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## **Analytical Report Number : 14-52703**

<b>Project / Site name:</b>	Bicester	<b>Samples received on:</b>	02/04/2014
<b>Your job number:</b>	JN0591	<b>Samples instructed on:</b>	02/04/2014
<b>Your order number:</b>		<b>Analysis completed by:</b>	08/04/2014
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	08/04/2014
<b>Samples Analysed:</b>	7 water samples		

**Signed:**

Thurstan Plummer  
Organics Technical Manager  
**For & on behalf of i2 Analytical Ltd.**

**Signed:**

Rexona Rahman  
Customer Services Manager  
**For & on behalf of i2 Analytical Ltd.**

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting  
leachates - 2 weeks from reporting  
waters - 2 weeks from reporting  
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.



Analytical Report Number: 14-52703

Project / Site name: Bicester

Lab Sample Number	327646				327647				327648				327649				327650			
Sample Reference	BH1				BH4				BH5				BH6				BH7			
Sample Number	None Supplied				None Supplied				None Supplied				None Supplied				None Supplied			
Depth (m)	None Supplied				None Supplied				None Supplied				None Supplied				None Supplied			
Date Sampled	31/03/2014				31/03/2014				31/03/2014				31/03/2014				31/03/2014			
Time Taken	None Supplied				None Supplied				None Supplied				None Supplied				None Supplied			
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status																	

**General Inorganics**

	pH Units	N/A	ISO 17025	7.6	7.8	7.7	7.5	7.5
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO <sub>4</sub>	ug/l	45	ISO 17025	67900	220000	44700	42200	44500
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

**Total Phenols**

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
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**Speciated PAHs**

	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

**Total PAH**

Total EPA-16 PAHs	µg/l	0.2	ISO 17025	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
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**Heavy Metals / Metalloids**

	µg/l	1	ISO 17025	6.7	4.3	6.2	7.3	7.0
Arsenic (dissolved)	µg/l	1	ISO 17025	6.7	4.3	6.2	7.3	7.0
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	< 0.4	1.0	0.6	< 0.4	< 0.4
Copper (dissolved)	µg/l	0.7	ISO 17025	2.0	2.7	4.1	1.7	2.2
Lead (dissolved)	µg/l	1	ISO 17025	< 1.0	1.4	26	< 1.0	1.0
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.7	1.9	4.1	3.3	3.7
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	52	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	0.4	1.1	9.1	0.8	0.8



Analytical Report Number: 14-52703  
 Project / Site name: Bicester

Lab Sample Number	327646				327647				327648				327649				327650			
Sample Reference	BH1				BH4				BH5				BH6				BH7			
Sample Number	None Supplied				None Supplied				None Supplied				None Supplied				None Supplied			
Depth (m)	None Supplied				None Supplied				None Supplied				None Supplied				None Supplied			
Date Sampled	31/03/2014				31/03/2014				31/03/2014				31/03/2014				31/03/2014			
Time Taken	None Supplied				None Supplied				None Supplied				None Supplied				None Supplied			
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status																	

**Monoaromatics**

Parameter	Units	Limit of detection	Accreditation Status	327646	327647	327648	327649	327650
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

**Petroleum Hydrocarbons**

Parameter	Units	Limit of detection	Accreditation Status	327646	327647	327648	327649	327650
TPH-CWG - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
<b>TPH-CWG - Aliphatic (C5 - C35)</b>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

Parameter	Units	Limit of detection	Accreditation Status	327646	327647	327648	327649	327650
TPH-CWG - Aromatic >C5 - C7	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C7 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
<b>TPH-CWG - Aromatic (C5 - C35)</b>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 14-52703  
Project / Site name: Bicester

<b>Lab Sample Number</b>				327651	327652			
<b>Sample Reference</b>				WLS3	WLS4			
<b>Sample Number</b>				None Supplied	None Supplied			
<b>Depth (m)</b>				None Supplied	None Supplied			
<b>Date Sampled</b>				31/03/2014	31/03/2014			
<b>Time Taken</b>				None Supplied	None Supplied			
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>					

**General Inorganics**

pH	pH Units	N/A	ISO 17025	7.3	7.4			
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Sulphate as SO <sub>4</sub>	ug/l	45	ISO 17025	48800	38300			
Sulphide	µg/l	5	NONE	< 5.0	< 5.0			

**Total Phenols**

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10			
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**Speciated PAHs**

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			

**Total PAH**

Total EPA-16 PAHs	µg/l	0.2	ISO 17025	< 0.20	< 0.20			
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**Heavy Metals / Metalloids**

Arsenic (dissolved)	µg/l	1	ISO 17025	14	10			
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08			
Chromium (dissolved)	µg/l	0.4	ISO 17025	< 0.4	1.1			
Copper (dissolved)	µg/l	0.7	ISO 17025	2.7	13			
Lead (dissolved)	µg/l	1	ISO 17025	17	6.6			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5			
Nickel (dissolved)	µg/l	0.3	ISO 17025	12	6.1			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0			
Zinc (dissolved)	µg/l	0.4	ISO 17025	250	370			



Analytical Report Number: 14-52703  
 Project / Site name: Bicester

<b>Lab Sample Number</b>				327651	327652			
<b>Sample Reference</b>				WLS3	WLS4			
<b>Sample Number</b>				None Supplied	None Supplied			
<b>Depth (m)</b>				None Supplied	None Supplied			
<b>Date Sampled</b>				31/03/2014	31/03/2014			
<b>Time Taken</b>				None Supplied	None Supplied			
<b>Analytical Parameter (Water Analysis)</b>	<b>Units</b>	<b>Limit of detection</b>	<b>Accreditation Status</b>					

**Monoaromatics**

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0			

**Petroleum Hydrocarbons**

TPH-CWG - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
<b>TPH-CWG - Aliphatic (C5 - C35)</b>	µg/l	10	NONE	< 10	< 10			

TPH-CWG - Aromatic >C5 - C7	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C7 - C8	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C8 - C10	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
<b>TPH-CWG - Aromatic (C5 - C35)</b>	µg/l	10	NONE	< 10	< 10			

U/S = Unsuitable Sample I/S = Insufficient Sample



**Analytical Report Number : 14-52703**

**Project / Site name: Bicester**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BTEX and MTBE in water	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073W-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
pH in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L070-UK	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L010-PL	W	NONE
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-UK	W	NONE

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

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APPENDIX D – MONITORING

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Project Name: <b>Bicester</b>	Project Engineer: <b>CMN</b>	Date: <b>07-Apr-14</b>	Project No: <b>JN0591</b>
Client: <b>A2 Dominion</b>	Operative:	Day of the week:	

Land Gas Data					Groundwater Data					Remarks					
Well / TH No.	Atmospheric Pressure (mb) and Ambient Temperature	PID	BH pressure	Flow Rate	CH <sub>4</sub>	CO <sub>2</sub>	O <sub>2</sub>	CO	H <sub>2</sub> S	Depth to base of well	Water level	Height of Cover	Details of water samples (colour, clarity, odour etc)	Ground Conditions (soft, wet/dry, frozen etc) & Weather Conditions	General Remarks
		ppm	mb	l/hr	%	%	%	ppm	ppm	m below top of cover	m below top of cover	m above GL			
BH1	996.0	P	-0.3	0.3	P	0.0	1.3	14.5	0.0	0.0	1.58			wet rain overcast light breeze 15 degrees	
		S			S	0.0	1.3	14.5	0.0	0.0					
		Time Of Readings: 12:15		Time Of Readings: 12:15			Time Of Readings: 12:15								
BH2	996.0	P	-0.3	0.0	P	0.0	2.0	16.3	0.0	0.0	1.90				
		S			S	0.0	2.0	16.3	0.0	0.0					
		Time Of Readings: 12:10		Time Of Readings: 12:10			Time Of Readings: 12:10								
BH4	996.0	P	-0.4	0.0	P	0.0	0.0	20.6	0.0	0.0	1.00				
		S			S	0.0	0.0	20.6	0.0	0.0					
		Time Of Readings: 12:00		Time Of Readings: 12:00			Time Of Readings: 12:00								
BH5	996.0	P	-0.1	-0.1	P	0.0	0.4	20.2	0.0	0.0	2.30				
		S			S	0.0	0.4	20.2	0.0	0.0					
		Time Of Readings: 12:50		Time Of Readings: 12:50			Time Of Readings: 12:50								
BH6	996.0	P	-0.2	0.2	P	0.0	1.4	18.4	6.0	0.0	1.50				
		S			S	0.0	1.4	18.4	0.0	0.0					
		Time Of Readings: 12:55		Time Of Readings: 12:55			Time Of Readings: 12:55								
BH7	996.0	P	-0.3	-0.1	P	0.0	1.0	18.5	3.0	0.0	1.95				
		S			S	0.0	1.0	18.5	3.0	0.0					
		Time Of Readings: 13:05		Time Of Readings: 13:05			Time Of Readings: 13:05								

P = Peak Reading, S = Steady reading      Equipment Used: Interface Meter, MiniRAE 2000, GFM435 Gas Analyser      Checked By



Project Name: <b>Bicester</b>	Project Engineer: <b>CMN</b>	Date: <b>07-Apr-14</b>	Project No: <b>JN0591</b>
Client: <b>A2 Dominion</b>	Operative:	Day of the week:	

Land Gas Data					Groundwater Data					Remarks					
Well / TH No.	Atmospheric Pressure (mb) and Ambient Temperature	PID	BH pressure	Flow Rate	CH <sub>4</sub>	CO <sub>2</sub>	O <sub>2</sub>	CO	H <sub>2</sub> S	Depth to base of well	Water level	Height of Cover	Details of water samples (colour, clarity, odour etc)	Ground Conditions (soft, wet/dry, frozen etc) & Weather Conditions	General Remarks
		ppm	mb	l/hr	%	%	%	ppm	ppm	m below top of cover	m below top of cover	m above GL			
WLS1	996.0	P	-0.2	-0.2	P	0.0	2.3	18.9	0.0	0.0	dry				
		S			S	0.0	2.3	18.9	0.0	0.0					
		Time Of Readings: 12:35				Time Of Readings: 12:35				Time Of Readings: 12:35					
WLS3	996.0	P	-0.2	0.0	P	0.0	4.9	14.2	0.0	0.0	1.68				
		S			S	0.0	4.9	14.2	0.0	0.0					
		Time Of Readings: 12:45				Time Of Readings: 12:45				Time Of Readings: 12:45					
WLS4	996.0	P	-0.2	0.2	P	0.0	5.9	12.9	0.0	0.0	1.62				
		S			S	0.0	5.9	12.9	0.0	0.0					
		Time Of Readings: 12:50				Time Of Readings: 12:50				Time Of Readings: 12:50					
WLS5	996.0	P	-0.2	-0.1	P	0.0	1.6	19.7	0.0	0.0	1.90				
		S			S	0.0	1.6	19.7	0.0	0.0					
		Time Of Readings: 13:00				Time Of Readings: 13:00				Time Of Readings: 13:00					
		P			P										
		S			S										
		Time Of Readings:				Time Of Readings:				Time Of Readings:					
		P			P										
		S			S										
		Time Of Readings:				Time Of Readings:				Time Of Readings:					

P = Peak Reading, S = Steady reading      Equipment Used: Interface Meter, MiniRAE 2000, GFM435 Gas Analyser      Checked By

Project Name: <b>Bicester</b>	Project Engineer: <b>CMN</b>	Date: <b>10-Apr-14</b>	Project No: <b>JN0591</b>
Client: <b>A2 Dominion</b>	Operative:	Day of the week:	

Land Gas Data					Groundwater Data					Remarks					
Well / TH No.	Atmospheric Pressure (mb) and Ambient Temperature	PID	BH pressure	Flow Rate	CH <sub>4</sub>	CO <sub>2</sub>	O <sub>2</sub>	CO	H <sub>2</sub> S	Depth to base of well	Water level	Height of Cover	Details of water samples (colour, clarity, odour etc)	Ground Conditions (soft, wet/dry, frozen etc) & Weather Conditions	General Remarks
		ppm	mb	l/hr	%	%	%	ppm	ppm	m below top of cover	m below top of cover	m above GL			
BH5	1012.0	P	-0.2	0.1	P	0.0	0.5	20.2	0.0	0.0	2.31		dry light breezey sunny 17 degrees		
		S			S										
		Time Of Readings: 12:30		Time Of Readings: 12:30			Time Of Readings: 12:30								
BH6	1012.0	P	-0.5	-0.7	P	0.0	1.2	19.4	0.0	0.0	1.55				
		S			S										
		Time Of Readings: 12:35		Time Of Readings: 12:35			Time Of Readings: 12:35								
BH7	1012.0	P	-0.4	1.0	P	0.0	0.7	19.4	1.0	0.0	1.98				
		S			S										
		Time Of Readings: 12:40		Time Of Readings: 12:40			Time Of Readings: 12:40								
		P			P										
		S			S										
		Time Of Readings: 11:30		Time Of Readings: 11:30			Time Of Readings: 11:30								
		P			P										
		S			S										
		Time Of Readings:		Time Of Readings:			Time Of Readings:								
		P			P										
		S			S										
		Time Of Readings:		Time Of Readings:			Time Of Readings:								

P = Peak Reading, S = Steady reading      Equipment Used: Interface Meter, MiniRAE 2000, GFM435 Gas Analyser      Checked By

Project Name: <b>Bicester</b>	Project Engineer: <b>CMN</b>	Date: <b>24-Mar-14</b>	Project No: <b>JN0591</b>
Client: <b>A2 Dominion</b>	Operative:	Day of the week:	

Land Gas Data					Groundwater Data								Remarks		
Well / TH No.	Atmospheric Pressure (mb) and Ambient Temperature	PID	BH pressure	Flow Rate	CH <sub>4</sub>	CO <sub>2</sub>	O <sub>2</sub>	CO	H <sub>2</sub> S	Depth to base of well	Water level	Height of Cover	Details of water samples (colour, clarity, odour etc)	Ground Conditions (soft, wet/dry, frozen etc) & Weather Conditions	General Remarks
		ppm	mb	l/hr	%	%	%	ppm	ppm	m below top of cover	m below top of cover	m above GL			
BH1	1000.0	P	0.2	0.3	P	0.0	1.6	10.4	2.0	0.0	15.10	1.50		windy cloudy 10 degrees dry	
		S			S	0.0	1.6	10.4	2.0	0.0					
		Time Of Readings: 13:40				Time Of Readings: 13:40				Time Of Readings: 13:40					
BH2	1000.0	P	-0.5	0.0	P	0.0	1.2	18.7	0.0	0.0	15.00	1.80			
		S			S	0.0	1.2	18.7	0.0	0.0					
		Time Of Readings: 14:00				Time Of Readings: 14:00				Time Of Readings: 14:00					
BH4	1000.0	P	-0.4	0.0	P	0.0	0.0	20.9	0.0	0.0	7.00	0.90			
		S			S	0.0	0.0	20.9	0.0	0.0					
		Time Of Readings: 14:30				Time Of Readings: 14:30				Time Of Readings: 14:30					
		P			P										
		S			S										
		Time Of Readings:				Time Of Readings:				Time Of Readings: 11:30					
		P			P										
		S			S										
		Time Of Readings:				Time Of Readings:				Time Of Readings:					
		P			P										
		S			S										
		Time Of Readings:				Time Of Readings:				Time Of Readings:					

P = Peak Reading, S = Steady reading      Equipment Used: Interface Meter, MiniRAE 2000, GFM435 Gas Analyser      Checked By

Project Name: <b>Bicester</b>	Project Engineer: <b>CMN</b>	Date: <b>24-Mar-14</b>	Project No: <b>JN0591</b>
Client: <b>A2 Dominion</b>	Operative:	Day of the week:	

Land Gas Data					Groundwater Data								Remarks		
Well / TH No.	Atmospheric Pressure (mb) and Ambient Temperature	PID	BH pressure	Flow Rate	CH <sub>4</sub>	CO <sub>2</sub>	O <sub>2</sub>	CO	H <sub>2</sub> S	Depth to base of well	Water level	Height of Cover	Details of water samples (colour, clarity, odour etc)	Ground Conditions (soft, wet/dry, frozen etc) & Weather Conditions	General Remarks
		ppm	mb	l/hr	%	%	%	ppm	ppm	m below top of cover	m below top of cover	m above GL			
WLS1	999.0	P	-0.3	0.0	P	0.0	1.4	20.1	0.0	0.0	0.70	dry		windy cloudy 10 degrees dry	
		S			S	0.0	1.4	20.1	0.0	0.0					
		Time Of Readings: 15:40				Time Of Readings: 15:40				Time Of Readings: 15:40					
WLS3	999.0	P	-0.8	1.8	P	0.0	5.7	14.8	0.0	0.0	2.70	1.45			
		S			S	0.0	5.7	14.8	0.0	0.0					
		Time Of Readings: 15:00				Time Of Readings: 15:00				Time Of Readings: 15:00					
WLS4	999.0	P	-0.4	0.0	P	0.0	5.7	14.8	0.0	0.0	2.90	1.45			
		S			S	0.0	5.7	14.8	0.0	0.0					
		Time Of Readings: 15:20				Time Of Readings: 15:20				Time Of Readings: 15:20					
WLS5	999.0	P	-0.3	0.0	P	0.0	1.2	19.3	0.0	0.0	2.10	1.65			
		S			S	0.0	1.2	19.3	0.0	0.0					
		Time Of Readings: 15:30				Time Of Readings: 15:30				Time Of Readings: 15:30					
		P			P										
		S			S										
		Time Of Readings:				Time Of Readings:				Time Of Readings:					
		P			P										
		S			S										
		Time Of Readings:				Time Of Readings:				Time Of Readings:					

P = Peak Reading, S = Steady reading      Equipment Used: Interface Meter, MiniRAE 2000, GFM435 Gas Analyser      Checked By

Project Name: <b>Bicester</b>	Project Engineer: <b>CMN</b>	Date: <b>31-Mar-14</b>	Project No: <b>JN0591</b>
Client: <b>A2 Dominion</b>	Operative:	Day of the week:	

Land Gas Data					Groundwater Data					Remarks					
Well / TH No.	Atmospheric Pressure (mb) and Ambient Temperature	PID	BH pressure	Flow Rate	CH <sub>4</sub>	CO <sub>2</sub>	O <sub>2</sub>	CO	H <sub>2</sub> S	Depth to base of well	Water level	Height of Cover	Details of water samples (colour, clarity, odour etc)	Ground Conditions (soft, wet/dry, frozen etc) & Weather Conditions	General Remarks
		ppm	mb	l/hr	%	%	%	ppm	ppm	m below top of cover	m below top of cover	m above GL			
BH1	1003.0	P	0.0	0.0	P	0.0	0.4	19.2	0.0	0.0	15.10	1.50	yes	dry overcast still sunny spells 14 degrees	
		S			S	0.0	0.4	19.2	0.0	0.0					
		Time Of Readings: 13:10		Time Of Readings: 13:10			Time Of Readings: 13:10								
BH2	1003.0	P	0.0	-1.5	P	0.0	1.0	17.7	2.0	0.0	15.00	1.85	yes		
		S			S	0.0	1.0	17.7	2.0	0.0					
		Time Of Readings: 13:20		Time Of Readings: 13:20			Time Of Readings: 13:20								
BH4	1003.0	P	0.1	0.0	P	0.0	0.0	20.7	1.0	0.0	7.00	0.90	yes		
		S			S	0.0	0.0	20.7	1.0	0.0					
		Time Of Readings: 13:40		Time Of Readings: 13:40			Time Of Readings: 13:40								
BH5	1003.0	P	-0.3	0.0	P	0.0	0.0	20.9	0.0	0.0	10.10	2.20	yes		
		S			S	0.0	0.0	20.9	0.0	0.0					
		Time Of Readings: 11:30		Time Of Readings: 11:30			Time Of Readings: 11:30								
BH6	1003.0	P	0.1	0.3	P	0.0	2.8	17.6	0.0	0.0	8.10	1.50	yes		
		S			S	0.0	2.8	17.6	0.0	0.0					
		Time Of Readings: 12:35		Time Of Readings: 12:35			Time Of Readings: 12:35								
BH7	1003.0	P	-0.1	0.0	P	0.0	0.3	19.0	0.0	0.0	9.10	1.90	yes		
		S			S	0.0	0.3	19.0	0.0	0.0					
		Time Of Readings: 12:55		Time Of Readings: 12:55			Time Of Readings: 12:55								

P = Peak Reading, S = Steady reading      Equipment Used: Interface Meter, MiniRAE 2000, GFM435 Gas Analyser      Checked By

Project Name: <b>Bicester</b>	Project Engineer: <b>CMN</b>	Date: <b>31-Mar-14</b>	Project No:
Client: <b>A2 Dominion</b>	Operative:	Day of the week:	<b>JN0591</b>

Land Gas Data					Groundwater Data					Remarks					
Well / TH No.	Atmospheric Pressure (mb) and Ambient Temperature	PID	BH pressure	Flow Rate	CH <sub>4</sub>	CO <sub>2</sub>	O <sub>2</sub>	CO	H <sub>2</sub> S	Depth to base of well	Water level	Height of Cover	Details of water samples (colour, clarity, odour etc)	Ground Conditions (soft, wet/dry, frozen etc) & Weather Conditions	General Remarks
		ppm	mb	l/hr	%	%	%	ppm	ppm	m below top of cover	m below top of cover	m above GL			
WLS1	1003.0	P	0.4	0.0	P	0.0	1.8	19.0	0.0	0.0	0.70	dry	yes	dry overcast still 14 degrees	
		S			0.0	1.8	19.0	0.0	0.0						
		Time Of Readings: 13:00				Time Of Readings: 13:00				Time Of Readings: 13:00					
WLS3	1003.0	P	-0.1	0.0	P	0.0	4.1	14.6	0.0	0.0	2.70	1.55	yes		
		S			0.0	4.1	14.6	0.0	0.0						
		Time Of Readings: 12:15				Time Of Readings: 12:15				Time Of Readings: 12:15					
WLS4	1003.0	P	-0.9	0.0	P	0.0	5.1	14.0	0.0	0.0	2.90	1.55	yes		
		S			0.0	5.1	14.0	0.0	0.0						
		Time Of Readings: 11:50				Time Of Readings: 11:50				Time Of Readings: 11:50					
WLS5	1003.0	P	-0.1	-0.8	P	0.0	2.8	17.6	0.0	0.0	2.10	1.80	yes		
		S			0.0	2.8	17.6	0.0	0.0						
		Time Of Readings: 12:45				Time Of Readings: 12:45				Time Of Readings: 12:45					
		P			P										
		S													
		Time Of Readings:				Time Of Readings:				Time Of Readings:					
		P			P										
		S													
		Time Of Readings:				Time Of Readings:				Time Of Readings:					

P = Peak Reading, S = Steady reading      Equipment Used: Interface Meter, MiniRAE 2000, GFM435 Gas Analyser      Checked By



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APPENDIX E – DESK STUDY


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## Geology 1:50,000 Maps Legends








### Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WMGR	Infilled Ground	Artificial Deposit	Present Day - Present Day
	WGR	Worked Ground (Undivided)	Void	Holocene - Holocene

### Superficial Geology

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

### Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	KLC	Kellaways Clay Member	Mudstone	Callovian - Callovian
	CB	Combrash Formation	Limestone	Callovian - Bathonian
	FMB	Forest Marble Formation	INTERBEDDED LIMESTONE AND MUDSTONE	Bathonian - Bathonian
	FMB	Forest Marble Formation	Limestone	Bathonian - Bathonian
	WHL	White Limestone Formation	Limestone	Bathonian - Bathonian
	BLAD	Bladon Member	Mudstone and Limestone, Interbedded	Bathonian - Bathonian
		Faults		



### Geology 1:50,000 Maps

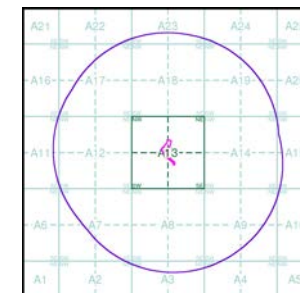
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published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

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

### Geology 1:50,000 Maps Coverage

Map ID:	1
Map Sheet No:	219
Map Name:	Buckingham
Map Date:	2002
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Available
Landslip:	Available
Rock Segments:	Not Available

### Geology 1:50,000 Maps - Slice A



### Order Details:

Order Number:	53980512_1_1
Customer Reference:	JN0591
National Grid Reference:	456960, 223800
Slice:	A
Site Area (Ha):	0.71
Search Buffer (m):	1000

### Site Details:

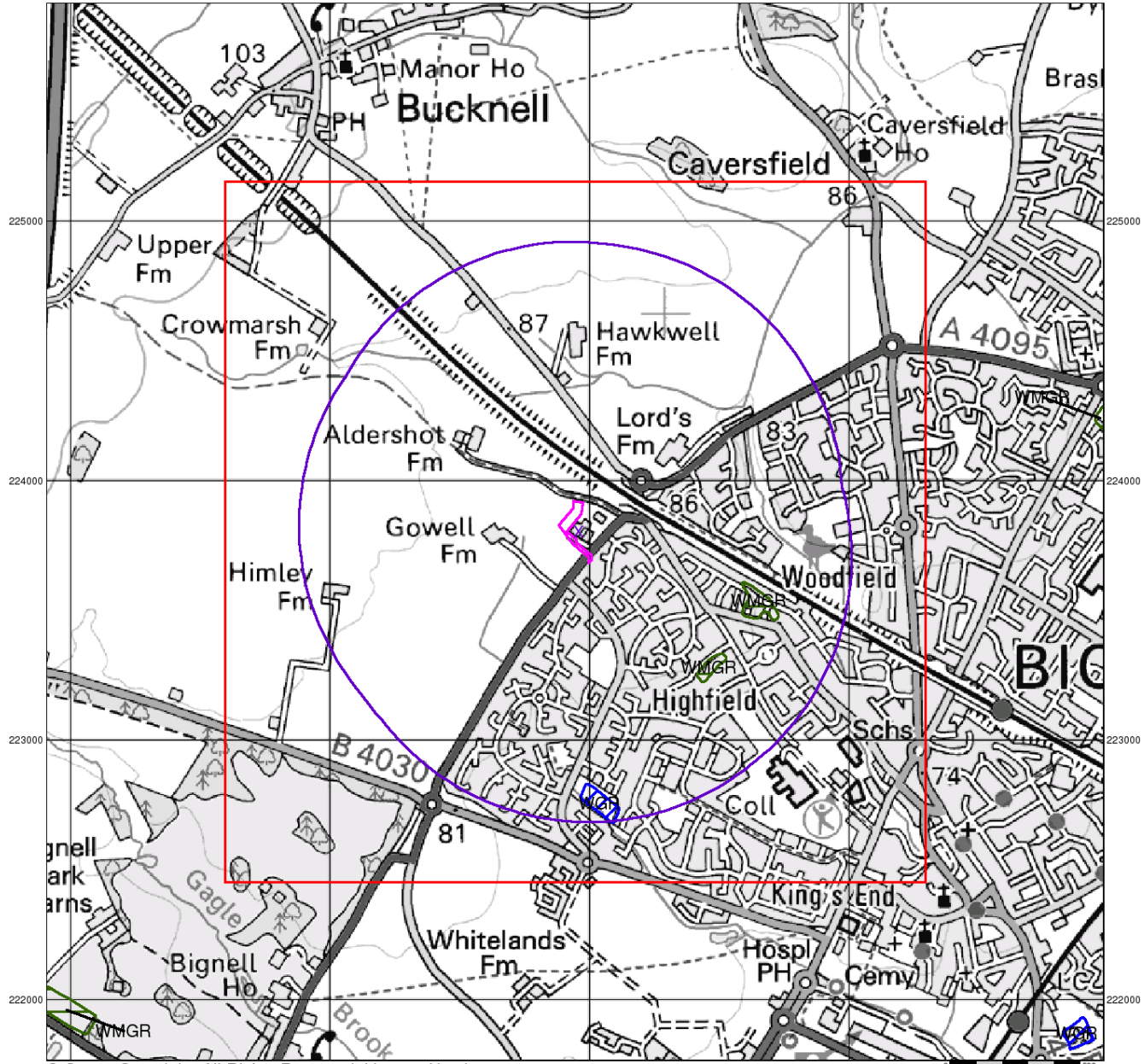
JN0591, Underpass at Bicester



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 Web: www.envirocheck.co.uk



455000 456000 457000 458000



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### Artificial Ground and Landslip

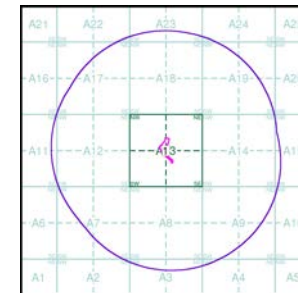
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions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

Artificial ground includes:

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

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

### Artificial Ground and Landslip Map - Slice A



### Order Details:

Order Number: 53980512\_1.1  
 Customer Reference: JN0591  
 National Grid Reference: 456960, 223800  
 Slice: A  
 Site Area (Ha): 0.71  
 Search Buffer (m): 1000

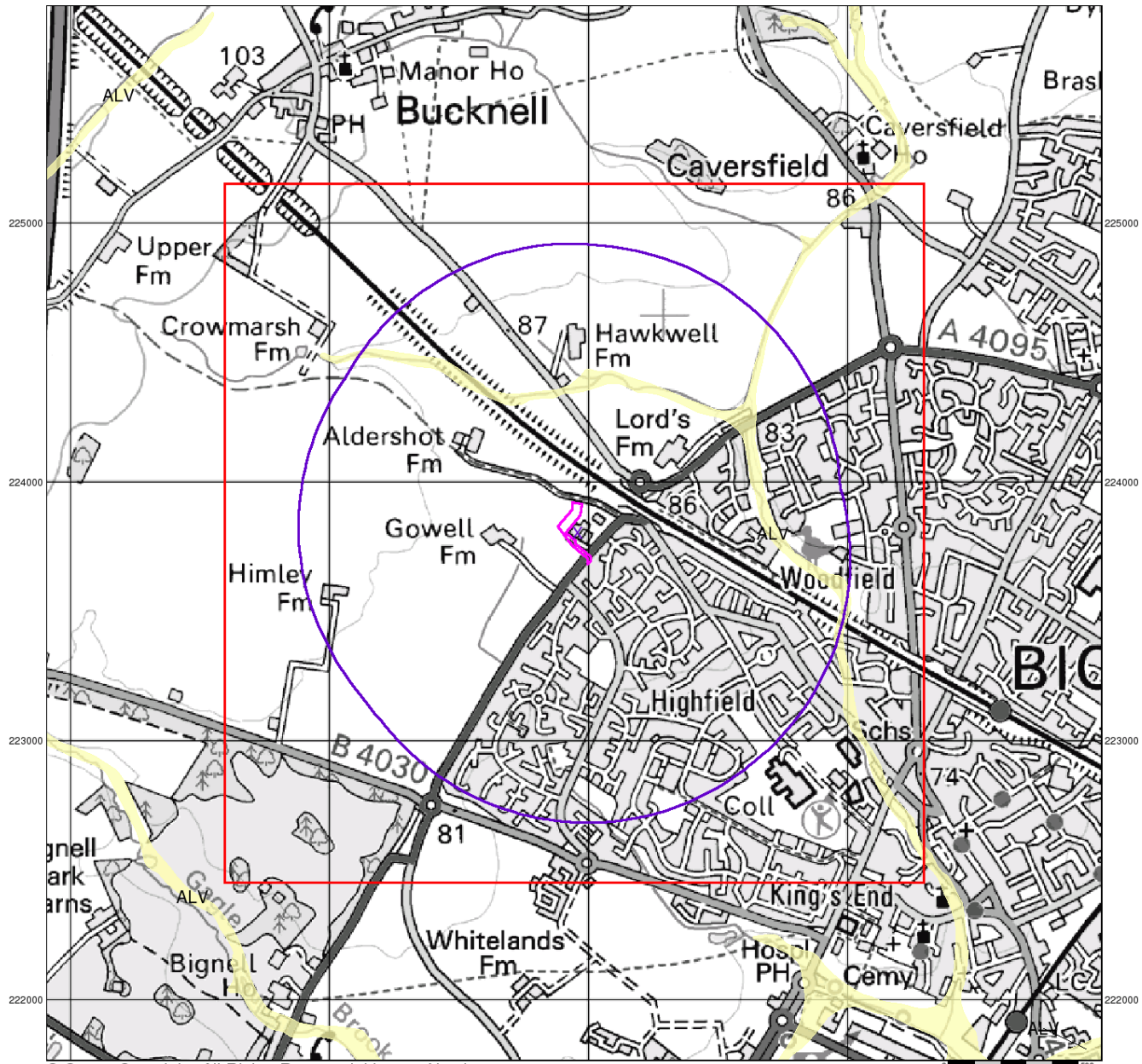
### Site Details:

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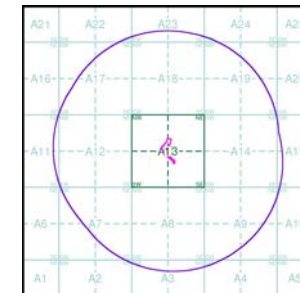
### Superficial Geology

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

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

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

### Superficial Geology Map - Slice A



### Order Details:

Order Number: 53980512\_1.1  
 Customer Reference: JN0591  
 National Grid Reference: 456960, 223800  
 Slice: A  
 Site Area (Ha): 0.71  
 Search Buffer (m): 1000

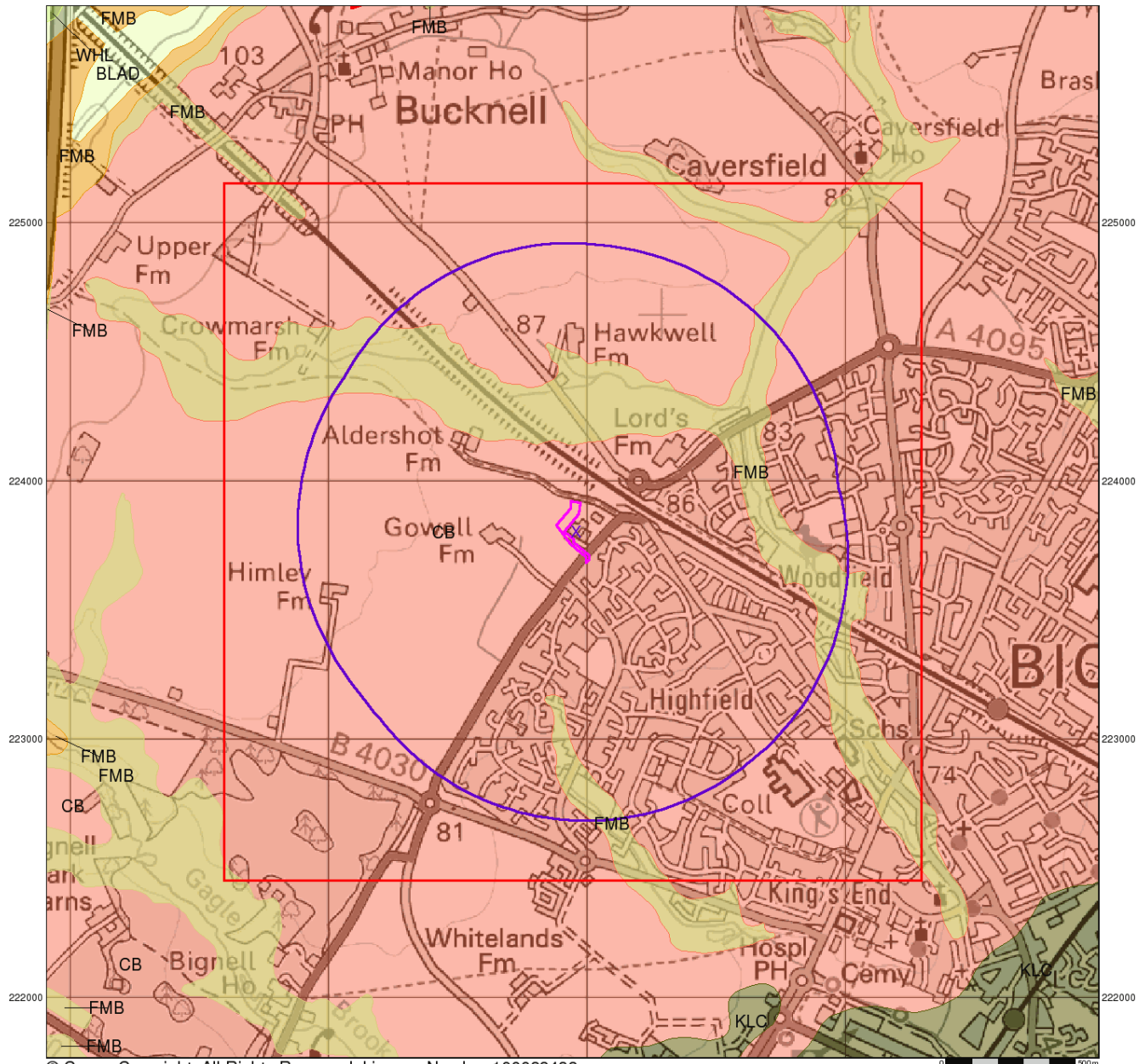
### Site Details:

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### Bedrock and Faults

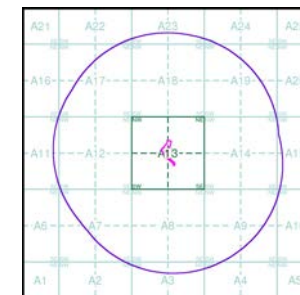
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

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

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

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

### Bedrock and Faults Map - Slice A



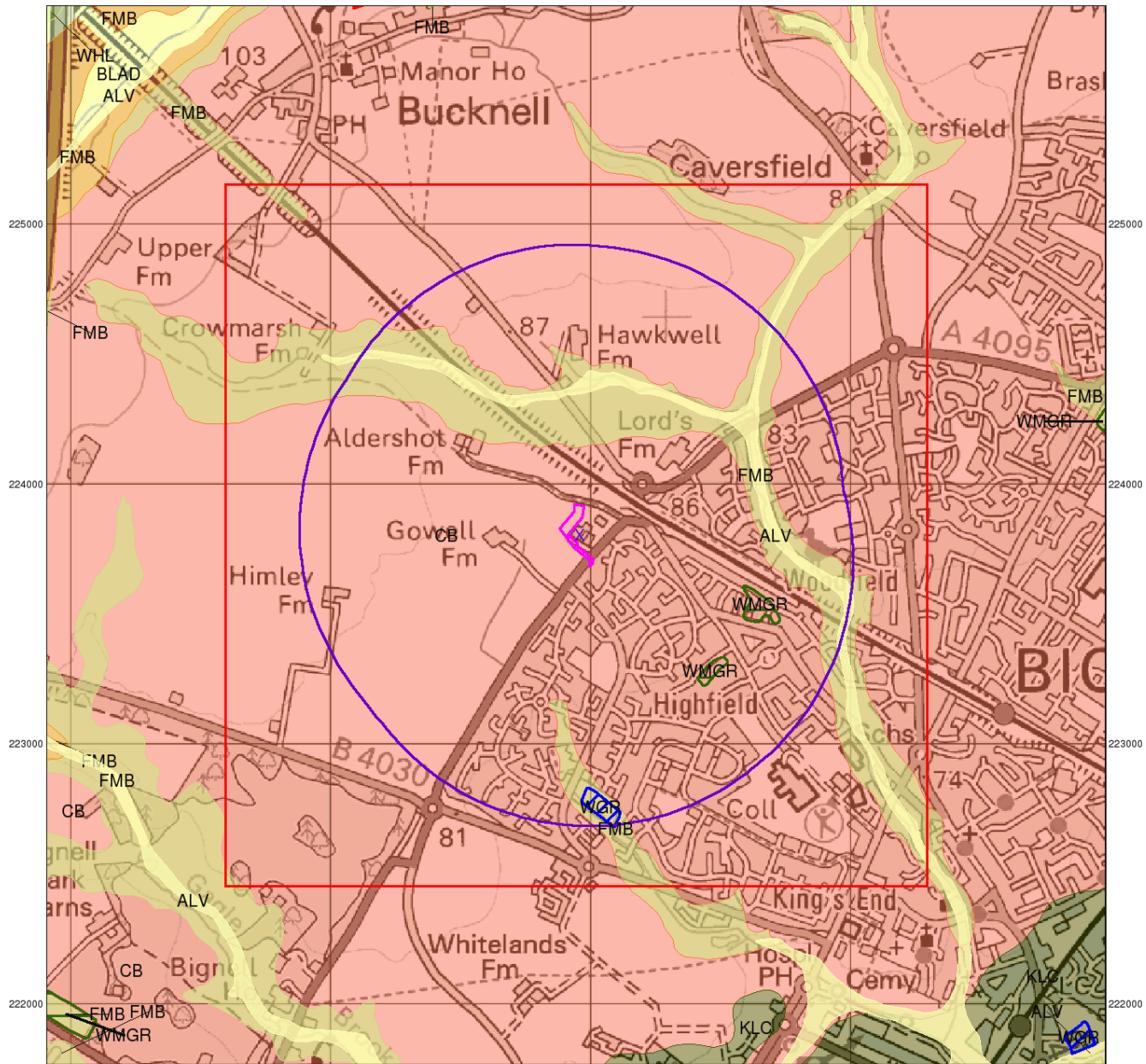
### Order Details:

Order Number: 53980512\_1\_1  
 Customer Reference: JN0591  
 National Grid Reference: 456960, 223800  
 Slice: A  
 Site Area (Ha): 0.71  
 Search Buffer (m): 1000

### Site Details:

JN0591, Underpass at Bicester

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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.

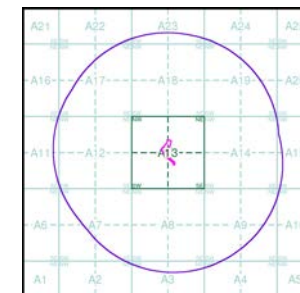
### Additional Information

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: 53980512\_1\_1  
 Customer Reference: JN0591  
 National Grid Reference: 456960, 223800  
 Slice: A  
 Site Area (Ha): 0.71  
 Search Buffer (m): 1000

### Site Details:

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# Historical Mapping Legends

## Ordnance Survey County Series 1:10,560

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

## Ordnance Survey Plan 1:10,000

- Chalk Pit, Clay Pit or Quarry
- Gravel Pit
- Sand Pit
- Disused Pit or Quarry
- Refuse or Slag Heap
- Lake, Loch or Pond
- Dunes
- Boulders
- Coniferous Trees
- Non-Coniferous Trees
- Orchard
- Scrub
- Coppice
- Bracken
- Heath
- Rough Grassland
- Marsh
- Reeds
- Saltings
- Building
- Glasshouse
- Sloping Masonry
- Pylon
- Electricity Transmission Line
- Pole
- Cutting
- Embankment
- Standard Gauge Multiple Track
- Standard Gauge Single Track
- Siding, Tramway or Mineral Line
- Narrow Gauge
- Geographical County
- Administrative County, County Borough or County of City
- Municipal Borough, Urban or Rural District, Burgh or District Council
- Borough, Burgh or County Constituency
- Civil Parish
- BP, BS** Boundary Post or Stone
- Ch** Church
- CH** Club House
- F E Sta** Fire Engine Station
- FB** Foot Bridge
- Fn** Fountain
- GP** Guide Post
- MP** Mile Post
- MS** Mile Stone
- Pol Sta** Police Station
- PO** Post Office
- PC** Public Convenience
- PH** Public House
- SB** Signal Box
- Spr** Spring
- TCB** Telephone Call Box
- TCP** Telephone Call Post
- W** Well

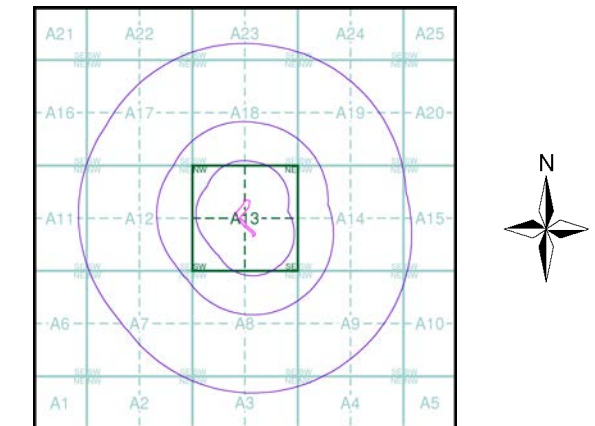
## 1:10,000 Raster Mapping

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

### Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Oxfordshire	1:10,560	1885	2
Oxfordshire	1:10,560	1900	3
Oxfordshire	1:10,560	1923	4
Oxfordshire	1:10,560	1938	5
Historical Aerial Photography	1:10,560	1947	6
Oxfordshire	1:10,560	1952	7
Ordnance Survey Plan	1:10,000	1955	8
Ordnance Survey Plan	1:10,000	1966	9
Ordnance Survey Plan	1:10,000	1970	10
Ordnance Survey Plan	1:10,000	1982 - 1988	11
Ordnance Survey Plan	1:10,000	1996	12
10K Raster Mapping	1:10,000	2006	13
VectorMap Local	1:10,000	2013	14

### Historical Map - Slice A



### Order Details

Order Number: 53980512\_1\_1  
 Customer Ref: JN0591  
 National Grid Reference: 456960, 223800  
 Slice: A  
 Site Area (Ha): 0.71  
 Search Buffer (m): 1000

### Site Details

JN0591, Underpass at Bicester

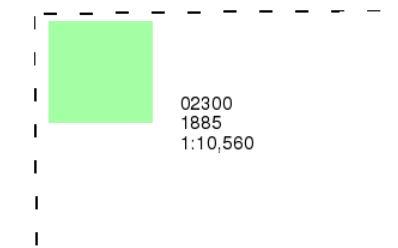
Oxfordshire

Published 1885

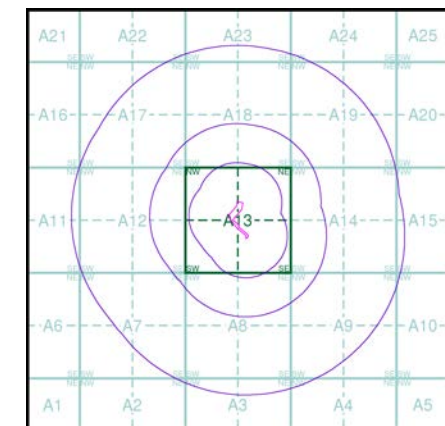
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A

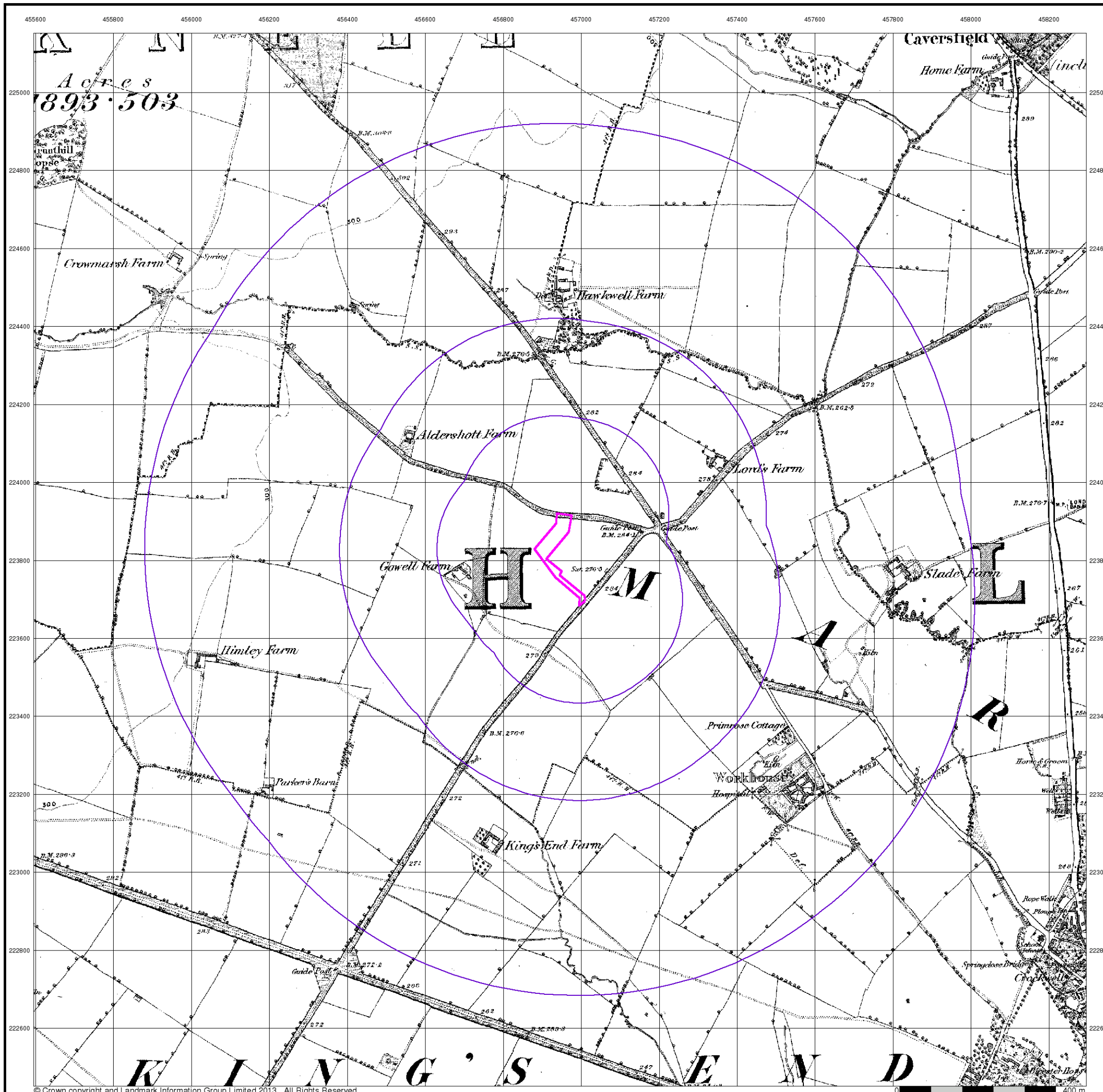


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Site Details

JN0591, Underpass at Bicester



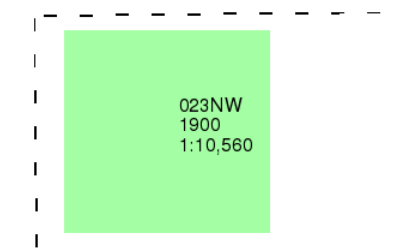
Oxfordshire

Published 1900

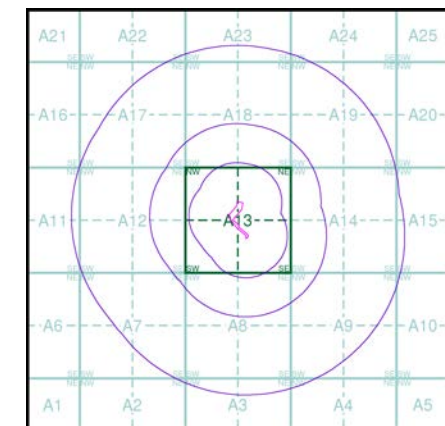
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A

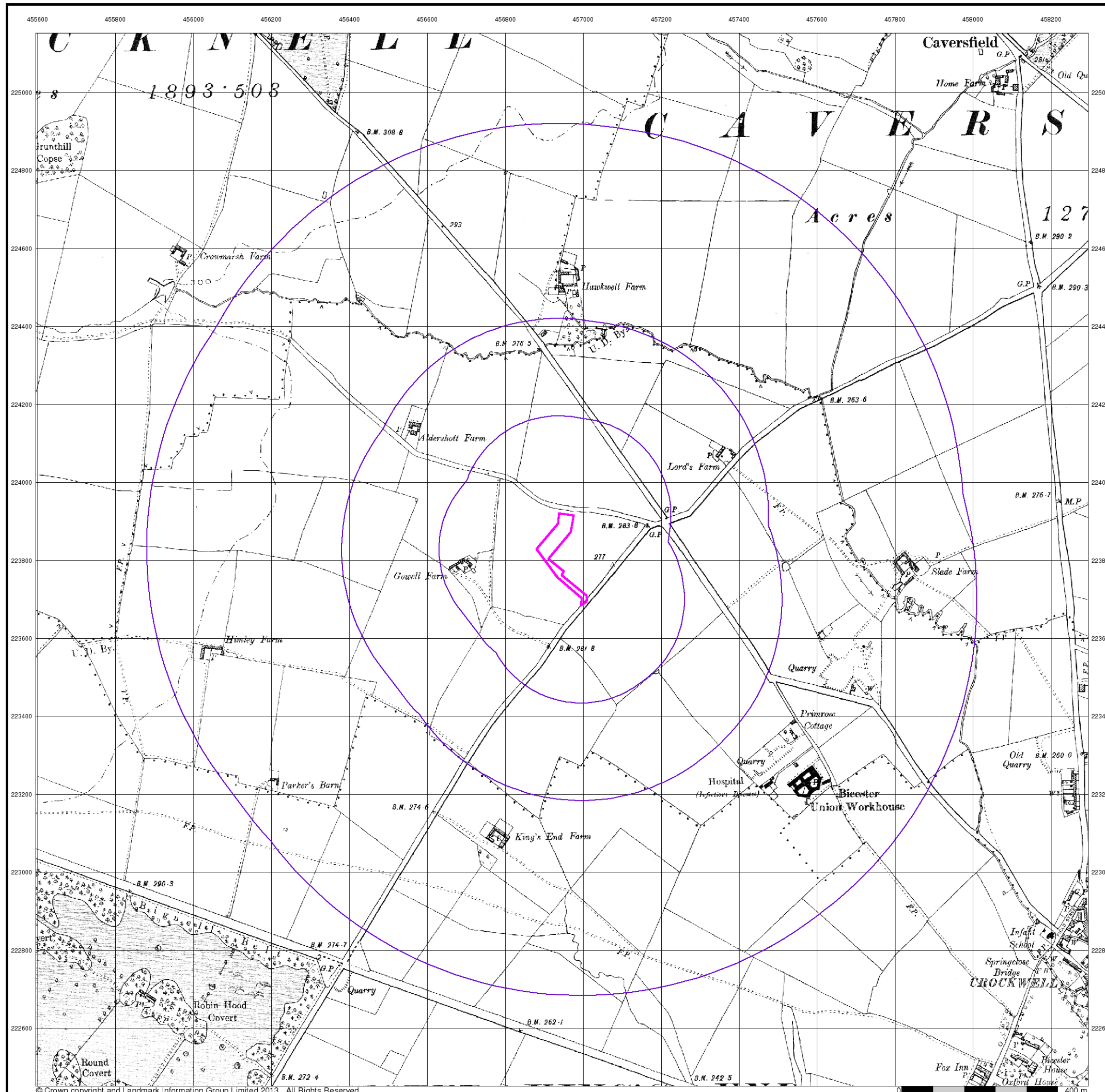


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Site Details

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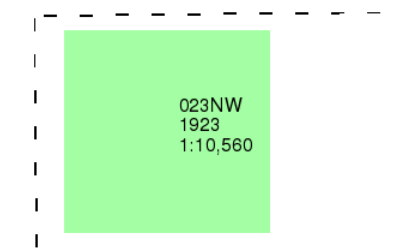
Oxfordshire

Published 1923

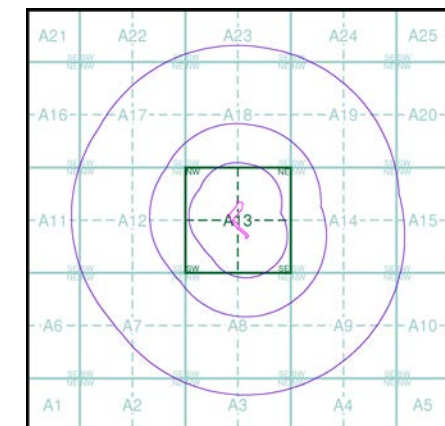
Source map scale - 1:10,560

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

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Historical Map - Slice A

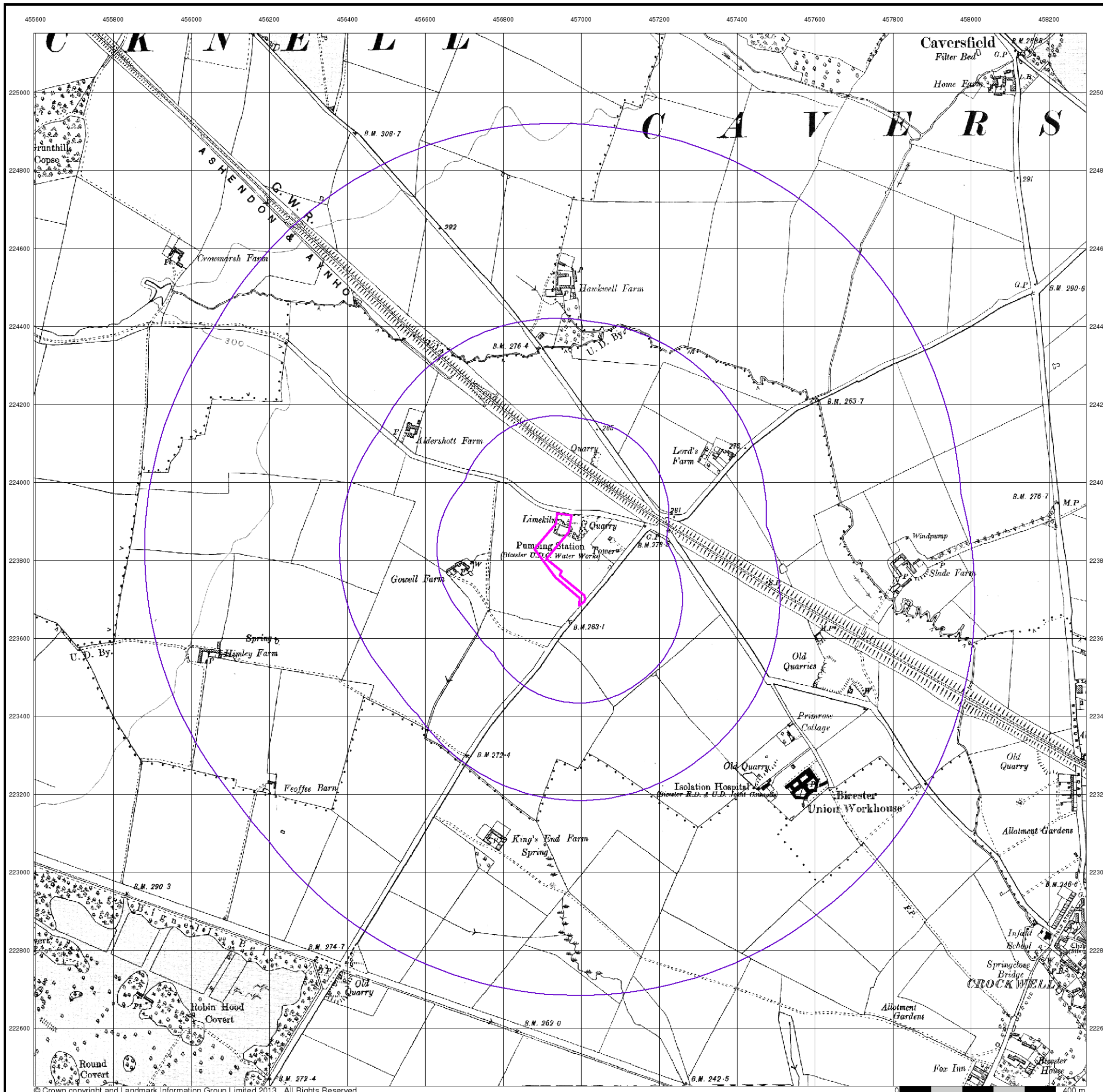


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Site Details

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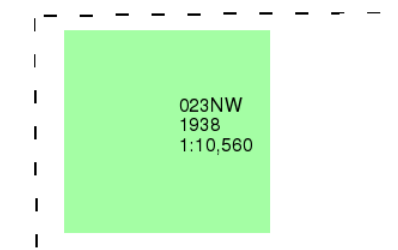
Oxfordshire

Published 1938

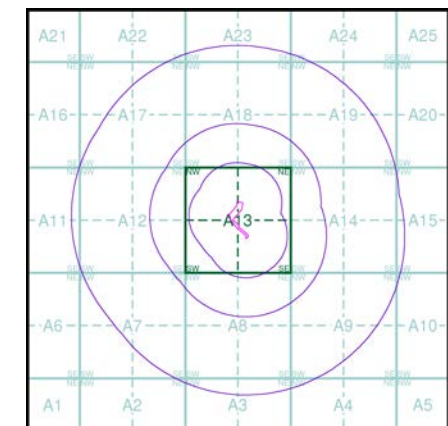
Source map scale - 1:10,560

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

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