

LANDMARK INFORMATION GROUP\*

### **Ordnance Survey Plan**

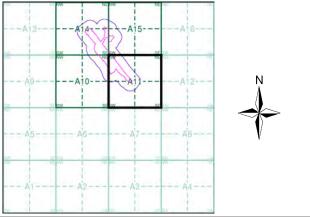
### **Published 1955 - 1970** Source map scale - 1:2,500

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

### Map Name(s) and Date(s)

ST1575	ST1675
1970	I 1955
1:2,500	1:2,500
— — — . ST1574	ST1674
1969	1970
1:2,500	1:2,500
1	1 1

### **Historical Map - Segment A11**



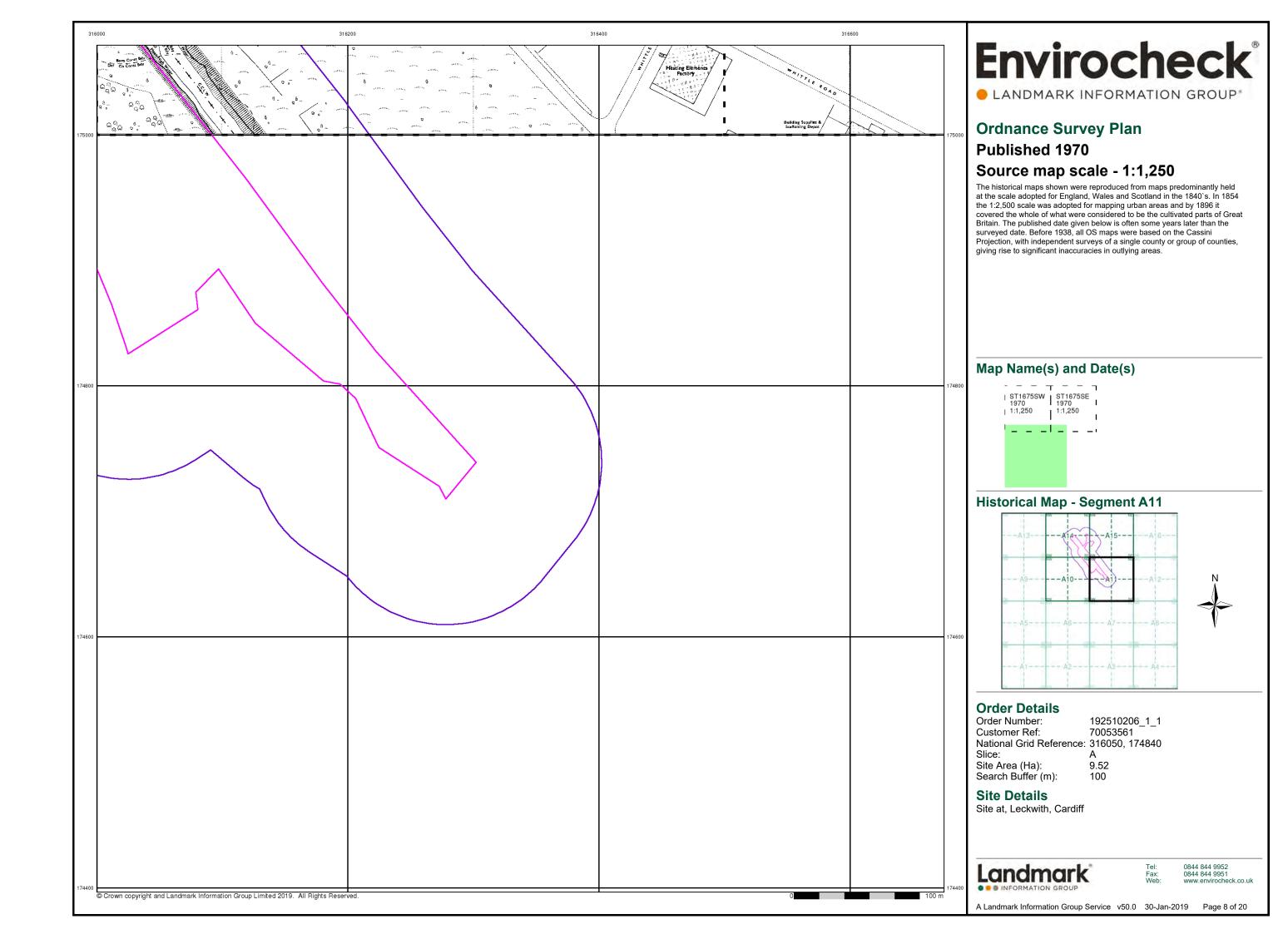
192510206\_1\_1 70053561 National Grid Reference: 316050, 174840

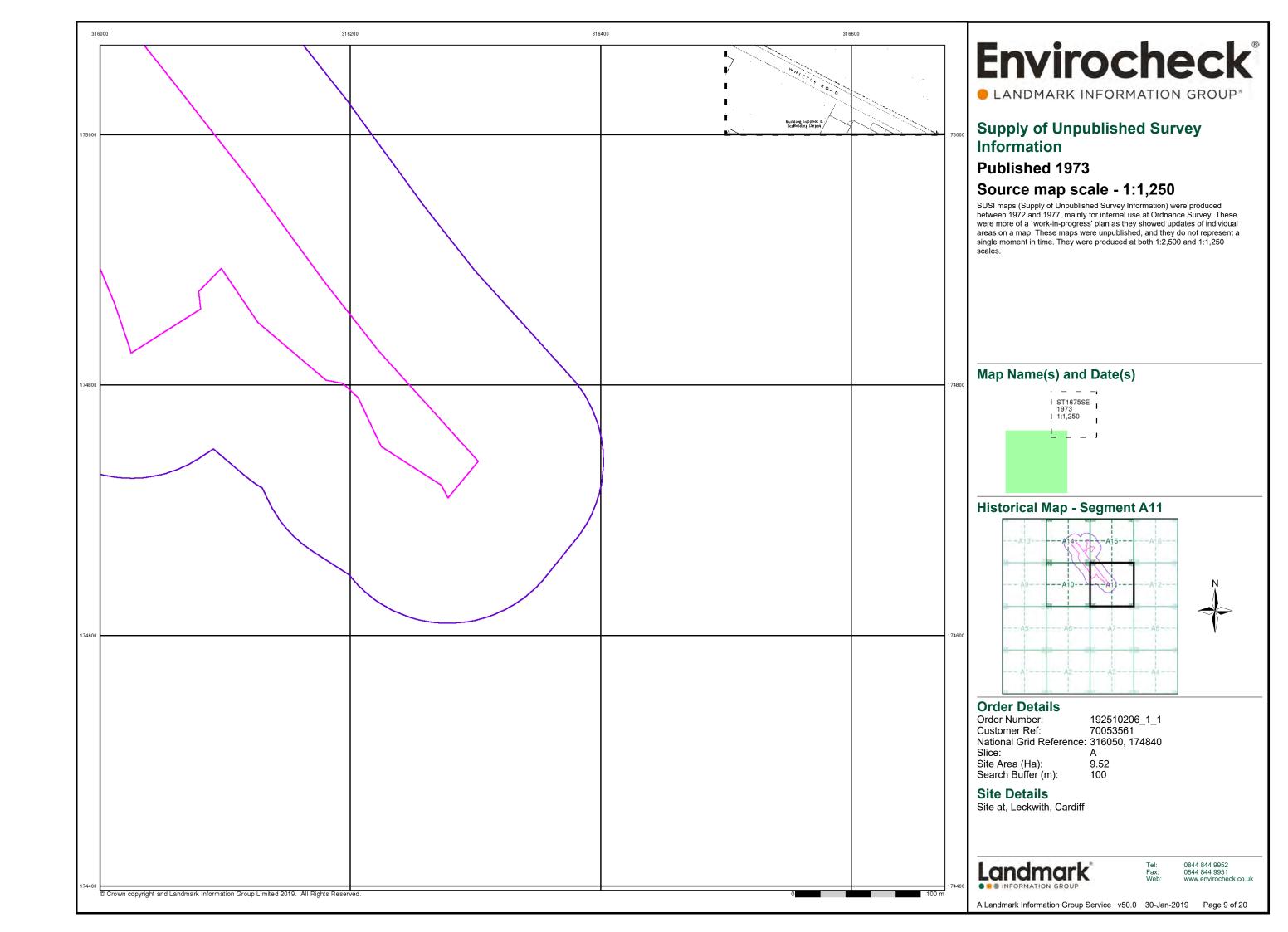
9.52

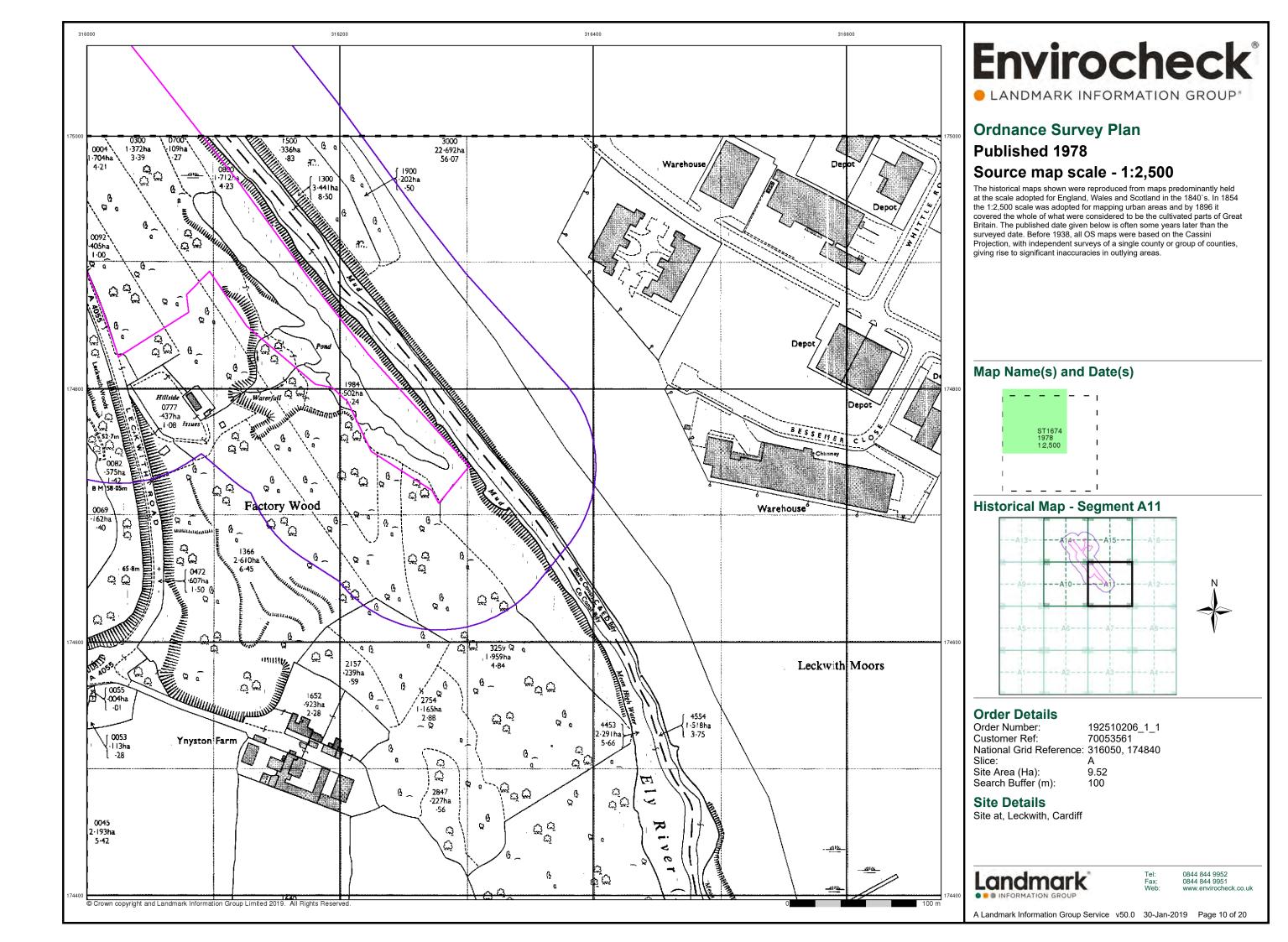


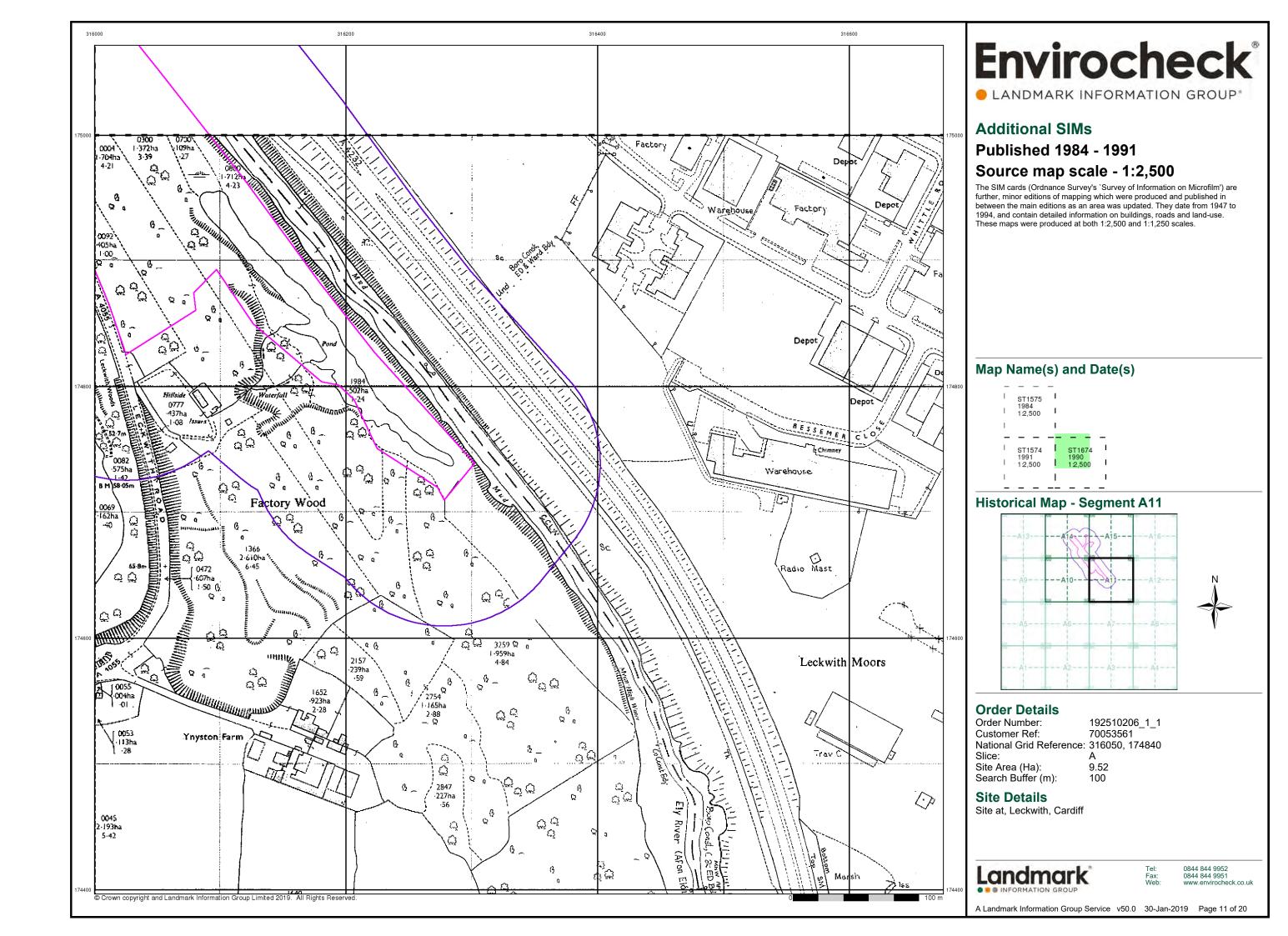
0844 844 9951 www.enviroche

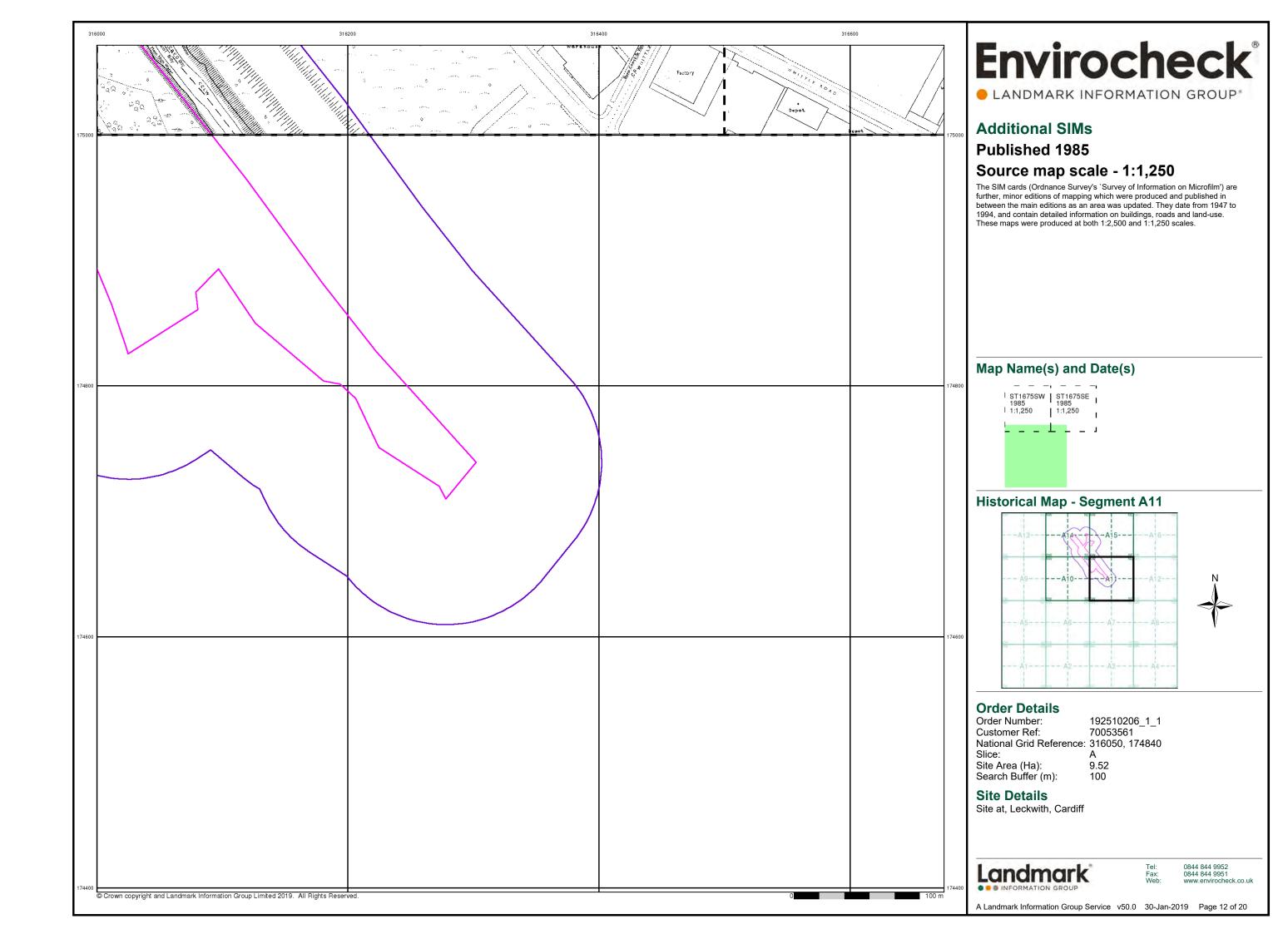
A Landmark Information Group Service v50.0 30-Jan-2019 Page 7 of 20

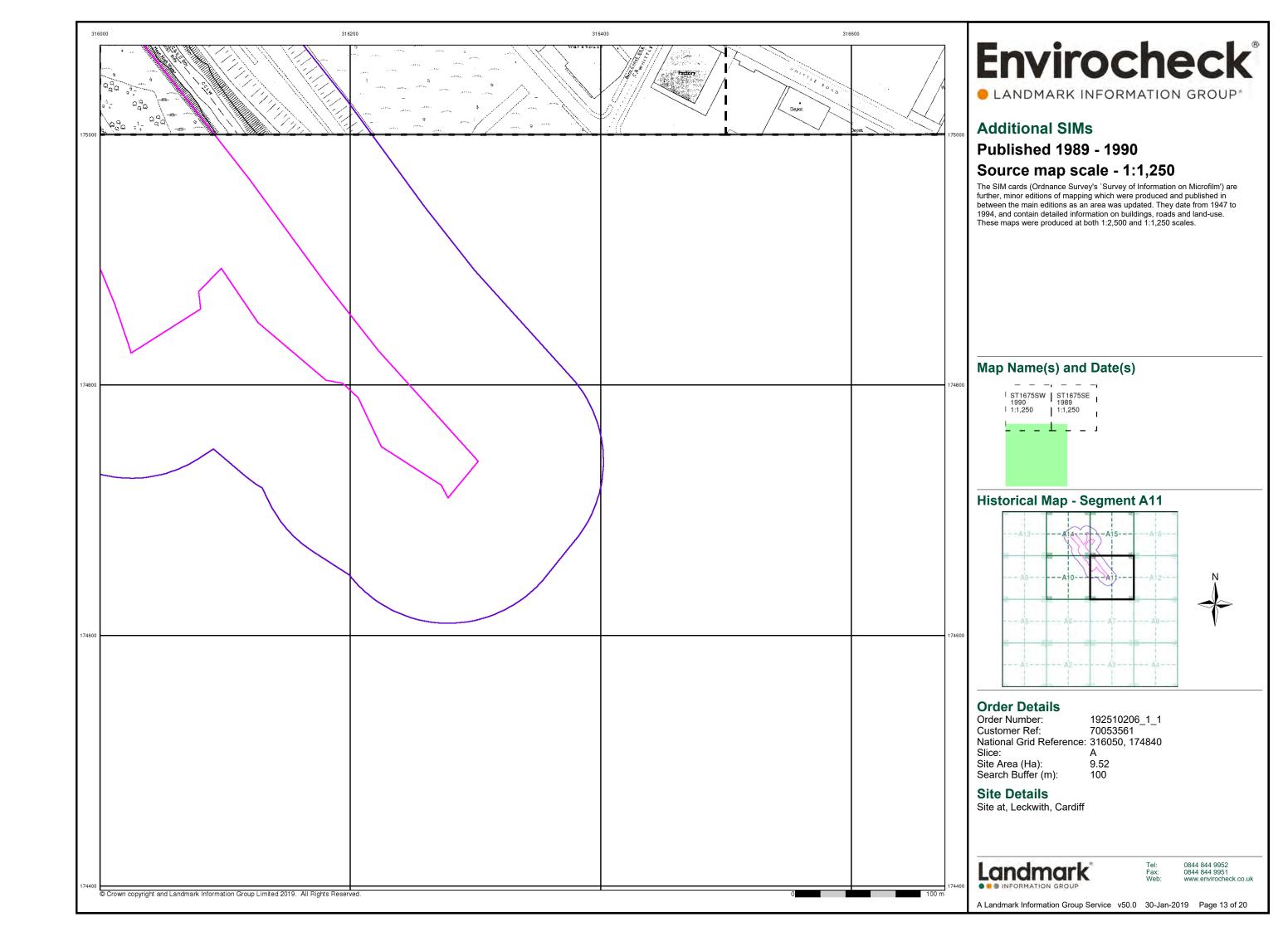


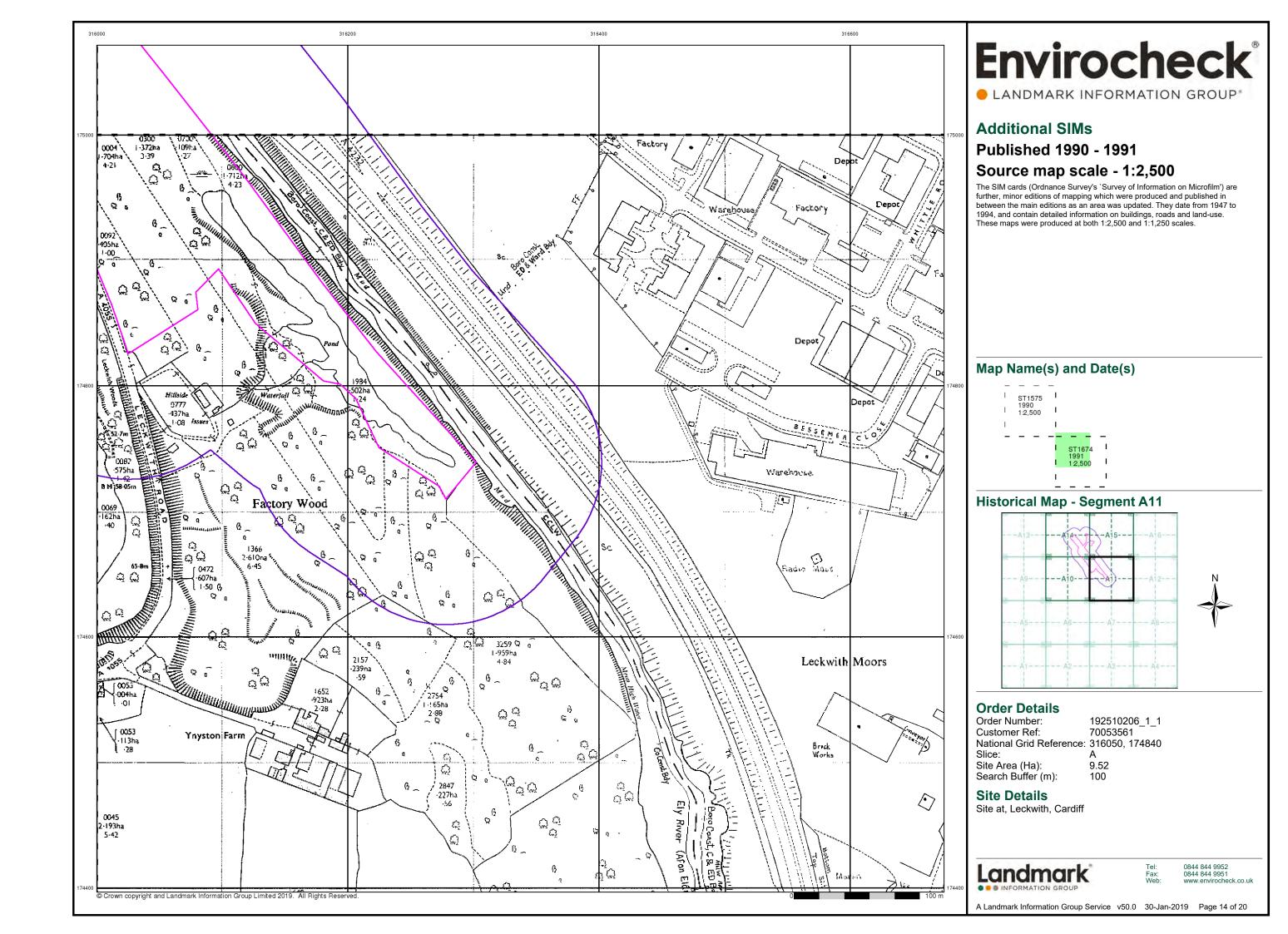


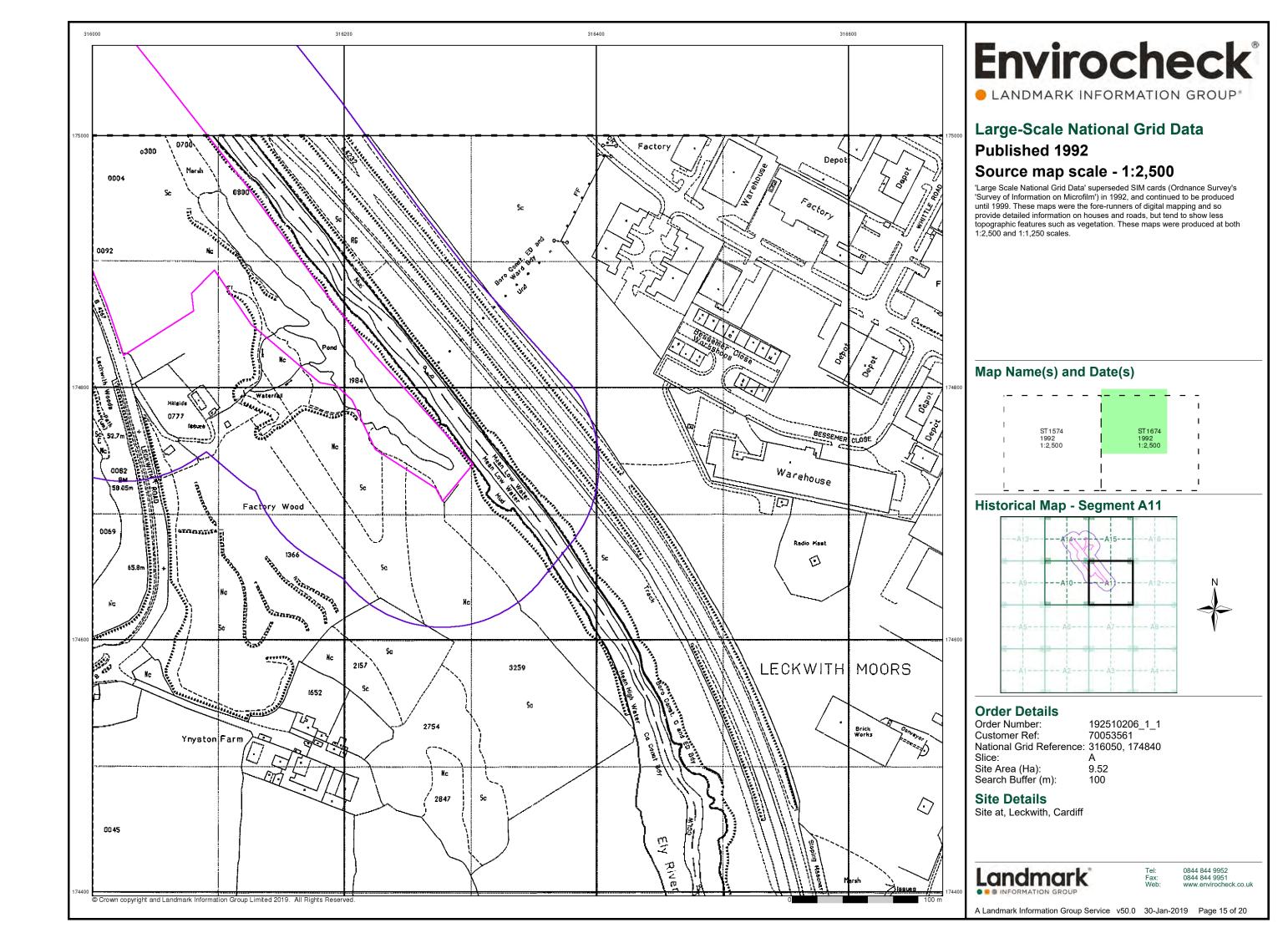


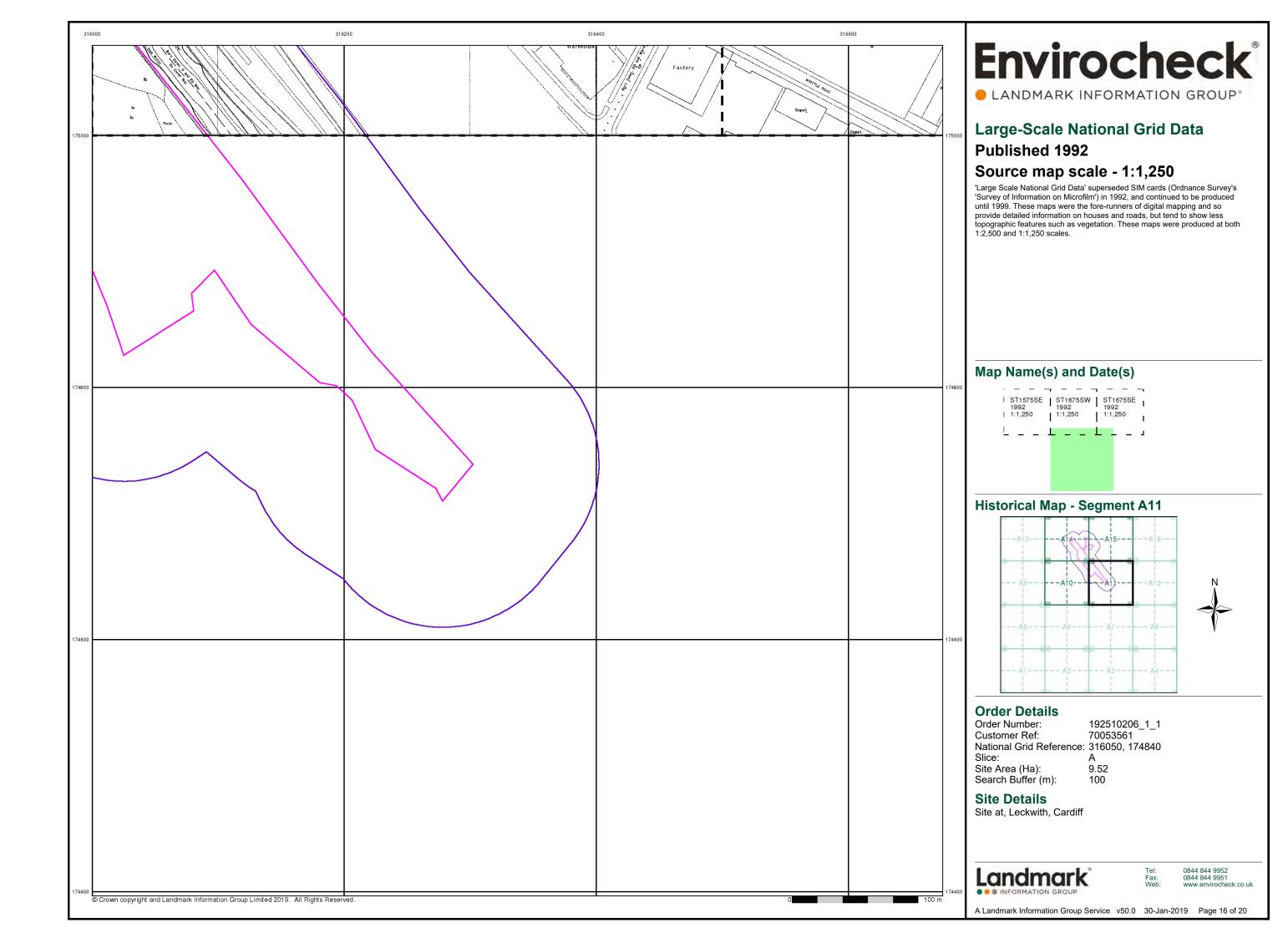


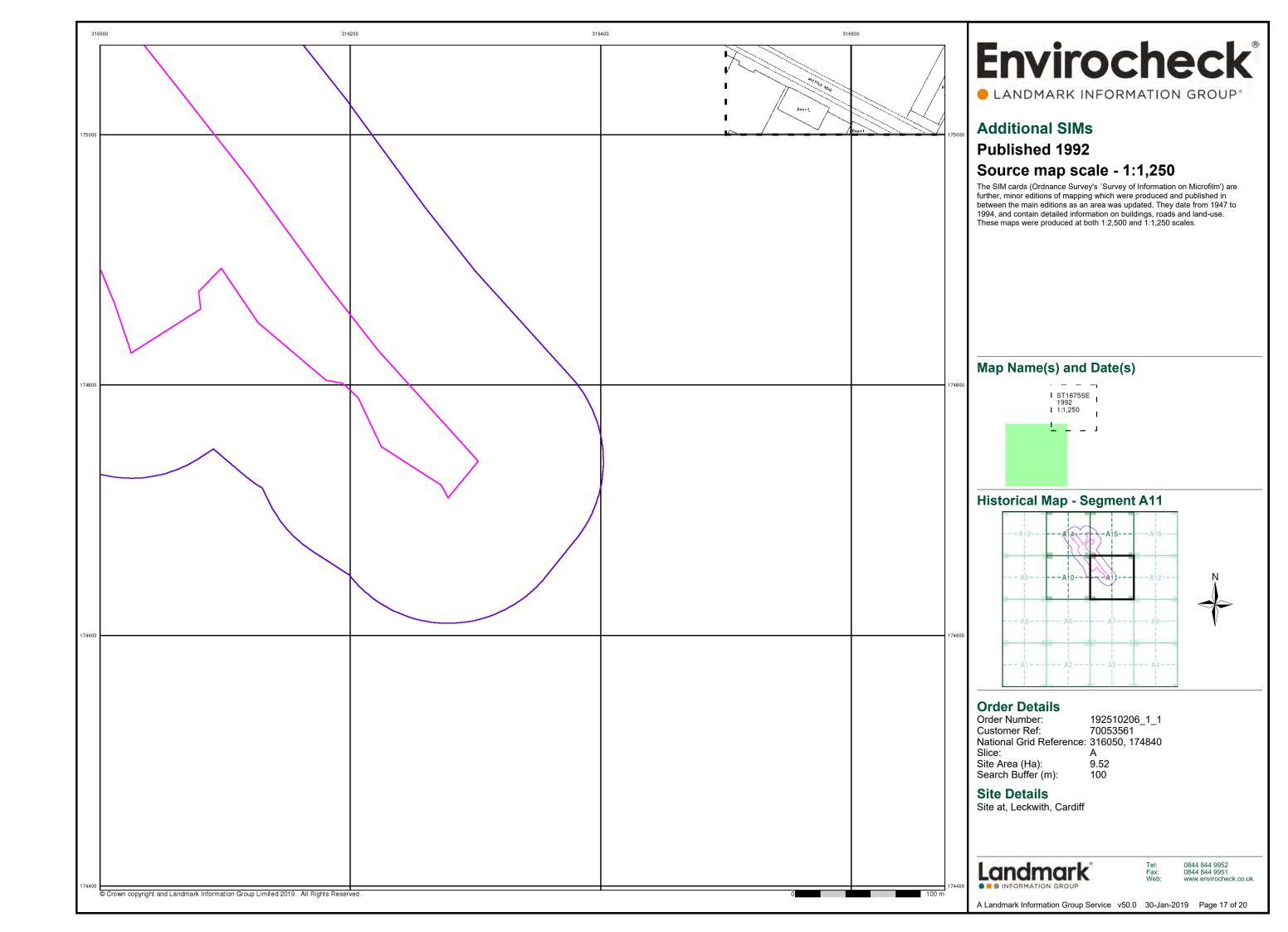


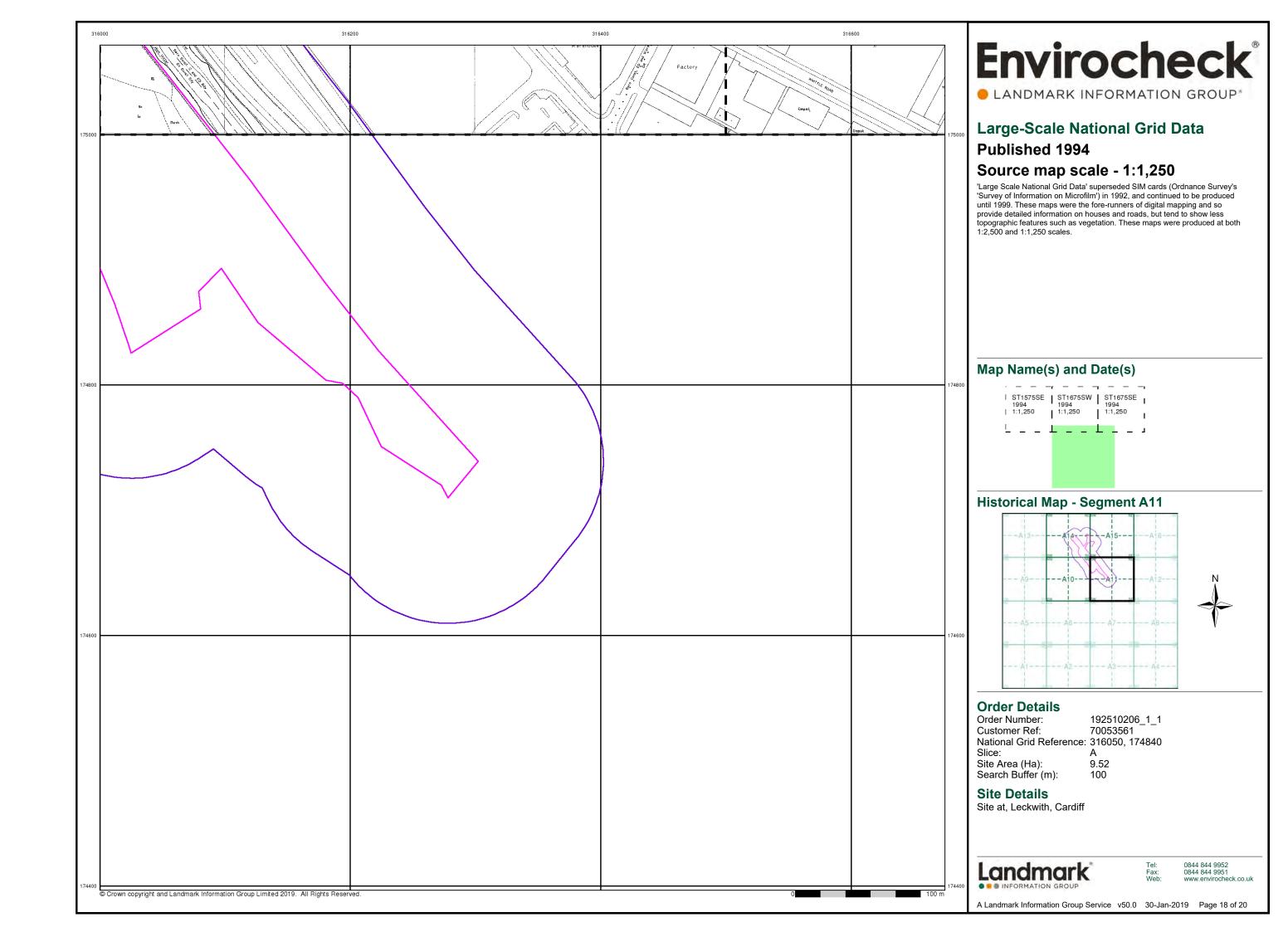


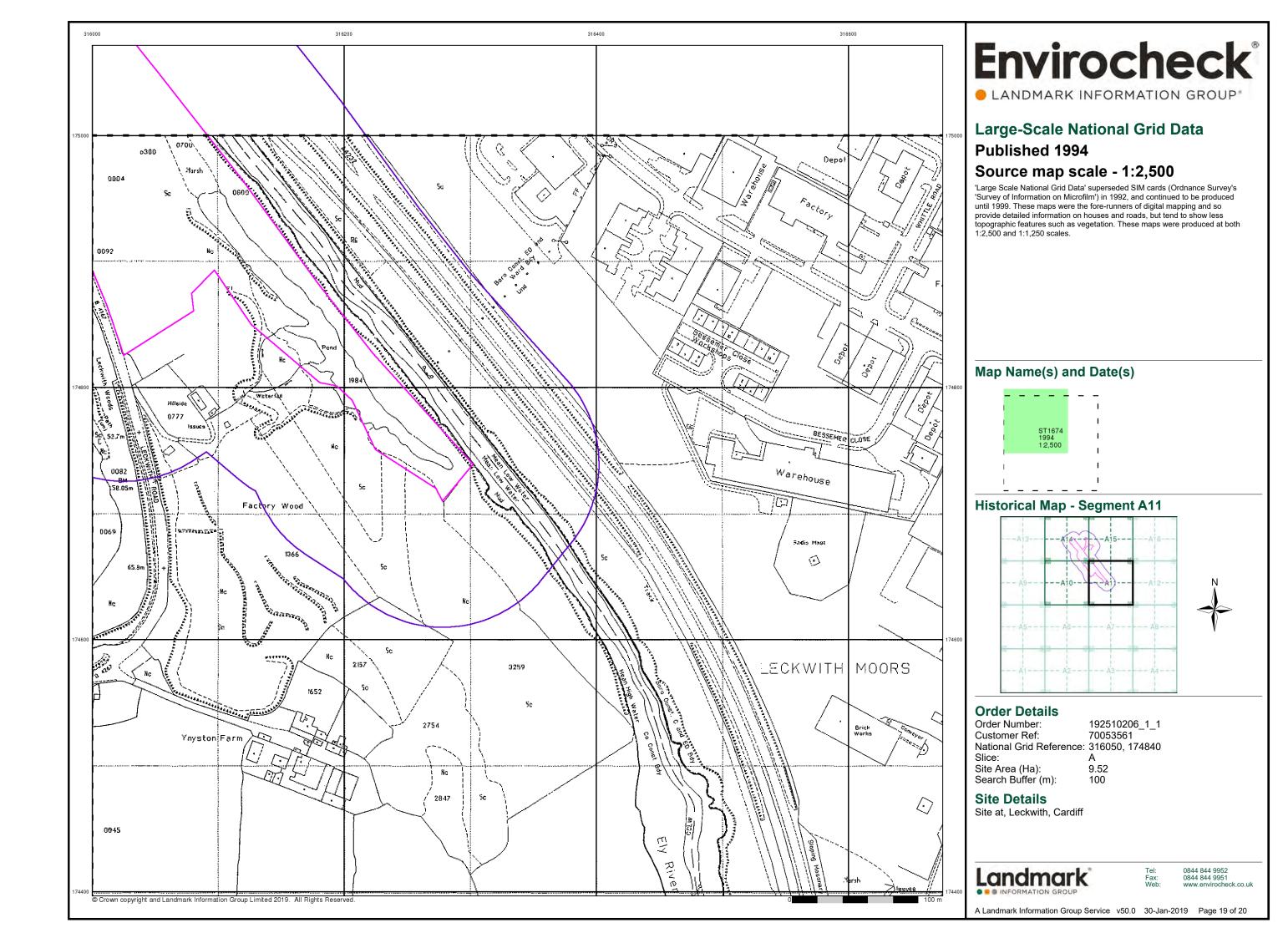












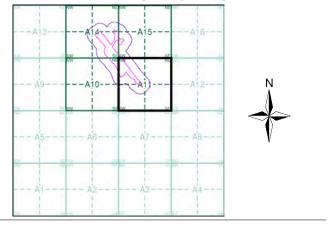


LANDMARK INFORMATION GROUP\*

## Historical Aerial Photography Published 2000

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 A11**



#### **Order Details**

Order Number: 192510206\_1\_1
Customer Ref: 70053561
National Grid Reference: 316050, 174840

Slice: A
Site Area (Ha): 9.52
Search Buffer (m): 100

earch Buffer (m):

#### **Site Details**

Site at, Leckwith, Cardiff

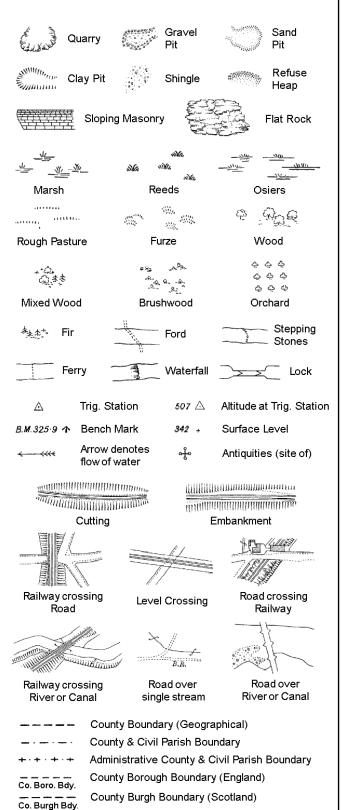
Landmark\*

el: 0844 844 9952 ax: 0844 844 9951 eb: www.envirocheck.co.uk

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## **Historical Mapping Legends**

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



B.R.

E.P

F.B.

M.S

Bridle Road

Foot Bridge

Mile Stone

M.P.M.R. Mooring Post or Ring

Electricity Pylor

Police Call Box

Telephone Call Box

Signal Post

Pump

Sluice

Spring

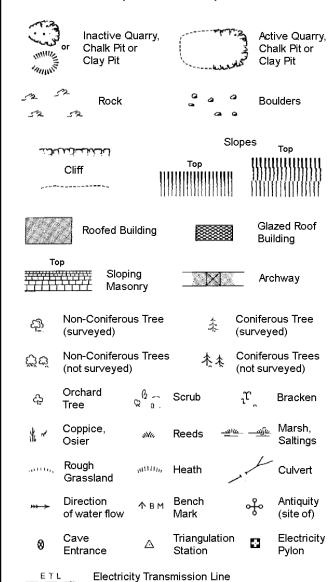
Trough Well

S.P

Sl.

 $T_{T}$ 

### **Supply of Unpublished Survey Information** 1:2,500 and 1:1,250



## County Boundary (Geographical)

County & Civil Parish Boundary Civil Parish Boundary Admin. County or County Bor. Boundary L B Bdy London Borough Boundary boundary

Symbol marking point	where
mereing changes	

вн	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
EIP	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
Н	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	WrPt,WrT	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

### Ordnance Survey Plan, Additional SIMs and Large-Scale National Grid Data 1:2,500 and 1:1,250

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~~~~ <u>~</u>					()(()	
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$\triangle_{a}$	Boulders			Δ.	Boulde	ers (scattered)
	Positioned	Boulder			Scree	
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ర్లోల్	Non-Conif (not surve	erous Trees yed)	\$	本本		erous Trees urveyed)
දා	Orchard Tree	Q 6 a .	Scru	b	ıπ,	Bracken
* ~	Coppice, Osier	si¥te,	Ree	ds 🛥	1 <u>(c)</u>	Marsh, Saltings
astiliz,	Rough Grassland	mun,	Heat	th	1	Culvert
<del>&gt;&gt;&gt;</del>	Direction of water flo	Δ	Triar Stati	ngulatior on	ુ ન્દ્રેલ	Antiquity (site of)
E_TL	_ Electric	ity Transmis	ssion	Line	$\boxtimes$	Electricity Pylon
/ <del>k</del> / вм	291.60m E	Bench Mark				ings with ing Seed
	Roofe	ed Building			8	Glazed Roof Building
		Civil parish	n/com	munity b	oundar	ту
		District bo	undar	у		
_ •		County box	undar	y		
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٥	,	Boundary in always apport of three)				
Bks	Barracks		1	P	Pillar, F	Pole or Post
Bty	Battery		ı	PO	Post C	Office
Cemy	Cemetery		ı	<b>-</b> C	Public	Convenience
Chy	Chimney		I	Pp	Pump	
Cis	Cistern			Ppg Sta		ng Station
Dismtd R	•	tled Railway		PW		ofWorship
El Gen S	ta Electric Station	ity Generating	;	Sewage P		Sewage Pumping Station
EIP		Pole, Pillar	:	SB, S Br	Signal	Box or Bridge
El Sub S	ta Electricity	Sub Station	:	SP, SL	Signal	Post or Light
FB	Filter Bed		:	Spr	Spring	I

Fn / D Fn Fountain / Drinking Ftn.

Gas Governer

**Guide Post** 

Manhole

GVC

Gas Valve Compound

Mile Post or Mile Stone

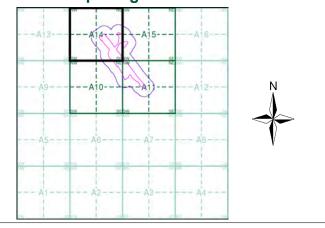
## Envirocheck®

LANDMARK INFORMATION GROUP

### **Historical Mapping & Photography included:**

Mapping Type	Scale	Date	Pg
Glamorganshire	1:2,500	1880	2
Glamorganshire	1:2,500	1901	3
Glamorganshire	1:2,500	1919 - 1920	4
Glamorganshire	1:2,500	1940 - 1941	5
Ordnance Survey Plan	1:1,250	1959 - 1991	6
Ordnance Survey Plan	1:1,250	1968	7
Ordnance Survey Plan	1:2,500	1970	8
Additional SIMs	1:2,500	1984	9
Additional SIMs	1:1,250	1984 - 1991	10
Additional SIMs	1:2,500	1990	11
Large-Scale National Grid Data	1:1,250	1992	12
Large-Scale National Grid Data	1:1,250	1994	13
Historical Aerial Photography	1:2,500	2000	14

### **Historical Map - Segment A14**



#### **Order Details**

Order Number: 192510206\_1\_1 **Customer Ref:** 70053561 National Grid Reference: 316050, 174840 Slice:

Site Area (Ha): 9.52 Search Buffer (m): 100

**Site Details** 

Tank or Track

Trough

Wind Pump Wr Pt. Wr T Water Point, Water Tap

Works (building or area)

Tr

Wd Pp

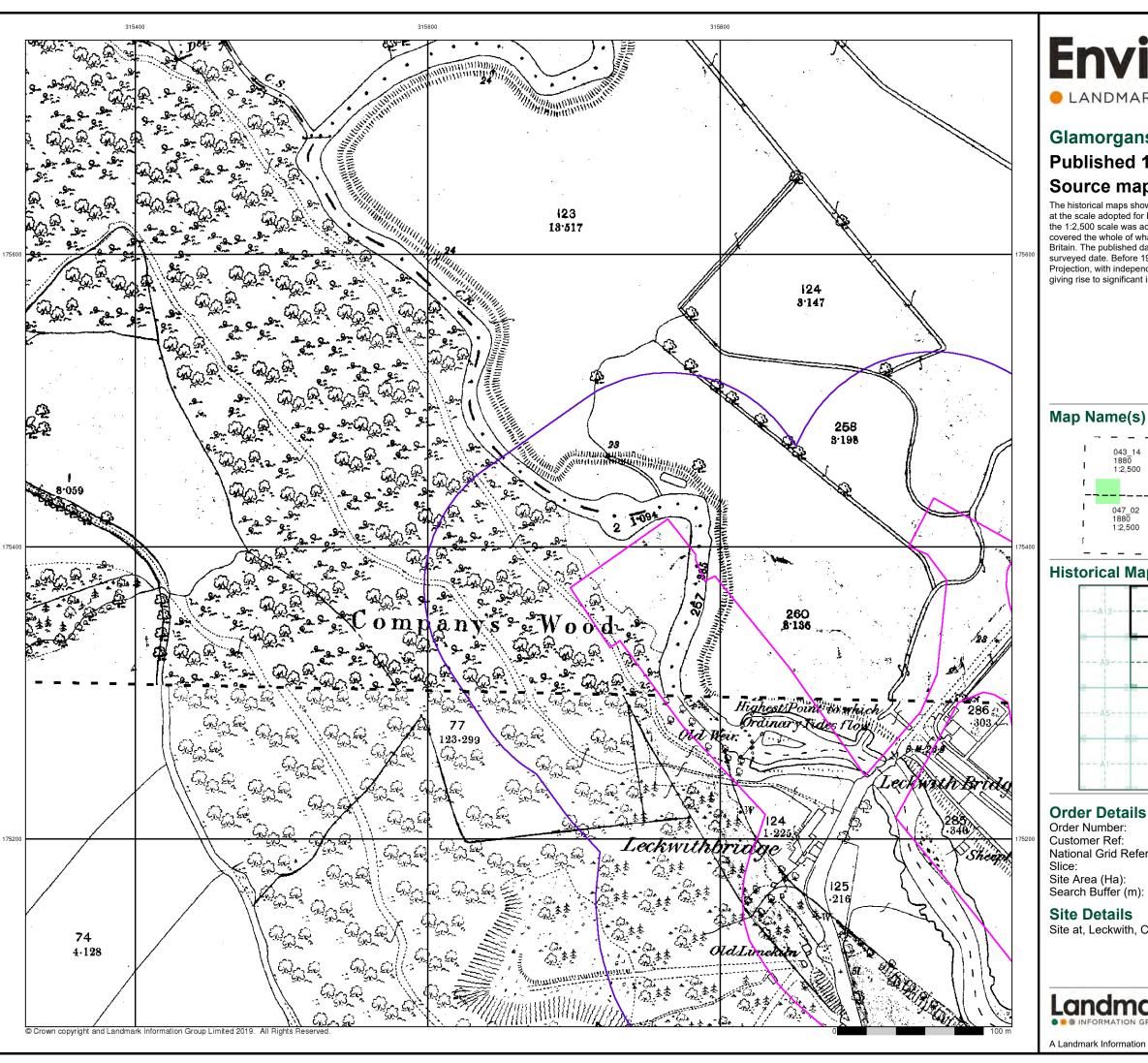
Wks

Site at, Leckwith, Cardiff



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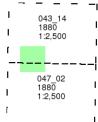
### Glamorganshire

### Published 1880

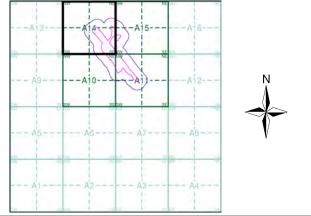
### Source map scale - 1:2,500

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 A14**



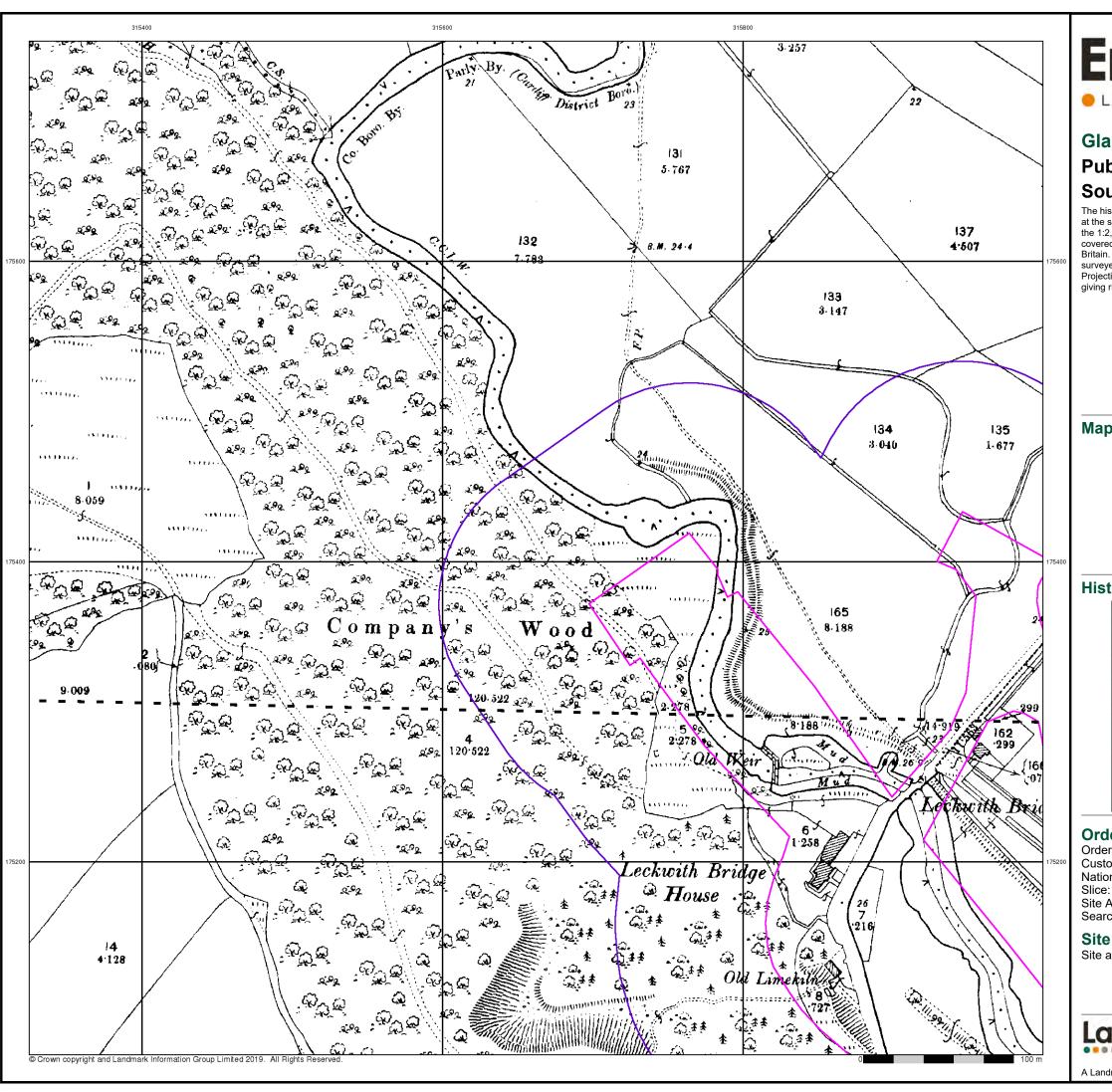
192510206\_1\_1 70053561 National Grid Reference: 316050, 174840

Site at, Leckwith, Cardiff



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A Landmark Information Group Service v50.0 30-Jan-2019 Page 2 of 14



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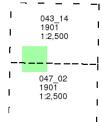
### Glamorganshire

### **Published 1901**

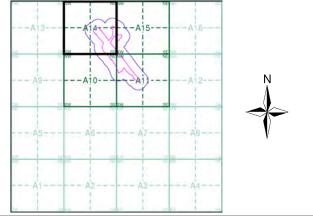
### Source map scale - 1:2,500

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 A14**



#### **Order Details**

Order Number: 192510206\_1\_1 **Customer Ref:** 70053561 National Grid Reference: 316050, 174840

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

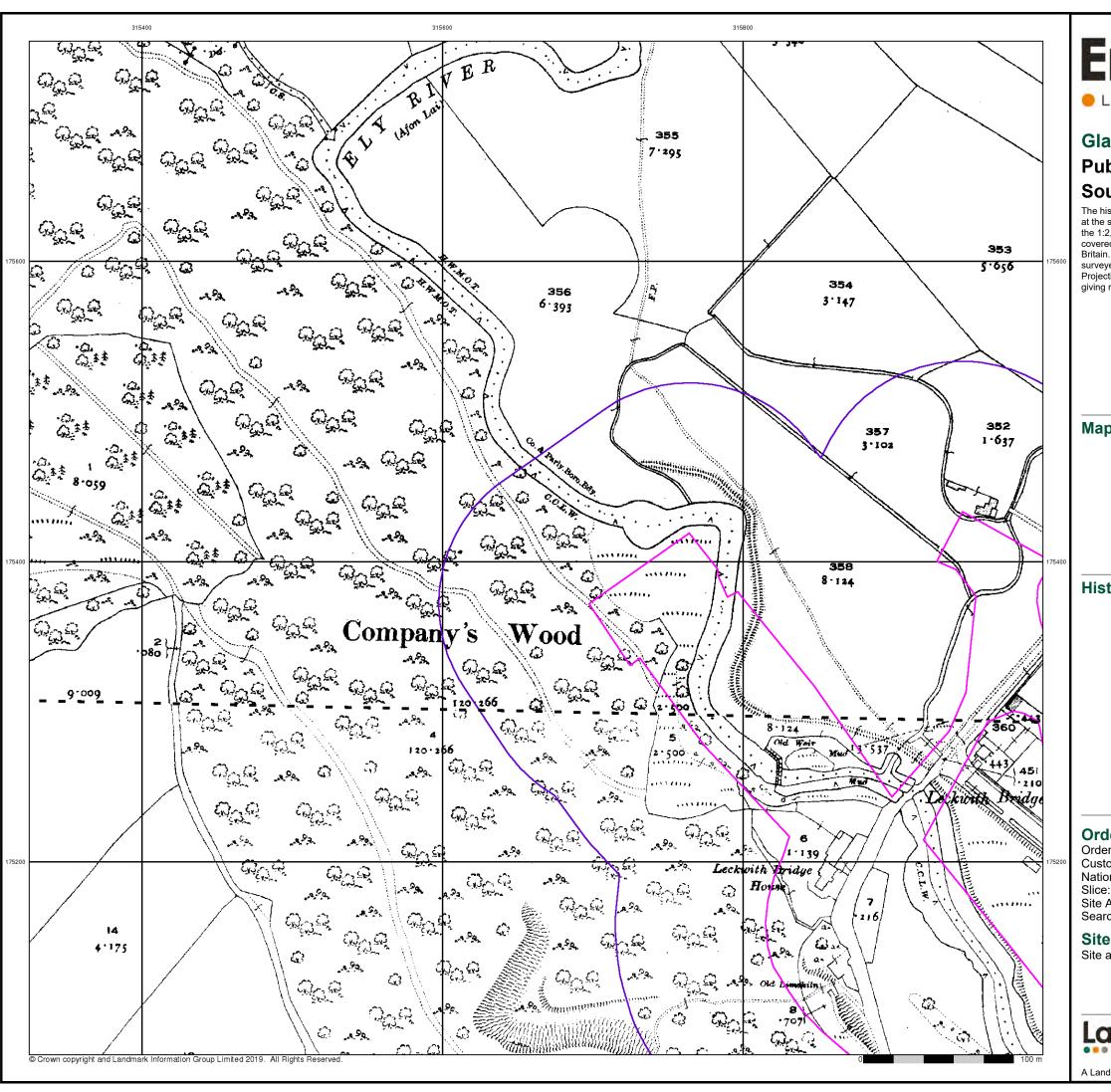
#### **Site Details**

Site at, Leckwith, Cardiff

Landmark

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A Landmark Information Group Service v50.0 30-Jan-2019 Page 3 of 14



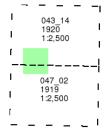
LANDMARK INFORMATION GROUP\*

### Glamorganshire

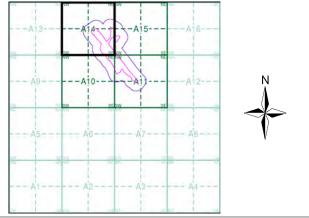
### **Published 1919 - 1920** Source map scale - 1:2,500

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 A14**



#### **Order Details**

Order Number: 192510206\_1\_1 **Customer Ref:** 70053561 National Grid Reference: 316050, 174840

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

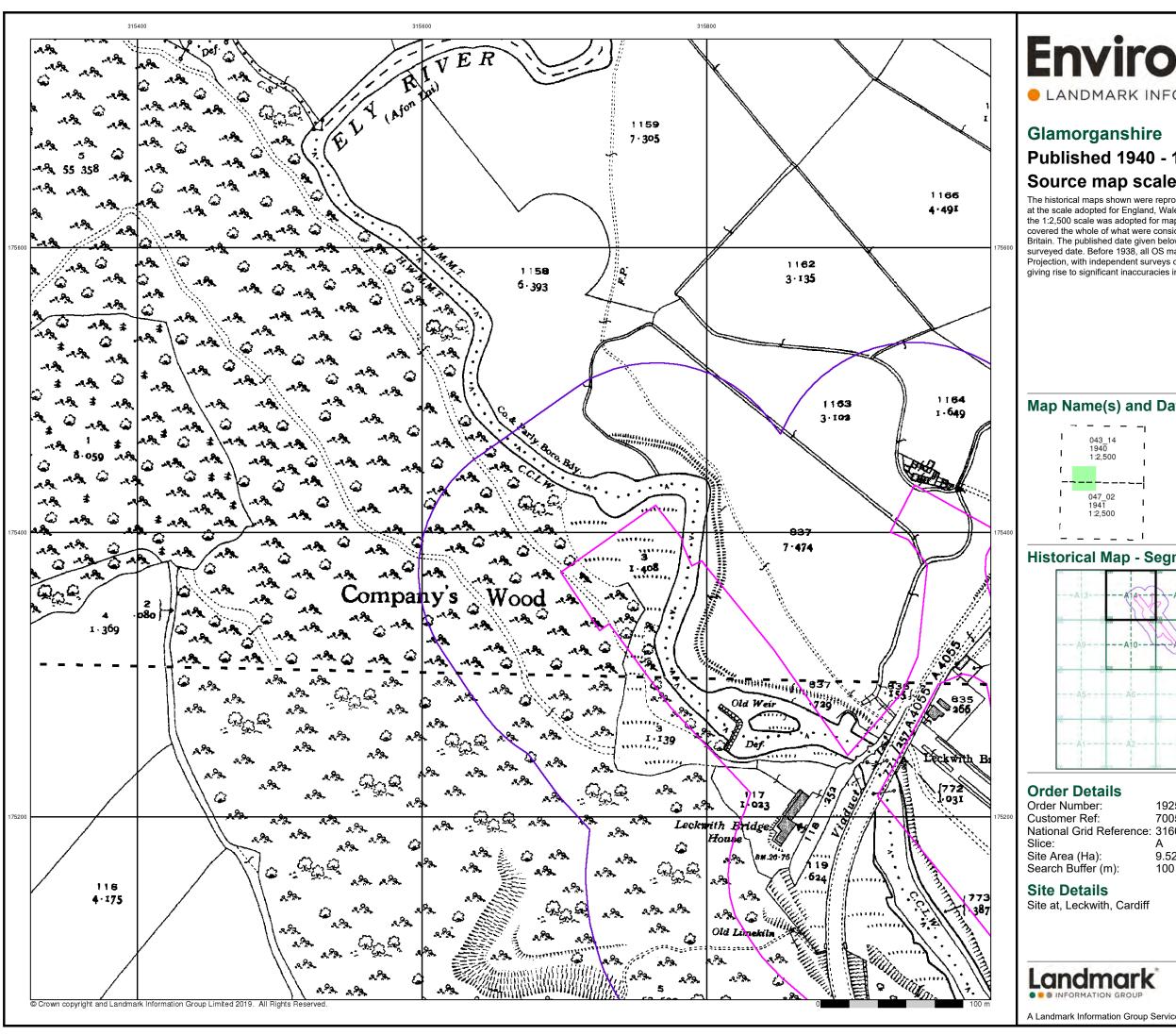
#### **Site Details**

Site at, Leckwith, Cardiff

Landmark

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A Landmark Information Group Service v50.0 30-Jan-2019 Page 4 of 14



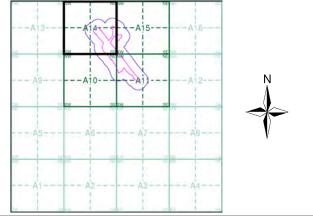
LANDMARK INFORMATION GROUP\*

### Published 1940 - 1941 Source map scale - 1:2,500

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

### Map Name(s) and Date(s)

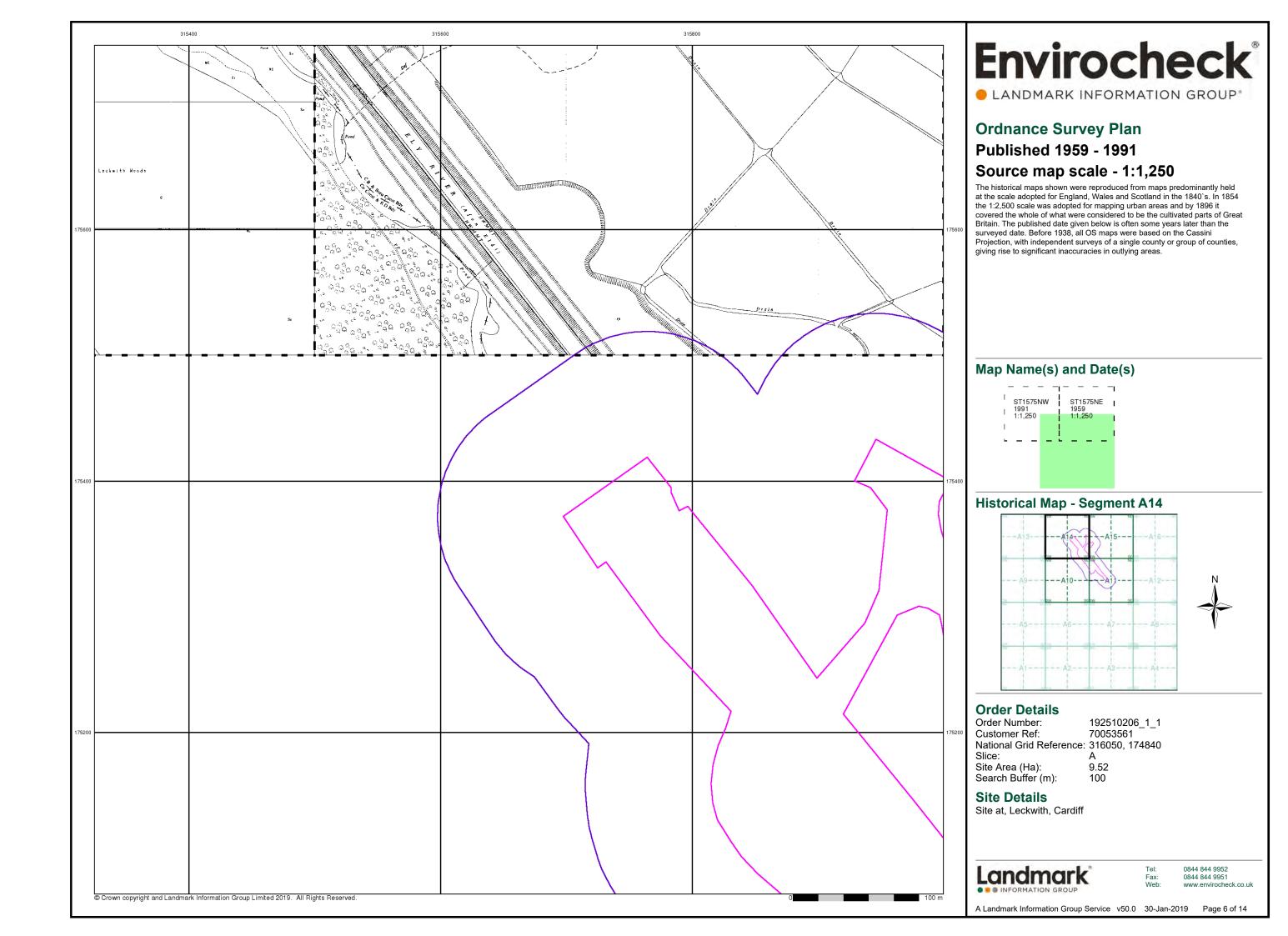
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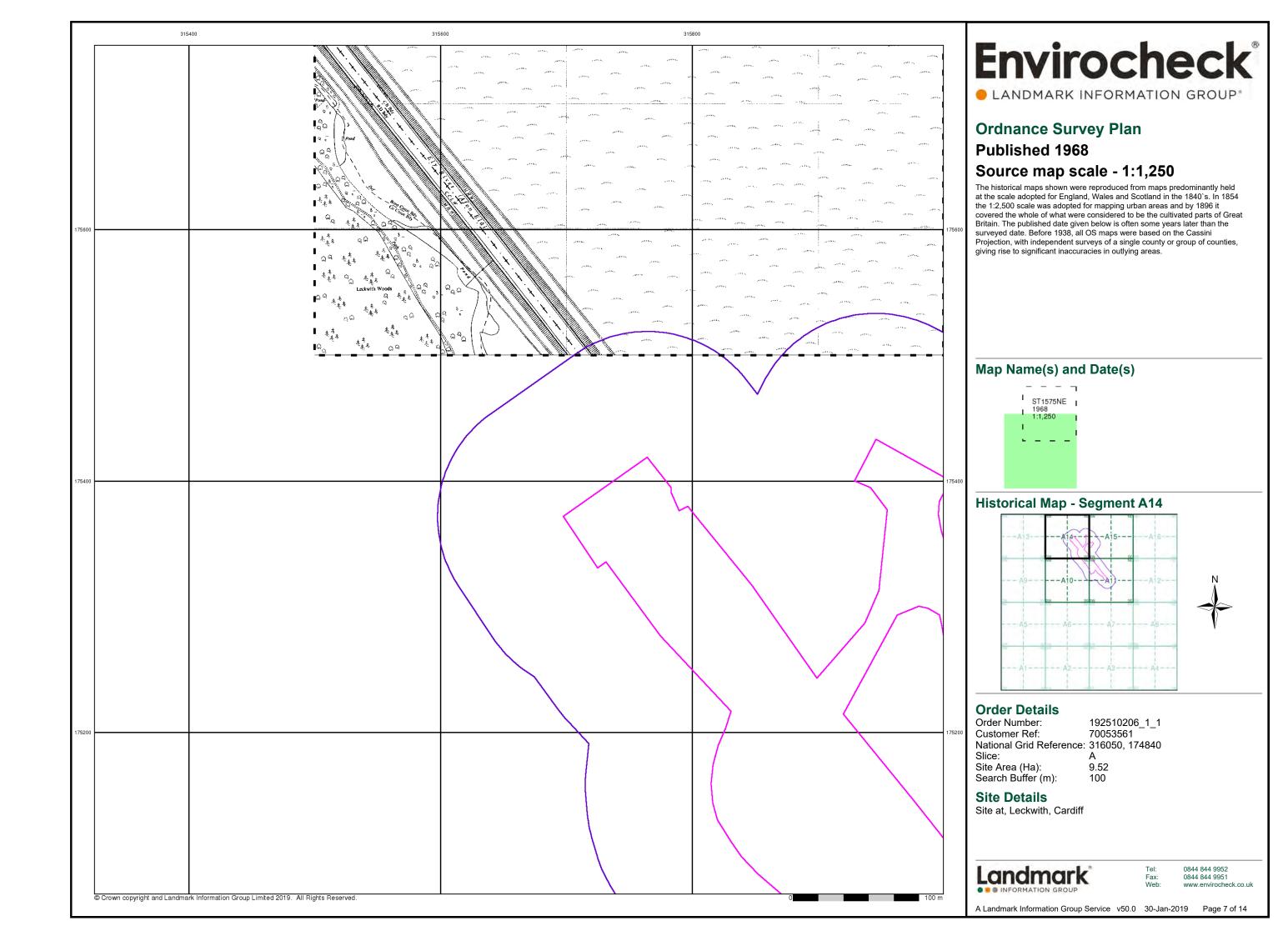


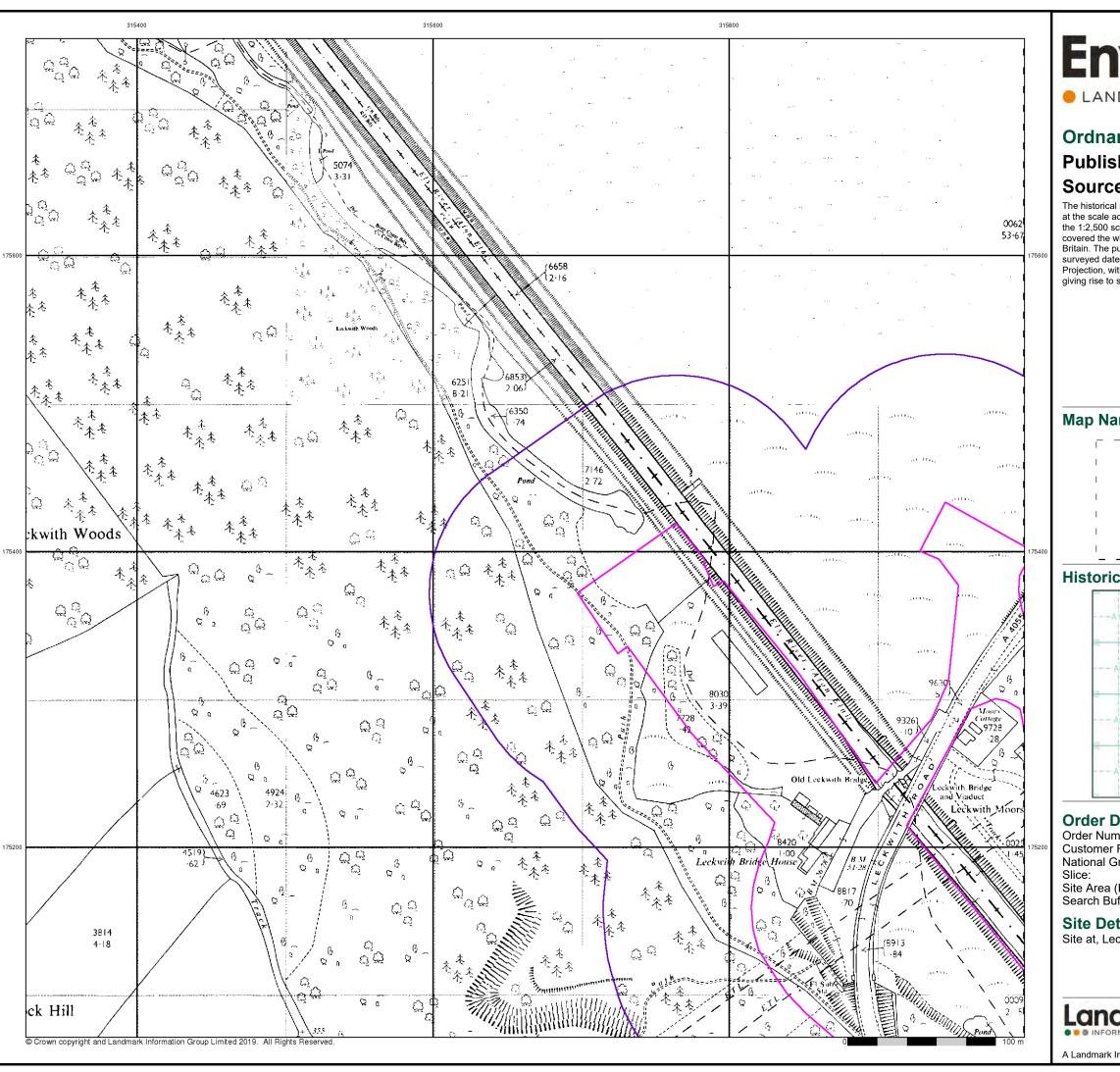
192510206\_1\_1 70053561 National Grid Reference: 316050, 174840

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A Landmark Information Group Service v50.0 30-Jan-2019 Page 5 of 14







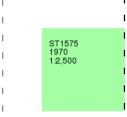
LANDMARK INFORMATION GROUP\*

### **Ordnance Survey Plan** Published 1970

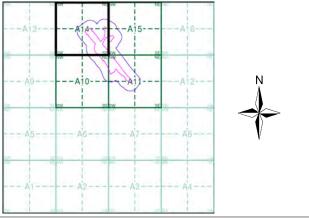
### Source map scale - 1:2,500

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

### Map Name(s) and Date(s)



### **Historical Map - Segment A14**



#### **Order Details**

Order Number: 192510206\_1\_1 70053561 **Customer Ref:** National Grid Reference: 316050, 174840

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

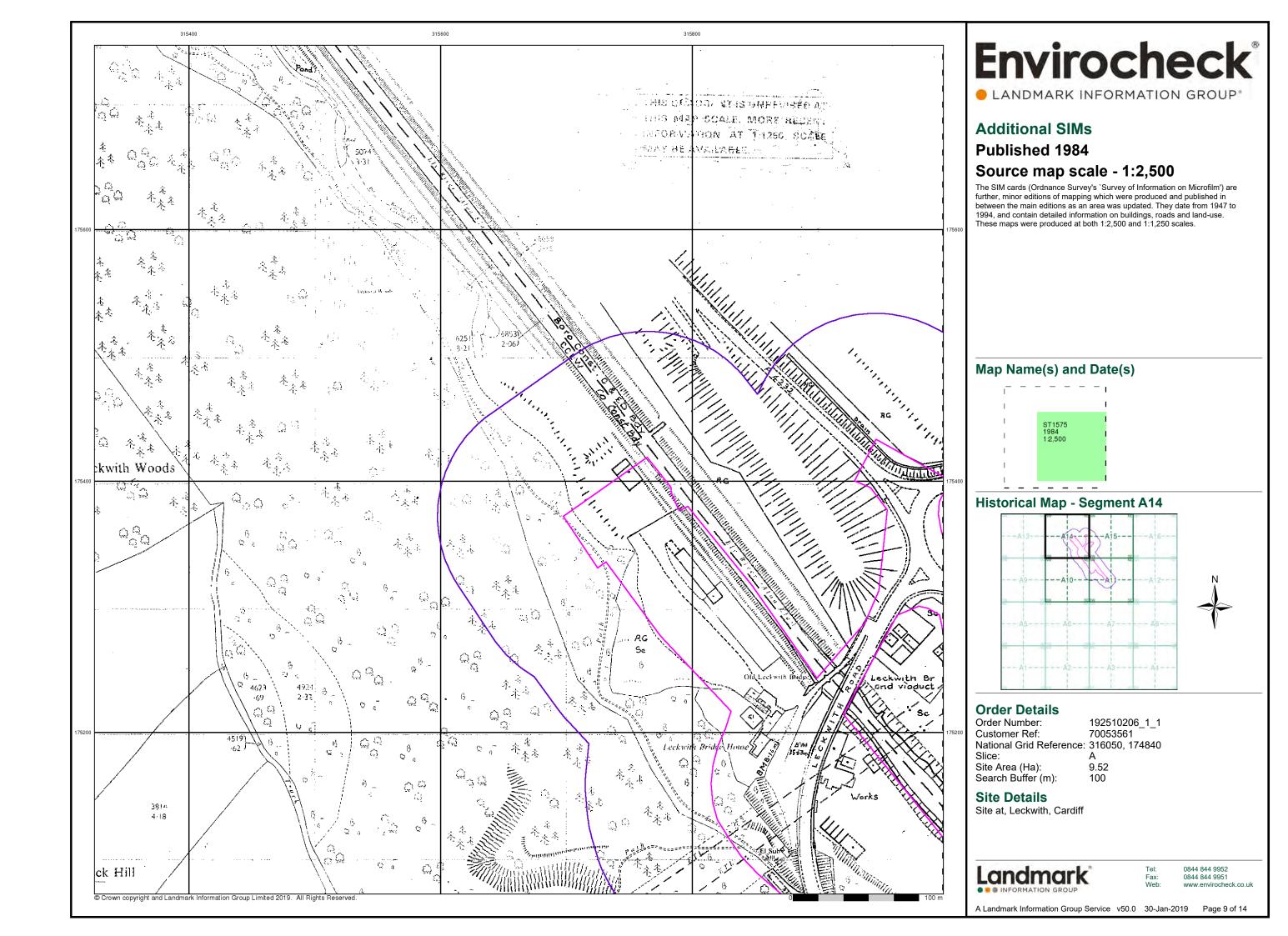
#### **Site Details**

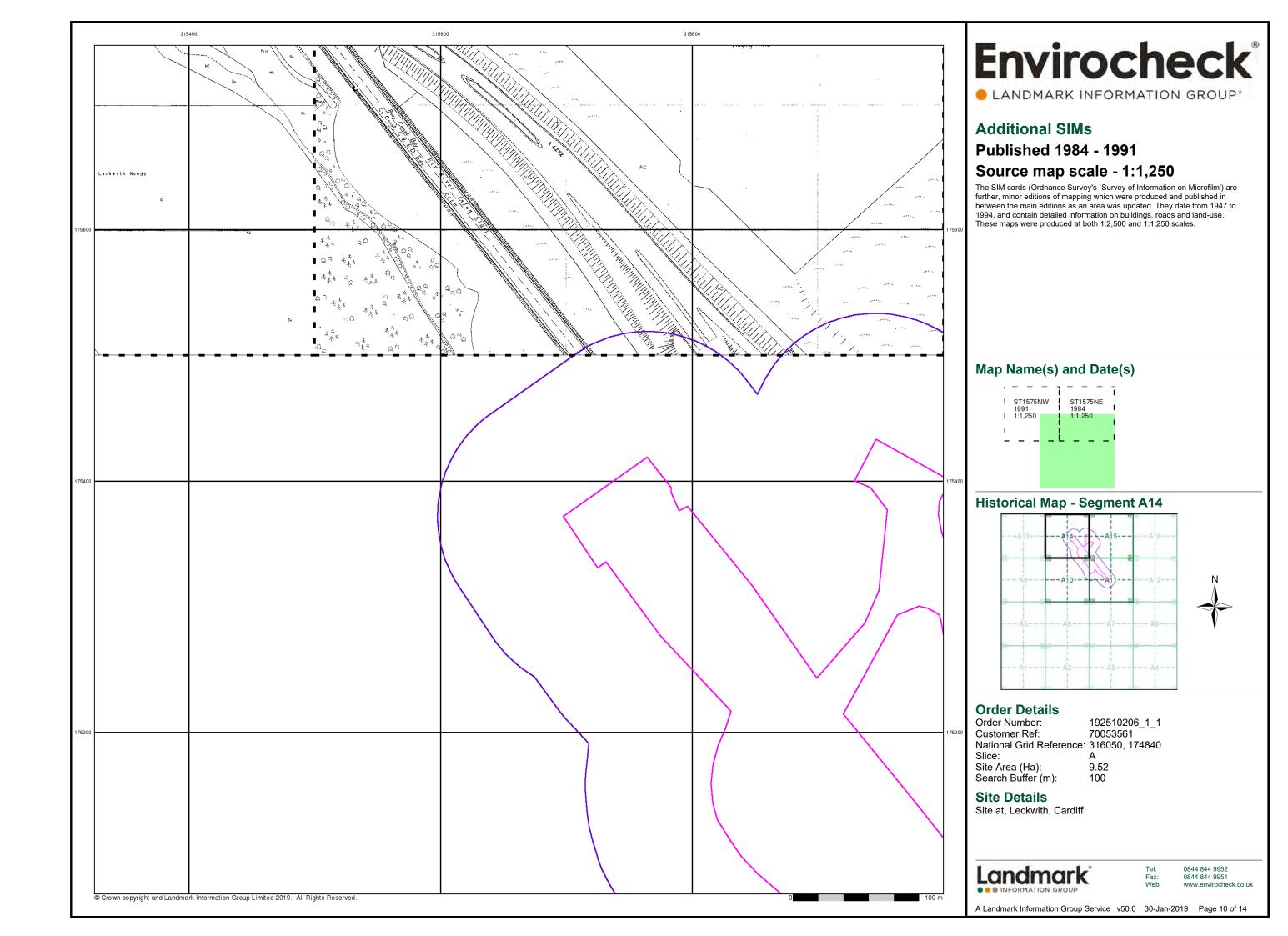
Site at, Leckwith, Cardiff

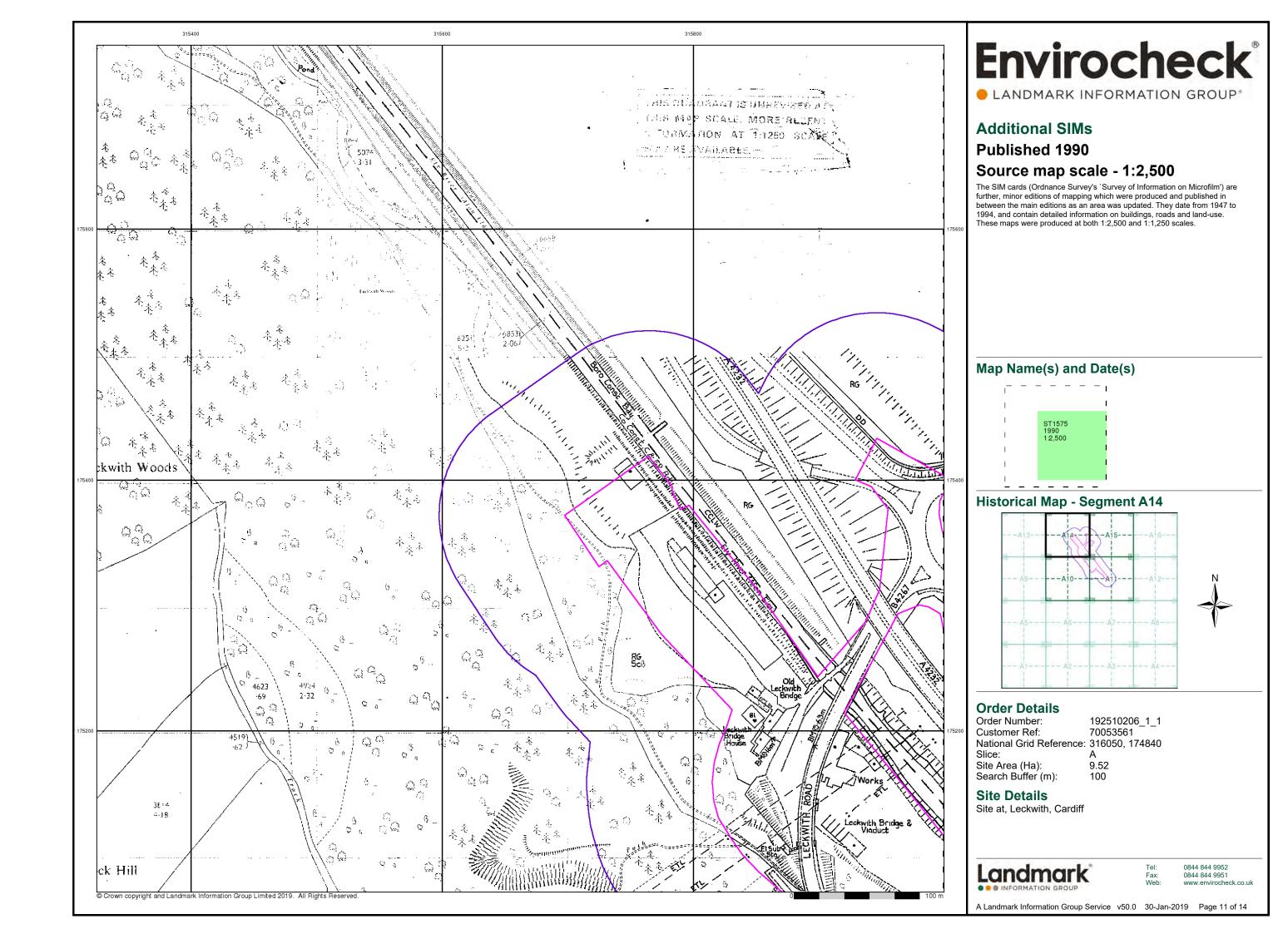
Landmark

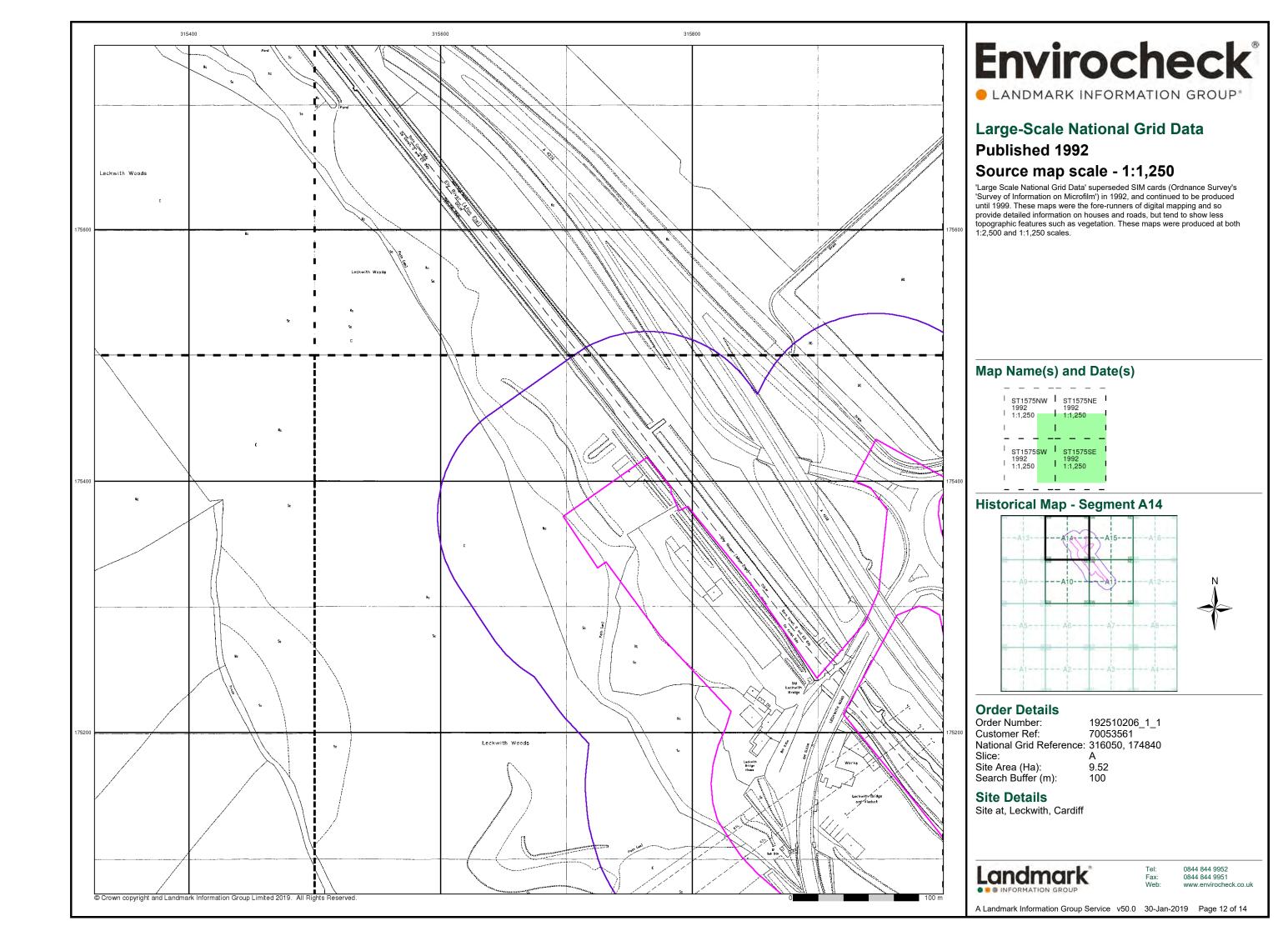
0844 844 9952

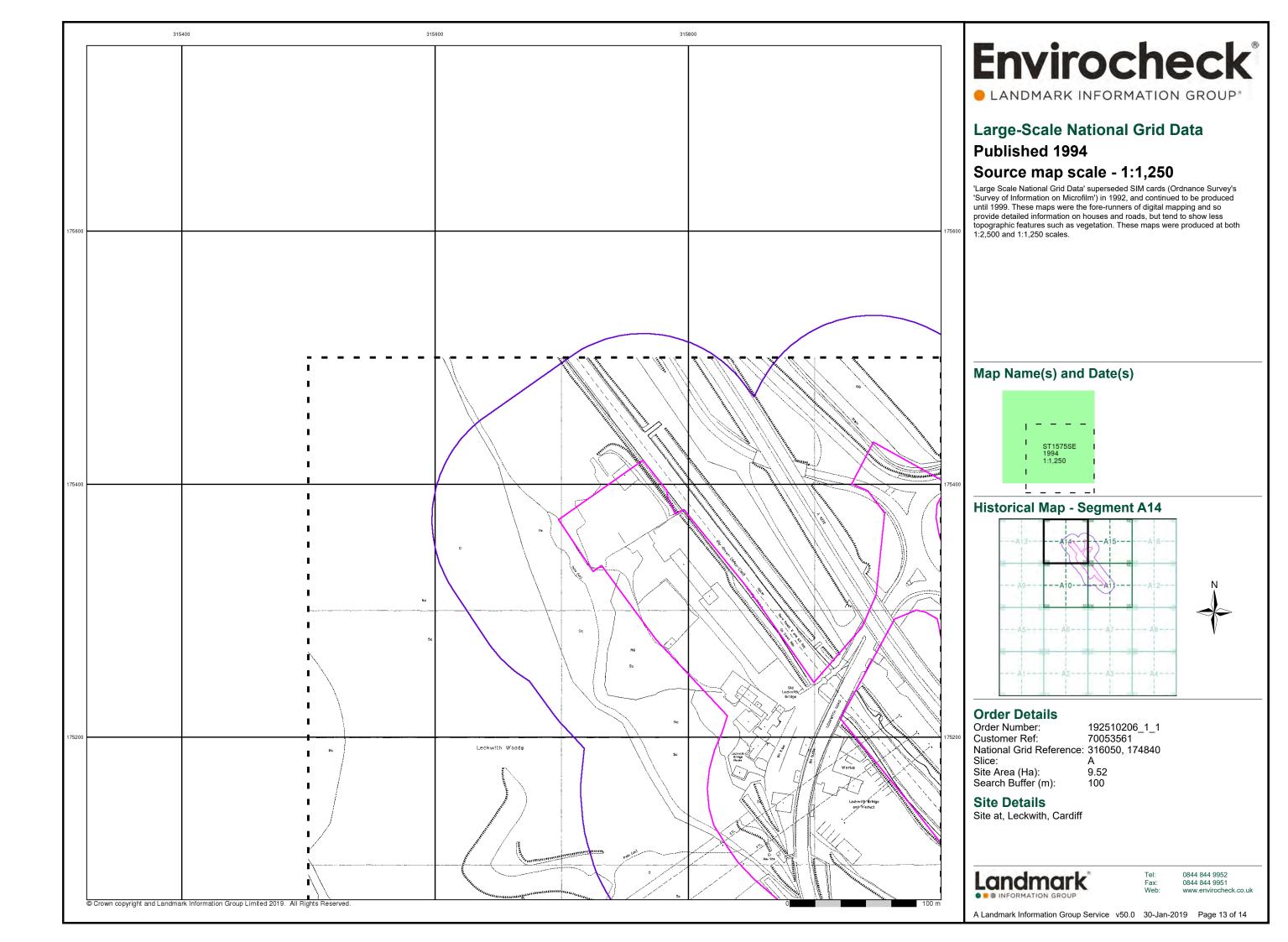
A Landmark Information Group Service v50.0 30-Jan-2019 Page 8 of 14

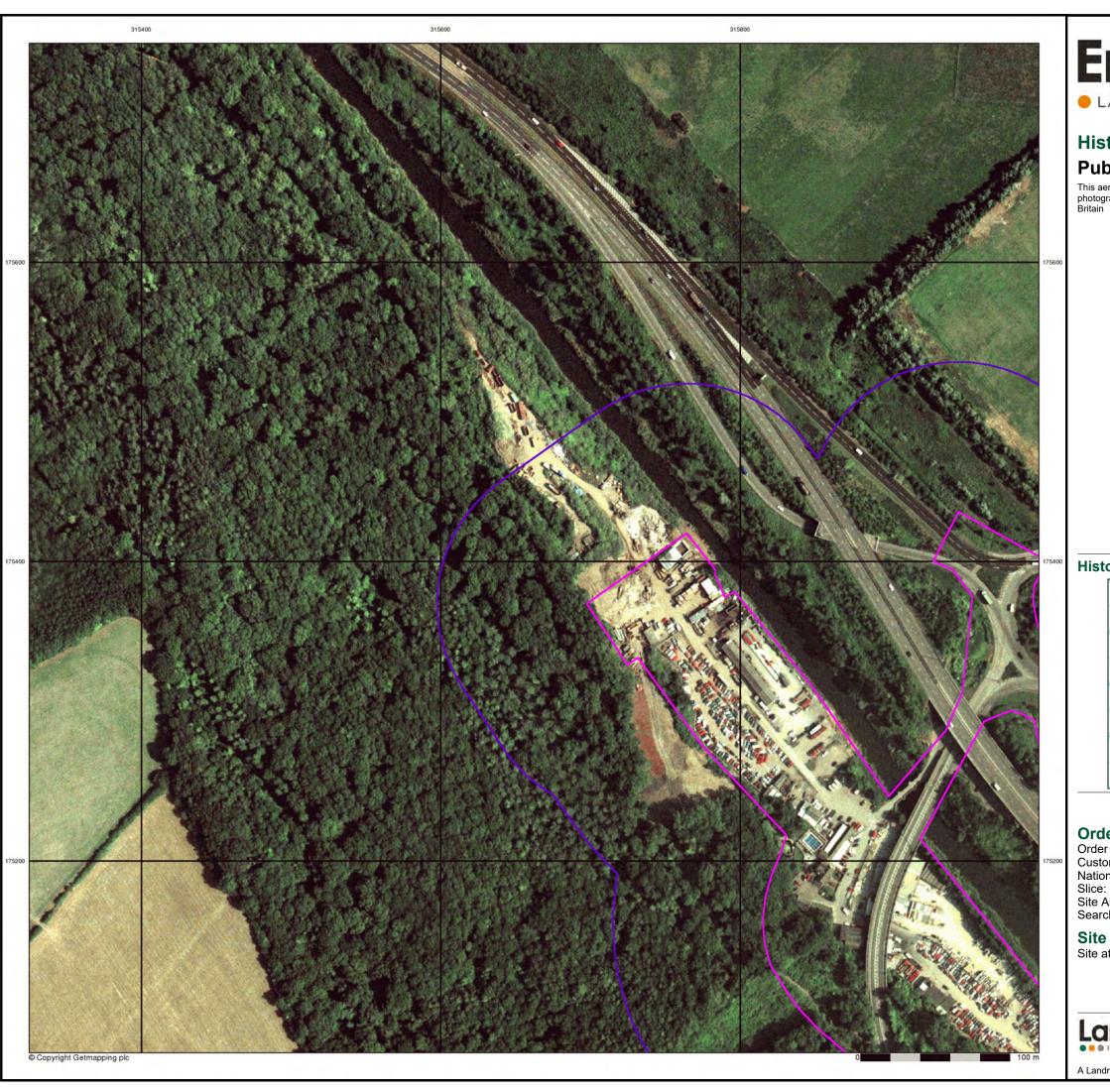










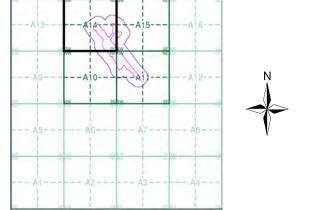


LANDMARK INFORMATION GROUP\*

## Historical Aerial Photography Published 2000

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 A14**



#### **Order Details**

Order Number: 192510206\_1\_1
Customer Ref: 70053561
National Grid Reference: 316050, 174840

Slice: A
Site Area (Ha): 9.52
Search Buffer (m): 100

**Site Details** 

Site at, Leckwith, Cardiff

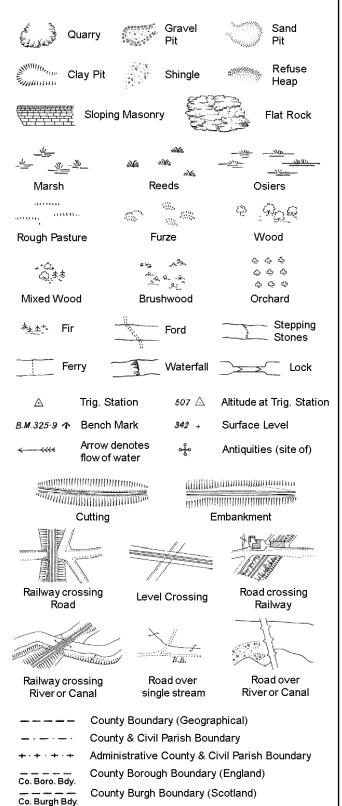
Landmark\*

Tel: 0844 844 9952 Fax: 0844 844 9951 Web: www.envirochec

A Landmark Information Group Service v50.0 30-Jan-2019 Page 14 of 14

## **Historical Mapping Legends**

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



B.R.

E.P

F.B.

Bridle Road

Foot Bridge

Mile Stone

M.P.M.R. Mooring Post or Ring

Electricity Pylor

Police Call Box

Telephone Call Box

LC

MP

MS

NTL

Level Crossing

Normal Tidal Limit

Mile Post or Mooring Post

Manhole

Mile Stone

Signal Post

Pump

Sluice

Spring

Trough

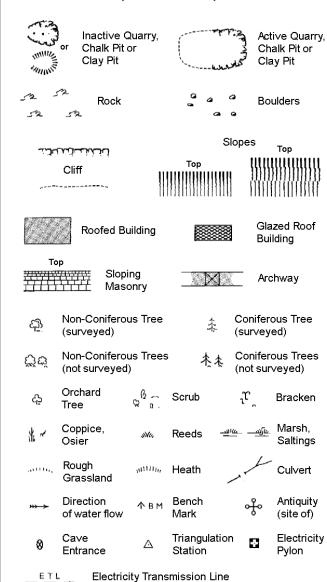
Well

S.P

Sl.

 $T_T$ 

### Ordnance Survey Plan, Additional SIMs and Large-Scale National Grid Data 1:2,500 and **Supply of Unpublished Survey Information** 1:2,500 and 1:1,250



		Civil Parish	Boundary	1
. —	<del></del> ·	Admin. Cou	ınty or Cou	ınty Bor. Boundary
L B Bd	<sup>y</sup> <del>→</del>	London Boi	ough Bou	ndary
21	•	Symbol ma mereing ch		where boundary
вн	Beer House		Р	Pillar, Pole or Post
BP, BS	Boundary Po	st or Stone	PO	Post Office
Cn, C	Capstan, Cra	ne	PC	Public Convenience
Chy	Chimney		PH	Public House
D Fn	Drinking Fou	ntain	Pp	Pump
EIP	Electricity Pill	ar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pil	lar	SP, SL	Signal Post or Light
FB	Foot Bridge		Spr	Spring
GP	Guide Post		Tk	Tank or Track
Н	Hydrant or Hy	/draulic	TCB	Telephone Call Box

TCP

Wd Pp

Telephone Call Post

Water Point, Water Tap

Trough

Wind Pump

County Boundary (Geographical) County & Civil Parish Boundary

Civil Pariob Boundary

## 1:1,250

		Slo	pes _
فتخطب فيمانان	•		Top
Cliff	11111111	Гор 	111111111111111111
~~~ *** = = = = = **	-		
S Rock		52	Rock (scattered)
24			
△ Boulder	s	Δ.	Boulders (scattered)
△ Position	ed Boulder		Scree
्र Non-Co (survey	niferous Tree ed)	-1-	Coniferous Tree (surveyed)
స్ట్రజ్ల Non-Co (not sur	niferous Trees veyed)	~I\ .A.	Coniferous Trees (not surveyed)
ကု Orchard Tree	l çû û . Sc	rub	<sub>ໃ</sub> ໃ Bracken
Coppice Osier	e, "w. Re	eds 📲	<u>ച്ച്</u> Marsh, Saltings
Rough Grassla	տուսը, He	ath	Culvert
Direction of water	2-3	angulation ation	Antiquity (site of)
E_TL Elect	ricity Transmissio	n Line	⊠ Electricity Pylon
BM 231.60m	Bench Mark		Buildings with Building Seed
Ro	ofed Building		Glazed Roof Building
	Civil parish/co	mmunity b	oundary
	District bounda	-	ouridar y
		-	
_ •	County bounds	<del>-</del>	
٥	Boundary post		al (nata: thaga
,0	Boundary mero always appear of three)		d pairs or groups
Bks Barrac	ks	Р	Pillar, Pole or Post
Bty Battery	•	PO	Post Office
Cemy Cemete	-	PC	Public Convenience
Chy Chimn	•	Pp	Pump
Cis Cisterr Dismtd Rly Disn	ı nantled Railway	Ppg Sta PW	Pumping Station Place of Worship
•	tricity Generating	Sewage P	·
EIP Electric	ity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta Electric	ity Sub Station	SP, SL	Signal Post or Light
FB Filter B	ed	Spr	Spring

Fn / D Fn Fountain / Drinking Ftn.

Gas Governer

**Guide Post** 

Manhole

Gas Valve Compound

Mile Post or Mile Stone

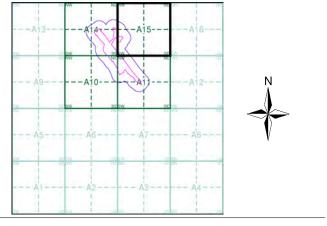
## Envirocheck®

LANDMARK INFORMATION GROUP

### **Historical Mapping & Photography included:**

Mapping Type	Scale	Date	Pg
Glamorganshire	1:2,500	1880	2
Glamorganshire	1:2,500	1901	3
Glamorganshire	1:2,500	1919 - 1920	4
Glamorganshire	1:2,500	1940 - 1941	5
Ordnance Survey Plan	1:1,250	1954 - 1959	6
Ordnance Survey Plan	1:2,500	1955 - 1970	7
Ordnance Survey Plan	1:1,250	1961 - 1971	8
Ordnance Survey Plan	1:1,250	1971	9
Supply of Unpublished Survey Information	1:1,250	1973	10
Additional SIMs	1:2,500	1984	11
Additional SIMs	1:1,250	1984 - 1985	12
Additional SIMs	1:1,250	1989 - 1990	13
Additional SIMs	1:2,500	1990	14
Large-Scale National Grid Data	1:1,250	1992	15
Additional SIMs	1:1,250	1992	16
Large-Scale National Grid Data	1:1,250	1994	17
Historical Aerial Photography	1:2,500	2000	18

### **Historical Map - Segment A15**



#### **Order Details**

Order Number: 192510206\_1\_1 **Customer Ref:** 70053561 National Grid Reference: 316050, 174840 Slice:

Site Area (Ha):

9.52 Search Buffer (m): 100

#### **Site Details**

Tank or Track

Trough

Wind Pump

Wr Pt. Wr T Water Point, Water Tap

Works (building or area)

Tr

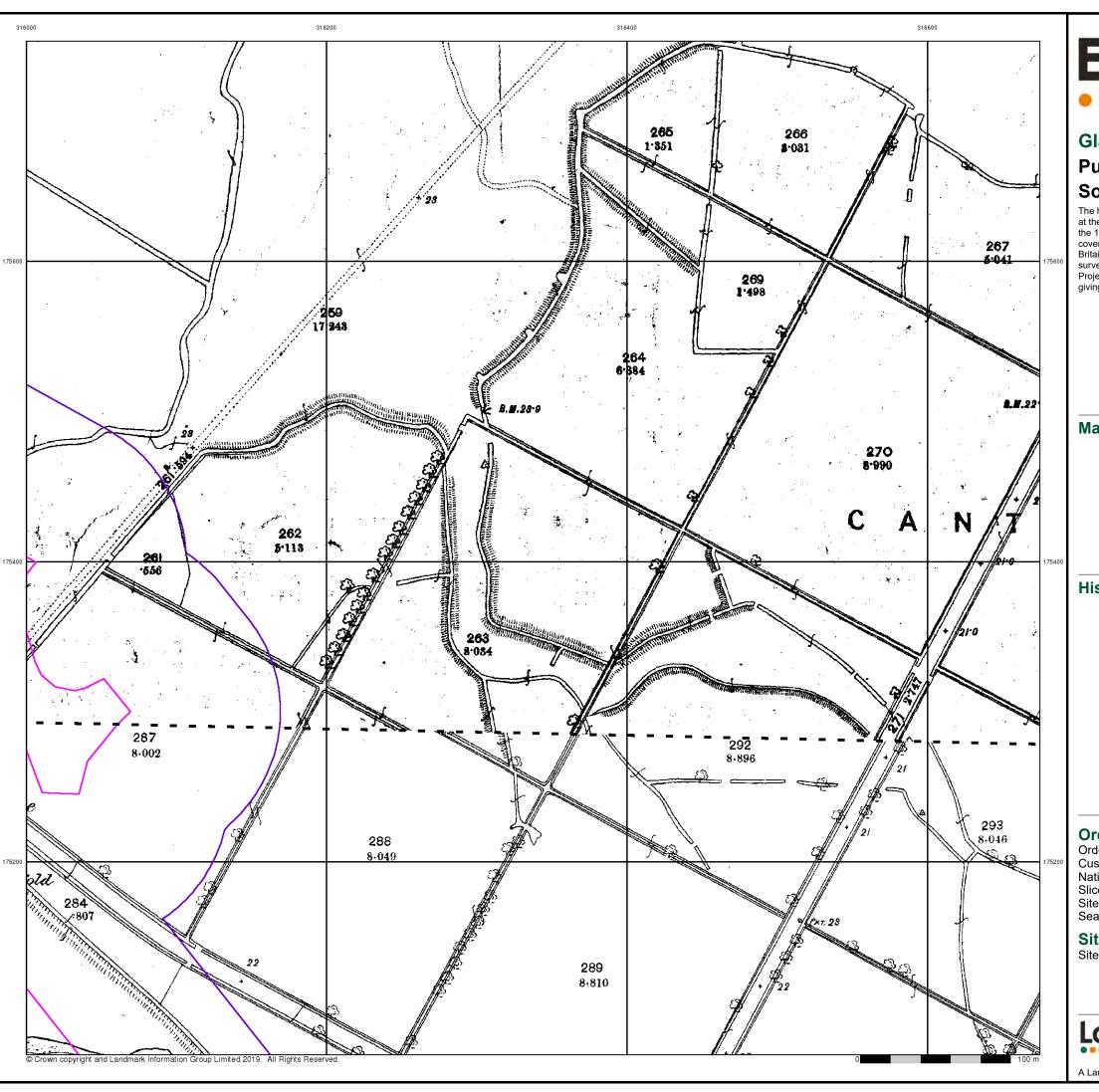
Wd Pp

Site at, Leckwith, Cardiff



0844 844 9952 0844 844 9951

A Landmark Information Group Service v50.0 30-Jan-2019 Page 1 of 18



LANDMARK INFORMATION GROUP\*

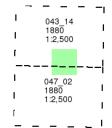
### Glamorganshire

### Published 1880

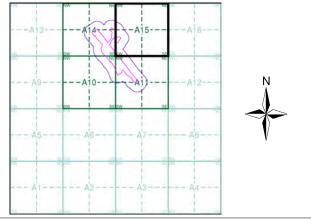
### Source map scale - 1:2,500

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 A15**



#### **Order Details**

Order Number: 192510206\_1\_1
Customer Ref: 70053561
National Grid Reference: 316050, 174840

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

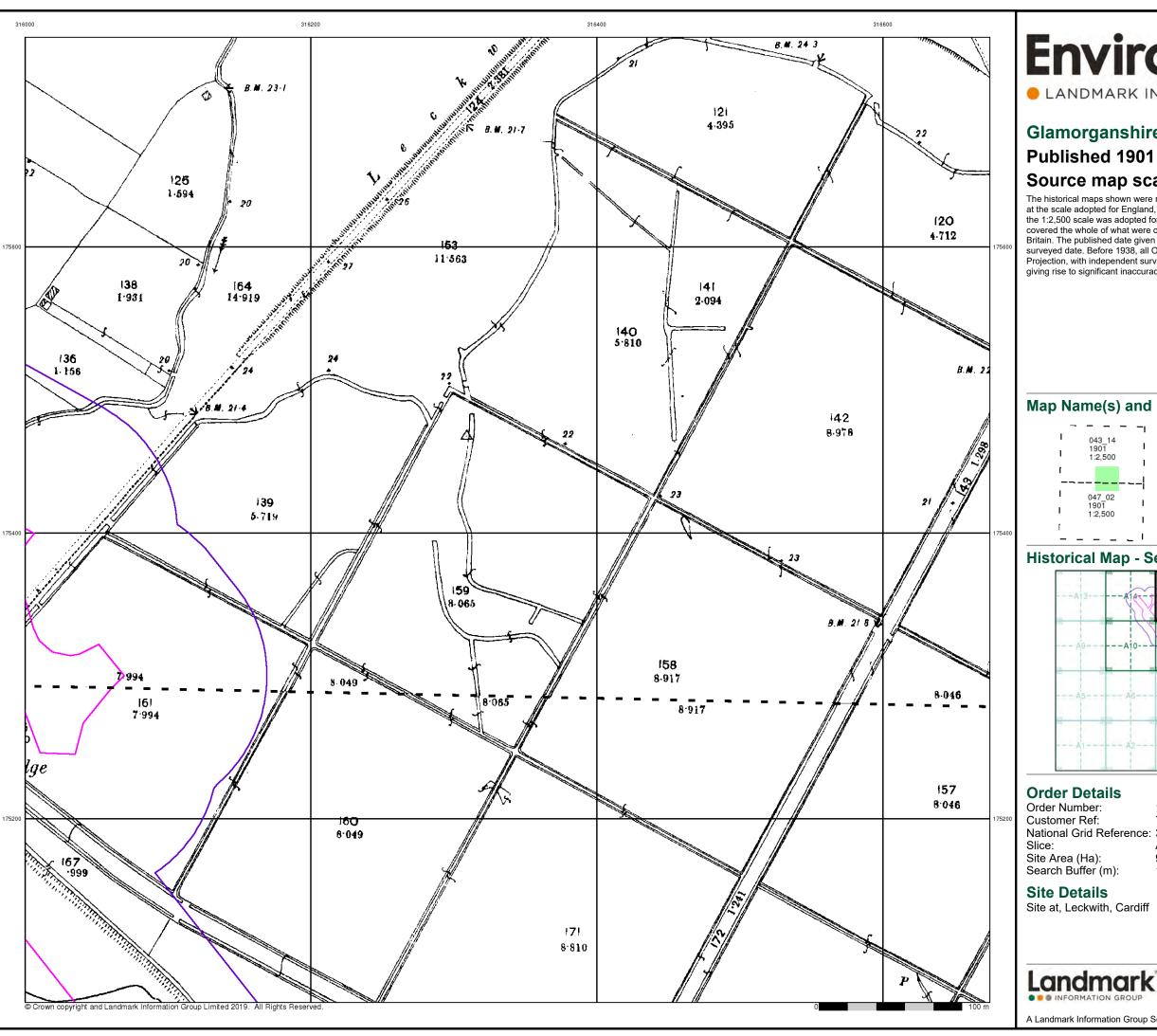
### **Site Details**

Site at, Leckwith, Cardiff

Landmark

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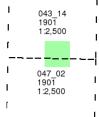
### Glamorganshire

### Published 1901

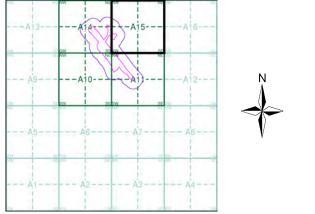
### Source map scale - 1:2,500

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 A15**

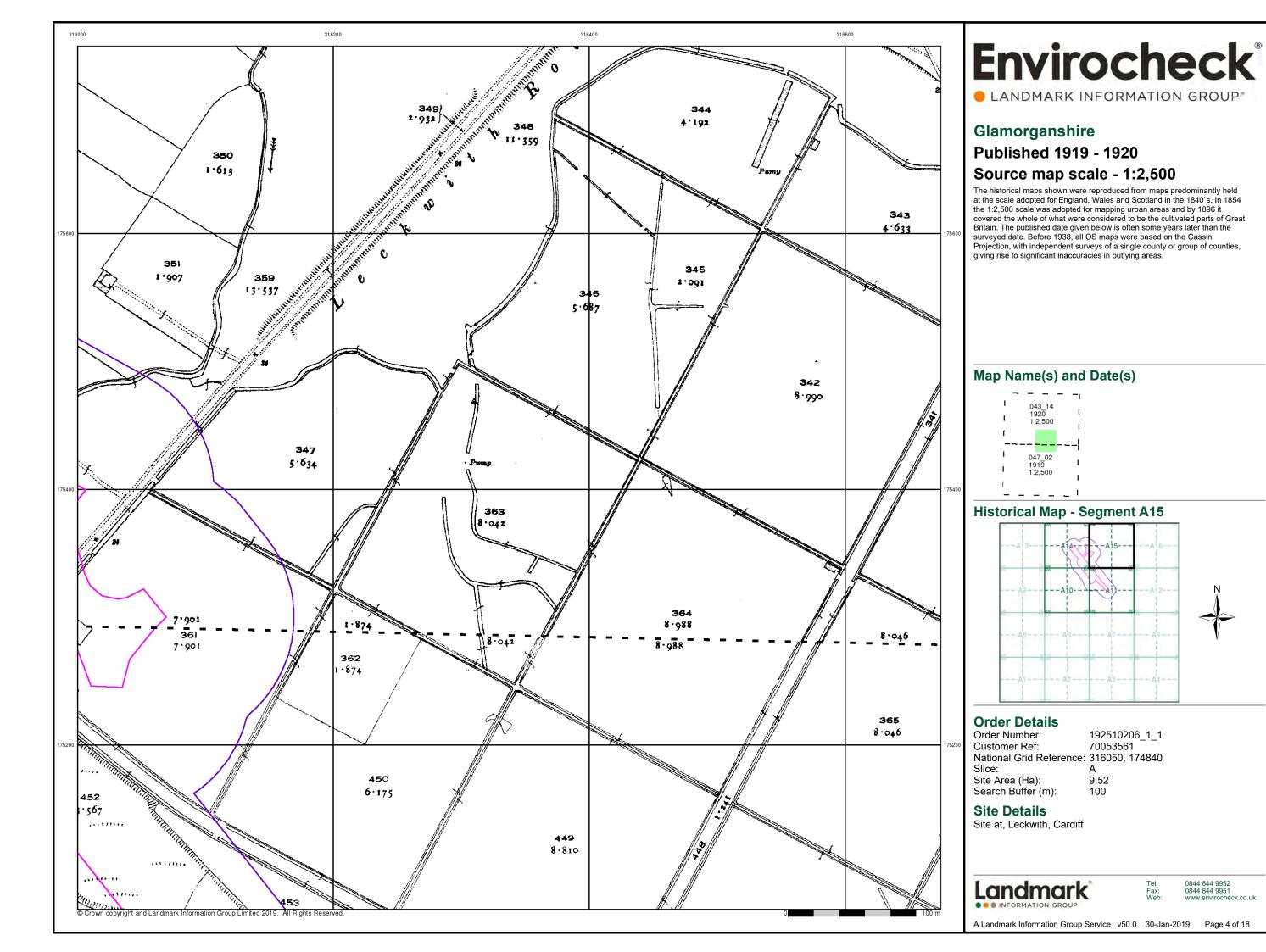


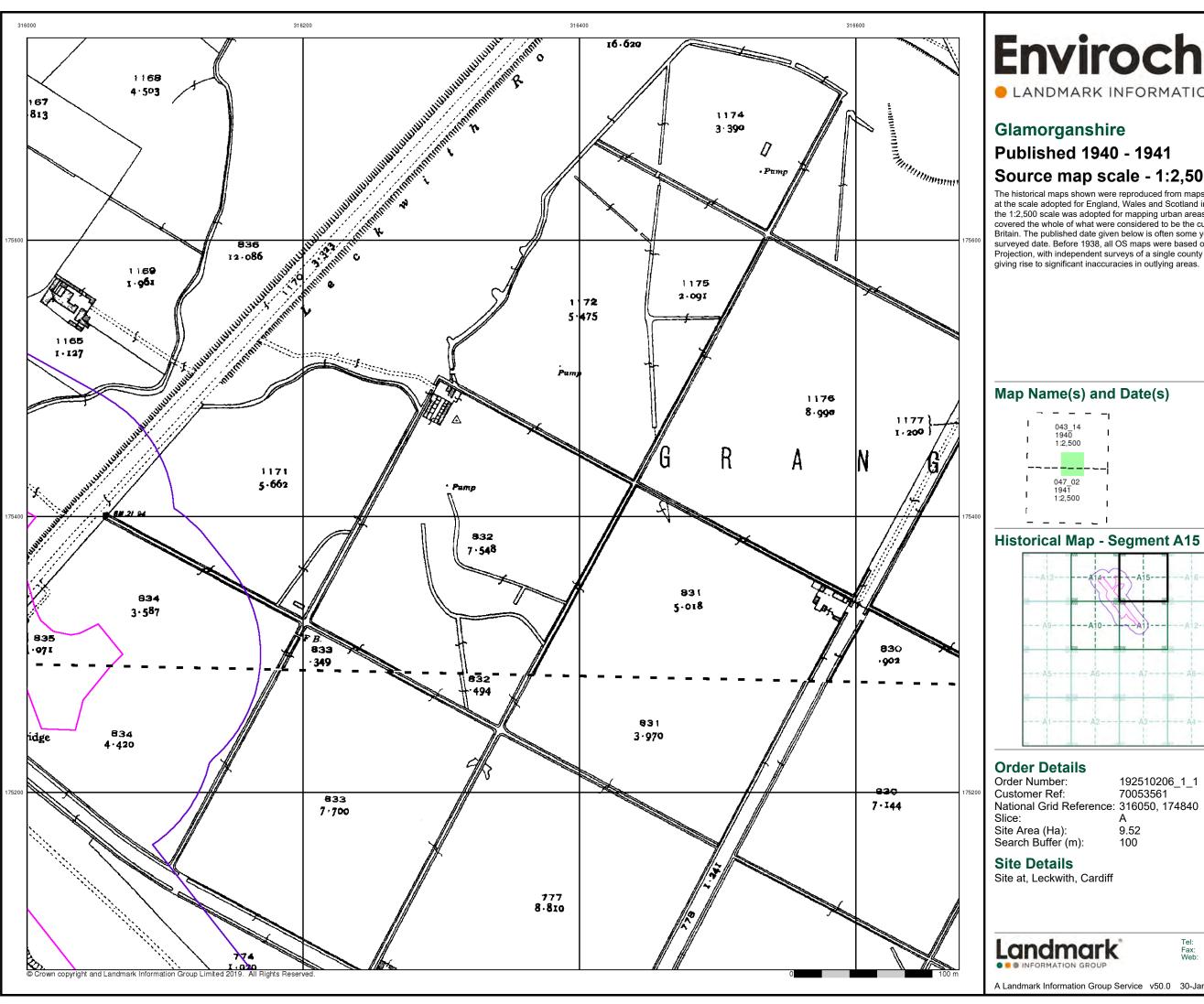
192510206\_1\_1 70053561 National Grid Reference: 316050, 174840

9.52

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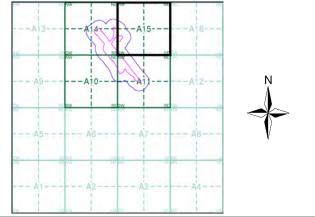




LANDMARK INFORMATION GROUP\*

## Source map scale - 1:2,500

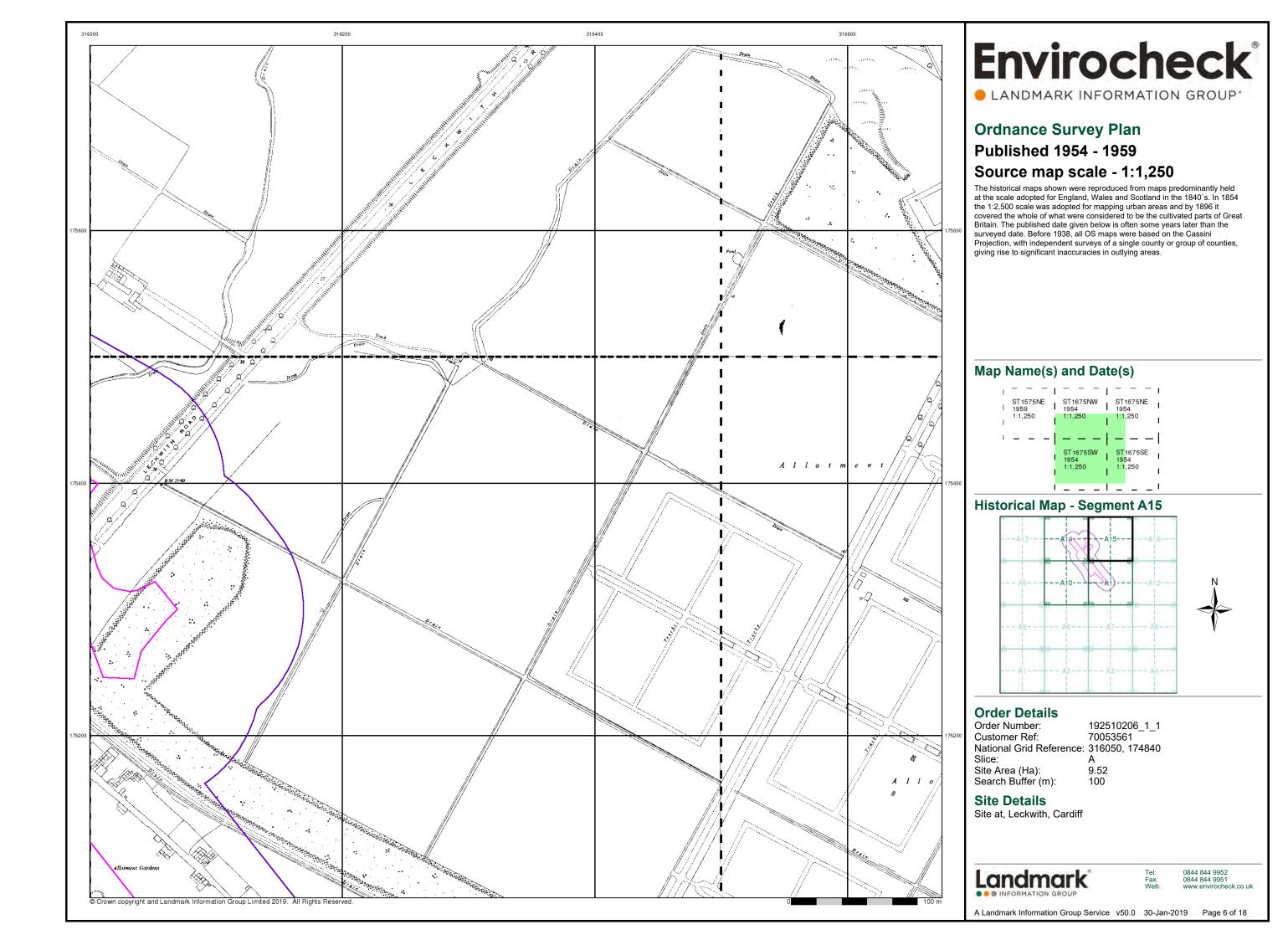
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. 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.

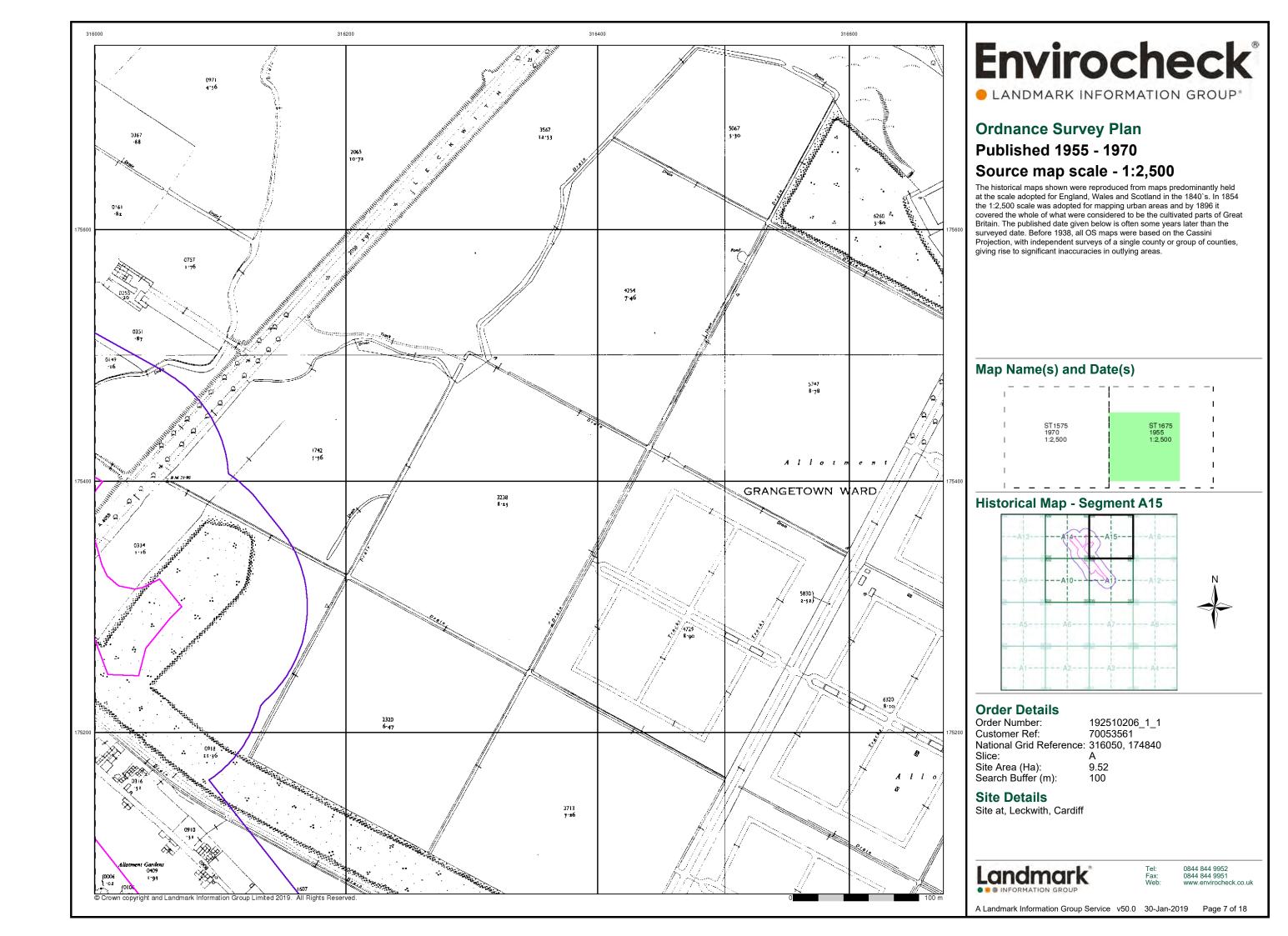


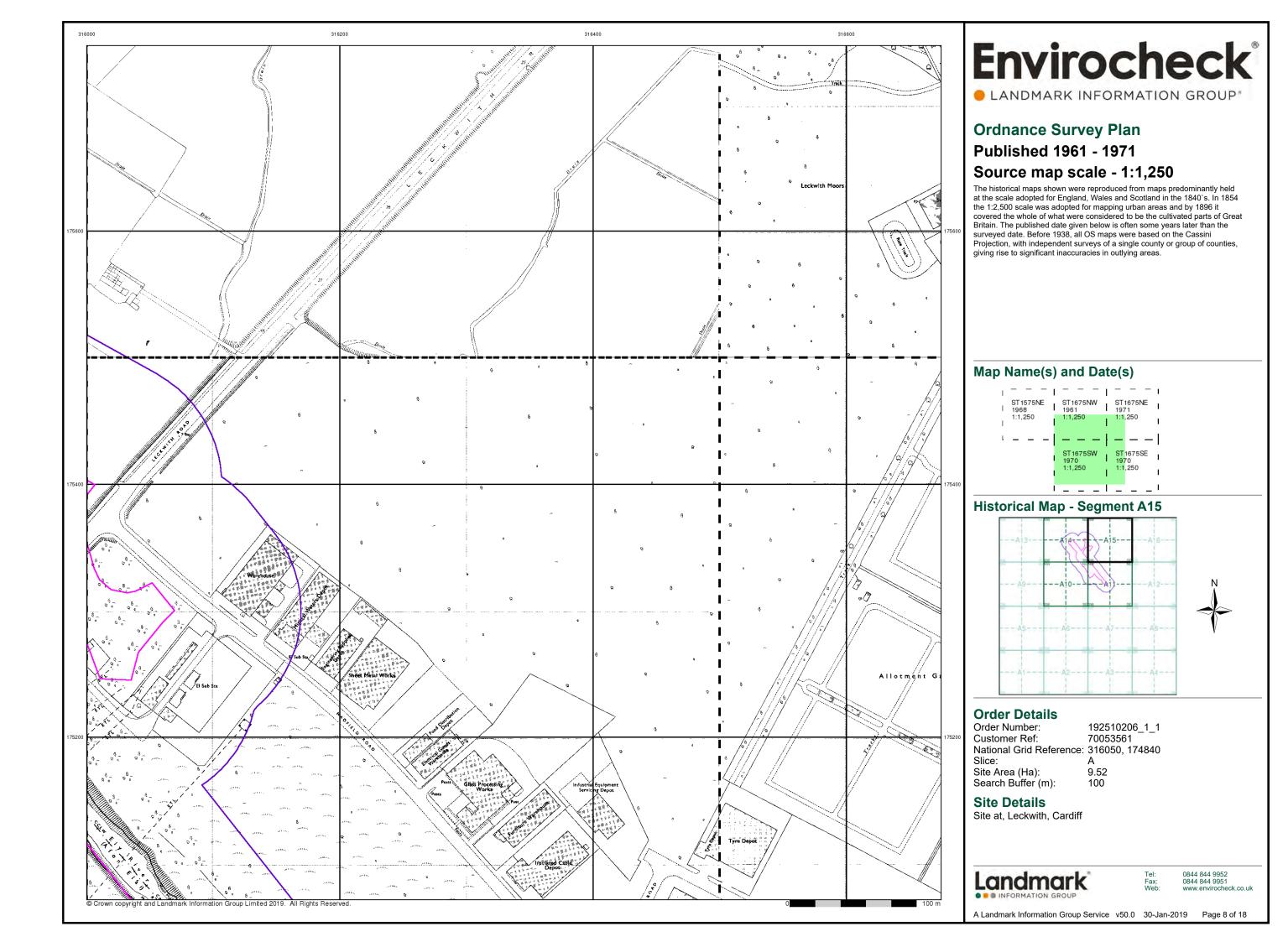
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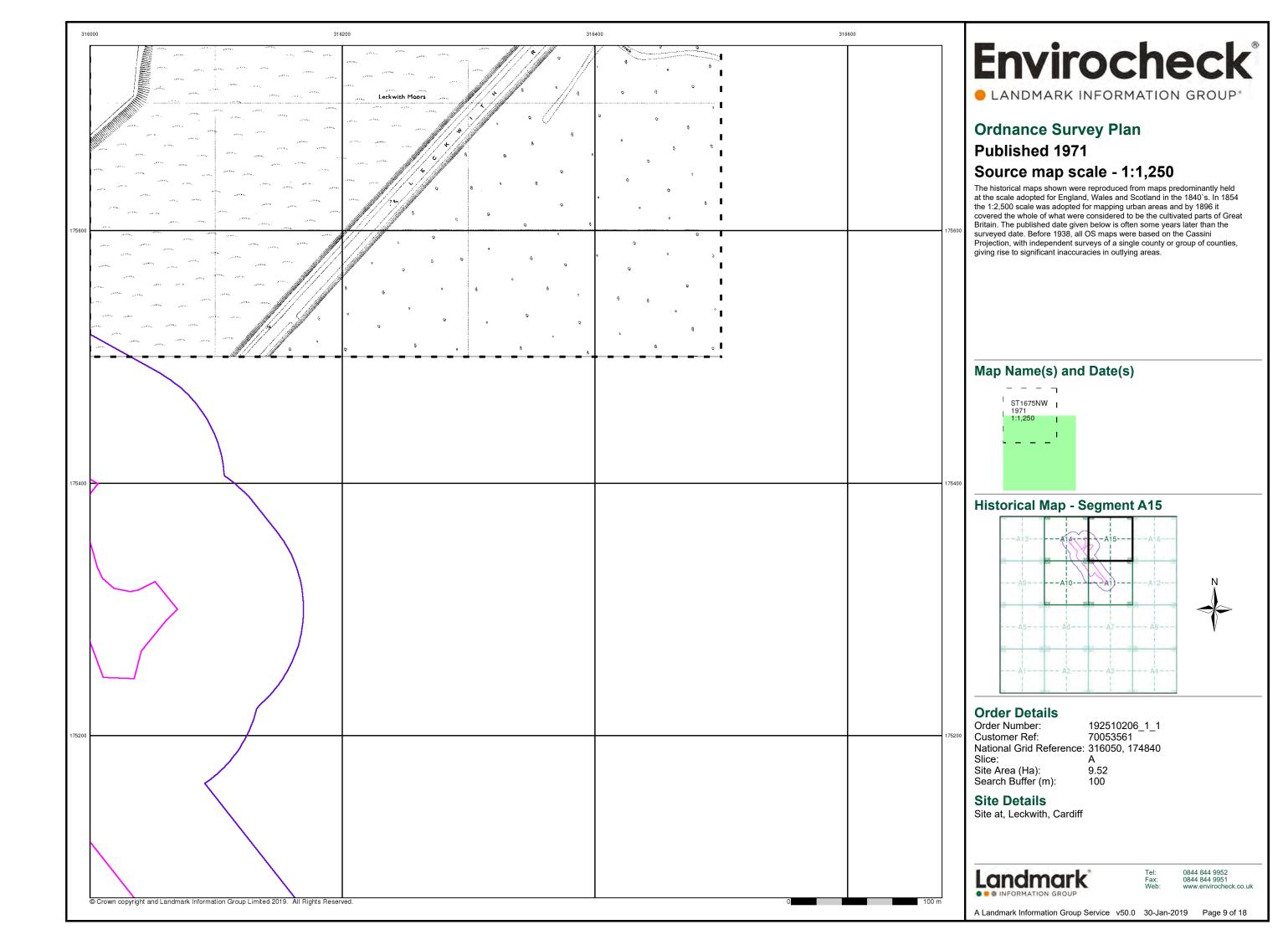
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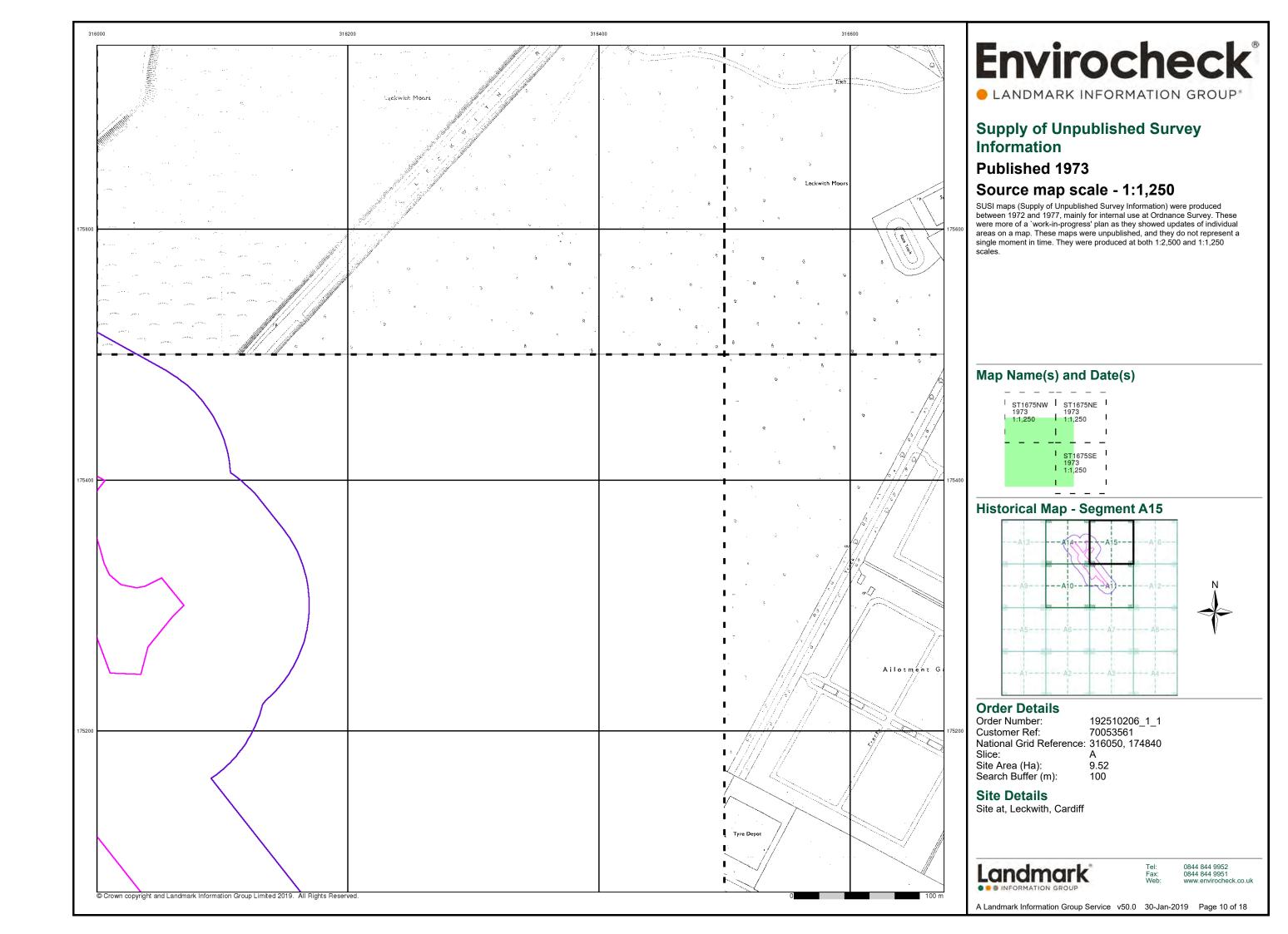
A Landmark Information Group Service v50.0 30-Jan-2019 Page 5 of 18

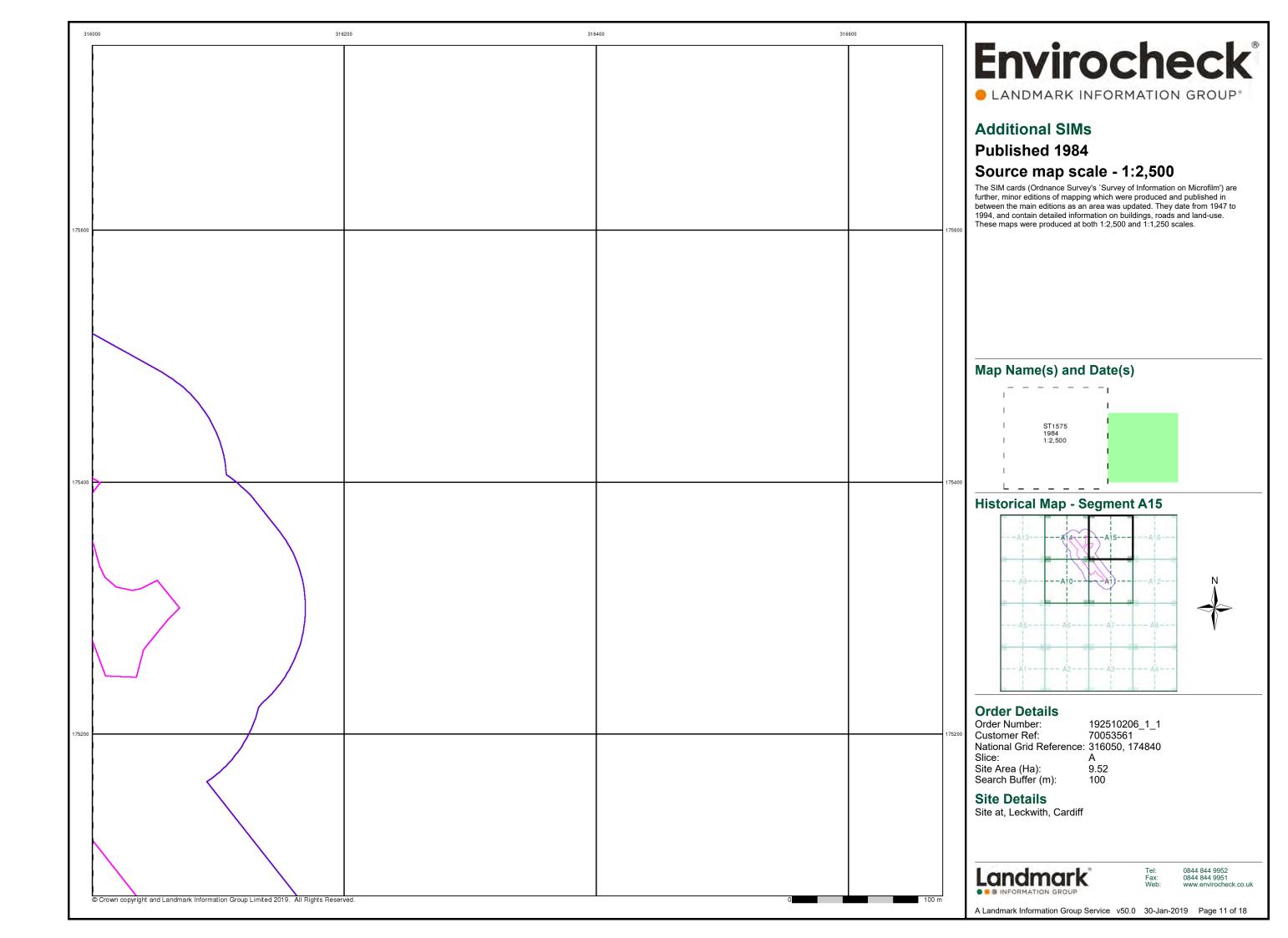


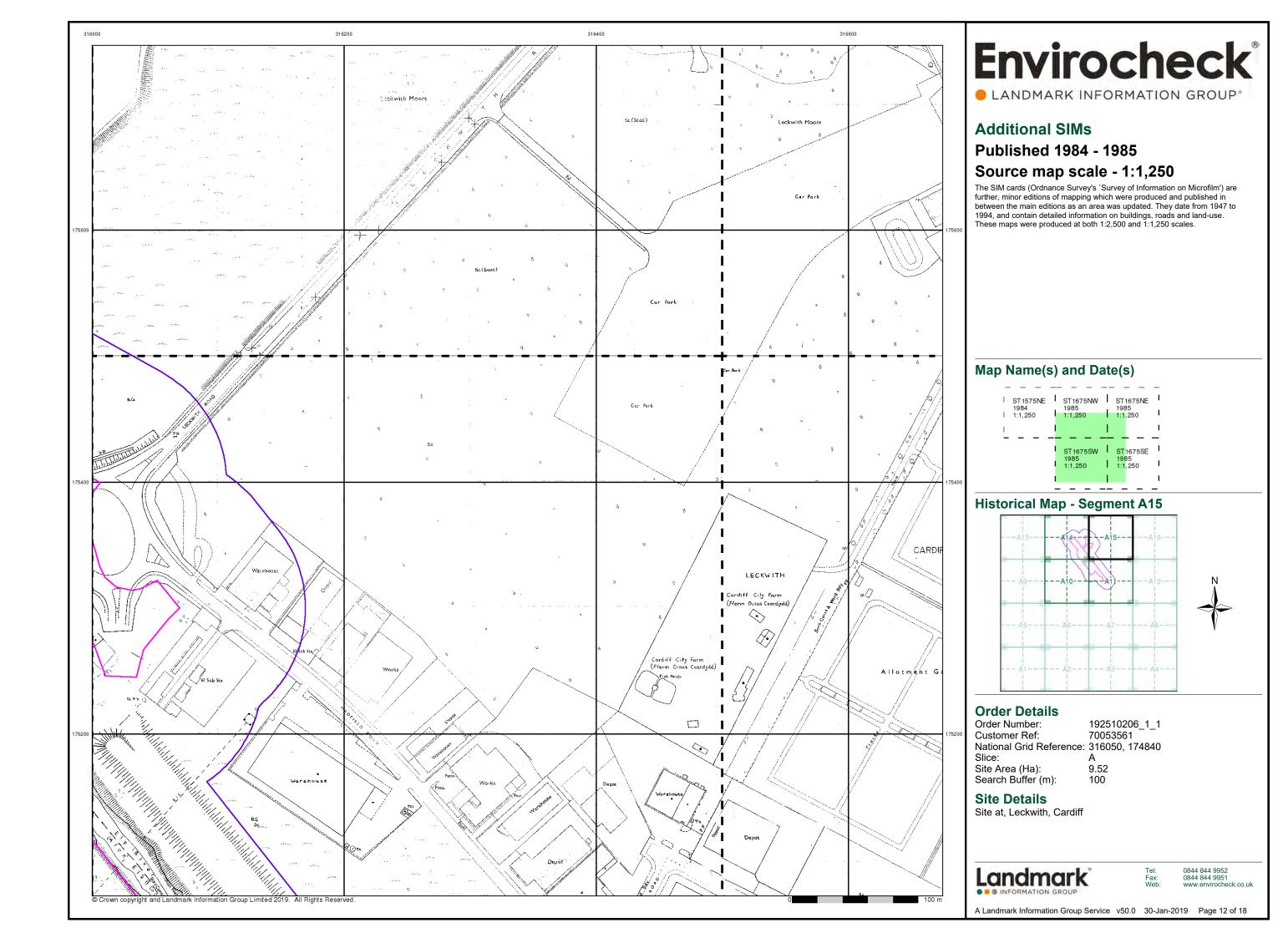


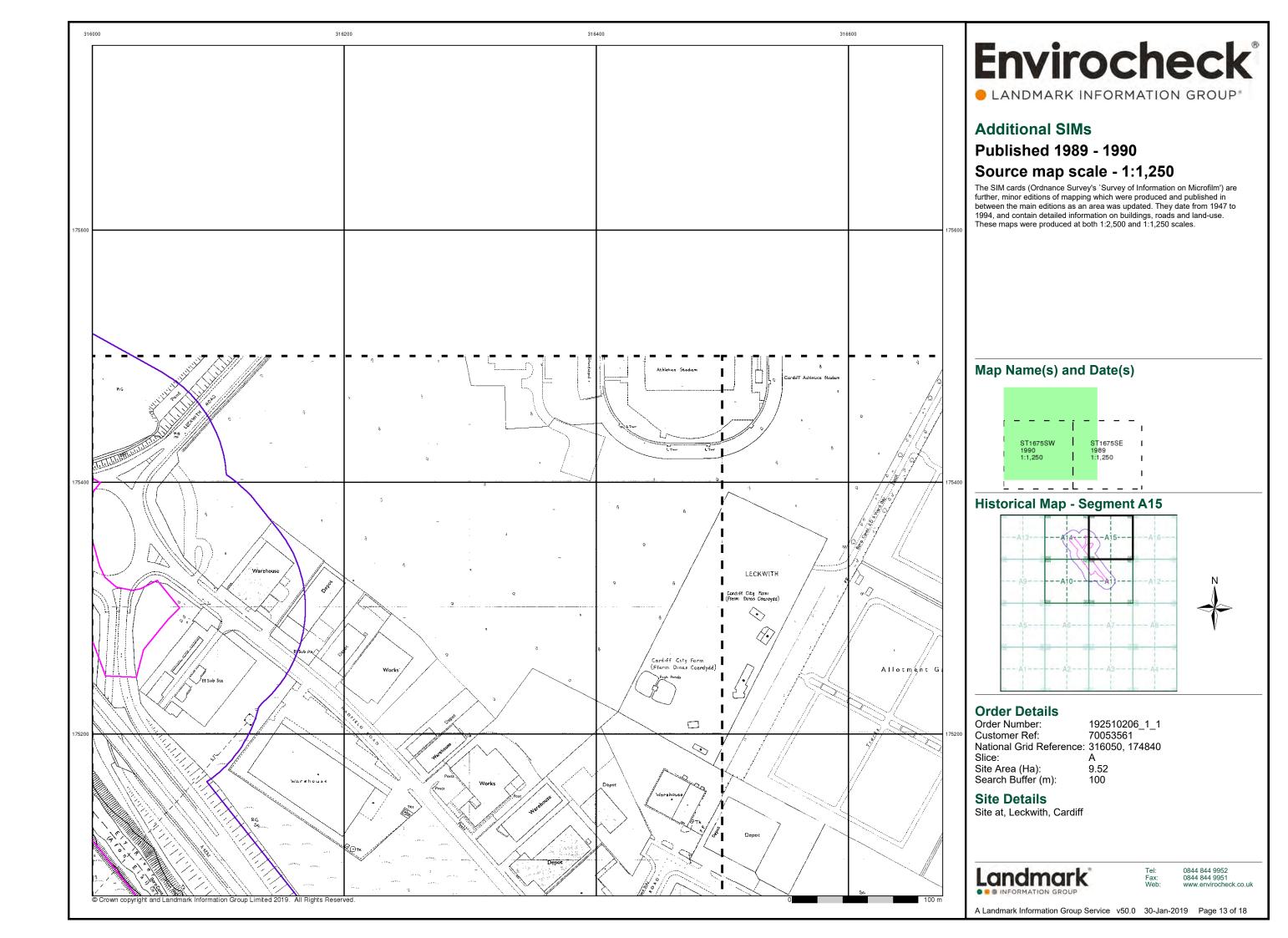


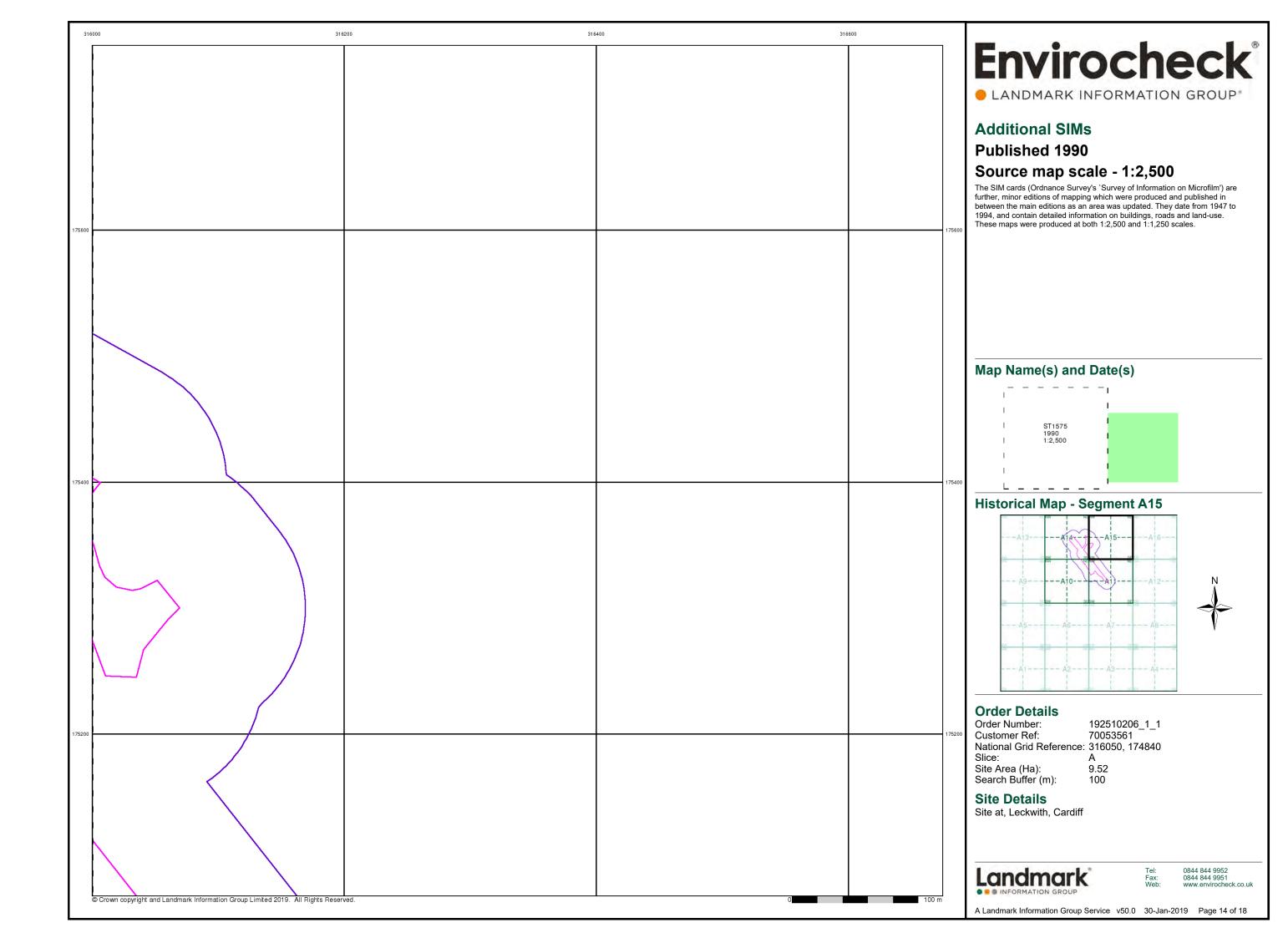


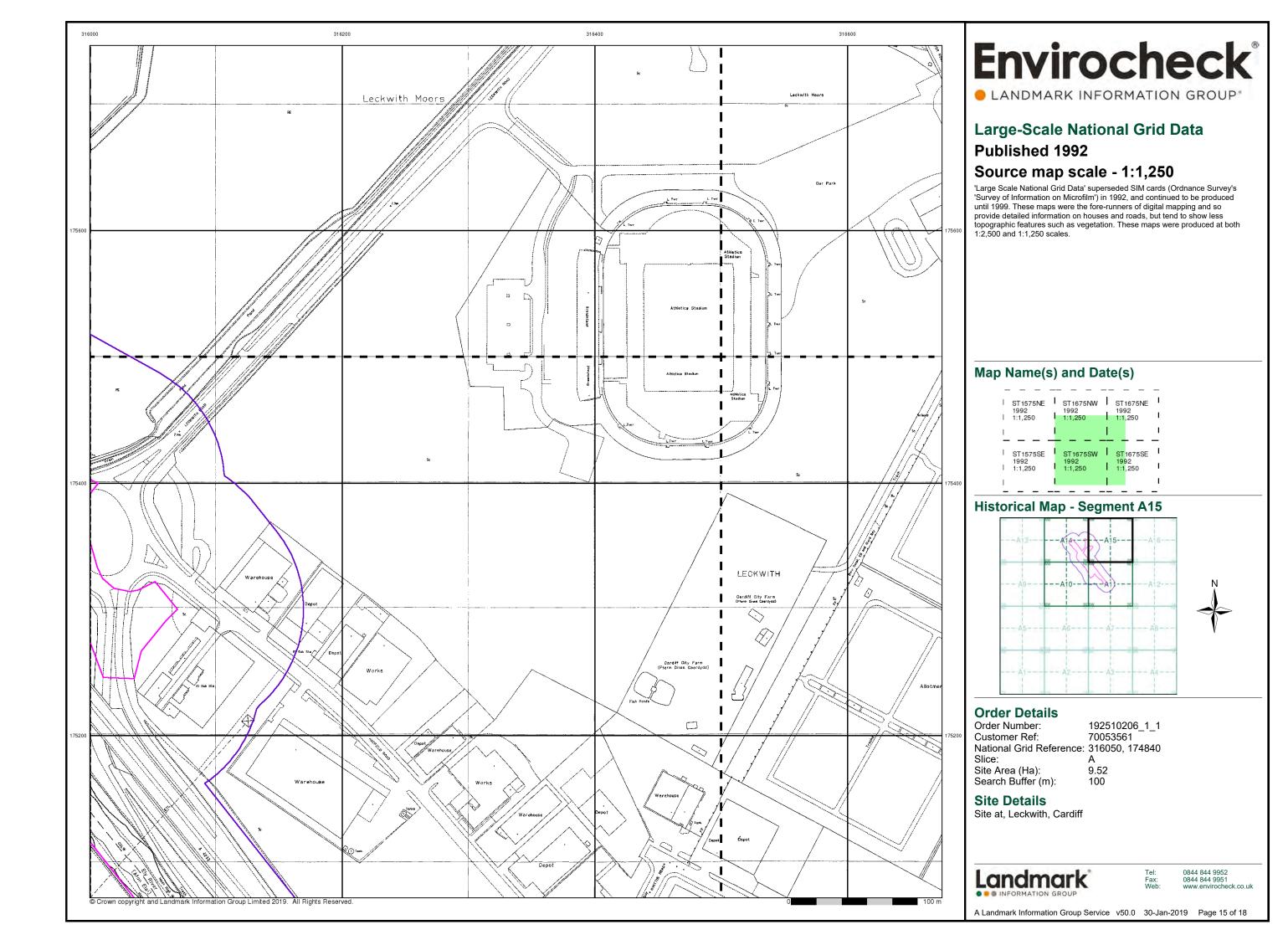


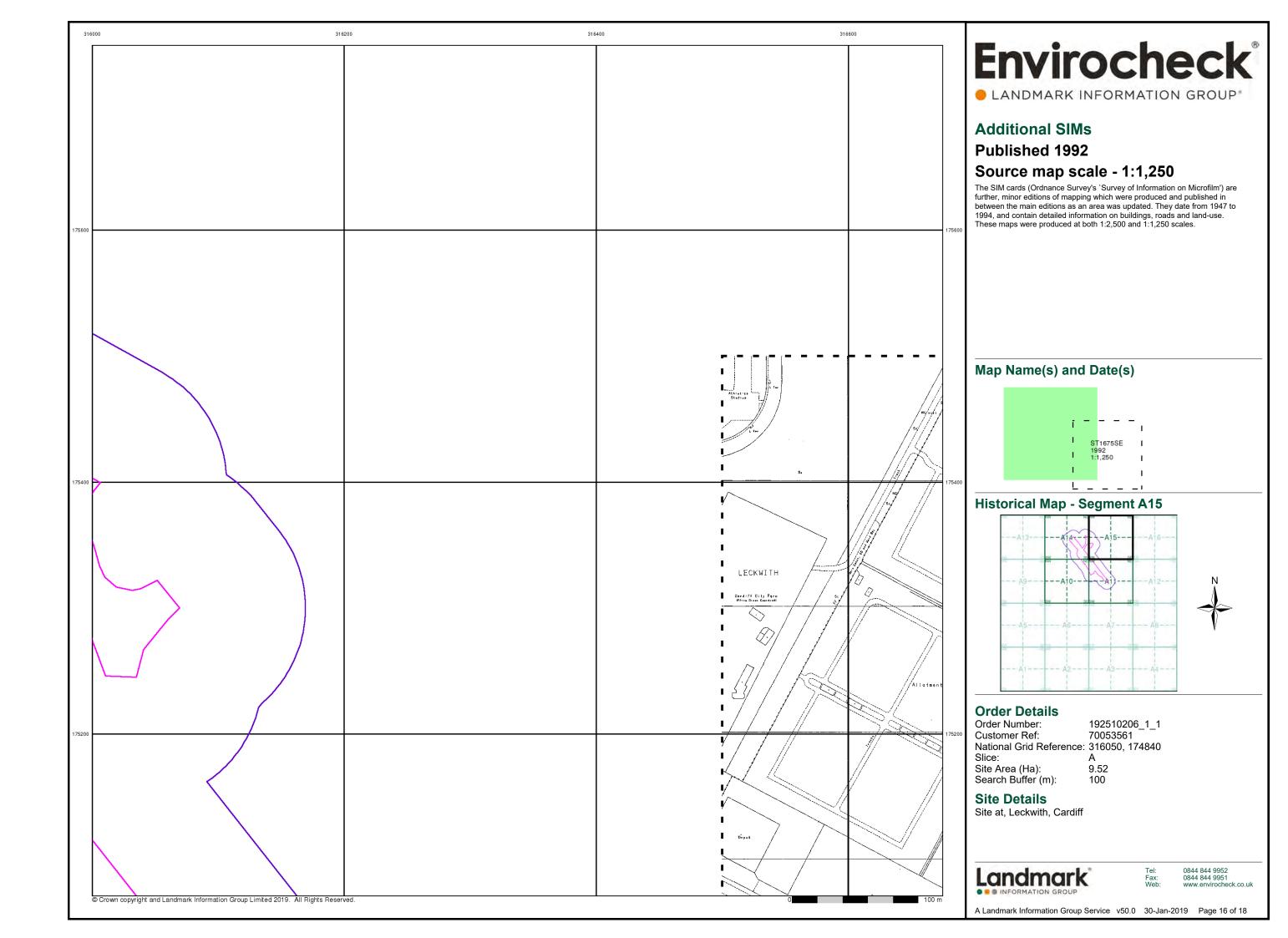


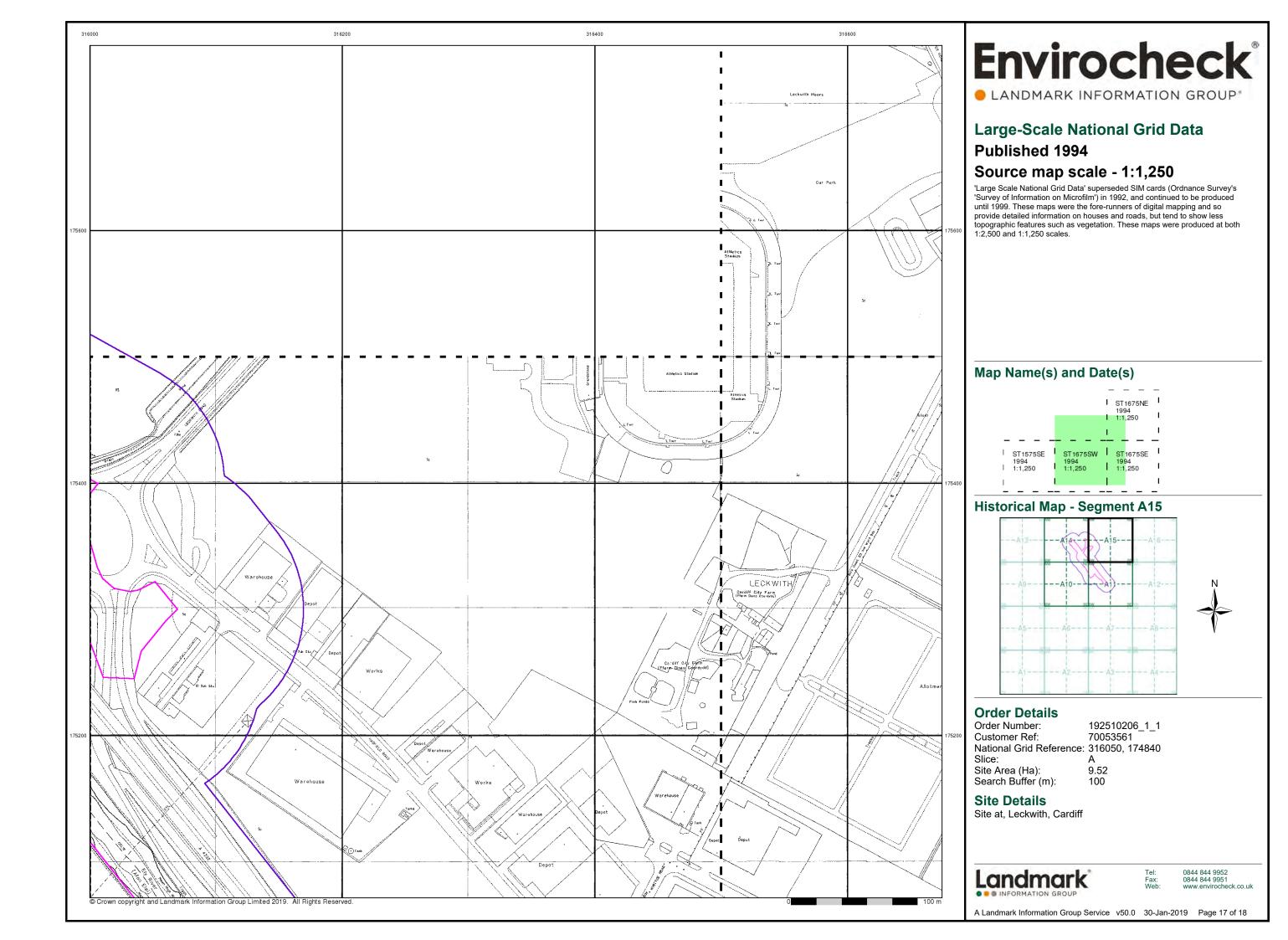


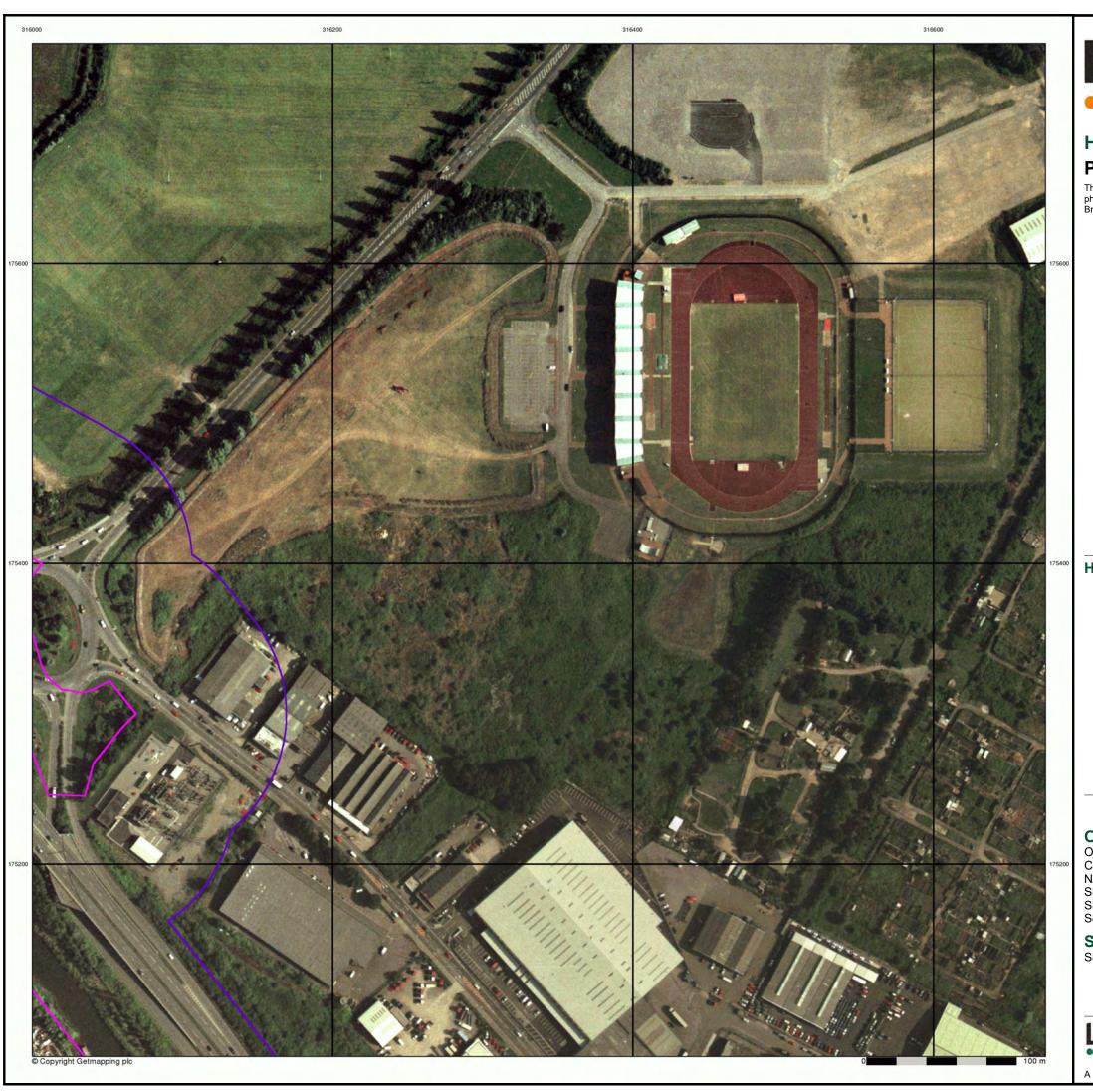












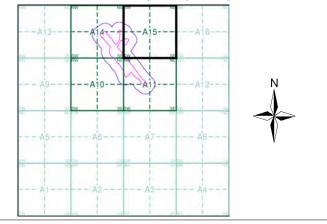
### **Envirocheck®**

LANDMARK INFORMATION GROUP\*

### Historical Aerial Photography Published 2000

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 A15**



### **Order Details**

Order Number: 192510206\_1\_1
Customer Ref: 70053561
National Grid Reference: 316050, 174840
Slice: A

Site Area (Ha): 9.52 Search Buffer (m): 100

**Site Details** 

Site at, Leckwith, Cardiff

Landmark\*

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

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### **Appendix D**

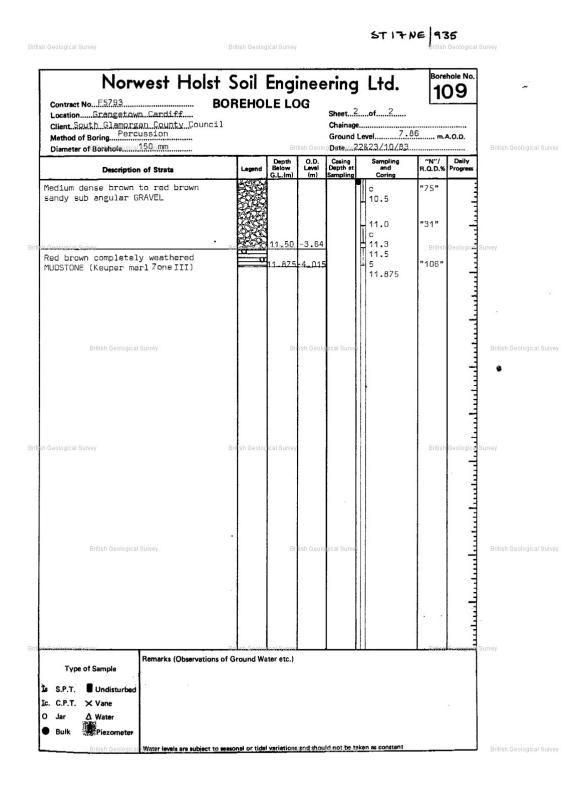
HISTORIC BGS BOREHOLE LOGS



British Geol	BOREHO  Glica Site Investigation  British Geologic					British	n Geologica	1582 7547  Survey British Geological Survey	8	b	
	CLIENT British Geologica							SITE	Sheet 1 of 1		
	County of South Glamorgan							Southern Access Road - Ely Section Job Ref. 5			0/2
	Daily Water Progress Level		Samples in situ tests and coring runs		N Value or Core	Depth	Description of Strata		Legend		
	Britis	n Geologia	From	To	Type	Recov.		British Ge <b>Ground</b> ulayel - m. A.O.D.	6.78	-10	-
- 1	11.5.78		1510(3)					TOPSCIL and ASH.	-	ed outvey	1
			0.50		D		0.30 .	Firm to stiff becoming firm brown silty CLAY with grey fissures containing roots.	6.48	_×	
	_		1.00	1.45	U			Clay along grey fissures frequently soft.	1	_ 	
	E.		1.50		D				1	-	
ritish Geolo	gical Survey	12.5.	1.80		0	British	Geologica	Survey British Geological Surve	1	-×-	
	Η.	-	2.00	2.45	U				<b>d</b> E		
	•		2.50		D		2.30		3 4.48		1
								Very soft grey sandy silty CLAY with occasional	=	x-:	
	<u>L</u>		2.85	3.45	D			small shells, roots and small organic inclusions			
	(3.00) <sup>Britis</sup>	Geologic	3.50		D			British Geological Survey B	rikksh Geologi	ai Survey	
	12.5.78	1	3.50		W				1		
	E		4.00	4.45	C	6	4.00		2.78	_×	1
	E		4.00	4.45	8				7	0.0.0	
	E							Loose brown silty fine and medium SANO and	7	0 .	
	Ę							rounded to angular fine medium and coarse GRAVEL and COBBLES occasionally ≥eakly	=	0.0	
ritish Geolo	ical Survey		5.00	5.45	C B	British	Geologica	unemented into aggregations of material beological Surve	y <del>-</del>	00:0	
	Ł							Becomes medium dense at 6m.	4	00	
	ŀ								<u> </u>	0	
	F		6.00	6.45	B	17		Strong odour from sample at 4m - 4.5m.	=	000	
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	F								=	10.0	
	Britis	hGeologic	a Survey					British Geological Survey B	ritien Geologi	D. C.	0
									=	0.0	
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itish Geolo	gcal Survey	1				British	n Geologica	I Survey British Geological Surve	<del>-</del>		
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	E	1							$\exists$	-	
	E								3		
	Tur	and Dis		1	1		+-	Remarks: ·	J	.1	
	Type and Diameter of Reginal Togical Survey							British Geological Survey . Br	ritish Geologi	cal Survey	
	Cable Percussion 200mm							incondwater standing at 2m on 12.5.78.			
	Logge	d by:	GHJ	Sca	ale:-	1:59		2			

Norwest Holst Soil Engineering Ltd. Borehole No. 109 **BOREHOLE LOG** Sheet..... Location Grangetown, Cardiff Client South Glamorgan County Council Chainage. Method of Boring...Percussion... Ground Level...7..86. m.A.O.D. 60-ordinates 1602 E. 7515 N. Date urve 22 & 23/10/83 Diameter of Borehole gical 150 mm British Geological Survey Depth Below G.L.(m) Description of Strata MADE GROUND: Black sand sized ash an 0.5 red brick gravel, with some coal "9" C 1.50 6.36 1.5 Soft to firm greyish brown silty CLAY, with occasional stones and traces of black organic X\_ = (28) material, becoming soft with depth. 2.5 (19) 3.00 4.86 Soft to very soft bluish to brownish grey silty CLAY, with pockets of dark grey silty sand. × (12) (18) Soft grey silty CLAY, with cobbles 7.60 ٥ Soft brown grey silty CLAY with pockets of grey sand. (22) X British Geological Survey X D 8.80 -0.94 Medium dense, red brown sandy Sub angular GRAVEL 9.0 "17" Remarks (Observations of Ground Water etc.) Type of Sample ( ) U100 blow counts Groundwater. Water struck at 9m, fast inflow Casing to 8.6m Is S.P.T. Undisturbed Ic. C.P.T. X Vane Final level 4.25m △ Water

ST 17 NE 935



# Appendix E

ZETICA UXO RISK ASSESSMENT





Pre-Desk Study As	sessment
Site:	Leckwith, Cardiff
Client:	WSP
Contact:	Katherine Prosser
Date:	5 <sup>th</sup> February 2019
Pre-WWI Military Activity on or Affecting the Site	None identified.
WWI Military Activity on or Affecting the Site	None identified.
WWI Strategic Targets (within 5km of Site)	<ul> <li>The following strategic targets were located in the vicinity of the Site:</li> <li>Cardiff Docks and associated shipbuilding yards and warehouses.</li> <li>Industry important to the war effort including, metal, engineering and munitions works.</li> <li>Military barracks, camps and training areas.</li> <li>Transport infrastructure and public utilities.</li> </ul>
WWI Bombing	None identified on the Site.
Interwar Military Activity on or Affecting the Site	None identified.
WWII Military Activity on or Affecting the Site	None identified.
WWII Strategic Targets (within 5km of Site)	<ul> <li>The following strategic targets were located in the vicinity of the Site:</li> <li>Cardiff Docks and associated shipbuilding yards and warehouses.</li> <li>Industry important to the war effort including, metal, engineering and munitions works.</li> <li>Military barracks, camps and training areas.</li> <li>Transport infrastructure and public utilities.</li> <li>Anti-Aircraft (AA) and anti-invasion defences.</li> </ul>
WWII Bombing Decoys (within 5km of Site)	1No. located approximately 1.8km west-southwest of the Site.
WWII Bombing	During WWII the Site straddled the boundary between the County Borough (CB) of Cardiff and the Rural District (RD) of Cardiff.
	Cardiff CB officially recorded 562No. High Explosive (HE) bombs with a regional bombing density of 40 bombs per 405 hectares (ha).
	Cardiff RD officially recorded 502No. HE bombs with a regional bombing density of 8.4 bombs per 405 ha.
	Air raids on Cardiff commenced in June 1940 and continued until May 1943. The heaviest raid, the 'Cardiff Blitz', took place in January 1941. Bombing was concentrated on the docks and city centre, approximately 2.6km from the Site.
	No readily available records have been found to indicate that the Site was bombed.
Post-WWII Military Activity on or Affecting the Site	None identified.

Recommendation	A detailed desk study, whilst always prudent, is not considered essential in this
	instance.

This summary is based on a cursory review of readily available records. Caution is advised if you plan to action work based on this summary.

It should be noted that where a potentially significant source of UXO hazard has been identified on the Site, the requirement for a detailed desk study and risk assessment has been confirmed and no further research will be undertaken at this stage. It is possible that further indepth research as part of a detailed UXO desk study and risk assessment may identify other potential sources of UXO hazard on the Site.

## **Appendix F**

RISK ASSESSMENT MATRIX



### **RISK APPRAISAL**

#### **RISK APPRAISAL**

Using the information detailed above, WSP|Parsons Brinckerhoff has refined the conceptual site model (CSM). The CSM identifies potential pollutants, receptors and exposure pathways that may be present based on a commercial (CPU) end use.

The identification of potential "pollutant linkages" is a key aspect of the evaluation of potentially contaminated land. An approach based on the UK CIRIA report C552 (Contaminated Land Risk Assessment: A Guide to Good Practice, 2001) has been adopted within this report. For each of the pollutant linkages, an estimate is made of;

- The potential severity of the risk; and
- The likelihood of the risk occurring.

Table C.1 presents the classification of the severity of the risk:

#### **TABLE C.1 SEVERITY OF RISK**

Severe	Acute risks to human health; Major pollution of controlled waters (watercourses or groundwater)
Medium	Chronic (long-term) risk to human health; Pollution of sensitive controlled waters (surface waters or aquifers)
Mild	Pollution of non-sensitive water resources.
Minor	Requirement for protective equipment during site works to mitigate health effects; Damage to non-sensitive ecosystems or species

The probability of the risk occurring is classified by criteria given in Table C.2.

#### **TABLE C.2 PROBABILITY OF RISK OCCURRING**

High Likelihood	Pollutant linkage may be present, and risk is almost certain to occur in the long term, or there is evidence of harm to the receptor.
Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term.
Low	Pollutant linkage may be present and there is a possibility of the risk occurring,
Likelihood	although there is no certainty that it will do so.
Unlikely	Pollutant linkage may be present but the circumstances under which harm would occur are improbable.

An overall evaluation of the level of risk is gained from a comparison of the severity and probability as presented in Table C.3.

TABLE C.3 COMPARISON OF SEVERITY AND PROBABILITY

		Severity					
		Severe	Medium	Mild	Minor		
	High Likelihood	Very high risk	High risk	Moderate risk	Moderate / low risk		
	Likely	High risk	Moderate risk	Moderate/ low risk	Low risk		
oility	Low Likelihood	Moderate risk	Moderate/ low risk	Low risk	Very low risk		
Probability	Unlikely	Moderate / low risk	Low risk	Very low risk	Very low risk		

Table C.4 then provides a description of the typical consequences and potential actions required following each risk definition.

TABLE C.4 QUALITATIVE RISK ASSESSMENT - CLASSIFICATION OF CONSEQUENCE

Classification	Definition
Very High Risk	Severe harm to a receptor may already be occurring, or a high likelihood severe harm will arise to a receptor, unless immediate remedial works / mitigation measures are undertaken.
High Risk	Harm is likely to arise to a receptor, and is likely to be severe, unless appropriate remedial actions / mitigation measures are undertaken. Remedial works may be required in the short-term, but likely to be required over the long-term.
Moderate Risk	Possible that harm could arise to a receptor, but low likelihood that such harm would be severe. Harm is likely to be mild. Some remedial works may be required in the long-term.
Moderate / Low Risk	Possible that harm could arise to a receptor, but where a combination of likelihood and consequence results in a risk that is above low, but is not of sufficient concern to be classified as mild.  Limited further investigation may be required to clarify the risk. If necessary, remediation works are likely to be limited in extent.
Low Risk	Possible that harm could arise to a receptor. Such harm, at worst, would normally be mild.
Very Low Risk	Low likelihood that harm could arise to a receptor. Such harm is unlikely to be any worse than mild.



1 Capital Quarter Tyndall Street Cardiff CF10 4BZ

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