to be developed. On this basis, the maximum number of burial plots would be 512. However, if the site were to follow the EA's minimum good practice guidance, a 30m non burial buffer would be required along the ditch to the west and the south, which would reduce the developable area down to 0.33 acres, thus lowering the maximum number of burial plots to 264.

Based on the proposed burial rate of 10 per annum, this site would have a lifespan of between 26-50 years. Based on the decay rate date, this site would reach peak effluent release at Year 10, the peak effluent release on this site would be maintained for a short to moderate period of time based on the predicated lifespan of the site and would therefore not be considered to be a declining source.

6.2 Burial Type and Sequence

The proposed site has been identified as a traditional burial ground, with grass coverings on the grave. As such the burials would potentially be embalmed depending on personal choice and therefore Formaldehyde remains as a potential source of future contamination.

The sequencing of burials has not been discussed at this stage and would be dependent on whether the operator of the site offers pre-purchased plots, which would lead to a more scattered placement of burials over a wider area, leading to a greater dilution and dispersion of burial contaminants, or whether they use burial plots sequentially on an as and when basis, which would lead to a more

concentrated release of burial contamination which could have a greater impact on the identified receptors.

6.3 Burial Depths

The site is proposed to be developed as a traditional burial ground and as such double depth burials are proposed at a depth of between 1.8m to 2.0m bgl. If double depths were to place on site then the maximum burial capacity of 512 plots would facilitate 1024 full body burials, whilst the reduced burial capacity would facilitate 528 full body burials.

The requirement to maintain a minimum 1m unsaturated zone thickness is currently being met on this site based on the depths to groundwater identified during our ground investigation. This site investigation work has been undertaken during a period of variable weather with heavy rainfall events over the preceding months.

In order to prove that the required 1m unsaturated zone can be met at all times, consideration could be given to undertaking the installation of groundwater monitoring wells in order to undertake seasonal groundwater monitoring to assess potential changes to water levels. However, we do not consider this to be a requirement for this site.

6.4 Design Mitigation Measures

The surface water catch trenches to the north of the site are upstream and are designed to collect surface water from the slope, as such we do not consider there to be a need for a non-burial buffer to these features as burial contaminants will not migrate upslope to interact with the shallow trenches.

The surface water catch trench along the sites southern boundary is a shallow feature, approximately 30cm deep and has been designed to catch surface water migrating across the site and to drain it to the ditch to the west. Given that this feature is shallow and can be removed or converted to a piped system we do not consider there to be a need for a non-burial buffer to this feature.

The ditch to the west of the site and road drainage ditch to the south of the site in theory will require a 30m non-burial buffer in line with the current updates EA good practice requirements. However, given the negligible permeability of the soils encountered on site, along with the low burial rate and cation exchange capacity of the underlying soils we would consider the 15m buffer, which is present due to the presence of the car park to the west and the additional non burial land to the south to be a sufficient non burial buffer providing protection to the shallow ditches from any migrating burial contaminants.

If the above recommendations are approved by the EA, then maximum developable area of the site could be realised, providing 512 burial plots which assuming double depth burials would provide capacity for 1024 full depth burials to take place on site.

7 Risk Evaluation

Whilst the latest updated guidance provides upto date information and data with regards to assessing the pollution impacts of burials on the environment, the new guidance does not provide an updated version of the risk assessment methodology which was included in the earlier document 'Potential of Cemeteries – R&D Technical Report P223'. Whilst this approach and the associated risk assessment table and nomograph have been superseded, they are still considered useful in providing a quantitative vs qualitative assessment.

7.1 Site Specific Assessment

The following table provides a modified conceptual site model, identifying the source of potential contaminants in the form of burials, the pathway in which the burial contaminants could mobilise (i.e. through the soil matrix) and the potential receptors which could be impacted. Each section is risk assessed on a score of 1-5 as shown in Table 8, with 5 being the highest risk.

Table 7. Modified Conceptual Site Model

Risk	Comment	Score
Source		
Burials per annum	The predicted number of burials per annum has been calculated by our client to be in the region of 10 burials per annum. This is considered to pose a low risk.	n/a
Pathways		
Drift / superficial data	There were no mapped superficial soils mapped on site based on the geological maps. However, the results of the site investigation have identified a shallow covering of silty Clay Head soils across the site. As such we have calculated this risk to be low.	2
Drift thickness	Site specific information from our intrusive investigation have identified that in general the thickness of the superficial soils were on average less than 3m in thickness. As such we have calculated this risk to be high.	4
Depth to Water Table	Groundwater was not encountered in the majority of the boreholes drilled on site to depth of 4m bgl. However, at the location of WLS104, a water strike was encountered within a granular deposit at a depth of 3.6m bgl, which rose to 3.4m bgl on completion. As such we have calculated this risk to be very high.	5
Flow mechanism	The soils on site predominantly comprised a silty Clay with variable fine sand laminations. These soils were generally observed to be of low porosity/permeability and would therefore help to restrict the movement of burial contaminants away from the source. As such we have calculated the risk to be low.	2
Receptors		
Proximity to Wells or potable water source	There are no known wells reported within 1km of the site. As such we have calculated the risk to be very low.	1
Aquifer Type	The site is mapped within a Secondary A Bedrock aquifer of medium vulnerability. As such we have calculated the risk to be moderate.	3

Risk	Comment	Score
Abstractions and SPZ	The site is not situated within a groundwater source protection zone. As such we have calculated the risk to be very low.	1
Proximity to water course/springs	There is a small stream situated to the south of the site which feeds into the tributary system of the River Hamble to the smooth-running down the sites western boundary. Given the distance from the site is greater than 100m we have calculated this risk to be very low.	1
Proximity to land drains	A drainage ditch has been observed 15m west of the site and a road drainage ditch is located 15m south of the site. Given the proximity to the site, these would be considered a high risk.	4
Total Score		23

The total score comes to 23 and is considered as a moderate risk.

The environmental assessment score is then assessed against the proposed burial rate of 10 per annum, which is then used to plot a nomograph for the site based on burial rate vs environmental assessment score. The final assessment of risk for this site according to the nomograph (Figure 18), would class it as being medium risk based on the predicted burial numbers. The site would only move into the high risk category if burial rates on site were to exceed 30 burial per annum.

Table 8. Groundwater Vulnerability Ranking Table

Ranking	Very Low	Low	Moderate	High	Very High
	1	2	3	4	5
Drift Type	Clay	Silt	Silty sand	Sand/gravel	Absent
Drift Thickness	>5 m	>3-5 m	3 m	0-3 m	Absent
Depth to water Table	>25 m	11 – 25 m	10 m	5 – 9 m	<5m
Flow mechanism	Intergranular				Fissured
Proximity to wells					Within 250 m
Aquifer type	Non Aquifer		Secondary aquifer		Principal aquifer
Abstractions and SPZs	Outside Zone III	Within Zone III	Close to boundary of Zone II	Within Zone II	Within Zone I
Water courses and springs	>100m	>70m<100m	>50 <70 m	>30 <50 m	<30 m
Drains	>100 m	>40 <100 m	30 – 40 m	>10 <30 m	<10 m

7.2 Groundwater Risk Nomograph

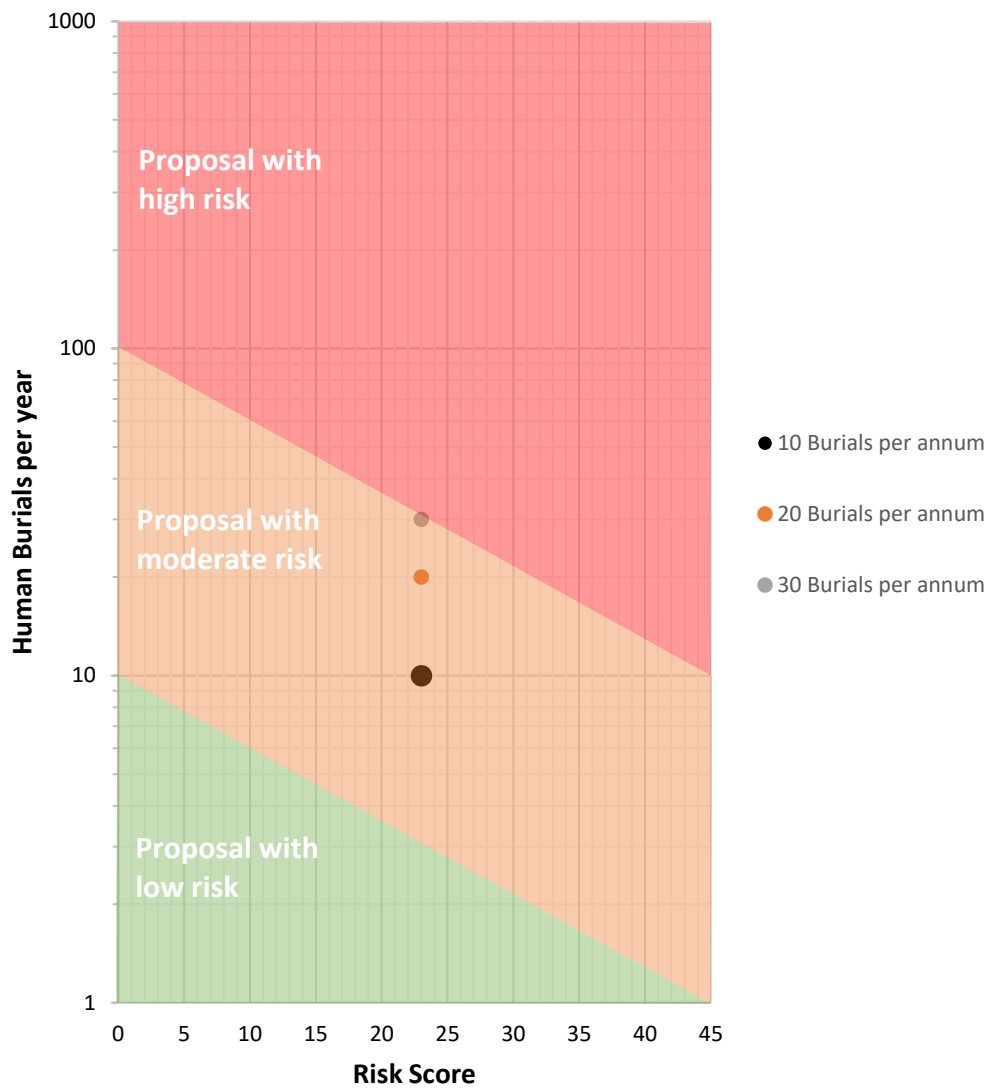


Figure 18. Groundwater Risk Nomograph

8 Conclusion

Based on the proposed burial rate of approximately 10 burials per annum and the calculated environmental risk score, the site is considered to be a moderate risk site. The receptors of concern are the small stream to the south of the site and the Secondary A bedrock aquifer in the underlying Wittering Formation. However the aquifer in the immediate local area is not known to be used for potable abstraction and the site sits outside of any designated groundwater source protection zones.

On this basis and in accordance with the updated EA guidance, this site is not considered to fall under the new EA permitting regulations and will not require any further detailed assessment.

With regards to future design and mitigation measures we would highlight the following site specific factors for this site.

- The surface water catch trenches to the north of the site are upstream and are designed to collect surface water from the slope, as such we do not consider there to be a need for a non-burial buffer to these features
- The surface water catch trench along the sites southern boundary is a shallow feature, approximately 30cm deep and has been designated to catch surface water migrating across the site and to drain it to the ditch to the west. Given that this feature is shallow and can be removed or converted to a piped system we do not consider there to be a need for a non-burial buffer to this feature.
- The ditch to the west of the site and road drainage ditch to the south of the site in theory will require a 30m non-burial buffer in line with the current updates EA good practice requirements. However, given the negligible permeability of the soils encountered on site, along with the low burial rate and cation exchange capacity of the underlying soils we would consider the 15m buffer, which is present due to the presence of the car park to the west and the additional non burial land to the south to be a sufficient non burial buffer providing protection to the shallow ditches from any migrating burial contaminants.

If the above recommendations are approved by the EA, then maximum developable area of the site could be realised, providing 512 burial plots which assuming double depth burials would provide capacity for 1024 full depth burials to take place on site.

9 Reporting Details

Report Author: Darryl Kelly MGeol FGS

Verification: Callum Ward BSc FGS

Date: 30th November 2022

APPENDIX A

SOIL LOGS



Cemeteries & Crematoria

Project Name: Fair Oak - New Cemetery		Windowless Sampler Borehole Log		Hole ID:	WLS101
Project Location: Knowle Lane, Fair Oak, SO50 7DZ				Hole Type:	WLS
Client: Fair Oak Parish Council		Project ID:	CDS-Fairoak-22	Logged By:	DK
		Contractor:	The CDS Group	Scale:	1:25
		Date:	17/11/2022	Page No:	Sheet 1 of 1

Well	Water Strikes	Depth (m)	Level (m)	Thickness (m)	Legend	Stratum Description	
		0.30		(0.30)		Grass over waterlogged, brown clayey sandy TOPSOIL with frequent fine roots.	
		0.55		(0.25)		Firm, brown sandy CLAY (HEAD) with occasional fine roots and black ironstaining.	
						Firm to stiff, orange brown mottled grey silty CLAY with rare fine to medium subrounded flint gravel.	
						<i>From 1m dark grey gleying with vertical fissures infilled with fine sand.</i>	1
				(2.55)		<i>Below 1.5m occasional sandy partings.</i>	2
		3.10				<i>At 3m rare flint nodules and sandy partings.</i>	3
				(0.90)		Stiff, thickly laminated, orange brown mottled grey CLAY/SILT with occasional fine sandy lenses.	
		4.00				End of Borehole at 4.000m	4
							5

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
Borehole dry on completion and dry after 3 hours.





Cemeteries & Crematoria

Project Name: Fair Oak - New Cemetery		Windowless Sampler Borehole Log		Hole ID:	WLS102
Project Location: Knowle Lane, Fair Oak, SO50 7DZ				Hole Type:	WLS
Client: Fair Oak Parish Council		Project ID:	CDS-Fairoak-22	Level:	
		Contractor:	The CDS Group	Logged By:	DK
		Date:	17/11/2022	Scale:	1:25
				Page No:	Sheet 1 of 1

Well	Water Strikes	Depth (m)	Level (m)	Thickness (m)	Legend	Stratum Description	
		0.40		(0.40)		Grass over waterlogged, dark brown clayey fine sandy TOPSOIL with occasional roots and rare fine brick fragments.	
		0.70		(0.30)		Firm, brown sandy CLAY (HEAD) with occasional fine roots and black ironstaining.	
		1.10		(0.40)		Firm, orange brown mottled grey silty CLAY with rare fine roots.	1
		2.90		(1.80)		Firm, orange brown mottled grey silty CLAY with occasional thin laminations of fine grey sand.	2
		4.00		(1.10)		Firm, pale grey mottled orange brown clayey SILT with occasional thin laminations of very weak ironstone.	3
						End of Borehole at 4.000m	4
							5

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
Borehole dry during drilling, no water strikes noted. Surface water ingress running into borehole due to saturated topsoil.





Cemeteries & Crematoria

Project Name: Fair Oak - New Cemetery		Windowless Sampler Borehole Log		Hole ID:	WLS103
Project Location: Knowle Lane, Fair Oak, SO50 7DZ				Hole Type:	WLS
Client: Fair Oak Parish Council		Project ID:	CDS-Fairoak-22	Level:	
		Contractor:	The CDS Group	Logged By:	DK
		Date:	17/11/2022	Scale:	1:25
				Page No:	Sheet 1 of 1

Well	Water Strikes	Depth (m)	Level (m)	Thickness (m)	Legend	Stratum Description	
		0.30		(0.30)		Grass over waterlogged, brown clayey sandy TOPSOIL with frequent fine roots.	
		0.90		(0.60)		Firm, brown sandy CLAY (HEAD) with occasional fine roots and black ironstaining.	
				(2.20)		Firm to stiff, orange brown mottled grey silty CLAY with occasional thin laminations of fine grey SAND.	1
						<i>Weak ironstone laminations.</i>	2
		3.10		(0.90)		Firm pale grey mottled orange CLAY/SILT with occasional ironstone laminations.	3
		4.00				<i>Heavily iron stained layer with coarse ironstone nodules in an orange brown sandy silty matrix.</i>	4
						End of Borehole at 4.000m	5

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
Borehole dry on completion and dry after 3 hours.





Cemeteries & Crematoria

Project Name: Fair Oak - New Cemetery		Windowless Sampler Borehole Log		Hole ID: WLS104
Project Location: Knowle Lane, Fair Oak, SO50 7DZ				Hole Type: WLS
Client: Fair Oak Parish Council		Project ID: CDS-Fairoak-22	Level:	Logged By: DK
		Contractor: The CDS Group	Scale: 1:25	
		Date: 17/11/2022	Page No: Sheet 1 of 1	

Well	Water Strikes	Depth (m)	Level (m)	Thickness (m)	Legend	Stratum Description
		0.40		(0.40)		Grass over brown organic clayey TOPSOIL with frequent fine roots.
		0.65		(0.25)		Firm, orange brown silty CLAY (HEAD).
				(1.95)		Firm, orange brown mottled grey silty CLAY with occasional fine sandy lenses.
		2.60		(1.00)		Firm, pale grey mottled orange SILT/CLAY with occasional ironstone laminations.
		3.60		(0.30)		Medium dense to dense (est), greenish grey silty GRAVEL. Gravels comprise fine to coarse subangular flint/chert. Possible water strike in gravel layer. Water level rose once this layer was penetrated.
		3.90				End of Borehole at 3.900m

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
Waterstrike encountered at 3.6m bgl after gravel layer penetrated. Water level 3.4m bgl on completion.





Cemeteries & Crematoria

Project Name: Fair Oak - New Cemetery		Windowless Sampler Borehole Log		Hole ID:	WLS105
Project Location: Knowle Lane, Fair Oak, SO50 7DZ				Hole Type:	WLS
Client: Fair Oak Parish Council		Project ID:	CDS-Fairoak-22	Level:	
		Contractor:	The CDS Group	Logged By:	DK
		Date:	17/11/2022	Scale:	1:25
				Page No:	Sheet 1 of 1

Well	Water Strikes	Depth (m)	Level (m)	Thickness (m)	Legend	Stratum Description	
		0.25		(0.25)		Grass over brown organic clayey TOPSOIL with frequent fine roots.	
				(1.15)		Firm to stiff, orange brown silty CLAY with occasional fine rootlets and orange brown silt lenses.	1
		1.40		(2.30)		Firm to stiff, pale grey brown mottled orange CLAY/SILT with occasional fine sandy partings.	2
						<i>At 2.2m ironstone nodules</i>	
		3.70		(0.30)		Medium dense (est) orange brown gravelly SILT/SAND.	3
		4.00				End of Borehole at 4.000m	4
							5

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
Borehole dry on completion and dry after 1 hour.



APPENDIX B

PHOTOGRAPHS



WLS101 (Top Right to Bottom left depth sequence)



WLS102 (Top Right to Bottom left depth sequence)



WLS103 (Top Right to Bottom left depth sequence)



WLS104 (Top Right to Bottom left depth sequence)



WLS105 (Top Right to Bottom left depth sequence)



View of site looking from north to south



Viewing looking into the site from west to east



Cut off trench to the north



Cut off trench to the north



Pond to the north west



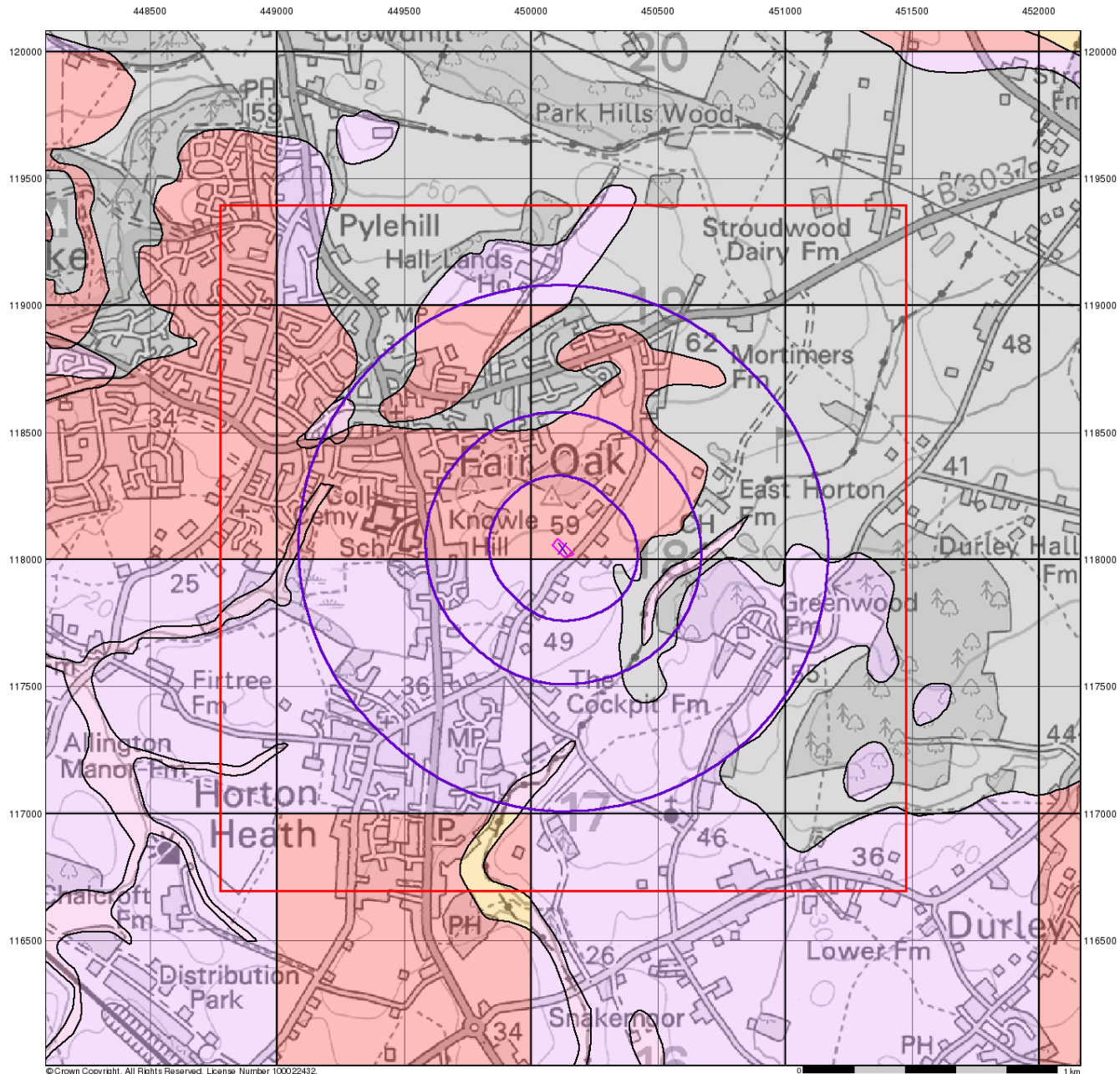
Shallow ditch to the west



Road ditch to the south of the site.

APPENDIX C

ENVIROCHECK REPORT



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Groundwater Vulnerability

General

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

Agency and Hydrological

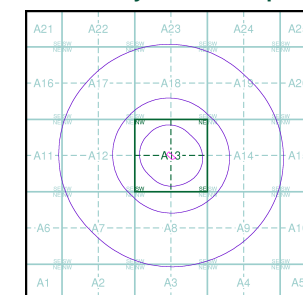
Bedrock Aquifers

- High Vulnerability, Principal Aquifer
- High Vulnerability, Secondary Aquifer
- Medium Vulnerability, Principal Aquifer
- Medium Vulnerability, Secondary Aquifer
- Low Vulnerability, Principal Aquifer
- Low Vulnerability, Secondary Aquifer
- Unproductive Aquifer
- Soluble Rock

Superficial Aquifers

- High Vulnerability, Principal Aquifer
- High Vulnerability, Secondary Aquifer
- Medium Vulnerability, Principal Aquifer
- Medium Vulnerability, Secondary Aquifer
- Low Vulnerability, Principal Aquifer
- Low Vulnerability, Secondary Aquifer

Site Sensitivity Context Map - Slice A



Order Details

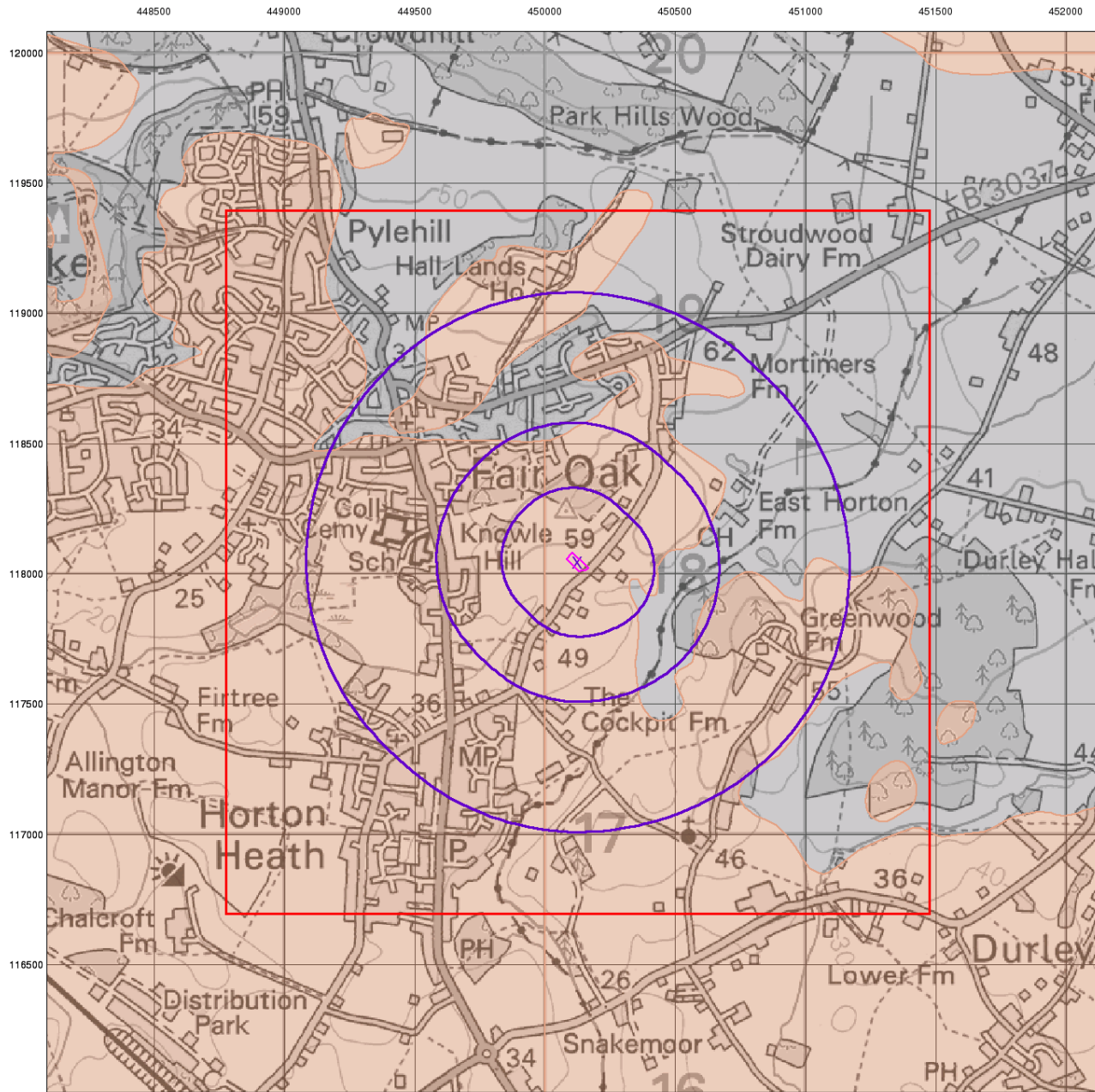
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 Site Area (Ha): 0.27
 Search Buffer (m): 1000

Site Details

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Bedrock Aquifer Designation

General

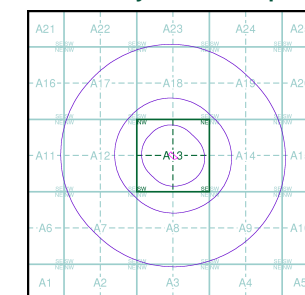
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



Order Details

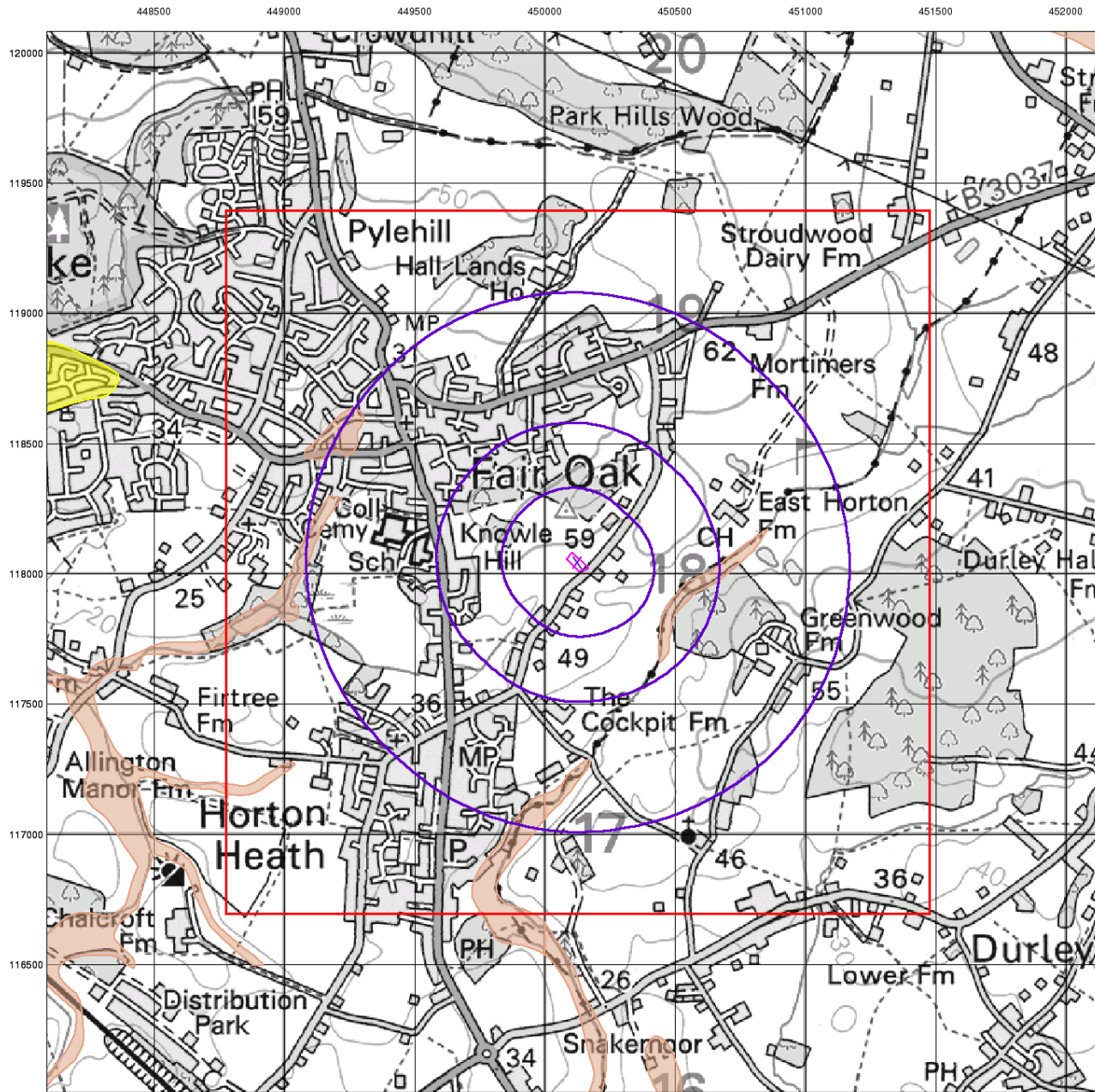
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Superficial Aquifer Designation

General

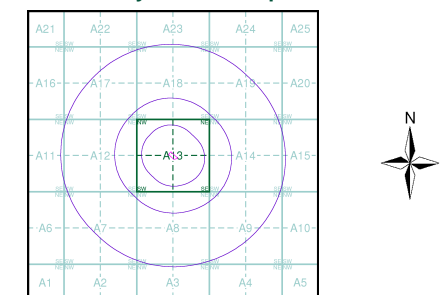
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- Specified Buffer(s)
- ✕ Bearing Reference Point
- Slice
- B Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



Order Details

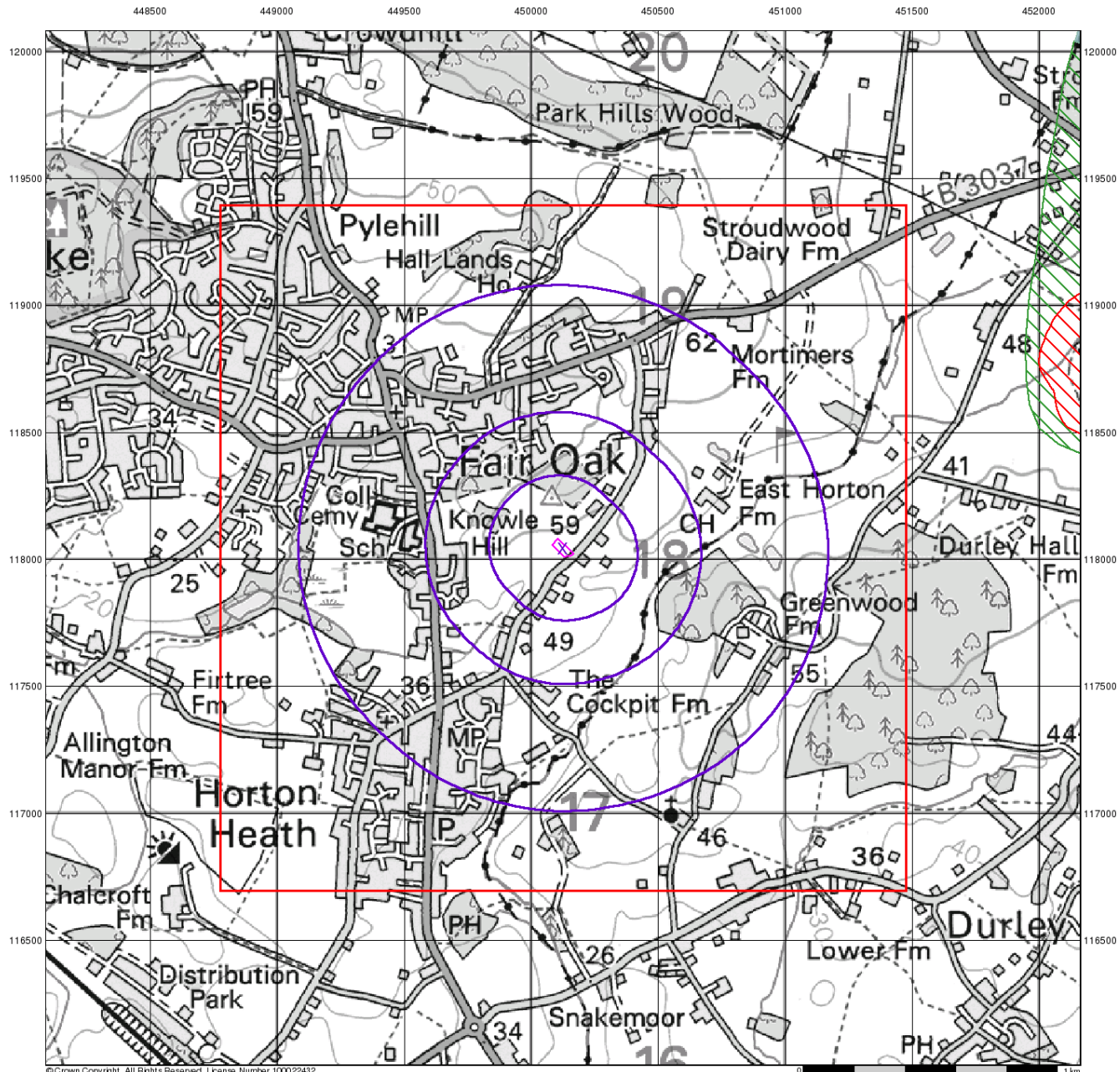
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Site Details

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Source Protection Zones

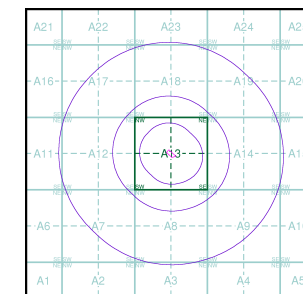
General

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

Agency and Hydrological

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

Site Sensitivity Context Map - Slice A



Order Details

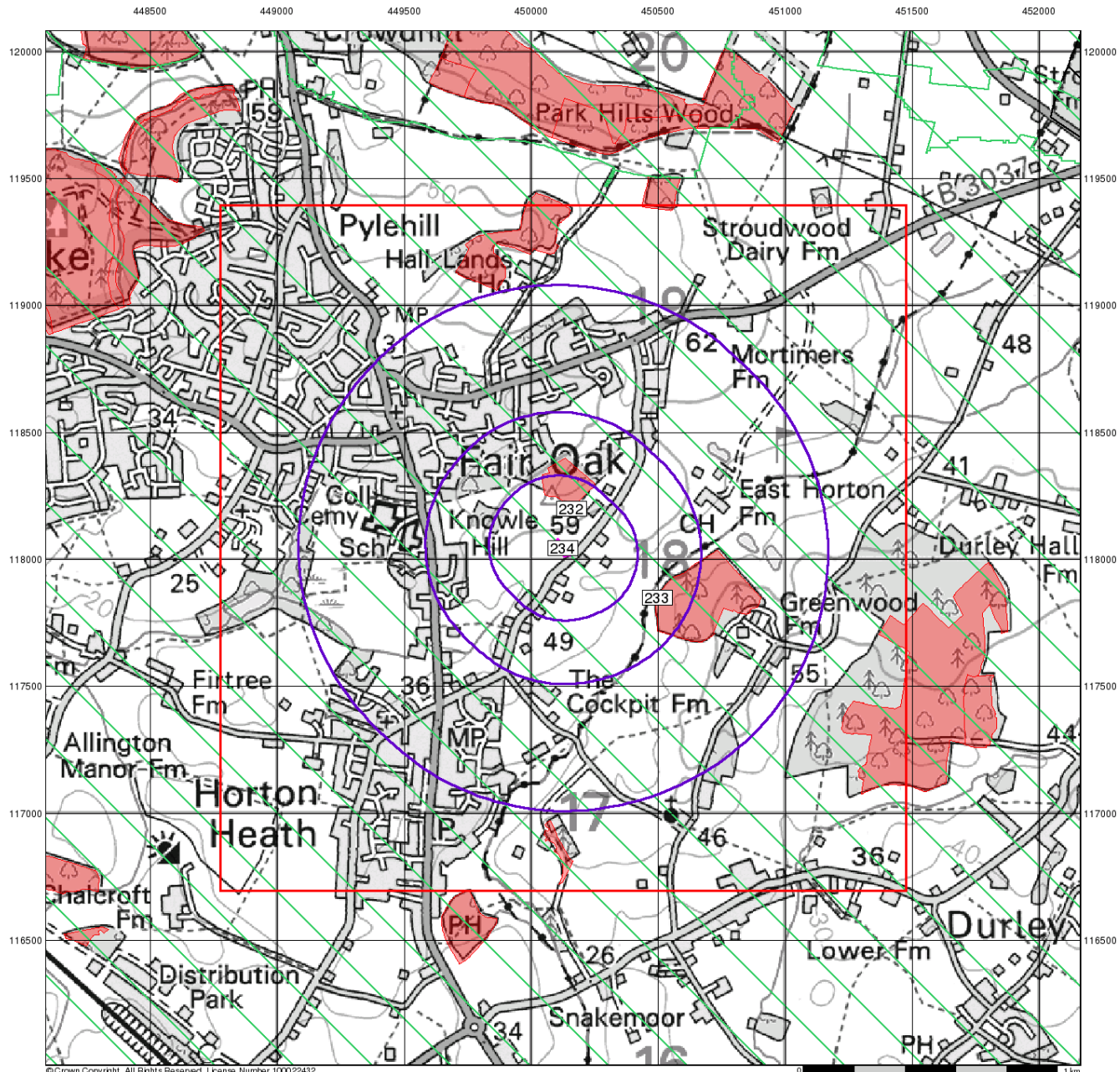
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Sensitive Land Uses

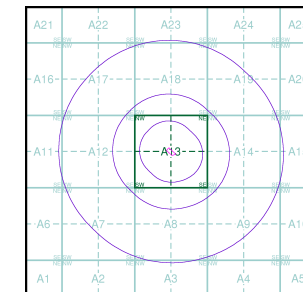
General

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

Sensitive Land Uses

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

Site Sensitivity Context Map - Slice A



Order Details

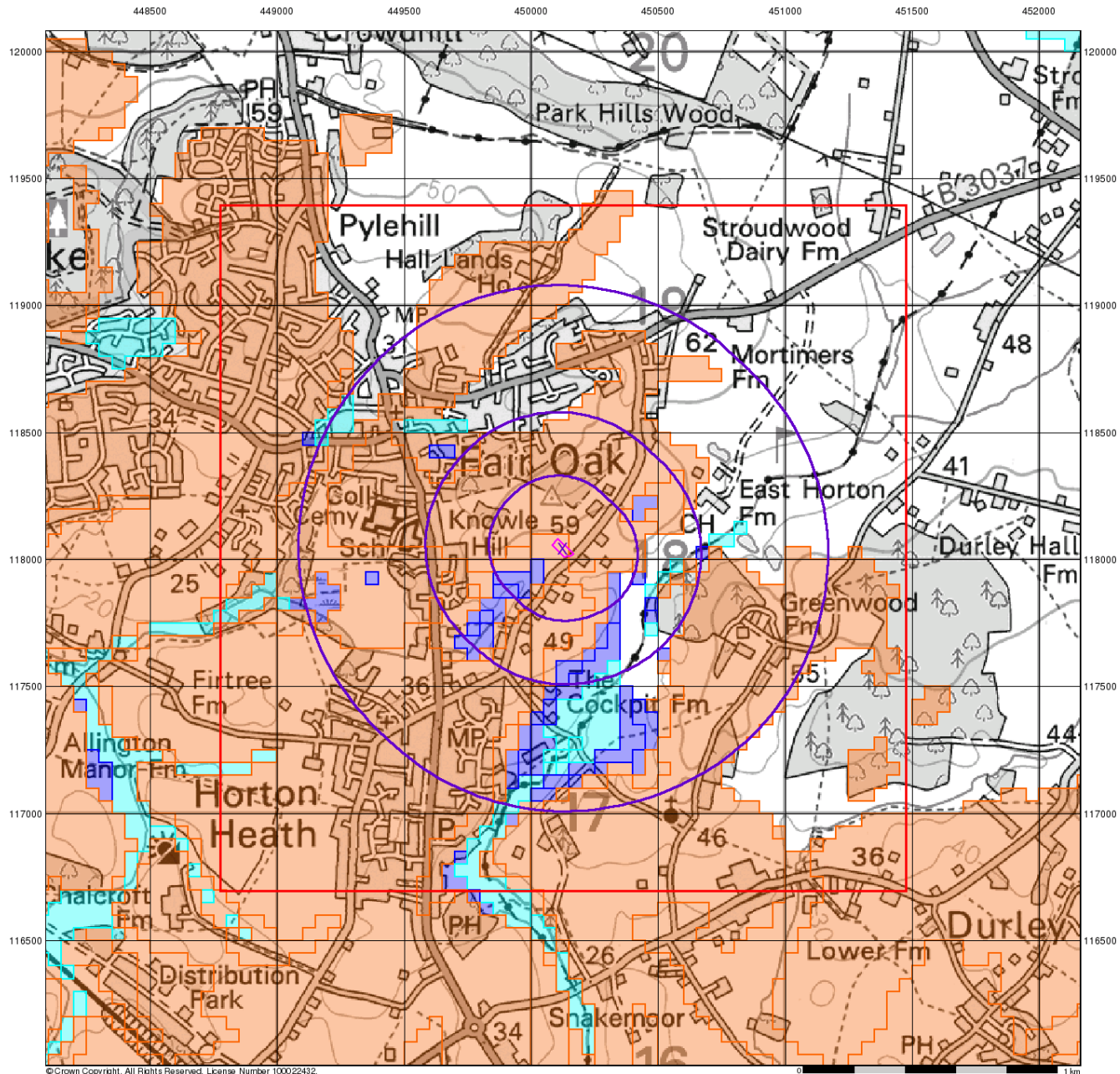
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Site Details

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BGS Flood GFS Data

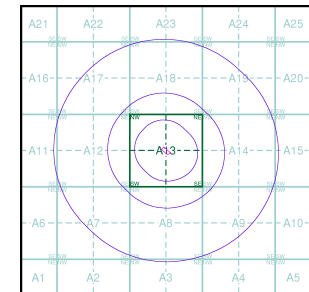
General

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

Agency and Hydrological (Flood)

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

Site Sensitivity Context Map - Slice A



Order Details

Order Number: 304449867_1_1
 Customer Ref: CDS-CC-1006
 National Grid Reference: 450120, 118040
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Site Details

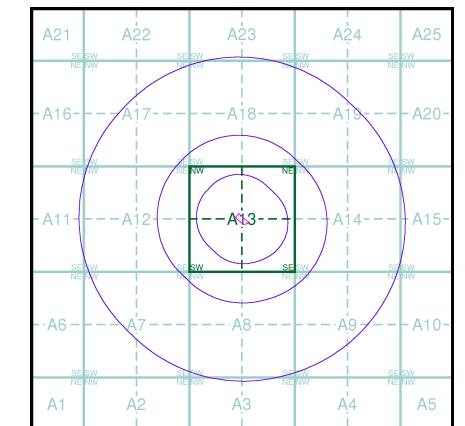
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- General**
- Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Map ID
 - Several of Type at Location
- Agency and Hydrological**
- Contaminated Land Register Entry or Notice (Location)
 - Contaminated Land Register Entry or Notice
 - Discharge Consent
 - Enforcement or Prohibition Notice
 - Integrated Pollution Control
 - Integrated Pollution Prevention Control
 - Local Authority Integrated Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control Enforcement
 - Pollution Incident to Controlled Waters
 - Prosecution Relating to Authorised Processes
 - Prosecution Relating to Controlled Waters
 - Registered Radioactive Substance
 - River Network or Water Feature
 - River Quality Sampling Point
 - Substantiated Pollution Incident Register
 - Water Abstraction
 - Water Industry Act Referral
- Hazardous Substances**
- COMAH Site
 - Explosive Site
 - NIHHS Site
 - Planning Hazardous Substance Consent
 - Planning Hazardous Substance Enforcement
 - BGS Recorded Mineral Site
- Waste**
- BGS Recorded Landfill Site (Location)
 - BGS Recorded Landfill Site
 - EA Historic Landfill (Buffered Point)
 - EA Historic Landfill (Polygon)
 - Integrated Pollution Control Registered Waste Site
 - Licensed Waste Management Facility (Landfill Boundary)
 - Licensed Waste Management Facility (Location)
 - Local Authority Recorded Landfill Site (Location)
 - Local Authority Recorded Landfill Site
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Registered Landfill Site (Location)
 - Registered Landfill Site (Point Buffered to 100m)
 - Registered Landfill Site (Point Buffered to 250m)
 - Registered Waste Transfer Site (Location)
 - Registered Waste Transfer Site
 - Registered Waste Treatment or Disposal Site (Location)
 - Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A

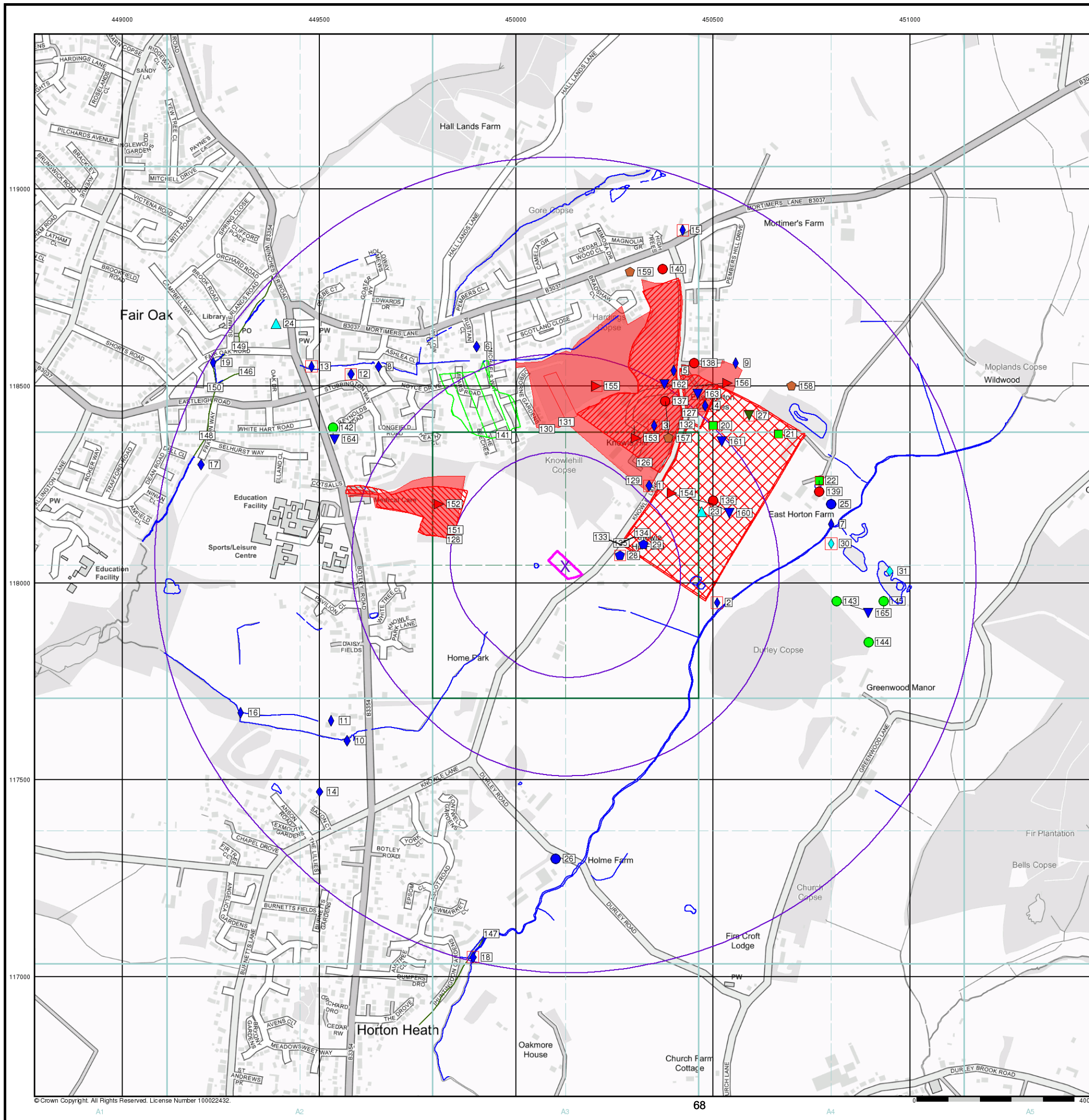


Order Details

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Site Details

Land at Knowle Lane, Horton Heath, Eastleigh, SO50 7DZ












Industrial Land Use Map

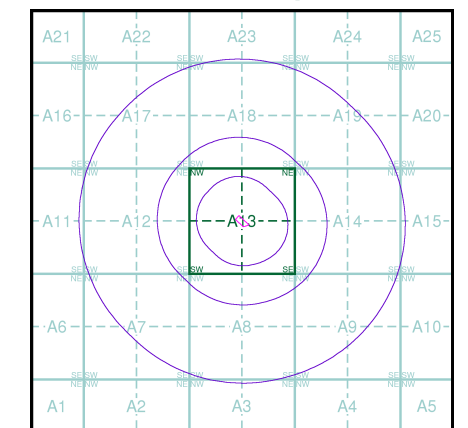
General

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

Industrial Land Use

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

Industrial Land Use Map - Slice A

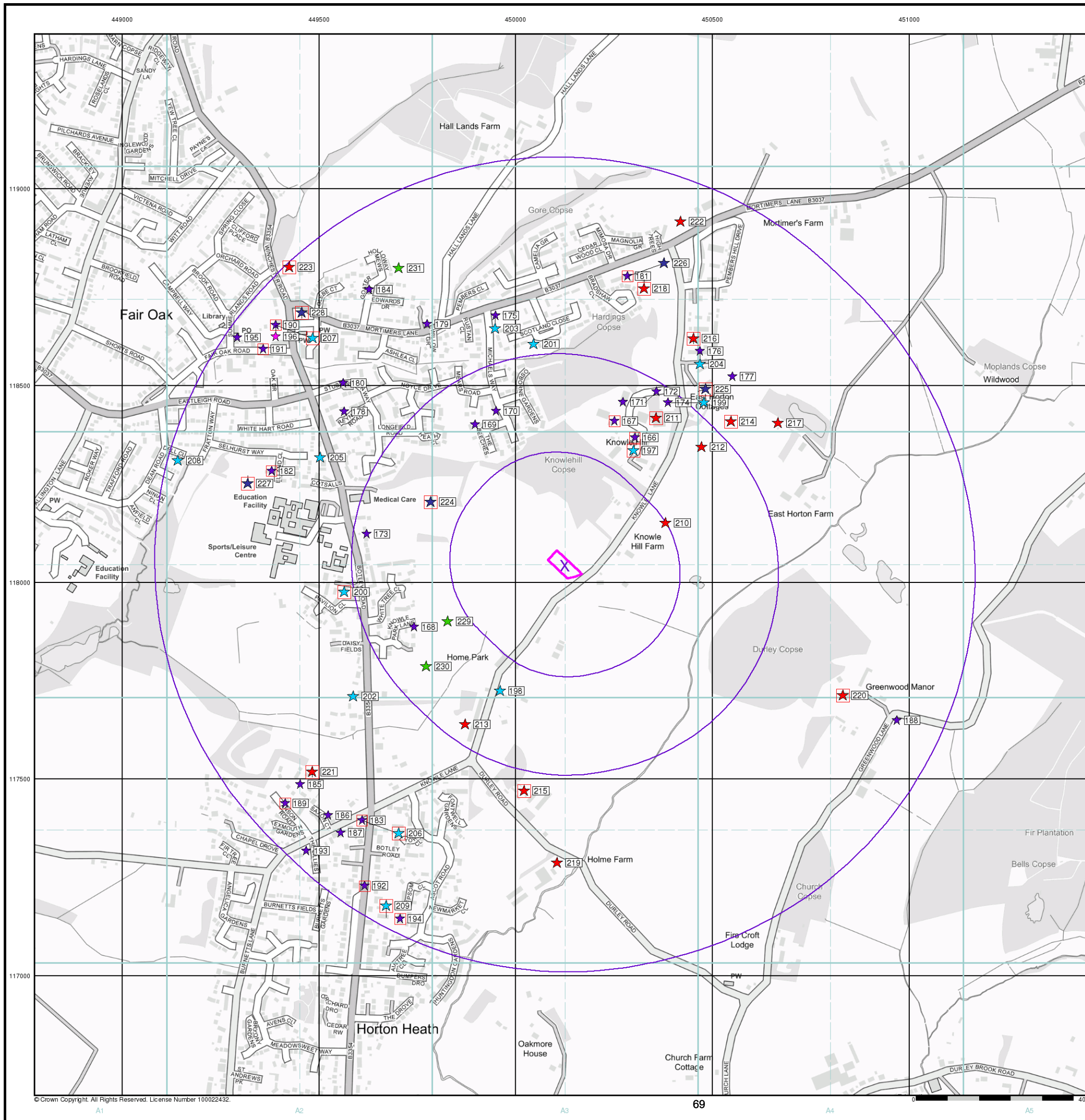


Order Details

Order Number: 304449867_1_1
 Customer Ref: CDS-CC-1006
 National Grid Reference: 450120, 118040
 Slice: A
 Site Area (Ha): 0.27
 Search Buffer (m): 1000

Site Details

Land at Knowle Lane, Horton Heath, Eastleigh, SO50 7DZ



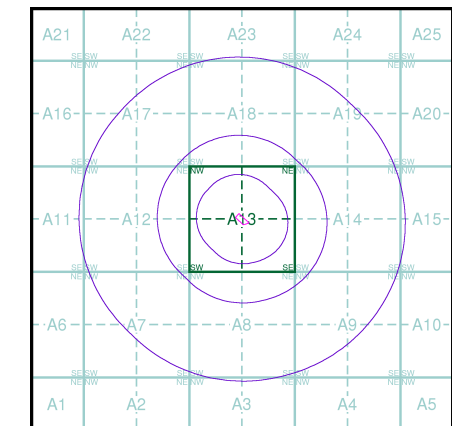
General

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

Agency and Hydrological (Flood)

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

Flood Map - Slice A

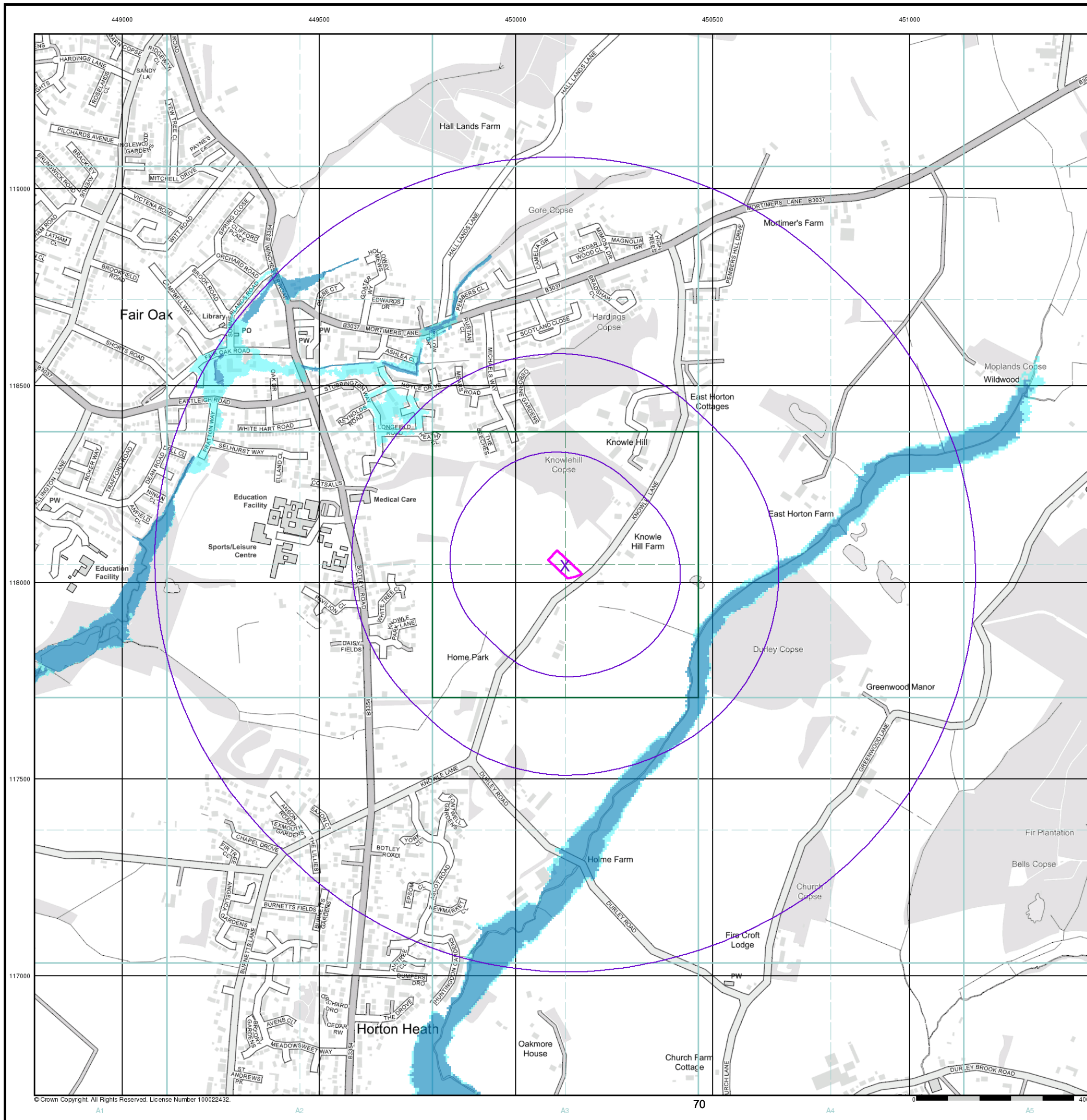


Order Details

Order Number: 304449867_1_1
 Customer Ref: CDS-CC-1006
 National Grid Reference: 450120, 118040
 Slice: A
 Site Area (Ha): 0.27
 Search Buffer (m): 1000

Site Details

Land at Knowle Lane, Horton Heath, Eastleigh, SO50 7DZ



General

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

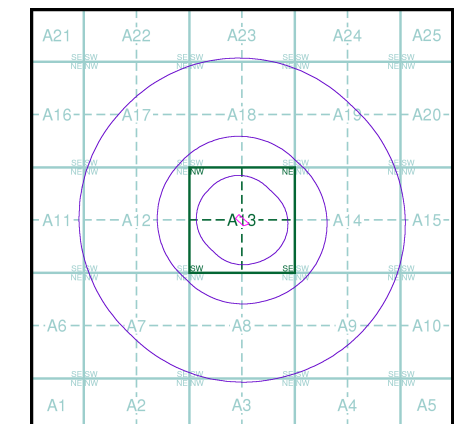
Agency and Hydrological (Boreholes)

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

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

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

Borehole Map - Slice A

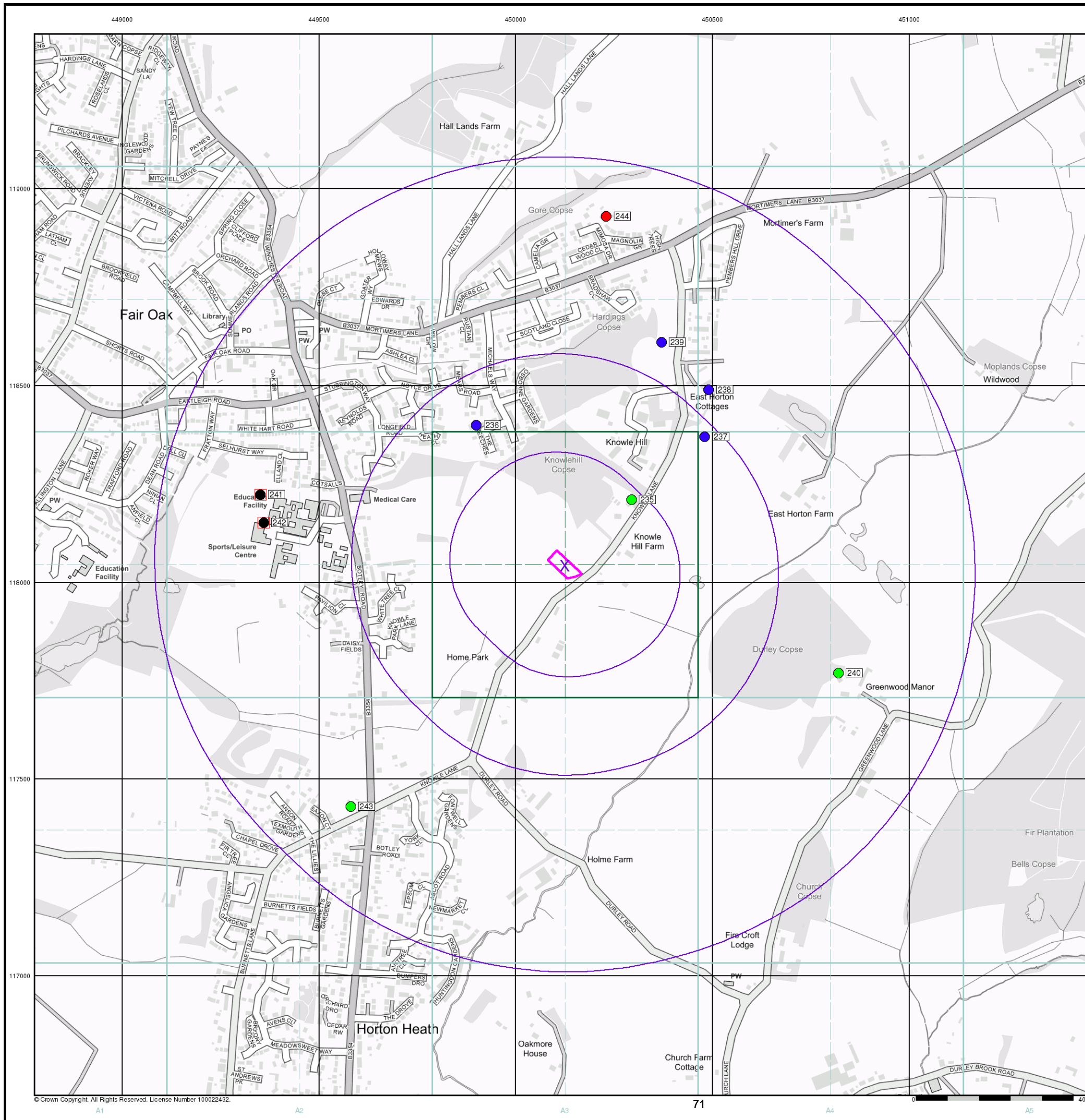


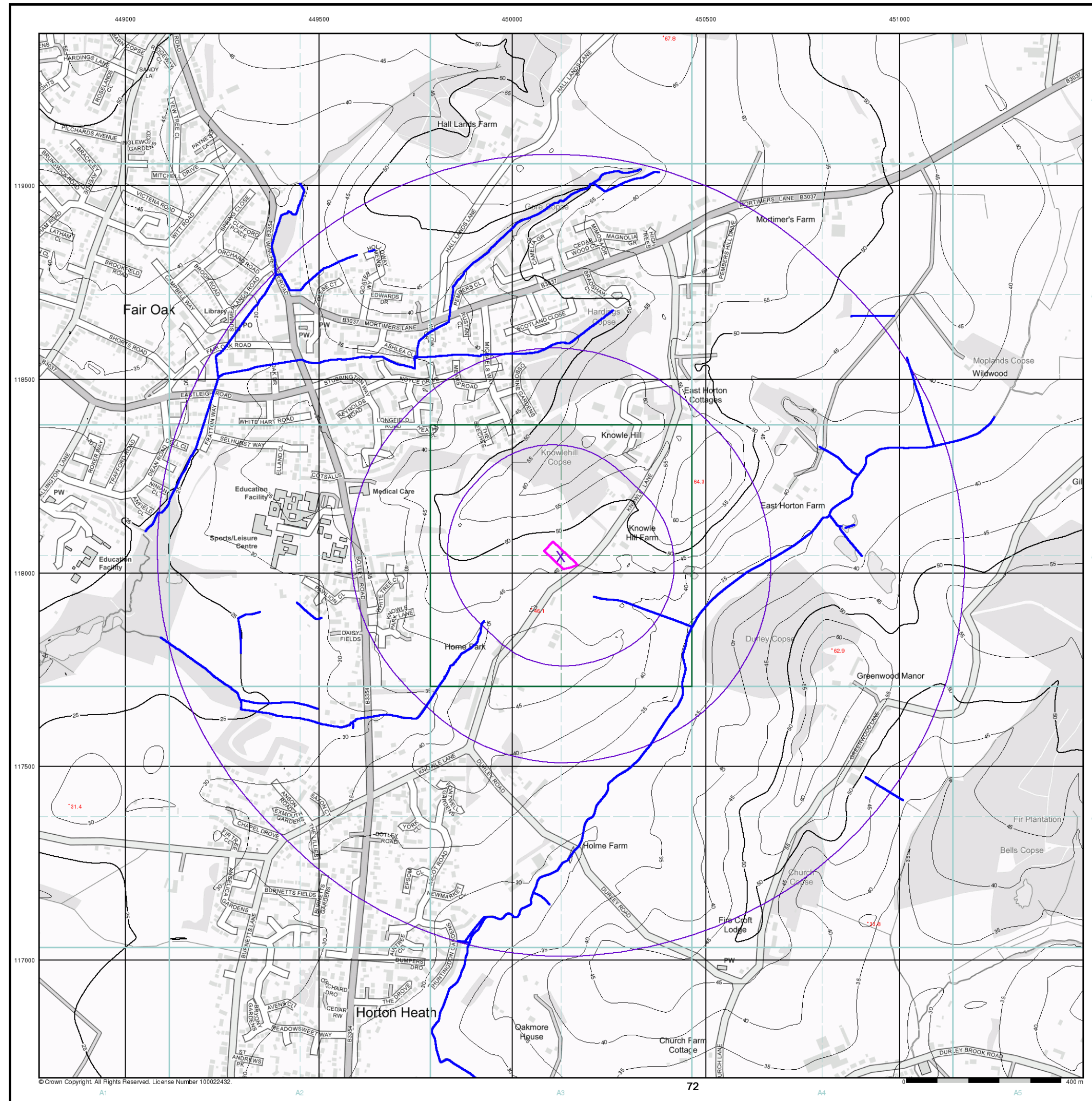
Order Details

Order Number: 304449867_1_1
 Customer Ref: CDS-CC-1006
 National Grid Reference: 450120, 118040
 Slice: A
 Site Area (Ha): 0.27
 Search Buffer (m): 1000

Site Details

Land at Knowle Lane, Horton Heath, Eastleigh, SO50 7DZ





General

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

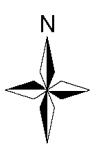
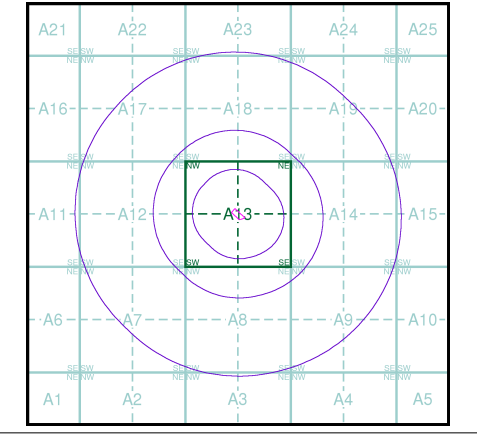
OS Water Network Data

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

Contours (height in meters)

- Standard Contour 105 Mean Low Water
- Master Contour 100 Mean High Water
- Spot Height 167.3

OS Water Network Map - Slice A



Order Details

Order Number: 304449867_1_1
 Customer Ref: CDS-CC-1006
 National Grid Reference: 450120, 118040
 Slice: A
 Site Area (Ha): 0.27
 Search Buffer (m): 1000

Site Details

Land at Knowle Lane, Horton Heath, Eastleigh, SO50 7DZ

General

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

Risk of Flooding from Surface Water

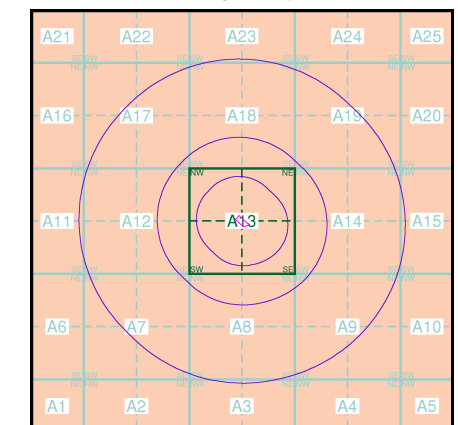
-  High - 30 Year Return
-  Medium - 100 Year Return
-  Low - 1000 Year Return

Suitability

See the suitability map below

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

EANRW Suitability Map - Slice A

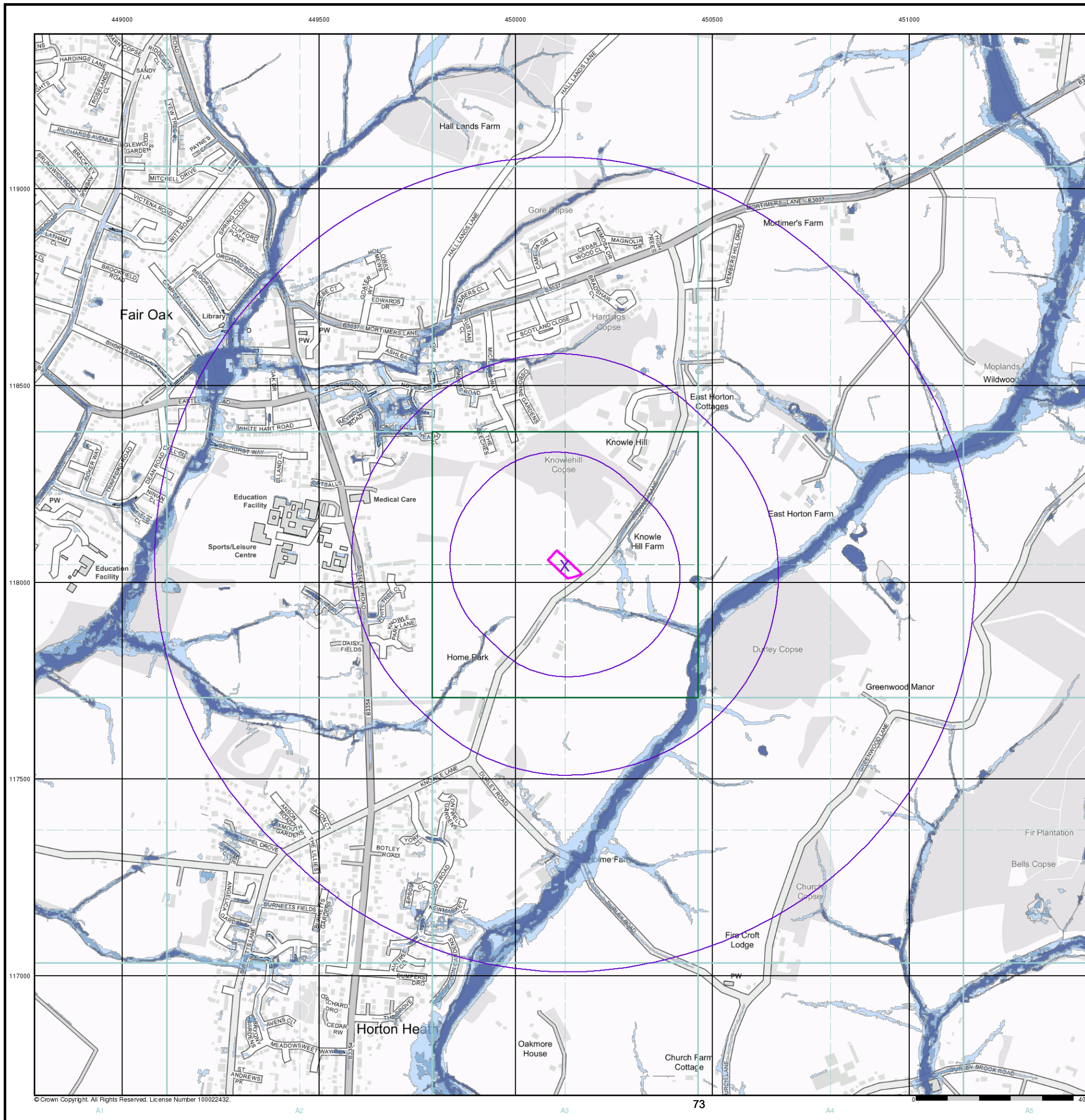


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Order Number: 304449867_1_1
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 National Grid Reference: 450120, 118040
 Slice: A
 Site Area (Ha): 0.27
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Site Details

Land at Knowle Lane, Horton Heath, Eastleigh, SO50 7DZ








Geology 1:50,000 Maps Legends







Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WMGR	Infilled Ground	Artificial Deposit	Not Supplied - Holocene
	WGR	Worked Ground (Undivided)	Void	Not Supplied - Holocene
	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	HEAD	Head	Gravel, Sand, Silt and Clay	Not Supplied - Quaternary
	RTDU	River Terrace Deposits (Undifferentiated)	Sand and Gravel	Not Supplied - Quaternary
	RTD1	River Terrace Deposits, 1	Clay and Silt	Not Supplied - Quaternary
	RTD1	River Terrace Deposits, 1	Sand and Gravel	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	EA	Earnley Sand Formation	Sand, Silt and Clay	Not Supplied - Lutetian
	WTT	Wittering Formation	Sand, Silt and Clay	Not Supplied - Ypresian
	LC	London Clay Formation	Clay, Silt and Sand	Not Supplied - Ypresian
	DYSA	Durley Sand Member	Sand	Not Supplied - Eocene
	LMBE	Lambeth Group	Clay, Silt and Sand	Not Supplied - Thanetian
	WHI	Whitecliff Sand Member	Sand	Not Supplied - Palaeogene

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Geology 1:50,000 Maps

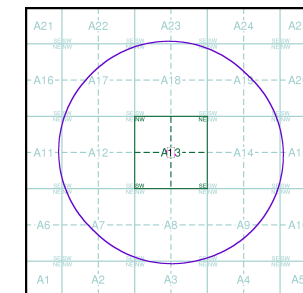
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published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

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

Geology 1:50,000 Maps Coverage

Map ID:	1
Map Sheet No:	315
Map Name:	Southampton
Map Date:	1987
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Not Supplied
Landslip:	Available
Rock Segments:	Not Supplied

Geology 1:50,000 Maps - Slice A



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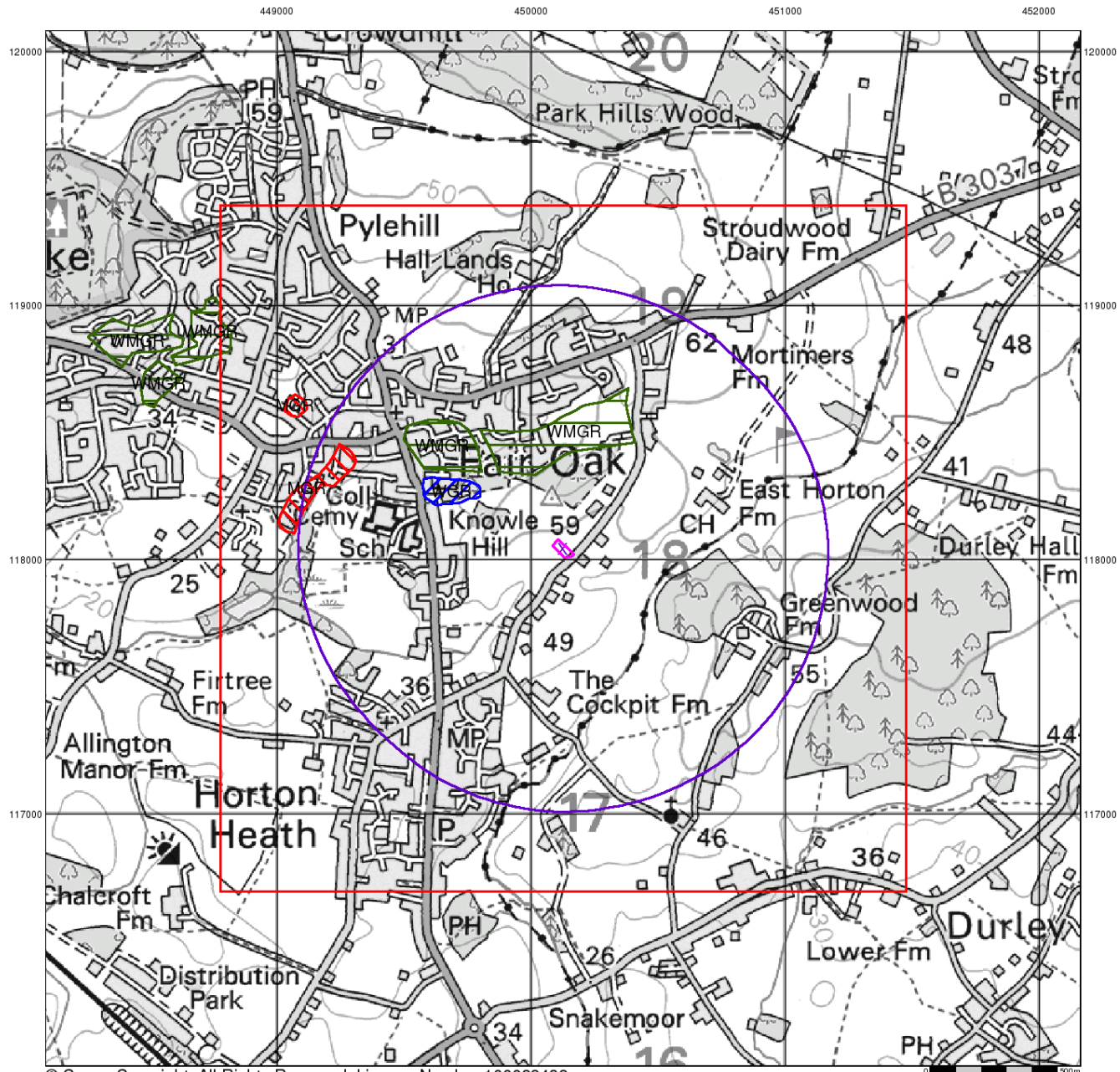
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National Grid Reference:	450120, 118040
Slice:	A
Site Area (Ha):	0.27
Search Buffer (m):	1000

Site Details:

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Artificial Ground and Landslip

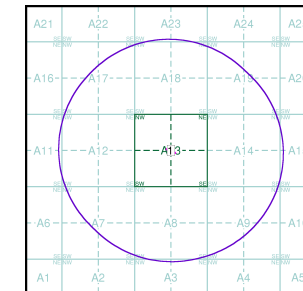
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions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

Artificial ground includes:

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

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

Artificial Ground and Landslip Map - Slice A



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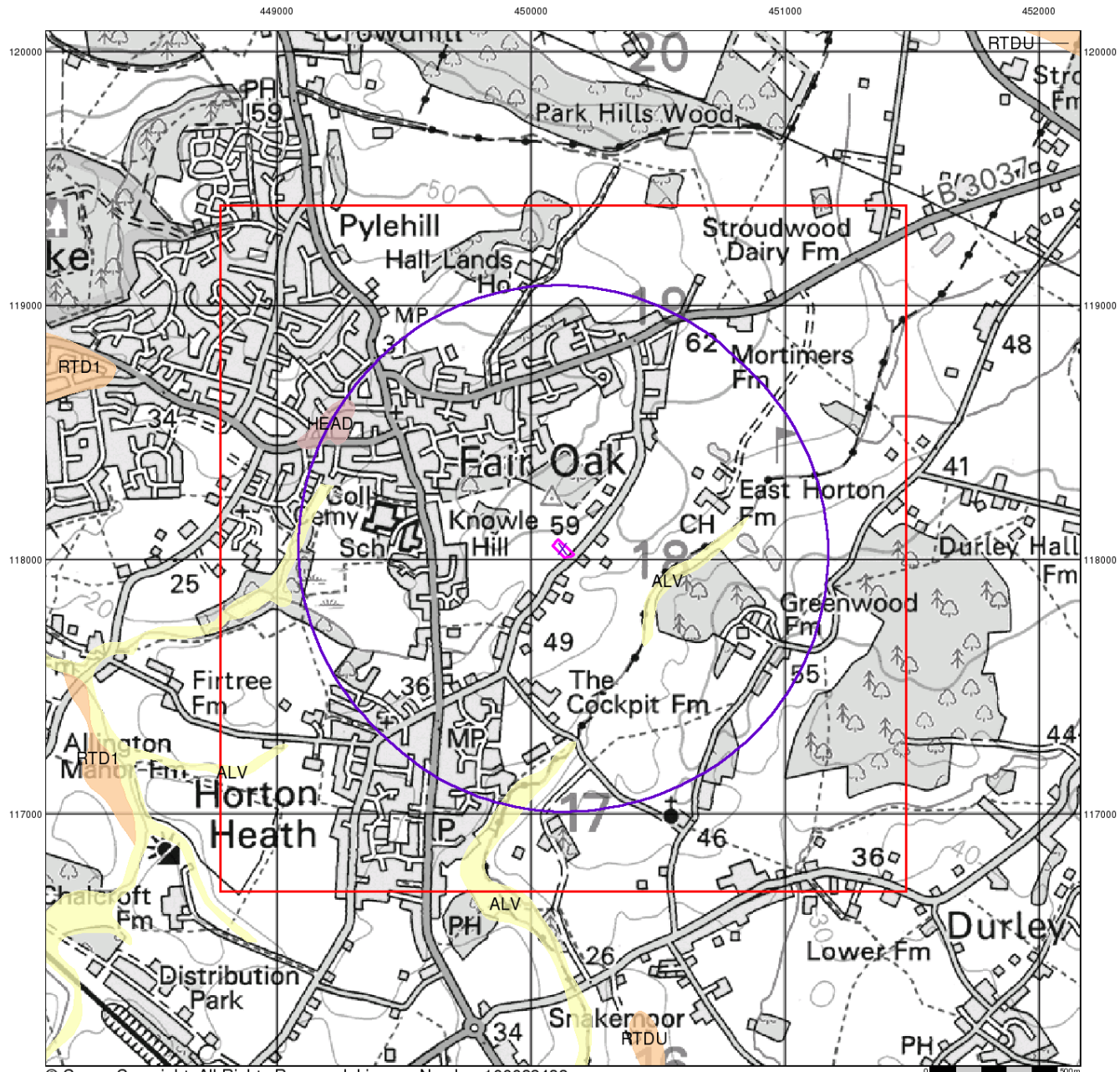
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Site Details:

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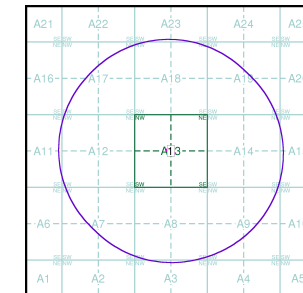
Superficial Geology

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

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

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

Superficial Geology Map - Slice A



Order Details:

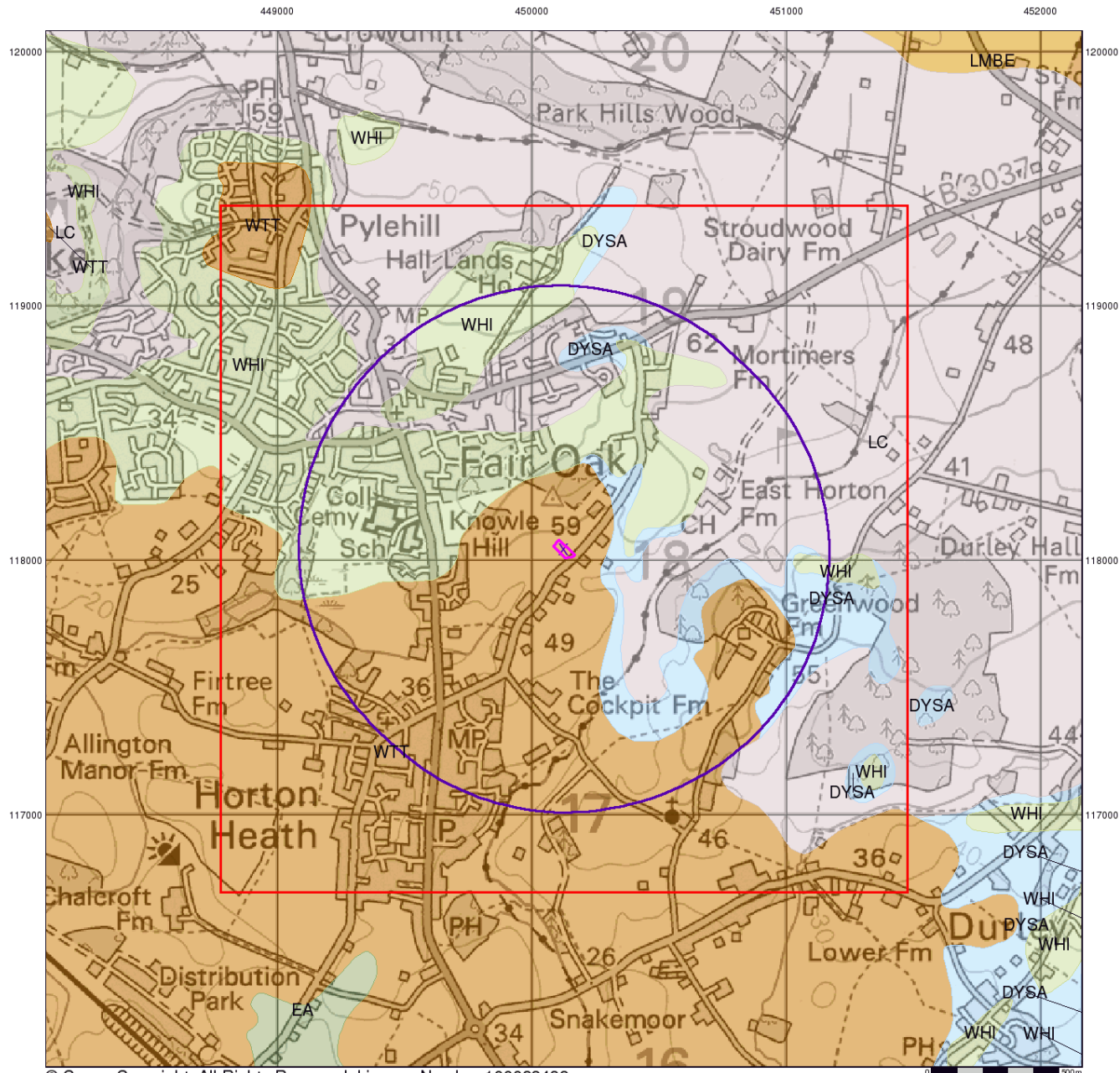
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 National Grid Reference: 450120, 118040
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 Site Area (Ha): 0.27
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Site Details:

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Bedrock and Faults

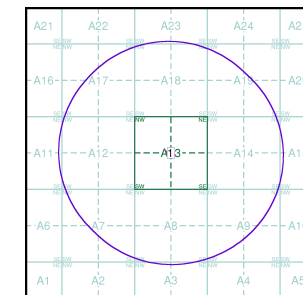
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

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

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

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

Bedrock and Faults Map - Slice A



Order Details:

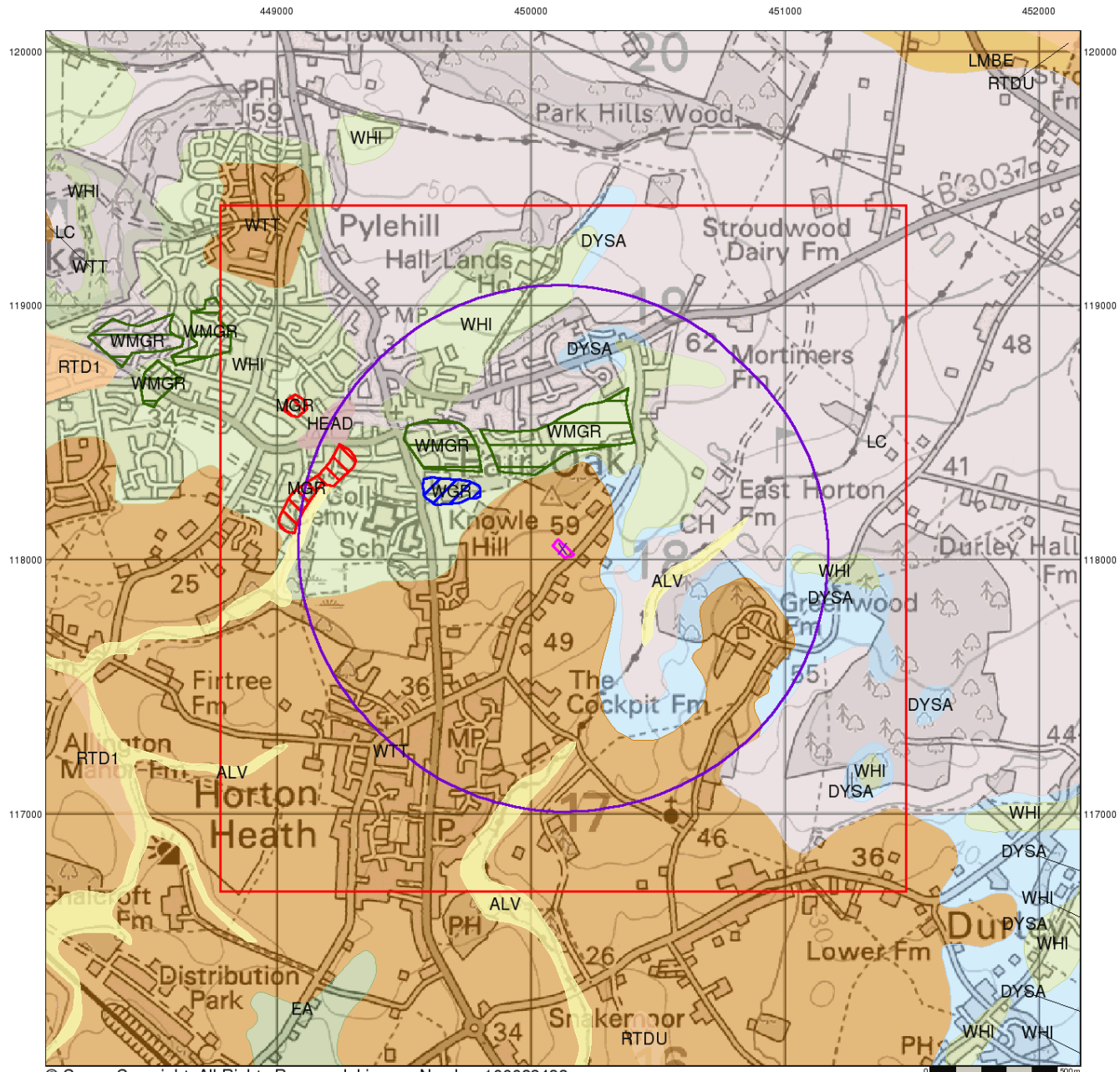
Order Number: 304449867_1_1
 Customer Reference: CDS-CC-1006
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Combined Surface Geology

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

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

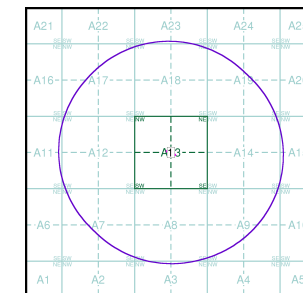
Additional Information

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

Contact

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

Combined Geology Map - Slice A



Order Details:

Order Number: 304449867_1_1
 Customer Reference: CDS-CC-1006
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Historical Mapping Legends

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

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

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

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

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

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

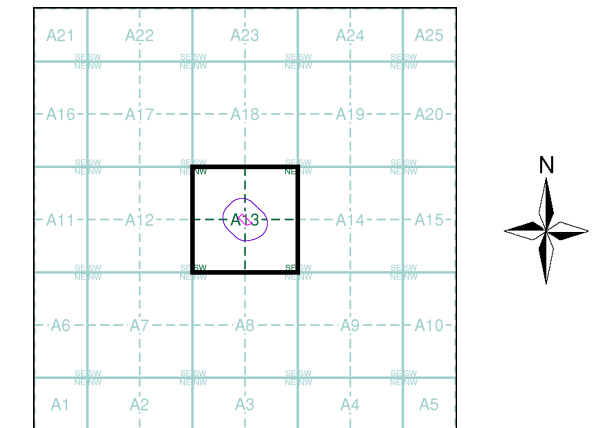
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hampshire & Isle Of Wight	1:2,500	1885	2
Hampshire & Isle Of Wight	1:2,500	1896	3
Hampshire & Isle Of Wight	1:2,500	1909	4
Hampshire & Isle Of Wight	1:2,500	1941	5
Ordnance Survey Plan	1:2,500	1963 - 1964	6
Ordnance Survey Plan	1:2,500	1968	7
Supply of Unpublished Survey Information	1:2,500	1974	8
Ordnance Survey Plan	1:1,250	1975	9
Additional SIMs	1:1,250	1985	10
Additional SIMs	1:2,500	1985 - 1989	11
Additional SIMs	1:1,250	1987	12
Additional SIMs	1:1,250	1988	13
Ordnance Survey Plan	1:1,250	1989	14
Additional SIMs	1:2,500	1989	15
Additional SIMs	1:2,500	1991	16
Large-Scale National Grid Data	1:2,500	1992 - 1993	17
Large-Scale National Grid Data	1:1,250	1992 - 1993	18
Additional SIMs	1:2,500	1992	19
Large-Scale National Grid Data	1:2,500	1994	20
Large-Scale National Grid Data	1:2,500	1994	21
Large-Scale National Grid Data	1:2,500	1996	22
Large-Scale National Grid Data	1:1,250	1996	23
Large-Scale National Grid Data	1:2,500	1996	24
Historical Aerial Photography	1:2,500	1999	25

Historical Map - Segment A13



Order Details

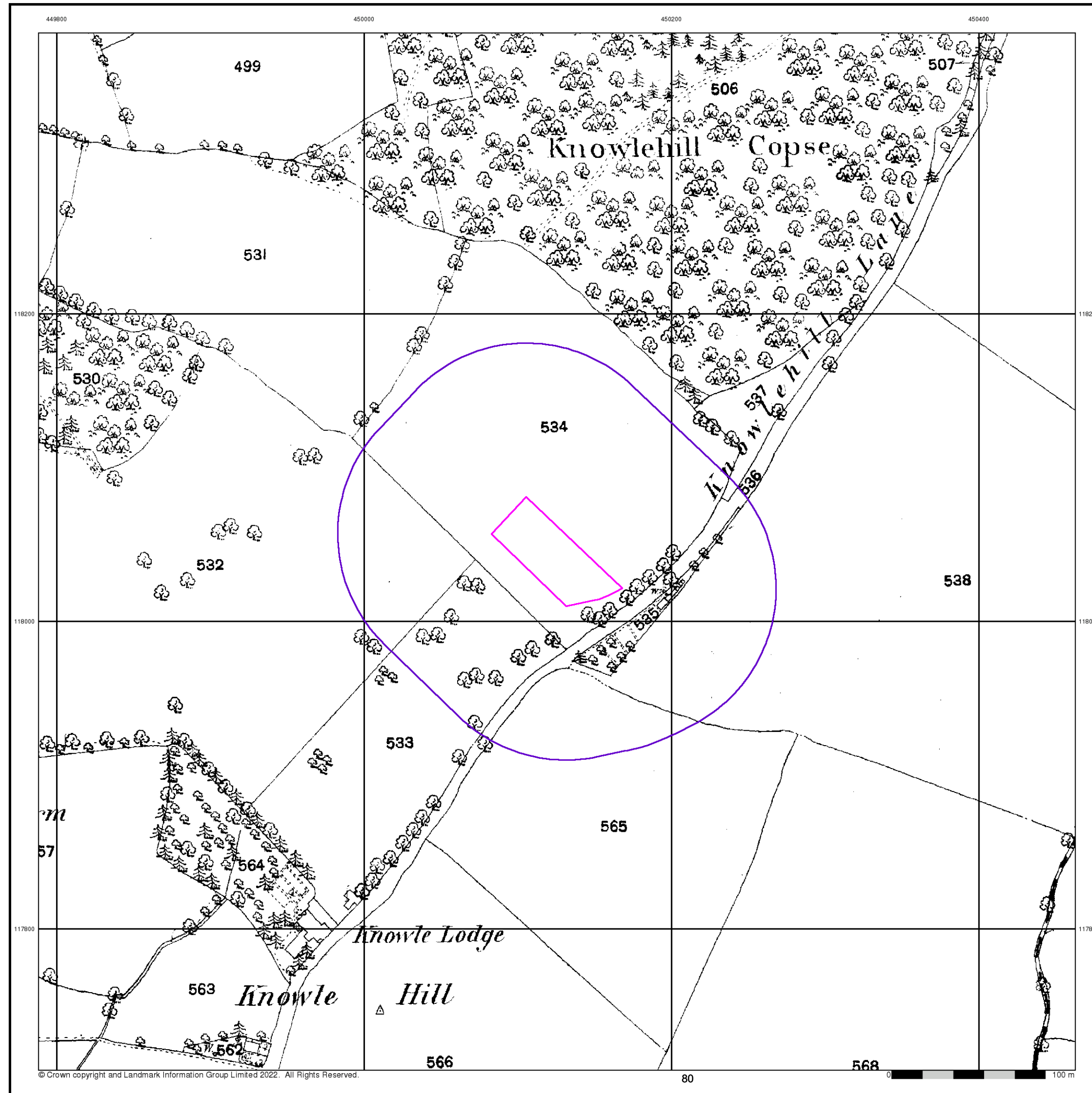
Order Number: 304449867_1_1
 Customer Ref: CDS-CC-1006
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Site Details

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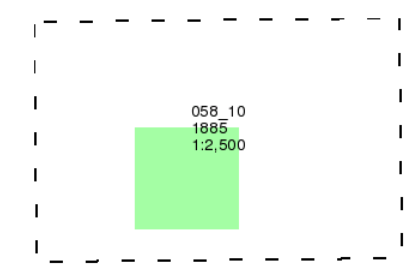
Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



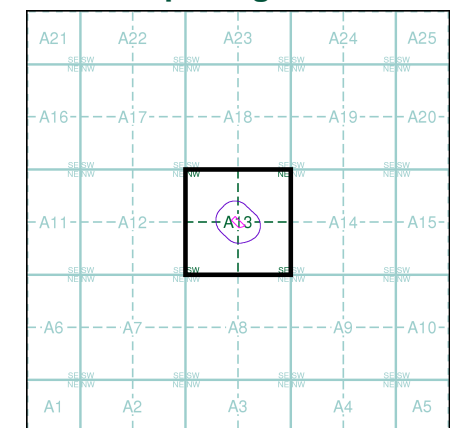
Hampshire & Isle Of Wight
Published 1885
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



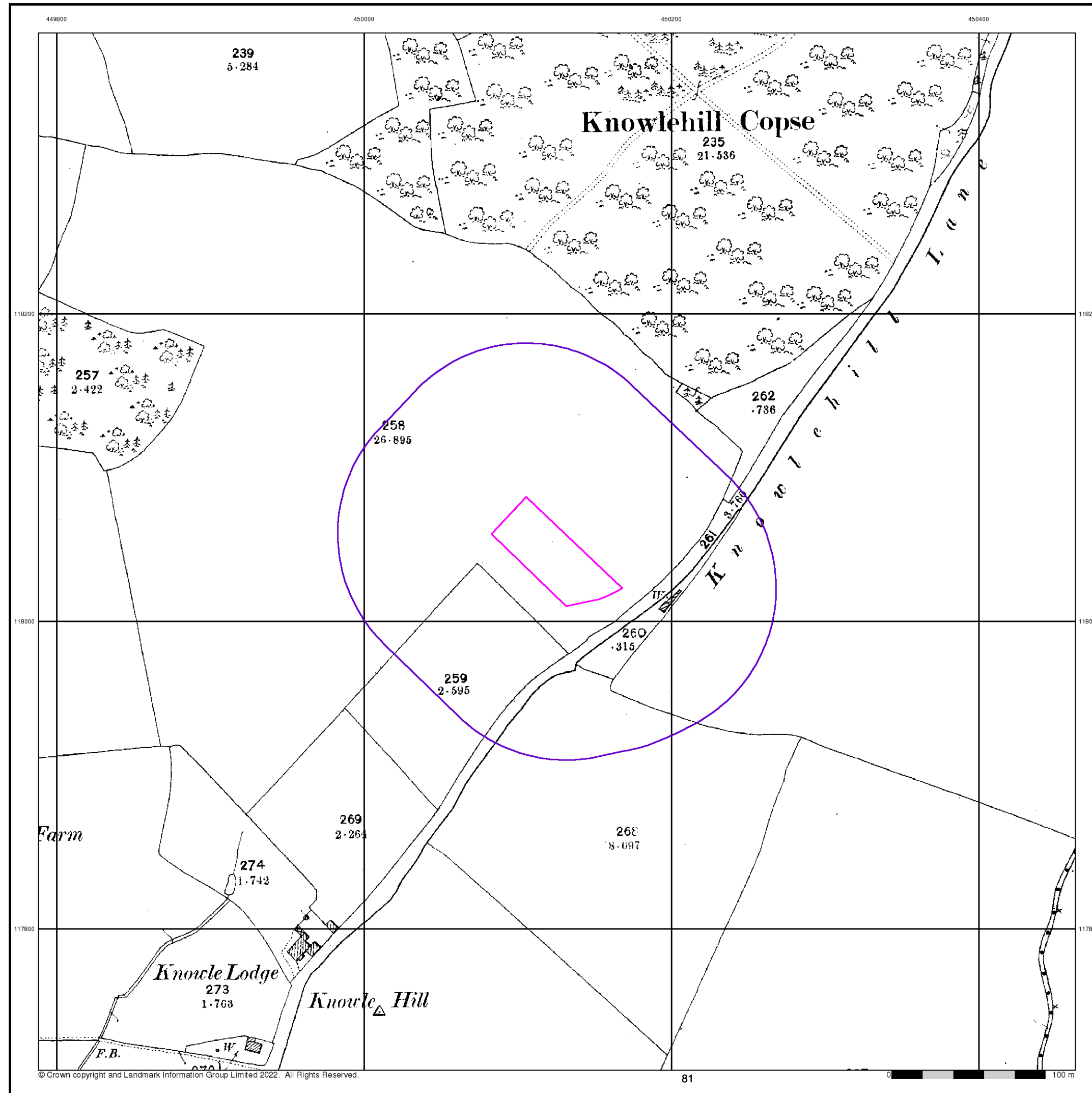
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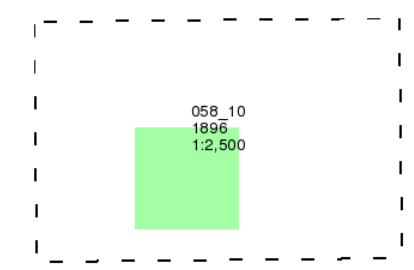
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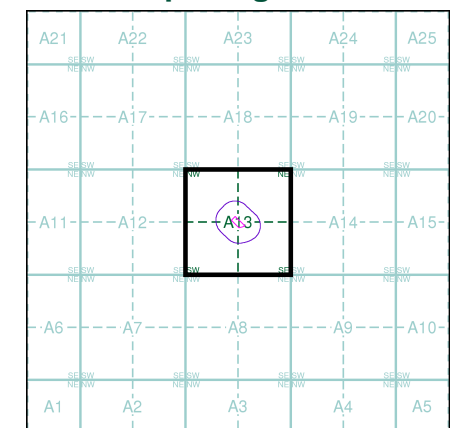
Hampshire & Isle Of Wight
Published 1896
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13

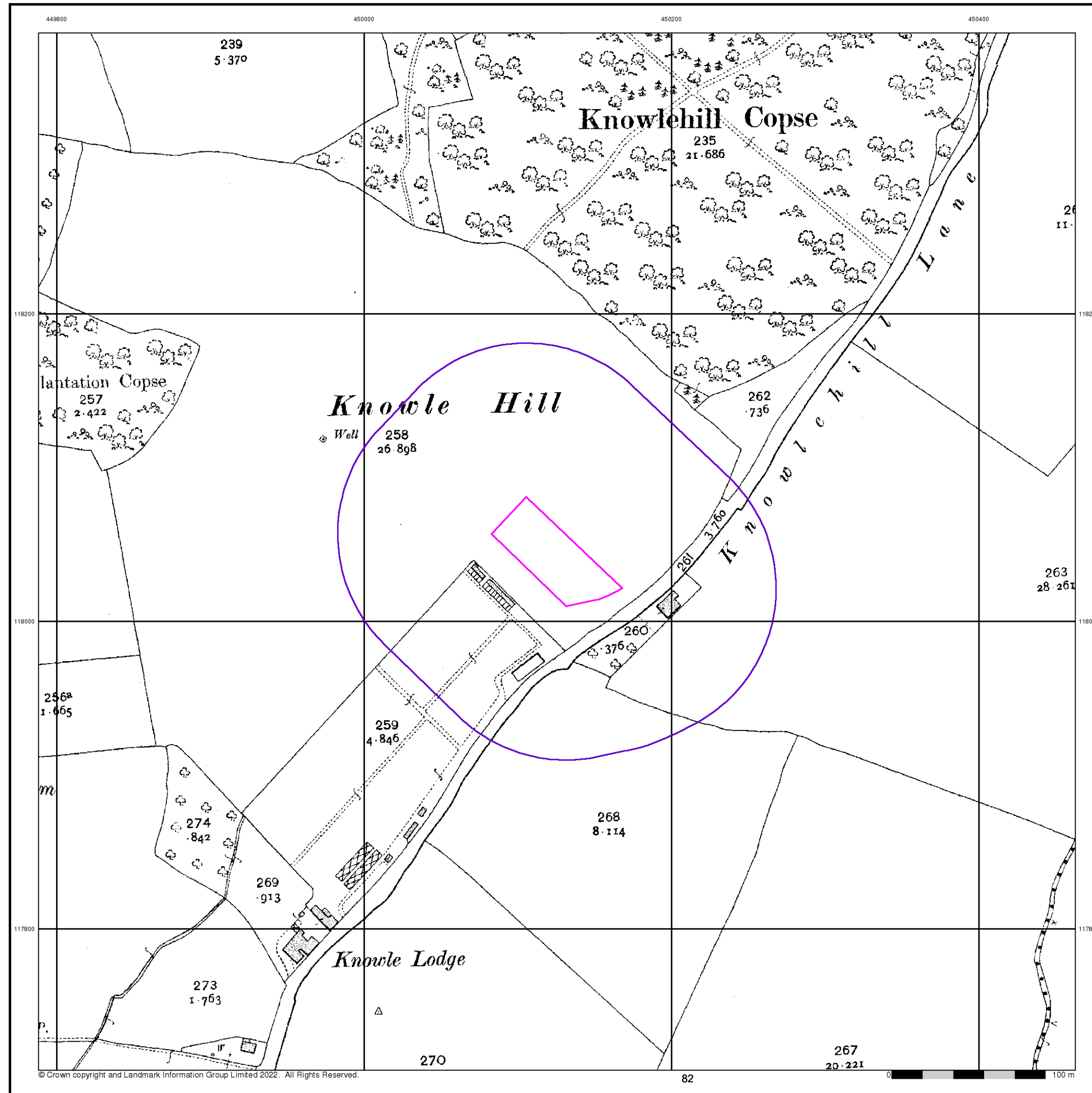


Order Details

Order Number: 304449867_1_1
 Customer Ref: CDS-CC-1006
 National Grid Reference: 450120, 118040
 Slice: A
 Site Area (Ha): 0.27
 Search Buffer (m): 100

Site Details

Land at Knowle Lane, Horton Heath, Eastleigh, SO50 7DZ



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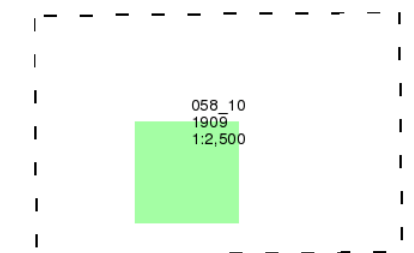
Hampshire & Isle Of Wight

Published 1909

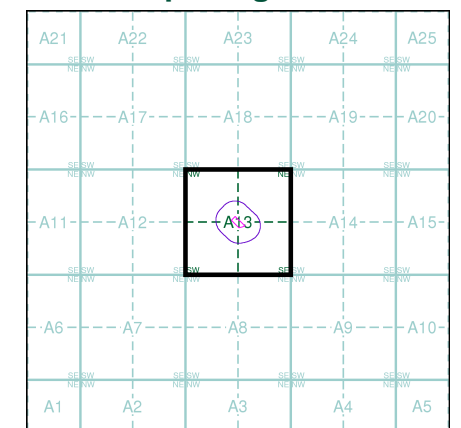
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

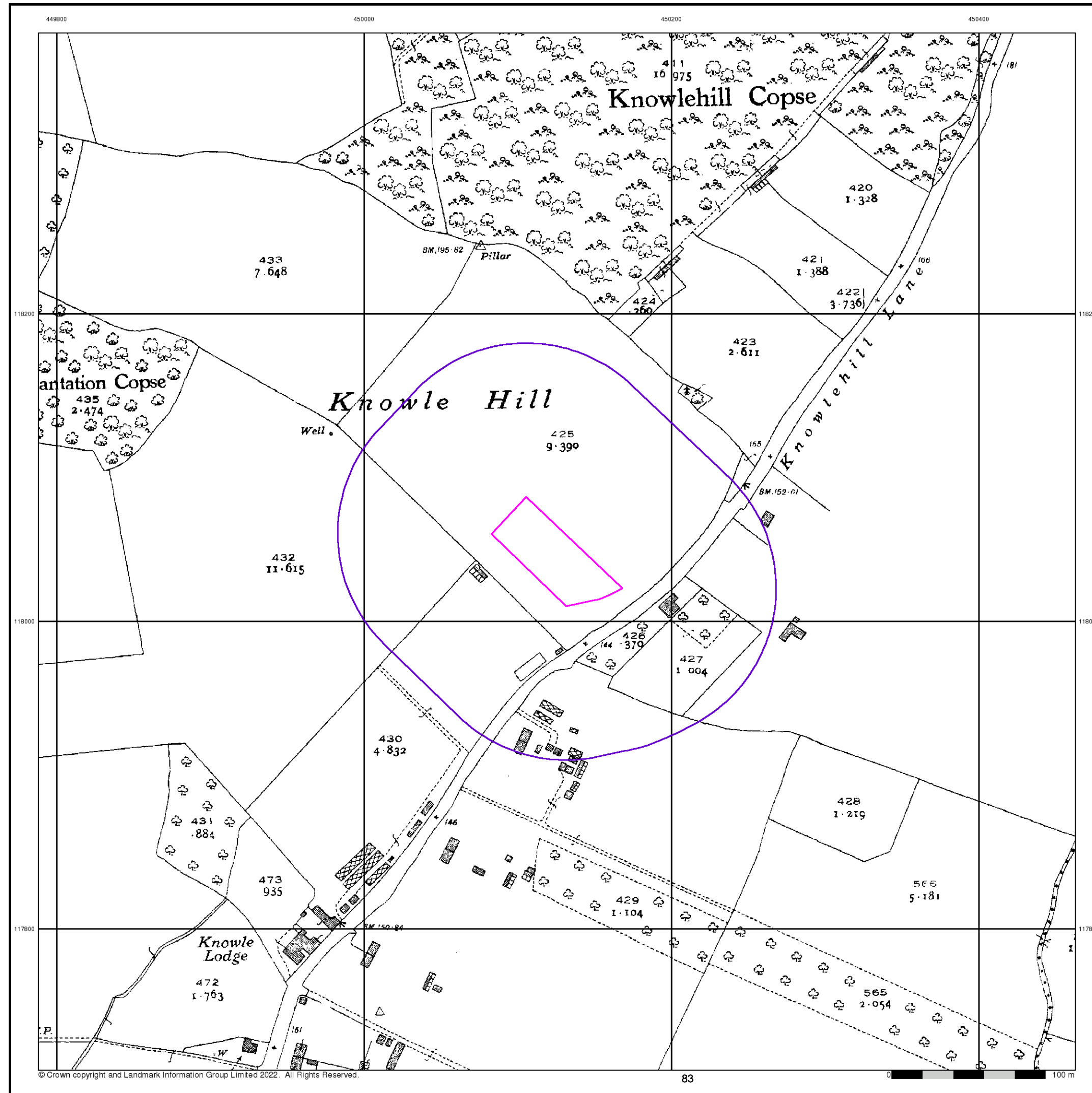
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Site Details

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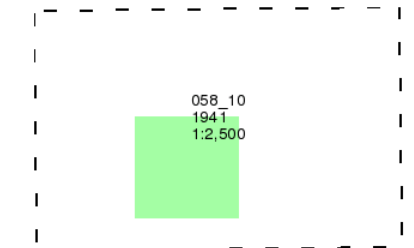
Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



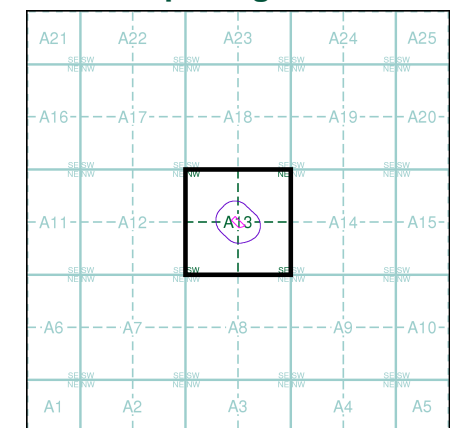
Hampshire & Isle Of Wight
Published 1941
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Map Name(s) and Date(s)

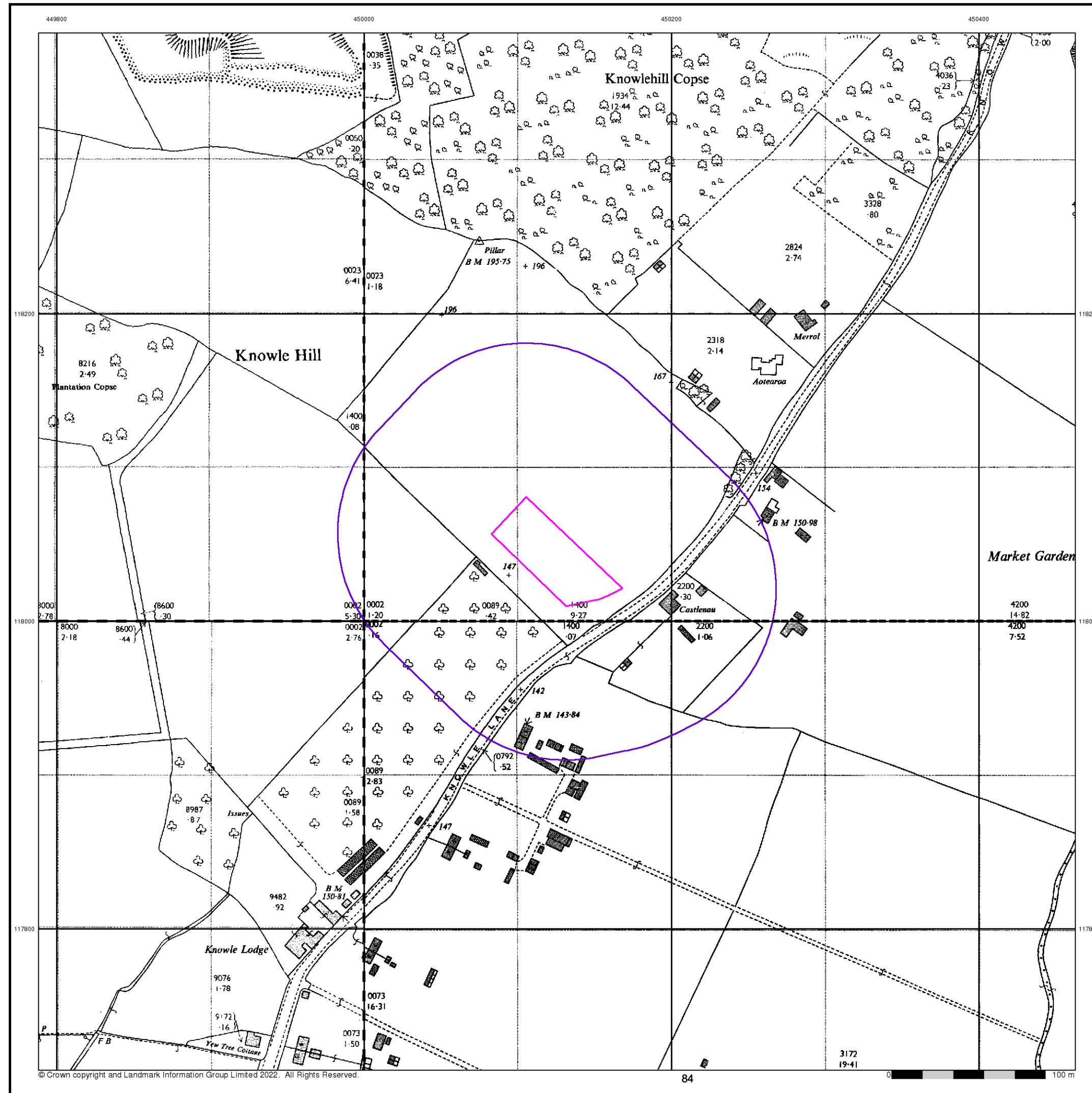


Historical Map - Segment A13



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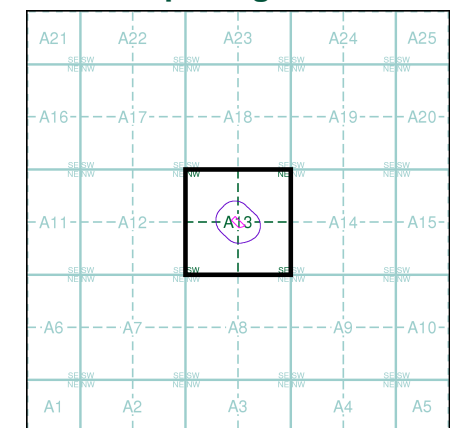
Ordnance Survey Plan
Published 1963 - 1964
Source map scale - 1:2,500

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

Map Name(s) and Date(s)

SU4918 1963 1:2,500	SU5018 1963 1:2,500
SU4917 1964 1:2,500	SU5017 1963 1:2,500

Historical Map - Segment A13

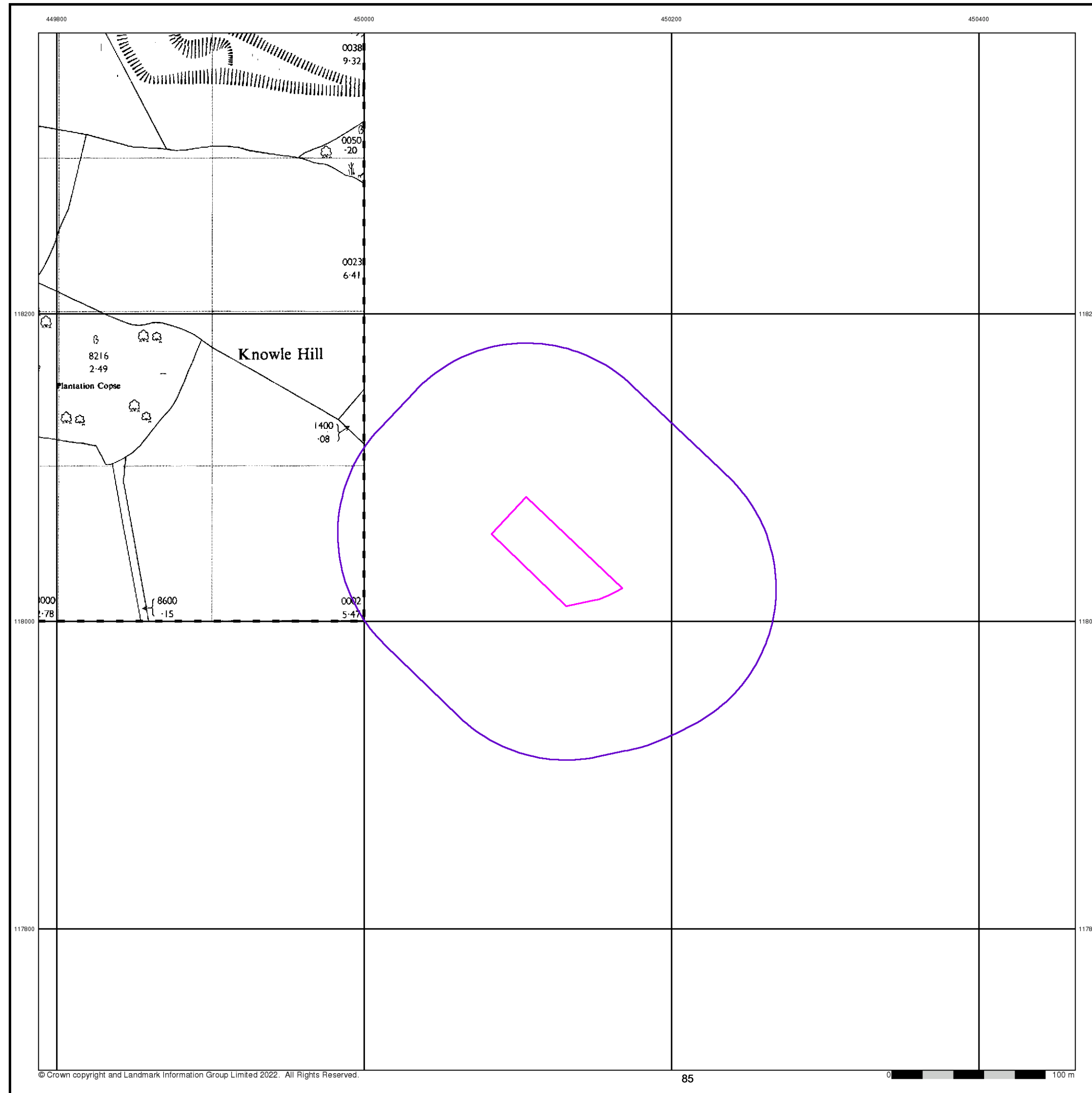


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Site Details

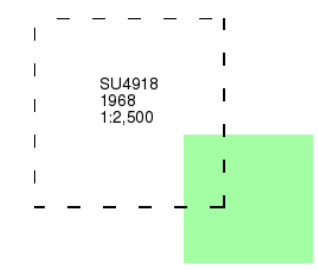
Land at Knowle Lane, Horton Heath, Eastleigh, SO50 7DZ



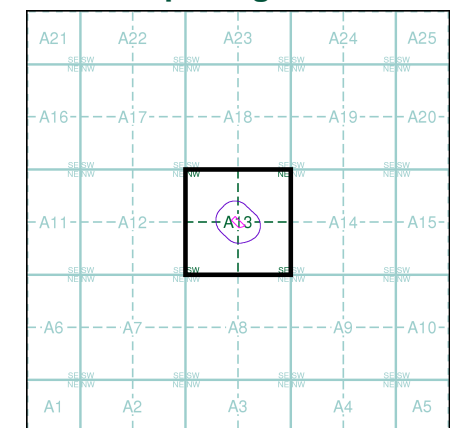
Ordnance Survey Plan Published 1968 Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13

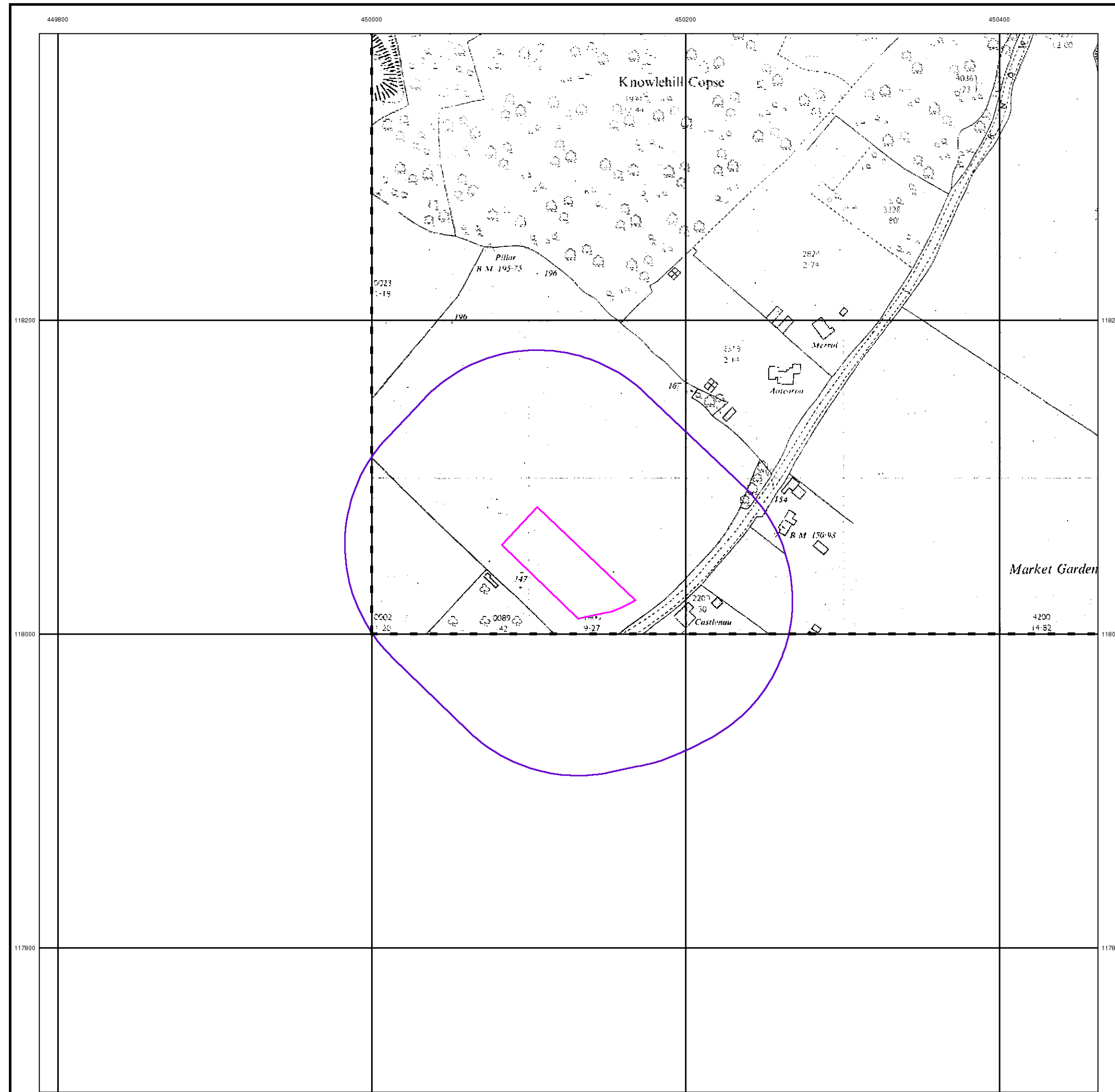


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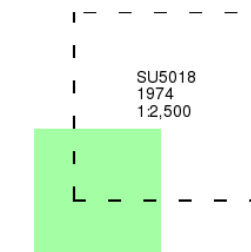
Supply of Unpublished Survey Information

Published 1974

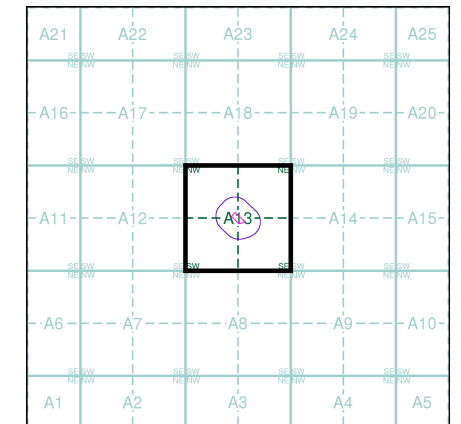
Source map scale - 1:2,500

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a 'work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



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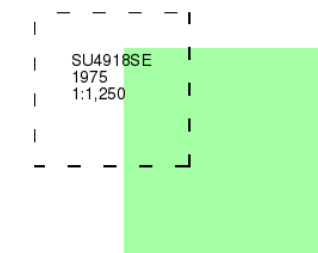
Ordnance Survey Plan

Published 1975

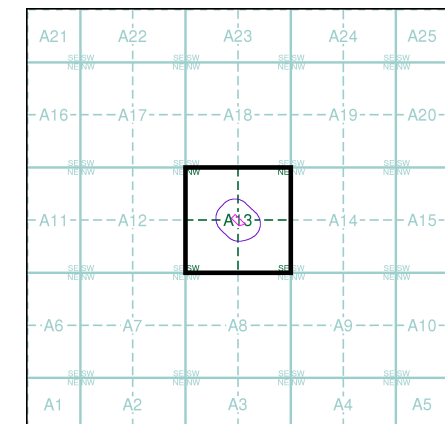
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13

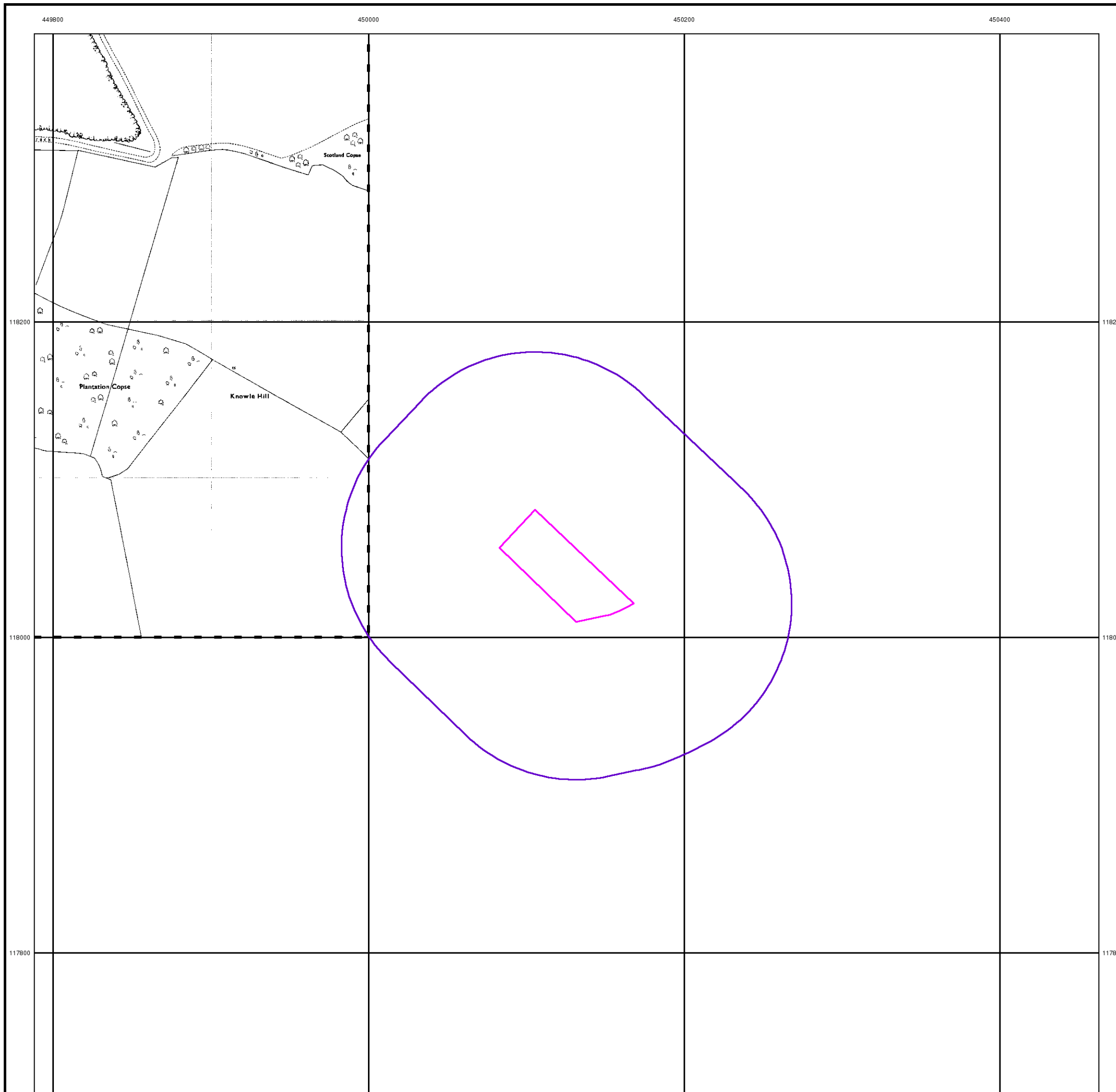


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Site Details

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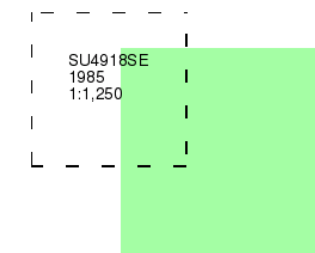
Additional SIMs

Published 1985

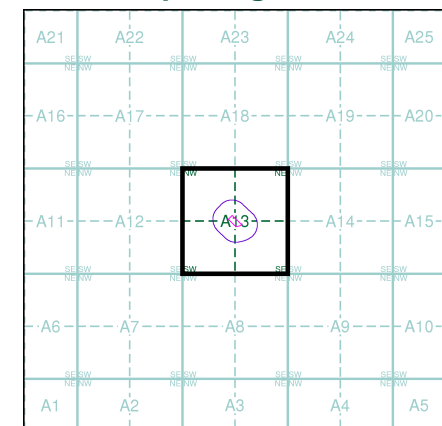
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13

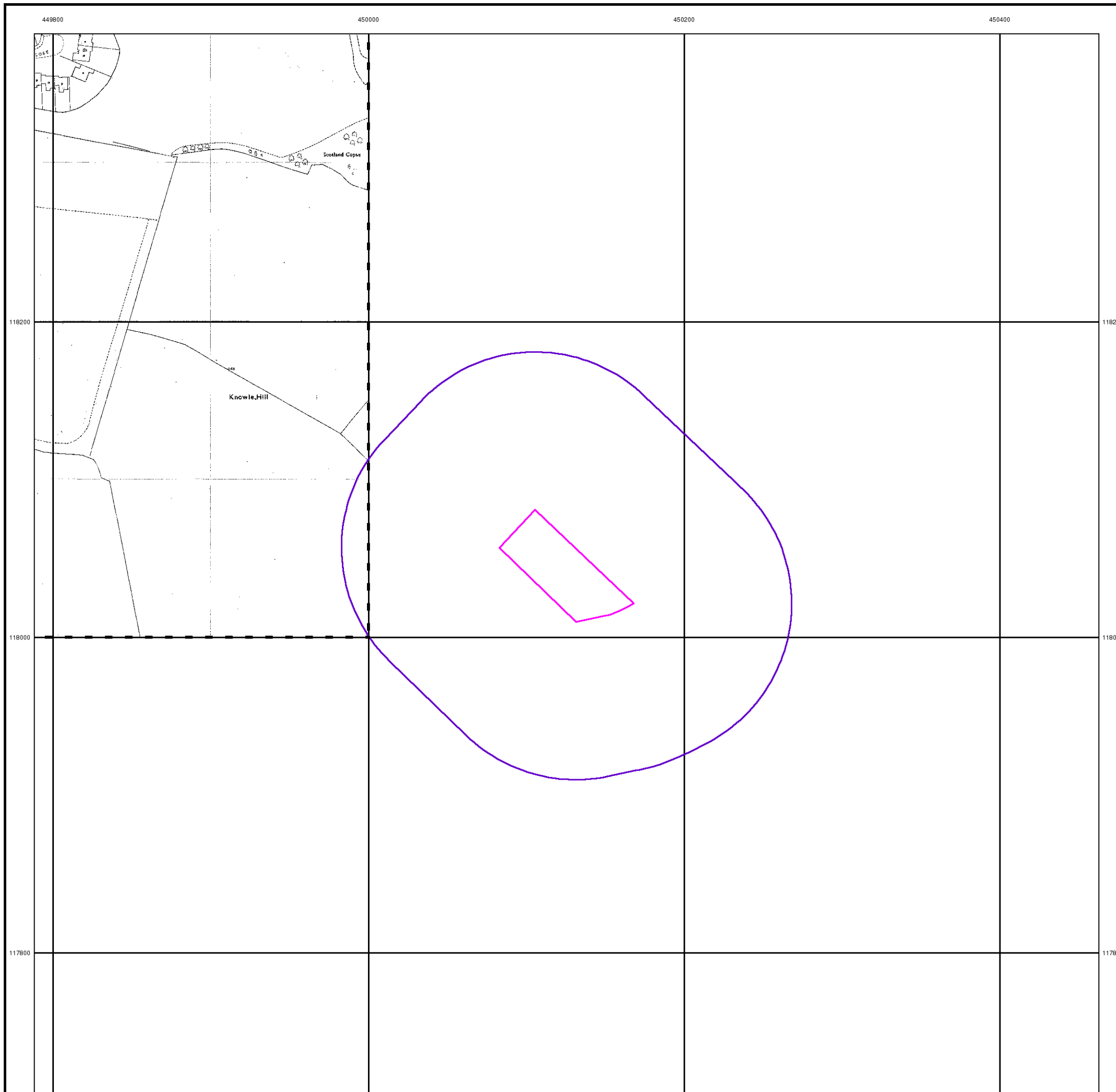


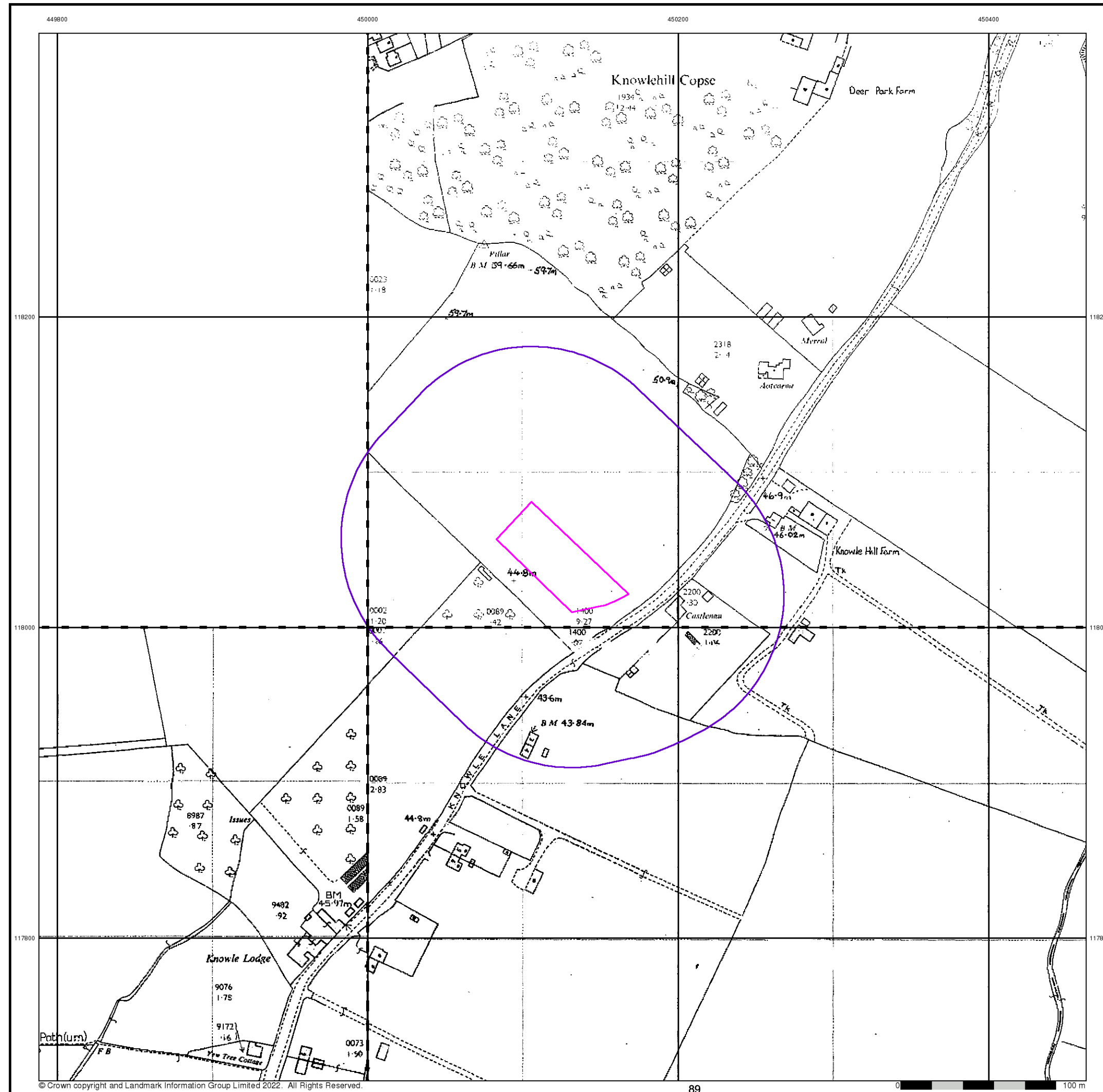
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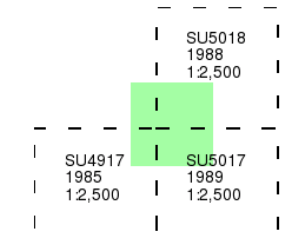
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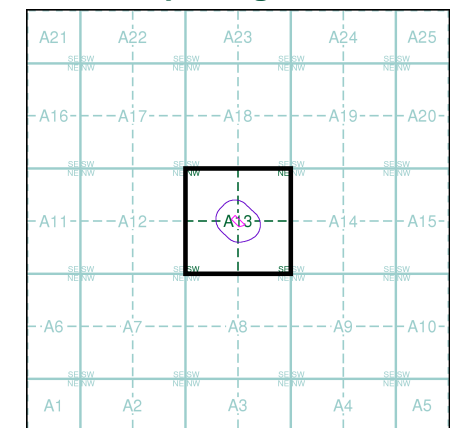
Additional SIMs
Published 1985 - 1989
Source map scale - 1:2,500

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Map Name(s) and Date(s)



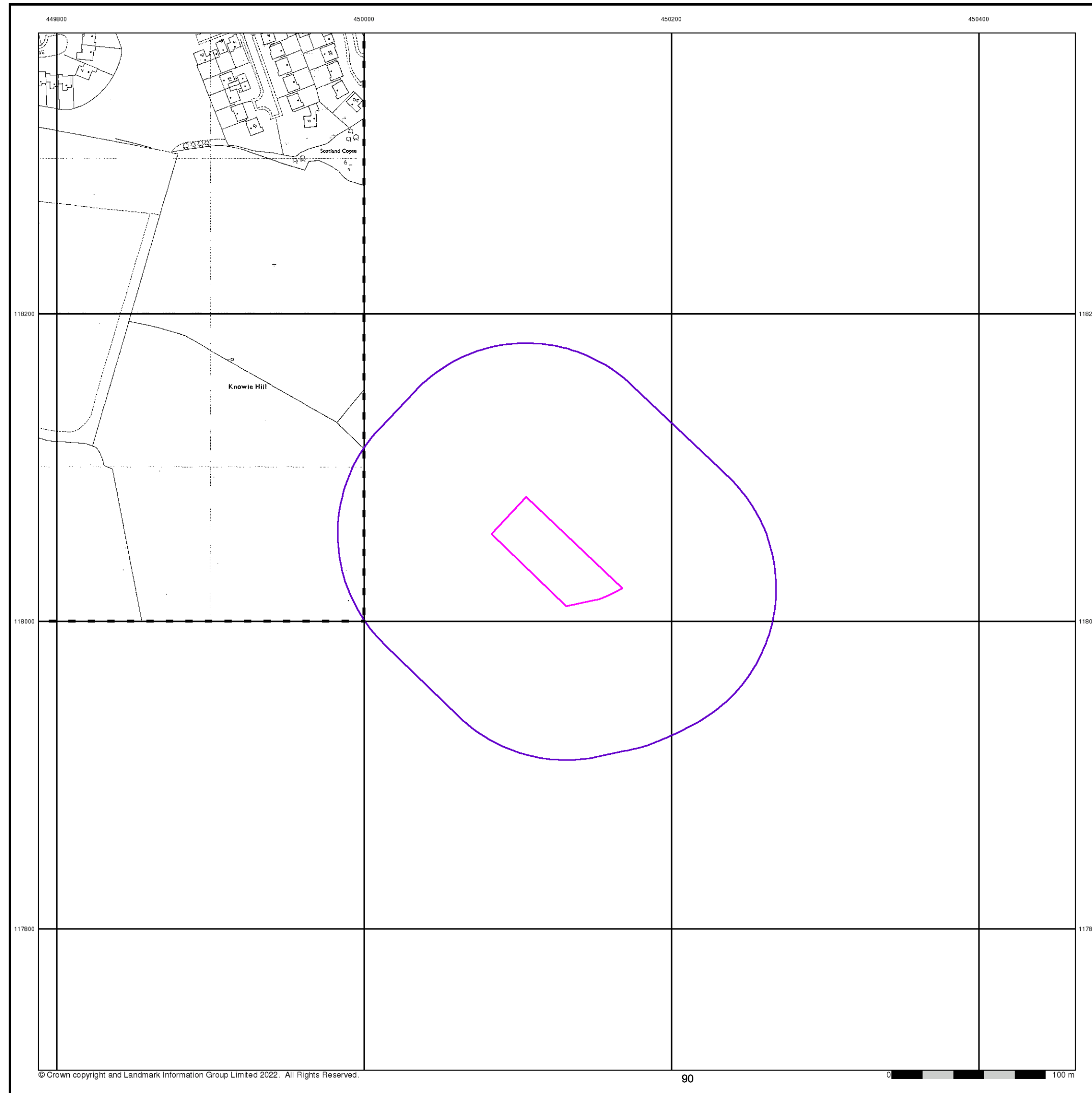
Historical Map - Segment A13



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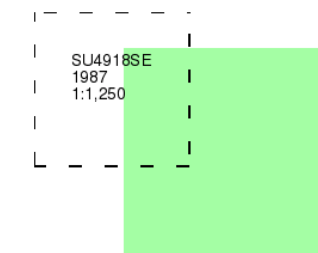
Additional SIMs

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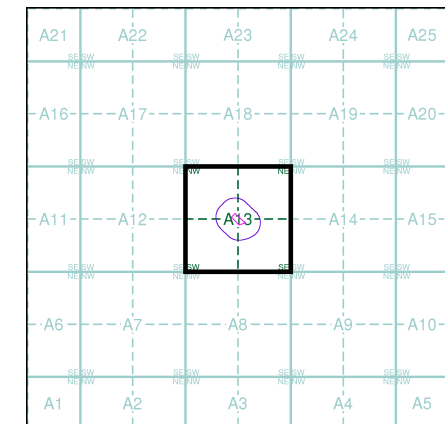
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

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 Slice: A
 Site Area (Ha): 0.27
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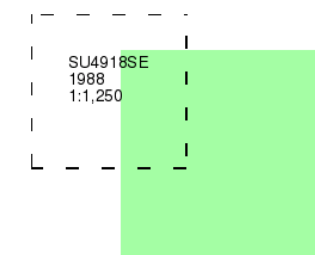
Additional SIMs

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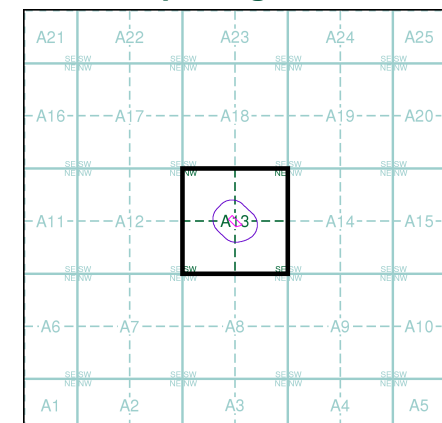
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Map Name(s) and Date(s)



Historical Map - Segment A13

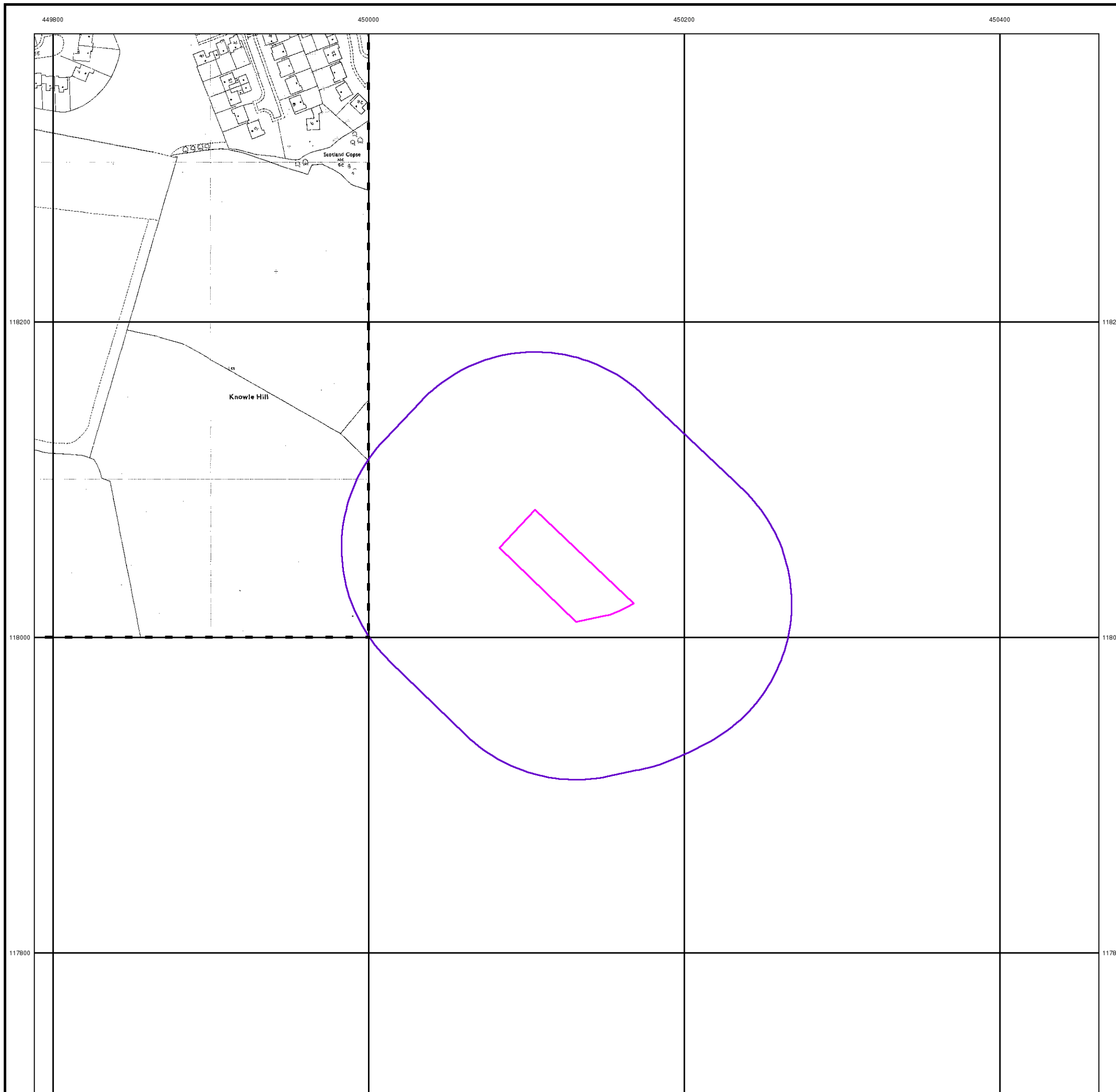


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Site Details

Land at Knowle Lane, Horton Heath, Eastleigh, SO50 7DZ



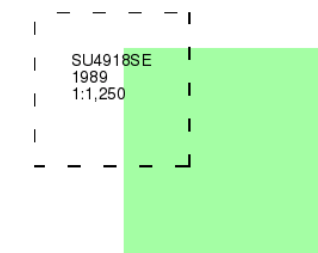
Ordnance Survey Plan

Published 1989

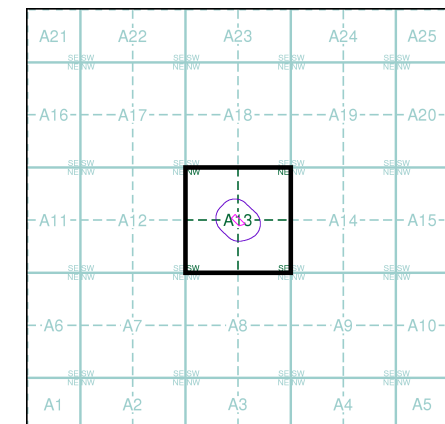
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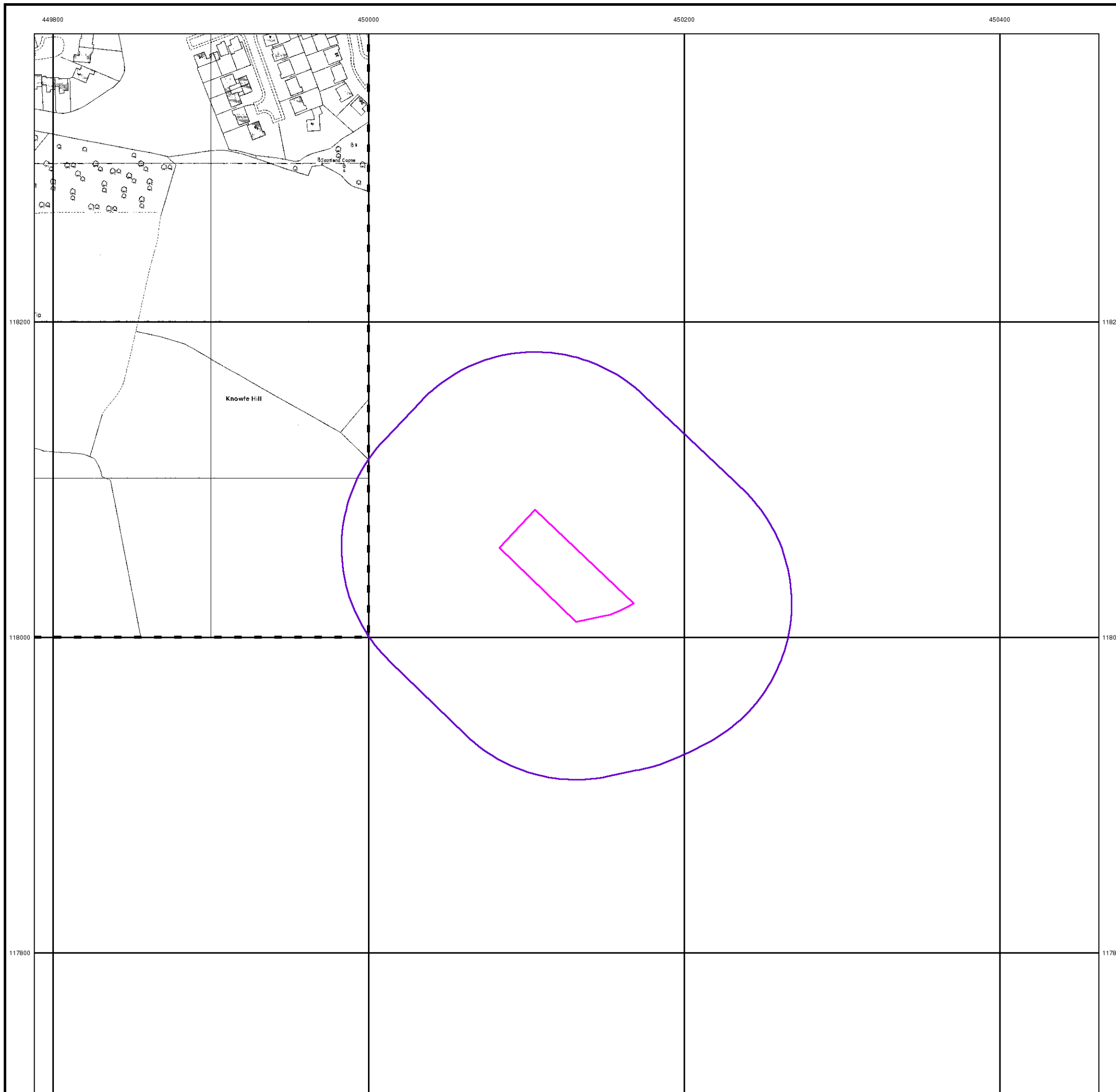


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Site Details

Land at Knowle Lane, Horton Heath, Eastleigh, SO50 7DZ



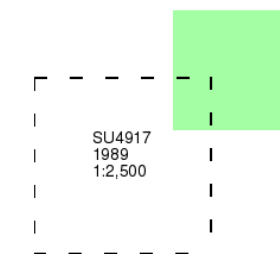
Additional SIMs

Published 1989

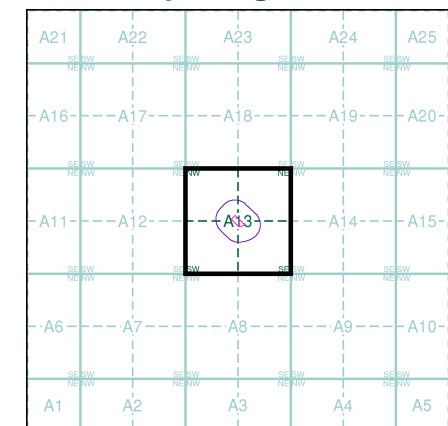
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Map Name(s) and Date(s)



Historical Map - Segment A13

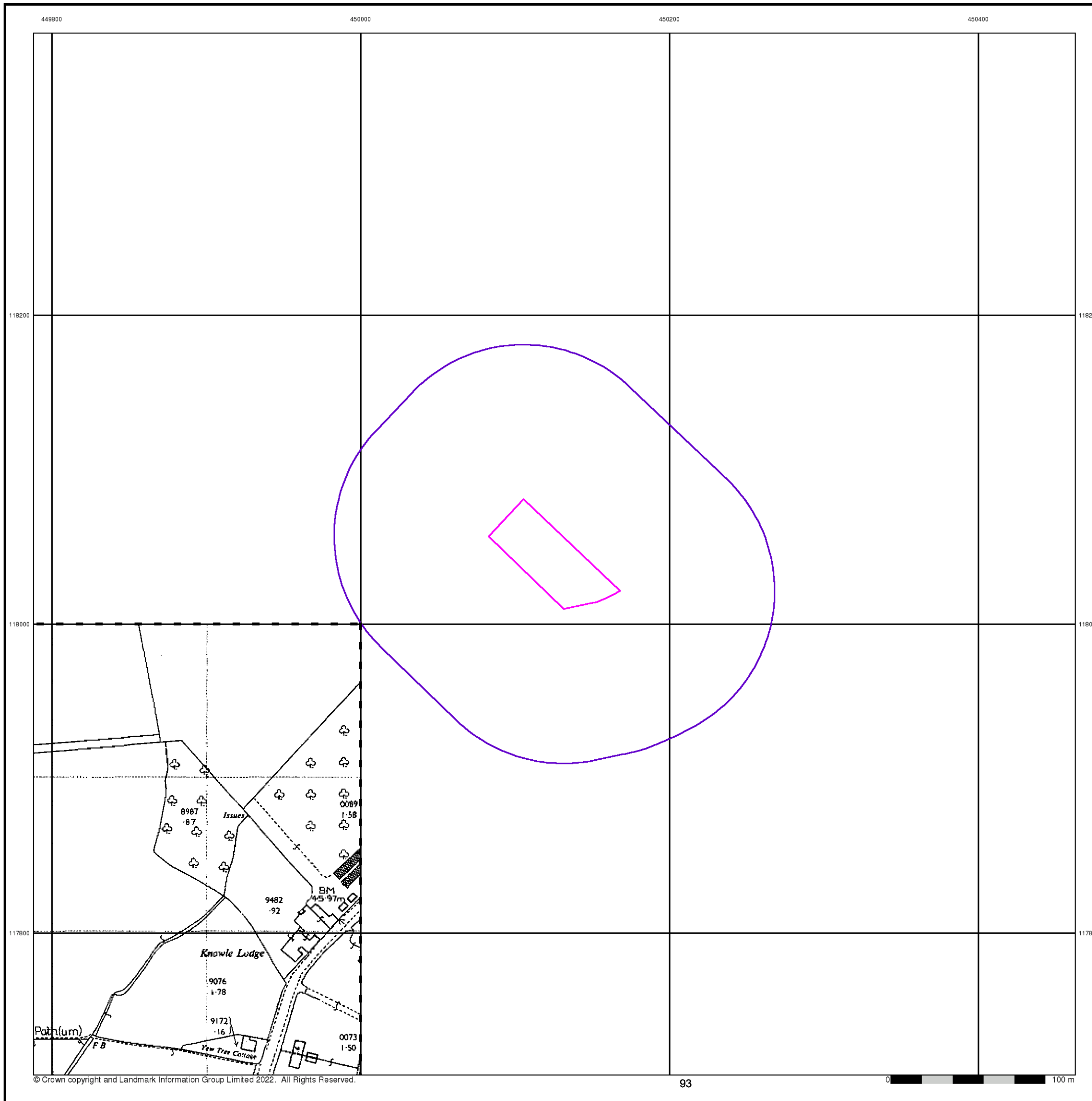


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Land at Knowle Lane, Horton Heath, Eastleigh, SO50 7DZ



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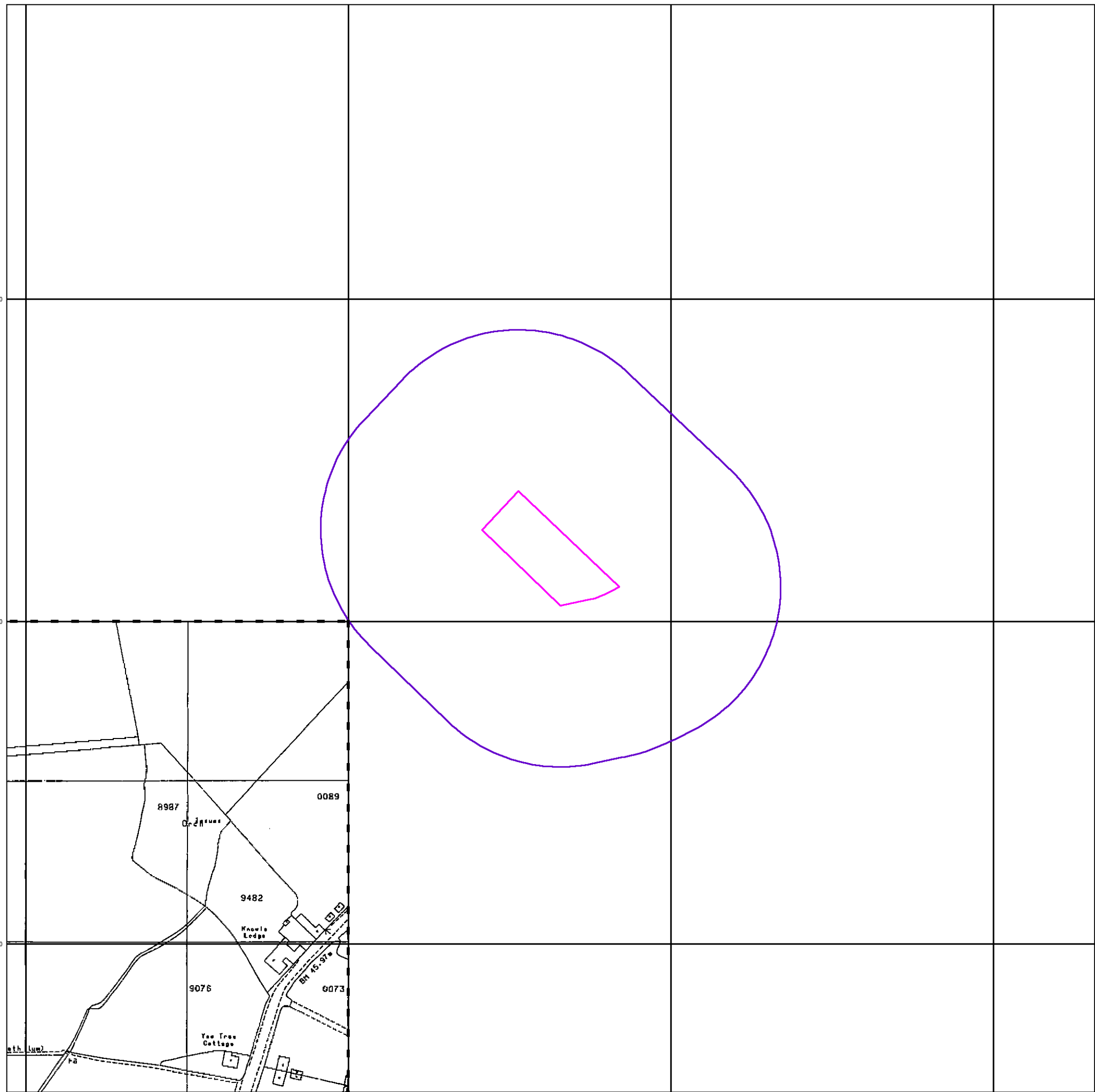
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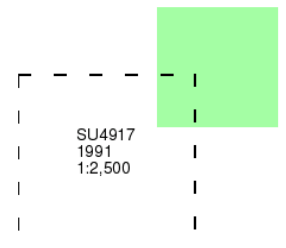
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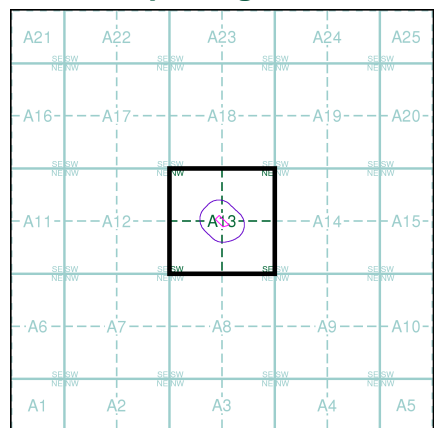
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Map Name(s) and Date(s)



Historical Map - Segment A13



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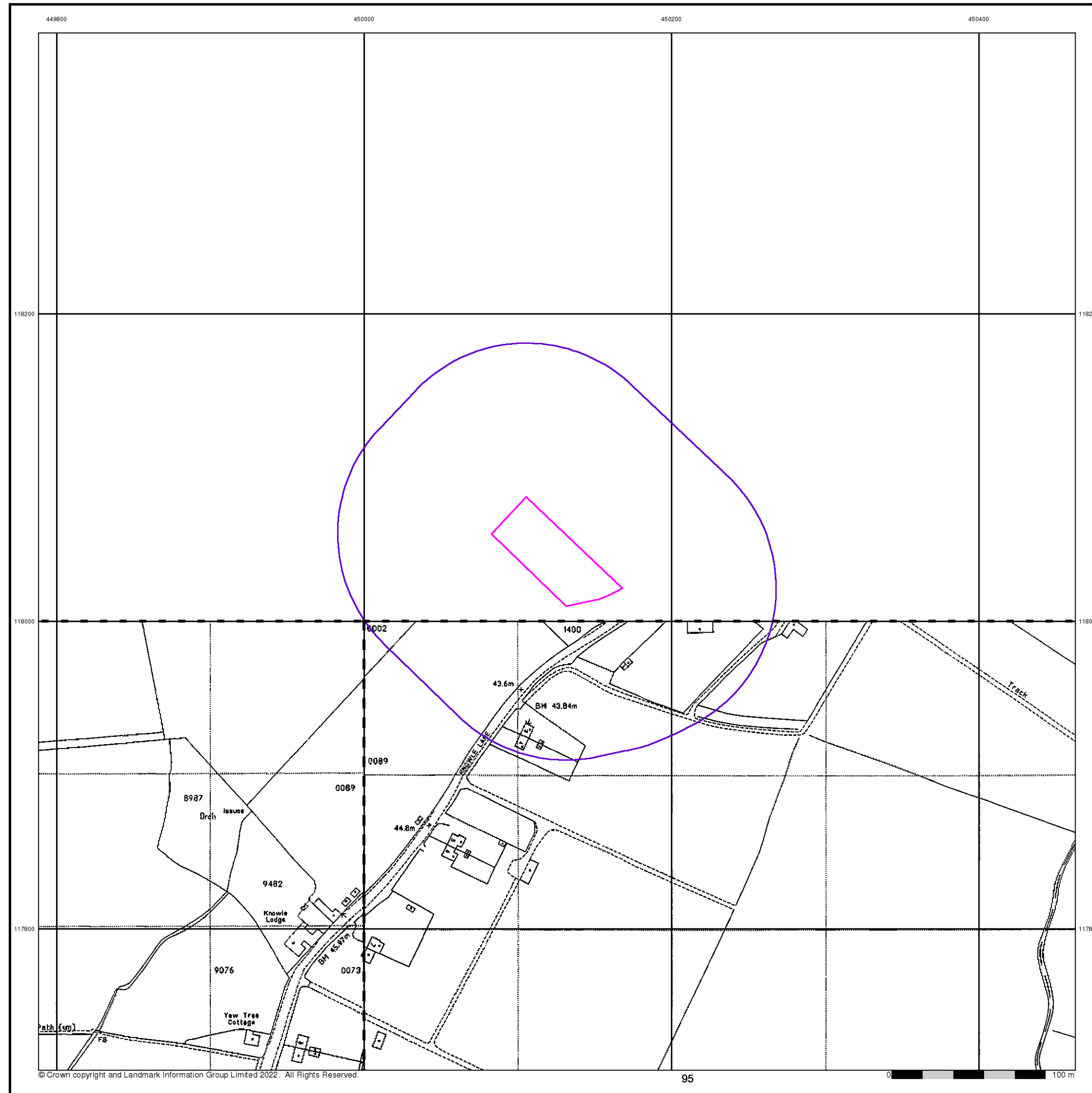
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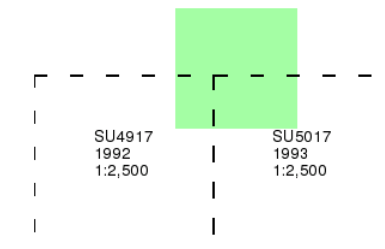
Large-Scale National Grid Data

Published 1992 - 1993

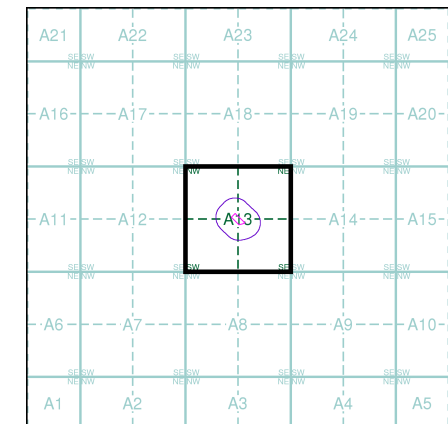
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13

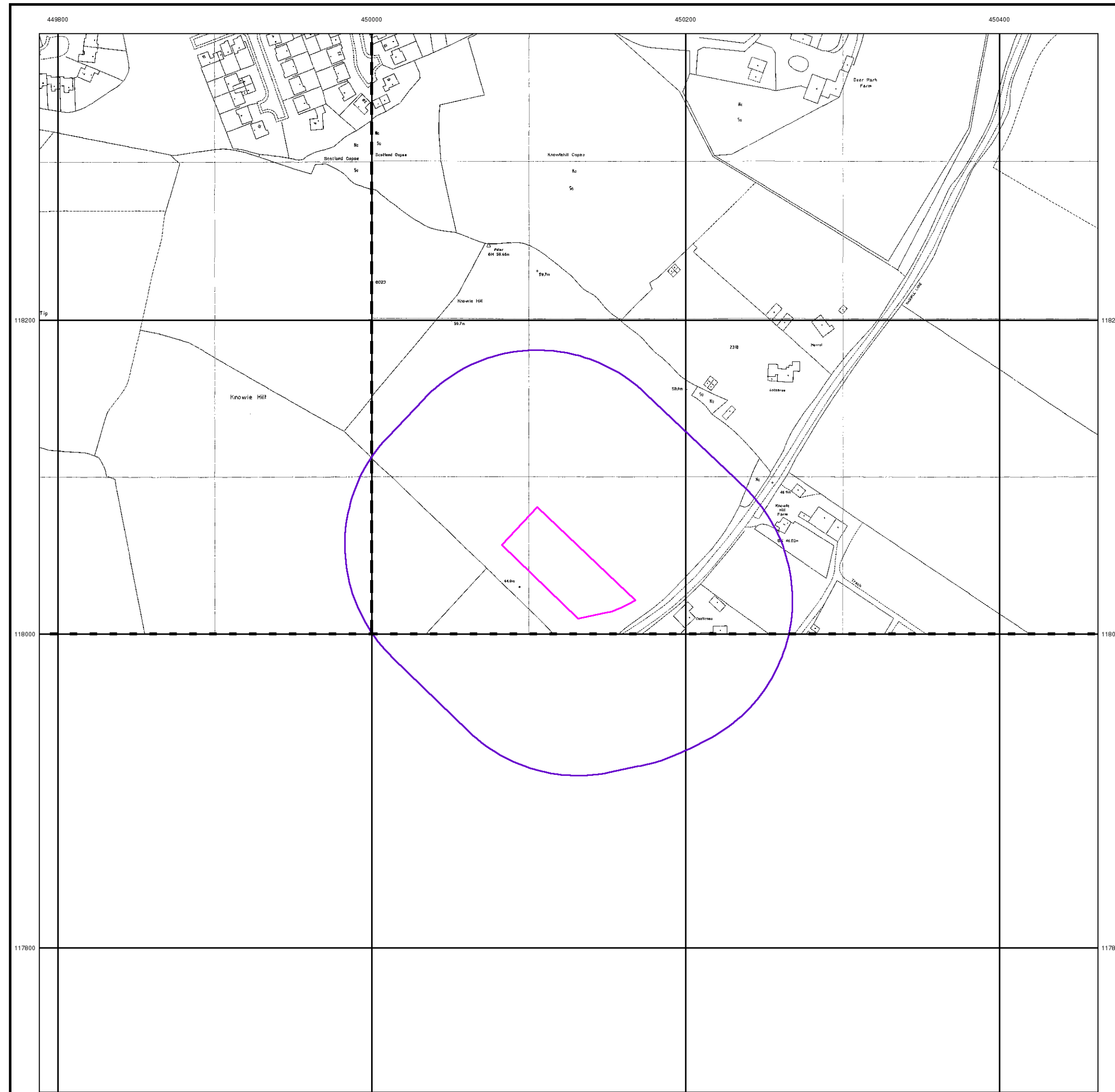


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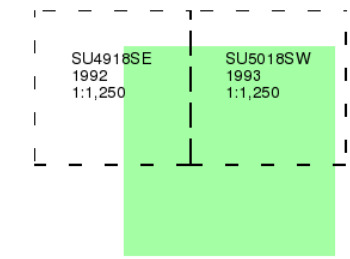
Land at Knowle Lane, Horton Heath, Eastleigh, SO50 7DZ



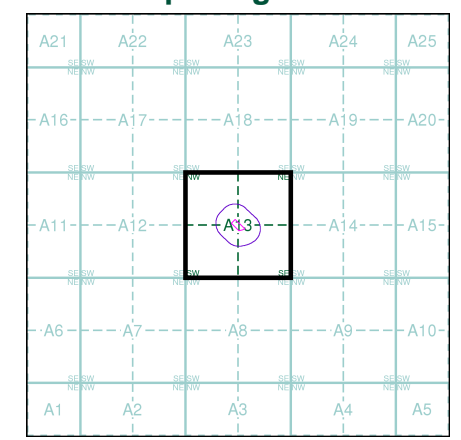
Large-Scale National Grid Data Published 1992 - 1993 Source map scale - 1:1,250

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

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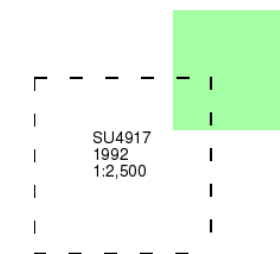
Additional SIMs

Published 1992

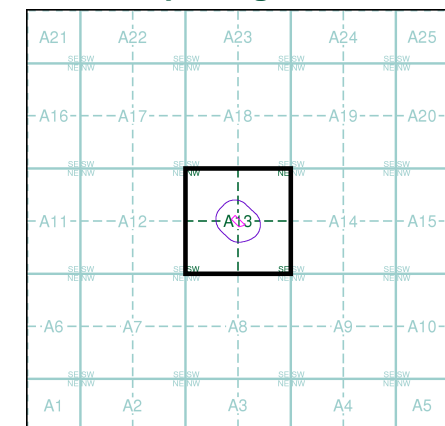
Source map scale - 1:2,500

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Historical Map - Segment A13

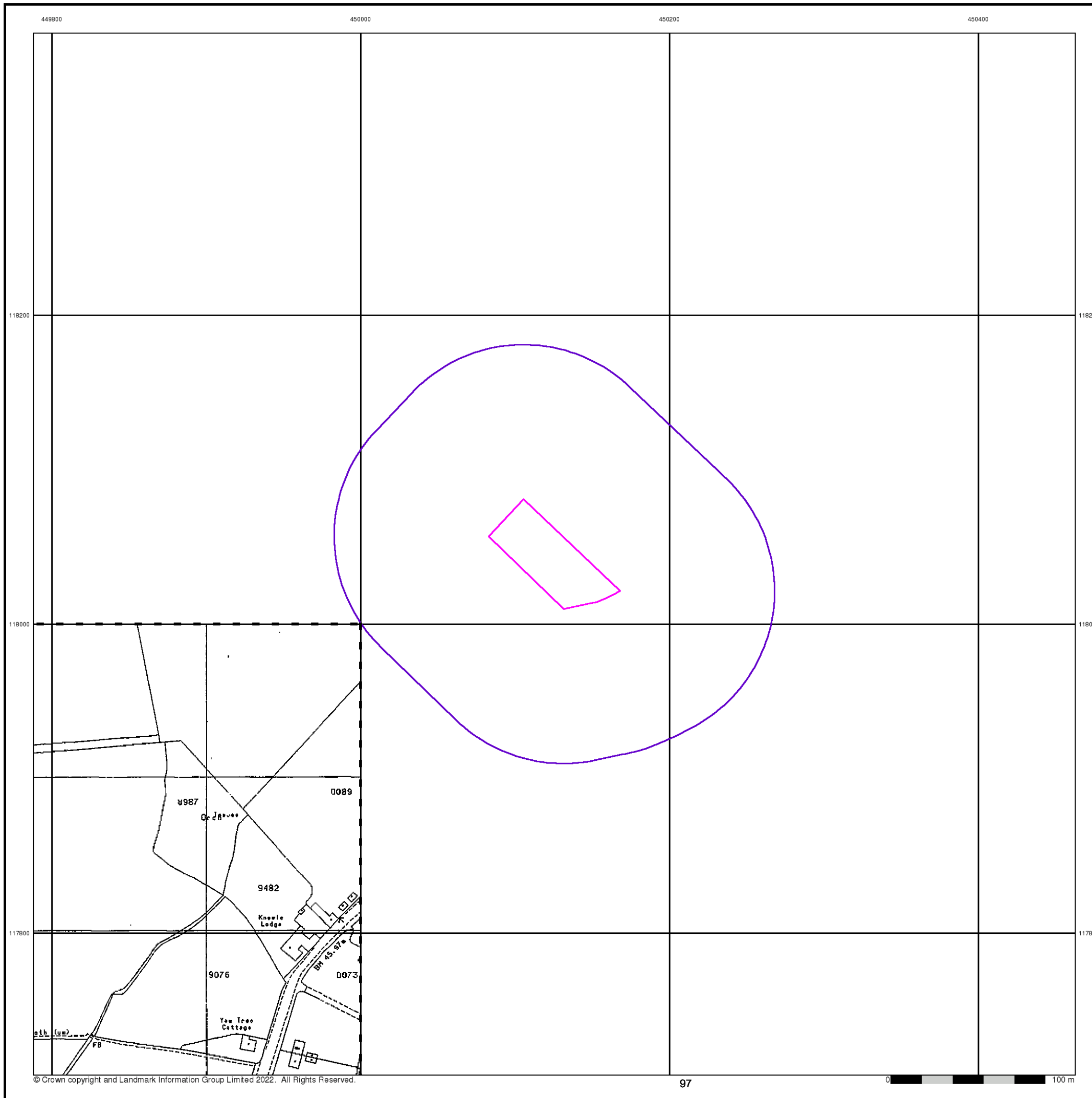


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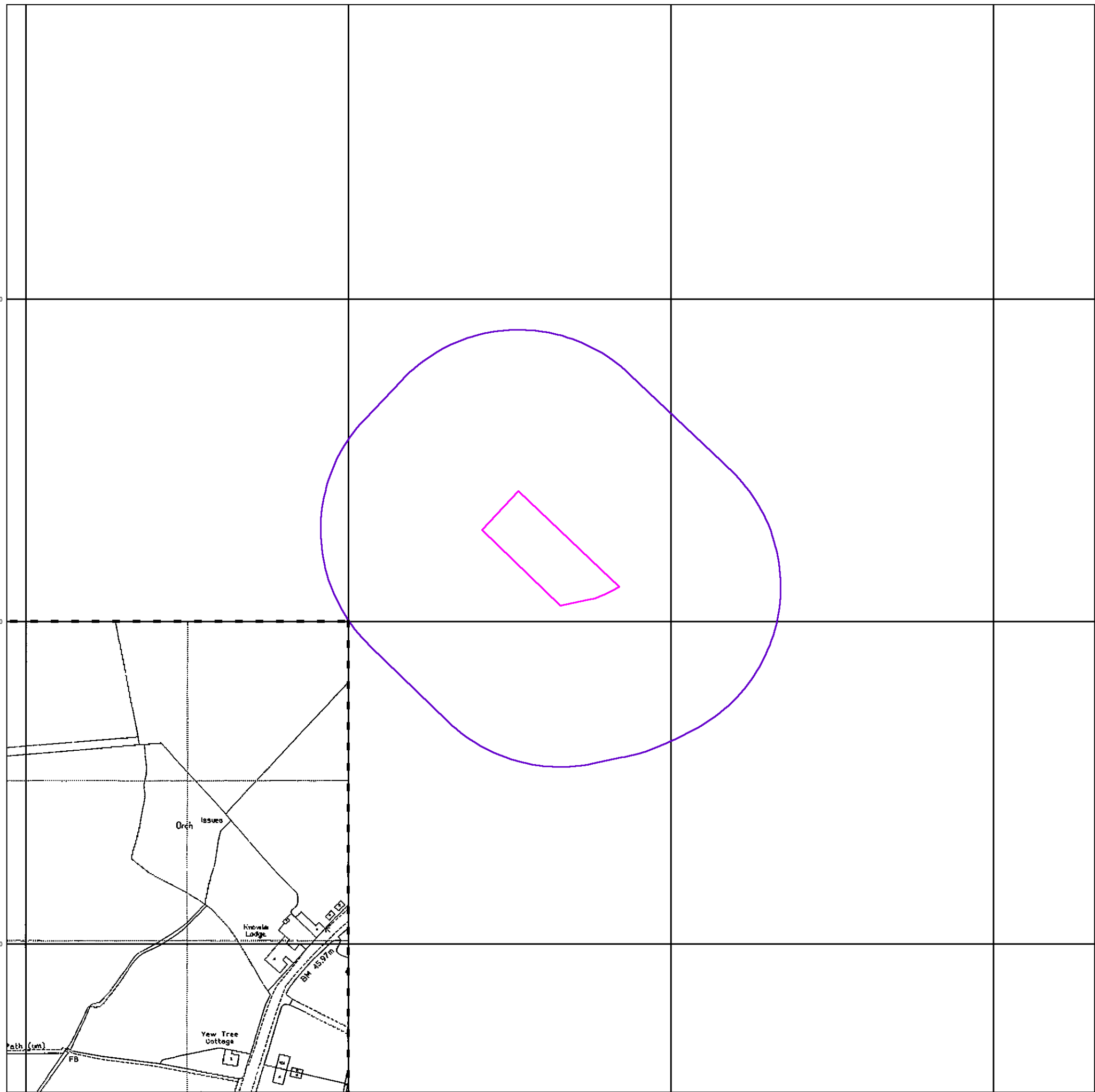
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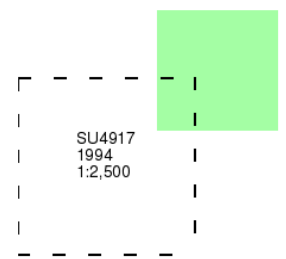
Large-Scale National Grid Data

Published 1994

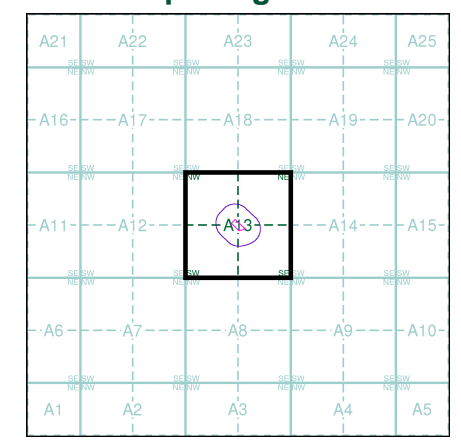
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 304449867_1_1
 Customer Ref: CDS-CC-1006
 National Grid Reference: 450120, 118040
 Slice: A
 Site Area (Ha): 0.27
 Search Buffer (m): 100

Site Details

Land at Knowle Lane, Horton Heath, Eastleigh, SO50 7DZ

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

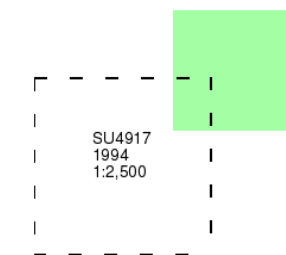
Large-Scale National Grid Data

Published 1994

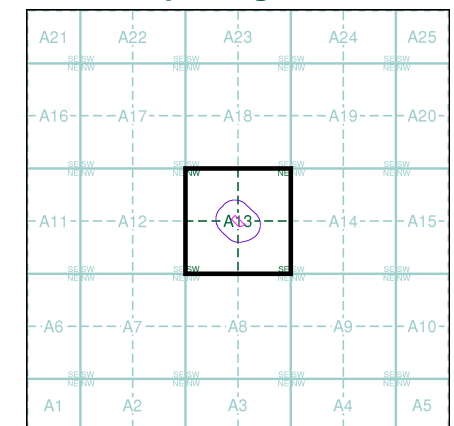
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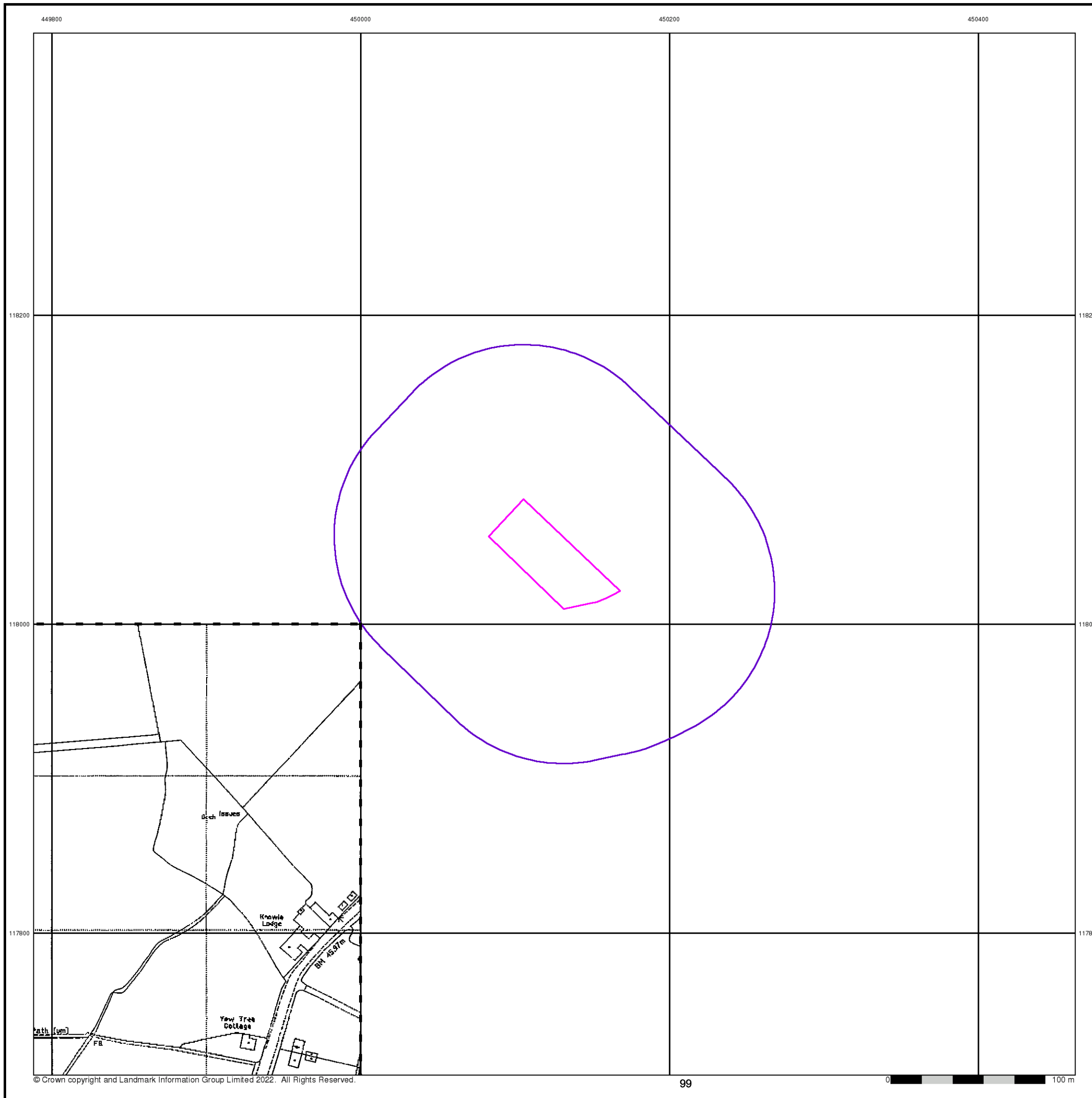


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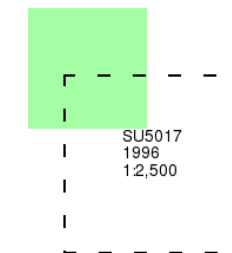
Large-Scale National Grid Data

Published 1996

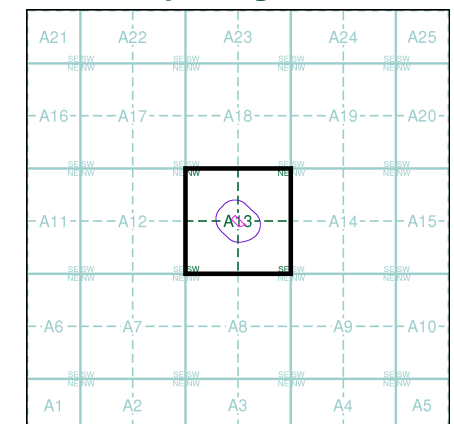
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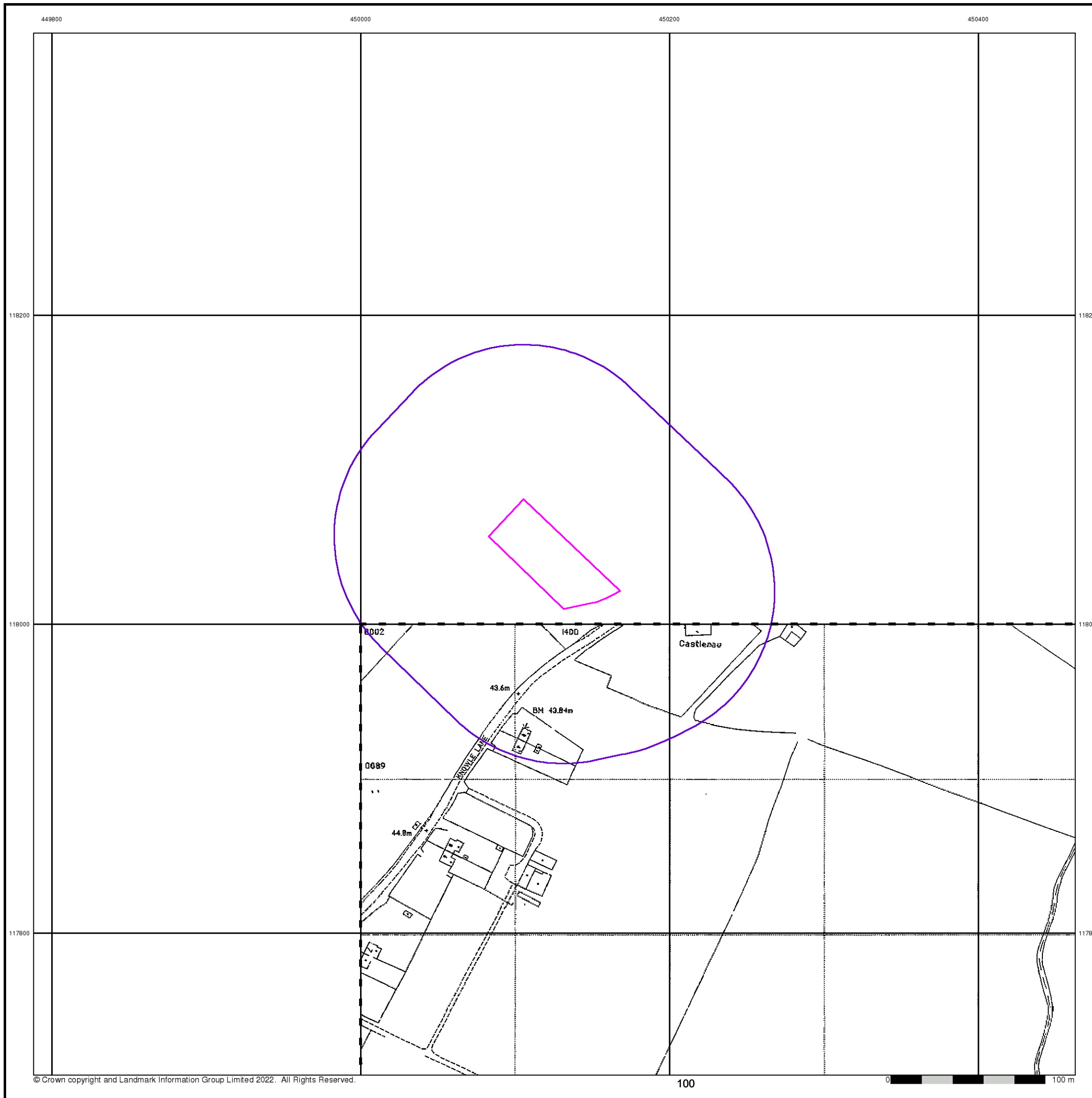


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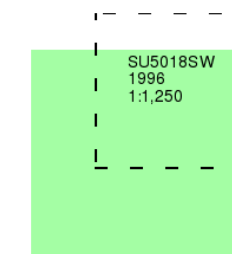
Large-Scale National Grid Data

Published 1996

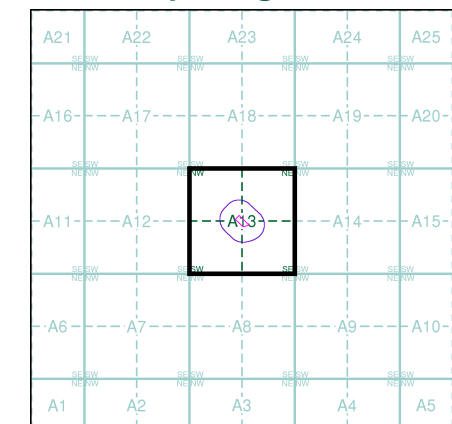
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Map Name(s) and Date(s)



Historical Map - Segment A13

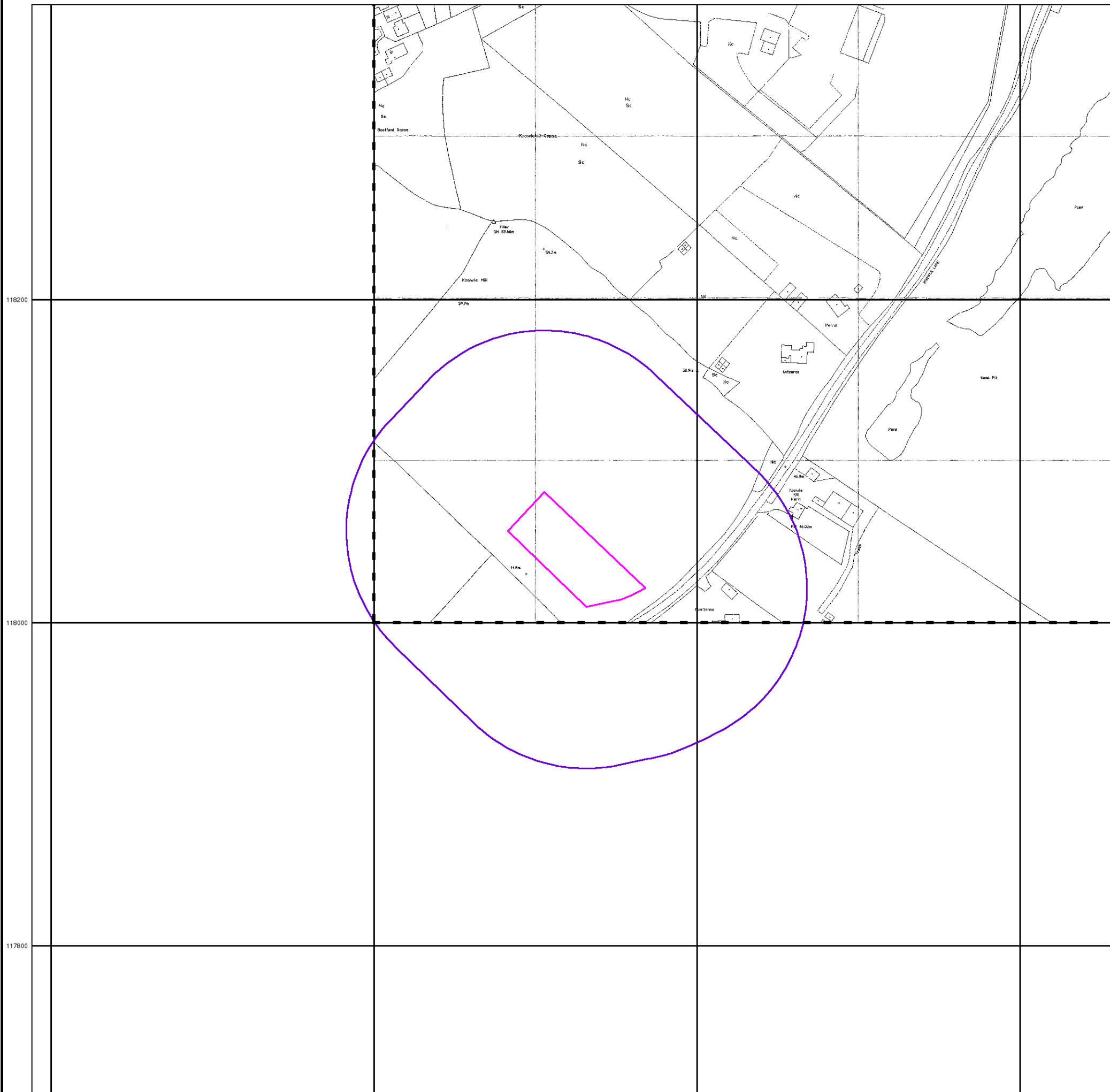


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Site Details

Land at Knowle Lane, Horton Heath, Eastleigh, SO50 7DZ



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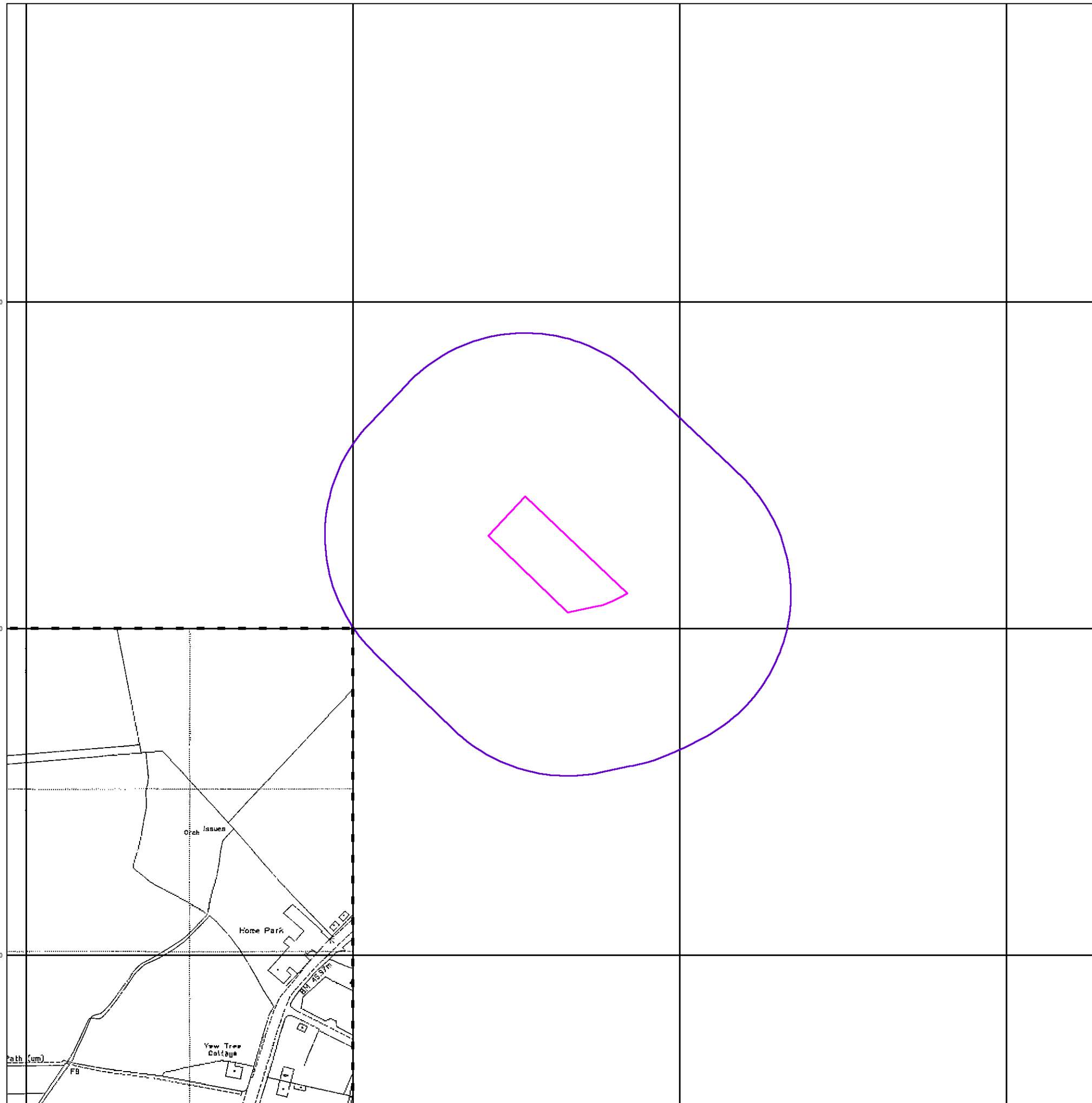
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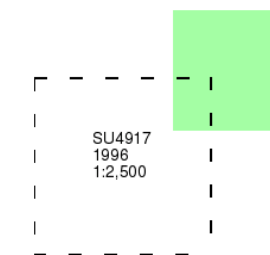
Large-Scale National Grid Data

Published 1996

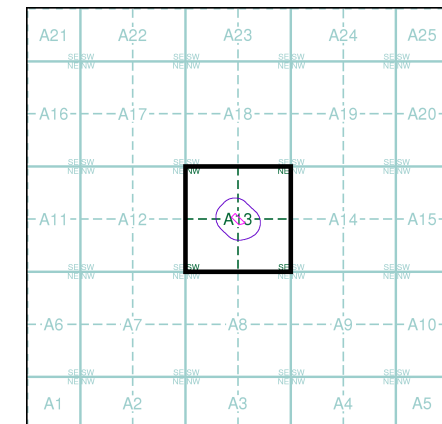
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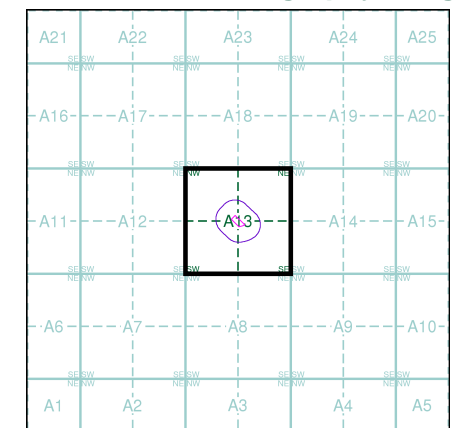
Historical Aerial Photography

Published 1999

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



Historical Aerial Photography - Segment A13



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FULL COUNCIL – 16 JANUARY 2023

TWYNAMS FIELD PROJECT PROPOSAL

1 RECOMMENDATION

- 1.1 To support the project proposals outlined below; and
- 1.2 To agree the allocation of funds from the Lapstone Playing Fields budget as set out in paragraph 7.

2 INTRODUCTION

- 2.1 Twynams field is situated to the southwest of Knowle Park. Measuring approximately 3.75 acres in size it was gifted to the Parish Council in approximately 2010 and was used by the previous landowner to graze cattle. From 2021 the farmer no longer required the usage for grazing. This instigated an internal review of how this land should be used and managed.
- 2.2 In seeking to examine how the Council should look to best manage the site, the Operations Manager commissioned an independent Ecological Survey. This was carried out by Eastleigh Borough Council in June 2021.
- 2.3 Following the site visit, the Ecologist reported that there was no evidence of protected species and that opening the field for community access as well as environmental improvements would be beneficial to the site as a whole. As such in 2021 the Full Council approved the change of use of this site from a closed grazing field to allow public access.
- 2.4 Residents were informed of this decision and a mowed pathway was created.

3 PROJECT OVERVIEW AND BENEFITS

- 3.1 It is proposed that the rewilding is managed as one compartment using naturalistic management to mimic natural processes as far as is practical under the project title Wilding Twynams.
- 3.2 Hampshire and Isle of Wight Wildlife Trust (HIWWT) as part of the Greening Campaign have offered their support via their Engagement Officer.
- 3.3 The project aims to provide a wider public experience by creating volunteer opportunities in the shape of a dedicated volunteer group/wardens as well as drawing in volunteers from existing groups. This would also meet one of the requirements for Green Flag status which the Council might wish to apply for in the future.
- 3.4 It will also provide additional benefits that are not immediately measurable for example:
 - Improvements in biodiversity
 - Improvements in water quality
 - Biological carbon sequestration
 - An increase in the number and diversity of people utilising the space

- An opportunity to engage people with nature and promote the health benefits of being in nature as well as the Council’s overall environmental preservation objectives.
- Improvements in public health leading to an overall reduction in health spending in the Borough

3.5 This proposal would contribute to council policy by:

- taking action to redress biodiversity loss
- taking action to limit climate change
- supporting the objectives of the Community Engagement Action Plan by creating volunteer opportunities, engaging with local schools and xxx

3.6 It would contribute to government policy by:

- contributing to the 25-year plan for wildlife
- providing better access to natural landscapes.

4 PREFERRED MANAGEMENT OPTIONS

4.1 Following the site visit with HIWWT’s Engagement Officer, naturalistic management is the most preferred management option for this site. This allows natural processes to replace human management of sites where possible. It forgoes direct control of landscapes to achieve specific targets in favour of reaping the diverse benefits of allowing nature to act more freely. The benefits of naturalistic management can include biodiversity restoration and conservation, flood mitigation, carbon storage and biological carbon sequestration, and a space for recreation as well as physical and mental health recovery.

4.2 Naturalistic management can be implemented in a variety of ways, allowing management strategies to be tailored to specific site conditions and contexts. Given the history of the site and its previous usage, as well as consideration of wildlife and residents this would seem the most sensitive option.

4.2.1 As a Passive strategy:

- Management could be minimised or removed entirely, and nature allowed to develop without any prior ecological remediation or ongoing management. The likely outcome of this would be the development of a relatively even-aged scrub. While this might benefit a small number of species, it would be with the loss of many others and at the opportunity cost of creating a more diverse vegetation structure that includes species-rich grassland and wildflowers.
- “Total abandonment can produce a ‘succession paradox’, whereby plant diversity declines as scrub and woodland develop”¹
- This form of rewilding would probably result in a loss of biodiversity as well as decreasing

¹ <https://www.plantlife.org.uk/uk/our-work/policy/rewilding>

public access as dense scrub takes over.

4.2.2 **An Active strategy:**

- Alternatively, some ecological remediation could be implemented in addition to reducing evasive maintenance. This could include ecological restoration and enhancement e.g., seeding native plant species, planting under-represented tree species and creating new habitats such as a pond and reptile habitat as well as bird nesting and bat boxes.
- This could encourage more wildlife which would play a particularly important role in the ecology of the site. Therefore, naturalistic management could include the encouragement of wild and possibly domestic herbivores, with humans taking the place of predators to control overall numbers and taking the place of the big animals that cannot be reintroduced.
- This is therefore the preferred option that is proposed for Twynams as it has the greatest potential for increasing biodiversity as well as increasing public access.

4.3 Naturalistic management is a better option than just planting trees. Planting trees creates a plantation, not a woodland. While a plantation may sequester carbon quickly it is susceptible to disease (much of the ash present in the Parish is now dying from ash dieback and the sequestered carbon being released) or wind throw, does not provide species diversity and incurs higher maintenance costs. A woodland arising from naturalistic management is diverse in age and species giving better long-term biological carbon sequestration and addressing the climate emergency. However, it may be beneficial to do some tree and wildflower planting, particularly fruit-bearing species, in the preparation stage of the proposal to ensure that a diverse range of seeds is available as the landscape develops.

5 ECOLOGICAL IMPLICATIONS

5.1 Rewilding pillar (spaces for nature) of the Greening Campaign aims to: -

- To conserve and enhance nature;
- Support sustainable places;
- Promote environmental awareness, knowledge, learning and engagement.

5.2 This proposal could significantly contribute to all of these objectives, for example by protecting and enhancing already established habitats and strengthening their resilience; achieving biodiversity net gain through the creation of new habitats; and increasing society's awareness of the importance of nature and how this can support health and wellbeing. The proposal would present a major opportunity to develop this area for more equitable usage, by creating wider, free public access to a natural space, enabling both public health benefits to the local community.

5.3 This proposal would provide a fantastic platform to demonstrate to residents that the Council is taking seriously the current climate and biodiversity emergency and taking visible and appropriate action to address these issues where and when opportunities arise.

5.4 As a greening campaign project there will be a strong public engagement element as part of

the core objectives: environmental awareness, knowledge, learning and engagement.

- 5.5 Depending on the funding stream it is hoped that there would be opportunities for open public access and engagement, guided tours and school visits as well as volunteering opportunities monitoring the wildlife.

6 EQUALITY AND DIVERSITY IMPLICATIONS

- 6.1 There is a growing body of evidence to show that time spent in open green spaces provides significant benefits to physical, mental and social health.
- 6.2 Providing access to a nature site could provide opportunities for people to improve their overall well-being and specifically, physical, and mental health. The Council's Community Development Officer would utilise the site to set up volunteering/warden opportunities which in turn could help to tackle social isolation, as well as providing physical activity and learning opportunities (including work with schools).
- 6.3 Further engagement opportunities could involve the provision of interpretation, outdoor classrooms, and guided walks which would support the aims of the Greening Campaign, bringing all sections of society together with the overall aim to reduce carbon emissions and support the natural world.

7 FINANCIAL IMPLICATIONS

- 7.1 As a large majority of the project will be created via material already in use in-house and donated materials, the project requires a limited budget. As a similar project will take place at Lapstone Playing Fields, it would be financially prudent to purchase plants for both sites at the same time from the Lapstone budget.
- 7.2 The Lapstone Playing Field budget currently has £5,130 remaining in this current financial year. Should members agree the project budget (£3,000) this will leave £2,130 in the Lapstone budget.
- 7.3 Costs associated with the project include: -
- Creation of pond = £200 (EBC donated stock tanks) cost of soil needed
 - Information boards = £0 (Clerk donated blackboards, A-frames made in-house)
 - Signage = £600 (dogs will be asked to be kept on leads)
 - Reptile habitat creation = £0 (to use in-house material)
 - Trees = £800
 - Other planting = £800
 - Insect/bird boxes = £200
 - Contingency = £400

Total required = **£3,000**

8 CONCLUSION

- 8.1 This proposal would provide multiple environmental benefits, helping to mitigate the climate and biodiversity emergency.
- 8.2 This proposal would help achieve the Council's aim to be carbon neutral by 2035 as well as

meet objectives set in the rewilding pillar of the Greening Campaign, by providing opportunities for biodiversity net gain, and environmental education and engagement opportunities.

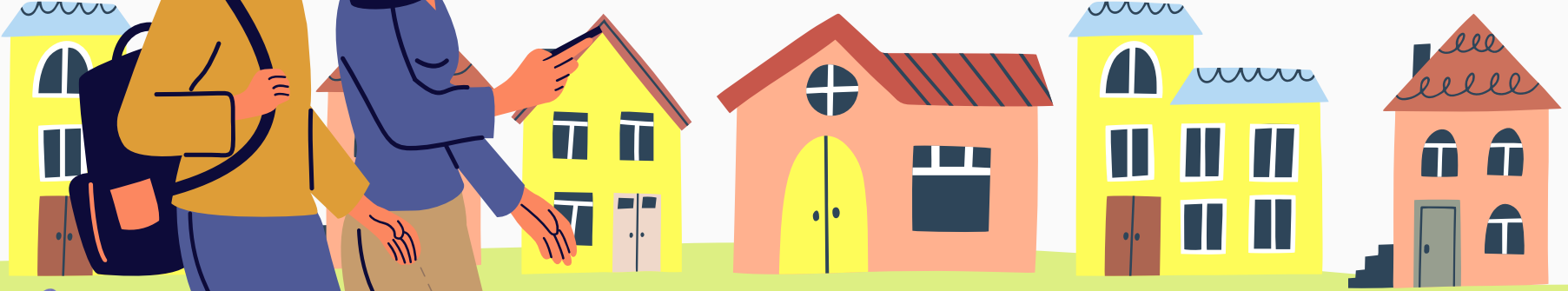
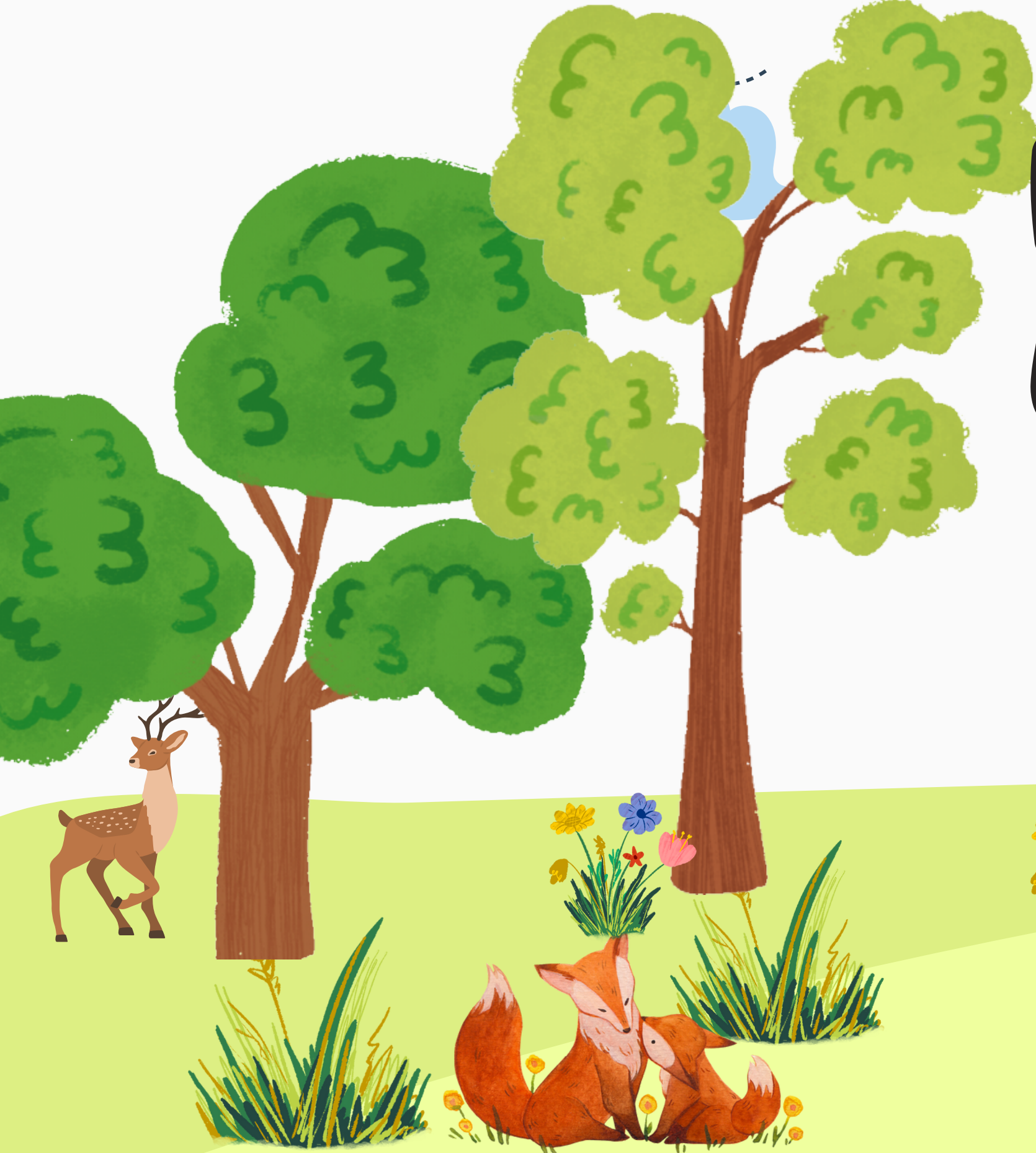
- 8.3 Rewilding will take place in-house, therefore requiring little financial outlay from the Council.

For Further Information Please Contact:

Melanie Stephens, Clerk

clerk@fairoak-pc.gov.uk

Twynams Field Nature Enhancement





Our goal for enhancing this area

reconnecting people with nature & promote wellbeing

create more diverse spaces for nature

attract a greater variety of wildlife

educate residents on importance of natural world

particularly young people



The importance of protecting local wildlife and nature spots

Pollination

Nature benefits humans too!

Reduce carbon emissions

Increase bi-diversity & wildlife variety





Let's Start

Ecological assessment/audit - done (8 September 2021)

Open access - done (January 2022)

Mow informal pathway - done (ongoing)

Planting trees - Jan 2023

Planting edibles along path - Jan 2023

Community engagement/volunteer group - Jan/Feb 2023

Create ponds - Feb 2023

Sow wildflowers - Feb 2023

Create reptile habitat - March 2023

Plant wild herbs/flowers - April 2023

Install wildlife audits chalkboards - May 2023

Install signage - May 2023





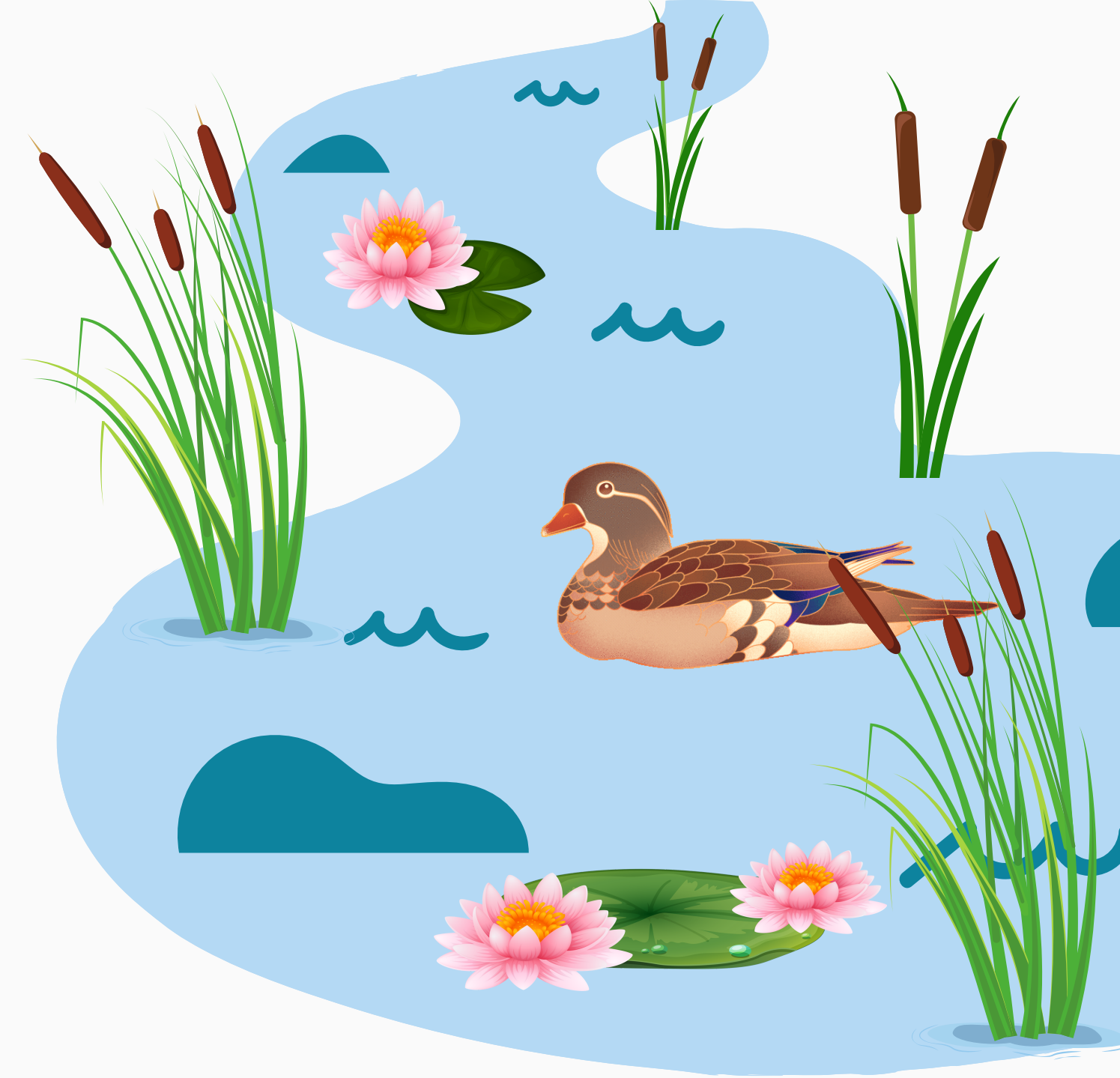
The Pond



Ponds are vital to the environment and to the continued survival of wildlife. They provide shelter, water, and a safe location for reproduction.

It is said that ponds support up to two thirds of all freshwater species in the UK ranging from the common frog, beetles, mayflies and newts to name a few!

EBC have donated 3 stock tanks from Stokepark Farm which will be used for pond creation



Dragon garden ..creating a respite for reptiles

Many of the places frogs, lizards, slow worms and snakes live have been destroyed by over development. By making small changes such as providing a pond, log pile or warm compost area, we can create spaces for these great creatures.

Creating a dragon garden is a great way to teach children about the wonders of cold-blooded life.





Plant fruit trees

Fruit trees and shrubs provide excellent habitats for a range of insects, birds and mammals. These sometimes overlooked species make an important contribution to biodiversity, as well as a feast for foragers



Wildflowers and grasses for pollinators



Recent studies show widespread losses of essential pollinators in the UK.

Planting wildflower meadows provides essential nectar for the survival of bees and other insects.

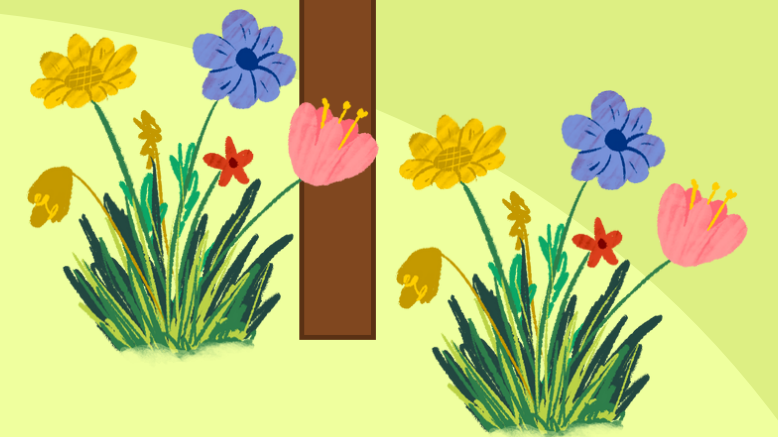
Creating insect hotels would be a great exercise with local residents/children



Community



Interpretation and Information signage, together with chalkboards for community wildlife audits will let all who visit know what animals, insects and plants that can be found in the field and how to help protect them.

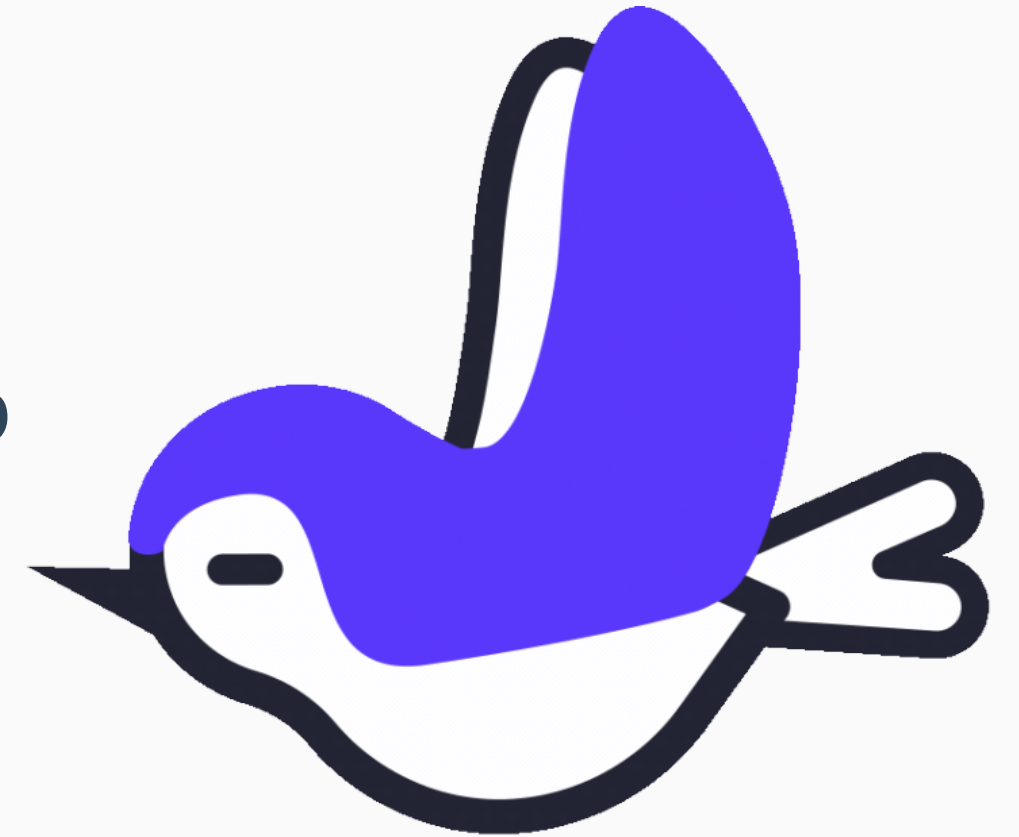




Budget

Proposed budget, using existing underspends: -

Trees	£800
Pond area	£200
Wildflower seeds/other planting	£800
Bug/bird box material	£200
Signs	£600
Repile habitat	£0
Willow dome	£tbc
Contingency	£400
Total	£3,000



FULL COUNCIL – 16 JANUARY 2023

ELECTRIC VEHICLE (EV) CHARGER INSTALLATION AT PARISH OFFICES, WOODLAND & HORTON HEATH COMMUNITY CENTRES

1 RECOMMENDATIONS

- 1.1. That the Council support and approve the project proposals outlined below; and
- 1.2. That the Council agree delegated authority to the Clerk and Deputy Clerk to undertake all required administrative and legal tasks pertaining to the installation of EV Chargers.

2 BACKGROUND

- 2.1. Transport is the largest contributor to greenhouse gas emissions (GHG), with road transport alone accounting for almost a quarter of our total emissions in 2019.
([Transport decarbonisation plan - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/policies/transport-decarbonisation))
- 2.2. Transport is the 2nd objective of the Parish Council's Climate Change Action Plan which aims to 'prioritise walking and cycling, promote public transport and accelerate the switch to electric vehicles.' One of the deliverables of the objective is to support the installation of quick-charging electric car points where local support or viability has been demonstrated.
- 2.3. The Parish Office, Horton Heath & Woodland Community Centres have been identified as possible candidates by Parish and Borough Officers due to their size and footfall.
- 2.4. The Council was contacted by an Electric Vehicle (EV) Charge Point installer Char.gy who is an installer of on-street residential electric vehicle charging solutions that provide electric vehicle charging for councils, parking providers and drivers.
- 2.5. Char.gy has access to the government-provided Charging Investment Infrastructure Fund (CIIF) and is financially backed by Zouk Capital, enabling them to provide councils with fully funded 7 kW EV Fast Charging Installations over a 15-year lease period. (A 7kW public charging point typically provides up to 30 miles of range per hour of charge.)
- 2.6. On 2 December 2022 a representative from Char.gy performed initial site visits to all three proposed sites to determine their suitability for EV installation. The criteria for suitability included location, 3G cellular coverage, parking restrictions, and earthing requirements.
- 2.7. All sites have passed the initial assessments and Char.gy has sent through the proposal for EV charger installation at each site as listed below:

3 THE PROPOSALS

3.1 PARISH OFFICE

Char.gy has recommended a 2-space 7Kw CP02 Bollard installation as per the attached proposal (see Appendix 1)

3.2 WOODLAND COMMUNITY CENTRE

Char.gy has recommended a 2-space 7Kw CP02 Bollard installation as per the attached proposal (see Appendix 2)

3.3 HORTON HEATH COMMUNITY CENTRE

Char.gy has recommended a 4-space 7Kw CP02 Bollard installation as per the attached proposal (see Appendix 3)

4 FINANCIAL IMPLICATIONS

4.1. The Council will incur the direct cost of the electricity used to charge the vehicles. This is recorded automatically and reimbursed to the Council quarterly at the average kWh unit rate as charged by our supplier, which is currently SSE.

4.2. Char.gy will pay the Council 10% of the EV charging revenue (net of energy network prices (including DUoS (Distribution Use of System) and CCL (Climate Change Levy) which is set for 0.775p/kWh from 1 April 2023 – 31 March 2024) every quarter.

4.3. The cost to earmark the parking bays for use by electric vehicles is payable by the Council and is approximately £500. Each building has a maintenance budget which can be used to cover this cost.

4.4. All other costs incurred during the supply and installation are the responsibility of the EV Charger provider Char.gy. These include specifically but are not limited to the following:

- Site surveys
- Project management
- Supply and installation of charging points and related civil works
- Lifetime warranty of 15 years (lifetime of the product)
- Operations
- Payment processing
- 24/7/365 customer support for the Parish Council and visitors
- Back-office reporting
- Insurance, inspections and any remedial works, repair, and maintenance

4.5. At the end of the 15-year lease, the Council will have the opportunity to negotiate:

- A renewal of the current contract including new equipment; or
- Enter into an agreement with another company; or
- End contract with Char.gy instructing them to disconnect and remove hardware#

5 CRIME & DISORDER IMPLICATIONS

- 5.1. As with the installation of any asset, there is a risk of damage either by accident or vandalism. Insurance and repair to the EV chargers are provided by Char.gy for the length of the 15-year lease.

6 ENVIRONMENTAL IMPLICATIONS

- 6.1. One of the most important levers to change to zero-emission vehicles is the ability to access EV charging technology in the most popular and convenient setting. By installing EV Chargers at our Parish Office and Community Centres we will be contributing to a low-carbon economy & will be helping to decarbonise road transport.
- 6.2. This proposal would provide a fantastic platform to demonstrate to residents that the Council is taking Climate Emergency seriously and taking visible and appropriate action to adapt to these issues wherever possible.

7 EQUALITY & DIVERSITY IMPLICATIONS

- 7.1. To ensure that the charging points are fully accessible, particularly for visitors requiring access to a disabled bay, one charge point per car park will be installed between a disabled and regular-sized bay effectively allowing charging to both bays. (Not simultaneously).

8 SUMMARY

- 8.1 This proposal would provide residents, staff and visitors to the parish offices and community centres the opportunity to 'top-up' their electric and hybrid vehicles. This will also include the electric vehicles owned and used by the Council as part of its Operations fleet.
- 8.2 This proposal would help the Council achieve the Climate Change Action Plan deliverable of supporting the installation of quick-charging electric car points where viability is demonstrated.
- 8.3 The Council will actively support the government's goal of reducing transport emissions which currently make up 25% of UK greenhouse gas emissions.

Appended Documents for Information:

- [Char.gy bollard charger brochure](#)
- [Char.gy brochure](#)

For further information contact:

Michelle Leadbitter-Allen
Deputy Clerk
deputyclerk@fairoak-pc.gov.uk

Appendix E.1

Proposal based on Site Survey

Date of Survey: December 2022

Site and Address: Fair oaks parish council SO50 7GL Park Lane Eastleigh,

Account Manager: Rodney Hornsveld

Proposal:

2 charging points to be installed at the location indicated on the map below.

Type of charging point: **CP02 Bollard - Fast Charger (up to 7kWh)**



Power supply to be taken from the DB Board, the (see map/photos above . Subject to a final electrical survey being undertaken by char.gy.

Next Steps

Complete a Heads of Terms

Agree a date for char.gy to undertake a final Electrical Survey

Complete a Commercial Lease

Schedule Civil Works

Schedule Final Installation

Agree a Commissioning and Go Live Date

Appendix E.2

Proposal based on Site Survey

Date of Survey: December 2022

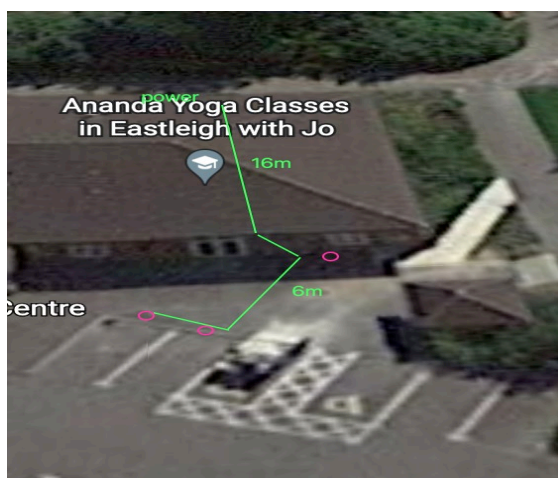
Site and Address: Woodlands Community Centre. Savernake way Fair Oaks. SO50 8DH

Account Manager: Rodney Hornsveld

Proposal:

2 charging points to be installed at the location indicated on the map below.

Type of charging point: **CP02 Bollard - Fast Charger (up to 7kWh)**



Power supply to be taken from the DB Board, the (see map/photos above . Subject to a final electrical survey being undertaken by char.gy.

Next Steps

Complete a Heads of Terms

Agree a date for char.gy to undertake a final Electrical Survey

Complete a Commercial Lease

Schedule Civil Works

Schedule Final Installation

Agree a Commissioning and Go Live Date

Appendix E.3

Proposal based on Site Survey

Date of Survey: December 2022

Site and Address: Horton Heath Community Centre SO50 7PD Botley Road Eastleigh

Account Manager: Rodney Hornsveld

Proposal:

4 charging points to be installed at the location indicated on the map below.

Type of charging point: **CP02 Bollard - Fast Charger (up to 7kWh)**



Power supply to be taken from DB Board, the (see map/photos above .
Subject to a final electrical survey being undertaken by char.gy.

Next Steps

Complete a Heads of Terms

Agree a date for char.gy to undertake a final Electrical Survey

Complete a Commercial Lease

Schedule Civil Works

Schedule Final Installation

Agree a Commissioning and Go Live Date

FAIR OAK & HORTON HEATH PARISH - COUNCIL MEETING DATES 2023- 2024

*Already agreed

MONTH	DATE	COMMITTEE
January 2023*	10	Asset Committee 2.00pm CANCELLED
	16	Full Council at 6.00pm
February 2023*	20	Full Council at 6.00pm
March 2023*	16	Finance Committee 10.00am
	20	Full Council at 6.00pm
April 2023*	17	Full Council at 6.00pm
	17	Parish Assembly at 5.00pm
May 2023*	15	Annual Council at 6.00pm
June 2023	5	Asset Committee at 2.00 pm
	19	Full Council at 6.00 pm
July 2023	10	Finance Committee at 10.00 am
	17	Full Council at 6.00 pm
August 2023	NO SCHEDULED MEETINGS	
September 2023	4	Asset Committee 2.00 pm
	18	Full Council at 6.00 pm
October 2023	16	Full Council at 6.00 pm
	23	Budget Task & Finish Group at 10.00 am
November 2023	20	Full Council at 6.00 pm
	27	Budget Task & Finish Group at 10.00 am
December 2023	4	Finance Committee at 10.00 am
	18	Full Council at 6.00 pm
January 2024	8	Asset Committee at 2.00 pm
	22	Full Council at 6.00 pm
February 2024	19	Full Council at 6.00 pm
March 2024	4	Finance Committee at 10.00 am
	18	Full Council at 6.00 pm
April 2024	15	Parish Assembly at 6.00 pm
	15	Full Council on the rising of the Parish Assembly
May 2024	13	Full Council at 6.00 pm

NB:

- Planning applications are considered by the Deputy Clerk (following email consultation with all Council members) as per current delegated arrangements. Major developments will be deferred to Full Council.
- All meetings held in the Parish Office, 2 Knowle Park Lane, Fair Oak unless otherwise stated.

For the purposes of transparency - all planning comments submitted to Eastleigh Borough Council will continue to be published on the Parish Council's website.

JANUARY 2023			
ITEM	OBJECTIVE	METHOD	LEAD OFFICER
Electric Charge Points	To consider a proposal for the installation of ECP at Parish properties	Report	Deputy Clerk
Rewilding Twynhams Field	To consider rewilding project proposal plans for Twynhams Field	Report	Clerk
Asset acquisition and retention policy	To adopt a policy/procedure	Report	Clerk
Knowle Park Cemetery	To consider recommendations following the soil survey	Report	Operations Manager
FEBRUARY 2023			
ITEM	OBJECTIVE	METHOD	LEAD OFFICER
Communications and Events Task & Finish Group	To receive an update on progress	Via Clerks Update	Clerk
Community Café	To receive an update on progress	Report	Clerk
Community Library	To consider funding of the project and agree next steps	Report	Clerk
MARCH 2023			
ITEM	OBJECTIVE	METHOD	LEAD OFFICER
Corporate Action Plan	Present and agree council corporate action plan 2023-2026 for public consultation	Report	Clerk
Council Branding	To consider branding options	Report	Clerk/Deputy Clerk
Write-offs	To consider end of year write offs	Report	Finance Officer
Website Accessibility Review	Receive an update and agree any recommendations from report	Report	Deputy Clerk (MLA)
Trees	To note the outcome of the annual tree survey and proposals for tree planting	Report	Clerk/Operations Manager
APRIL 2023			
ITEM	OBJECTIVE	METHOD	LEAD OFFICER
Corporate Social Responsibility Policy/Sustainability Policy	Adopt CSR	Report/policy	Deputy Clerk
Internal Auditor Report	To consider the recommendations of the internal auditor	Report	Finance Officer
Crowdhill Green Play Area	To receive an update on progress	Report	Clerk
Community Café	To receive an update on progress	Report	Clerk
Fixed Asset Register	To review and approve the Fixed Asset Register	Report	Finance Officer
Corporate Action Plan	To adopt the Action Plan following community consultation	Report	Clerk
MAY 2023			
ITEM	OBJECTIVE	METHOD	LEAD OFFICER
Membership of Committees	To appoint members to committees	Report	Clerk
Standing Orders	To adopt Standing Orders	Report	Clerk
Final Accounts	To approve the Final Accounts for year end	Report	Finance Officer
Annual Governance Report	To approve the AGAR	Report	Finance Officer
UNALLOCATED ITEMS			
Cemetery Road	To consider options appraisal	Report	Operations Manager
Parish Land Trading Policy	To consider adopting a policy	Report	Deputy Clerk
Green Flag Award Status for KP	To consider steps needed to achieve GF award status at KP	Report	Clerk/Operations Manager
Play Strategy	To consider the development of a Play Strategy	Report	Clerk
Meeting Schedule	Agree meeting dates from June 2023 -	report	Deputy Clerk
Crowdhill Green - Nature trail using remainder PA monies	To consider project proposal	Report	Clerk
Community pantry/fridge	To consider project proposal for the installation of a community pantry at the Café site	Report	Clerk
Dog Walking Signage Proposal	Receive presentation of Officer led consultation for walking areas within the parish and agree recommendation	Report	Operations Manager/Clerk/Deputy Clerk (MLA)
Data Protection Annual Audit	To receive the audit	Report	Clerk
Public Art	To note public art project proposal for Pembers Hill Farm	Report	Clerk



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MEMBER TRAINING 2022-2023

Topic	Proposed date	Format	Presenter(s)	Notes
Code of conduct	19 September 2022 at 5.30pm	Member Briefing	Mel Stephens/Michelle Leadbitter-Allen	Completed and refresher to be arranged following May 23 elections
Planning Enforcement	30 November 2022 time TBC	Teams	EBC	
Social Media/Communications	20 February 2023 time TBC	Presentation	Comms Officer	
Corporate Climate Change Agenda/Sustainability Policy	20 March 2023 time 5:00 pm	Member Briefing/Workshop	Michelle Leadbitter-Allen/Mel Stephens	Corporate strategy – what we've achieved, what's next & Sustainability Policy
Mental Health Matters	17 April 2023 (APM)	External	Solent Mind	



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MEMBER TRAINING 2022-2023

Topic	Proposed date	Format	Presenter(s)	Notes
Constitution/ Meeting Etiquette/Chairing Skills/code of conduct	19 June 2023 at 5.00 pm	Member Briefing	Mel Stephens/Michelle Leadbitter-Allen	Refresher training and introduction for newly elected members, site visits for newly elected member of parish-owned assets
Diversity & Inclusion	17 July 2023 time TBC	External	TBC	
Community Engagement	TBC	Member Briefing	Comm Dev Officer	How can members get involved?
Finance/Risk Management Training	TBC	External	TBC	Understand financial regulations relevant to the parish council
Environment Act	TBC	Member and Staff	Mel Stephens/Michelle Leadbitter-Allen	How it impacts the Council and Residents