Rev.	Date	Description	Issuer	Reviewer	Approver
00	2021.10.29	For Design	VYDU	EDRM	SIBB

Civil and Structural Design and Engineering
Previous Geotechnical Site Investigations

Table of Content

1. Table of Enclosures

Doc. no.:	Title:	Issued:	Rev.:
8943/TD/04	Extension to Shed 11 - Site Investigation Factual Report (Integral Geotechnique)	August 2004	0
11827/TD/16/SI	Shed 21 -Site Investigation Factual Report (Integral Geotechnique)	September 2016	0
5001-NE33910-NER-01	Geo-environmental Desk Study Report (Hyder Consulting)	February 2008	

Associated British Ports

EXTENSION TO SHED 11 NEWPORT DOCKS

Site Investigation Factual Report

Intégral
Géotechnique

CLIENT:	**Associated British Ports**
PROJECT:	**Extension to Shed 11 Newport Docks**
TITLE:	**Site Investigation Factual Report**
JOB NO:	**8943**
DOCUMENT REF:	**8943/TD/04**

Revision	Purpose Description	Originated	Reviewed	Authorised	Date
0	Initial	APD	AFT	MJE	Aug 04

Geotechnical Engineers:

Intégral Géotechnique (Wales) Limited
50 Cathedral Road
Cardiff
CF11 9LL

Tel: 029 2022 0462
Fax: 029 2034 0789

CONTENTS

1.0 INTRODUCTION

1.1 GENERAL

Associated British Ports (ABP) are planning to construct an extension, along with associated external paving, to the existing Shed 11 storage facility.

The proposed extension, to the north-west, measures approximately 85m by 85m. The paving occupies an area of approximately 8000m².

Intégral Géotechnique (Wales) Limited have been instructed by ABP to carry out a site investigation and provide a factual report of the data obtained.

2.0 THE SITE

2.1 SITE LOCATION AND DESCRIPTION

The site is located in Newport, within the Dock complex, to the north of South Dock at a National Grid Reference of ST 313 848, see Figure 1.

The site is open and unoccupied. A number of stockpiles of timber sleepers, chipped sleepers and pallets are present. It is largely level but drops by approximately 1m to the eastern boundary. It is mostly unvegetated apart from it's eastern boundary which has brambles, reeds, grass, a number of semi-mature trees and a number of stands of Japanese Knotweed growing here.

To the south and east there are existing storage/warehouse facilities.

See Figure 2 for the site layout.

2.2 HISTORY

The site is shown on 1:2,500 scale Ordnance Survey maps dated 1883/4, 1901 and 1920/1. Relevant information from these maps has been drawn onto Figure 3.

The North Dock is shown on all the maps presented on Figure 3. Between 1883 and 1920/1, construction of the South Dock took place.

Between 1884 and 1920, a timber float is shown on the maps to the north-east of the site, beside this to the south-west a reen is shown. The 1901 and 1920 maps show rail lines next to the reen.

The 1883/4 maps show the River Ebbw meandering through the area and crossing close to the north of the proposed site. The 1920/1 map shows the river to have been diverted to allow construction of the South Dock.

2.3 GEOLOGY

The 1:50,000 scale geological map of the Newport area (Sheet 249) shows the site to be underlain by Marine of Estuarine Alluvium overlying rocks of the Mercia Mudstone Group.

2.3 GEOLOGY (CONTINUED)

Alluvial deposits are likely to consist of soft clays/clayey silts with bands of very soft peat and organic matter inclusions.

Rocks of the Mercia Mudstone Group generally comprise horizontally bedded and over consolidated red brown silty clays and mudstones with sub-ordinate siltstone bands. The upper surface of these rocks may be weathered to a firm silty clay with weak mudstone lithorelicts.

Previous investigations have encountered River Terrace Gravels beneath the alluvial deposits. These materials, in general, consist of medium dense to dense silty sands, sub-rounded gravels and cobbles.

Made ground is expected to overlie the alluvial deposits.

The Environment Agency 1:100,000 groundwater vulnerability map (sheet 36) classifies the strata beneath the site as Non-Aquifers.

Non-Aquifer strata are considered to contain insignificant quantities of groundwater. Groundwater flow can occur through these rocks and some Non-Aquifers can provide small amounts of water for abstraction purposes, and base flow to rivers.

2.4 AVAILABLE SITE INVESTIGATION INFORMATION

A search of the archives held by Intégral Géotechnique (Wales) Limited identified Report N° 5609/C, Alexandra Dock, Newport, Gwent, carried out for Associated British Ports in July 1994 into the site now occupied by Shed 11.

Extracts from that report comprising borehole logs are given in Appendix A.

3.0 THE SITE INVESTIGATION

3.1 FIELDWORKS

A site investigation comprising seven machine excavated trial pits and two boreholes was carried out in June/July 2004.

The trial pits were excavated using a JCB mechanical excavator to a maximum depth of 4.0m.

The boreholes were sunk using a Pilcon 150 shell and auger drilling rig to a maximum depth of 17.5m.

The fieldworks were supervised by Intégral Géotechnique who also logged the trial pits and boreholes and prepared their detailed engineering logs in accordance with the requirements of BS 5930.

The trial pit and borehole logs are presented in Appendices B and C respectively and their approximate locations are shown on Figure 2.

3.2 LABORATORY CHEMICAL TESTING

Disturbed samples were taken from the trial pits and dispatched to the laboratories of STL Coventry for laboratory chemical testing.

The testing schedule was prepared in accordance with the elements/compounds listed in Tables 3 and 4 of the Interdepartmental Committee on the Redevelopment of Contaminated Land (ICRCL) Guidance Note 59/83.

The concentrations of the following chemical elements/compounds were determined in the laboratories:

Arsenic	Cadmium
Total Chromium	Lead
Mercury	Selenium
Boron	Copper
Nickel	PAH (Priority 16 by GC)
Phenol Index	Total Cyanide
Total Sulphate	Sulphide
PH	Elemental Sulphur
Sulphate, water soluble	Zinc

Screening for asbestos was also carried out.

The results of these tests are presented in Appendix D.

APPENDIX A

AVAILABLE SITE INVESTIGATION INFORMATION

Intégral Géotechnique

APPENDIX	
JOB NO	5609/C
MADE BY	K.J.N.
DATE MADE	28.6.94

RECORD OF BOREHOLE 1 Sheet 1 of 2

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES: DEPTH FROM	SAMPLES: DEPTH TO	SAMPLES: TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
13.6.94			0.00	1.50	BS		0.425		FILL (Hardstanding comprising 75mm of tarmacadam overlying 350mm of granular hardcore, sub-base)
			1.50	1.95	S (3)				FILL (Soft brown and grey brown in areas black ashy sandy silty CLAY, some to many gravels, cobbles, brick fragments, timber, pockets and layers of vlayey ash)
			1.50	3.00	BS		2.50		
			3.00	3.45	S (1)				Very soft grey silty CLAY/clayey SILT with at the surface organic traces
			3.00	4.50	BS		4.30		
			4.50	4.95	S (0)				Very soft grey silty CLAY/clayey SILT
			4.50	6.00	BS				
			6.00	6.45	S(0)				
			6.00	7.50	BS		6.60		
							7.20		Very soft dark grey peaty CLAY
			7.50	7.95	S(3)				Soft and very soft grey silty CLAY/clayey SILT
			7.50	9.00	BS		8.10		
							8.40		Soft brown silty CLAY/clayey SILT
			9.00	9.45	S(3)				Very soft grey silty CLAY/clayey SILT
			9.00	10.50	BS				
			10.50	11.00	U4(16)		10.60		
	11.10		10.50	12.00	BS				Soft grey clayey sandy SILT
			12.00	12.45	S(4)				
			12.00	13.50	BS		12.10		
			13.50	13.95	S(3)				Very soft grey silty CLAY/clayey SILT, occasional gravels, cobbles
			13.50	15.00	BS				
			15.00	15.45	S(2)		14.90		
			15.00	16.50	BS		15.20		Loose and very loose grey silty sandy GRAVELS, COBBLES and occasional boulders
							15.50		Very soft brown silty PEAT with grey silty clay, gravels and cobbles
			16.50	16.95	C(27)				Medium dense rapidly becoming dense and very dense brown and blue grey silty sandy GRAVELS, COBBLES, occasional boulders
			16.50	18.00	BS				
			18.00	18.45	C(56)				
			18.00	19.50	BS				
			19.50	19.01	C(*)				
		20.00	19.50	21.00	BS				

REMARKS

1. Equipment: Dando 150 Shell and Auger drilling rig
2. Standard/Cone Penetration Test Results: See attached sheet.
3. Groundwater Observations: See attached sheet.
4. Chiselling:

Depth (m)	Time (Hours)
0.00 - 0.40	0.50
18.70 - 19.00	0.50
19.30 - 19.70	1.00
22.00 - 22.20	1.00

5. Borehole grouted to ground level.

TYPE OF BORING

Shell and auger

DIAMETER OF BORING

GL to 20.00m - 150mm

CASING TUBES

GL to 20.00m - 150mm

BOREHOLE 1

Intégral Géotechnique

RECORD OF BOREHOLE **1** Sheet 2 of 2

APPENDIX	
JOB NO	5609/C
MADE BY	K.J.N.
DATE MADE	28.6.94

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
			21.00	21.45	S(44)		21.00		Medium dense rapidly becoming dense and very dense brown and blue grey silty sandy GRAVELS, COBBLES, occasional boulders
		22.00	22.00	22.25	C(*)				Very stiff and hard red brown with grey green staining silty CLAY, with many gravel size mudstone lithorelicts
16.6.94							22.00		
									END OF BOREHOLE

REMARKS

See sheet 1 of 2

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

20.00m to 22.20m - 150mm

CASING TUBES

20.00m to 22.00m - 150mm

BOREHOLE 1

BOREHOLE NO. 1

2. **Standard/Cone Penetration Test Results**

Depth (m)	Blows/75mm Penetration	'N' Value
1.50 - 1.95	1/0/1/1/0/1	3
3.00 - 3.45	1/0/0/1/0/0	1
4.50 - 4.95	1/0/0/0/0/0	0
6.00 - 6.45	1/0/0/0/0/0	0
7.50 - 7.95	1/0/1/1/1/0	3
9.00 - 9.45	1/0/1/1/0/1	3
12.00 - 12.45	1/1/1/1/1/1	4
13.50 - 13.95	1/0/1/0/1/1	3
15.00 - 15.45	1/0/0/1/0/1	2
16.50 - 16.95	2/3/4/7/6/10	27
18.00 - 18.45	7/15/13/10/17/16	56
19.50 - 19.81	9/12/14/21/50 blows for 10mm penetration	>50
21.00 - 21.45	2/6/7/10/10/17	44
22.00 - 22.25	16/34/50 for 25mm penetration	>50

3. **Groundwater Observations:**

i) Groundwater first struck at 15.90m depth rising to 11.10m depth after 20 minutes.

Intégral Géotechnique

RECORD OF BOREHOLE 2 Sheet 1 of 2

APPENDIX	
JOB NO	5609/C
MADE BY	G.C.L.
DATE MADE	28.6.94

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
16.6.94			0.00	1.50	BS		0.15		FILL (Hardstanding comprising 50mm of tarmacadam surfacing overlying 100mm of granular hardcore, sub-base)
	1.40		1.50	1.68	C(*)				FILL (Loose to medium dense brown and grey brown ashy clayey silty SAND, gravels, cobbles, boulders, brick fragments, pockets and layers of silty ashy clay)
			1.50	3.00	BS				
			3.00	3.45	C(11)				
			3.00	4.50	BS		3.50		
			4.50	4.95	S(1)				Very soft grey silty CLAY/clayey SILT
			4.50	6.00	BS				
							5.60		
			6.00	6.45	S(5)				Soft brown silty CLAY/clayey SILT
			6.00	7.50	BS				
							6.80		
			7.50	7.95	S(3)				Very soft grey silty CLAY/clayey SILT
			7.50	9.00	BS				
			9.00	9.45	S(2)				
			9.00	10.50	BS				
			10.50	10.95	S(1)				
			10.50	12.00	BS		11.00		
			12.00	12.45	S(0)				Very soft grey sandy silty CLAY/clayey SILT
			12.00	13.50	BS				
			13.00	13.95	S(3)				
			13.50	15.00	BS				
			15.00	15.45	S(2)				
			15.00	16.50	BS				
							15.80		
			16.50	16.95	C(40)				Dense rapidly becoming very dense brown SANDS, brown and blue grey rounded and sub-rounded GRAVELS and COBBLES, occasional boulders
			16.50	18.00	BS				
			18.00	18.45	C(51)				
			18.00	19.50	BS				
			19.50	19.95	C(69)				
		20.00	19.50	21.00	BS				

REMARKS

1. Equipment: Dando 150 Shell and Auger drilling rig.
2. Standard/Cone Penetration Test Results: See attached sheet.
3. Groundwater Observations: See attached Sheet.
4. Chiselling:

Depth (m)	Time (Hours)
0.00 - 0.50	0.50
1.20 - 1.50	0.75
17.20 - 17.50	0.50
20.00 - 20.40	1.00
21.20 - 21.40	1.00
21.80 - 22.10	1.00

5. Borehole grouted to ground level.

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

GL to 20.00m - 150mm

CASING TUBES

GL to 20.00m - 150mm

BOREHOLE 2

Intégral Géotechnique

RECORD OF BOREHOLE **2** Sheet 2 of 2

APPENDIX	
JOB NO	5609/C
MADE BY	K.J.N.
DATE MADE	28.6.94

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES: DEPTH FROM	SAMPLES: DEPTH TO	SAMPLES: TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
			21.00	21.45	C (*)				Dense rapidly becoming very dense brown SANDS, brown and blue grey rounded and sub-rounded GRAVELS and COBBLES, occasional boulders
							21.40		
		22.00	21.80	22.25	C(*)				Very stiff and hard red brown with grey green staining silty CLAY, with many gravel size mudstone lithorelicts
21.6.94							22.10		END OF BOREHOLE

REMARKS

See sheet 1 of 2

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

20.00m to 22.10m - 150mm

CASING TUBES

20.00m to 22.00m - 150mm

BOREHOLE 2

BOREHOLE NO. 2

2. **Standard/Cone Penetration Test Results**

Depth (m)	Blows/75mm Penetration	'N' Value
1.50 - 1.68	2/10/50 for 30mm penetration	>50
3.00 - 3.45	1/2/6/4/1/0	11
4.50 - 4.95	1/0/0/1/0/0	1
6.00 - 6.45	1/1/1/1/1/2	5
7.50 - 7.95	1/0/1/0/1/1	3
9.00 - 9.45	1/0/0/1/0/1	2
10.50 - 10.95	1/0/0/1/0/0	1
12.00 - 12.45	1/0/0/0/0/0	0
13.50 - 13.95	1/0/1/1/0/1	3
15.00 - 15.45	1/1/1/0/0/1	2
16.50 - 16.95	9/7/9/11/11/9	40
18.00 - 18.45	16/12/12/14/12/13	51
19.50 - 19.95	12/17/17/19/14/19	69
21.00 - 21.25	19/27/23/50 for 30mm penetration	>50
21.80 - 22.97	16/34/50 for 25mm penetration	>50

3. **Groundwater Observations:**

i) Groundwater first struck at 1.60m depth rising to 1.40m depth after 20 minutes, sealed off at 4.00m depth.

ii) Groundwater restruck at 15.60m depth rising to 10.70m depth after 20 minutes.

Intégral Géotechnique

RECORD OF BOREHOLE 3

APPENDIX	
JOB NO	5609/C
MADE BY	G.C.L.
DATE MADE	1..7.94

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
23.6.94			0.00	1.50	BS		0.375		FILL (Hardstanding comprising 75mm of tarmacadam surfacing overlying 300mm of ashy hardcore sub-base)
			1.50	1.95	C(16)				FILL (Medium dense brown ashy clayey silty SAND, gravels, cobbles, occasional boulders, bricks, timber, pockets of ash and clay)
			1.50	3.00	BS				
			3.00	3.45	C(17)				
			3.00	4.50	BS		3.30		Soft grey and blue grey silty CLAY/clayey SILT
			4.50	4.95	S(4)				
			4.50	6.00	BS				
			6.00	6.45	S(3)		5.80		Very soft brown silty CLAY/clayey SILT
			6.00	7.50	BS		7.20		
			7.50	7.95	S(3)				Very soft grey silty CLAY/clayey SILT
			7.50	9.00	BS				
			9.00	9.45	S(2)				
			9.00	10.50	BS				
			10.50	10.95	S(2)				
			10.50	12.00	BS				
			12.00	12.45	S(3)				
			12.00	13.50	BS				
			13.50	13.95	S(1)				
			13.50	15.00	BS		14.40		
			15.00	15.45	C(92)				Very dense brown SANDS, GRAVELS, COBBLES, occasional boulders
24.6.94		15.50	15.50	15.95	C(135)		15.60		
			15.00	15.50	BS				END OF BOREHOLE

REMARKS

1. Equipment: Dando 150 Shell and Auger drilling rig.
2. Standard/Cone Penetration Test Results: See attached sheet.
3. Groundwater Observations: See attached sheet.
4. Chiselling:

Depth (m)	Time (Hours)
0.00 - 0.40	0.75
14.80 - 15.00	0.50
15.10 - 15.40	1.75
15.40 - 15.60	1.75

5. Borehole grouted to ground level.

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

GL to 15.60m - 150mm

CASING TUBES

GL to 15.60m - 150mm

BOREHOLE 3

BOREHOLE NO. 3

2. Standard/Cone Penetration Test Results

Depth (m)	Blows/75mm Penetration	'N' Value
1.50 - 1.95	3/3/3/5/5/3	16
3.00 - 3.45	6/4/3/3/7/4	17
4.50 - 4.95	1/2/1/1/1/1	4
6.00 - 6.45	1/1/1/0/1/1	3
7.50 - 7.95	1/0/1/0/1/1	3
9.00 - 9.45	1/0/0/1/0/1	2
10.50 - 10.95	1/1/1/0/0/1	2
12.00 - 12.45	1/1/0/1/1/1	3
13.50 - 13.95	1/0/0/0/0/1	1
15.00 - 15.45	9/14/12/32/25/33	92
15.50 - 15.95	16/27/29/33/31/42	135

3. Groundwater Observations:

i) Groundwater first struck at 0.8m depth rising to 0.4m depth after 20 minutes, sealed off at 3.8m depth.

ii) Groundwater restruck at 4.8m depth rising to 3.7m depth after 20 minutes, sealed off at 7.9m depth.

iii) Groundwater restuck at 14.40m depth rising to 10.10m depth after 20 minutes.

Intégral Géotechnique

APPENDIX

JOB NO 5609/C

MADE BY G.C.L.

DATE MADE 4.7.94

RECORD OF BOREHOLE 4

Sheet 1 of 2

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
26.6.94			0.00	1.50	BS		0.175		FILL (Hardstanding comprising 75 mm of tarmacadam overlying 100 mm of ash sub-base)
			1.50	1.95	C (14				FILL (Medium dense becoming loose brown and grey brown very clayey GRAVELS, COBBLES, occasional boulders, bricks, timber, pockets and layers of ashy clay)
			1.50	3.00	BS				
			3.00	3.45	C (5)				
			3.00	4.50	BS		3.40		
							3.90		Soft grey silty CLAY/clayey SILT
	4.20								
			4.50	4.95	S (6)				Soft grey brown silty CLAY/clayey SILT
			4.50	6.00	BS				
							5.50		
			6.00	6.45	S (4)				
			6.00	7.50	BS				
			7.50	7.95	S (1)				
			7.50	9.00	BS				
			9.00	9.45	S (5)				Soft and very soft grey silty CLAY/clayey SILT
			9.00	10.50	BS				
			10.50	10.95	S (4)				
			10.50	12.00	BS				
			12.00	12.45	S (0)				
			12.00	13.50	BS				
							12.70		
			13.50	13.95	S (2)				Very soft grey clayey SILT
			13.50	15.00	BS				
							14.30		
									Very soft grey silty CLAY, occasional gravels, cobbles
			15.00	15.45	C(37)		15.00		
			15.00	16.50	BS				Dense rapidly becoming very dense brown SANDS, rounded and sub-rounded GRAVELS, COBBLES and occasional boulders
			16.50	16.73	C (*)				
			16.50	18.00	BS				
			18.00	18.45	C(69)				
			18.00	19.50	BS				
			19.50	19.52	C (*)				
		20.00	19.50	21.00	BS				

REMARKS

1. Equipment: Dando 150 shell and auger drilling rig.
2. Standard/Cone Penetration Test Results: see attached sheet.
3. Groundwater Observations: see attached sheet.
4. Chiselling:

Depth (m)	Time (Hours)
16.60 - 17.00	1.25
17.40 - 17.60	0.50
18.40 - 18.80	0.50
19.50 - 20.00	1.00
21.50 - 21.90	1.00

5. Borehole grouted to ground level.

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

GL to 20.00m - 150 mm

CASING TUBES

GL to 20.00m - 150 mm

BOREHOLE 4

Intégral Géotechnique

APPENDIX	
JOB NO	5609/C
MADE BY	G.C.L.
DATE MADE	4.7.94

RECORD OF BOREHOLE 4

Sheet 2 of 2

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
							20.60		Dense and very dense brown SANDS, rounded and sub-rounded GRAVELS, COBBLES and occasional boulders
			21.00	21.45	C(41)				Very stiff and hard red brown with green staining silty CLAY, with many gravel size mudstone lithorelicts
28.6.94		21.90	21.90	22.35	C(130		21.90		END OF BOREHOLE

REMARKS

See Sheet 1 of 2

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

20.00m to 21.90m - 150 mm

CASING TUBES

20.00m to 21.90m - 150 mm

BOREHOLE 4

BOREHOLE NO. 4

2. **Standard/Cone Penetration Test Results**

Depth (m)	Blows/75mm Penetration	'N' Value
1.50 - 1.95	3/6/4/3/3/4	14
3.00 - 3.45	2/3/2/1/1/1	5
4.50 - 4.95	1/2/2/2/1/1	6
6.00 - 6.45	1/1/1/1/1/1	4
7.50 - 7.95	1/0/0/0/1/0	1
9.00 - 9.45	1/1/2/1/1/1	5
10.50 - 10.95	1/1/1/1/1/1	4
12.00 - 12.45	1/0/0/0/0/0	0
13.50 - 13.95	1/0/0/0/0/1	2
15.00 - 15.45	2/4/6/10/11/10	37
16.50 - 16.73	5/15/16/50 for 10mm penetration	>50
18.00 - 18.45	10/13/17/16/17/19	69
19.50 - 19.52	50 for 25mm penetration	>50
21.00 - 21.45	3/5/9/10/11/11	41
21.80 - 22.35	15/20/29/30/33/38	130

3. **Groundwater Observations:**

i) Groundwater first struck at 4.8m depth rising to 4.2m depth after 20 minutes, sealed off at 6.0m depth.

ii) Groundwater restruck at 14.5m depth rising to 9.8m depth after 20 minutes, sealed off at 7.9m depth.

iii) Groundwater restuck at 14.40m depth rising to 10.10m depth after 20 minutes.

Intégral Géotechnique

RECORD OF BOREHOLE 5

APPENDIX	
JOB NO	5609/C
MADE BY	C.C.L.
DATE MADE	4.7.94

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES: DEPTH FROM	SAMPLES: DEPTH TO	SAMPLES: TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
28.6.94									PILL (Hardstanding comprising 75 mm Tarmacadam overlying ash hardcore with boulders)
28.6.94							0.90		

REMARKS

1. Equipment: Dando 150 shell and auger drilling rig.
2. Chiselling:

Depth (m)	Time (Hours)
0.00 - 0.90	2.00

3. Borehole abandoned due to lack of progress.
4. Borehole grouted to ground level.

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

GL to 0.90m - 150 mm

CASING TUBES

BOREHOLE 5

Intégral Géotechnique

APPENDIX	
JOB NO	5609/C
MADE BY	G.C.L.
DATE MADE	4.7.94

RECORD OF BOREHOLE 5A

Sheet 1 of 2

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
29.6.94			0.00	1.50	BS				FILL (Hardstanding comprising 75 mm of tarmacadam overlying 600 mm of ash hardcore)
							0.675		
			1.50	1.95	C(9)				FILL (Soft brown and grey brown in areas black ashy sandy silty CLAY, many gravels, cobbles, boulders, bricks, timber)
			1.50	3.00	BS				
							2.60		
			3.00	3.45	S (0)				Very soft grey silty CLAY, organic and timber inclusions
			3.00	4.50	BS		3.50		
									Very soft grey with brown mottling silty CLAY/clayey SILT
			4.50	4.95	S (4)		4.50		
			4.50	6.00	BS				
			6.00	6.45	S(1)				
			6.00	7.50	BS				
			7.50	7.95	S(2)				Very soft grey silty CLAY/clayey SILT
			7.50	9.00	BS				
			9.00	9.45	S(2)				
			9.00	10.50	BS				
			10.50	10.95	S (1)				
			10.50	11.00	BS				
	11.60						11.60		
			12.00	12.45	S (1)				Very soft grey clayey SILT
			12.00	13.50	BS				
			13.50	13.95	S (2)				
			13.50	15.00	BS				
							14.50		
			15.00	15.45	S(20)				Medium dense becoming dense and very dense brown SANDS, rounded and sub-rounded GRAVELS, COBBLES and occasional boulders
			15.00	16.50	BS				
			16.50	16.95	C(29)				
			16.50	18.00	BS				
			18.00	18.[illegible]	C (*)				
			18.00	19.50	BS				
			19.50	19.95	C (*)				
		20.00	19.50	21.00	BS				

REMARKS

1. Equipment: Dando 150 shell and auger drilling rig.
2. Standard/Cone Penetration Test Results: see attached sheet.
3. Groundwater Observations: see attached sheet.
4. Chiselling:

Depth (m)	Time (Hours)
0.00 - 1.00	3.00
17.50 - 17.90	0.75
18.00 - 18.50	1.25
19.60 - 20.00	0.75
20.80 - 21.40	1.00

5. Borehole grouted to ground level.

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

GL to 20.00m - 150 mm

CASING TUBES

GL to 20.00m - 150 mm

BOREHOLE 5A

Intégral Géotechnique

RECORD OF BOREHOLE 5 A

Sheet 2 of 2

APPENDIX	
JOB NO	5609/C
MADE BY	G.C.L.
DATE MADE	4.7.94

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
							20.20		Very dense brown SANDS, rounded and sub-rounded GRAVELS, COBBLES and occasional boulders
		21.00	21.00	21.45	D(86)				Very stiff and hard red brown with grey green staining silty CLAY, with many gravel size mudstone lithorelicts
30.6.94							21.40		END OF BOREHOLE

REMARKS

See Sheet 1 of 2

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

20.00m to 21.40m - 150 mm

CASING TUBES

20.00m to 21.40m - 150 mm

BOREHOLE 5 A

BOREHOLE NO. 5A

2. **Standard/Cone Penetration Test Results**

Depth (m)	Blows/75mm Penetration	'N' Value
1.50 - 1.95	9/14/4/3/1/1	9
3.00 - 3.45	1/0/0/0/0/0	0
4.50 - 4.95	1/0/1/1/1/1	4
6.00 - 6.45	1/0/0/1/0/0	1
7.50 - 7.95	1/0/0/1/0/1	2
9.00 - 9.45	1/0/0/1/0/1	2
10.50 - 10.95	1/0/0/1/0/0	1
12.00 - 12.45	1/0/0/1/0/0	1
13.50 - 13.95	1/0/0/1/0/1	2
15.00 - 15.45	2/3/3/5/5/7	20
16.50 - 16.95	1/2/1/3/10/15	29
18.00 - 18.45	50 for 25mm penetration	>50
19.50 - 19.75	9/18/30/50 for 25mm penetration	>50
21.00 - 21.45	5/9/16/20/21/29	86

3. **Groundwater Observations:**

i) Groundwater first struck at 14.5m depth rising to 11.6m depth after 20 minutes.

APPENDIX B

TRIAL PIT LOGS

RECORD OF TRIAL PIT 1

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface		
0.1		MADE GROUND: Very dense GRAVEL of slag		
		END OF TRIAL PIT AT 0.1m		

REMARKS:

1. Trial pit abandoned at 0.1m due to refusal of machine.
2. Trial pit relocated 5m north east to TP1A.

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Not applicable

Stability: Not applicable

RECORD OF TRIAL PIT 1A

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface		
		MADE GROUND: Dense becoming loose grey/brown occasionally black clayey, sandy GRAVEL of brick, concrete, stone with some to many cobbles/boulders of concrete, brick and stone and much metal, timber, plastic(bottles and bags), cloth and many clay tiles.	D@0.6m	Reinforced concrete fence post recovered at 1.0m
1.9		END OF TRIAL PIT AT 1.9m		

REMARKS:

1. Trial pit abandoned at 1.9m due to sides collapsing

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Moderate to rapid inflow at 1.7m

Stability: Unstable collapsing below 0.6m

RECORD OF TRIAL PIT 2

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface	D@1.2m	
		MADE GROUND: Dense, firm in places, grey/brown occasionally black sandy, clayey GRAVEL of stone occasional brick, concrete and slag.		
0.8		MADE GROUND:Loose grey/brown sandy GRAVEL of brick, concrete, stone with some to many cobbles/boulders of concrete, brick and stone and much metal, timber, plastic(bottles and bags).		
1.9		Very soft blue/grey SILT		
2.5		END OF TRIAL PIT AT 2.5m		

REMARKS:

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Moderate to rapid inflow at 1.6m

Stability: Unstable below 0.8m

RECORD OF TRIAL PIT 3

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface		
		MADE GROUND: Medium dense grey/brown occasionally black sandy GRAVEL of stone.		
1.0		MADE GROUND:Loose very loose in places grey/brown sandy GRAVEL of brick, concrete (reinforced), stone with some to many cobbles/boulders of concrete, brick and stone and much metal, timber, plastic(bottles and bags) and roofing felt.	D@1.5m	Much roofing felt at 2.0m Much plastic bunting at 2.5m
2.8		Very soft blue/grey SILT with some black fibrous organic inclusions		
3.5		END OF TRIAL PIT AT 3.5m		

REMARKS:

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Moderate to rapid inflow at 2.5m

Stability: Unstable and collapsing below 1.0m

RECORD OF TRIAL PIT 4

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface	D@1.5m	
		MADE GROUND: Loose to medium dense grey/brown occasionally black sandy GRAVEL of stone occasional brick and concrete		
1.1		MADE GROUND:Loose grey/brown sandy GRAVEL of brick, concrete(reinforced), stone with some to many cobbles/boulders of concrete, brick and stone and much metal, timber, plastic(bottles and bags).		
3.7		Very soft blue/grey SILT with much black fibrous organic inclusions		
4.0		END OF TRIAL PIT AT 4.0m		

REMARKS:

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Moderate to rapid inflow at 2.8m

Stability: Unstable

RECORD OF TRIAL PIT 5

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface		
		MADE GROUND:Loose very loose in places grey sandy GRAVEL of brick, concrete(reinforced), stone with some to many cobbles/boulders of concrete, brick and stone and much metal, timber, plastic(bottles and bags).	D@1.4m	
2.2		Very soft grey silty CLAY with some black organic inclusions		
2.4		END OF TRIAL PIT AT 2.4m		

REMARKS:

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Moderate to rapid inflow at 1.9m

Stability: Unstable and collapsing

RECORD OF TRIAL PIT 6

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface		
		MADE GROUND: Medium dense/soft to firm brown sandy very clayey GRAVEL/gravelly CLAY occasional brick and concrete, occasional cobbles.		
1.1		MADE GROUND:Medium dense to loose grey/brown sandy GRAVEL of brick, concrete (reinforced), stone with some to many cobbles/boulders of concrete, brick and stone and much metal, timber, plastic(bottles and bags).	D@1.5m	
1.5		Very soft grey silty CLAY		
2.0		END OF TRIAL PIT AT 2.0m		

REMARKS:

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Not encountered

Stability: Overbreak below 1.1m

RECORD OF TRIAL PIT 7

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface		
		MADE GROUND: Soft to firm dark brown sandy CLAY with many roots, occasional brick		
0.4		POSSIBLE MADE GROUND: Very soft grey silty CLAY with many black fibrous/woody root remains		
1.0		POSSIBLE MADE GROUND: Soft to firm yellow/brown occasionally grey/black very gravelly CLAY with occasional shells and occasional ash/clinker		
1.6		END OF TRIAL PIT AT 1.6m		

REMARKS:

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Moderate to rapid inflow at 1.4m

Stability: Some overbreak below 1.1m

APPENDIX C

BOREHOLE LOGS

RECORD OF BOREHOLE 1

Client: ABP

Site Name: ABP Newport Shed 11 Ext.

Ground Level mOD: **Co-ordinates:**

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Daily Progress	Casing Depth (m)	Water Depth (m)	Samples/Tests			Depth (m)	Legend	Description
			Depth (m)	Type/No.	SPT (N)			
16.07.04						0.0		Ground Surface
						0.30		MADE GROUND: Medium dense grey clayey GRAVEL
								MADE GROUND: Loose GRAVEL of clinker
						0.80		
			1.50 - 1.95	S	8			MADE GROUND: Loose grey clayey GRAVEL of brick and concrete with occasional wood
		2.0						
			2.50 - 2.95	S	7			
						2.80		
			3.50 - 3.95	S	7			Soft grey silty CLAY.
						4.20		
			4.50 - 4.95	S	8			Soft grey/brown silty CLAY
						5.30		
			5.50 - 5.95	S	5			
			7.00 - 7.45	S	4			
			8.50 - 8.95	S	4			Soft becoming very soft dark grey/brown silty CLAY
			10.00 - 10.45	S	3			

REMARKS

1. See attached sheet for details of in situ tests, groundwater observations and chiselling, where appropriate.

Sample/Test Types

B = bulkdisturbed
W = water sample
D = small disturbed
SPT = standard penetration test
C = SPT using solid cone
S = SPT using split spoon
U = undisturbed

Equipment: Pilcon 150
Type of boring: Shell and auger
Diameter of boring: 150mm
Diameter of casing: 150mm
Depth of gas/water standpipe: N/A

RECORD OF BOREHOLE 1

Client: ABP

Site Name: ABP Newport Shed 11 Ext.

Ground Level mOD: **Co-ordinates:**

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Daily Progress	Casing Depth (m)	Water Depth (m)	Samples/Tests			Depth (m)	Legend	Description
			Depth (m)	Type/No.	SPT (N)			
			11.50 - 11.95	S	3			
						12.7		
			13.00 - 13.45	S	10			Soft to firm dark grey sandy gravelly CLAY
						13.7		
16.07.04	14.5		14.50 - 14.95	S	23			Medium dense becoming dense and very dense grey and orange/brown sandy GRAVEL with cobbles/ boulders of sandstone.
20.07.04								
	16.0							
20.07.04			16.50 - 16.65	S	>50	16.50		
								END OF BOREHOLE AT 16.5m.

REMARKS

1. See attached sheet for details of in situ tests, groundwater observations and chiselling, where appropriate.

Sample/Test Types

B = bulkdisturbed
W = water sample
D = small disturbed
SPT = standard penetration test
C = SPT using solid cone
S = SPT using split spoon
U = undisturbed

Equipment: Pilcon 150
Type of boring: Shell and auger
Diameter of boring: 150mm
Diameter of casing: 150mm
Depth of gas/water standpipe: N/A

RECORD OF BOREHOLE 1

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789

Client: ABP Newport **Site name:** Shed 11 Ext.
Project Number: 8943 **Project Engineer:** TD
Ground level: Not used **Co-ordinates:** Not used

STANDARD PENETRATION (SPT) RESULTS

Depth (m)		0-75 mm	75-150 mm	150-225 mm	225-300 mm	300-375 mm	375-450 mm	SPT-N Value
From	200mm							
1.50	1.95	2	3	2	2	2	2	8
2.50	2.95	1		2	2	2	1	7
3.50	3.95	3	2	2	1	2	2	7
4.50	4.95	2	2	2	2	2	2	8
5.50	5.95	2	2	1	1	2	1	5
7.00	7.45	1	1	1	1	1	1	4
8.50	8.95	1		1	1	1	1	4
10.00	10.45	1		1		1	1	3
11.50	11.95	1		1	1		1	3
13.00	13.45	1	2	2	2	2	4	10
14.50	14.95	4	4	4	4	6	9	23
16.50	16.65	25	50	= 75 blows for 150mm penetration				>50

CHISELLING

Depth (m)		Time (hours)
From	To	
14.80	15.10	0.50
16.10	16.50	1.00

GROUNDWATER OBSERVATIONS

1. Groundwater struck at 2.3m on the 16.07.04 rising to 2.0m after 20mins.
2. Groundwater struck at 13.7m on the 16.07.04 standing at 2.5m at 08.00hrs. on the 20.07.04

REMARKS

1. Equipment: Dando 150 drilling rig
2. Borehole Depth (m): 16.50

TYPE OF BORING
Shell and Auger

DIAMETER OF BORING
150mm

DIAMETER OF CASING
150mm

RECORD OF BOREHOLE 2

Client: ABP

Site Name: ABP Newport Shed 11 Ext.

Ground Level mOD: **Co-ordinates:**

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Daily Progress	Casing Depth (m)	Water Depth (m)	Samples/Tests			Depth (m)	Legend	Description
			Depth (m)	Type/No.	SPT (N)			
20.07.04						0.0		Ground Surface
			1.00 - 1.45	S	6			MADE GROUND: Loose to medium dense grey clayey GRAVEL of stone and ash.
			2.00 - 2.45	S	13			
						2.2		MADE GROUND: Loose grey clayey GRAVEL of brick and concrete with occasional wood
			3.00 - 3.45	S	5			
						3.2		MADE GROUND: Soft dark grey ashy, gravelly CLAY
						3.8		
			4.00 - 4.45	S	8			Soft to firm grey silty CLAY
			5.00 - 5.45	S	4	5.0		
			6.50 - 6.95	S	3			
		7.2						Very soft grey silty CLAY
			9.00 - 9.45	S	1			

REMARKS

1. See attached sheet for details of in situ tests, groundwater observations and chiselling, where appropriate.

Sample/Test Types

B = bulkdisturbed
W = water sample
D = small disturbed
SPT = standard penetration test
C = SPT using solid cone
S = SPT using split spoon
U = undisturbed

Equipment: Pilcon 150
Type of boring: Shell and auger
Diameter of boring: 150mm
Diameter of casing: 150mm
Depth of gas/water standpipe: N/A

RECORD OF BOREHOLE 2

Client: ABP

Site Name: ABP Newport Shed 11 Ext.

Ground Level mOD: **Co-ordinates:**

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Daily Progress	Casing Depth (m)	Water Depth (m)	Samples/Tests			Depth (m)	Legend	Description
			Depth (m)	Type/No.	SPT (N)			
			10.50 - 10.95	S	9	10.7		
			12.00 - 12.45	S	10			Soft to firm grey silty, sandy CLAY
						12.8		Firm grey gravelly, very sandy CLAY.
20.07.04			13.50 - 13.95	S	24	13.6		
21.07.04	14.5		15.00 - 15.45	S	22			Medium dense becoming dense and very dense grey sandy GRAVEL with cobbles/boulders of sandstone.
	16.0		16.50 - 16.95	S	75			
21.07.04			17.50 - 17.75	S	>50	17.5		END OF BOREHOLE AT 17.5m.

REMARKS

1. See attached sheet for details of in situ tests, groundwater observations and chiselling, where appropriate.

Sample/Test Types

B = bulkdisturbed
W = water sample
D = small disturbed
SPT = standard penetration test
C = SPT using solid cone
S = SPT using split spoon
U = undisturbed

Equipment: Pilcon 150
Type of boring: Shell and auger
Diameter of boring: 150mm
Diameter of casing: 150mm
Depth of gas/water standpipe: N/A

RECORD OF BOREHOLE 2

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789

Client: ABP Newport **Site name:** Shed 11 Ext.
Project Number: 8943 **Project Engineer:** TD
Ground level: Not used **Co-ordinates:** Not used

STANDARD PENETRATION (SPT) RESULTS

Depth (m) From	Depth (m) 200mm	0-75 mm	75-150 mm	150-225 mm	225-300 mm	300-375 mm	375-450 mm	SPT-N Value
1.00	1.45	1	1	1	2	1	2	6
2.00	2.45	1	2	2	3	4	4	13
3.00	3.45	1	1	1	1	2	1	5
4.00	4.45	1	1	2	2	2	2	8
5.00	5.45	1		1	1		2	4
6.50	6.95	1		1	1		1	3
9.00	9.45	1					1	1
10.50	10.95	1	1	2	2	2	3	9
12.00	12.45	2	2	2	3	2	3	10
13.50	13.95	1	4	5	5	6	8	24
15.00	15.45	3	4	4	8	4	6	22
16.50	16.95	3	6	12	20	21	22	75
17.50	17.75	22	26	50	= 98 blows for 250mm penetratoin			>50

CHISELLING

Depth (m) From	Depth (m) To	Time (hours)
2.20	2.40	0.50
17.20	17.50	1.00

GROUNDWATER OBSERVATIONS

1. Groundwater struck at 13.6m on the 20.07.04 rising to 7.2m after 20mins.
2. Groundwater standing at GL at 08.00hrs. on the 21.07.04

REMARKS

1. Equipment: Dando 150 drilling rig
2. Borehole Depth (m): 17.50

TYPE OF BORING
Shell and Auger

DIAMETER OF BORING
150mm

DIAMETER OF CASING
150mm

APPENDIX D

LABORATORY CHEMICAL TEST RESULTS

SEVERN TRENT
ENVIRONMENTAL LEADERSHIP

STL

Leaders in Environmental Testing

Mr Dixon
Integral Geotechnique
50 Cathedral Road
Cardiff CF1 9LL

05 July 2004

Test Report : TH /235652/2004

Dear Mr Dixon,

Analysis of your sample(s) submitted on 24/06/2004 is now complete and we have pleasure in enclosing the appropriate test report(s).

Should you have any query on the report(s) or any part of our service we will be happy to discuss your requirements.

An invoice for the analysis carried out will be sent under separate cover.

Thank you for using STL and we look forward to receiving your next samples.

To arrange a container delivery or sample collection please ring the direct line to **COURIERS on 024 7685 6562.**

Yours Sincerely,

Signed : JFell

- 6 JUL 2004

Name : J. Fell

Title : Section Manager

Report Summary

1314
0897
1229
1510

SEVERN TRENT
Environmental Leadership

STL

Mr Tony Dixon
Integral Geotechnique

50 Cathedral Road

Cardiff

CF1 9LL

Report Number : TH/235652/2004 *Issue 1*

Job Description : 8943 NEWPORT

Job Location : 8943 NEWPORT

Number of Samples included in report **5**

Job Received : **24 June 2004**

Number of test results included in report **175**

Analysis Commenced : **25 June 2004**

Signed : H Quick

Name : **H. Quick** Date : 05 July 2004

Title : **Senior Coordinator**

STL was not responsible for sampling unless otherwise stated. Sampling is not covered by our UKAS accreditation.
Information on the methods of analysis and performance characteristics are available on request
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory

Severn Trent Laboratories Ltd
STL Business Centre, Torrington Avenue, Coventry CV4 9GU Tel : 02476 421213 Fax : 02476 856575

Certificate of Analysis

1314
0897
1229
1510

SEVERN TRENT
Environmental Leadership

STL

Sample 1 of 5 Laboratory Number : 316942
Report Number : TH /235652/2004 Issue 1

Sample Source : **Integral Geotechnique**
Sample Point Description : **Integral Geotechnique**
Sample Description : **TP1 0.6M**

Sample Date : **23 June 2004** Sample Received : **24 June 2004** Analysis Complete : **02 July 2004**

Test Description	Result	Units		Accreditation	Method
Arsenic as As, dry weight	12	mg/kg		L	30/30C
Boron as B, hot water sol dw	3.4	mg/kg		L	6
Cadmium as Cd, dry weight	0.70	mg/kg		L	30
Chromium as Cr, dry weight	29	mg/kg		L	30
Copper as Cu, dry weight	43	mg/kg		L	30
Lead as Pb, dry weight	240	mg/kg		L	30
Mercury as Hg, dry weight	0.15	mg/kg		L	30C
Nickel as Ni, dry weight	30	mg/kg		L	30
Selenium as Se, dry weight	1.1	mg/kg		L	30C
Zinc as Zn, dry weight	290	mg/kg		L	30
Sulphide, dry weight	140	mg/kg		L	47
Elemental sulphur, dry weight	270	mg/kg		L	51
Sulphate as SO4, water sol dw	860	mg/kg		L	46
Sulphate Total as SO4 DW	1500	mg/kg		L	45
Cyanide as CN,total dry weight	< 0.50	mg/kg		L	14
Monohydric phenols dw	< 0.50	mg/kg		L	40A
Asbestos identification	ND	Text	*	L	Asbestos
Anthracene	< 0.50	mg/kg		L	313
Acenaphthene	< 0.50	mg/kg		L	313
Acenaphthylene	< 0.50	mg/kg		L	313
Benz-(a)-pyrene	0.66	mg/kg		L	313
Benz-g,h,i-perylene	< 0.50	mg/kg		L	313
Benzo-a-anthracene	0.63	mg/kg		L	313
Benzo-b-fluoranthene	1.1	mg/kg		L	313
Benzo-k-fluoranthene	< 0.50	mg/kg		L	313
Chrysene	0.97	mg/kg		L	313
Dibenz (a,h) anthracene	< 0.50	mg/kg		L	313
Fluoranthene	1.6	mg/kg		L	313
Fluorene	< 0.50	mg/kg		L	313
Indeno 1,2,3-cd pyrene	0.57	mg/kg		L	313
Naphthalene	< 0.50	mg/kg		L	313
Phenanthrene	0.80	mg/kg		L	313
Pyrene	1.7	mg/kg		L	313
PAH total	7.9	mg/kg		L	313
pH	8.7			L	39

Accreditation Codes : * = Not UKAS accredited B = Analysed at Bridgend C = Analysed at STL Coventry R = Analysed at Runcorn S = Sub-contracted
L = Analysed at STL CAS For Microbiological determinands 0 or ND = Not Detected, DET = Detected

Severn Trent Laboratories Ltd
STL Business Centre, Torrington Avenue, Coventry CV4 9GU Tel : 02476 421213 Fax : 02476 856575

Certificate of Analysis

1314
0897
1229
1510

SEVERN TRENT
Environmental Leadership

STL

Sample 2 of 5 Laboratory Number : 316943
Report Number : TH /235652/2004 Issue 1

Sample Source : **Integral Geotechnique**
Sample Point Description : **Integral Geotechnique**
Sample Description : **TP2 1.2M**

Sample Date : **23 June 2004** Sample Received : **24 June 2004** Analysis Complete : **02 July 2004**

Test Description	Result	Units		Accreditation	Method
Arsenic as As, dry weight	17	mg/kg		L	30/30C
Boron as B, hot water sol dw	2.8	mg/kg		L	6
Cadmium as Cd, dry weight	1.5	mg/kg		L	30
Chromium as Cr, dry weight	85	mg/kg		L	30
Copper as Cu, dry weight	69	mg/kg		L	30
Lead as Pb, dry weight	260	mg/kg		L	30
Mercury as Hg, dry weight	0.24	mg/kg		L	30C
Nickel as Ni, dry weight	42	mg/kg		L	30
Selenium as Se, dry weight	0.84	mg/kg		L	30C
Zinc as Zn, dry weight	310	mg/kg		L	30
Sulphide, dry weight	18	mg/kg		L	47
Elemental sulphur, dry weight	< 100	mg/kg		L	51
Sulphate as SO4, water sol dw	1700	mg/kg		L	46
Sulphate Total as SO4 DW	2200	mg/kg		L	45
Cyanide as CN,total dry weight	< 0.50	mg/kg		L	14
Monohydric phenols dw	< 0.50	mg/kg		L	40A
Asbestos identification	ND	Text	*	L	Asbestos
Anthracene	0.83	mg/kg		L	313
Acenaphthene	< 0.50	mg/kg		L	313
Acenaphthylene	< 0.50	mg/kg		L	313
Benz-(a)-pyrene	2.1	mg/kg		L	313
Benz-g,h,i-perylene	1.5	mg/kg		L	313
Benzo-a-anthracene	1.8	mg/kg		L	313
Benzo-b-fluoranthene	3.2	mg/kg		L	313
Benzo-k-fluoranthene	1.1	mg/kg		L	313
Chrysene	2.2	mg/kg		L	313
Dibenz (a,h) anthracene	< 0.50	mg/kg		L	313
Fluoranthene	4.0	mg/kg		L	313
Fluorene	< 0.50	mg/kg		L	313
Indeno 1,2,3-cd pyrene	1.9	mg/kg		L	313
Naphthalene	0.67	mg/kg		L	313
Phenanthrene	2.2	mg/kg		L	313
Pyrene	3.2	mg/kg		L	313
PAH total	25	mg/kg		L	313
pH	8.6			L	39

Accreditation Codes : * = Not UKAS accredited B = Analysed at Bridgend C = Analysed at STL Coventry R = Analysed at Runcorn S = Sub-contracted
L = Analysed at STL CAS For Microbiological determinands 0 or ND = Not Detected, DET = Detected

Severn Trent Laboratories Ltd
STL Business Centre, Torrington Avenue, Coventry CV4 9GU Tel : 02476 421213 Fax : 02476 856575

Certificate of Analysis

1314
0897
1229
1510

SEVERN TRENT
Environmental Leadership

STL

Sample 3 of 5 Laboratory Number : 316944
Report Number : TH /235652/2004 Issue 1

Sample Source : **Integral Geotechnique**
Sample Point Description : **Integral Geotechnique**
Sample Description : **TP3 1.5M**

Sample Date : **23 June 2004** Sample Received : **24 June 2004** Analysis Complete : **02 July 2004**

Test Description	Result	Units		Accreditation	Method
Arsenic as As, dry weight	16	mg/kg		L	30/30C
Boron as B, hot water sol dw	0.91	mg/kg		L	6
Cadmium as Cd, dry weight	1.9	mg/kg		L	30
Chromium as Cr, dry weight	28	mg/kg		L	30
Copper as Cu, dry weight	41	mg/kg		L	30
Lead as Pb, dry weight	170	mg/kg		L	30
Mercury as Hg, dry weight	0.24	mg/kg		L	30C
Nickel as Ni, dry weight	20	mg/kg		L	30
Selenium as Se, dry weight	0.65	mg/kg		L	30C
Zinc as Zn, dry weight	210	mg/kg		L	30
Sulphide, dry weight	< 5.0	mg/kg		L	47
Elemental sulphur, dry weight	< 100	mg/kg		L	51
Sulphate as SO4, water sol dw	410	mg/kg		L	46
Sulphate Total as SO4 DW	1500	mg/kg		L	45
Cyanide as CN,total dry weight	< 0.50	mg/kg		L	14
Monohydric phenols dw	< 0.50	mg/kg		L	40A
Asbestos identification	ND	Text	*	L	Asbestos
Anthracene	< 0.50	mg/kg		L	313
Acenaphthene	< 0.50	mg/kg		L	313
Acenaphthylene	< 0.50	mg/kg		L	313
Benz-(a)-pyrene	< 0.50	mg/kg		L	313
Benz-g,h,i-perylene	< 0.50	mg/kg		L	313
Benzo-a-anthracene	< 0.50	mg/kg		L	313
Benzo-b-fluoranthene	0.51	mg/kg		L	313
Benzo-k-fluoranthene	< 0.50	mg/kg		L	313
Chrysene	< 0.50	mg/kg		L	313
Dibenz (a,h) anthracene	< 0.50	mg/kg		L	313
Fluoranthene	0.65	mg/kg		L	313
Fluorene	< 0.50	mg/kg		L	313
Indeno 1,2,3-cd pyrene	< 0.50	mg/kg		L	313
Naphthalene	< 0.50	mg/kg		L	313
Phenanthrene	< 0.50	mg/kg		L	313
Pyrene	0.59	mg/kg		L	313
PAH total	< 5.00	mg/kg		L	313
pH	8.9			L	39

Accreditation Codes : * = Not UKAS accredited B = Analysed at Bridgend C = Analysed at STL Coventry R = Analysed at Runcorn S = Sub-contracted
L = Analysed at STL CAS For Microbiological determinands 0 or ND = Not Detected, DET = Detected

Severn Trent Laboratories Ltd
STL Business Centre, Torrington Avenue, Coventry CV4 9GU Tel : 02476 421213 Fax : 02476 856575

Certificate of Analysis

1314
0897
1229
1510

SEVERN TRENT
Environmental Leadership

STL

Sample 4 of 5 Laboratory Number : 316945
Report Number : TH /235652/2004 Issue 1

Sample Source : **Integral Geotechnique**
Sample Point Description : **Integral Geotechnique**
Sample Description : **TP4 1.5M**

Sample Date : **23 June 2004** Sample Received : **24 June 2004** Analysis Complete : **02 July 2004**

Test Description	Result	Units		Accreditation	Method
Arsenic as As, dry weight	21	mg/kg		L	30/30C
Boron as B, hot water sol dw	2.6	mg/kg		L	6
Cadmium as Cd, dry weight	0.55	mg/kg		L	30
Chromium as Cr, dry weight	150	mg/kg		L	30
Copper as Cu, dry weight	100	mg/kg		L	30
Lead as Pb, dry weight	180	mg/kg		L	30
Mercury as Hg, dry weight	0.38	mg/kg		L	30C
Nickel as Ni, dry weight	93	mg/kg		L	30
Selenium as Se, dry weight	0.58	mg/kg		L	30C
Zinc as Zn, dry weight	250	mg/kg		L	30
Sulphide, dry weight	< 5.0	mg/kg		L	47
Elemental sulphur, dry weight	< 100	mg/kg		L	51
Sulphate as SO4, water sol dw	180	mg/kg		L	46
Sulphate Total as SO4 DW	1100	mg/kg		L	45
Cyanide as CN,total dry weight	< 0.50	mg/kg		L	14
Monohydric phenols dw	< 0.50	mg/kg		L	40A
Asbestos identification	ND	Text	*	L	Asbestos
Anthracene	< 0.50	mg/kg		L	313
Acenaphthene	< 0.50	mg/kg		L	313
Acenaphthylene	< 0.50	mg/kg		L	313
Benz-(a)-pyrene	1.2	mg/kg		L	313
Benz-g,h,i-perylene	0.86	mg/kg		L	313
Benzo-a-anthracene	0.97	mg/kg		L	313
Benzo-b-fluoranthene	1.7	mg/kg		L	313
Benzo-k-fluoranthene	0.72	mg/kg		L	313
Chrysene	1.2	mg/kg		L	313
Dibenz (a,h) anthracene	< 0.50	mg/kg		L	313
Fluoranthene	2.3	mg/kg		L	313
Fluorene	< 0.50	mg/kg		L	313
Indeno 1,2,3-cd pyrene	1.1	mg/kg		L	313
Naphthalene	< 0.50	mg/kg		L	313
Phenanthrene	1.2	mg/kg		L	313
Pyrene	2.0	mg/kg		L	313
PAH total	13	mg/kg		L	313
pH	9.7			L	39

Accreditation Codes : * = Not UKAS accredited B = Analysed at Bridgend C = Analysed at STL Coventry R = Analysed at Runcorn S = Sub-contracted
L = Analysed at STL CAS For Microbiological determinands 0 or ND = Not Detected, DET = Detected

Severn Trent Laboratories Ltd
STL Business Centre, Torrington Avenue, Coventry CV4 9GU Tel : 02476 421213 Fax : 02476 856575

Certificate of Analysis

1314
0897
1229
1510

SEVERN TRENT
Environmental Leadership

STL

Sample 5 of 5 Laboratory Number : 316946
Report Number : TH /235652/2004 Issue 1

Sample Source : **Integral Geotechnique**
Sample Point Description : **Integral Geotechnique**
Sample Description : **TP5 1.4M**

Sample Date : **23 June 2004** Sample Received : **24 June 2004** Analysis Complete : **02 July 2004**

Test Description	Result	Units		Accreditation	Method
Arsenic as As, dry weight	13	mg/kg		L	30/30C
Boron as B, hot water sol dw	0.84	mg/kg		L	6
Cadmium as Cd, dry weight	< 0.50	mg/kg		L	30
Chromium as Cr, dry weight	27	mg/kg		L	30
Copper as Cu, dry weight	44	mg/kg		L	30
Lead as Pb, dry weight	110	mg/kg		L	30
Mercury as Hg, dry weight	0.20	mg/kg		L	30C
Nickel as Ni, dry weight	24	mg/kg		L	30
Selenium as Se, dry weight	0.42	mg/kg		L	30C
Zinc as Zn, dry weight	300	mg/kg		L	30
Sulphide, dry weight	< 5.0	mg/kg		L	47
Elemental sulphur, dry weight	< 100	mg/kg		L	51
Sulphate as SO4, water sol dw	1400	mg/kg		L	46
Sulphate Total as SO4 DW	2900	mg/kg		L	45
Cyanide as CN,total dry weight	< 0.50	mg/kg		L	14
Monohydric phenols dw	< 0.50	mg/kg		L	40A
Asbestos identification	Chrysotile	Text	*	L	Asbestos
Anthracene	1.7	mg/kg		L	313
Acenaphthene	0.69	mg/kg		L	313
Acenaphthylene	< 0.50	mg/kg		L	313
Benz-(a)-pyrene	3.4	mg/kg		L	313
Benz-g,h,i-perylene	2.4	mg/kg		L	313
Benzo-a-anthracene	2.4	mg/kg		L	313
Benzo-b-fluoranthene	4.5	mg/kg		L	313
Benzo-k-fluoranthene	1.8	mg/kg		L	313
Chrysene	3.2	mg/kg		L	313
Dibenz (a,h) anthracene	< 0.50	mg/kg		L	313
Fluoranthene	5.8	mg/kg		L	313
Fluorene	0.59	mg/kg		L	313
Indeno 1,2,3-cd pyrene	3.1	mg/kg		L	313
Naphthalene	< 0.50	mg/kg		L	313
Phenanthrene	3.6	mg/kg		L	313
Pyrene	4.6	mg/kg		L	313
PAH total	38	mg/kg		L	313
pH	8.3			L	39

Accreditation Codes : * = Not UKAS accredited B = Analysed at Bridgend C = Analysed at STL Coventry R = Analysed at Runcorn S = Sub-contracted
L = Analysed at STL CAS
For Microbiological determinands 0 or ND = Not Detected, DET = Detected

Signed : H Quick Name : **H. Quick** Date : 05 July 2004
Title : **Senior Coordinator**

Severn Trent Laboratories Ltd
STL Business Centre, Torrington Avenue, Coventry CV4 9GU Tel : 02476 421213 Fax : 02476 856575

NORTH

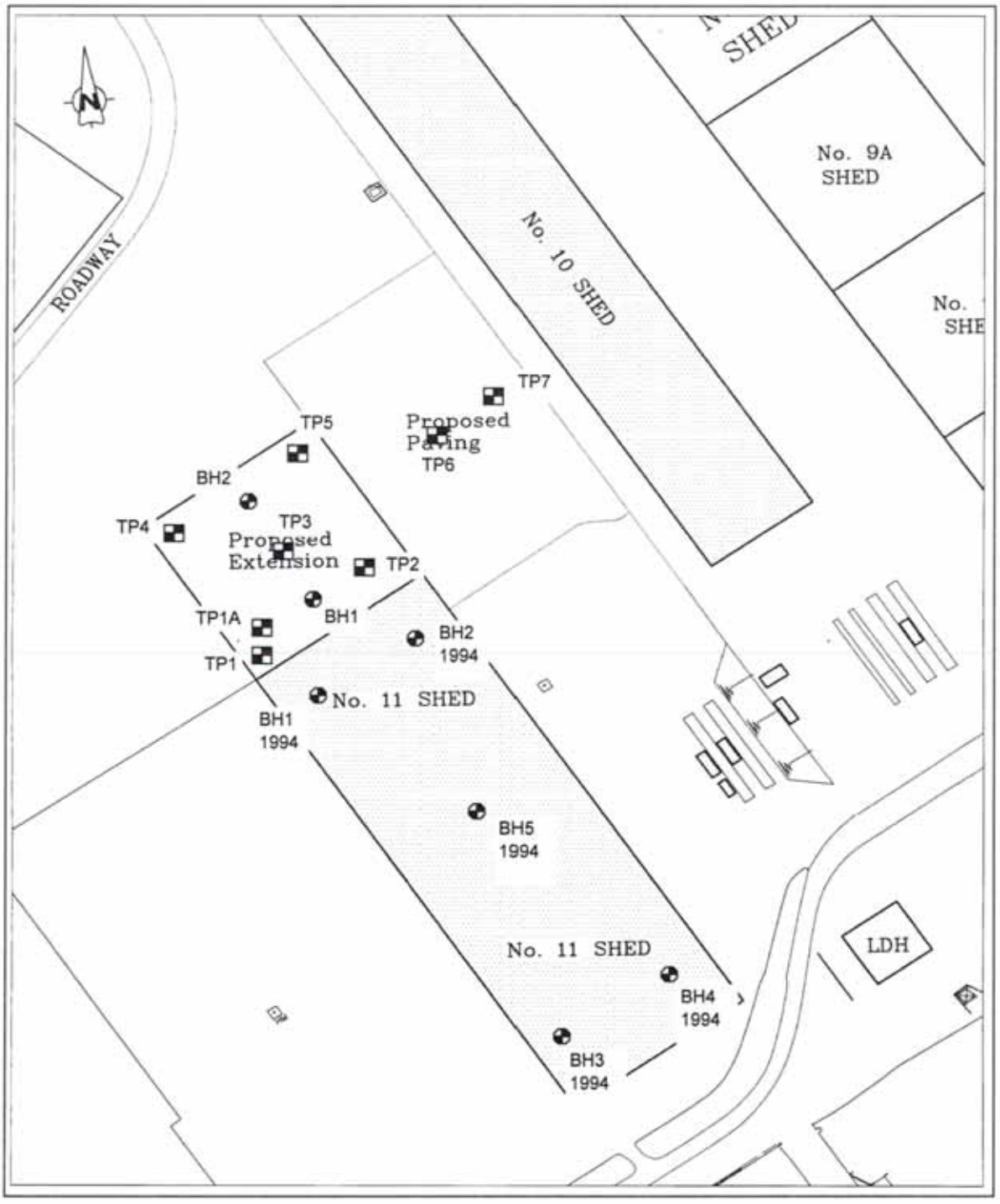
Scale = 1:25,000

FIGURE 1 - SITE LOCATION

Shed 11 Ext. ABP Newport

Intégral Géotechnique
50 Cathedral Road
Cardiff
CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789

NORTH



Not To Scale

LEGEND

TP2	Approximate Trial Pit Location
BH1	Approximate Borehole Location, 2004
BH3 1994	Approximate Borehole Location, 1994

FIGURE 2 - SITE LAYOUT

Shed 11 Ext. ABP Newport

Intégral Géotechnique

50 Cathedral Road
Cardiff
CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789

NORTH

Not drawn to scale

The location of historical information is approximate

FIGURE 3
SITE HISTORY

SITE: Shed 11 Ext. ABP Newport

Intégral Geotechnique
50 Cathedral Road
Cardiff
CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789

Associated British Ports

Shed 21, Newport Docks

Site Investigation Factual Report

11827/TD/16/SI

Intégral
Géotechnique

CLIENT: **Associated British Ports**

PROJECT: **Shed 21, Newport Docks**

TITLE: **Site Investigation Factual Report**

JOB NO: **11827**

DOCUMENT REF: **11827/TD/16/SI**

Revision	Purpose Description	Originated	Reviewed	Authorised	Date
0	Final Factual Report	LP/TD	MJE	MJE	September 2016

Geotechnical Engineers:

Intégral Géotechnique (Wales) Limited
Integral House
7 Beddau Way
Castlegate Business Park
Caerphilly
CF83 2AX

Tel: 029 2080 7991
Fax: 029 2086 2176

CONTENTS

1.0 INTRODUCTION

1.1 GENERAL

Associated British Ports (ABP) are proposing to construct a new industrial unit adjacent to the existing Shed 11 unit within the Newport Docks.

Bingham Hall Partnership are the civil and structural engineers for the scheme.

Intégral Géotechnique (Wales) Limited have been appointed as the Geotechnical Engineers to undertake a site investigation to enable a geotechnical and geoenvironmental appraisal of the site and provide a basis for design.

This report presents the factual findings of the site investigation.

1.2 PROPOSED DEVELOPMENT

A design and build scheme is being considered for the new Shed 21 which is proposed to be 60m by 60m in size. The design and construction is likely to be similar to the adjacent Shed 11, which is an aluminium clad steel frame building.

1.3 SCOPE OF WORKS

The work instructed included a desk study of available information and additional site investigation works specific to the area of the proposed unit. This was followed by laboratory testing, and geotechnical and geoenvironmental reporting.

The desk study comprised a review of:

- Old Ordnance Survey maps covering the site, from the former investigations for Shed 11;
- Geological maps of the area provided by the British Geological Survey; and
- the Natural Resources Wales groundwater vulnerability map and aquifer database for the area.

1.3 SCOPE OF WORKS (CONTINUED)

The desk study information was used to make an initial assessment of the site and to design an investigation to be carried out by Intégral Géotechnique. The site investigation was designed in accordance with BS5930+A2:2010, the Code of Practice for Site Investigations, BS10175:2011, the Code of Practice for Investigation of Potentially Contaminated Sites, and 'Development of Land Affected by Contamination: A Guide for Developers' prepared by Welsh Local Government Association (WLGA)/Environment Agency Wales (EAW) Land Contamination Working Group, 2012.

The site investigation included:

- The drilling of three windowless sample holes and also a shell and auger borehole to examine the deeper ground conditions during July 2016;
- Sampling of made ground for laboratory chemical testing.

1.4 LIMITATIONS

This document is intended to be a working document for further development in discussion with all concerned including the Local Planning Authority, Natural Resources Wales (NRW) as appropriate.

"Contamination" is taken throughout the report to mean the "presence of one or more potentially harmful substances as a result of human activity". The use of the term in this way does not imply that harm is being or might be caused by the contamination. It should be noted that "contamination" can have different meanings under different regulatory regimes, for example, planning, building control and Part IIA of the Environmental Protection Act 1990. Naturally elevated concentrations of potentially harmful substances may also be of concern and the significance of any that have been found is also evaluated in this report.

It is important to recognise that there may be areas of contamination that have not been found, or that contaminants are present at concentrations above those that have been found. It is also important to recognise that contamination may be localised and that no investigation, however comprehensive, is capable of finding such occurrences other than by chance.

It should also be noted that vertical and lateral changes in ground conditions may be present between exploratory hole locations.

Access for the intrusive site investigation was generally available across the majority of the site, but with the constraint of minimising disruption to the surfacings.

1.4 LIMITATIONS (CONTINUED)

This report has been prepared for the use of Associated British Ports and their advisors and should not be passed to others without the express consent of Intégral Géotechnique (Wales) Limited.

2.0 THE SITE

2.1 SITE LOCATION AND DESCRIPTION

The site is located in Newport, within the Dock complex, to the north of South Dock at a National Grid Reference of 331362, 184641, see Figure 1.

The site is open and unoccupied and covered by areas of hardstanding. The site is relatively level and lies at an approximate elevation of 11m AOD.

The site layout showing the location of the proposed unit is shown on Figure 2.

2.2 SITE OPERATIONS

There were no site operations at the time of the site investigation works, with the site being vacant.

2.3 SURROUNDING LAND USE

The surrounding land is utilised by Associated British Ports with a combination of currently undeveloped land and existing industrial/commercial units.

2.4 AVAILABLE SITE INVESTIGATION DATA

Investigation works have been undertaken previously for Associated British Ports for the adjacent Shed 11 and its subsequent extension. The site investigation works included the drilling of shell and auger boreholes, the excavation of trial pits and laboratory chemical testing. The findings for the site investigation for Shed 11 was presented in Report No. 5609/C, dated July 1994, and the information for the subsequent extension was presented in Report No. 8943/TD/04, dated August 2004.

Relevant information from the previous investigations is presented in Appendix A.

3.0 SITE HISTORY

The recent history of the site has been traced with the aid of available information from previous adjacent site works.

The site is shown on 1:2,500 scale Ordnance Survey maps dated 1883/4, 1901 and 1920/1. Relevant information from these maps has been drawn onto Figure 3.

The North Dock is shown on all the maps presented on Figure 3. Between 1883 and 1920/1, construction of the South Dock took place.

Between 1884 and 1920, a timber float is shown on the maps to the north-east of the site, beside this to the south-west a reen is shown. The 1901 and 1920 maps show rail lines next to the reen.

The 1883/4 maps show the River Ebbw meandering through the area and crossing close to the western edge of the proposed site. The 1920/1 map shows the river to have been diverted to allow construction of the South Dock.

4.0 SITE ENVIRONMENTAL SETTING

4.1 PHYSICAL SETTING

The site is located within Newport Docks at an approximate elevation of 11m AOD. The Ebbw River flows approximately 400m to the west and the River Usk approximately 800m to the southeast.

4.2 GEOLOGY

The 1:50,000 scale geological map of the area indicates the site is underlain by rocks of the Mercia Mudstone Group of Triassic Period. These rocks are dominantly red, less commonly green-grey, mudstones and subordinate siltstones with thick halite-bearing units in some basinal areas. Thin beds of gypsum/anhydrite are widespread and sandstones are also present.

Superficial Tidal Flat Deposits of the Quaternary Period are shown to overlie the solid strata. These deposits comprise normally a consolidated soft silty clay, with layers of sand, gravel and peat. Characteristically low relief from the tidal zone.

A variable thickness of made ground is anticipated above the superficial deposits across most of the site.

A summary of the anticipated geological succession is given below in Table 1.

Table 1 : Summary of Anticipated Site Geology

Geological unit	Horizon	Description
Recent	Made ground	Various materials
Quaternary	Tidal Flat Deposits	Unconsolidated soft silty clay, with layers of sand, gravel and peat. Characteristically low relief from the tidal zone.
Triassic	Mercia Mudstone Group	These rocks are dominantly red, less commonly green-grey, mudstones and subordinate siltstones with thick halite-bearing units in some basinal areas. Thin beds of gypsum/anhydrite are widespread and sandstones are also present.

4.3 MINING

The site is in an area that is not at risk from past or future underground mining activity.

4.4 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK

The Ebbw River flows approximately 400m to the west of the site and the River Usk flows approximately 800m to the southeast. Alexandra Dock is the closest surface water feature approximately 50m to the southeast.

The groundwater vulnerability map classifies the strata beneath the site as Non-Aquifers.

Non-Aquifer strata are considered to contain insignificant quantities of groundwater. Groundwater flow can occur through these rocks and some Non-Aquifers can provide small amounts of water for abstraction purposes, and base flow to rivers.

Perched water bodies are anticipated in the made ground, encapsulated above the low permeability Tidal Flat Deposits. Vertical migration of groundwater is likely to be limited by the high clay content of the underlying Tidal Flat Deposits.

It is considered possible that any existing or redundant site drainage can act as a pathway for potential surface contaminants.

Tables 2 and 3 present a summary of the hydrological features and key hydrogeological nature of the site.

Table 2: Summary of Site Hydrology

Feature	Distance from site	Flow	Classification	Abstraction	Discharge
Ebbw River	400m west	Not known	Primary river	Not known	River Usk
River Usk	800m southeast	Not known	Primary river	Not known	River Severn
Surface run-off	On site	Not known	N/A	No	Not known
Site Drainage	On site	Not known	N/A	No	Not known

4.4 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK (CONTINUED)

Table 3: Summary of Site Hydrogeology				
Geological Unit	Aquifer Classification	Aquifer Characteristics	Source Protection Zone	Groundwater Abstractions
Made ground	Not classified	Highly variable permeability and porosity. Perched water may be present with variable flow directions.	No	None
Tidal Flat Deposits	Non Aquifer	Variable low permeability and porosity with some intergranular flow possible. High clay content likely to restrict flow.	No	None
Mercia Mudstone Group	Non Aquifer	Variable low permeability and porosity. Mudstone and siltstone with sub-ordinate sandstones	No	None

The Natural Resources Wales Flood Risk Map indicates that the site is not at risk from extreme flooding from rivers or sea without defences.

4.5 POTENTIAL CONTAMINATION

Previous Uses

The various activities in the vicinity of the site which may have resulted in ground or water resource contamination on this site are listed below in Tables 4 and 5. Reference to Department of the Environment Industry Profiles has been made and a summary of the potential contaminants can be found in the tables.

Table 4: Potential Contaminants		
Land Use: Reclamation of the land and re-routing of the river		
Material/Process	**Contamination/Hazard**	**Evidence**
Reclamation works and infilling of the river	Metals, semi metals, non-metals, PAH and TPH.	Historical Maps

Existing Uses

The site is currently undeveloped and so unlikely to cause any significant contamination.

4.5 POTENTIAL CONTAMINATION (CONTINUED)

Adjacent Site Uses

Table 5 : Potential Contaminants : Adjacent Site Uses		
Potential Contamination Source	**Boundary**	**Associated Contaminants and Hazards**
Undeveloped land	Northwest and southwest	No Potential Contaminants
Existing unit	Northeast	No Potential Contaminants
Alexandra Dock	Southeast	No Potential Contaminants

5.0 THE SITE INVESTIGATION

5.1 FIELDWORKS

A site investigation was designed in accordance with BS5930+A2:2010, the Code of Practice for Site Investigations, BS10175:2011, the Code of Practice for Investigation of Potentially Contaminated Sites, and 'Development of Land Affected by Contamination: A Guide for Developers' prepared by Welsh Local Government Association (WLGA)/Environment Agency Wales (EAW) Land Contamination Working Group, 2012.

An intrusive investigation comprising three windowless sample holes and one shell and auger borehole was undertaken in July 2016.

The windowless sample holes were drilled using a dynamic probing rig down to a maximum depth of 4m. In-situ strength testing (CPT's) were undertaken at regular intervals within the holes. The shell and auger borehole was drilled to a maximum depth of 19.30m. The purpose of the shell and auger borehole was to prove the deeper ground conditions and allow an assessment of the most appropriate foundation type for the proposed building. In situ strength testing (SPT/CPTs) was carried out in the borehole.

Representative soil samples were taken from the windowless samples for laboratory chemical testing. The chemical samples were placed in the appropriate sample containers deemed suitable for the analysis required. Strict protocols were adopted during this process to limit the cross contamination of samples.

The fieldworks were supervised by a qualified Geotechnical Engineer from Intégral Géotechnique (Wales) Limited who also logged the boreholes and prepared their detailed engineering logs in accordance with the requirements of BS5930+A2: 2010. The engineering logs provide descriptions of the materials encountered in accordance with BSEN ISO 14688-1 (2002) and 14689-1 (2003) for soils and rocks respectively.

The approximate locations of the windowless sample hole and the shell and auger borehole are shown on Figure 2.

The shell and auger borehole and windowless sample hole logs are presented in Appendices B and C respectively.

5.2 FIELD OBSERVATIONS

No visual and olfactory evidence of contamination was observed during the fieldworks.

5.3 LABORATORY CHEMICAL TESTING

Representative soil samples were taken from the windowless sample holes across the site, stored at the appropriate temperature and dispatched to the UKAS accredited laboratories of i2 Analytical for laboratory chemical testing within 24 hours.

The samples were tested for a range of contaminants that reflects the historical use of the site and the findings of the desk study. A list of the soil testing carried out is given below:

Beryllium	Cadmium
Total Chromium	Hexavalent Chromium (VI)
Copper	Lead
Mercury	Nickel
Vanadium	Zinc
Arsenic	Boron
Selenium	Elemental Sulphur
Total Cyanide	Total Sulphate
Sulphide	Water Soluble Sulphate
pH	Monohydric Phenol
Polyaromatic Hydrocarbons (PAH)	Petroleum Hydrocarbons (VPH/EPH)
Asbestos	TPH

The results of all the soil testing are presented in Appendix D.

6.0 GROUND CONDITIONS

The ground conditions which were encountered within the area of the proposed Shed 21 are in line with those found previously for the adjacent Shed 11 and its extension.

A summary of the ground conditions encountered across the site is presented below in Table 6.

TABLE 6 : SUMMARY OF GROUND CONDITIONS

Depth (m) From	To	Stratum
GL	2.5/2.8	MADE GROUND: Tarmac over layers of very dense/compact black ash and gravel with occasional cobbles and brick fragments, black ashy sand with brick fragments and coarse gravels, black and black brown ash locally loose with some slag fragments
2.5/2.8	15.8	Soft in layers very soft grey and grey brown silty CLAY below approximately 14.0m depth with gravels and cobbles
15.8	>19.3	Medium dense/ dense SANDS, GRAVELS, COBBLES and occasional boulders

The 1883/4 maps show the River Ebbw meandering through the area and crossing close to the western edge of the proposed site. The 1920/1 map shows the river to have been diverted to allow construction of the South Dock. It is therefore inferred that the overall thickness of made ground may be significantly greater in these areas.

Groundwater was encountered within the made ground within each of the windowless samples at depths of between 1.5m and 2.0m. Groundwater was struck within the shell and auger borehole at a depth of 3.5m.

APPENDIX A

AVAILABLE SITE INVESTIGATION DATA

Intégral Géotechnique

APPENDIX	
JOB NO	5609/C
MADE BY	K.J.N.
DATE MADE	28.6.94

RECORD OF BOREHOLE 1

Sheet 1 of 2

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
13.6.94			0.00	1.50	BS		0.425		FILL (Hardstanding comprising 75mm of tarmacadam overlying 350mm of granular hardcore, sub-base)
			1.50	1.95	S (3)				FILL (Soft brown and grey brown in areas black ashy sandy silty CLAY, some to many gravels, cobbles, brick fragments, timber, pockets and layers of vlayey ash)
			1.50	3.00	BS				
							2.50		
			3.00	3.45	S (1)				Very soft grey silty CLAY/clayey SILT with at the surface organic traces
			3.00	4.50	BS				
							4.30		
			4.50	4.95	S (0)				Very soft grey silty CLAY/clayey SILT
			4.50	6.00	BS				
			6.00	6.45	S(0)				
			6.00	7.50	BS				
							6.60		Very soft dark grey peaty CLAY
							7.20		Soft and very soft grey silty CLAY/clayey SILT
			7.50	7.95	S(3)				
			7.50	9.00	BS				
							8.10		Soft brown silty CLAY/clayey SILT
							8.40		
			9.00	9.45	S(3)				Very soft grey silty CLAY/clayey SILT
			9.00	10.50	BS				
			10.50	11.00	U4(16)		10.60		
	11.10		10.50	12.00	BS				Soft grey clayey sandy SILT
			12.00	12.45	S(4)				
			12.00	13.50	BS		12.10		
			13.50	13.95	S(3)				Very soft grey silty CLAY/clayey SILT, occasional gravels, cobbles
			13.50	15.00	BS				
			15.00	15.45	S(2)		14.90		Loose and very loose grey silty sandy GRAVELS, COBBLES and occasional boulders
			15.00	16.50	BS		15.20		
							15.50		Very soft brown silty PEAT with grey silty clay, gravels and cobbles
			16.50	16.95	C(27)				
			16.50	18.00	BS				Medium dense rapidly becoming dense and very dense brown and blue grey silty sandy GRAVELS, COBBLES, occasional boulders
			18.00	18.45	C(56)				
			18.00	19.50	BS				
			19.50	19.01	C(*)				
		20.00	19.50	21.00	BS				

REMARKS

1. Equipment: Dando 150 Shell and Auger drilling rig
2. Standard/Cone Penetration Test Results: See attached sheet.
3. Groundwater Observations: See attached sheet.
4. Chiselling:

Depth (m)	Time (Hours)
0.00 - 0.40	0.50
18.70 - 19.00	0.50
19.30 - 19.70	1.00
22.00 - 22.20	1.00

5. Borehole grouted to ground level.

TYPE OF BORING

Shell and auger

DIAMETER OF BORING

GL to 20.00m - 150mm

CASING TUBES

GL to 20.00m - 150mm

BOREHOLE 1

Intégral Géotechnique

RECORD OF BOREHOLE 1

Sheet 2 of 2

APPENDIX	
JOB NO	5609/C
MADE BY	K.J.N.
DATE MADE	28.6.94

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
									Medium dense rapidly becoming dense and very dense brown and blue grey silty sandy GRAVELS, COBBLES, occasional boulders
			21.00	21.45	S(44)		21.00		
		22.00	22.00	22.25	C(*)				Very stiff and hard red brown with grey green staining silty CLAY, with many gravel size mudstone lithorelicts
16.6.94							22.00		
									END OF BOREHOLE

REMARKS

See sheet 1 of 2

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

20.00m to 22.20m - 150mm

CASING TUBES

20.00m to 22.00m - 150mm

BOREHOLE 1

5609/C

BOREHOLE NO. 1

2. **Standard/Cone Penetration Test Results**

Depth (m)	Blows/75mm Penetration	'N' Value
1.50 - 1.95	1/0/1/1/0/1	3
3.00 - 3.45	1/0/0/1/0/0	1
4.50 - 4.95	1/0/0/0/0/0	0
6.00 - 6.45	1/0/0/0/0/0	0
7.50 - 7.95	1/0/1/1/1/0	3
9.00 - 9.45	1/0/1/1/0/1	3
12.00 - 12.45	1/1/1/1/1/1	4
13.50 - 13.95	1/0/1/0/1/1	3
15.00 - 15.45	1/0/0/1/0/1	2
16.50 - 16.95	2/3/4/7/6/10	27
18.00 - 18.45	7/15/13/10/17/16	56
19.50 - 19.81	9/12/14/21/50 blows for 10mm penetration	>50
21.00 - 21.45	2/6/7/10/10/17	44
22.00 - 22.25	16/34/50 for 25mm penetration	>50

3. **Groundwater Observations:**

i) Groundwater first struck at 15.90m depth rising to 11.10m depth after 20 minutes.

Intégral Géotechnique

RECORD OF BOREHOLE 2 Sheet 1 of 2

APPENDIX	
JOB NO	5609/C
MADE BY	G.C.L.
DATE MADE	28.6.94

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
16.6.94			0.00	1.50	BS		0.15		FILL (Hardstanding comprising 50mm of tarmacadam surfacing overlying 100mm of granular hardcore, sub-base)
	1.40		1.50	1.68	C(*)				FILL (Loose to medium dense brown and grey brown ashy clayey silty SAND, gravels, cobbles, boulders, brick fragments, pockets and layers of silty ashy clay)
			1.50	3.00	BS				
			3.00	3.45	C(11)				
			3.00	4.50	BS		3.50		
			4.50	4.95	S(1)				Very soft grey silty CLAY/clayey SILT
			4.50	6.00	BS				
							5.60		
			6.00	6.45	S(5)				Soft brown silty CLAY/clayey SILT
			6.00	7.50	BS				
							6.80		
			7.50	7.95	S(3)				Very soft grey silty CLAY/clayey SILT
			7.50	9.00	BS				
			9.00	9.45	S(2)				
			9.00	10.50	BS				
			10.50	10.95	S(1)				
			10.50	12.00	BS		11.00		
			12.00	12.45	S(0)				Very soft grey sandy silty CLAY/clayey SILT
			12.00	13.50	BS				
			13.00	13.95	S(3)				
			13.50	15.00	BS				
			15.00	15.45	S(2)				
			15.00	16.50	BS				
							15.80		
			16.50	16.95	C(40)				Dense rapidly becoming very dense brown SANDS, brown and blue grey rounded and sub-rounded GRAVELS and COBBLES, occasional boulders
			16.50	18.00	BS				
			18.00	18.45	C(51)				
			18.00	19.50	BS				
			19.50	19.95	C(69)				
		20.00	19.50	21.00	BS				

REMARKS

1. Equipment: Dando 150 Shell and Auger drilling rig.
2. Standard/Cone Penetration Test Results: See attached sheet.
3. Groundwater Observations: See attached Sheet.
4. Chiselling:

Depth (m)	Time (Hours)
0.00 - 0.50	0.50
1.20 - 1.50	0.75
17.20 - 17.50	0.50
20.00 - 20.40	1.00
21.20 - 21.40	1.00
21.80 - 22.10	1.00

5. Borehole grouted to ground level.

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

GL to 20.00m - 150mm

CASING TUBES

GL to 20.00m - 150mm

BOREHOLE 2

Intégral Géotechnique

APPENDIX	
JOB NO	5609/C
MADE BY	K.J.N.
DATE MADE	28.6.94

RECORD OF BOREHOLE 2 Sheet 2 of 2

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
									Dense rapidly becoming very dense brown SANDS, brown and blue grey rounded and sub-rounded GRAVELS and COBBLES, occasional boulders
			21.00	21.45	C (*)				
							21.40		
		22.00	21.80	22.25	C (*)				Very stiff and hard red brown with grey green staining silty CLAY, with many gravel size mudstone lithorelicts
21.6.94							22.10		END OF BOREHOLE

REMARKS

See sheet 1 of 2

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

20.00m to 22.10m - 150mm

CASING TUBES

20.00m to 22.00m - 150mm

BOREHOLE 2

5609/C

BOREHOLE NO. 2

2. Standard/Cone Penetration Test Results

Depth (m)	Blows/75mm Penetration	'N' Value
1.50 - 1.68	2/10/50 for 30mm penetration	>50
3.00 - 3.45	1/2/6/4/1/0	11
4.50 - 4.95	1/0/0/1/0/0	1
6.00 - 6.45	1/1/1/1/1/2	5
7.50 - 7.95	1/0/1/0/1/1	3
9.00 - 9.45	1/0/0/1/0/1	2
10.50 - 10.95	1/0/0/1/0/0	1
12.00 - 12.45	1/0/0/0/0/0	0
13.50 - 13.95	1/0/1/1/0/1	3
15.00 - 15.45	1/1/1/0/0/1	2
16.50 - 16.95	9/7/9/11/11/9	40
18.00 - 18.45	16/12/12/14/12/13	51
19.50 - 19.95	12/17/17/19/14/19	69
21.00 - 21.25	19/27/23/50 for 30mm penetration	>50
21.80 - 22.97	16/34/50 for 25mm penetration	>50

3. Groundwater Observations:

i) Groundwater first struck at 1.60m depth rising to 1.40m depth after 20 minutes, sealed off at 4.00m depth.

ii) Groundwater restruck at 15.60m depth rising to 10.70m depth after 20 minutes.

Intégral Géotechnique

RECORD OF BOREHOLE 3

APPENDIX	
JOB NO	5609/C
MADE BY	G.C.L.
DATE MADE	1..7.94

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
23.6.94			0.00	1.50	BS		0.375		FILL (Hardstanding comprising 75mm of tarmacadam surfacing overlying 300mm of ashy hardcore sub-base)
			1.50	1.95	C(16)				FILL (Medium dense brown ashy clayey silty SAND, gravels, cobbles, occasional boulders, bricks, timber, pockets of ash and clay)
			1.50	3.00	BS				
			3.00	3.45	C(17)				
			3.00	4.50	BS		3.30		Soft grey and blue grey silty CLAY/clayey SILT
			4.50	4.95	S(4)				
			4.50	6.00	BS				
			6.00	6.45	S(3)		5.80		Very soft brown silty CLAY/clayey SILT
			6.00	7.50	BS		7.20		
			7.50	7.95	S(3)				Very soft grey silty CLAY/clayey SILT
			7.50	9.00	BS				
			9.00	9.45	S(2)				
			9.00	10.50	BS				
			10.50	10.95	S(2)				
			10.50	12.00	BS				
			12.00	12.45	S(3)				
			12.00	13.50	BS				
			13.50	13.95	S(1)				
			13.50	15.00	BS		14.40		
			15.00	15.45	C(92)				Very dense brown SANDS, GRAVELS, COBBLES, occasional boulders
24.6.94		15.50	15.50	15.95	C(135)		15.60		
			15.00	15.50	BS				END OF BOREHOLE

REMARKS

1. Equipment: Dando 150 Shell and Auger drilling rig.
2. Standard/Cone Penetration Test Results: See attached sheet.
3. Groundwater Observations: See attached sheet.
4. Chiselling:

Depth (m)	Time (Hours)
0.00 - 0.40	0.75
14.80 - 15.00	0.50
15.10 - 15.40	1.75
15.40 - 15.60	1.75

5. Borehole grouted to ground level.

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

GL to 15.60m - 150mm

CASING TUBES

GL to 15.60m - 150mm

BOREHOLE 3

5609/C

BOREHOLE NO. 3

2. Standard/Cone Penetration Test Results

Depth (m)	Blows/75mm Penetration	'N' Value
1.50 - 1.95	3/3/3/5/5/3	16
3.00 - 3.45	6/4/3/3/7/4	17
4.50 - 4.95	1/2/1/1/1/1	4
6.00 - 6.45	1/1/1/0/1/1	3
7.50 - 7.95	1/0/1/0/1/1	3
9.00 - 9.45	1/0/0/1/0/1	2
10.50 - 10.95	1/1/1/0/0/1	2
12.00 - 12.45	1/1/0/1/1/1	3
13.50 - 13.95	1/0/0/0/0/1	1
15.00 - 15.45	9/14/12/32/25/33	92
15.50 - 15.95	16/27/29/33/31/42	135

3. Groundwater Observations:

i) Groundwater first struck at 0.8m depth rising to 0.4m depth after 20 minutes, sealed off at 3.8m depth.

ii) Groundwater restruck at 4.8m depth rising to 3.7m depth after 20 minutes, sealed off at 7.9m depth.

iii) Groundwater restuck at 14.40m depth rising to 10.10m depth after 20 minutes.

Intégral Géotechnique

RECORD OF BOREHOLE 4

Sheet 1 of 2

APPENDIX	
JOB NO	5609/C
MADE BY	G.C.L.
DATE MADE	4.7.94

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
26.6.94			0.00	1.50	BS		0.175		FILL (Hardstanding comprising 75 mm of tarmacadam overlying 100 mm of ash sub-base)
			1.50	1.95	C (14)				FILL (Medium dense becoming loose brown and grey brown very clayey GRAVELS, COBBLES, occasional boulders, bricks, timber, pockets and layers of ashy clay)
			1.50	3.00	BS				
			3.00	3.45	C (5)				
			3.00	4.50	BS		3.40		
							3.90		Soft grey silty CLAY/clayey SILT
	4.20								
			4.50	4.95	S (6)				Soft grey brown silty CLAY/clayey SILT
			4.50	6.00	BS				
							5.50		
			6.00	6.45	S (4)				Soft and very soft grey silty CLAY/clayey SILT
			6.00	7.50	BS				
			7.50	7.95	S (1)				
			7.50	9.00	BS				
			9.00	9.45	S (5)				
			9.00	10.50	BS				
			10.50	10.95	S (4)				
			10.50	12.00	BS				
			12.00	12.45	S (0)				
			12.00	13.50	BS				
							12.70		
			13.50	13.95	S (2)				Very soft grey clayey SILT
			13.50	15.00	BS				
							14.30		
									Very soft grey silty CLAY, occasional gravels, cobbles
			15.00	15.45	C(37)		15.00		
			15.00	16.50	BS				Dense rapidly becoming very dense brown SANDS, rounded and sub-rounded GRAVELS, COBBLES and occasional boulders
			16.50	16.73	C (*)				
			16.50	18.00	BS				
			18.00	18.45	C(69)				
			18.00	19.50	BS				
			19.50	19.52	C (*)				
		20.00	19.50	21.00	BS				

REMARKS

1. Equipment: Dando 150 shell and auger drilling rig.
2. Standard/Cone Penetration Test Results: see attached sheet.
3. Groundwater Observations: see attached sheet.
4. Chiselling:

Depth (m)	Time (Hours)
16.60 - 17.00	1.25
17.40 - 17.60	0.50
18.40 - 18.80	0.50
19.50 - 20.00	1.00
21.50 - 21.90	1.00

5. Borehole grouted to ground level.

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

GL to 20.00m - 150 mm

CASING TUBES

GL to 20.00m - 150 mm

BOREHOLE 4

Intégral Géotechnique

RECORD OF BOREHOLE 4

Sheet 2 of 2

APPENDIX	
JOB NO	5609/C
MADE BY	G.C.L.
DATE MADE	4.7.94

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
									Dense and very dense brown SANDS, rounded and sub-rounded GRAVELS, COBBLES and occasional boulders
							20.60		
			21.00	21.45	C(41)				Very stiff and hard red brown with green staining silty CLAY, with many gravel size mudstone lithorelicts
28.6.94		21.90	21.90	22.35	C(130)		21.90		
									END OF BOREHOLE

REMARKS

See Sheet 1 of 2

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

20.00m to 21.90m - 150 mm

CASING TUBES

20.00m to 21.90m - 150 mm

BOREHOLE 4

BOREHOLE NO. 4

2. Standard/Cone Penetration Test Results

Depth (m)	Blows/75mm Penetration	'N' Value
1.50 - 1.95	3/6/4/3/3/4	14
3.00 - 3.45	2/3/2/1/1/1	5
4.50 - 4.95	1/2/2/2/1/1	6
6.00 - 6.45	1/1/1/1/1/1	4
7.50 - 7.95	1/0/0/0/1/0	1
9.00 - 9.45	1/1/2/1/1/1	5
10.50 - 10.95	1/1/1/1/1/1	4
12.00 - 12.45	1/0/0/0/0/0	0
13.50 - 13.95	1/0/0/0/0/1	2
15.00 - 15.45	2/4/6/10/11/10	37
16.50 - 16.73	5/15/16/50 for 10mm penetration	>50
18.00 - 18.45	10/13/17/16/17/19	69
19.50 - 19.52	50 for 25mm penetration	>50
21.00 - 21.45	3/5/9/10/11/11	41
21.80 - 22.35	15/20/29/30/33/38	130

3. Groundwater Observations:

i) Groundwater first struck at 4.8m depth rising to 4.2m depth after 20 minutes, sealed off at 6.0m depth.

ii) Groundwater restruck at 14.5m depth rising to 9.8m depth after 20 minutes, sealed off at 7.9m depth.

iii) Groundwater restuck at 14.40m depth rising to 10.10m depth after 20 minutes.

Intégral Géotechnique

RECORD OF BOREHOLE 5

APPENDIX	
JOB NO	5609/C
MADE BY	G.C.L.
DATE MADE	4.7.94

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES: DEPTH FROM	SAMPLES: DEPTH TO	SAMPLES: TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
28.6.94									FILL (Hardstanding comprising 75 mm Tarmacadam overlying ash hardcore with boulders)
28.6.94							0.90		

REMARKS

1. Equipment: Dando 150 shell and auger drilling rig.
2. Chiselling:

Depth (m)	Time (Hours)
0.00 - 0.90	2.00

3. Borehole abandoned due to lack of progress.
4. Borehole grouted to ground level.

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

GL to 0.90m - 150 mm

CASING TUBES

BOREHOLE 5

Intégral Géotechnique

RECORD OF BOREHOLE 5A

Sheet 1 of 2

APPENDIX	
JOB NO	5609/C
MADE BY	G.C.L.
DATE MADE	4.7.94

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
29.6.94			0.00	1.50	BS				FILL (Hardstanding comprising 75 mm of tarmacadam overlying 600 mm of ash hardcore)
							0.675		
			1.50	1.95	C(9)				FILL (Soft brown and grey brown in areas black ashy sandy silty CLAY, many gravels, cobbles, boulders, bricks, timber)
			1.50	3.00	BS				
							2.60		
			3.00	3.45	S (0)				Very soft grey silty CLAY, organic and timber inclusions
			3.00	4.50	BS		3.50		
									Very soft grey with brown mottling silty CLAY/clayey SILT
			4.50	4.95	S (4)		4.50		
			4.50	6.00	BS				Very soft grey silty CLAY/clayey SILT
			6.00	6.45	S(1)				
			6.00	7.50	BS				
			7.50	7.95	S(2)				
			7.50	9.00	BS				
			9.00	9.45	S(2)				
			9.00	10.50	BS				
			10.50	10.95	S (1)				
			10.50	11.00	BS				
	11.60						11.60		
			12.00	12.45	S (1)				Very soft grey clayey SILT
			12.00	13.50	BS				
			13.50	13.95	S (2)				
			13.50	15.00	BS				
							14.50		
			15.00	15.45	S(20)				Medium dense becoming dense and very dense brown SANDS, rounded and sub-rounded GRAVELS, COBBLES and occasional boulders
			15.00	16.50	BS				
			16.50	16.95	C(29)				
			16.50	18.00	BS				
			18.00	18.[illegible]	C (*)				
			18.00	19.50	BS				
			19.50	19.95	C (*)				
		20.00	19.50	21.00	BS				

REMARKS

1. Equipment: Dando 150 shell and auger drilling rig.
2. Standard/Cone Penetration Test Results: see attached sheet.
3. Groundwater Observations: see attached sheet.
4. Chiselling:

Depth (m)	Time (Hours)
0.00 - 1.00	3.00
17.50 - 17.90	0.75
18.00 - 18.50	1.25
19.60 - 20.00	0.75
20.80 - 21.40	1.00

5. Borehole grouted to ground level.

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

GL to 20.00m - 150 mm

CASING TUBES

GL to 20.00m - 150 mm

BOREHOLE 5A

Intégral Géotechnique

APPENDIX	
JOB NO	5609/C
MADE BY	G.C.L.
DATE MADE	4.7.94

RECORD OF BOREHOLE 5 A

Sheet 2 of 2

DAILY PROGRESS	DEPTH TO WATER	DEPTHS OF CASING	SAMPLES DEPTH FROM	SAMPLES DEPTH TO	SAMPLES TYPE	LEGEND	DEPTH	REDUCED LEVEL	DESCRIPTION OF STRATA
	m	m	m	m			m		GROUND LEVEL
							20.20		Very dense brown SANDS, rounded and sub-rounded GRAVELS, COBBLES and occasional boulders
		21.00	21.00	21.45	C(86)				
30.6.94							21.40		Very stiff and hard red brown with grey green staining silty CLAY, with many gravel size mudstone lithorelicts
									END OF BOREHOLE

REMARKS

See Sheet 1 of 2

TYPE OF BORING

Shell and Auger

DIAMETER OF BORING

20.00m to 21.40m - 150 mm

CASING TUBES

20.00m to 21.40m - 150 mm

BOREHOLE 5 A

BOREHOLE NO. 5A

2. **Standard/Cone Penetration Test Results**

Depth (m)	Blows/75mm Penetration	'N' Value
1.50 - 1.95	9/14/4/3/1/1	9
3.00 - 3.45	1/0/0/0/0/0	0
4.50 - 4.95	1/0/1/1/1/1	4
6.00 - 6.45	1/0/0/1/0/0	1
7.50 - 7.95	1/0/0/1/0/1	2
9.00 - 9.45	1/0/0/1/0/1	2
10.50 - 10.95	1/0/0/1/0/0	1
12.00 - 12.45	1/0/0/1/0/0	1
13.50 - 13.95	1/0/0/1/0/1	2
15.00 - 15.45	2/3/3/5/5/7	20
16.50 - 16.95	1/2/1/3/10/15	29
18.00 - 18.45	50 for 25mm penetration	>50
19.50 - 19.75	9/18/30/50 for 25mm penetration	>50
21.00 - 21.45	5/9/16/20/21/29	86

3. **Groundwater Observations:**

i) Groundwater first struck at 14.5m depth rising to 11.6m depth after 20 minutes.

RECORD OF BOREHOLE 1

Client: ABP

Site Name: ABP Newport Shed 11 Ext.

Ground Level mOD: **Co-ordinates:**

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Daily Progress	Casing Depth (m)	Water Depth (m)	Samples/Tests			Depth (m)	Legend	Description
			Depth (m)	Type/No.	SPT (N)			
16.07.04						0.0		Ground Surface
						0.30		MADE GROUND: Medium dense grey clayey GRAVEL
								MADE GROUND: Loose GRAVEL of clinker
						0.80		
			1.50 - 1.95	S	8			MADE GROUND: Loose grey clayey GRAVEL of brick and concrete with occasional wood
		2.0						
			2.50 - 2.95	S	7			
						2.80		
			3.50 - 3.95	S	7			Soft grey silty CLAY.
						4.20		
			4.50 - 4.95	S	8			Soft grey/brown silty CLAY
						5.30		
			5.50 - 5.95	S	5			
			7.00 - 7.45	S	4			
			8.50 - 8.95	S	4			Soft becoming very soft dark grey/brown silty CLAY
			10.00 - 10.45	S	3			

REMARKS

1. See attached sheet for details of in situ tests, groundwater observations and chiselling, where appropriate.

Sample/Test Types

B = bulkdisturbed
W = water sample
D = small disturbed
SPT = standard penetration test
C = SPT using solid cone
S = SPT using split spoon
U = undisturbed

Equipment: Pilcon 150

Type of boring: Shell and auger

Diameter of boring: 150mm

Diameter of casing: 150mm

Depth of gas/water standpipe: N/A

RECORD OF BOREHOLE 1

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Client: ABP

Site Name: ABP Newport Shed 11 Ext.

Project Engineer: TD

Ground Level mOD:

Co-ordinates:

Project Number: 8943

Daily Progress	Casing Depth (m)	Water Depth (m)	Samples/Tests			Depth (m)	Legend	Description
			Depth (m)	Type/No.	SPT (N)			
			11.50 - 11.95	S	3			
						12.7		
			13.00 - 13.45	S	10			Soft to firm dark grey sandy gravelly CLAY
						13.7		
16.07.04	14.5		14.50 - 14.95	S	23			Medium dense becoming dense and very dense grey and orange/brown sandy GRAVEL with cobbles/ boulders of sandstone.
20.07.04								
	16.0							
20.07.04			16.50 - 16.65	S	>50	16.50		END OF BOREHOLE AT 16.5m.

REMARKS

1. See attached sheet for details of in situ tests, groundwater observations and chiselling, where appropriate.

Sample/Test Types

B = bulkdisturbed
W = water sample
D = small disturbed
SPT = standard penetration test
C = SPT using solid cone
S = SPT using split spoon
U = undisturbed

Equipment: Pilcon 150
Type of boring: Shell and auger
Diameter of boring: 150mm
Diameter of casing: 150mm
Depth of gas/water standpipe: N/A

RECORD OF BOREHOLE 1

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789

Client: ABP Newport
Site name: Shed 11 Ext.
Project Number: 8943
Project Engineer: TD
Ground level: Not used
Co-ordinates: Not used

STANDARD PENETRATION (SPT) RESULTS

Depth (m) From	Depth (m) 200mm	0-75 mm	75-150 mm	150-225 mm	225-300 mm	300-375 mm	375-450 mm	SPT-N Value
1.50	1.95	2	3	2	2	2	2	8
2.50	2.95	1		2	2	2	1	7
3.50	3.95	3	2	2	1	2	2	7
4.50	4.95	2	2	2	2	2	2	8
5.50	5.95	2	2	1	1	2	1	5
7.00	7.45	1	1	1	1	1	1	4
8.50	8.95	1		1	1	1	1	4
10.00	10.45	1		1		1	1	3
11.50	11.95	1		1	1		1	3
13.00	13.45	1	2	2	2	2	4	10
14.50	14.95	4	4	4	4	6	9	23
16.50	16.65	25	50	= 75 blows for 150mm penetration				>50

CHISELLING

Depth (m) From	Depth (m) To	Time (hours)
14.80	15.10	0.50
16.10	16.50	1.00

GROUNDWATER OBSERVATIONS

1. Groundwater struck at 2.3m on the 16.07.04 rising to 2.0m after 20mins.
2. Groundwater struck at 13.7m on the 16.07.04 standing at 2.5m at 08.00hrs. on the 20.07.04

REMARKS

1. Equipment: Dando 150 drilling rig
2. Borehole Depth (m): 16.50

TYPE OF BORING
Shell and Auger

DIAMETER OF BORING
150mm

DIAMETER OF CASING
150mm

RECORD OF BOREHOLE 2

Client: ABP

Site Name: ABP Newport Shed 11 Ext.

Ground Level mOD: **Co-ordinates:**

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Daily Progress	Casing Depth (m)	Water Depth (m)	Samples/Tests			Depth (m)	Legend	Description
			Depth (m)	Type/No.	SPT (N)			
20.07.04						0.0		Ground Surface
			1.00 - 1.45	S	6			MADE GROUND: Loose to medium dense grey clayey GRAVEL of stone and ash.
			2.00 - 2.45	S	13	2.2		
			3.00 - 3.45	S	5			MADE GROUND: Loose grey clayey GRAVEL of brick and concrete with occasional wood
						3.2		MADE GROUND: Soft dark grey ashy, gravelly CLAY
			4.00 - 4.45	S	8	3.8		Soft to firm grey silty CLAY
			5.00 - 5.45	S	4	5.0		
			6.50 - 6.95	S	3			
		7.2						Very soft grey silty CLAY
			9.00 - 9.45	S	1			

REMARKS

1. See attached sheet for details of in situ tests, groundwater observations and chiselling, where appropriate.

Sample/Test Types

B = bulkdisturbed
W = water sample
D = small disturbed
SPT = standard penetration test
C = SPT using solid cone
S = SPT using split spoon
U = undisturbed

Equipment: Pilcon 150

Type of boring: Shell and auger

Diameter of boring: 150mm

Diameter of casing: 150mm

Depth of gas/water standpipe: N/A

RECORD OF BOREHOLE 2

Client: ABP

Site Name: ABP Newport Shed 11 Ext.

Ground Level mOD: **Co-ordinates:**

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Daily Progress	Casing Depth (m)	Water Depth (m)	Samples/Tests			Depth (m)	Legend	Description
			Depth (m)	Type/No.	SPT (N)			
			10.50 - 10.95	S	9	10.7		
			12.00 - 12.45	S	10			Soft to firm grey silty, sandy CLAY
						12.8		
			13.50 - 13.95	S	24			Firm grey gravelly, very sandy CLAY.
20.07.04						13.6		
21.07.04								
	14.5		15.00 - 15.45	S	22			Medium dense becoming dense and very dense grey sandy GRAVEL with cobbles/boulders of sandstone.
	16.0							
			16.50 - 16.95	S	75			
21.07.04			17.50 - 17.75	S	>50	17.5		END OF BOREHOLE AT 17.5m.

REMARKS

1. See attached sheet for details of in situ tests, groundwater observations and chiselling, where appropriate.

Sample/Test Types

B = bulkdisturbed
W = water sample
D = small disturbed
SPT = standard penetration test
C = SPT using solid cone
S = SPT using split spoon
U = undisturbed

Equipment: Pilcon 150
Type of boring: Shell and auger
Diameter of boring: 150mm
Diameter of casing: 150mm
Depth of gas/water standpipe: N/A

RECORD OF BOREHOLE 2

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789

Client: ABP Newport **Site name:** Shed 11 Ext.
Project Number: 8943 **Project Engineer:** TD
Ground level: Not used **Co-ordinates:** Not used

STANDARD PENETRATION (SPT) RESULTS									CHISELLING		
Depth (m)		0-75 mm	75-150 mm	150-225 mm	225-300 mm	300-375 mm	375-450 mm	SPT-N Value	Depth (m)		Time (hours)
From	200mm								From	To	
1.00	1.45	1	1	1	2	1	2	6	2.20	2.40	0.50
2.00	2.45	1	2	2	3	4	4	13	17.20	17.50	1.00
3.00	3.45	1	1	1	1	2	1	5			
4.00	4.45	1	1	2	2	2	2	8			
5.00	5.45	1		1	1		2	4			
6.50	6.95	1		1	1		1	3			
9.00	9.45	1					1	1			
10.50	10.95	1	1	2	2	2	3	9			
12.00	12.45	2	2	2	3	2	3	10			
13.50	13.95	1	4	5	5	6	8	24			
15.00	15.45	3	4	4	8	4	6	22			
16.50	16.95	3	6	12	20	21	22	75			
17.50	17.75	22	26	50	= 98 blows for 250mm penetratoin			>50			

GROUNDWATER OBSERVATIONS

1. Groundwater struck at 13.6m on the 20.07.04 rising to 7.2m after 20mins.
2. Groundwater standing at GL at 08.00hrs. on the 21.07.04

REMARKS

1. Equipment: Dando 150 drilling rig
2. Borehole Depth (m): 17.50

TYPE OF BORING
Shell and Auger

DIAMETER OF BORING
150mm

DIAMETER OF CASING
150mm

RECORD OF TRIAL PIT 1

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface		
0.1		MADE GROUND: Very dense GRAVEL of slag		
		END OF TRIAL PIT AT 0.1m		

REMARKS:

1. Trial pit abandoned at 0.1m due to refusal of machine.
2. Trial pit relocated 5m north east to TP1A.

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Not applicable

Stability: Not applicable

RECORD OF TRIAL PIT 1A

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface		
		MADE GROUND: Dense becoming loose grey/brown occasionally black clayey, sandy GRAVEL of brick, concrete, stone with some to many cobbles/boulders of concrete, brick and stone and much metal, timber, plastic(bottles and bags), cloth and many clay tiles.	D@0.6m	Reinforced concrete fence post recovered at 1.0m
1.9		END OF TRIAL PIT AT 1.9m		

REMARKS:

1. Trial pit abandoned at 1.9m due to sides collapsing

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Moderate to rapid inflow at 1.7m

Stability: Unstable collapsing below 0.6m

RECORD OF TRIAL PIT 2

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface	D@1.2m	
		MADE GROUND: Dense, firm in places, grey/brown occasionally black sandy, clayey GRAVEL of stone occasional brick, concrete and slag.		
0.8		MADE GROUND:Loose grey/brown sandy GRAVEL of brick, concrete, stone with some to many cobbles/boulders of concrete, brick and stone and much metal, timber, plastic(bottles and bags).		
1.9		Very soft blue/grey SILT		
2.5		END OF TRIAL PIT AT 2.5m		

REMARKS:

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Moderate to rapid inflow at 1.6m

Stability: Unstable below 0.8m

RECORD OF TRIAL PIT 3

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface		
		MADE GROUND: Medium dense grey/brown occasionally black sandy GRAVEL of stone.		
1.0		MADE GROUND:Loose very loose in places grey/brown sandy GRAVEL of brick, concrete (reinforced), stone with some to many cobbles/boulders of concrete, brick and stone and much metal, timber, plastic(bottles and bags) and roofing felt.	D@1.5m	Much roofing felt at 2.0m Much plastic bunting at 2.5m
2.8		Very soft blue/grey SILT with some black fibrous organic inclusions		
3.5		END OF TRIAL PIT AT 3.5m		

REMARKS:

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Moderate to rapid inflow at 2.5m

Stability: Unstable and collapsing below 1.0m

RECORD OF TRIAL PIT 4

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface	D@1.5m	
		MADE GROUND: Loose to medium dense grey/brown occasionally black sandy GRAVEL of stone occasional brick and concrete		
1.1		MADE GROUND:Loose grey/brown sandy GRAVEL of brick, concrete(reinforced), stone with some to many cobbles/boulders of concrete, brick and stone and much metal, timber, plastic(bottles and bags).		
3.7		Very soft blue/grey SILT with much black fibrous organic inclusions		
4.0		END OF TRIAL PIT AT 4.0m		

REMARKS:

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Moderate to rapid inflow at 2.8m

Stability: Unstable

RECORD OF TRIAL PIT 5

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface		
		MADE GROUND:Loose very loose in places grey sandy GRAVEL of brick, concrete(reinforced), stone with some to many cobbles/boulders of concrete, brick and stone and much metal, timber, plastic(bottles and bags).	D@1.4m	
2.2		Very soft grey silty CLAY with some black organic inclusions		
2.4		END OF TRIAL PIT AT 2.4m		

REMARKS:

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Moderate to rapid inflow at 1.9m

Stability: Unstable and collapsing

RECORD OF TRIAL PIT 6

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface		
		MADE GROUND: Medium dense/soft to firm brown sandy very clayey GRAVEL/gravelly CLAY occasional brick and concrete, occasional cobbles.		
1.1		MADE GROUND:Medium dense to loose grey/brown sandy GRAVEL of brick, concrete (reinforced), stone with some to many cobbles/boulders of concrete, brick and stone and much metal, timber, plastic(bottles and bags).	D@1.5m	
1.5		Very soft grey silty CLAY		
2.0		END OF TRIAL PIT AT 2.0m		

REMARKS:

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Not encountered

Stability: Overbreak below 1.1m

RECORD OF TRIAL PIT 7

Client: ABP

Site Name: ABP Newport Shed 11

Ground Level mOD:

Co-ordinates:

Project Engineer: TD

Project Number: 8943

Intégral Géotechnique
50 Cathedral Road
Cardiff CF11 9LL
Tel: 029 2022 0462
Fax: 029 2034 0789
e mail: mail@integralgeotec.com

Depth (m)	Legend	Description	Sample Depth (m)	Comments
GL		Ground Surface		
		MADE GROUND: Soft to firm dark brown sandy CLAY with many roots, occasional brick		
0.4		POSSIBLE MADE GROUND: Very soft grey silty CLAY with many black fibrous/woody root remains		
1.0		POSSIBLE MADE GROUND: Soft to firm yellow/brown occasionally grey/black very gravelly CLAY with occasional shells and occasional ash/clinker		
1.6		END OF TRIAL PIT AT 1.6m		

REMARKS:

Equipment: JCB 3CX

Date excavated: 23.06.04

Pit dimensions: 0.6m x 2.0m

Groundwater: Moderate to rapid inflow at 1.4m

Stability: Some overbreak below 1.1m

APPENDIX B

SHELL AND AUGER BOREHOLE LOG

Intégral Géotechnique	Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com	Project Name: **ABP Newport Shed 21**	Project No.: **11827**	Borehole No.: **BH1** Sheet 1 of 2
Location: ABP Newport		Client: ABP	Coordinates:	Hole Type: CP
Equipment: Dando 2000		Diameter of Casing: 200+150mm	Level:	Scale 1:50
Diameter of Boring: 200mm		Depth of Casing: 6.00+19.30m	Dates 20/07/2016 - 21/07/2016	Logged By: MB

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		1.00	C	N=23 (5,5/6,7,6,4)				MADE GROUND: Tarmac, sub-base, sandy ash and timber
		1.00	D					
		2.00	C	N=32 (1,1/1,2,8,21)				
		2.00	D					
					2.60			Soft grey brown silty CLAY
		3.00	S	N=7 (1,2/1,2,2,2)				
	3.50 ▼							
		4.00	S	N=6 (1,1/1,2,1,2)				
		5.00	S	N=7 (1,1/2,1,2,2)				
		6.50	S	N=3 (1,0/1,0,1,1)	6.50			Very soft grey silty CLAY
		8.00	S	N=2 (1,0/0,1,0,1)				
					9.30			Soft brown grey silty CLAY
		9.50	S	N=5 (1,1/1,1,1,2)				

Remarks:

Water strike at 3.5m depth rising to 3.2m after 20 minutes. Water strike at 14.8m depth rising to 8.3m after 20 minutes. Chiselling 0.3 to 0.7m for 60 min, 18.3 to 18.5m for 30 min and 19.0 to 19.3 for 90 min.

Key:

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
TCR - Total Core Recovery
SCR - Solid Core Recovery
RQD - Rock Quality Designation

AGS

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name:	Project No.:	Borehole No.:
ABP Newport Shed 21	**11827**	**BH1** Sheet 2 of 2

Location:	Client:	Coordinates:	Hole Type:
ABP Newport	ABP		CP

Equipment:	Diameter of Casing:	Level:	Scale
Dando 2000	200+150mm		1:50

Diameter of Boring:	Depth of Casing:	Dates	Logged By:
200mm	6.00+19.30m	20/07/2016 - 21/07/2016	MB

Well	Water Strikes	Samples & In situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		11.00	S	N=4 (1,1/1,1,1,1)				
		12.50	S	N=4 (1,0/1,1,1,1)				
		14.00	C	N=7 (1,2/1,2,2,2)	14.00			Soft grey silty sandy CLAY with gravels and cobbles
	14.80 ▼	15.00	D					
		15.50	C	N=15 (2,4/5,3,3,4)				
					15.80			Medium dense/dense SANDS, GRAVELS, COBBLES and occasional boulders
		17.00 17.00	C D	N=37 (6,7/13,10,7,7)				
		18.50	C	N=38 (10,15/9,10,9,10)				
		19.30	C	0 (50 for 0mm/0 for 0mm)	19.30			End of Borehole at 19.30 m

Remarks:

Water strike at 3.5m depth rising to 3.2m after 20 minutes. Water strike at 14.8m depth rising to 8.3m after 20 minutes. Chiselling 0.3 to 0.7m for 60 min, 18.3 to 18.5m for 30 min and 19.0 to 19.3 for 90 min.

Key:

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
TCR - Total Core Recovery
SCR - Solid Core Recovery
RQD - Rock Quality Designation

AGS

APPENDIX C

WINDOWLESS SAMPLE HOLE LOGS

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name: **ABP Newport Shed 21**		Project No.: **11827**	Borehole No.: **WS2** Sheet 1 of 1
Location: ABP Newport	Client: ABP	Coordinates:	Hole Type: WLS
Equipment: DHSP	Diameter of Casing:	Level:	Scale 1:50
Diameter of Boring: 101mm	Depth of Casing:	Dates 20/07/2016 -	Logged By: SJ

Well	Water Strikes	Samples & In situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.10			TARMAC
					0.20			MADE GROUND: Red brown slightly clayey sub-base material
		0.50	D					MADE GROUND: Very dense compact black ash and gravel with occasional cobbles and brick fragments
		1.00	C	N=63 (10,12/15,15,16,17)				
		1.00	D					
		1.50	D		1.50			MADE GROUND: Black ashy silty SAND with occasional brick and fine to coarse gravels
	2.00 ▼	2.00	C	N=11 (2,2/1,3,3,4)				
		2.00 - 2.20	D					
		2.50 - 3.00	D		2.60			Soft becoming very soft grey stained black slightly silty CLAY
		3.00	C	N=4 (1,1/1,1,1,1)				
		4.00	C	N=3 (1,0/1,1,1,0)	4.00			End of Borehole at 4.00 m

Remarks:
Water strike at 2.00m depth

Key:
D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
TCR - Total Core Recovery
SCR - Solid Core Recovery
RQD - Rock Quality Designation

AGS

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name: **ABP Newport Shed 21**		Project No.: **11827**	Borehole No.: **WS3** Sheet 1 of 1
Location: ABP Newport	Client: ABP	Coordinates:	Hole Type: WLS
Equipment: DHSP	Diameter of Casing:	Level:	Scale 1:50
Diameter of Boring: 101mm	Depth of Casing:	Dates 20/07/2016 -	Logged By: SJ

Well	Water Strikes	Samples & In situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.10			TARMAC
					0.20			MADE GROUND: Red brown slightly clayey sub-base
		0.50	D					MADE GROUND: Dense compact black slightly sandy gravelly ash with some slag fragments
		1.00	C	N=63 (10,12/15,15,16,17)				
		1.00	D					
					1.30			MADE GROUND: Loose black sandy ASH with occasional slag and fine to coarse gravels
		1.50	D					
		2.00	C	N=11 (2,2/1,3,3,4)				
	2.20 ▼	2.00	D					
		2.50	D					
					2.80			Soft becoming very soft grey slightly silty CLAY
		3.00	C	N=4 (1,1/1,1,1,1)				
		4.00	C	N=3 (1,0/1,1,1,0)	4.00			End of Borehole at 4.00 m

Remarks:
Water strike at 2.20m depth

Key:
D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
TCR - Total Core Recovery
SCR - Solid Core Recovery
RQD - Rock Quality Designation

AGS

Intégral Géotechnique
Intégral House, 7 Beddau Way
Castlegate Business Park
Caerphilly CF83 2AX
Tel. 029 20807991
Fax. 029 20862176
mail@integralgeotec.com

Project Name:	Project No.:	Borehole No.:
ABP Newport Shed 21	**11827**	**WS4** Sheet 1 of 1

Location:	Client: ABP	Coordinates:	Hole Type:
ABP Newport			WLS

Equipment: DHSP	Diameter of Casing:	Level:	Scale
			1:50

Diameter of Boring: 101mm	Depth of Casing:	Dates	Logged By:
		20/07/2016 -	SJ

Well	Water Strikes	Samples & In situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.10			TARMAC
								MADE GROUND: Red brown slightly clayey sub-base material
		0.50	D		0.50			MADE GROUND: Compact black brown ASH and fine to coarse gravel and brick fragments
		1.00	C	N=17 (1,2/4,2,6,5)				
		1.00	D					
	1.50 ▼	1.50	D		1.50			MADE GROUND: Black slightly silty SAND and fine to coarse gravels
		2.00	C	N=11 (1,3/3,3,3,2)				
		2.00	D					
		2.50	D		2.50			Soft grey brown CLAY with occasional red and black staining
		3.00	C	N=6 (1,1/1,1,2,2)	3.00			Soft grey CLAY
					4.00			End of Borehole at 4.00 m

Remarks:
Water strike at 1.50m depth

Key:

D - Small disturbed sample	W - Water sample
B - Bulk disturbed sample	U - Undisturbed sample
ES - Environmental soil sample	TCR - Total Core Recovery
SPT - Standard Penetration Test (split spoon)	SCR - Solid Core Recovery
CPT - Standard Penetration Test (solid cone)	RQD - Rock Quality Designation

AGS

APPENDIX D

LABORATORY CHEMICAL TEST RESULTS

Tony Dixon
Integral Geotechnique
Integral House
7 Beddau Way
Castlegate Business Park
CF83 2AX

t: 02920807991
f: 02920862176
e: tonyd@integralgeotec.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 16-23862

Replaces Analytical Report Number : 16-23862, issue no. 1

Project / Site name:	ABP Newport Shed 21	**Samples received on:**	28/07/2016
Your job number:	11827	**Samples instructed on:**	28/07/2016
Your order number:		**Analysis completed by:**	12/08/2016
Report Issue Number:	2	**Report issued on:**	12/08/2016
Samples Analysed:	3 soil samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

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: 16-23862

Project / Site name: ABP Newport Shed 21

Lab Sample Number				608282	608283	608284		
Sample Reference				WS2	WS3	WS4		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.40-0.50	1.00	1.50		
Date Sampled				26/07/2016	26/07/2016	26/07/2016		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1		
Moisture Content	%	N/A	NONE	7.6	8.3	17		
Total mass of sample received	kg	0.001	NONE	0.49	0.52	0.55		
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	Chrysotile & Amosite	Chrysotile		
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected		
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	< 0.001	< 0.001		
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	< 0.001	< 0.001		
General Inorganics								
pH	pH Units	N/A	MCERTS	8.8	8.5	7.8		
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Total Sulphate as SO_4	mg/kg	50	MCERTS	2700	2000	1600		
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.36	0.17	0.44		
Sulphide	mg/kg	1	MCERTS	87	43	30		
Total Sulphur	mg/kg	50	NONE	1500	940	1400		
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.9	0.8	1.0		
Loss on Ignition @ 450°C	%	0.2	MCERTS	4.3	2.9	2.8		
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Phenanthrene	mg/kg	0.1	MCERTS	0.63	< 0.10	< 0.10		
Anthracene	mg/kg	0.1	MCERTS	0.14	< 0.10	< 0.10		
Fluoranthene	mg/kg	0.1	MCERTS	0.97	< 0.10	< 0.10		
Pyrene	mg/kg	0.1	MCERTS	0.90	< 0.10	< 0.10		
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.46	< 0.10	< 0.10		
Chrysene	mg/kg	0.05	MCERTS	0.54	< 0.05	< 0.05		
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.57	< 0.10	< 0.10		
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.33	< 0.10	< 0.10		
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.43	< 0.10	< 0.10		
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.31	< 0.10	< 0.10		
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.30	< 0.05	< 0.05		
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	5.58	< 1.60	< 1.60		
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	29	14	7.5		
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.75	0.42	0.24		
Boron (water soluble)	mg/kg	0.2	MCERTS	4.0	8.1	3.5		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	3.5	4.3	0.8		
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	84	120	73		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	210	240	77		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	270	350	140		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.3	0.7	< 0.3		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	49	100	58		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.9	< 1.0	1.7		
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	38	40	13		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	810	650	120		

Analytical Report Number: 16-23862

Project / Site name: ABP Newport Shed 21

Lab Sample Number				608282	608283	608284		
Sample Reference				WS2	WS3	WS4		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.40-0.50	1.00	1.50		
Date Sampled				26/07/2016	26/07/2016	26/07/2016		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	6.4		
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	17	19	14		
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	270	98	97		
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	ISO 17025	280	120	110		
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	390	97	81		
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	290	120	120		
TPH-CWG - Aliphatic (EC5 - EC44)	mg/kg	10	NONE	670	210	200		
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0		
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	12	10		
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	250	110	42		
TPH-CWG - Aromatic >EC35 - EC40	mg/kg	10	NONE	310	52	27		
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	610	160	79		
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	260	120	52		
TPH-CWG - Aromatic (EC5 - EC44)	mg/kg	10	NONE	860	280	130		
TPH Total C5 - C44	mg/kg	10	NONE	1500	490	330		

Analytical Report Number: 16-23862
Project / Site name: ABP Newport Shed 21
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

"The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
608282	WS2	0.40-0.50	123	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
608283	WS3	1.00	126	Loose Fibres	**Chrysotile & Amosite**	< 0.001	**< 0.001**
608284	WS4	1.50	101	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

Analytical Report Number : 16-23862

Project / Site name: ABP Newport Shed 21

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
608282	WS2	None Supplied	0.40-0.50	Brown loam and sand with gravel.
608283	WS3	None Supplied	1.00	Brown loam and sand with gravel.
608284	WS4	None Supplied	1.50	Brown loam and sand with gravel.

Analytical Report Number : 16-23862

Project / Site name: ABP Newport Shed 21

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
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	The analysis was carried out using documented in-house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	NONE

Analytical Report Number : 16-23862

Project / Site name: ABP Newport Shed 21

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
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding.	L076-PL	D	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

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.

FIGURES

NORTH

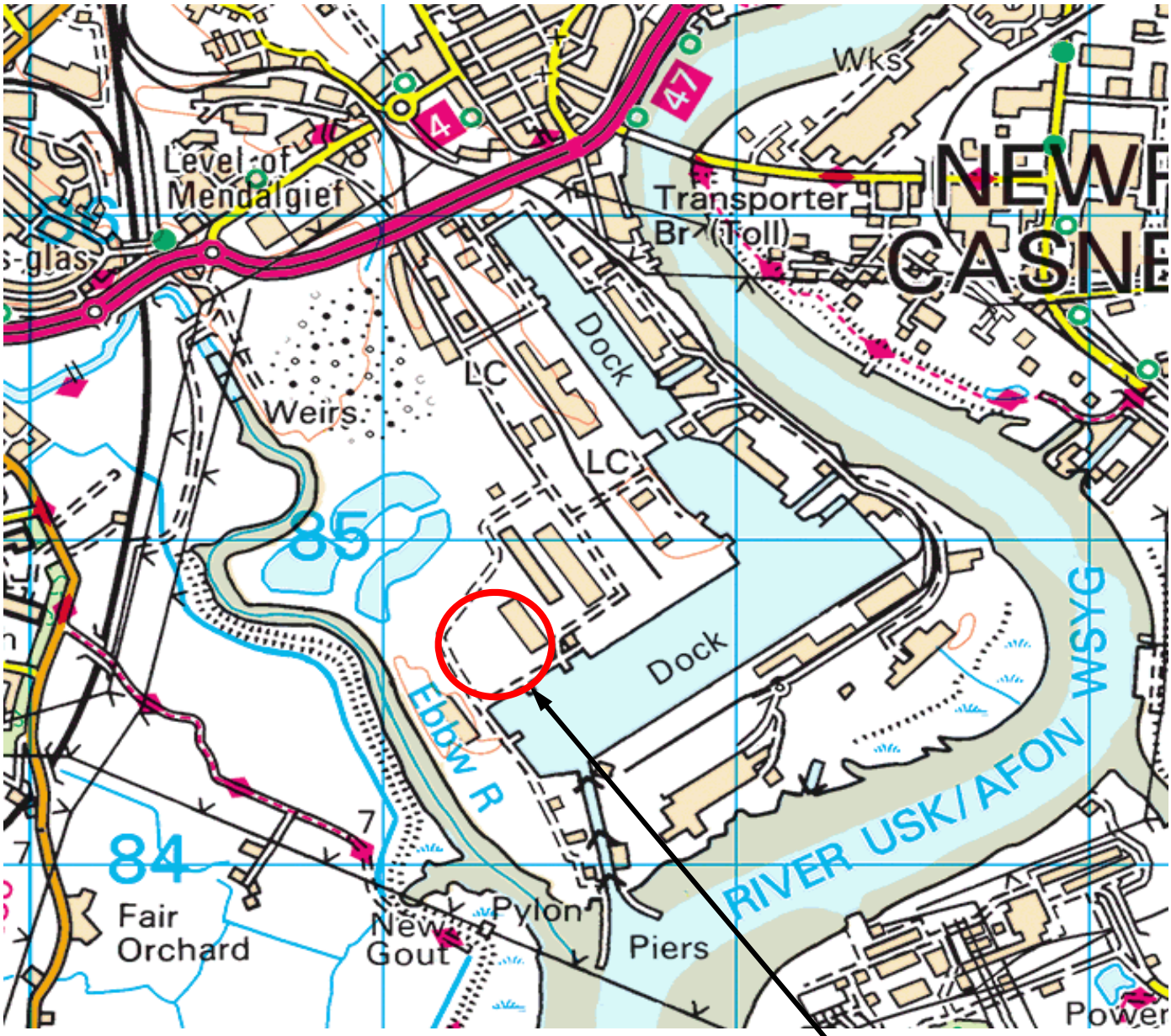
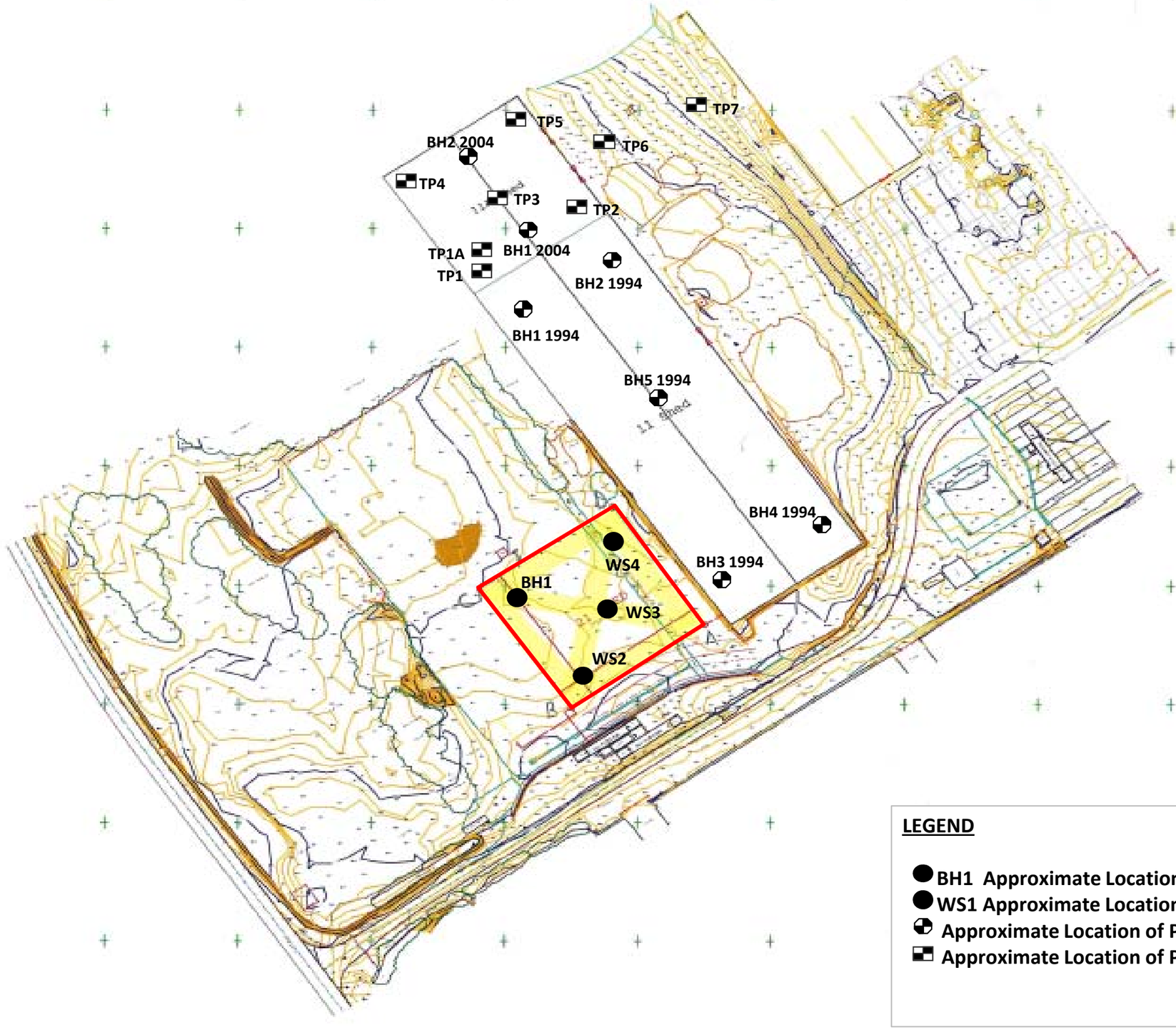


FIGURE 1 - SITE LOCATION

Shed 21, Newport

Intégral Géotechnique

Intégral House
7 Beddau Way
Castlegate Business Park
Caerphilly
CF83 2AX
Tel: 029 2080 7991
Fax: 029 2086 2176



LEGEND

- BH1 Approximate Location of Borehole
- WS1 Approximate Location Of Windowless Sample Holes
- Approximate Location of Previous Boreholes
- Approximate Location of Previous Trial Pits

FIGURE 1 - SITE PLAN

Shed 21, Newport

Intégral Géotechnique

Intégral House
7 Beddau Way
Castlegate Business Park
Caerphilly
CF83 2AX
Tel: 029 2080 7991
Fax: 029 2086 2176

NORTH

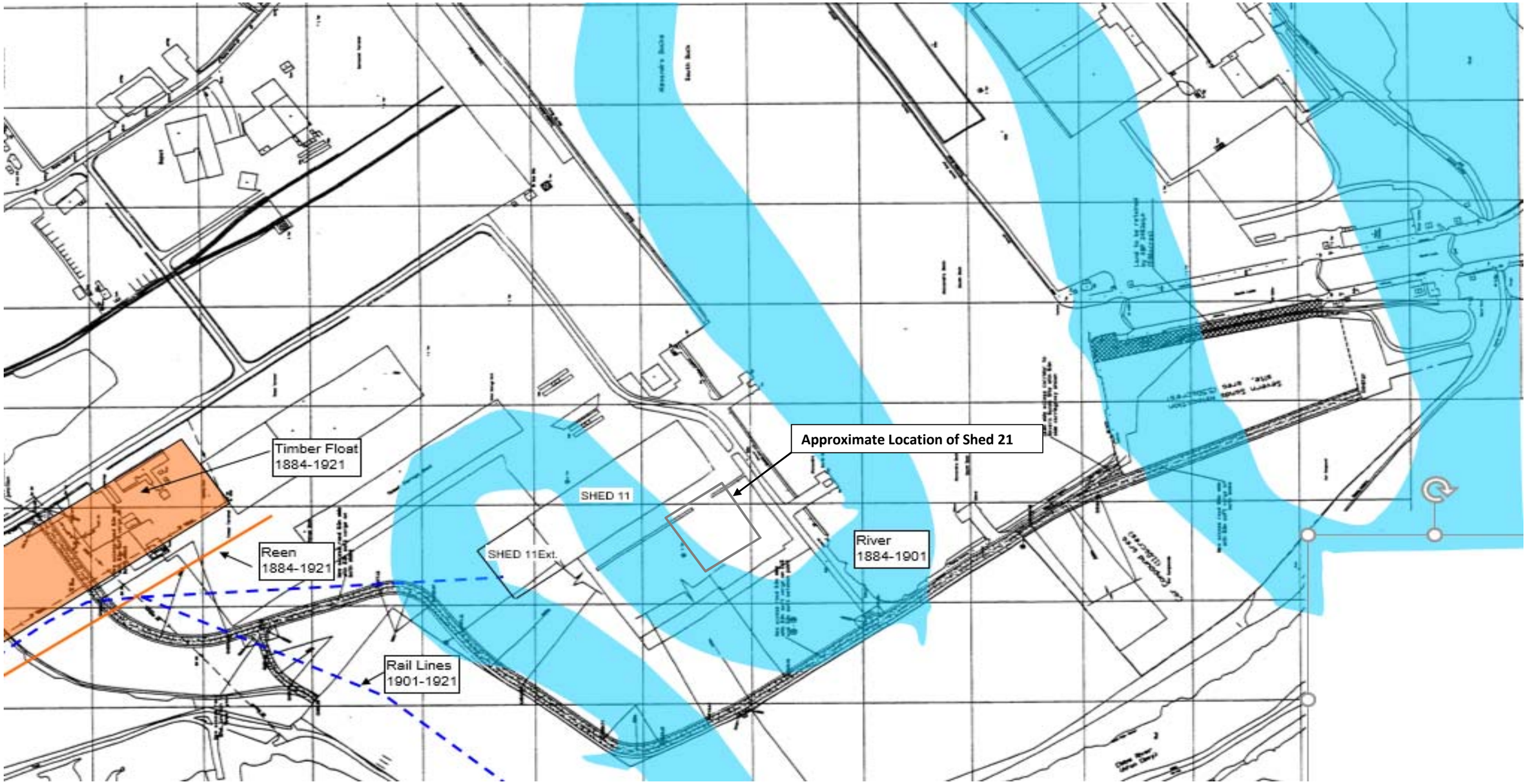


FIGURE 3 - SITE HISTORY

Shed 21, Newport

Intégral Géotechnique

Intégral House
7 Beddau Way
Castlegate Business Park
Caerphilly
CF83 2AX
Tel: 029 2080 7991
Fax: 029 2086 2176

VO-Gen Energy Limited

Bio-Fuel Site, Newport Docks

Geo-environmental Desk Study Report

February 2008

Report no: 5001-NE33910-NER-01

Hyder Consulting

VO-Gen Energy Limited

Bio-Fuel Site, Newport Docks

Geo-environmental Desk Study Report

Author: G Swains

Checker: T Braithwaite

Approver: N Margetson

Report no: 5001-NE33910-NER-01 **Date:** February 2008

Hyder Consulting (UK) Limited
2212959
HCL House, St Mellons Business Park, St Mellons, Cardiff CF3 0EY, United Kingdom
Tel: +44 (0)870 000 3001 Fax: +44 (0)870 000 3901 www.hyderconsulting.com

Contents

Figures

Appendices

1 Introduction

1.1 Terms of Reference

Hyder Consulting (UK) Limited (HCL) was commissioned by VO-Gen Energy Limited to undertake a Geo-Environmental desk study for the proposed installation of a renewable power generation facility at Newport Docks, South Wales.

1.2 Proposed Development

The current scope of works is to construct a renewable bio-fuel power generation facility and the associated buildings and infrastructure, including the turbine house and feedstock storage area.

1.3 Report Objectives

The principal objective of this desk study report is to identify factors that could influence construction works. These include:

- The likely ground conditions beneath the site that may affect the proposed construction works;
- The potential presence of contaminants in soil and groundwater;
- The likely health and safety issues arising as a result of ground contamination.

In order to identify these factors, a review has been undertaken of published geological and hydrogeological information. Historical land uses and potential past and present sources of contamination have also been identified using various sources, including previous reports on the site and surrounding sites, historical maps, and the records of regulatory and statutory bodies procured through Landmark Information Group.

The following report presents the findings of the relevant searches and provides recommendations for a ground investigation.

2 Site Setting

2.1 Site Location

The site is within the boundaries of Newport Docks, South Wales, approximately 3.5 miles to the south of Newport City centre at an approximate National Grid Reference of ST311847. The site is an estimated 2 hectares in area.

A plan showing the site location is included in Figure 1.

2.2 Site Description

An Engineer from HCL undertook a site walkover survey on 13th December 2007, the findings of this survey and references to local maps are summarised below.

The proposed development site comprises of an irregular shaped area of land. The site is an open, non-fenced area of derelict hard standing and scrub land in the western area of Newport docklands. The site is bounded on the north, north-west and west by the docklands perimeter road and in the south by further disused land. On the south-eastern boarder of the site there is an area of hard standing used as a storage area for expanded pellets. The site is flat, derelict ground covered by sporadic vegetation and occasional waste metal products, with occasional areas of standing water. There are no buildings or visible infrastructure currently on the site.

Photographs of the site can be seen in Appendix A.

2.3 Public Register Information

Public register information relating to the site and the surrounding area was obtained through an Envirocheck report produced by the Landmark Information Group. The Envirocheck report includes a review of records held by the Environment Agency and the Local Authority along with details of historical landfill sites held by the British Geological Survey. A copy of the Envirocheck report is included in Appendies B and C.

2.3.1 Waste Activities

There are five waste activities recorded on-site, summarised in Table 2.1. It includes the recorded waste accepted and deposited at each location and whether the site is in current use.

Table 2.1 Summaries of Waste Activities and Recorded Waste Acceptances.

Waste Activity	Recorded Waste Acceptances	Active/In-active
Historical Landfill Sites	Inert and Industrial	Last input date 12/1990
	Inert and Industrial	Last input date 12/1983
Registered Landfill Sites	Building rubble, hardcore and similar inert waste	Licence lapsed/cancelled or defunct
	Foundry sand, slag, boiler/flue cleanings, rubble, hardcore and inert waste	Licence lapsed/cancelled or defunct
	Excavated natural materials, hardcore, inert waste and rubble	Licence lapsed/cancelled or defunct

There are numerous waste activities recorded within 1km of the site boundary. These include six historical landfill sites, five licensed waste management facilities, eight registered landfill sites, one waste transfer site and one registered waste treatment or disposal site. Specific details relating to each of these can be seen in the Envirocheck Datasheets in Appendix B. However, there are two registered landfill sites approximately 730m north-west of the site that are active and include large inventories of varying waste acceptance including liquids, asbestos, effluent and veterinary medical and surgical waste.

2.3.2 Trade Directory Entries

Contemporary Trade Directory Entries

No trade directories are listed on the site. However, one is listed within 500m of the site. The listing is recorded to Sims Metal (UK) Ltd, located on the north side of the south dock, and is classified as a scrap metal merchants.

There are a further 13 active trades listed between 500 m and 1km from the site. The operations recorded include: sand, gravel and aggregate merchants, haulage services, electrical engineers, pipeline blast services, packing and wrapping services, fertiliser merchants, engineers, ship builders, coal and smokeless fuel merchants, fertiliser distributors and timber merchants.

Fuel Station Entries

There are no fuel station entries recorded within 1 km of the site.

2.3.3 Pollution Controls

There are no businesses requiring control under the pollution prevention control regulations on site or in the surrounding 250m. However, there is an

Integrated Pollution Prevention and Control permit issued 480m to the west, relating to the Dockways Landfill site. There are also two Local Authority Pollution Prevention and Control permits issued to Westland Coal Supplies Ltd and Rugby Cement located 480m north-east

There are a further seven Local Pollution Prevention and Control permits issued for sites located between 500m and 1km from the site, 6 are recorded as permitted and active, and one as cancelled. These can be seen in Appendix B.

2.3.4 Industrial Processes with Hazardous Substances

There are 4 recorded sites which use and store hazardous substances within 1 km of the site. There is a lower tier Control of Major Hazards Sites (COMAH) site, located 250m north-east of the site and a site permitted to store and use explosives recorded 940m north-east. Further to these, there are, planning hazardous and substance consents issued to two sites, 230m and 860m respectively from the site.

2.4 Current and Surrounding Land Use

The current land use of the site is predominately derelict scrub land, with earth bunds located throughout the site.

The immediate surroundings of the site also comprise derelict scrub/waste land to the south of the site and on the other side of the perimeter road. However, approximately 100m south-west there is a scrap yard dealing in scrap fridges and freezers of varying sizes and from either domestic or commercial uses. Further to this approximately 300m east is a large scale scrap metal merchants trading in all types of scrap metals, with a timber yard also located between 50m and 500m east of the site.

Table 2.2 Summaries of Potential Contaminants Resulting from Current and Surrounding Land Uses

Potentially Contaminative Use	Potential Contaminative Source	Potential Contaminants	Ability to Impact Site
Fridge/Freezer Scrap Dealers 100m south-west	Leaking storage areas, overflows from storage tanks and areas, accidental discharges	PCB'c, CFC's and possible pH anomalies	No – contaminants unlikely to migrate 100m north-east
Scrap Metal Dealers 300m east	Leaking storage areas, overflows from storage tanks and areas, accidental discharges	Heavy metals, semi-metals and non-metals, inorganic chemicals, asbestos, pH anomalies, chlorinated aliphatic and aromatic hydrocarbons, PAH's and PCB's	No – contaminants unlikely to migrate 300m west
Landfill Site 500-1000m north-west	Leachate leaks, landfill material migration and or overflow, accidental discharge	Heavy metals, arsenic, sulphates, asbestos, pH, hydrocarbons, PAH's, chlorinated aliphatic and aromatic hydrocarbons, PCB's dioxins and furans	Yes – possibility for contaminants to migrate towards site
Timber Yard 50-500m north and north-east	Leaking storage tanks, overflows from storage tanks, accidental chemical discharge	Heavy metals, inorganic chemicals, asbestos, phenols, acetone, pH anomalies, PAHs and chlorinated solvents.	Yes – possibility of contaminants to migrate 500 m to site.

3 Historical Land Use

3.1 General

The historical land use of the site and surrounding area has been traced with reference to currently available historical maps originally published between 1887 and 2007. The historical maps were obtained as part of the Envirocheck report and are included in Appendix C. The following text summarises significant observations relating to any potentially contaminative former land uses on and adjacent to the site.

3.2 The Site

The historical maps dating between 1883-1884 indicate that the site is dominated by a meander of the River Ebbw, which runs south-west to north-east across the site. Either side of the river channel tidal mud flats are recorded and beyond these pasture land and green fields. The historical map dated 1901 records the site area as remaining unchanged.

Significant changes to the site are indicated on the maps dated 1920-1921. Most noticeably the course of the River Ebbw has changed considerably and a now runs approximately 200m west of the site boundary. The reclaimed land from the river channel change is recorded as grasslands and green fields. However, along the eastern boundary of the site, a railway embankment and associated infrastructures have been developed, servicing the newly developed docklands approximately 200m south.

The site remains largely unchanged until 1968. The historic maps dated between 1956 and 1967 record increased railway infrastructure on site with the continuation of grassland and green fields. However, the map indicates that the centre and northern extents of the site are dominated by marsh lands.

The prominent changes in land use indicated on the map dated 1968-1972 are the removal of the railway infrastructure. Despite the removal the map does not show the land use returning to grassland. The areas around the removed infrastructure are still indicated as being predominately marsh land.

There is no recorded information between 1972 and 1992. The maps dated 1992-1993 show the marshland present and the remnant embankments of the railway. However, the north-western extents of the site are recorded as having a spoil heap present.

The 1995 dated map shows the site developed to an area of hard standing ground, extending from the docklands in the south-east. This remains the case until the present day where the site is covered with earth bunds and derelict land amongst hard standing ground.

3.3 Surrounding Area

The 1887 map shows the site and the surrounding areas as grass or pasture land dissected by the meandering of the River Ebbw. 250m north-east of the site and extending up to 1000m further to the north, the historic map indicates a timber float adjacent to the existing Alexandra Docks, approximately 750m north-east of the site. The docklands are serviced by an extensive network of dockland railway sidings which feed from the north. Between 500m and 750m east of the site are infrequent residential buildings and farmsteads.

The 1902 map shows the south, west and north-west of the site as unchanged. However, the north and north-east shows increased development. Approximately 250m north of the site boundary the Port Sanitary Hospital has been built approximately 700m north-east, the Alexandra Docks has been extended to the south-east, forming the 'South Dock' and a small pond exists beyond the dock extension. The south pumping station has also been developed roughly 1km east of the site. With the extension of the docklands areas there is increased railway infrastructure and sidings that run adjacent to the existing timber float which has also seen an increased number of buildings within the vicinity, around 900m north.

The prominent change to the surrounding land indicated on the historic map dated 1922 is the diversion of the River Ebbw from its natural course. The main river channel has been straightened and now runs direct to the coast from a meander north-west of the site. The diversion of the river channel has allowed the massive development of the docklands area. The existing 'Alexandra Dock' has been renamed the 'North Dock' with the 'South Dock' renamed the 'Alexandra Dock'. The pond detailed in the 1902 map has been expanded south-west from the South pumping Station and forms the newly developed 'South Dock' The expansion of the docklands has seen the substantial increase in railway infrastructure to the south and east of the site. Dockside coal hoists have been built along the dock walls, and the existing timber float has increased in size along with the timber shed that service the timber yards. Approximately 750m south of the site boundary an 'electric power station' has been built with a central storage depot and transit sheds150m east of the power station. The south-west, west and north-west areas of the site remain largely unchanged from pasture and grassland with occasional randomly located small residential dwellings and farmstead developments. The 1922 map also shows the demolition of the hospital 250m north.

The area surrounding the site remains principally unchanged up to 1954, other than small increases with in the existing docklands developments and the introduction of extra sidings within the railway infrastructure. There are no other changes recorded around the site until 1970, other than the existing storage depot approximately 720m south-east of the site has changed to a Mill.

The historic map dated 1970-1973 shows the decline of the docklands area, signified by the removal of all railway infrastructure to the west of the Alexandra and South Docks, a small number of sidings remain for the servicing of the timber yard between 500 and 1000m north and north-east of the site. Around 150-200m north-east of the site on the site of the old railway sidings a large timber storage shed has been built. The timber floats in the north-east of the surrounding areas have also been in filled. The immediate areas around the site have been returned to grassland and or scrubland. The docks have been further developed by the introduction of numerous travelling cranes. The western surrounding areas remain unchanged as pasturelands. The Mill in the south-eastern extent remains active. However, approximately 100m east of the mill a small dry-dock has been built along with the Atlantic Ship building yard.

The 1972-1996 map shows the further removal of railway infrastructure from the north of the site and the timber yard. The railway sidings are replaced by buildings belonging to a sawmill (850m north). This coincides with the expansion of the existing timber terminal 500m east. The areas around the old railway sidings are termed as scrubland areas. A coal dump has been established 900m east of the site and approximately 500m to 1000m north-west of the site a landfill site has been constructed.

The 1999 map shows the area surrounding the site to the north, east and south remaining predominately unchanged. However, the coal dump has been re-developed and is now occupied by a transit shed, along with the development of a container terminal 500m east. However, the largest change in the area is the change in course of the River Ebbw. The large meander to the west has been by-passed with the river channel being straightened. The changing of the channel course has left a substantial ox-bow lake approximately 500m north-west of the site boundary.

Modern up to date maps show the area as largely unchanged from the maps published in the period 1972-1996. The changes to the area are only around the current timber yard and involve the expansion of the existing timber sheds.

3.4 Potential Contamination Sources from Historical Activity

An assessment of sources of potential contamination at the site and in the vicinity of the site is presented in Table 3.1. A more detailed table is contained in the site conceptual model within Appendix D.

Table 3.1 Summaries of Potential Contaminative from Historic Land Uses

Potentially Contaminative Use	Potential Contaminative Source	Potential Contaminants	Ability to Impact Site
Railway sidings and infrastructure **On-site**	Spills, leaks from traction engines, rolling stock and ash from steam boilers.	Heavy metals, sulphates, asbestos and hydrocarbons, PAHs and PCB's.	Yes - Contaminants likely to be present on-site
Historic and registered Landfill Sites **On-site**	Leachate leaks, landfill material migration and or overflow, accidental discharge, presence of unknown materials	Heavy metals, arsenic, sulphates, asbestos, pH, hydrocarbons, PAH's, chlorinated aliphatic and aromatic hydrocarbons, PCB's dioxins and furans	Yes - Contaminants likely to be present on-site
Timber Yard/Timber Floats 50-500m north and north-east	Leaking storage tanks, overflows from storage tanks, accidental chemical discharge	Heavy metals, inorganic chemicals, asbestos, phenols, acetone, pH anomalies, PAHs and chlorinated solvents.	Yes – possibility of contaminants to migrate 500 m to site.
Travelling Cranes 50-500m east and north-east	Spills, leaks from engines and mechanisms	Heavy metals, sulphates, asbestos and hydrocarbons, PAHs and PCB's.	Yes - Contaminants likely to be transported around site by site activities
Docklands / Harbour Encompassing the north, east and south 150-1000m	Fuel leaks and spillages, Coal; ash, clinker	Heavy metals, sulphates, phenols, Hydrocarbons, PAHs and PCB's.	Yes - Contaminants likely to be transported around site by site activities
Railway sidings and infrastructure Encompassing the north and east 150-1000m	Spills, leaks from traction engines, rolling stock and ash from steam boilers.	Heavy metals, sulphates, asbestos and hydrocarbons, PAHs and PCB's.	Yes - Contaminants likely to be transported around site by site activities

Potentially Contaminative Use	Potential Contaminative Source	Potential Contaminants	Ability to Impact Site
Power Station 750m south	Fuel leaks and spillages, Coal; ash, clinker	Heavy metals, semi-metals and non-metals, inorganic chemicals, asbestos, pH anomalies, chlorinated aliphatic and aromatic hydrocarbons, PAH's and PCB's	No – contaminants unlikely to migrate 750m north through dock retaining wall
Mill House and Works (mill type unknown) 720m south-east	Leaking storage tanks, overflows from storage tanks, accidental chemical	Unknown; but possible heavy metals, sulphates, asbestos, phenols, PAH's and PCB's	No – contaminants unlikely to migrate 750m north through dock retaining wall
Sawmill 850m north	Leaking storage tanks, overflows from storage tanks, accidental discharge chemicals.	Heavy metals, inorganic chemicals, asbestos, phenols, acetone, pH anomalies, PAHs and chlorinated solvents.	Yes – possibility of contaminants to migrate 850 m to site.
Landfill Site 500-1000m north-west	Leachate leaks, landfill material migration and or overflow, accidental discharge	Heavy metals, arsenic, sulphates, asbestos, pH, hydrocarbons, PAH's, chlorinated aliphatic and aromatic hydrocarbons, PCB's dioxins and furans	Yes – possibility for contaminants to migrate towards site

4 Site Sensitivity

The following sections detail the site's environmental and geotechnical sensitivity with regards to geology, hydrogeology, hydrology and ecology.

4.1 Geology

Published Geology

The British Geological Survey Map for the area (Ref 1) shows that the site is underlain by the Mercia Mudstone Group of late Triassic. There are no faults running through the site.

Superficial deposits overly the solid geology over the entire site, comprising of tidal mud flat deposits. Made Ground is also present across all of the site overlying the superficial deposits.

Existing Boreholes

The British Geological Survey (BGS) has no existing borehole records within site. However the BGS hold four existing borehole records on an area adjacent to the docklands retaining wall to the east of the site, approximately 250 to 500 metres from the site boundary, these have not been obtained for the purpose of this report. ABP have not been consulted for Borehole records.

4.2 Hydrogeology

4.2.1 Groundwater Vulnerability

Aquifer Units

The Groundwater Vulnerability map included in the Envirocheck report shows the site to be underlain by a negligibly permeable non-aquifer. These are classified as formations which are generally regarded as containing insignificant quantities of groundwater for economic use. However, groundwater flow through such rocks, although imperceptible, does take place and needs to be considered in assessing the risk associated with persistent pollutants.

Soil Classification

The soils overlying the non-aquifer are recorded in the Envirocheck report as not classified; therefore the leaching potential of the soils is undetermined. The soils overlying generally comprise of made ground which may allow the transmission of contaminants, but the site is underlain by estuarine deposits which are unlikely to transmit contaminants very far.

4.2.2 Groundwater Abstractions

There are no licensed groundwater abstractions within 1km of the site. However, there are three licensed abstractions within 2km of the site. Two abstractions for metal production (classed as general use) and are within 1.3 km of the site to the north (issued to Corus UK Ltd and British Steel Ltd). Abstraction sources are recorded as being from surface waters for both licences. One abstraction for the production of energy and non-evaporative cooling is located approximately 1.4 km to the south-east of the site, and is held by AES East Usk Limited to abstract water from a tidal location (defined within the Envirocheck Appendix B).

The site is not located within a source protected zone.

4.3 Hydrology

4.3.1 Nearby Surface Water Features

The Envirocheck report highlights one nearby surface water feature. This is recorded as the historic natural River Ebbw channel oxbow lake formation approximately 167m north-west of the site. It is possible that areas of this feature have been in-filled. Further to this the current River Ebbw is approximately 250m east and the River Usk one kilometre to the south. There are also extensive dockland areas and the Cold Harbour Reach within 1km.

4.3.2 Surface Water Abstractions

There are no surface water abstractions registered within 1 km of the site.

4.3.3 Discharge Consents

There are no discharge consents issued for activities on-site. However, there are 15 in the surrounding areas up to 500m from the site. These are recorded as being held by Associated British Ports, Finforest Sawmill, Laws Fertilisers and Sims Metal Recycling Ltd. The receiving waters are listed as either the South Dock or the River Ebbw. Between 500m and 1km from the site boundary there are 90 other discharge consents recorded. However, for the Severn Estuary, River Usk and Ebbw Estuary, a full list of the consents can be seen within the Envirocheck report Appendix B.

4.3.4 Pollution Incidents to Controlled Waters

The Envirocheck report states there have been no reported pollution incidents to controlled waters relating to the site or within 1km of the site boundary (see section 4.3.6).

4.3.5 Prosecutions Relating to Controlled Waters

There are no prosecutions related to controlled waters listed within 1 km of the site.

4.3.6 Substantiated Pollution Incident Register

There is one entry in the Substantiated Pollution Incident Register within 1 km of the site. The incident occurred in May 2003 and involved pollutants listed as "contaminated water: Landfill Leachate". The incident resulted in Water impact Category 2 (Significant), Air impact category 4 (No Impact) and Land impact Category 3 (Minor Incident).

4.3.7 Flooding

The flood map included in the Envirocheck report suggests that the site is not at risk from tidal flooding or flooding from rivers or the sea with or without sea defences. There are no flood defences within 1 km of the site. However, extreme flooding from rivers or the sea without defences is shown approximately 50m north-east and east and 175m south-west and west of the site boundary.

4.4 Ecology

There are numerous areas of sensitive land use within 1km of the site. These include:

Table 4.1 Summary of Areas of Sensitive Land Use

Classification	Location	Distance from Site
Ramsar	Ebbw/Usk/Severn Estuary (Wales)	481m south
	Ebbw/Usk/Severn Estuary	482m south
Sites of Special Scientific Interest	Gwent Levels – St. Brides	273m south-west
	Ebbw/Usk/Severn Estuary	439m south
	River Usk (Lower usk)	871m south-east
Special Areas of Conservation	River Usk	871m south-east
Special Protection Areas	Ebbw/Usk/Severn Estuary (Wales)	481m south
	Ebbw/Usk/Severn Estuary	482m south

4.5 Environmental Sensitivity Summary

Groundwater Sensitivity: Very Low to Low

The site is underlain by estuarine deposits which comprise of clays and silts. This deposit is considered to be a non-aquifer as defined by the Environment Agency's groundwater vulnerability maps. Such formations are generally regarded as containing insufficient quantities of groundwater for economic use. Therefore, groundwater is not considered to be a receptor at this site.

However, the estuarine deposits are able to transmit small quantities of water, and should be considered as a pathway in assessing the risk associated with persistent pollutants. The site is not within a groundwater source protection zone and there are no groundwater abstractions on the site. However, there are 3 abstraction points within 2 km of the site boundary, with the water being abstracted from the river at two locations and inter-tidal area for the remaining location. The close proximity of the site to the coast and to the tidally influenced River Ebbw and River Usk suggest that the estuarine deposits would be in hydraulic continuity with the rivers, and thus have a reciprocating motion with regards to groundwater flow direction, proving contamination modelling and dispersion paths complex. However, in the event of a pollution incident localised clean-up/isolation of soil and groundwater only maybe required as contaminates are likely to remain in the estuarine deposits, due to their nature. Also dispersion will be limited. There is unlikely to be on-site and off-site liabilities or action by statutory authorities with respect to groundwater. There are low cost implications and risk of prosecution.

Surface Water Sensitivity: Moderate

There is one surface water feature 167m north-west of the general site area in the form of an ox-bow lake. The recharge nature of the water contained within the feature is currently unknown, but is expected to be recharged by a combination of groundwater and run-off. It is also likely to be in continuity via limited groundwater movement with the new River Ebbw channel. A General Quality Assessment (GQA) water classification does not exist for this water body. As stated above, the current River Ebbw is approximately 250m east, and the River Usk 1km south, both of which are tidally influenced. The River Ebbw is considered to be in continuity with the estuarine deposits and as such, given time, contaminants confined in this deposit would migrate to the river. A dock wall prohibits movement of contaminants to the River Usk, located approximately 1km south.

Coastal Water Sensitivity: Moderate

The site is located within 1000 m of the mean high water line of Newport. It is unlikely that contaminaants would migrate the distance in significant concentrations to cause pollution of controlled waters.

Ecological Sensitivity: Moderately High

The River Ebbw and Severn Estuaries are Sites of Special Scientific Interest and Special Protected Zones, as well as Areas of Conservation and RAMSAR sites. There is a possibility of diffuse flow via groundwater seepages to the River Ebbw but migration to the coast is limited. The site is situated within reasonable proximity (less than 500m) of a protected site of high ecological importance or within close proximity (less than 250m) of a protected site of medium ecological importance. The site is not designated for its ecological value but it is probable that there are protected plant and animal species present that could be affected by contamination.

No assessment of protected spices has been carried out for this report.

In addition, the site is within 1km of numerous other areas deemed to have a sensitive land use, these are outlined in section 4.4. Also there maybe liabilities initially associated with watercourses and or groundwater.

5 Conceptual Model and Qualitative Risk Assessment

5.1 Introduction

Irrespective of the degree of contamination, current guidelines require a systematic approach to the assessment of contamination. This is achieved by developing a conceptual model.

The conceptual model identifies the pollutant linkages that may exist by highlighting the relationships between the contaminants, pathways and receptors and how these are linked together.

A **contaminant** may be defined as

A substance which is in, on or under the land and which appears to be causing significant harm or may cause significant harm to receptors, or pollution of controlled waters is being caused or is likely to be caused.

A **receptor** may be defined as either:

(a) *Human Health*

(b) A living organism, a group of organisms or an ecological system.

(c) A piece of property which is being, or could be, harmed, by a contaminant; or

(d) Controlled waters which are being, or could be polluted by a contaminant.

A **pathway** may be defined as

One or more routes or means by, or through, which a receptor:

(a) Is being exposed to, or affected by a contaminant, or

(b) Could be so exposed or affected.

Where a pathway can expose an identified receptor to an identified contaminant, a pollution linkage is formed. So, all three elements must be present for a pollutant linkage to exist.

The following sections detail the method of assessment and the conceptual model assessing the potential contaminative sources, the potential pathways and the identified receptors.

5.2 Qualitative Risk Assessment

Risk assessment is the process of collating known information on a hazard or set of hazards (to determine the potential severity of any impact) along

with details on the likelihood of impact on detailed receptors. Risks are generally managed by isolating the receptor or by intercepting or interrupting the exposure pathway, so no pollutant linkages are formed and there can be no risk. The following section focuses on the potential hazards or contaminants identified on site and indicates whether they maybe able to impact a nearby receptor discussed in Section 4 of this report.

The assessment of risk presented is based upon the procedure outlined in the Department of the Environment, Transport and Regions (DETR), Statutory Guidance on Contaminated Land. In addition DEFRA has also published guidance on risk assessment which has also been used to complete the assessment.

The guidance states that the designation of risk is based upon a consideration of both:

- The likelihood of an event (probability); [takes into account both the presence of the hazard and the receptor and the integrity of the pathway]
- The severity of the potential consequence [takes into account both the potential severity of the hazard and the sensitivity of the receptor]

Under such a classification system the following categorisation of risk has been developed and the terminology adopted as follows:

Table 5.1 Summary of Risk Classification Categories

Term	Description
Very High Risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard at the site without appropriate remedial action.
High Risk	Harm is likely to arise to a designated receptor from an identified hazard at the site without appropriate remedial action.
Moderate Risk	It is possible that without appropriate remedial action harm could arise to a designated receptor but it is relatively unlikely that any such harm would be severe and if any harm were to occur it is likely that such harm would be relatively mild.
Low Risk	It is possible that harm could arise to a designated receptor from an identified hazard but it is likely that at worst this harm if realised would normally be mild.
Negligible Risk	The presence of an identified hazard does not give rise to the potential to cause significant harm to a designated receptor.

This risk assessment has been undertaken to determine the likely levels of environmental risk associated with development of the site. More general environmental risks arising from the land associated with current use are outside the scope of this work.

5.3 Conceptual Model

5.3.1 Potential Contaminative Sources

Potential contaminative sources identified on site are tabulated in Sections 2.4 and 3.4 of this report. Potential sources identified on site include:

- Contamination from railway sidings.
- Contamination from timber yard and timber terminal
- Contamination from travelling cranes
- Contamination from docklands and harbour
- Contamination from sawmills
- Contamination from landfill sites

The Department of the Environment (DOE) has published documents that describe the above processes and identify contaminants or substances that will have been used in these processes at the site. Theses are listed in Tables 2.2 and 3.1 and identified in Appendix D.

5.3.2 Receptors

Environmentally sensitive receptors are considered to include:

- Human Health

  Who will work at the site once construction has been completed. Current practices assess long term exposure to contamination at the site (contained within CLR 7). The site will be developed for a bio-fuel plant so contact with contaminants in future will be limited.

- Controlled waters (groundwater, coastal and surface water)

  The site is 1000m north of the River Usk, 200m from the River Ebbw and approximately 200m south of the River Ebbw ox-bow lake formation. The site is underlain by a non-aquifer, therefore groundwater is not considered to be a receptor.

- Buildings and structures.

  There are no existing properties and or buildings on the site. Around the perimeter of the site services such as fibre optic communication cables and 240v and 11kv electric cables are located. No survey of sewers of buried pipes has been undertaken.

5.3.3 Pathways

Pathways are the routes that link the receptor to the contamination. The potential pathways for this site are given below.

Table 5.2 Potential Pathways for the Site

Receptor	Pathways
Human Health.	Ingestion of contaminants in soil. Dermal contact with contaminants within soil and dust. Inhalation of the contaminants within soil vapour and dust. Inhalation of ground gases Ingestion of abstracted water
Controlled waters: River Usk, River Ebbw and Ebbw River ox-bow lake	Vertical and horizontal migration of contaminants Through soils. Through groundwater.
Buildings and structures Proposed buildings and infrastructure on site.	Direct contact with aggressive ground conditions. Migration through pipes and services.
Ecology in River Usk and Ebbw	Vertical and horizontal migration of contaminants Through soils. Through groundwater. Into surface water and coastal water.

5.3.4 Pollutant Linkages

Table 5.3 identifies the plausible pollutant linkages that can exist at the site and following re-development of the site.

Table 5.3 Plausible Linkages Resulting from Current and Future Land Use and the Resulting Risk.

Potential Contaminant	Potential Pathway	Receptor	Likelihood	Severity	Risk	Comments
Cadmium, Chromium, Copper, Lead, Nickel, Vanadium, Zinc, Boron, Mercury,	Migration through soils via diffusion and soil partition	River Ebbw	Un-Likely	Medium	**Low**	Soil / geology comprise of saturated estuarine mud, therefore diffusion is limited.
	Migration Through Groundwater	River Ebbw	Un-Likely	Medium	**Low**	Groundwater comprises water contained in clays and silts, therefore migration will be limited
	Migration through soils via diffusion and soil partition	River Ebbw Ox-bow Lake	Un-Likely	Medium	**Low**	Soil / geology comprise of saturated estuarine mud, therefore diffusion is limited.
	Migration Through Groundwater	River Ebbw Ox-bow Lake	Un-Likely	Medium	**Low**	Groundwater comprises water contained in clays and silts, therefore migration will be limited
Arsenic	Migration through soils via diffusion and soil partition	River Ebbw	Un-Likely	Medium	**Low**	Soil / geology comprise of saturated estuarine mud, therefore diffusion is limited.
	Migration Through Groundwater	River Ebbw	Un-Likely	Medium	**Low**	Most arsenic compounds dissolve in water and ultimately end up in the soil or sediments.
	Migration through soils via diffusion and soil partition	River Ebbw Ox-bow Lake	Un-Likely	Medium	**Low**	Soil / geology comprise of saturated estuarine mud, therefore diffusion is limited.
	Migration Through Groundwater	River Ebbw Ox-bow Lake	Un-Likely	Medium	**Low**	Most arsenic compounds dissolve in water and ultimately end up in the soil or sediments.

Potential Contaminant	Potential Pathway	Receptor	Likelihood	Severity	Risk	Comments
Sulphate	Migration through soils via diffusion and soil partition	River Ebbw	Un-Likely	Medium	**Low**	Soil / geology comprise of saturated estuarine mud, therefore diffusion is limited.
	Migration Through Groundwater	River Ebbw	Un-Likely	Medium	**Low**	May reduce pH in aquatic environment
	Migration through soils via diffusion and soil partition	River Ebbw Ox-bow Lake	Un-Likely	Medium	**Low**	May reduce pH in aquatic environment
	Migration Through Groundwater	River Ebbw Ox-bow Lake	Un-Likely	Medium	**Low**	May reduce pH in aquatic environment but contaminant likely to disperse in contaminant plume
PCB's	Migration through soils via diffusion and soil partition	River Ebbw	Un-Likely	Medium	**Low**	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited, PCB's are heavy and lateral migration is limited.
	Migration Through Groundwater	River Ebbw	Low Likelihood	Mild	**Low**	In water, a small amount of PCBs may remain dissolved, but most stick to organic particles and bottom sediments
	Migration through soils via diffusion and soil partition	River Ebbw Ox-bow Lake	Un-Likely	Medium	**Low**	Located within 400m of the site and comprises saturated sediments. Therefore diffusion is limited. Therefore diffusion is limited, PCB's are heavy and lateral migration is limited.
	Migration Through Groundwater	River Ebbw Ox-bow Lake	Low Likelihood	Mild	**Low**	In water, a small amount of PCBs may remain dissolved, but most stick to organic particles and bottom sediments
PAH's	Inhalation of Soil Vapours	Human Beings	Likely	Severe	**High**	Current risk, as site is accessible. However, future use will be hard standing. Contaminant will move between soil and vapour phase

Potential Contaminant	Potential Pathway	Receptor	Likelihood	Severity	Risk	Comments
	Migration through soils via diffusion and soil partition	River Ebbw	Low Likelihood	Medium	**Medium**	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited, PAH's are mobile and will move laterally in a saturated environment.
	Migration Through Groundwater	River Ebbw	Likely	Severe	**High**	PAHs move through soil to contaminate underground water. Do not dissolve easily in water. They stick to solid particles and settle to the bottoms of lakes or rivers
	Migration through soils via diffusion and soil partition	River Ebbw Ox-bow Lake	Low Likelihood	Medium	**Medium**	Located within 400m of the site and comprises saturated sediments. Therefore diffusion is limited. PAH's are heavy and lateral migration is limited.
	Migration Through Groundwater	River Ebbw Ox-bow Lake	Likely	Severe	**High**	PAHs move through soil to contaminate underground water. They do not dissolve easily in water. They stick to solid particles and settle to the bottoms of lakes or rivers
Hydrocarbons	Inhalation of Soil Vapours	Human Beings	Likely	Severe	**High**	Current risk, as site is accessible. However, future use will be hard standing. Contaminant will move between soil and vapour phase
	Migration through soils via diffusion and soil partition	River Ebbw	Low Likelihood	Medium	**Medium**	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited; hydrocarbons are mobile and will move laterally in a saturated environment.
	Migration Through Groundwater	River Ebbw	Likely	Severe	**High**	Hydrocarbons move through soil to contaminate underground water. They do not dissolve easily in water. They stick to solid particles and settle to the bottoms of lakes or rivers

Potential Contaminant	Potential Pathway	Receptor	Likelihood	Severity	Risk	Comments
	Migration through soils via diffusion and soil partition	River Ebbw Ox-bow Lake	Low Likelihood	Medium	**Medium**	Soil / geology comprise saturated estuarine muds. Therefore diffusion is limited; Hydrocarbons are mobile and will move laterally in a saturated environment.
	Migration Through Groundwater	River Ebbw Ox-bow Lake	Likely	Severe	**High**	Hydrocarbons move through soil to contaminate underground water. They do not dissolve easily in water. They stick to solid particles and settle to the bottoms of lakes or rivers
Phenol	Inhalation of Soil Vapours	Human Beings	Likely	Severe	**High**	Current risk, as site is accessible. However, future use will be hard standing. Contaminant will move between soil and vapour phase
	Migration through soils via diffusion and soil partition	River Ebbw	Un-Likely	Severe	**Moderate**	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited, and remains in soil for a short time.
	Migration Through Groundwater	River Ebbw	Un-Likely	Severe	**Moderate**	Contaminant only remains in water for about 1 week and then dissipates.
	Migration through soils via diffusion and soil partition	River Ebbw Ox-bow Lake	Un-Likely	Severe	**Moderate**	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited, and remains in soil for a short time.
	Migration Through Groundwater	River Ebbw Ox-bow Lake	Un-Likely	Severe	**Moderate**	Contaminant only remains in water for about 1 week and then dissipates.
HCH (hexachloro-	Inhalation of Soil Vapours	Human Beings	Un-Likely	Severe	**Low**	Contaminant can exist as a vapour phase, and is likely to have dispersed.

Potential Contaminant	Potential Pathway	Receptor	Likelihood	Severity	Risk	Comments
cyclohexane)	Migration through soils via diffusion and soil partition	River Ebbw	Low Likelihood	Medium	**Medium**	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited, PAH's are mobile and will move laterally in a saturated environment.
	Migration Through Groundwater	River Ebbw	Low Likelihood	Mild	**Medium**	Contaminant is broken down to less toxic substances by algae, fungi, and bacteria, this process can take a long time.
	Migration through soils via diffusion and soil partition	River Ebbw Ox-bow Lake	Low Likelihood	Medium	**Medium**	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited; HCH is mobile and will move laterally in a saturated environment.
	Migration Through Groundwater	River Ebbw Ox-bow Lake	Low Likelihood	Mild	**Low**	Contaminant is broken down to less toxic substances by algae, fungi, and bacteria, this process can take a long time.
Dieldrin	Inhalation of Soil Vapours	Human Beings	Low Likelihood	Mild	**Low**	Dieldrin vapour is heavier than air, and only poses a risk to confined areas, contaminant unlikely to migrate to 50m to site. Some atmospheric dispersion will take place.
	Migration through soils via diffusion and soil partition	River Ebbw	Low Likelihood	Mild	**Low**	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
	Migration through soils via diffusion and soil partition	River Ebbw Ox-bow Lake	Un-Likely	Medium	**Low**	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
Organotin Compounds	Inhalation of Soil Vapours	Human Beings	Likely	Severe	**High**	Current risk, as site is accessible. However, future use will be hard standing. Contaminant will move between soil and vapour phase

Potential Contaminant	Potential Pathway	Receptor	Likelihood	Severity	Risk	Comments
Acetone	Inhalation of Soil Vapour	Human Beings	Likely	Severe	**High**	Current risk as site is accessible however future use will be hard standing. Causes irritation after short term exposure. Will affect male and female reproductive systems
	Migration Through Groundwater	River Ebbw	Low Likelihood	Medium	**Medium**	Able to migrate to ground water from soils. The breakdown time varies with situation.
	Migration Through Groundwater	River Ebbw Ox-bow Lake	Low Likelihood	Medium	**Medium**	Able to migrate to groundwater from soils. The breakdown time varies with situation.

5.4 Summary of Environmental Risk Assessment

Development of a site conceptual model which identifies receptors that may be at risk from contaminants at the site is provided in Section 4.5. The following sections discuss the potential pollution linkages identified and how they impact current site use, future site use and construction risk.

5.4.1 Pollutant Linkages that Impact Current Site Use

Receptor: Human Health

The site is currently derelict, and no permanent human activity occurs. However, it is accessible to the public and potential contaminants have been identified that may cause harm, but due to the open nature of the site the harm is unlikely to be significant. Therefore, the risk to humans from pollutant linkages that are currently on site is negligible.

Receptor: Controlled Waters

The risks to controlled waters exist whether the land is developed or not, and whilst the pollutant linkages discussed in Table 5.3 are plausible, the risk of metals, arsenic, sulphate and PCB's migration is reduced due to the attenuation in the clayey estuarine deposits. However, the more mobile contaminants such as PAH, hydrocarbons, HCH and Acetone pose a medium to high risk due to their reduced attenuation in the clayey estuarine deposits. These assumptions are based principally on the conceptual model and therefore further investigation and assessment of the site would be required to characterise the potential pollutant linkages and quantify the risk.

Receptor: Ecology

The SSSI on the River Usk is not at risk from the linkages that impact current site use. This is due to the river channel, and therefore the ecological sites of interest, being located 1km away from the site. It is unlikely that contaminants will migrate for this distance through estuarine deposits. Also a dock wall lies between the site and the river providing a barrier.

5.4.2 Pollutant Linkages that Impact Future Long-Term Site Use

Receptor: Human Health

Phenol, PAH's and hydrocarbons maybe present at the site. These contaminants pose a high risk to human health from long-term site use, through the inhalation of soil vapours, as the contaminant moves from the soils and sediments to the vapour and air directly. Dermal contact and dust pathways are not considered to be a risk as the site will predominantly be

covered in hard standing and buildings. The other contaminants identified in Table 5.3 are all recorded as a low or very low risk to humans.

Receptor: Controlled Waters and Ecology

The risk of contamination from the pollution linkages relating to future long-term use are identical as those highlighted within section 5.4.1 of this report.

5.4.3 Risk to Construction Workers during Construction

The risk to workers during construction from the contaminants highlighted within the conceptual model (Table 5.3) is plausible. However, with the relevant health and safety personal protective equipment and a detailed designed ground investigation any risks would be reduced significantly.

6 Engineering and Environmental Issues

6.1 Natural Ground Hazards

The table below summarises the risks to the site from natural ground hazards.

Hazard	Risk
Settlement/consolidation	Moderate
Running sands	Moderate
Slope stability	Low
Shrinking/swelling clays	Low, however the sediments are of a compressible nature
Ground dissolution	No Hazard

6.2 Mining Hazards

The site is in an area that is not affected by coal mining. Additionally, there is no evidence of metalliferous mining in the area of the site. However, 3 BGS Recorded Mineral Sites are recorded within 1km, all relate to marine sands and gravels and are located 612m north-east, 667m north and 870m east.

6.3 Groundwater

Without specific ground investigation data the condition and level of groundwater is undetermined. However, perched ground water may be encountered in shallow excavations and deeper intrusive works in the extensive made ground.

6.4 Excavations

It is likely that extensive deposits of Made Ground underlay the site. The presence and nature of any made ground is predominately unknown at present without data from a detailed ground investigation.

Made ground is likely to be highly variable and hence stability will be unpredictable. Where insitu natural materials are encountered during excavations they are expected to be stable in shallow excavations; however support of the excavation sides will be required as a pre-caution to

prevent collapse. Alternatively, if there is sufficient space the side slopes could be constructed to a safe angle or battered back by benching. Standing water may be encountered at shallow depths which together with rainfall infiltrations can affect stability of excavations.

6.5 Foundations

The site is underlain by estuarine deposits covered by Made Ground to a significant depth. Due to the consolidation nature of the sediments on site based on the historical data traditional strip foundations may not be suitable for founding structures. Therefore, the use of pilled foundations should be considered with the base of the pile seated upon the Mercia Mudstone Group bedrock as a suitable foundation design

6.6 Below Ground Obstructions / Cavities

Made Ground is anticipated to be encountered in significant VOlumes beneath the site. Obstructions and cavities are not expected to be encountered during excavation works.

6.7 Protection of Workers

The risks posed to humans including site and maintenance workers cannot be determined at this stage. This is dependant on the nature of the ground; a detailed assessment will be required after a relevant ground investigation has been carried out. While workers could be exposed to contaminants during construction and excavation works, the risks to site workers can be minimised by appropriate site practices and management measures during the works. It is advisable to ensure that all construction workers are adequately protected (with appropriate Personal Protective Equipment made available) and that a suitable health and safety scheme is adopted during any construction activities. Document HSG (66) "*Protection of workers and the general public development of contaminated land"* published by the HSE (Ref.2) provides further guidance.

6.8 Waste Management

Excavated materials from the site will be classified as waste materials and consideration should therefore be given to a site wide waste management plan.

Due to the introduction of the Landfill Directive in July 2004, waste must be characterised prior to being sent to an appropriately licensed landfill site. Landfills are now categorised into one of three types, inert, non-hazardous and hazardous and can only accept waste that they are licensed for. The characterisation is therefore to ensure that the landfill is suitably licensed to

accept the excavated soil (i.e. the waste) from this site. Since the 30th October 2007 landfills for inert or non-hazardous waste can no longer accept untreated waste.

Surplus soils will have to be classified as waste materials and under the Duty of Care, waste producers have a duty to classify and describe their waste correctly; this includes selecting the most appropriate six digit code from the European Waste Catalogue (EWC).

7 Conclusions and Recommendations

7.1 Conclusions

- The site is located within the Newport Docklands development and is an irregular shaped area of derelict land, earth bunds and scrubland amongst hard standing ground, located on the perimeter road to the west of the docklands site.
- The historical and current land uses have resulted in potential contamination from numerous sources; the contaminants and sources are highlighted within this report.
- The qualitative risk assessment for the site indicates that the impact of current site use on humans is negligible, as there is no current activity on site. The assessment has identified a low long-term risk to humans using the site. However, the risk to humans is high when related to the contaminants phenol, PAH's and hydrocarbons.
- The site overlies a non-aquifer. Whilst this would act as a pathway it is not considered to be at risk itself.
- Risks to controlled waters have been identified from contaminants possibly on site from historic uses as primarily low. However, the risk associated with PAH, hydrocarbons, HCH and acetone are identified as medium due to the nature of the contaminant.
- Risk to Ramsar and SSSI sites are not present as the site is at a significant distance from any ecological listed site. Given the derelict nature of the site, species of flora or fauna may have re-habited the site in recent years.
- The risk to construction workers can be mitigated by the use of appropriate Personal Protective Equipment and the implementation of a suitable health and safety management scheme.
- The Envirocheck report lists potential risks from natural geological hazards as moderate for settlement/consolidation and running sands. However, there is a low risk of slope stability issues and shrinking/swelling of clays. There are no hazards from ground dissolution. Mining hazards and groundwater are not seen to be a hazard, but minimal localised groundwater may be encountered. It is expected that there is no risk from below ground obstructions and cavities, despite the significant layer of made ground. The risks of these ground hazards under structural load should be taken into consideration when designing foundations and planning excavations on site
- Excavated material should be reused on site wherever possible. Any excess materials excavated from site would be classed as waste and as such will need to be disposed of to an appropriate licensed landfill facility.

7.2 Recommendations

In order to design the engineering works necessary for the development of the site and associated works, further information on the site is required. From the information gathered for this study the following recommendations have been drawn:

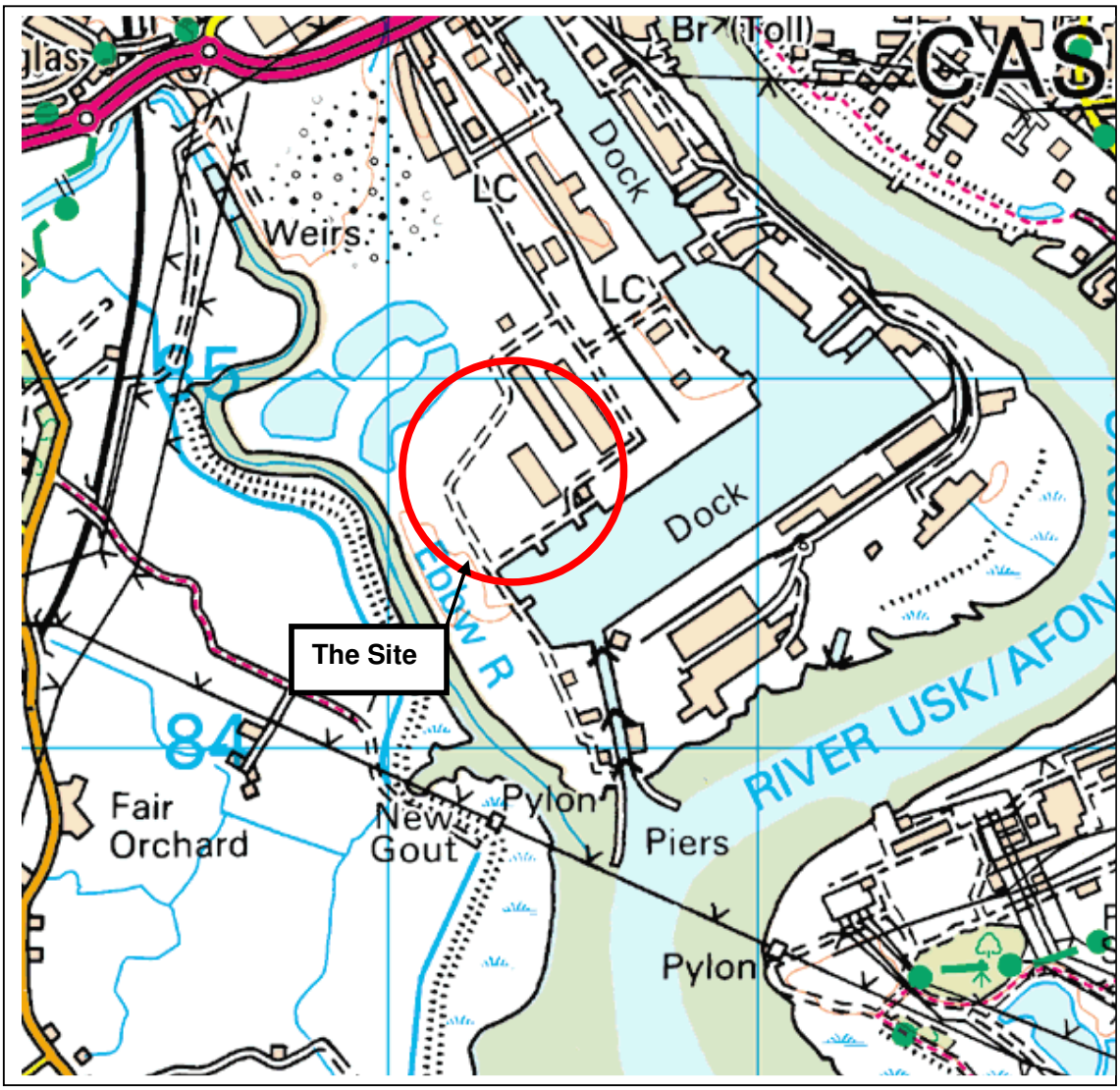
- An appropriate intrusive site investigation should be undertaken in order to obtain information on the geotechnical soil properties, groundwater levels, ground chemistry and contamination levels. The results of the ground investigation will have implications on the engineering foundation design and the construction works.
- The nature of the soil should be ascertained so that appropriate methods for dealing with the excavated materials can be planned and implemented during the construction works and appropriate foundation specifications can be provided.
- Due to the extensive Made Ground on site, piled foundations should be considered in the foundation design.
- A site waste management plan should be developed as part of the on going development, to ascertain what waste streams are present and may become present and how they can be minimised, re-used and or recycled.
- Consent may need to be sought from the Environment Agency if any works are likely to be within 7 m of any water course. Works should be carried out in accordance with PPG5: "*Works in, near or liable to affect water courses"* (Ref.3).

8 References

1. Geological Survey of Great Britain, 1975, Solid and Drift Geological Map, Sheet 249 Scale 1:50,000.
2. HSE, 1991: Protection of workers and the general public during development of contaminated land, guidance. HMSO, London.
3. Environment Alliance. Pollution Prevention Guidance Note 5; Works in, near or liable to affect watercourses.

Figure

Figure 1 – Site Location Plan



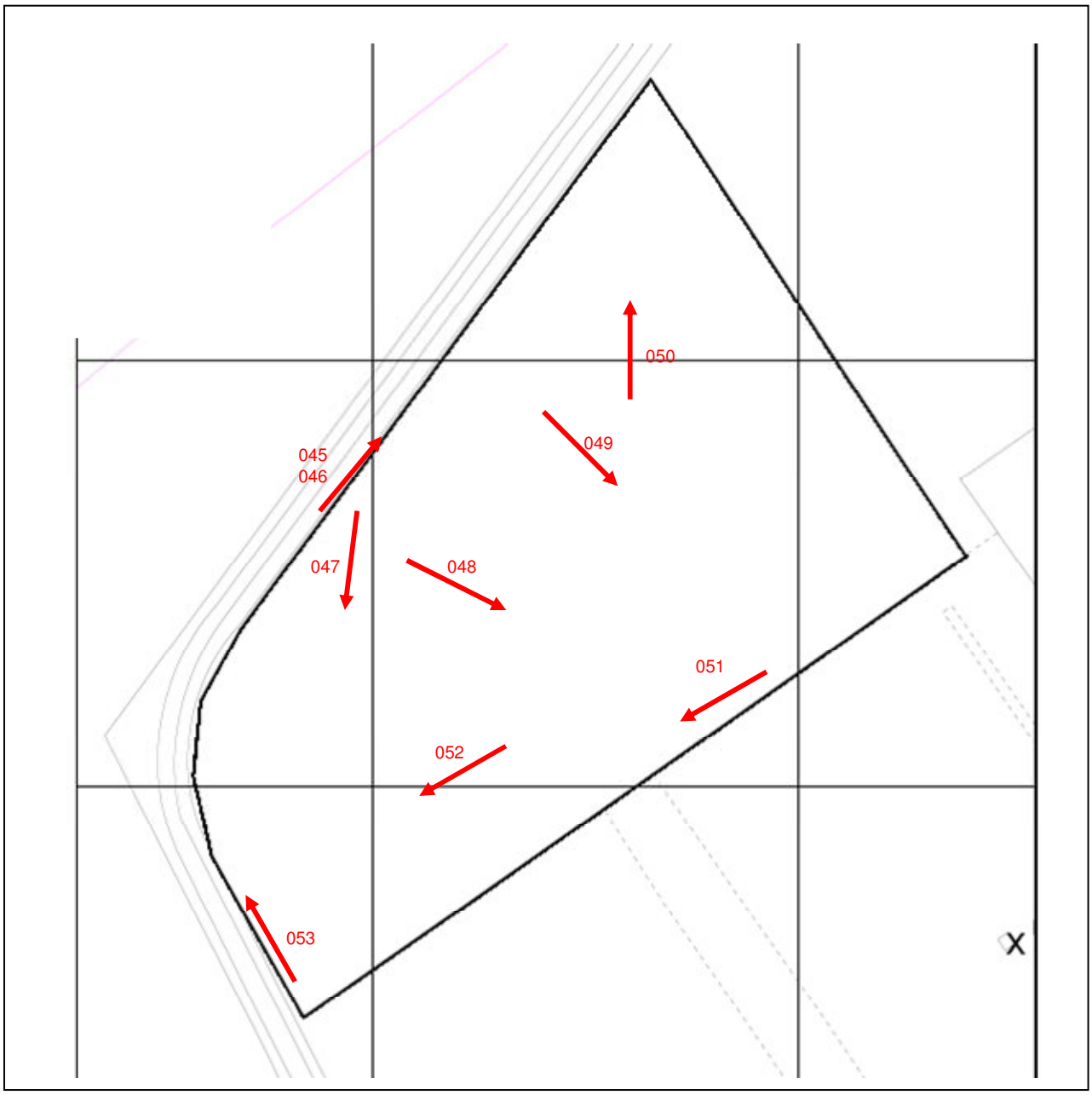
National Grid Reference: 331500,184500

Client **VO-Gen Energy Limited**	**Project** Bio-fuel Site	Hyder Consulting	Hyder Consulting Ltd HCL House Fortran Road Cardiff CF3 0EY Tel: 02920 925000 Fax: 02920 925222
	Title Site Location Plan		
Scale 1:50,000	Datum	Project Code NE33910	Drawing No Figure 1
			Issue 1

Appendices

Appendix A

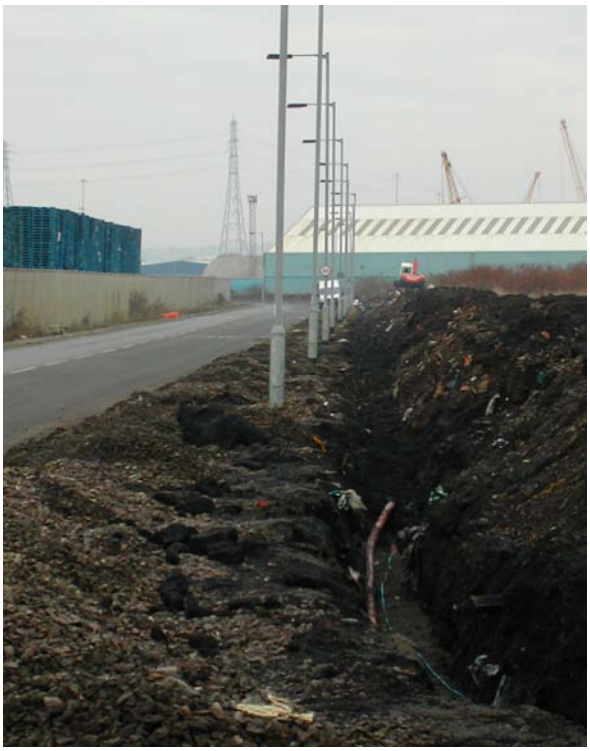
Photographs of Site



Photograph Location and Direction Taken

048 Photograph Number

Client **VO-Gen Energy Limited**	**Proiect** Bio-fuel Site	Hyder Consulting Ltd HCL House Fortran Road Cardiff CF3 0EY Tel: 02920 925000 Fax: 02920 925222
	Title Photograph Location Plan	Proiect Code NE33910



Photograph 45: Taken looking north-east along the perimeter road and site boundary.

Photograph 46: Taken looking north-east along the perimeter road and site boundary. Photogarph shows composition of made ground

Photograph 47: Taken looking south into the site, from the north boundary.

Photograph 48: Taken looking south-east into the site, from the north boundary.

Photograph 49: Taken looking south into the site, from the north corner. Photograph indicates standing water and surface conditions.

Photograph 50: Taken looking north towards the north corner. photograph indicates standing water and surface conditions.

Photograph 51: Taken looking south-west into the site from the southern boundary. Photograph indicates standing water and surface conditions.

Photograph 52: Taken looking south-west into the site.

Photograph 53: Taken looking north-west along the perimeter road and site boundary. Photograph indicates ground conditions and buried services.

Appendix B

Envirocheck Datasheets

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
23849817_1_1

Customer Reference:
NE033910

National Grid Reference:
331250, 184750

Slice:
A

Site Area (Ha):
2.03

Search Buffer (m):
1000

Site Details:

Site at
Newport
Newport

Client Details:

Mr G Swains
Hyder Consulting Ltd
HCL House
St. Mellons Business Park
St Mellons
Cardiff
CF3 0EY

Contents

Introduction

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

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

Report Version v31.0

Envirocheck®
A Landmark service

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1		10	5	90
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control	pg 27			1	
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 27			2	7
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 28		Yes		
Pollution Incidents to Controlled Waters	pg 28				4
Prosecutions Relating to Authorised Processes					
Prosecutions Relating to Controlled Waters					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register	pg 29				1
Water Abstractions	pg 29				(*3)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 30	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences	pg 30		Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 30		Yes	n/a	n/a
Areas Benefiting from Flood Defences	pg 30		Yes	n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences	pg 30		Yes	n/a	n/a
Waste					
BGS Recorded Landfill Sites	pg 31			1	
Historical Landfill Sites	pg 31	2	1	2	3
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)	pg 32		1		
Licensed Waste Management Facilities (Locations)	pg 33		1	2	1
Local Authority Recorded Landfill Sites					
Registered Landfill Sites	pg 34	3	2	2	4
Registered Waste Transfer Sites	pg 39				1
Registered Waste Treatment or Disposal Sites	pg 39				1

Envirocheck®
A Landmark service

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)	pg 40		1		
Explosive Sites	pg 40				1
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents	pg 40		1		1
Planning Hazardous Substance Enforcements					
Geological					
BGS Recorded Mineral Sites	pg 41				3
BGS 1:625,000 Solid Geology	pg 41	Yes	n/a	n/a	n/a
Brine Compensation Areas			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Natural and Mining Cavities					
Potential for Collapsible Ground Stability Hazards				n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 41	Yes		n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards		Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 42	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 42	Yes		n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Shallow Mining Hazards				n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 43			1	27
Fuel Station Entries					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites	pg 46			2	
Sites of Special Scientific Interest	pg 46			2	1
Special Areas of Conservation	pg 46				1
Special Protection Areas	pg 46			2	

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Project Manager Property Type: Sawmilling Of Wood Location: Finnforest Bbh Ltd Newport, Alexandra Dock, South Wales, Np20 2wa Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An0397001 Permit Version: 1 Effective Date: 15th June 2006 Issued Date: 15th June 2006 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: The River Ebbw **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A13SW (SW)	163	1	331002 184650
1	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Abp Bulk Cargo North Side South, North Side South Dock, Alexandra Dock, Newport, Np20 2uw Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An0395201 Permit Version: 1 Effective Date: 2nd March 2006 Issued Date: 2nd March 2006 Revocation Date: Not Supplied Discharge Type: Trade Discharges - Site Drainage Discharge Environment: Freshwater Stream/River Receiving Water: The River Ebbw **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A13SW (SW)	164	1	331002 184648
1	**Discharge Consents** Operator: Iaws Fertilisers (Uk) Ltd Property Type: Fertilisers Location: Iaws Fertilisers South Dock Newport, Iaws Fertilisers (Uk) Ltd, North Side, South Dock, Alexandra Docks Newport, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An0389201 Permit Version: 1 Effective Date: 21st October 2005 Issued Date: 21st October 2005 Revocation Date: Not Supplied Discharge Type: Trade Discharges - Site Drainage Discharge Environment: Freshwater Stream/River Receiving Water: The River Ebbw **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A13SW (SW)	164	1	331002 184649
2	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033343 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Ebbw **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A13NW (N)	190	1	331150 185020

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
2	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033343 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Ebbw **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A13NW (N)	190	1	331150 185020
2	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Port Of Newport Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AB0055401 Permit Version: 2 Effective Date: 14th June 1994 Issued Date: 14th June 1994 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Ebbw **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A13NW (N)	214	1	331150 185050
2	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Port Of Newport Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: Ab0055401 Permit Version: 1 Effective Date: 22nd February 1967 Issued Date: 22nd February 1967 Revocation Date: 13th June 1994 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Ebbw **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A13NW (N)	214	1	331150 185050
3	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033301 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 6th March 1995 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A13SE (SE)	212	1	331520 184640

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033302 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A13SE (E)	215	1	331530 184650
3	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033302 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A13SE (E)	215	1	331530 184650
4	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newprt, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033303 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A14SW (E)	395	1	331740 184750
4	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newprt, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033303 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A14SW (E)	395	1	331740 184750

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	**Discharge Consents** Operator: The Company Secretary Property Type: Metal Recycling Sites (mixed) Location: Metal Recycling Site Sims Group Uk, Sims Group Uk Ltd, North Side South Dock, Alexandra Docks, Np20 2we Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An0364401 Permit Version: 1 Effective Date: 12th June 2004 Issued Date: 12th June 2004 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Saline Estuary Receiving Water: North Side South Dock **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A14NW (E)	405	1	331750 184760
5	**Discharge Consents** Operator: Newport Borough Council Property Type: Unspecified Tip Location: Maesglas Waste Disposal Site, Newport Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: Ac0130701 Permit Version: 1 Effective Date: 25th June 1981 Issued Date: 25th June 1981 Revocation Date: 21st October 1993 Discharge Type: Waste Site - Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Ebbw **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A18SW (NW)	424	1	331000 185200
6	**Discharge Consents** Operator: Associated British Ports Property Type: Undefined Or Other Location: Newport Docks , . Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033350 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 19th April 1993 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A17SE (NW)	468	1	330870 185120
7	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033342 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 6th March 1995 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	510	1	331620 184330

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	**Discharge Consents** Operator: Operations Manager Property Type: Household, Commercial and Industrial Waste Landfills Location: Docks Way Landfill Site Newport, Docksway Landfill Site, Docksway, Newport, Gwent, Np20 2ns Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An0394301 Permit Version: 1 Effective Date: 18th September 2006 Issued Date: 18th September 2006 Revocation Date: Not Supplied Discharge Type: Trade Discharges - Site Drainage Discharge Environment: Freshwater Stream/River Receiving Water: The Tidal River Ebbw **Status:** **New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A17SE (NW)	540	1	330818 185170
9	**Discharge Consents** Operator: Associated British Ports Property Type: Undefined Or Other Location: Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033341 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 7th October 1992 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status:** **Consent expired** Positional Accuracy: Located by supplier to within 10m	A14SW (SE)	540	1	331780 184440
10	**Discharge Consents** Operator: Environment Manager Property Type: Household, Commercial and Industrial Waste Landfills Location: Newport Waste Disposal Site Npt, Phase 2, Newport Waste Disposal Site, Docksway, Newport, Np20 2ns Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An0401301 Permit Version: 1 Effective Date: 1st September 2006 Issued Date: 1st September 2006 Revocation Date: Not Supplied Discharge Type: Trade Discharges - Site Drainage Discharge Environment: Freshwater Stream/River Receiving Water: The Tidal River Ebbw **Status:** **New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A12NE (W)	547	1	330618 184802
11	**Discharge Consents** Operator: Sims Group Uk Limited Property Type: Support Services - Sea Transport Location: South Dock (North Side) Newport, Alexandra Docks, Newport Cbc Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0261501 Permit Version: 1 Effective Date: 6th December 1995 Issued Date: 6th December 1995 Revocation Date: Not Supplied Discharge Type: Trade Effluent Discharge Environment: Saline Estuary Receiving Water: Estuarial Waters Of South Dock **Status:** **New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A14NW (E)	568	1	331880 184950

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033304 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 11th December 1992 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A14NW (E)	576	1	331910 184870
13	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033306 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 14th June 1995 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	590	1	331820 185110
13	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033307 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 14th June 1995 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	595	1	331800 185150
14	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033308 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	592	1	331790 185160

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
14	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033308 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	592	1	331790 185160
15	**Discharge Consents** Operator: Company Secretary Property Type: Metal Recycling Sites (mixed) Location: Simsmetal Northside South Dock, Simsmetal Uk Ltd, Northside, South Dock, Alexandra Dock Newport, Np20 2we Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An0325702 Permit Version: 2 Effective Date: 8th April 2004 Issued Date: 7th April 2004 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Estuary Receiving Water: South Dock, Newport Docks **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	594	1	331762 185206
15	**Discharge Consents** Operator: Company Secretary Property Type: Metal Recycling Sites Location: Simsmetal Northside South Dock, Simsmetal Uk Ltd, Northside, South Dock, Alexandra Dock Newport, Np20 2we Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An0325701 Permit Version: 1 Effective Date: 30th July 2002 Issued Date: 30th July 2002 Revocation Date: Not Supplied Discharge Type: Trade Discharges - Site Drainage Discharge Environment: Freshwater Estuary Receiving Water: South Dock, Newport Docks **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	594	1	331762 185206
15	**Discharge Consents** Operator: Company Secretary Property Type: Metal Recycling Sites Location: Simsmetal Northside South Dock, Simsmetal Uk Ltd, Northside, South Dock, Alexandra Dock Newport, Np20 2we Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An0325702 Permit Version: 1 Effective Date: 30th July 2002 Issued Date: 30th July 2002 Revocation Date: 7th April 2004 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Estuary Receiving Water: South Dock, Newport Docks **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	594	1	331762 185206

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
16	**Discharge Consents** Operator: Severn Sands Ltd Property Type: Support Services - Sea Transport Location: Premises At Newport Dock, Newport, Newport Cbc Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033309 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	624	1	331760 185260
16	**Discharge Consents** Operator: Severn Sands Ltd Property Type: Support Services - Sea Transport Location: Premises At Newport Dock, Newport, Newport Cbc Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033309 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	624	1	331760 185260
17	**Discharge Consents** Operator: Newport Borough Council Property Type: Undefined Or Other Location: Meaesglas Disused Tip Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: Ac0133401 Permit Version: 1 Effective Date: 8th December 1981 Issued Date: 8th December 1981 Revocation Date: 29th April 1993 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Ebbw Estuary **Status: Consent expired** Positional Accuracy: Manually corrected supplier location	A17SE (NW)	624	1	330780 185260
18	**Discharge Consents** Operator: Associated British Ports Property Type: Undefined Or Other Location: Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033340 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 7th October 1992 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A14SE (E)	628	1	331940 184560

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
19	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033310 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 14th June 1995 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	643	1	331690 185360
20	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033305 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A14NE (E)	667	1	331970 184990
20	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033305 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A14NE (E)	667	1	331970 184990
21	**Discharge Consents** Operator: Jewson Ltd Property Type: Wholesale Distribution Of Timber Location: Jewson Ltd Timber Supply Depot Nort, Timber Supply Depot, North Dock, Alexandra Dock Newport, Np20 2wb Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An0374301 Permit Version: 1 Effective Date: 10th December 2004 Issued Date: 10th December 2004 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Saline Estuary Receiving Water: North Dock Newport **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A19NW (NE)	693	1	331611 185477

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
22	**Discharge Consents** Operator: Lg Electronics Wales Ltd Property Type: Undefined Or Other Location: Lg Electronics Wales Ltd Duffryn La, Duffryn Lane Coedkernew Newport, Coedkernew Newport Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An027760101 Permit Version: 1 Effective Date: 23rd February 1998 Issued Date: 22nd February 1998 Revocation Date: 5th August 1998 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: River Ebbw (Estuarial) **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A12NW (W)	708	1	330480 184920
22	**Discharge Consents** Operator: Ir Newport Limited Property Type: Undefined Or Other Location: Wafer-Fab Ltd Cardiff Road Newport, Cardiff Road, Duffryn, Np10 8yj Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0272001 Permit Version: 1 Effective Date: 27th June 1997 Issued Date: 27th June 1997 Revocation Date: 24th November 2006 Discharge Type: Trade Effluent Discharge Environment: Saline Estuary Receiving Water: River Ebbw Estuary **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A12NW (W)	714	1	330480 184940
23	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033311 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 11th December 1992 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A18NE (N)	732	1	331550 185550
23	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033312 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 11th December 1992 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A18NE (N)	753	1	331530 185580

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	**Discharge Consents** Operator: Associated British Ports Property Type: Undefined Or Other Location: Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033320 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 7th October 1992 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	741	1	331820 185370
25	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033321 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	745	1	331880 185300
25	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033321 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	745	1	331880 185300
26	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033338 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A14SE (E)	762	1	332100 184660

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033338 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A14SE (E)	762	1	332100 184660
27	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033339 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A14SE (E)	772	1	332100 184600
27	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033339 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 100m	A14SE (E)	772	1	332100 184600
28	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033344 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: 24th January 1997 Discharge Type: Unspecified Discharge Environment: Into And/Or Watercourse Receiving Water: 20 Acre Reen **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A18NW (N)	775	1	331030 185610

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
28	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033344 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Into And/Or Watercourse Receiving Water: 20 Acre Reen **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A18NW (N)	775	1	331030 185610
29	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Maesglas-Newport Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0031301 Permit Version: 2 Effective Date: 9th January 1993 Issued Date: 9th October 1992 Revocation Date: 8th March 2001 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Ebbw Estuary **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A17SE (NW)	793	1	330600 185300
29	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Maesglas-Newport Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0031301 Permit Version: 1 Effective Date: 20th November 1987 Issued Date: 20th November 1987 Revocation Date: 8th January 1993 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Ebbw Estuary **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 100m	A17SE (NW)	793	1	330600 185300
30	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Port Of Newport, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: Not Given Reference: AC0123702 Permit Version: 2 Effective Date: 14th June 1994 Issued Date: 14th June 1994 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A19SE (NE)	797	1	331950 185290

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
30	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Port Of Newport, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: Ac0123702 Permit Version: 1 Effective Date: 4th March 1980 Issued Date: 4th March 1980 Revocation Date: 13th June 1994 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A19SE (NE)	797	1	331950 185290
31	**Discharge Consents** Operator: Associated British Ports Property Type: Undefined Or Other Location: Newport Docks Accommodation At Sout, Accommodation At South Locks Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: Ac0133601 Permit Version: 1 Effective Date: 20th November 1981 Issued Date: 20th November 1981 Revocation Date: 25th September 1992 Discharge Type: Unspecified Discharge Environment: Unknown Receiving Water: Unspecified **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A8SE (S)	835	1	331580 183910
32	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033337 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A14SE (E)	837	1	332180 184700
32	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033337 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A14SE (E)	837	1	332180 184700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
33	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033322 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A19SE (NE)	844	1	332070 185190
33	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033322 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A19SE (NE)	844	1	332070 185190
34	**Discharge Consents** Operator: Sca Packaging Newport Property Type: Conversion Of Paper & Board Location: Sca Packaging Alexandra Docks, Sca Packaging Newport, Newport, Wales Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: Ab0041901 Permit Version: 2 Effective Date: 27th June 2000 Issued Date: 10th November 1964 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Saline Estuary Receiving Water: River Usk Estuary **Status: Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	847	1	331900 184120
34	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033366 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A9SW (SE)	890	1	331920 184080

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
34	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033366 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A9SW (SE)	890	1	331920 184080
35	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033313 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: 24th January 1997 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: North Dock **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A18NE (N)	848	1	331460 185700
35	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033313 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: North Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A18NE (N)	848	1	331460 185700
36	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Port Of Newport, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: Not Given Reference: AC0123701 Permit Version: 2 Effective Date: 14th June 1994 Issued Date: 14th June 1994 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A19SE (NE)	873	1	332130 185140

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
36	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Port Of Newport, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: Ac0123701 Permit Version: 1 Effective Date: 4th March 1980 Issued Date: 4th March 1980 Revocation Date: 13th June 1994 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A19SE (NE)	873	1	332130 185140
37	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Station - Water Company Location: Maesglas Ps Off Maesglas Av, Maesglas, Newport Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An030030101 Permit Version: 1 Effective Date: 13th October 2000 Issued Date: 13th October 2000 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Saline Estuary Receiving Water: Ebbw Estuary **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A17SW (NW)	876	1	330570 185400
37	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Station - Water Company Location: Maesglas Ps Off Maesglas Av, Maesglas, Newport Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An030030102 Permit Version: 1 Effective Date: 13th October 2000 Issued Date: 13th October 2000 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Saline Estuary Receiving Water: Ebbw Estuary **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A17SW (NW)	876	1	330570 185400
37	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Station - Water Company Location: Maesglas Ps Off Maesglas Av, Maesglas, Newport Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An030030101 Permit Version: 1 Effective Date: 13th October 2000 Issued Date: 13th October 2000 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Saline Estuary Receiving Water: Ebbw Estuary **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A17SW (NW)	876	1	330570 185400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
38	**Discharge Consents** Operator: Associated British Ports Property Type: Undefined Or Other Location: Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033367 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 7th October 1992 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A9SW (SE)	880	1	331780 183990
39	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033331 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	882	1	332010 184180
39	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033331 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A9NE (SE)	882	1	332010 184180
39	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033365 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	887	1	331980 184140

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
39	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033365 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A9NE (SE)	887	1	331980 184140
39	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033332 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	894	1	331970 184120
39	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033332 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A9NE (SE)	894	1	331970 184120
40	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033333 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A9SW (SE)	884	1	331830 184020

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
40	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033333 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A9SW (SE)	884	1	331830 184020
41	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033330 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	884	1	332100 184300
41	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033330 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	884	1	332100 184300
42	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033334 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A9SW (SE)	888	1	331710 183930

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
42	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033334 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A9SW (SE)	888	1	331710 183930
43	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033336 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A14NE (E)	895	1	332240 184760
43	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033336 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A14NE (E)	895	1	332240 184760
43	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033335 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A15NW (E)	936	1	332280 184790

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
43	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033335 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: South Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A15NW (E)	936	1	332280 184790
44	**Discharge Consents** Operator: Sca Packaging Newport Property Type: Support Services - Sea Transport Location: Alexandra Docks Newport, Newport Cbc, Wales Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0267401 Permit Version: 1 Effective Date: 17th October 1996 Issued Date: 17th October 1996 Revocation Date: Not Supplied Discharge Type: Trade Effluent Discharge Environment: Saline Estuary Receiving Water: Usk Estuary **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	932	1	332050 184150
45	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033345 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 11th December 1992 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A18NW (N)	942	1	330980 185770
45	**Discharge Consents** Operator: Neil Smith Property Type: Construction & Repair Of Buildings Location: Laing O Rourke Wales And West Ltd, Westway Road, Newport Dock, Newport, Np20 2wd Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An0364701 Permit Version: 1 Effective Date: 1st July 2004 Issued Date: 30th June 2004 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Trib Of River Ebbw **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A23SW (N)	991	1	330966 185817

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
46	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033319 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 14th June 1995 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A19NW (N)	955	1	331600 185770
47	**Discharge Consents** Operator: Specialist Heavy Engineers Ltd Property Type: Support Services - Sea Transport Location: Premises At Newport Dock, Newport, Gwent, Wales Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033358 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A19NE (NE)	960	1	331970 185530
47	**Discharge Consents** Operator: Specialist Heavy Engineers Ltd Property Type: Support Services - Sea Transport Location: Premises At Newport Dock, Newport, Gwent, Wales Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033358 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A19NE (NE)	960	1	331970 185530
48	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033364 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	964	1	332130 184200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
48	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033364 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A9NE (SE)	964	1	332130 184200
49	**Discharge Consents** Operator: Specialist Heavy Engineers Ltd Property Type: Support Services - Sea Transport Location: Premises At Newport Dock, Newport, Newport Cbc, Wales Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033324 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A19NE (NE)	967	1	331930 185580
49	**Discharge Consents** Operator: Specialist Heavy Engineers Ltd Property Type: Support Services - Sea Transport Location: Premises At Newport Dock, Newport, Newport Cbc, Wales Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033324 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A19NE (NE)	967	1	331930 185580
49	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033357 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 11th December 1992 Discharge Type: Unspecified Discharge Environment: Saline Estuary Receiving Water: Severn Estuary **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A19NE (NE)	988	1	331940 185600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
49	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033356 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A19NE (NE)	997	1	331930 185620
49	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033356 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A19NE (NE)	997	1	331930 185620
50	**Discharge Consents** Operator: The Managing Director Property Type: Domestic Property (Single) Location: Finnforest Bbh Ltd Alexandra Docks, Alecandra Docks, Newport, Gwent, Np20 2wa Authority: Environment Agency, Welsh Region Catchment Area: Not Supplied Reference: An0336701 Permit Version: 1 Effective Date: 22nd August 2003 Issued Date: 22nd August 2003 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Lake/Reservoir - with outlet Receiving Water: North Dock Of Newport Docks **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A23SE (N)	971	1	331360 185840
50	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033314 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: 24th January 1997 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: North Dock **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A23SE (N)	981	1	331360 185850

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
50	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033314 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Tidal Waters Receiving Water: North Dock **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A23SE (N)	981	1	331360 185850
51	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033325 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A19NE (NE)	974	1	332040 185470
51	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Gwent, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033325 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A19NE (NE)	974	1	332040 185470
51	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: AN0033359 Permit Version: 2 Effective Date: 3rd February 1993 Issued Date: 3rd November 1992 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A19NE (NE)	994	1	332080 185450

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
51	**Discharge Consents** Operator: Associated British Ports Property Type: Support Services - Sea Transport Location: Premises At Newport Docks, Newport, Newport Cbc, Wales, Np20 2np Authority: Environment Agency, Welsh Region Catchment Area: River Usk (Afon Wysg) Reference: An0033359 Permit Version: 1 Effective Date: 10th September 1987 Issued Date: 10th September 1987 Revocation Date: 2nd February 1993 Discharge Type: Unspecified Discharge Environment: Freshwater Stream/River Receiving Water: River Usk **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A19NE (NE)	994	1	332080 185450
52	**Integrated Pollution Prevention And Control** Name: Newport City Council Location: Docksway Landfill - Area 2, Docksway Disposal Site - Phase 2, Maesglas, Newport, NP20 2NS Authority: Environment Agency, Welsh Region Permit Reference: MP3730MJ Original Permit Ref: Dp3733bk Effective Date: 10th May 2007 **Status: Effective** Application Type: Variation App. Sub Type: Minor Positional Accuracy: Located by supplier to within 100m Activity Code: 1.1 A(1) (A) Activity Description: Combustion; Any Fuel Greater Or Equal To 50Mw Primary Activity: N Activity Code: 5.2 A(1) (A) Activity Description: Waste Landfilling; Greater Than 10 T/D With Capacity Greater Than 25,000T Excluding Inert Waste Primary Activity: Y	A12NE (W)	478	1	330700 184850
53	**Local Authority Pollution Prevention and Controls** Name: Westland Coal Supplies Ltd Location: Alexandra Dock, NEWPORT, Gwent, NP9 2UX Authority: Newport City Council, Public Protection and Environmental Services Permit Reference: 021/05 Dated: 24th March 1994 Process Type: Local Authority Pollution Prevention and Control Description: PG3/5 Coal, coke and coal product processes **Status: Permitted** Positional Accuracy: Manually positioned within the geographical locality	A14NW (NE)	481	2	331700 185095
53	**Local Authority Pollution Prevention and Controls** Name: Rugby Cement Location: East Way Road, Alexandra Dock, NEWPORT, Gwent, NP9 2UX Authority: Newport City Council, Public Protection and Environmental Services Permit Reference: 005/05 Dated: 14th September 1992 Process Type: Local Authority Pollution Prevention and Control Description: PG3/1Blending, packing, loading and use of bulk cement **Status: Permitted** Positional Accuracy: Manually positioned within the geographical locality	A19SW (NE)	484	2	331700 185100
54	**Local Authority Pollution Prevention and Controls** Name: Monmouthshire Timber Supplies LtdPo Box 20 Location: North End, Alexandra Dock, NEWPORT, Gwent, NP9 1AL Authority: Newport City Council, Public Protection and Environmental Services Permit Reference: 020/05 Dated: 18th April 2000 Process Type: Local Authority Pollution Prevention and Control Description: PG6/2 Manufacture of timber and wood-based products **Status: Permitted** Positional Accuracy: Manually positioned to the road within the address or location	A19SW (NE)	606	2	331724 185275
55	**Local Authority Pollution Prevention and Controls** Name: Jewson Internal Suppliers Location: North Dock, Alexandra Dock, NEWPORT, Gwent, NP9 2WB Authority: Newport City Council, Public Protection and Environmental Services Permit Reference: 019/05 Dated: 28th October 1996 Process Type: Local Authority Pollution Prevention and Control Description: PG6/2 Manufacture of timber and wood-based products **Status: Permitted** Positional Accuracy: Manually positioned within the geographical locality	A18NE (N)	636	2	331405 185495

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
56	**Local Authority Pollution Prevention and Controls** Name: Associated British Ports Location: Alexandra Dock, NEWPORT, NP9 2UW Authority: Newport City Council, Public Protection and Environmental Services Permit Reference: 022/05 Dated: 22nd February 1994 Process Type: Local Authority Pollution Prevention and Control Description: PG3/5 Coal, coke and coal product processes **Status:** **Permitted** Positional Accuracy: Manually positioned within the geographical locality	A19SE (NE)	919	2	332113 185264
57	**Local Authority Pollution Prevention and Controls** Name: Finn Forest Location: Alexandra Docks, NEWPORT, Gwent, NP9 2WA Authority: Newport City Council, Public Protection and Environmental Services Permit Reference: 018/05 Dated: 16th August 1993 Process Type: Local Authority Pollution Prevention and Control Description: PG6/2 Manufacture of timber and wood-based products **Status:** **Permitted** Positional Accuracy: Manually positioned to the address or location	A23SE (N)	927	2	331300 185800
57	**Local Authority Pollution Prevention and Controls** Name: Burt Boulton & Haywood Ltd Location: Alexandra Docks, NEWPORT, Gwent, NP9 2WA Authority: Newport City Council, Public Protection and Environmental Services Permit Reference: APA/004/92 Dated: 13th July 1993 Process Type: Local Authority Air Pollution Control Description: PG1/12 Combustion of fuel manufactured from/or comprised of, solid waste in appliances between 0.4-3MW thermal input **Status:** **Application Refused Or Cancelled** Positional Accuracy: Manually positioned to the address or location	A23SE (N)	927	2	331300 185800
58	**Local Authority Pollution Prevention and Controls** Name: Huw R Edwards Location: New Dairy Farm, St Brides , NEWPORT, Gwent, NP1 9SF Authority: Newport City Council, Public Protection and Environmental Services Permit Reference: 024/06 Dated: 8th June 1992 Process Type: Local Authority Pollution Prevention and Control Description: PG6/5 Maggot breeding processes **Status:** **Permitted** Positional Accuracy: Manually positioned to the address or location	A7SE (SW)	928	2	330623 183904
59	**Local Authority Pollution Prevention and Controls** Name: Associated British Ports Location: Alexandra Dock, Atlantic Sheds, NEWPORT, NP9 2UW Authority: Newport City Council, Public Protection and Environmental Services Permit Reference: 023/05 Dated: 23rd November 1994 Process Type: Local Authority Pollution Prevention and Control Description: PG3/5 Coal, coke and coal product processes **Status:** **Permitted** Positional Accuracy: Manually positioned to the address or location	A19SE (NE)	962	2	332200 185200
	Nearest Surface Water Feature	A13NW (NW)	167	-	331086 184910
60	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: NEWPORT, Gwent Authority: Environment Agency, Welsh Region Pollutant: Mud/Clay/Soil Note: Not Supplied Incident Date: 30th May 1995 Incident Reference: 24448 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	520	1	331610 184310

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
61	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Opposite South Dock No 5, Transit Shed Authority: Environment Agency, Welsh Region Pollutant: Industrial Solid Waste Note: Not Supplied Incident Date: 24th May 1991 Incident Reference: 945 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18NE (N)	785	1	331480 185630
62	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Transporter Bridge Pill, NEWPORT Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Not Supplied Incident Date: 8th November 1991 Incident Reference: 1008 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Effluent Discharge Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A15SW (E)	968	1	332300 184600
63	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: NEWPORT Authority: Environment Agency, Welsh Region Pollutant: Farm Effluent/Slurry Note: Not Supplied Incident Date: 14th November 1991 Incident Reference: 1838 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A24SW (N)	984	1	331600 185800
64	**Substantiated Pollution Incident Register** Authority: Environment Agency - Welsh Region, South East Area Incident Date: 12th May 2003 Incident Reference: 157537 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Contaminated Water: Landfill Leachate	A17SE (NW)	816	1	330631 185380
	Water Abstractions Operator: Corus Uk Ltd Licence Number: 20/56/11/0013 Permit Version: 102 Location: Dock Feeder At Pillgwenlly To Whitehead Authority: Environment Agency, Welsh Region Abstraction: Metal: General Use Relating To Secondary Category (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Whitehead Works, Newport Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th April 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A22SE (N)	1314	1	330800 186100

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: British Steel Plc Licence Number: 20/56/11/0013 Permit Version: 101 Location: Dock Feeder At Pillgwenlly To Whitehead Authority: Environment Agency, Welsh Region Abstraction: Metal: General Use Relating To Secondary Category (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Whitehead Works, Newport Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 3rd March 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A22SE (N)	1314	1	330800 186100
	Water Abstractions Operator: Aes East Usk Limited Licence Number: 20/56/11/0022 Permit Version: Not Supplied Location: Location Description Not Available Authority: Environment Agency, Welsh Region Abstraction: Production Of Energy: Non-Evaporative Cooling Abstraction Type: Not Supplied Source: Tidal Daily Rate (m3): 1832000 Yearly Rate (m3): 270000000 Details: River Usk At Newport (Uskmouth Power Station) Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A10SW (SE)	1355	1	332330 183830
	Groundwater Vulnerability Geological Classification: Non Aquifer (Negligibly permeable) - Formations which are generally regarded as containing insignificant quantities of groundwater. However, groundwater flow through such rocks, although imperceptible, does take place and needs to be considered in assessing the risk associated with persistent pollutants Soil Classification: Not classified Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	A13NW (NW)	0	1	331076 184903
	Drift Deposits None				
	Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Boundary Accuracy: As Supplied	A13NE (NE)	49	1	331367 184823
	Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Boundary Accuracy: As Supplied	A13SW (SW)	166	1	331004 184633
	Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Boundary Accuracy: As Supplied	A13NE (NE)	51	1	331370 184820
	Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Boundary Accuracy: As Supplied	A13SW (SW)	166	1	331005 184630
	Areas Benefiting from Flood Defences Type: Area Benefiting from Flood Defences Boundary Accuracy: As Supplied	A13SW (SW)	229	1	330959 184582
	Flood Water Storage Areas None				
	Flood Defences Type: Flood Defences Reference: 1030971000201	A13SW (SW)	230	1	330957 184582

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
65	**BGS Recorded Landfill Sites** Site Name: Maesglas Tip Location: Old Maesglas Rd, NEWPORT, Monmouthshire Authority: British Geological Survey, National Geoscience Information Service Ground Water: Information not available Surface Water: Information not available Geology: N/A Positional Accuracy: Positioned by the supplier Boundary Accuracy: Moderate	A18SW (NW)	406	6	331000 185176
66	**Historical Landfill Sites** Licence Holder: Gwent Haulage Company Limited Location: Eastern Wharf, Newport Name: South Dock Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD15031 First Input Date: 31st January 1976 Last Input Date: 31st December 1990 Specified Waste Type: Deposited Waste included Inert and Industrial Waste EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 6935/0046 BGS Ref: Not Supplied Other Ref: 004/77	A13NW (NW)	0	1	331083 184861
67	**Historical Landfill Sites** Licence Holder: H Wessen Location: Newport South Dock, Newport Name: Old Coal Sidings Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD15053 First Input Date: 31st December 1970 Last Input Date: 31st December 1983 Specified Waste Type: Deposited Waste included Inert and Industrial Waste EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 6935/0032 BGS Ref: Not Supplied Other Ref: 015/77	A13NW (NW)	0	1	331163 184882
68	**Historical Landfill Sites** Licence Holder: Newport County Borough Council Location: Landfill, Newport Name: Docks Way Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD14579 First Input Date: 31st December 1980 Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert, Industrial, Commercial and Household Waste EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 6935/0013 BGS Ref: Not Supplied Other Ref: 066/92	A13NW (NW)	159	1	331067 184912
69	**Historical Landfill Sites** Licence Holder: Volehurst Limited Location: Newport, Gwent Name: Land adjoining Timber Terminal South Docks Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD13884 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert, Industrial and Household Waste EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 6935/0051 BGS Ref: Not Supplied Other Ref: 043/86, 040/86, 6935/0050	A13NW (NW)	268	1	331017 184982

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
70	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Old Maesglas Road, Newport, Monmouthshire Name: Maesglas Tip Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD31202 First Input Date: 30th April 1967 Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Commercial Waste and Liquid Sludge EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: 209 Other Ref: Not Supplied	A18SW (NW)	406	1	331000 185176
71	**Historical Landfill Sites** Licence Holder: Newport County Borough Council Location: Docks Way, Newport, Gwent Name: Docksway Landfill Newport Phase 1 Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD14580 First Input Date: 31st December 1958 Last Input Date: 31st December 1980 Specified Waste Type: Deposited Waste included Inert, Industrial, Commercial and Household Waste, and Liquid Sludge EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 6935/0012 BGS Ref: Not Supplied Other Ref: 066/92	A12NE (NW)	579	1	330710 185089
72	**Historical Landfill Sites** Licence Holder: Associated British Ports / I Fight and Sons Location: Adjoining Timber Terminal North Side, St Brides Wentlooge, Newport, Gwent Name: Lagoon Site Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD13881 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert, Industrial and Household Waste EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 6935/0021 BGS Ref: Not Supplied Other Ref: 042/86	A8SW (S)	645	1	331008 184024
73	**Historical Landfill Sites** Licence Holder: Coslett Contractors Limited Location: South Dock, Newport, Gwent Name: South Dock Phase 1 Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD15034 First Input Date: 30th April 1986 Last Input Date: 30th April 1990 Specified Waste Type: Deposited Waste included Industrial and Household Waste EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 6935/0047 BGS Ref: Not Supplied Other Ref: 039/86	A9NE (E)	980	1	332248 184377
74	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: Docks Way Landfill Licence Number: 30058 Location: Docks Way Landfill, Docks Way, Maesglas, Newport, NP20 2NS Licence Holder: Newport City Council Authority: Environment Agency - Welsh Region, South East Area Site Category: Other Landfill Sites Taking Special Waste Max Input Rate: Not Supplied **Licence Status: Active** Issued 28th February 1992 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A13NW (NW)	130	1	331086 184872

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
75	**Licensed Waste Management Facilities (Locations)** Licence Number: 30273 Location: Westway Road, South Dock, Newport, NP20 2WE Operator Name: Sims Group U K Ltd Operator Location: Sims Group U K Ltd, Westway Road, South Dock, Newport, NP20 2WE Authority: Environment Agency - Welsh Region, South East Area Site Category: Metal Recycling Sites (Mixed) **Licence Status: Modified** Issued: 28th February 2003 Last Modified: 14th June 2004 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A13SE (S)	185	1	331276 184485
76	**Licensed Waste Management Facilities (Locations)** Licence Number: 30305 Location: Sims Group Uk Ltd, North Side, South Dock, Alexandra Dock, Newport, NP20 2WE Operator Name: Sims Group U K Ltd Operator Location: Sims Group Uk Ltd, Long Marston, Stratford Upon Avon, Warwickshire, CV37 8AQ Authority: Environment Agency - Welsh Region, South East Area Site Category: Metal Recycling Sites (Mixed) **Licence Status: Surrendered** Issued: 30th January 2004 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 3rd February 2005 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8NW (S)	254	1	331250 184400
77	**Licensed Waste Management Facilities (Locations)** Licence Number: 30312 Location: Simsgroup U K Ltd, Northside, South Dock, Alexandra Dock, Newport, Gwent, NP20 2WE Operator Name: Simsgroup U K Ltd Operator Location: Simsgroup U K Ltd, Long Marston, Stratford Upon Avon, Warwickshire, CV37 8AQ Authority: Environment Agency - Welsh Region, South East Area Site Category: Metal Recycling Sites (Vehicle Dismantlers) **Licence Status: Modified** Issued: 4th October 2004 Last Modified: 6th February 2007 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	449	1	331641 185126
78	**Licensed Waste Management Facilities (Locations)** Licence Number: 30264 Location: Sims Group U K Ltd, South Dock, Alexandra Dock, Newport, NP20 2WE Operator Name: Sims Group U K Ltd Operator Location: Sims Group U K Ltd, Long Marston, Strafford Upon Avon, Warwickshire, CV37 8AQ Authority: Environment Agency - Welsh Region, South East Area Site Category: Material Recycling Treatment Facilities **Licence Status: Modified** Issued: 1st August 2002 Last Modified: 14th August 2007 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	553	1	331750 185150
	Local Authority Landfill Coverage Name: Newport County Borough Council - Has no landfill data to supply		0	9	332505 180852

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
79	**Registered Landfill Sites** Licence Holder: Volehurst Ltd Licence Reference: 043/86 Site Location: Adj. Timber Terminal, South Docks, Newport, Gwent Licence Easting: 331300 Licence Northing: 184700 Operator Location: Old Esso Depot, Church Street, Newport, Gwent Authority: Environment Agency - Welsh Region, South East Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st May 1986 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Accuracy: Not Applicable Authorised Waste: Building Rubble, Hardcore Similar Inert Material	A13NW (NW)	0	1	331229 184770
80	**Registered Landfill Sites** Licence Holder: Gwent Haulage Company Licence Reference: 004/77 Site Location: Land Adj. No.20 Hoist At South Dock, Newport, Gwent Licence Easting: 331200 Licence Northing: 184700 Operator Location: Eastern Dry Dock, Corporation Road, Newport, Gwent Authority: Environment Agency - Welsh Region, South East Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st June 1981 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Approximate location provided by supplier Boundary Accuracy: Not Applicable Authorised Waste: Foundry Sand Hardcore And Rubble Inert Waste Slag, Boiler/Flue Cleanings	A13NE (NE)	0	1	331358 184894
81	**Registered Landfill Sites** Licence Holder: Ring-A-Bin Ltd Licence Reference: 034/85 Site Location: Old Coal Sidings., South Docks, Newport, Gwent Licence Easting: 331200 Licence Northing: 184600 Operator Location: Unit 5 Latches Wharf, Mill Parade, Newport, Gwent Authority: Environment Agency - Welsh Region, South East Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: Not Supplied Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Accuracy: Not Applicable Authorised Waste: Excavated Natural Materials $ Hardcore And Rubble Inert Waste	A13SW (S)	0	1	331228 184696

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
82	**Registered Landfill Sites** Licence Holder: Welch Construction Services Licence Reference: 040/86 Site Location: Adj. Timber Terminal, South Dock, Newport, Gwent Licence Easting: 331300 Licence Northing: 184600 Operator Location: 15 Broad Quay Road, Stephenson I/E, Newport, Gwent Authority: Environment Agency - Welsh Region, South East Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st May 1986 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Accuracy: Not Applicable Authorised Waste: Building Rubble Similar Inert Material	A13SE (S)	4	1	331266 184694
83	**Registered Landfill Sites** Licence Holder: I Flight & Sons Ltd Licence Reference: 042/86 Site Location: Adj. Timber Terminal (North Side), South Dock, Newport, Gwent Licence Easting: 331200 Licence Northing: 185200 Operator Location: 108 Cae-Perllan Road, Newport, Gwent Authority: Environment Agency - Welsh Region, South East Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st May 1986 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Accuracy: Not Applicable Authorised Waste: Building Rubble Similar Inert Material	A18SW (N)	234	1	331210 185101
84	**Registered Landfill Sites** Licence Holder: H Wesson (Newport) Ltd Licence Reference: 005/77 Site Location: Old Coal Sidings, South Docks, Newport, Gwent Licence Easting: 331800 Licence Northing: 185000 Operator Location: 10 Slade Street, Newport, Gwent Authority: Environment Agency - Welsh Region, South East Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st June 1977 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Accuracy: Not Applicable Authorised Waste: Building Rubble	A14NW (NE)	415	1	331709 184959

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
85	**Registered Landfill Sites** Licence Holder: H Wesson (Newport) Ltd Licence Reference: 015/77 Site Location: Old Coal Sidings, South Docks, Newport, Gwent Licence Easting: 331800 Licence Northing: 185000 Operator Location: 10 Slade Street, Newport, Gwent Authority: Environment Agency - Welsh Region, South East Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: Only waste produced on site Status: Record supersededSuperseded Dated: 1st June 1977 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Accuracy: Not Applicable Authorised Waste: Excavated Natural Materials $ Hardcore And Rubble Inert Waste	A14NW (NE)	415	1	331709 184959

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Registered Landfill Sites				
86	Licence Holder: Newport Waste Disposal Company Ltd Licence Reference: 066/92 Site Location: Docks Way, Maesglas, Newport, Gwent Licence Easting: 330900 Licence Northing: 185500 Operator Location: Civic Centre, NEWPORT, Gwent, NP9 4UR Authority: Environment Agency - Welsh Region, South East Area Site Category: Landfill Max Input Rate: Very Large (Equal to or greater than 250,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Status: Operational as far as is knownOperational Dated: 28th February 1992 Preceded By Licence: 000/77 Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Alkali Metal Oxides/Hydroxides Aluminium Hydroxide Aluminium,Iron & Zinc Oxides Animal Carcasses/Wastes/Hides Asbestos (Cement) Calcium Hydroxide Contaminated Rubbish Dyestuffs Waste Empty Used Containers Fats, Waxes And Greases House. & Com. Baled Waste House. & Com. Pulverised/Composted W. House. & Com. Untreated Waste Incinerator Residues (Household&Comm.) Ind. Non-Haz. Waste Industrial Effluent Treatment Sludge Ion-Exchange Resin Wastes Iron Compounds Latex, Latex/Rubber Sol'Ns/Susp'Ns Medical, Surgical, Veterinary Wastes Mine And Quarry Wastes Mineral Processing Wastes Paint Waste Pharmaceutical/Cosmetic Products Polymeric Mat'L, Finished Prods/Scrap Pressed Cake Fr. Water Reclam.Works. Printing Industry Wastes Scrap Metal, Ferrous & Non-Ferrous Scrap Rubber (Incl.Shredded Tyres) Silt And Dredgings Slag, Boiler/Flue Cleanings Sodium And Calcium Nitrates Sodium/Potassium Carbonates Synthetic Adhesive Wastes Tank Cleaning Sludge Tar, Pitch, Bitumen & Asphalts Used Filter Materials Waste From The Construction Industry Prohibited Waste: Acid Salts Containing Mat'Ls N.O.S. Acid Salts/Sludges - Ph Less Than 5 Any Contam. Waste N.O.S. Highly Flammable Waste Fl.Pt < 20 C Incomplete Dyestuffs Intermediates Medical (Misuse Of Drugs Act '71) Oily Waste Percussive/Explosive/Similar Waste Pumpable Sludges (< 20% Dry Solids) Special Wastes Substances In 76/464/Ec & North Sea 87 Waste Compounds-Carcinogenic Subs.Regs Waste Containing Flammable Solvents Waste Contam. W/Viable Pathogenic Orgs Whole Tyres	A17NE (NW)	728	1	330900 185500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
86	**Registered Landfill Sites** Licence Holder: Newport B.C. Licence Reference: 000/77 Site Location: Docks Way, Maesglas, Newport, Gwent Licence Easting: 330900 Licence Northing: 185500 Operator Location: Civic Centre, NEWPORT, Gwent, NP9 4UR Authority: Environment Agency - Welsh Region, South East Area Site Category: Landfill - with civic amenity Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Record supersededSuperseded Dated: Not Supplied Preceded By Licence: Not Given Superseded By Licence: 066/92 Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Construction And Demolition Wastes; Household + Commercial Waste; Householders Asbestos Waste; Ind. Non-Haz. Non-Toxic Waste Prohibited Waste: Special Wastes	A17NE (NW)	728	1	330900 185500
87	**Registered Landfill Sites** Licence Holder: Cosslett (Contractors) Ltd Licence Reference: 061/90 Site Location: Adj Atlantic Sheds, South Dock, Newport, Gwent Licence Easting: Not Supplied Licence Northing: Not Supplied Operator Location: Bridge Road, Treforest Industrial Estate, Pontypridd, Mid Glamorgan Authority: Environment Agency - Welsh Region, South East Area Site Category: Landfill - with treatment Max Input Rate: Very Large (Equal to or greater than 250,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st November 1990 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Positioned by the supplier Boundary Accuracy: Moderate Authorised Waste: Brick & Concrete Products; Calcium Sulphate Bearing Sludge; Foundry Sandstone (For Screening); Nat'L Stone & Sand; Soil, Subsoil,Excav'N Waste Prohibited Waste: Biodegradable Waste; Poisonous, Noxious, Polluting Wastes	A9NE (SE)	847	1	332104 184386
88	**Registered Landfill Sites** Licence Holder: J Roche Licence Reference: 019/78 Site Location: Atlantis Shipping Site B, Alexandra Docks, Newport, Gwent Licence Easting: 332300 Licence Northing: 184400 Operator Location: As Site Address Authority: Environment Agency - Welsh Region, South East Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: Only waste produced on site Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st May 1978 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Accuracy: Not Applicable Authorised Waste: Excavated Natural Materials $; Hardcore And Rubble; Inert Waste	A14SE (E)	921	1	332205 184431

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
89	**Registered Waste Transfer Sites** Licence Holder: D J Morgan Licence Reference: EAWML30298 Site Location: A1 Skip Hire, West Way Road, Newport Docks, Newport, Gwent Operator Location: Pentre Basket Cottage, Ty Coch Lane, Ty Coch, CWMBRAN, Gwent, NP44 7AD Authority: Environment Agency - Welsh Region, South East Area Site Category: Transfer Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 13th October 2000 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Located by supplier to within 100m Boundary Quality: Not Supplied Authorised Waste: General & Biodegradable Waste - Comprising Glass Household & Similar Commercial/Industrial Waste Inert - Ceramic & Cemented Materials Inert Materials - Comprising Naturally Occurring Rocks & Subsoil Processed/Prepared Mineral Materials (Unused/Uncontaminated) Prohibited Waste: Liquid / Sludge / Wet Wastes Other Waste / Waste Not Otherwise Specified Packaged Waste (Mixed/Unmixed) Special Waste (As In Epa 1990:S62 Of 1996 Regs)	A23SW (N)	991	1	331100 185850
90	**Registered Waste Treatment or Disposal Sites** Licence Holder: Burt Boulton (Timber) Ltd Licence Reference: 028/81 Site Location: Alexandra Docks, NEWPORT, Gwent, NP7 2WA Operator Location: As Site Address Authority: Environment Agency - Welsh Region, South East Area Site Category: Incineration Max Input Rate: Undefined Waste Source Restrictions: Only waste produced on site Licence Status: Site now IPC authorisedAuthorised Dated: 1st January 1981 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Approximate location provided by supplier Boundary Quality: Not Supplied Authorised Waste: Paper/Cardboard Waste Sawdust/Bark Wood Waste/Timber	A23SE (N)	927	1	331300 185800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
91	**Control of Major Accident Hazards Sites (COMAH)** Name: Iaws Fertilisers Uk Ltd Location: Alexandra Dock, West Way Road, South Dock, Newport, NP9 2WZ Reference: 1037655 Type: Lower Tier **Status: Active** Positional Accuracy: Manually positioned to the address or location	A13NE (NE)	249	3	331516 184952
92	**Explosive Sites** Name: Associated British Ports Location: Alexandra Docks, NEWPORT, Gwent, NP20 2UW **Status: Active** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	937	3	331845 185613
93	**Planning Hazardous Substance Consents** Name: Associated British Ports Location: North Side, Alexandra South Dock, NEWPORT, Gwent, NP9 2UW Authority: Newport City Council, Planning Department Application Ref: 96/0240/HSC Hazardous Substance: Ammonium nitrate and ammonium nitrate compounds (where nitrogen content is more than 28% by weight) or aqueous ammonium nitrate solutions (where concentration of ammonium nitrate is more than 90% by weight) Maximum Quantity: 4950 Application date: 13th March 1996 **Decision: New application granted conditionallyGranted** Positional Accuracy: Located by supplier to within 10m	A13NE (NE)	226	4	331487 184955
94	**Planning Hazardous Substance Consents** Name: Associated British Ports Location: Bays R1, R2, R3 & R4, Riverside Bulk, Alexandra Docks, Newport, Gwent, Np20 2uw Authority: Kings Lynn And West Norfolk Borough Council, Planning Control Application Ref: 2/02/1390/Hz Hazardous Substance: Ammonium nitrate and ammonium nitrate compounds (where nitrogen content is more than 28% by weight) or aqueous ammonium nitrate solutions (where concentration of ammonium nitrate is more than 90% by weight) Maximum Quantity: 3500 Application date: 8th August 2002 **Decision: Continuation of consent** Positional Accuracy: Located by supplier to within 10m	A19NW (NE)	861	5	331830 185527

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
95	**BGS Recorded Mineral Sites** Site Name: Newport Wharf Location: Lilleshall Street, Newport, Gwent, Np1 0fb Source: British Geological Survey, National Geoscience Information Service Reference: 10821 Type: Wharf **Status: Ceased** Operator: South Wales Sand & Gravel Operator Location: Uma House, Shopwyke Road, Chichester, West Sussex, Po20 6ad Periodic Type: Quaternary Geology: Marine Deposits Commodity: Marine Sand And Gravel Positional Accuracy: Located by supplier to within 10m	A18SE (NE)	612	6	331539 185423
96	**BGS Recorded Mineral Sites** Site Name: North Dock Location: Lockheadalexandra Docks, Newport, Gwent, Np20 2wz Source: British Geological Survey, National Geoscience Information Service Reference: 19084 Type: Wharf **Status: Active** Operator: Severn Sands Ltd Operator Location: Lockhead, Alexandra Dock, Newport, Gwent, Np20 2wz Periodic Type: Quaternary Geology: Marine Deposits Commodity: Marine Sand And Gravel Positional Accuracy: Located by supplier to within 100m	A18NE (N)	667	6	331500 185500
97	**BGS Recorded Mineral Sites** Site Name: Newport Depot Location: South Dock, Alexandra Dock, Newport, Gwent, Np9 2nq Source: British Geological Survey, National Geoscience Information Service Reference: 10820 Type: Wharf **Status: Ceased** Operator: Rugby Cement Operator Location: Rmc House, Evreux Street, Rugby, Warwickshire, Cv21 2dt Periodic Type: Quaternary Geology: Marine Deposits Commodity: Marine Sand And Gravel Positional Accuracy: Located by supplier to within 100m	A14SE (E)	870	6	332200 184600
	BGS 1:625,000 Solid Geology Description: Triassic mudstones (including Keuper Marl, Dolomitic Conglomerate and Rhaetic)	A13NE (NE)	0	6	331379 184824
	Coal Mining Affected Areas In an area which may not be affected by coal mining				
	Potential for Collapsible Ground Stability Hazards No Hazard				
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A9SW (SE)	0	6	331625 183925
	Potential for Ground Dissolution Stability Hazards No Hazard				
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	0	6	331325 184550
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	118	6	331050 184650
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	127	6	331245 185000
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	151	6	331325 184550
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	189	6	331100 184475
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	201	6	331075 184475

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	216	6	331050 184475
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	223	6	331075 184450
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	228	6	330975 184550
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A9SW (SE)	0	6	331625 183925
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A9SW (SE)	0	6	331625 183925
	Radon Potential - Radon Affected Areas Affected Area: The property is not in a radon affected area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	0	6	331245 185000
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	0	6	331245 185000
	Shallow Mining Hazards No Hazard				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
98	**Contemporary Trade Directory Entries** Name: Sims Metal (Uk) Ltd Location: North Side, South Dock, Alexandra Docks, Newport, Gwent, NP20 2NQ Classification: Scrap Metal Merchants **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NW (NE)	498	-	331756 185039
99	**Contemporary Trade Directory Entries** Name: W T Smith Location: Unit 20,Westway,South Dock,Alexandra Docks, Newport, Gwent, NP20 2NQ Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A14SW (E)	531	-	331867 184666
100	**Contemporary Trade Directory Entries** Name: Severn Sands Ltd Location: Lockhead, Alexandra Dock, NEWPORT, Gwent, NP20 2WZ Classification: Sand, Gravel & Other Aggregates **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A19SW (NE)	555	-	331706 185216
100	**Contemporary Trade Directory Entries** Name: Djv Transport & Forwarding Ltd Location: North Dock,Alexandra Dock, Newport, Gwent, NP20 2WB Classification: Road Haulage Services **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A19SW (NE)	566	-	331720 185216
101	**Contemporary Trade Directory Entries** Name: Freight Movement Ltd Location: Norbulk Terminal,South Dock, Newport, Gwent, NP20 2NQ Classification: Freight Forwarders **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A14NW (NE)	572	-	331844 185038
102	**Contemporary Trade Directory Entries** Name: Snowflake Bristol Ltd Location: North Dock, Alexandra Docks, Newport, Gwent, NP20 2WB Classification: Sawdust & Shavings **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (NE)	651	-	331553 185460
103	**Contemporary Trade Directory Entries** Name: Advanced Power Solutions Ltd Location: Norbulk Terminal, South Dock, Alexandra Docks, NEWPORT, Gwent, NP20 2NQ Classification: Electrical Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NE (SE)	718	-	331957 184384
104	**Contemporary Trade Directory Entries** Name: Pipeline & Metal Coatings Ltd Location: Atlantic Shed, South Dock, Alexandra Docks, Newport, Gwent, NP20 2NQ Classification: Blast Cleaning **Status: Active** Positional Accuracy: Automatically positioned in the proximity of the address	A19SE (NE)	788	-	332013 185176
105	**Contemporary Trade Directory Entries** Name: Newport Joinery Specialist Location: Middle Quay, Alexandra Dock, Newport, Gwent, NP20 2NP Classification: Joinery Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SE (NE)	795	-	331931 185316
105	**Contemporary Trade Directory Entries** Name: F T S Ltd Location: Alexandra Docks, Newport, Gwent, NP20 2NQ Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A19SE (NE)	800	-	331928 185328
106	**Contemporary Trade Directory Entries** Name: Mallett Transport Location: Unit 3 Westway Rd,Alexandra Dock, Newport, Gwent, NP20 2UX Classification: Road Haulage Services **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A18NW (N)	800	-	331170 185667

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
107	**Contemporary Trade Directory Entries** Name: S C A Location: South Dock, Alexandra Docks, Newport, Gwent, NP20 2WE Classification: Packaging & Wrapping Equipment & Supplies **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NE (SE)	819	-	331986 184251
108	**Contemporary Trade Directory Entries** Name: Partnership Freight Management Location: Alexandra Dock, Newport, Gwent, NP20 2NP Classification: Freight Forwarders **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A18NE (N)	850	-	331587 185662
109	**Contemporary Trade Directory Entries** Name: Gwent Commercials Ltd Location: FTS Transport Yard,Westway Rd,Alexandra Dock, Newport, Gwent, NP20 2NQ Classification: Car & Commercial Repairs **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A19SE (NE)	881	-	332119 185179
110	**Contemporary Trade Directory Entries** Name: Specialist Heavy Engineers Plc Location: Alexandra Docks, Newport, Gwent, NP20 2NP Classification: Engineers - General **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	885	-	331863 185531
110	**Contemporary Trade Directory Entries** Name: Specialist Heavy Engineers Plc Location: Alexandra Docks, Newport, Gwent, NP20 2NP Classification: Engineers - General **Status: Active** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	885	-	331863 185531
110	**Contemporary Trade Directory Entries** Name: Bailey C H Ltd Location: Alexandra Docks, Newport, Gwent, NP20 2NP Classification: Ship Builders, Repairs & Fittings **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	919	-	331890 185552
110	**Contemporary Trade Directory Entries** Name: C H Bailey Ltd Location: Alexandra Docks, Newport, Gwent, NP20 2NP Classification: Ship Builders, Repairs & Fittings **Status: Active** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	919	-	331890 185552
111	**Contemporary Trade Directory Entries** Name: Associated British Ports Location: Alexandra Docks, Newport, Gwent, NP20 2UW Classification: Ports, Docks & Harbours **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	937	-	331845 185613
111	**Contemporary Trade Directory Entries** Name: Associated British Ports Location: Alexandra Docks, Newport, Gwent, NP20 2UW Classification: Ports, Docks & Harbours **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	937	-	331845 185613
111	**Contemporary Trade Directory Entries** Name: Reliance Agri-Products Ltd Location: Alexandra Docks, Newport, Gwent, NP20 2UW Classification: Agricultural Merchants **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	937	-	331845 185613
111	**Contemporary Trade Directory Entries** Name: Waybridge Glocom Ltd Location: Alexandra Docks, Newport, Gwent, NP20 2UW Classification: Animal By-Products **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	937	-	331845 185613

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
111	**Contemporary Trade Directory Entries** Name: Westland Coal Supplies Ltd Location: Alexandra Docks, Newport, Gwent, NP20 2UW Classification: Coal & Smokeless Fuel Merchants & Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	937	-	331845 185613
111	**Contemporary Trade Directory Entries** Name: Hargreaves Location: Alexandra Docks, Newport, Gwent, NP20 2UW Classification: Road Haulage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	937	-	331845 185613
111	**Contemporary Trade Directory Entries** Name: Hargreaves Macphail Site Location: Alexandra Docks, Newport, Gwent, NP20 2UW Classification: Coal & Smokeless Fuel Merchants & Distributors **Status: Active** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	937	-	331845 185613
111	**Contemporary Trade Directory Entries** Name: I A W S Ltd Location: north Side,North Dock,Alexandra Dock, Newport, Gwent, NP20 2NP Classification: Fertilisers **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A19NW (NE)	953	-	331859 185622
111	**Contemporary Trade Directory Entries** Name: R & N Components Location: R & N Components,Alexandra Dock, Newport, Gwent, NP20 2NP Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A19NW (NE)	953	-	331828 185646
112	**Contemporary Trade Directory Entries** Name: Burt Boulton & Haywood Location: Alexandra Docks, Newport, Gwent, NP20 2WA Classification: Timber Preservation Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SE (N)	991	-	331334 185862

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
113	**Ramsar Sites** Name: Severn Estuary(Wales) Multiple Area: Y Area (m2): 67680630.31 Source: Countryside Council for Wales Reference: UK11081 Designation Date: 13th July 1995	A8NW (S)	481	8	331154 184165
114	**Ramsar Sites** Name: Severn Estuary Multiple Area: Y Area (m2): 69546840.3 Source: Natural England Reference: UK11081 Designation Date: Not Supplied	A8NW (S)	482	7	331155 184163
115	**Sites of Special Scientific Interest** Name: Gwent Levels - St. Brides Multiple Area: N Area (m2): 13063865.5 Source: Countryside Council for Wales Reference: 34133wep Designation Details: Biological Designation Date: 21st May 1991 Date Type: Notified	A12SE (SW)	273	8	330906 184589
116	**Sites of Special Scientific Interest** Name: Severn Estuary Multiple Area: Y Area (m2): 143037563.24 Source: Countryside Council for Wales Reference: 46133wgx Designation Details: Biological Designation Date: 1st January 1976 Date Type: Renotified	A8NW (S)	439	8	331238 184210
117	**Sites of Special Scientific Interest** Name: River Usk (Lower Usk)/Afon Wysg (Wysg Isaf) Multiple Area: N Area (m2): 5342210.65 Source: Countryside Council for Wales Reference: 142533wea Designation Details: Biological Designation Date: 25th October 1996 Date Type: Notified	A9SW (SE)	871	8	331804 184017
118	**Special Areas of Conservation** Name: River Usk / Afon Wysg Multiple Area: Y Area (m2): 10072072.48 Source: Countryside Council for Wales Reference: Uk0013007 **Status: Designated**	A9SW (SE)	871	8	331804 184017
119	**Special Protection Areas** Name: Severn Estuary(Wales) Multiple Area: Y Area (m2): 67680630.66 Source: Countryside Council for Wales Reference: UK9015022 Designation Date: 13th July 1995	A8NW (S)	481	8	331154 184165
120	**Special Protection Areas** Name: Severn Estuary Multiple Area: Y Area (m2): 69546840.3 Source: Natural England Reference: UK9015022 Designation Date: Not Supplied	A8NW (S)	482	7	331155 184163

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Caerphilly County Borough Council - Environmental Health Department	July 2007	Annual Rolling Update
Newport City Council - Public Protection and Environmental Services	June 2007	Annual Rolling Update
Discharge Consents		
Environment Agency - Welsh Region	October 2007	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Welsh Region	December 2007	As notified
Integrated Pollution Controls		
Environment Agency - Welsh Region	October 2007	Quarterly
Integrated Pollution Prevention And Control		
Environment Agency - Welsh Region	October 2007	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Caerphilly County Borough Council - Environmental Health Department	February 2007	Annual Rolling Update
Newport City Council - Public Protection and Environmental Services	October 2007	Annual Rolling Update
Local Authority Pollution Prevention and Controls		
Caerphilly County Borough Council - Environmental Health Department	February 2007	Annual Rolling Update
Newport City Council - Public Protection and Environmental Services	October 2007	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Caerphilly County Borough Council - Environmental Health Department	February 2007	Annual Rolling Update
Newport City Council - Public Protection and Environmental Services	October 2007	Annual Rolling Update
Nearest Surface Water Feature		
Ordnance Survey	July 2007	Quarterly
Pollution Incidents to Controlled Waters		
Environment Agency - Welsh Region	December 1998	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Welsh Region	December 2007	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Welsh Region	December 2007	As notified
Registered Radioactive Substances		
Environment Agency - Welsh Region	October 2007	Quarterly
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	September 2007	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	October 2006	Annually
Substantiated Pollution Incident Register		
Environment Agency - Welsh Region - South East Area	October 2007	Quarterly
Water Abstractions		
Environment Agency - Welsh Region	October 2007	Quarterly
Water Industry Act Referrals		
Environment Agency - Welsh Region	October 2007	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	January 1999	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable
Source Protection Zones		
Environment Agency - Head Office	April 2005	Variable
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	October 2007	Quarterly

Agency & Hydrological	Version	Update Cycle
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	October 2007	Quarterly
Areas Benefiting from Flood Defences		
Environment Agency - Head Office	October 2007	Quarterly
Flood Water Storage Areas		
Environment Agency - Head Office	October 2007	Quarterly
Flood Defences		
Environment Agency - Head Office	October 2007	Quarterly
Waste	**Version**	**Update Cycle**
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Welsh Region - South East Area	October 2007	As notified
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Welsh Region	October 2007	Quarterly
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - Welsh Region - South East Area	November 2007	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - Welsh Region - South East Area	November 2007	Quarterly
Local Authority Landfill Coverage		
Caerphilly County Borough Council - Environmental Health Department	May 2000	Not Applicable
Newport City Council	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Caerphilly County Borough Council - Environmental Health Department	May 2000	Not Applicable
Newport City Council	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - Welsh Region - South East Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Welsh Region - South East Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Welsh Region - South East Area	March 2003	Not Applicable
Hazardous Substances	**Version**	**Update Cycle**
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	October 2007	Bi-Annually
Explosive Sites		
Health and Safety Executive	August 2007	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Newport City Council - Planning Department	August 2007	Annual Rolling Update
Caerphilly County Borough Council - Planning Department	January 2007	Annual Rolling Update
Planning Hazardous Substance Consents		
Kings Lynn And West Norfolk Borough Council - Planning Control	April 2007	Annual Rolling Update
Newport City Council - Planning Department	August 2007	Annual Rolling Update
Caerphilly County Borough Council - Planning Department	January 2007	Annual Rolling Update

Geological	Version	Update Cycle
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	October 2007	Bi-Annually
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	August 1996	Not Applicable
Coal Mining Affected Areas The Coal Authority - Mining Report Service	January 2006	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Natural and Mining Cavities Peter Brett Associates	December 2005	Variable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	April 2007	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	May 2007	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	May 2007	Annually
Shallow Mining Hazards British Geological Survey - National Geoscience Information Service	August 2002	Not Applicable
Industrial Land Use	**Version**	**Update Cycle**
Contemporary Trade Directory Entries Thomson Directories	August 2007	Quarterly
Fuel Station Entries Catalist Ltd - (Fuel Station Data)	October 2007	Quarterly

Sensitive Land Use	Version	Update Cycle
Areas of Adopted Green Belt		
Newport City Council	May 2006	As notified
Areas of Unadopted Green Belt		
Newport City Council	May 2006	As notified
Areas of Outstanding Natural Beauty		
Countryside Council for Wales	August 2007	Bi-Annually
Environmentally Sensitive Areas		
The National Assembly for Wales - GI Services (Department of Planning & Countryside)	June 2006	Annually
Forest Parks		
Forestry Commission	April 1997	Not Applicable
Local Nature Reserves		
Caerphilly County Borough Council	August 2007	Bi-Annually
Newport City Council	August 2007	Bi-Annually
Marine Nature Reserves		
Countryside Council for Wales	August 2007	Bi-Annually
National Nature Reserves		
Countryside Council for Wales	August 2007	Bi-Annually
National Parks		
The National Assembly for Wales - GI Services (Department of Planning & Countryside)	November 2007	Annually
Nitrate Sensitive Areas		
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	December 2003	Not Applicable
Nitrate Vulnerable Zones		
The National Assembly for Wales - GI Services (Department of Planning & Countryside)	October 2005	Annually
Ramsar Sites		
Countryside Council for Wales	August 2007	Bi-Annually
Natural England	October 2007	Bi-Annually
Sites of Special Scientific Interest		
Countryside Council for Wales	August 2007	Bi-Annually
Special Areas of Conservation		
Countryside Council for Wales	August 2007	Bi-Annually
Special Protection Areas		
Countryside Council for Wales	August 2007	Bi-Annually
Natural England	October 2007	Bi-Annually

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Countryside Council for Wales	
Scottish Natural Heritage	
Natural England	
Health Protection Agency	
Ove Arup	
Peter Brett Associates	

Useful Contacts

Contact	Name and Address	Contact Details
1	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
2	**Newport City Council - Public Protection and Environmental Services** Civic Centre, Newport, Gwent, NP20 4UR	Telephone: 01633 656656 Fax: 01633 232429 Website: www.newport.gov.uk
3	**Health and Safety Executive** HSE Infoline, Caerphilly Business Park, Caerphilly, CF83 3GG	Telephone: 08701 545500 Fax: 02920 859260 Email: hseinformationservices@natbrit.com Website: www.hse.gov.uk
4	**Newport City Council - Planning Department** Civic Centre, Newport, South Wales, NP9 4UR	Telephone: 01633 656656 Fax: 01633 244721 Website: www.newport.gov.uk
5	**Kings Lynn And West Norfolk Borough Council - Planning Control** Kings Court, Chapel Street, Kings Lynn, Norfolk, PE30 1EX	Telephone: 01553 616200 Fax: 01553 691663 Website: www.west-norfolk.gov.uk
6	**British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
7	**Natural England** Northminster House, Northminster Road, Peterborough, Cambridgeshire, PE1 1UA	Telephone: 0845 600 3078 Fax: 01733 455103 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
8	**Countryside Council for Wales** Plas Penrhose, Fford Penrhos, Bangor, Gwynedd, LL57 2LQ	Telephone: 01248 385500 Fax: 01248 355782
9	**Newport City Council** Civic Centre, Newport, South Wales, NP9 4UR	Telephone: 01633 656656 Fax: 01633 244721 Website: www.newport.gov.uk
-	**Health Protection Agency** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 831600 Fax: 01235 833891 Website: www.hpa.org.uk
-	**Landmark Information Group Limited** The Smith Centre, Henley On Thames, Oxfordshire, RG9 6AB	Telephone: 0870 850 6670 Fax: 0870 850 6671 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / SEPA have a charging policy in place for enquiries.

Envirocheck® Geology Report
A Landmark Service

Envirocheck® Report:

Geology 1:50,000 Maps

Order Details:

Order Number:
23849817_1_1

Customer Reference:
NE033910

National Grid Reference:
331250, 184750

Slice:
A

Site Area (Ha):
2.03

Search Buffer (m):
1000

Site Details:

Site at
Newport
Newport

Client Details:

Mr G Swains
Hyder Consulting Ltd
HCL House
St. Mellons Business Park
St Mellons
Cardiff
CF3 0EY

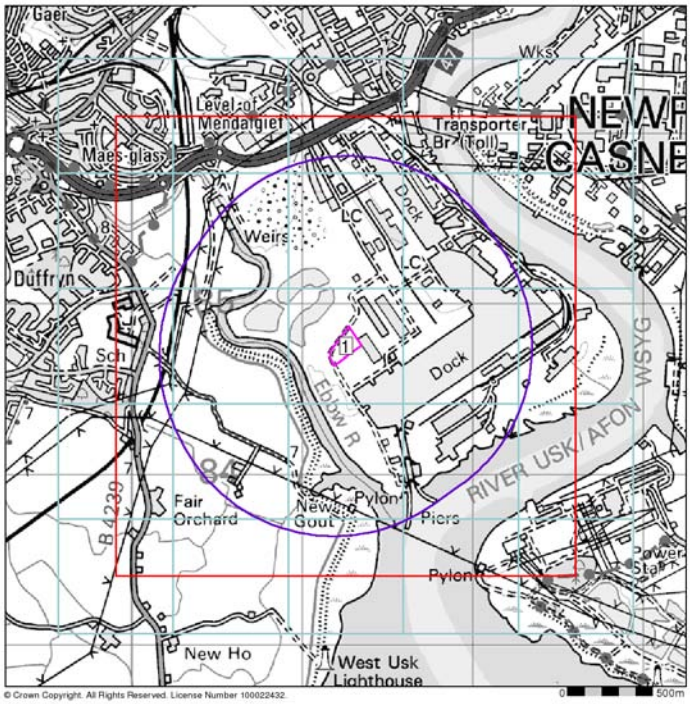
Envirocheck Geology Report
A Landmark Service

Geological Coverage Map

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

The various geological layers - artificial (man-made) and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps. The final map, that of 'Combined Surface Geology', superimposes all these distinct layers into one, producing a map that shows the rocks that occur at the surface just beneath the soil. NOTE: The legend is in chronological order in accordance with the BGS geological age index.

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

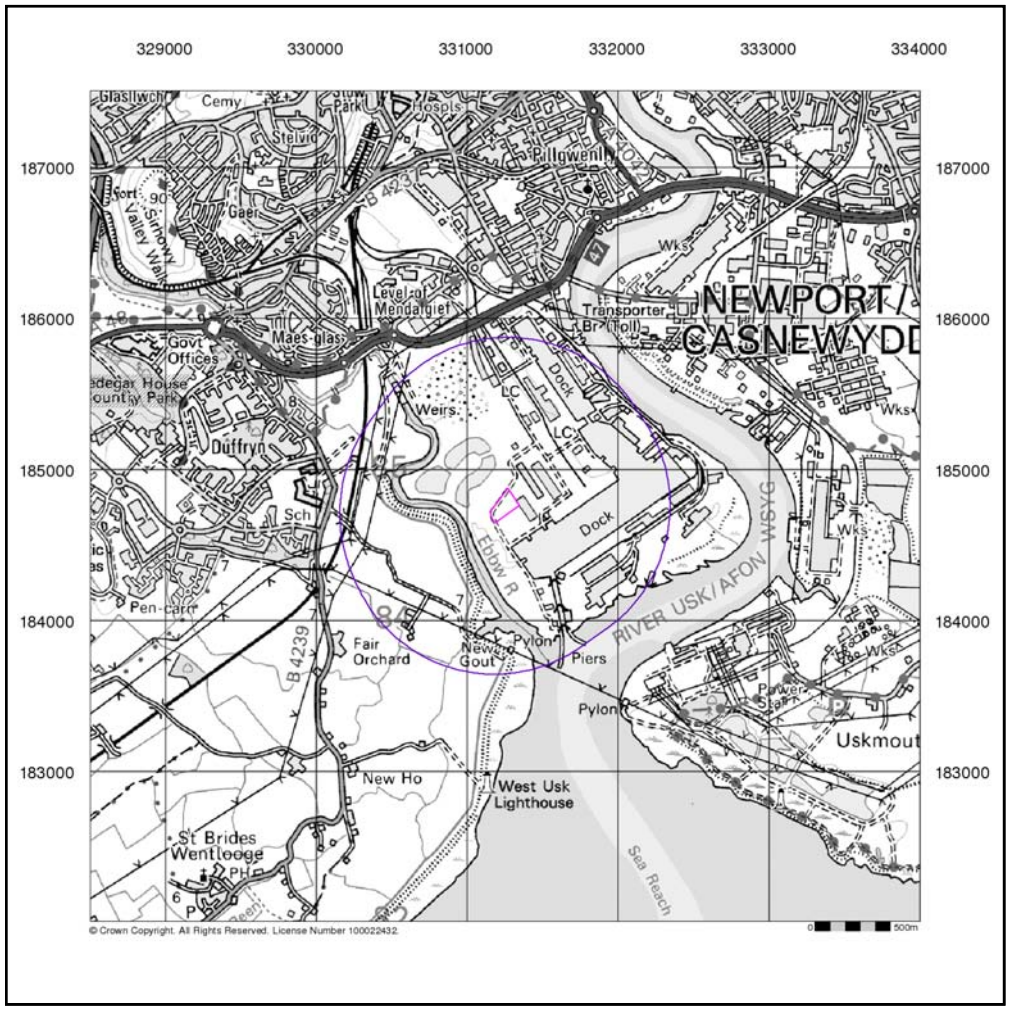


Legend

- 8 — Map ID
- Specified Site
- Specified Buffer
- Slice
- Segment within a Slice

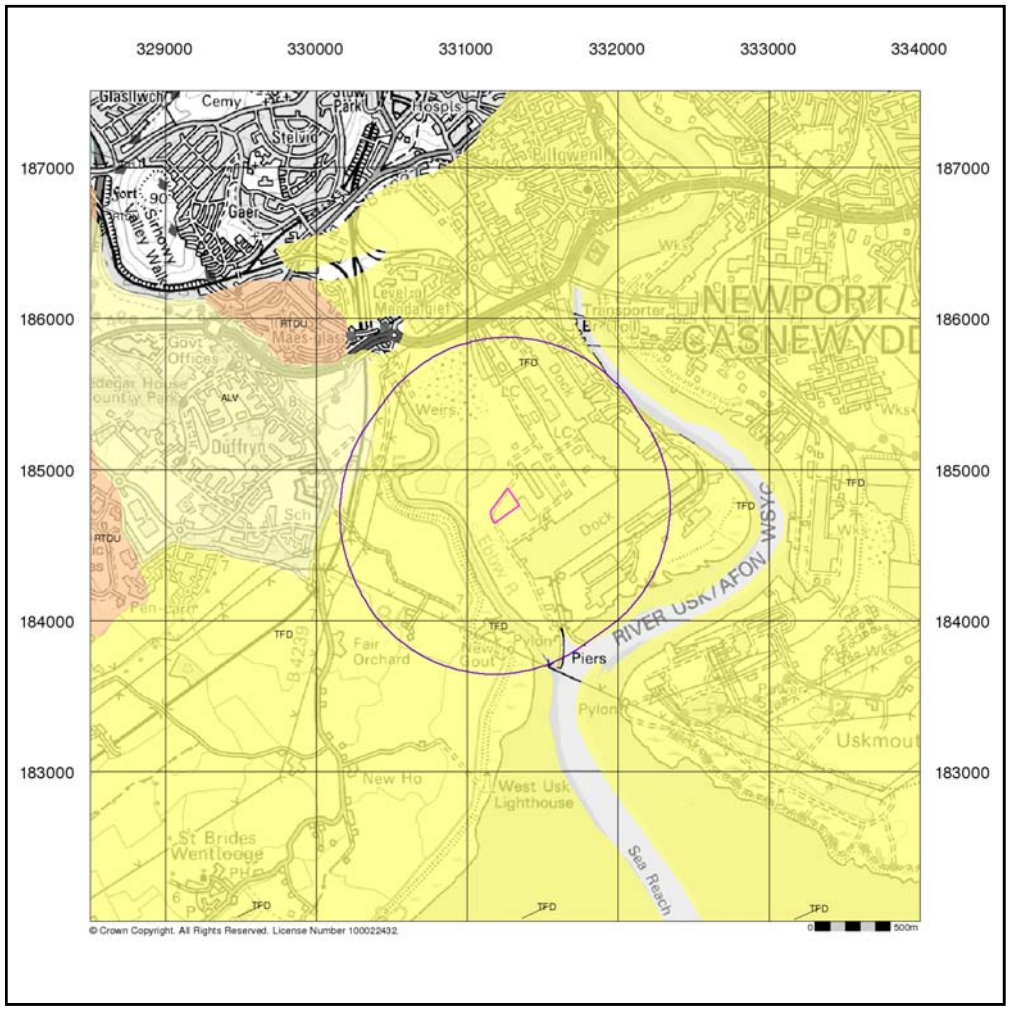
BGS 1:50,000 Geological Mapping Coverage	
Map ID:	1
Map Sheet No:	249
Map Name:	Newport
Map Date:	1975
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Available
Landslip:	Available
Rock Segments:	Available

Artificial Ground and Landslip Map



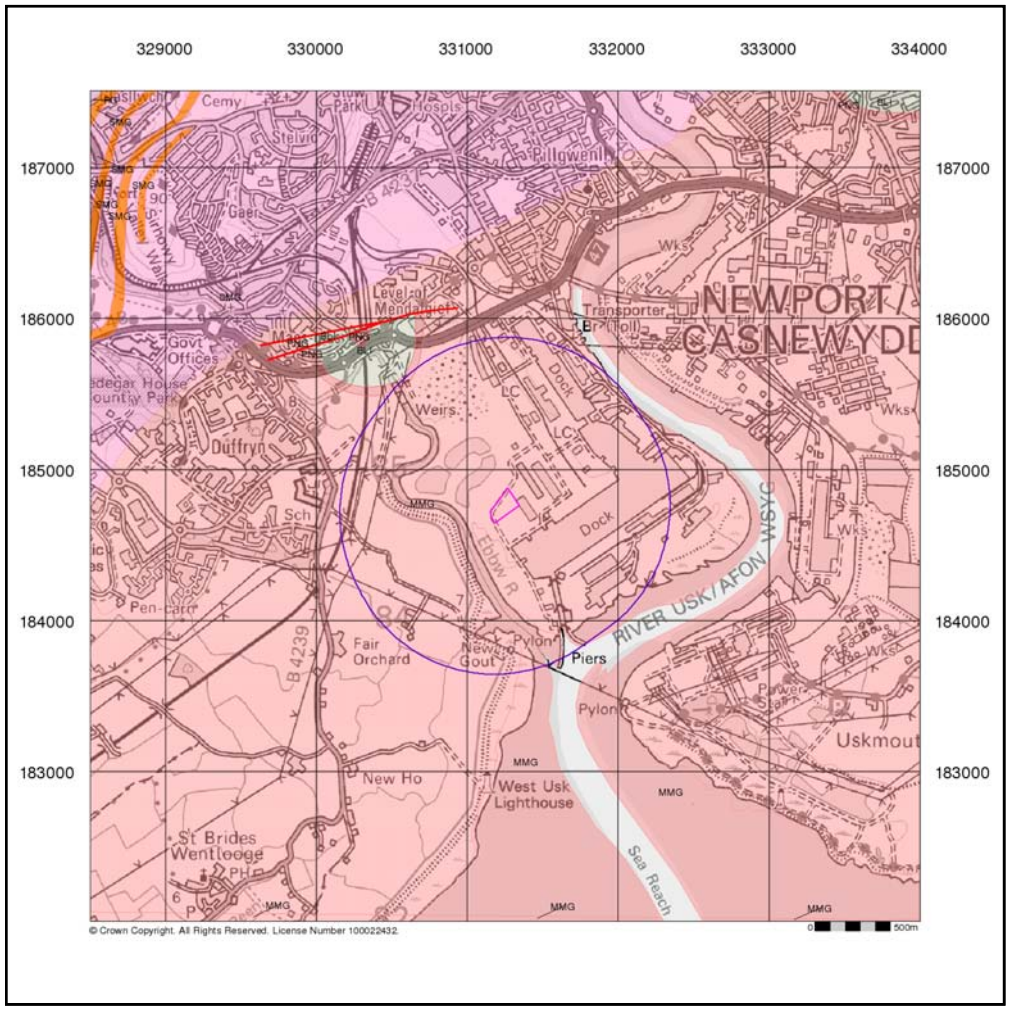
Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age

Superficial Geology Map



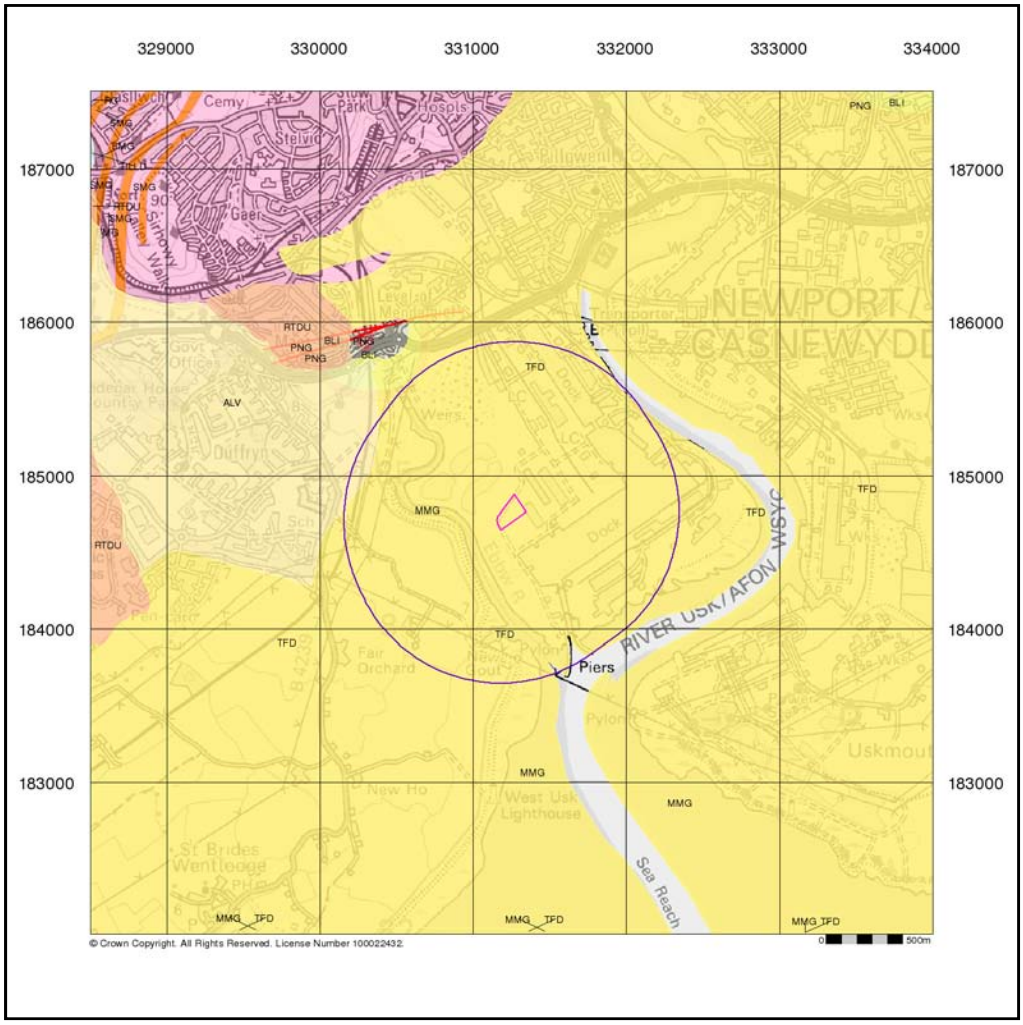
Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	RTDU	River Terrace Deposits (Undifferentiated)	Sand and Gravel	Quaternary - Quaternary
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Quaternary - Quaternary
	TFD	Tidal Flat Deposits	Clay, Silt, Sand and Gravel	Holocene - Holocene
	TFD	Tidal Flat Deposits	Clay, Silt and Sand	Holocene - Holocene
	TFD	Tidal Flat Deposits	Clay and Silt	Holocene - Holocene
	TILLD	Till, Devensian	Diamicton	Devensian - Devensian

Bedrock and Faults Map



Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	PNG	Penarth Group	Mudstone	Rhaetian - Rhaetian
	BLI	Blue Lias Formation	Limestone and Mudstone, Interbedded	Sinemurian - Rhaetian
	MMG	Mercia Mudstone Group	Mudstone	Rhaetian - Scythian
	SMG	St Maughans Formation	Sandstone	Early Devonian - Early Devonian
	SMG	St Maughans Formation	Argillaceous Rocks and [Subequal/Subordinate] Sandstone, Interbedded	Early Devonian - Early Devonian
	RG	Raglan Mudstone Formation	Mudstone and Sandstone, Interbedded	Pridoli - Pridoli
		Faults		

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 - Enquiry Service
British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
Nottinghamshire
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
Email: enquiries@bgs.ac.uk
Website: www.bgs.ac.uk

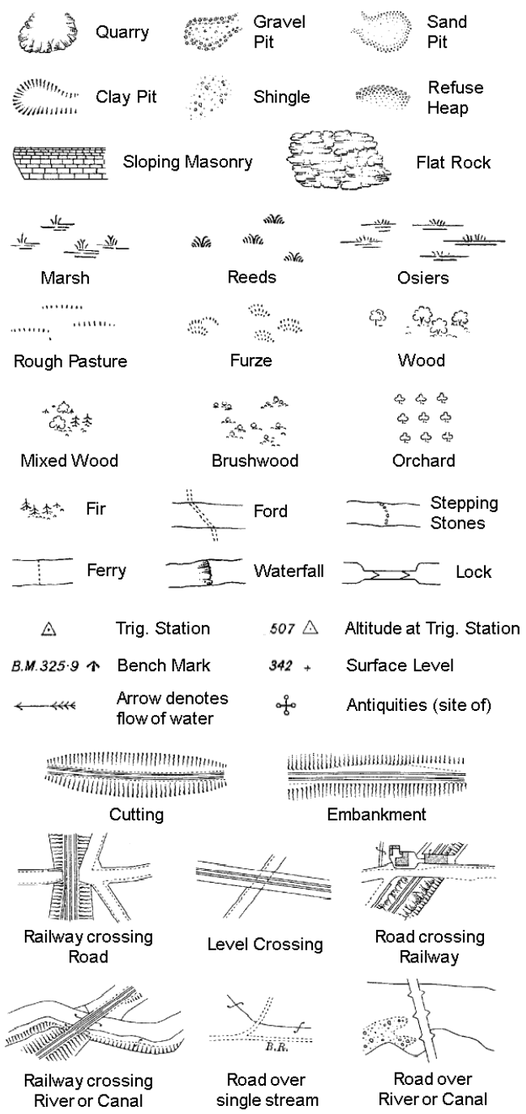
British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Appendix C

Envirocheck Historical Plans

Historical Mapping Legends

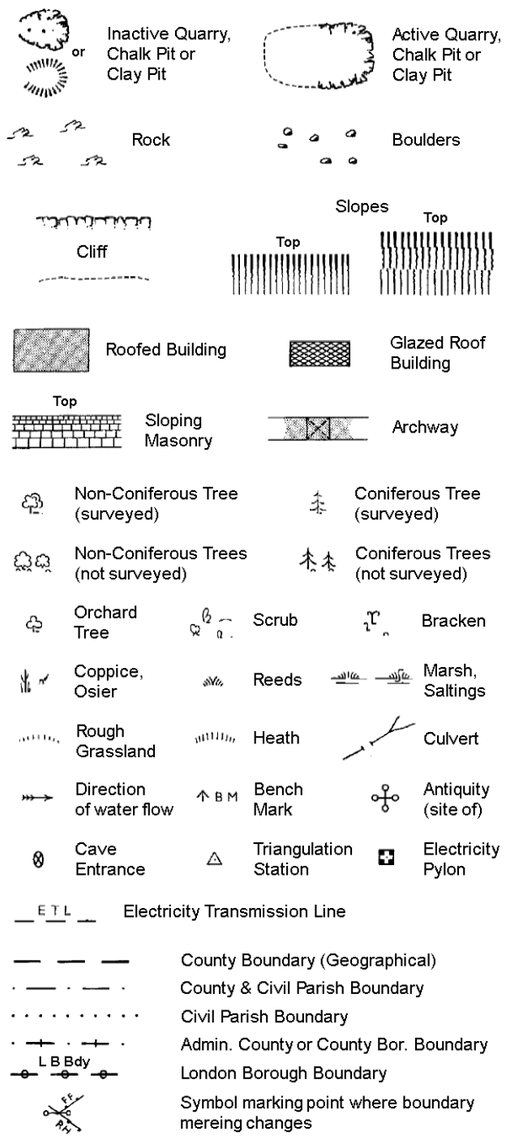
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)

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

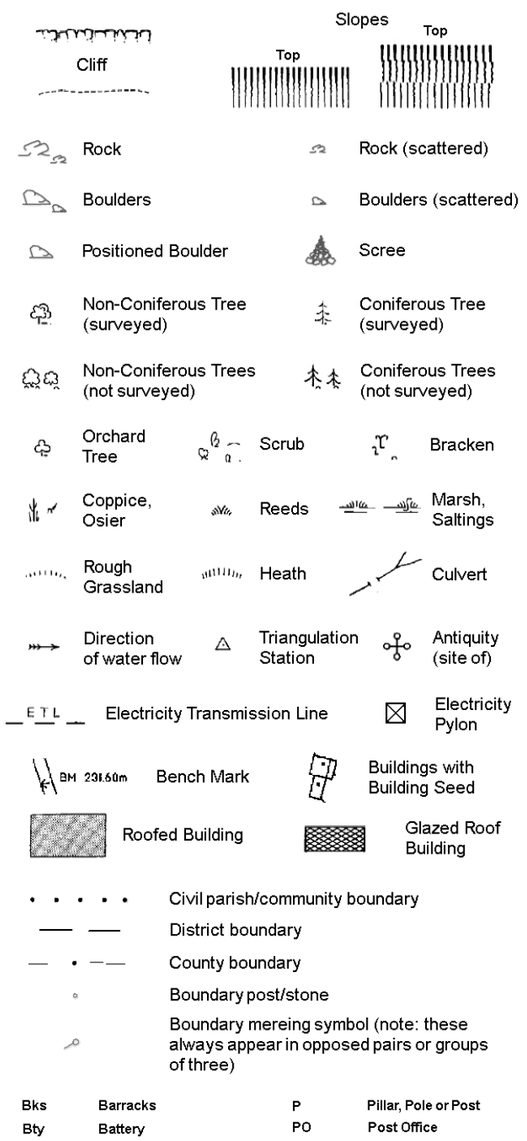
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
L B Bdy 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
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

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



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)

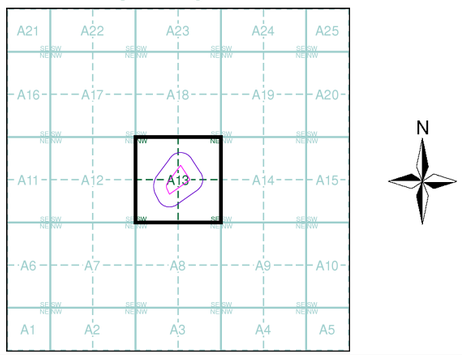
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity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

Envirocheck®
A Landmark service

Ordnance Survey mapping included:

Mapping Type	Scale	Date	Pg
Monmouthshire	1:2,500	1883 - 1884	2
Monmouthshire	1:2,500	1901	3
Monmouthshire	1:2,500	1920 - 1921	4
Monmouthshire	1:2,500	1937	5
Ordnance Survey Plan	1:1,250	1956	6
Ordnance Survey Plan	1:2,500	1956 - 1969	7
Ordnance Survey Plan	1:1,250	1968 - 1972	8
Ordnance Survey Plan	1:2,500	1969 - 1971	9
Supply of Unpublished Survey Information	1:1,250	1974	10
Ordnance Survey Plan	1:1,250	1976	11
Additional SIMs	1:1,250	1986 - 1989	12
Additional SIMs	1:2,500	1989	13
Large-Scale National Grid Data	1:1,250	1992 - 1993	14
Large-Scale National Grid Data	1:2,500	1995	15
Large-Scale National Grid Data	1:1,250	1995	16

Historical Map - Segment A13



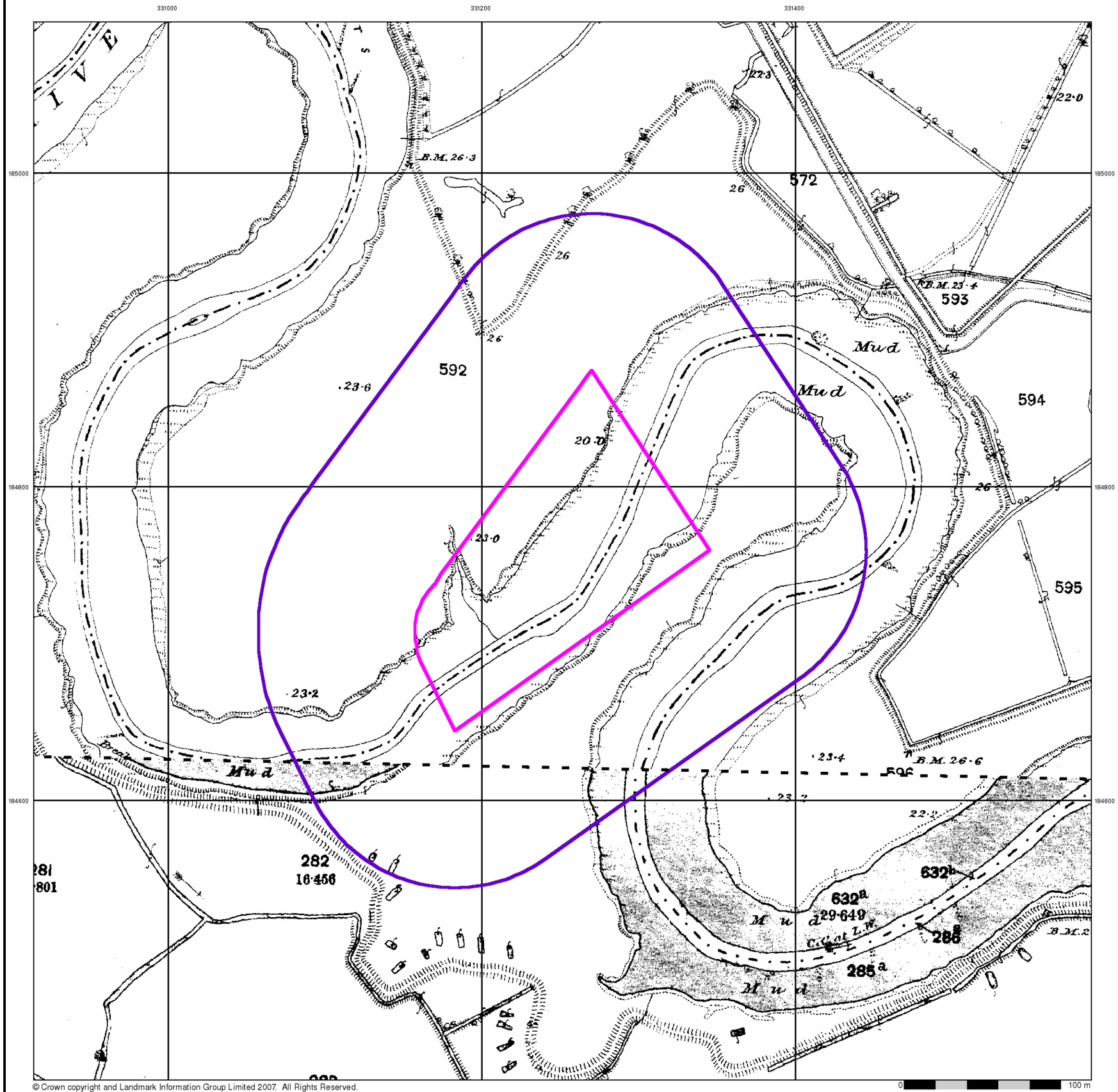
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	100

Site Details

Site at, Newport, Newport

LANDMARK® Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

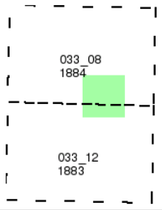
Monmouthshire

Published 1883 - 1884

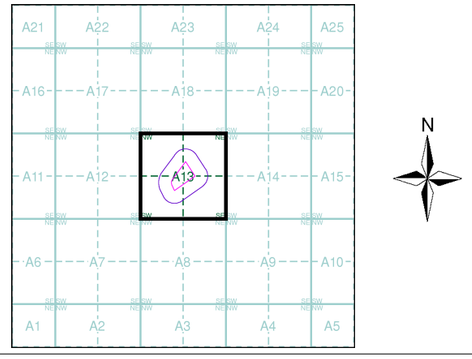
Source map scale - 1:2,500

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



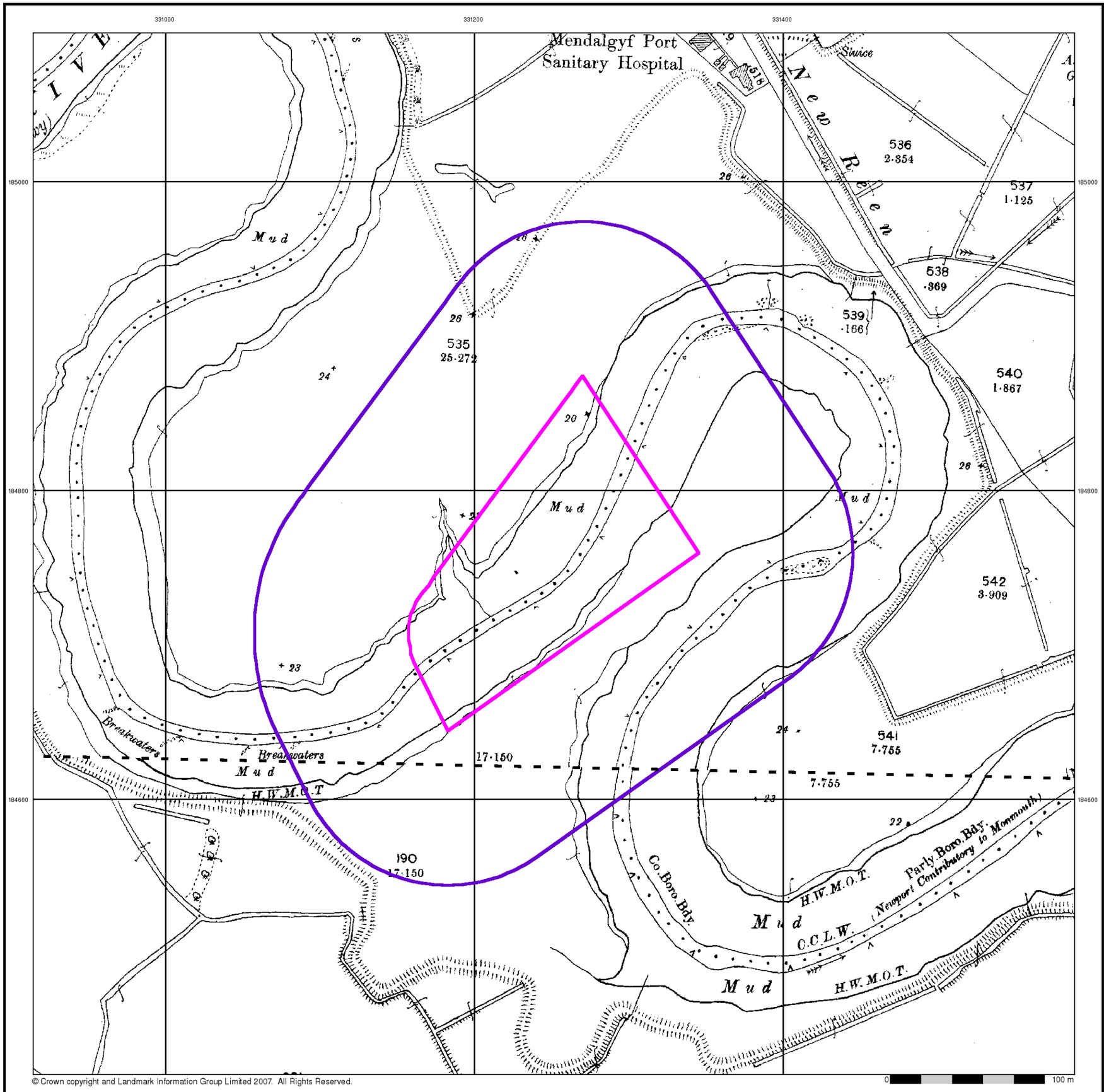
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	100

Site Details

Site at, Newport, Newport

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

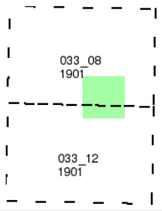
Monmouthshire

Published 1901

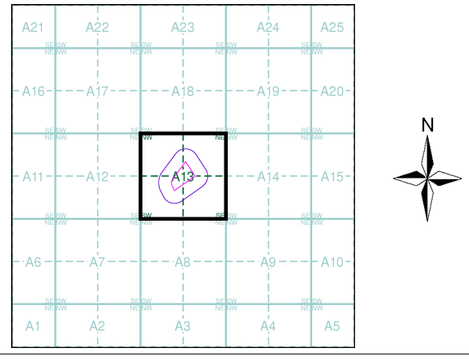
Source map scale - 1:2,500

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 A13



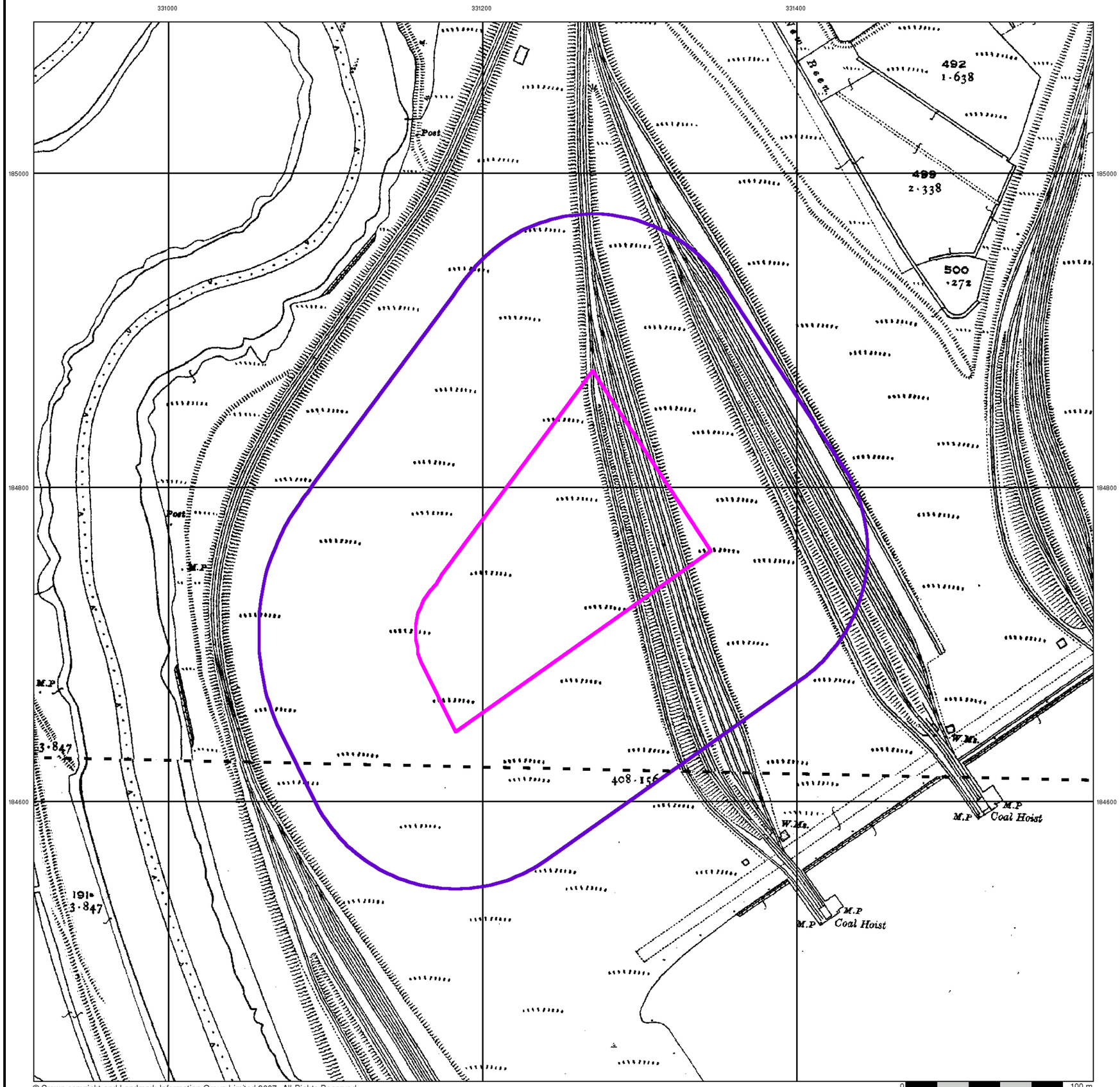
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	100

Site Details

Site at, Newport, Newport

LANDMARK® Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

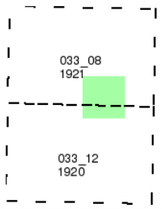
Monmouthshire

Published 1920 - 1921

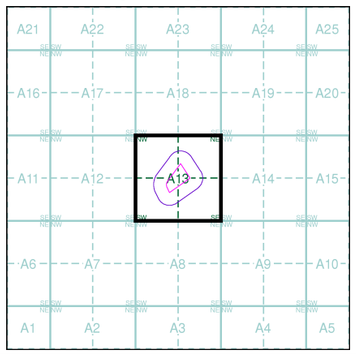
Source map scale - 1:2,500

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



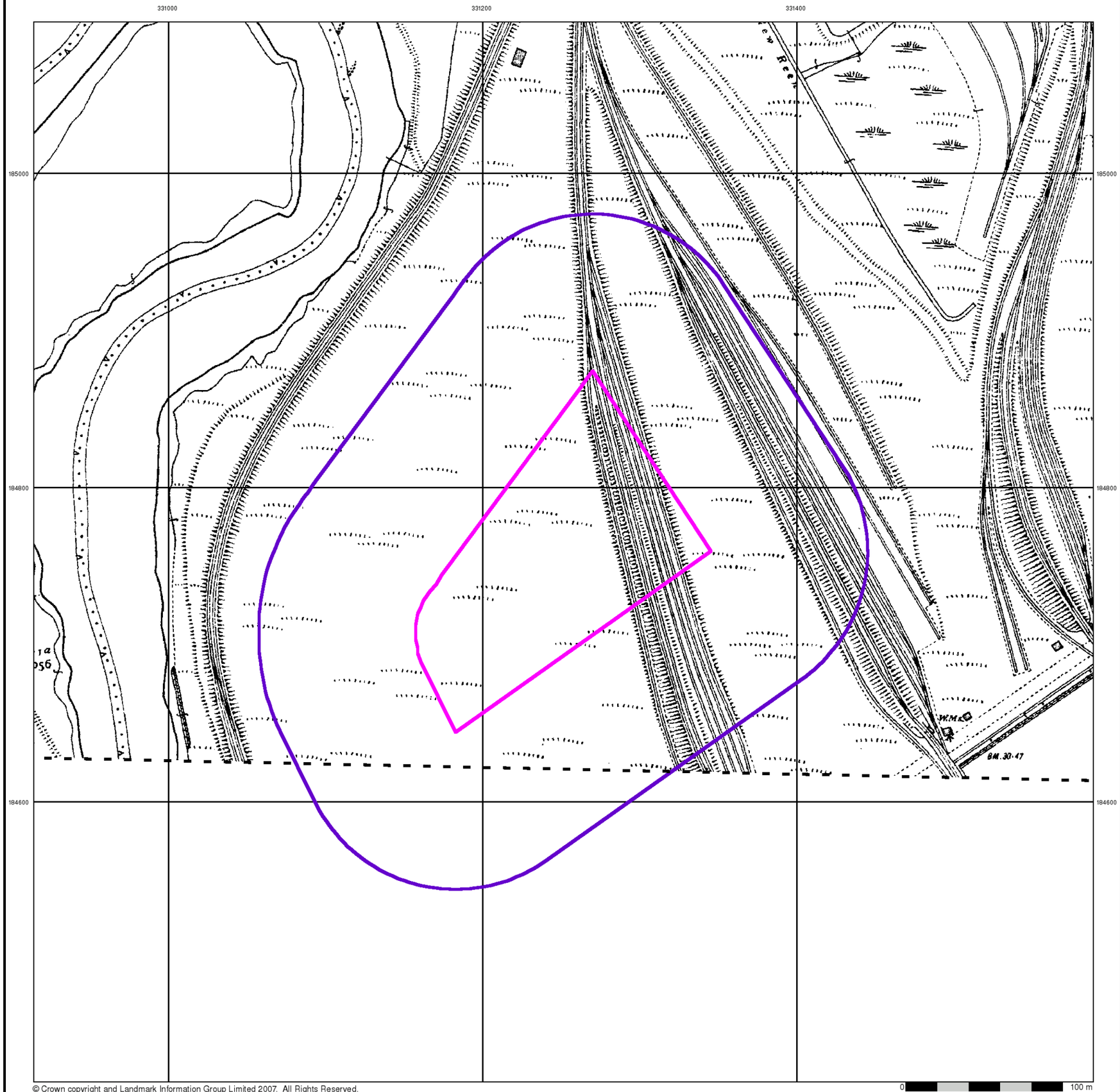
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	100

Site Details

Site at, Newport, Newport

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

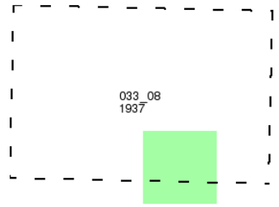
Monmouthshire

Published 1937

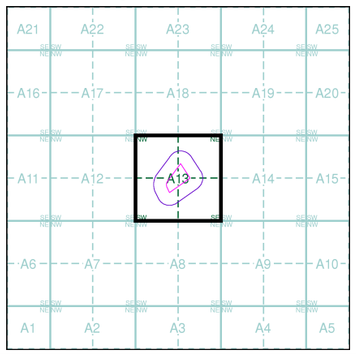
Source map scale - 1:2,500

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



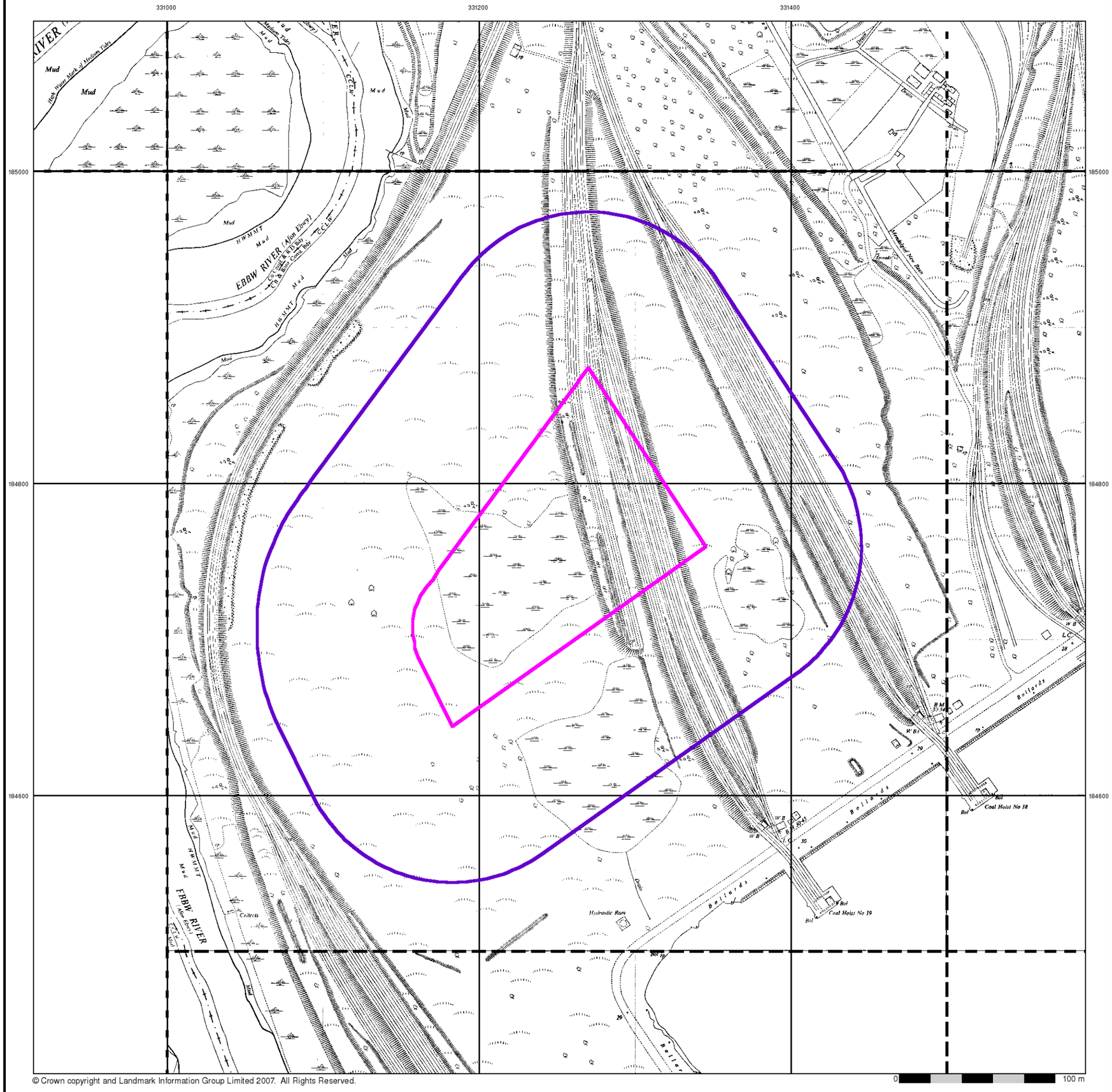
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	100

Site Details

Site at, Newport, Newport

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

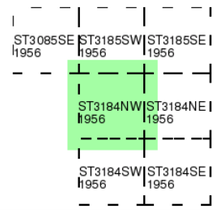
Ordnance Survey Plan

Published 1956

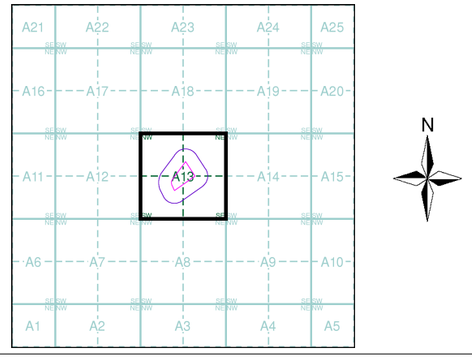
Source map scale - 1:1,250

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



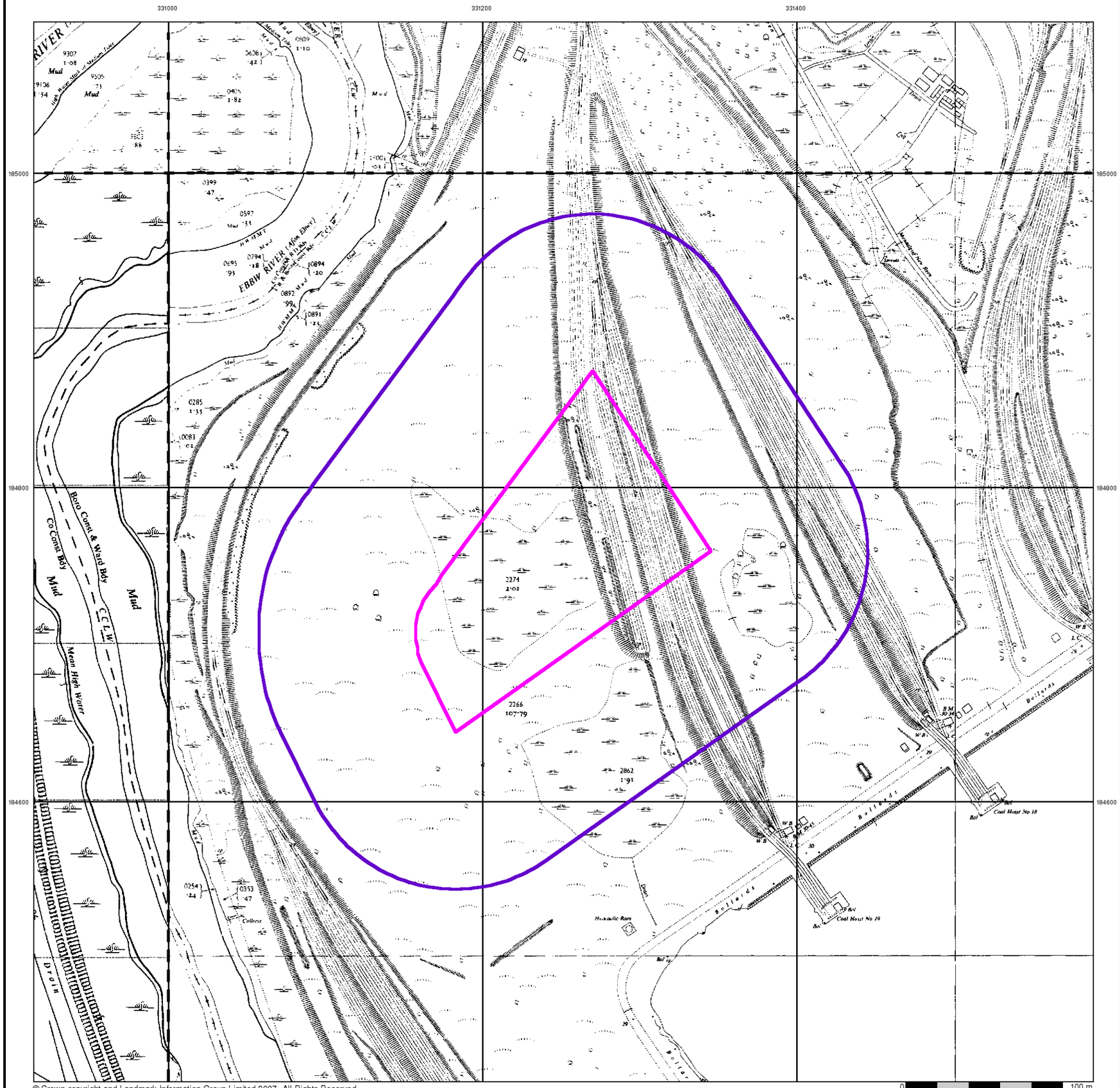
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	100

Site Details

Site at, Newport, Newport

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

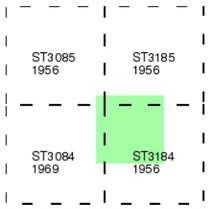
Ordnance Survey Plan

Published 1956 - 1969

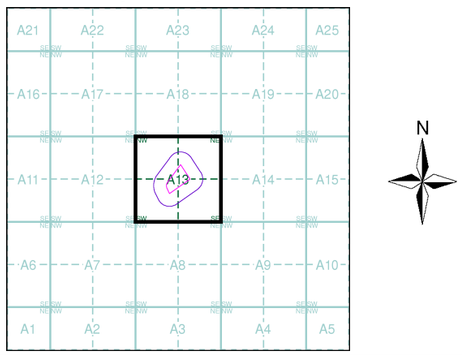
Source map scale - 1:2,500

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



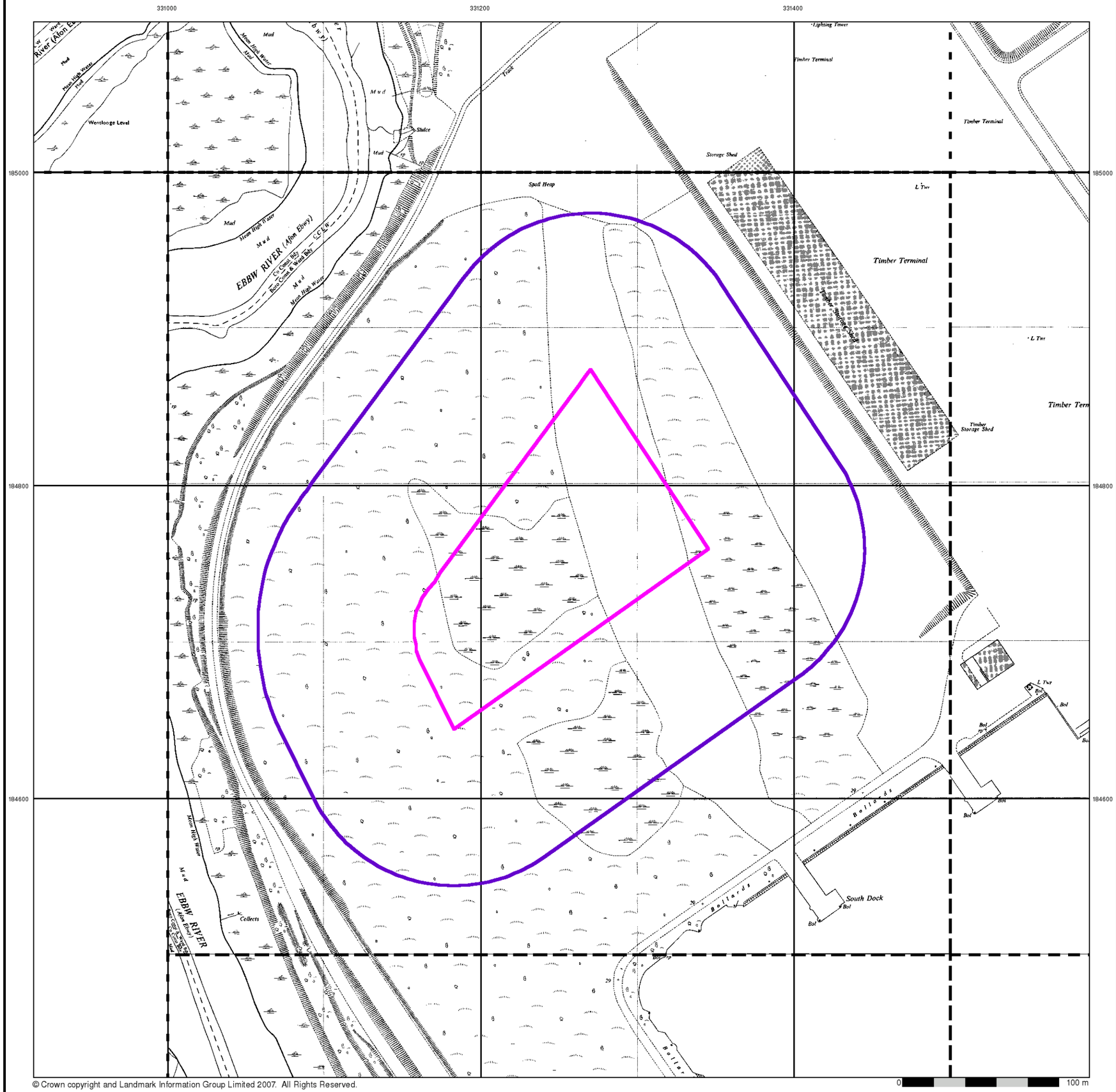
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	100

Site Details

Site at, Newport, Newport

LANDMARK® Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

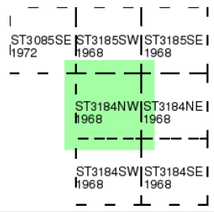
Ordnance Survey Plan

Published 1968 - 1972

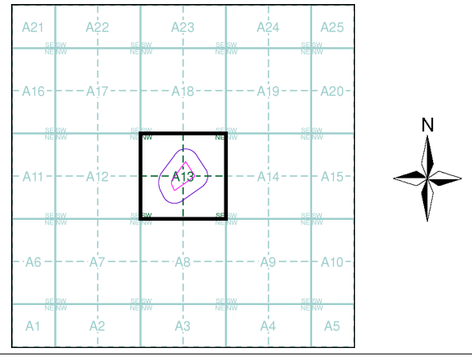
Source map scale - 1:1,250

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



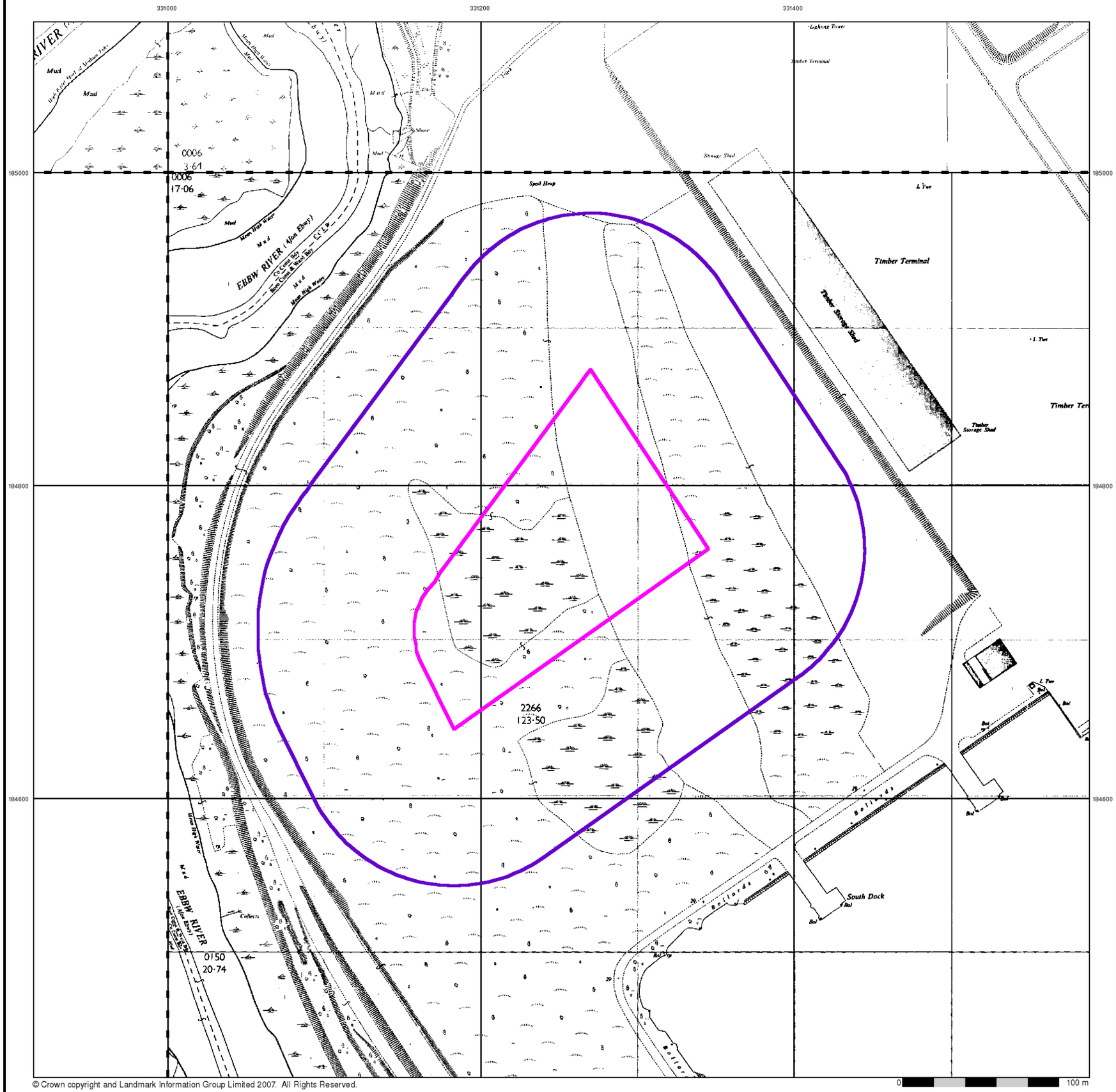
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	100

Site Details

Site at, Newport, Newport

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk

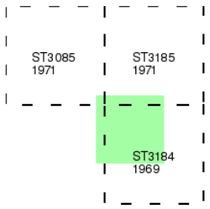


Envirocheck®
A Landmark service

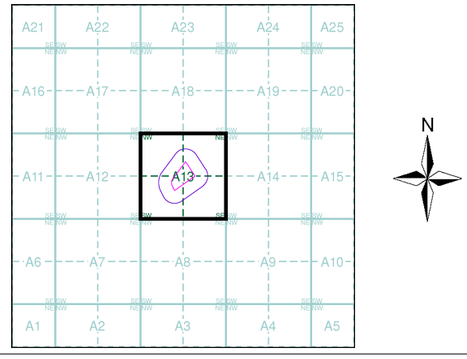
Ordnance Survey Plan
Published 1969 - 1971
Source map scale - 1:2,500

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



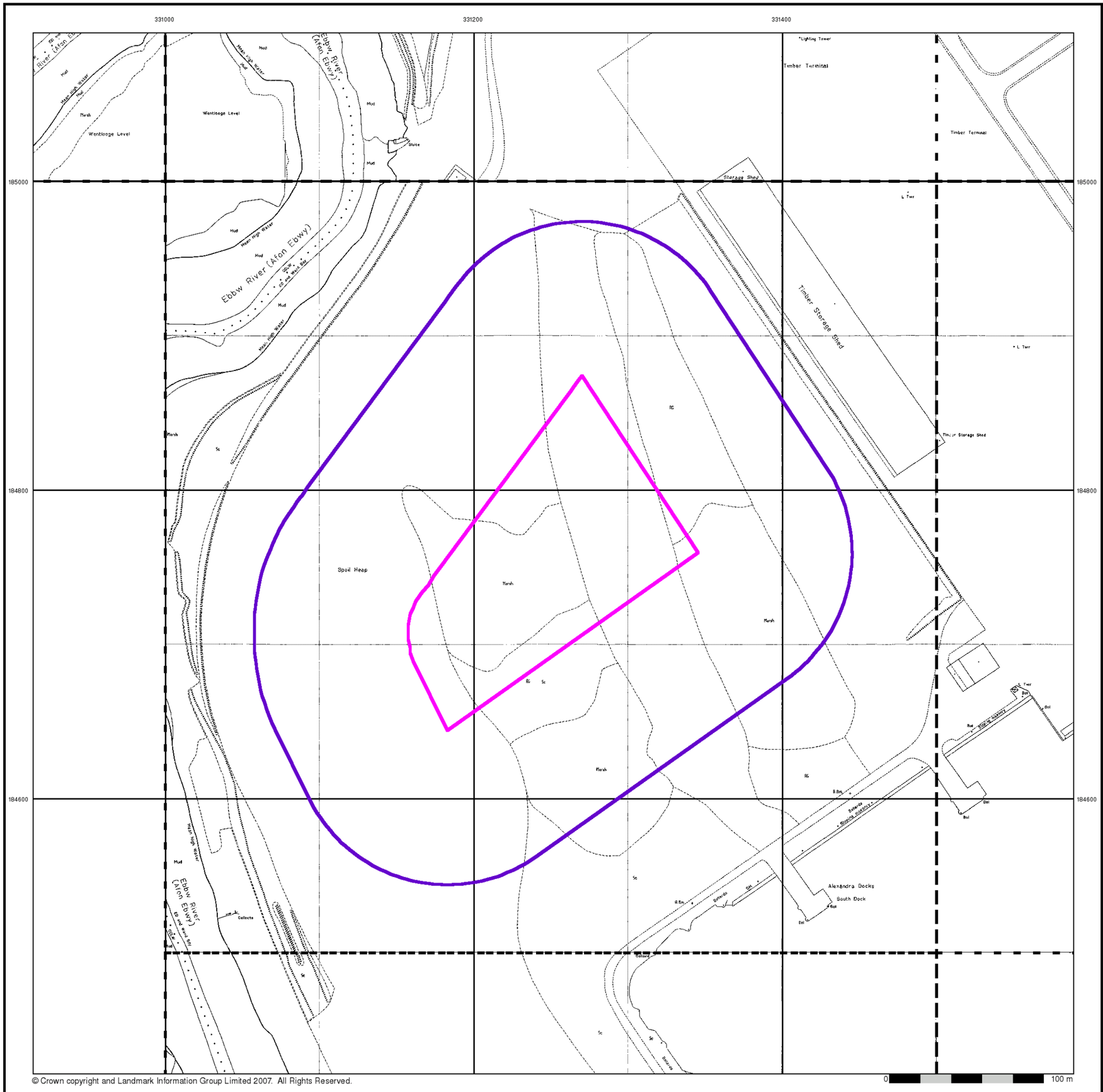
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	100

Site Details

Site at, Newport, Newport

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

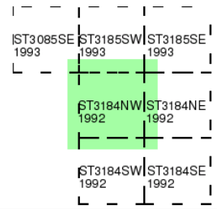
Large-Scale National Grid Data

Published 1992 - 1993

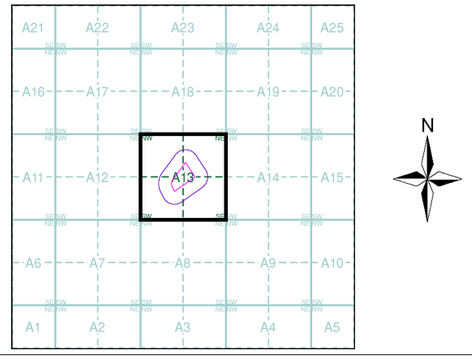
Source map scale - 1:1,250

'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.

Map Name(s) and Date(s)



Historical Map - Segment A13



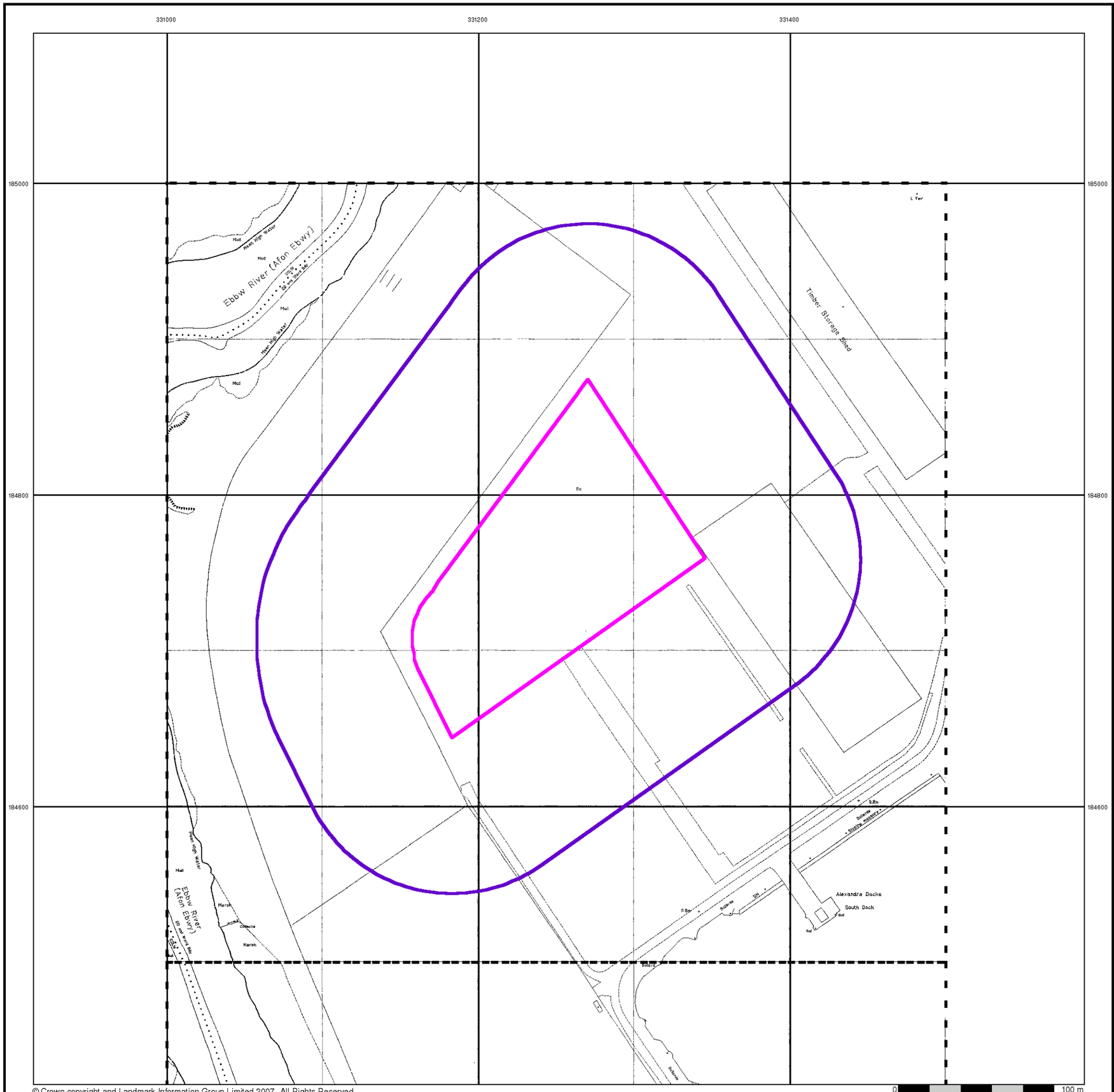
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	100

Site Details

Site at, Newport, Newport

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

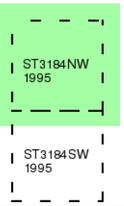
Large-Scale National Grid Data

Published 1995

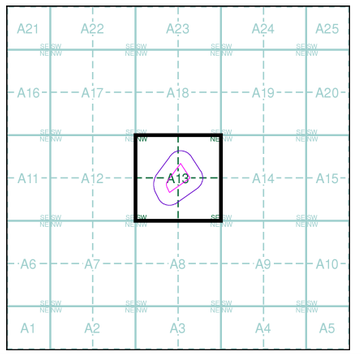
Source map scale - 1:1,250

'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.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	100

Site Details

Site at, Newport, Newport

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk

Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:10,560

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

Ordnance Survey Plan 1:10,000

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

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

1:10,000 Raster Mapping

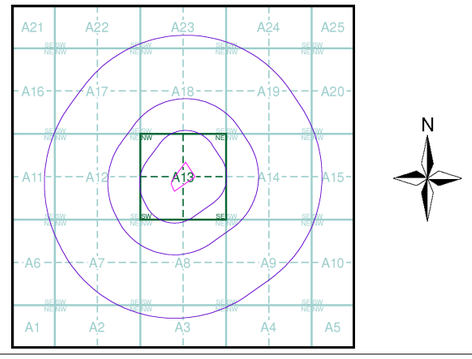
Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community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

Envirocheck®
A Landmark service

Ordnance Survey mapping included:

Mapping Type	Scale	Date	Pg
Monmouthshire	1:10,560	1887	2
Monmouthshire	1:10,560	1902	3
Monmouthshire	1:10,560	1922	4
Monmouthshire	1:10,560	1938 - 1954	5
Ordnance Survey Plan	1:10,560	1964 - 1965	6
Ordnance Survey Plan	1:10,000	1970 - 1973	7
Ordnance Survey Plan	1:10,000	1972 - 1996	8
Ordnance Survey Plan	1:10,000	1981 - 1989	9
10K Raster Mapping	1:10,000	1999	10
10K Raster Mapping	1:10,000	2007	11

Historical Map - Slice A



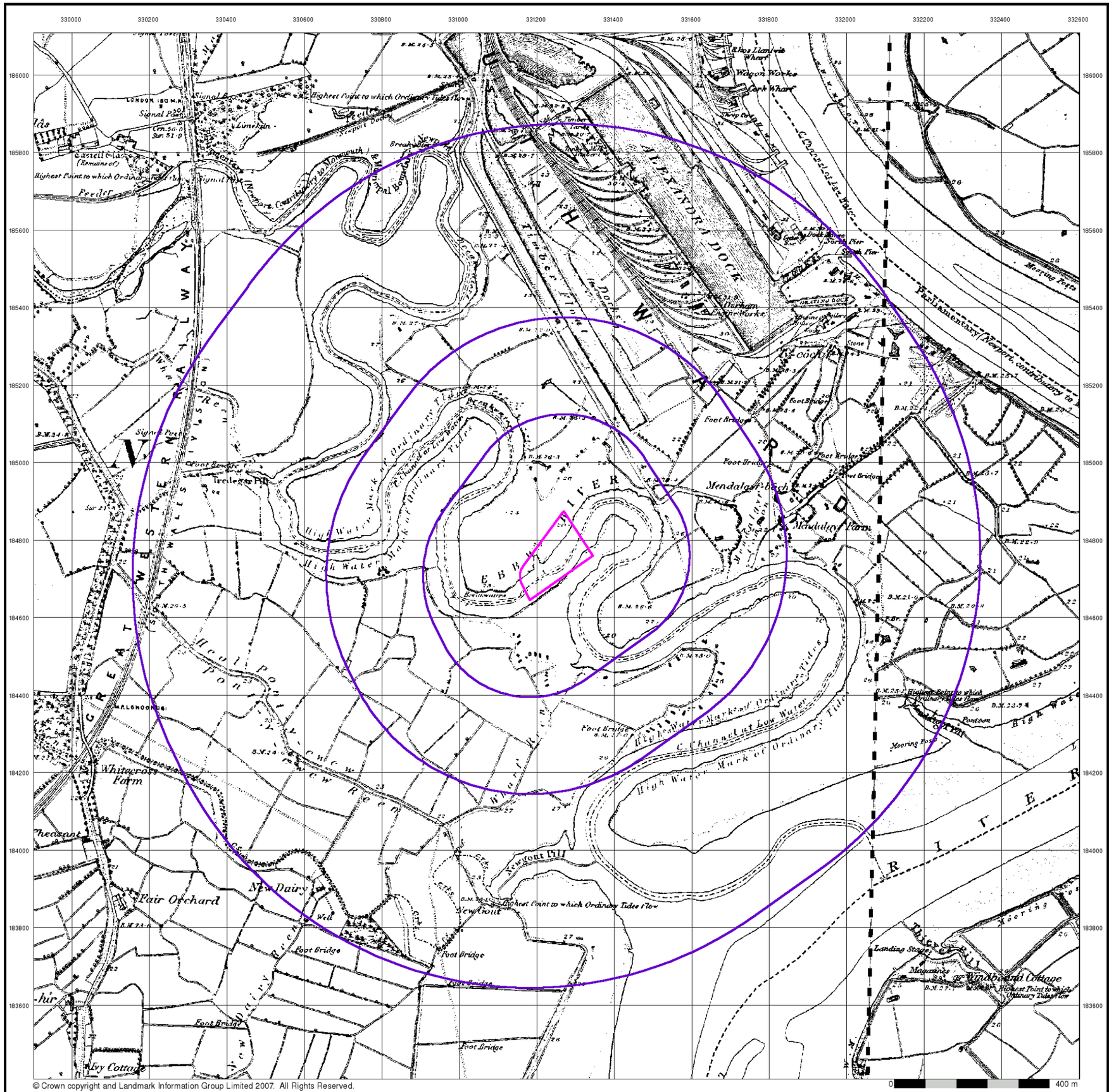
Order Details

Order Number: 23849817_1_1
Customer Ref: NE033910
National Grid Reference: 331250, 184750
Slice: A
Site Area (Ha): 2.03
Search Buffer (m): 1000

Site Details

Site at, Newport, Newport

LANDMARK® Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

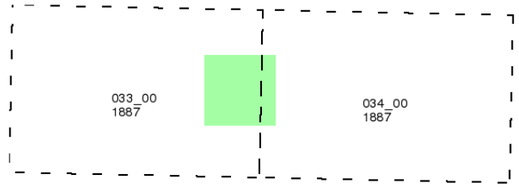
Monmouthshire

Published 1887

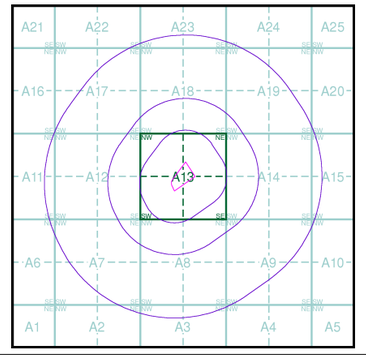
Source map scale - 1:10,560

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



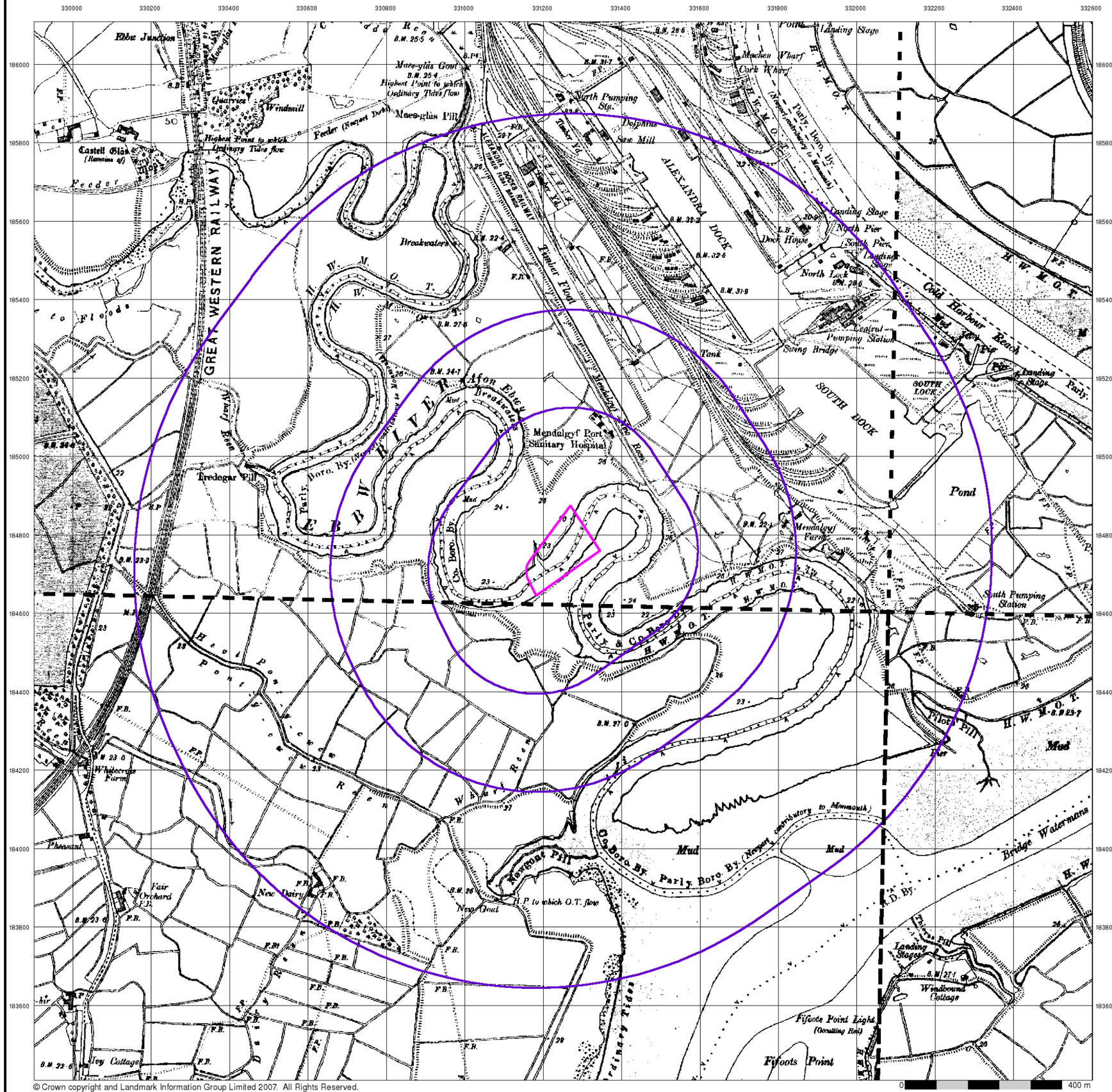
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	1000

Site Details

Site at, Newport, Newport

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

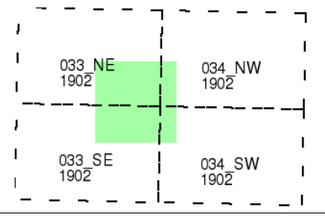
Monmouthshire

Published 1902

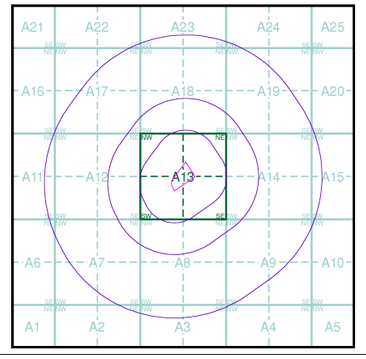
Source map scale - 1:10,560

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



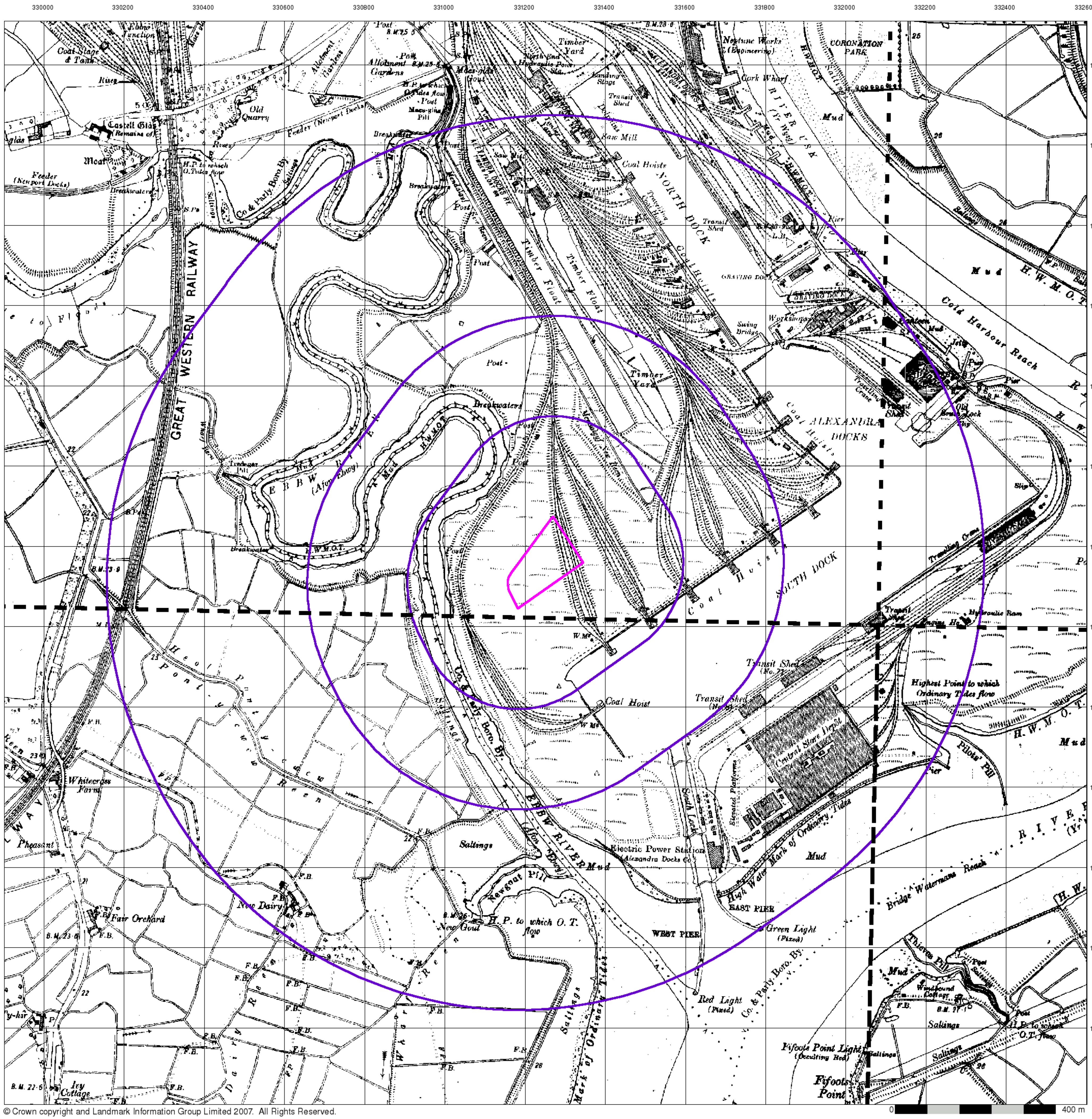
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	1000

Site Details

Site at, Newport, Newport

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



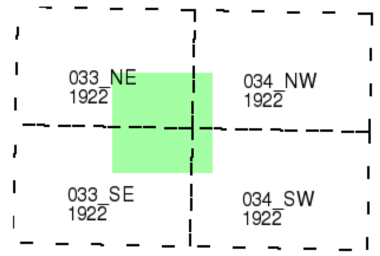
© Crown copyright and Landmark Information Group Limited 2007. All Rights Reserved.

Envirocheck®
A Landmark service

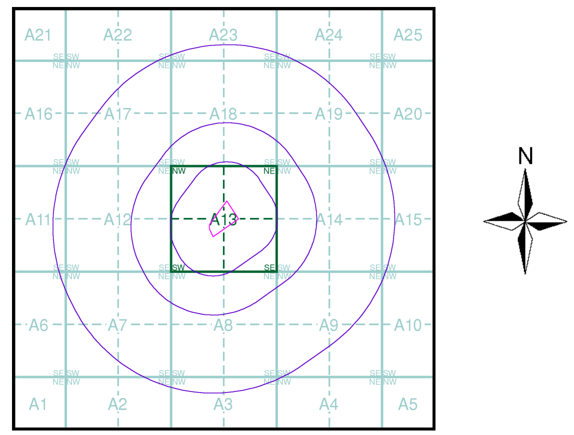
Monmouthshire
Published 1922
Source map scale - 1:10,560

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



Order Details

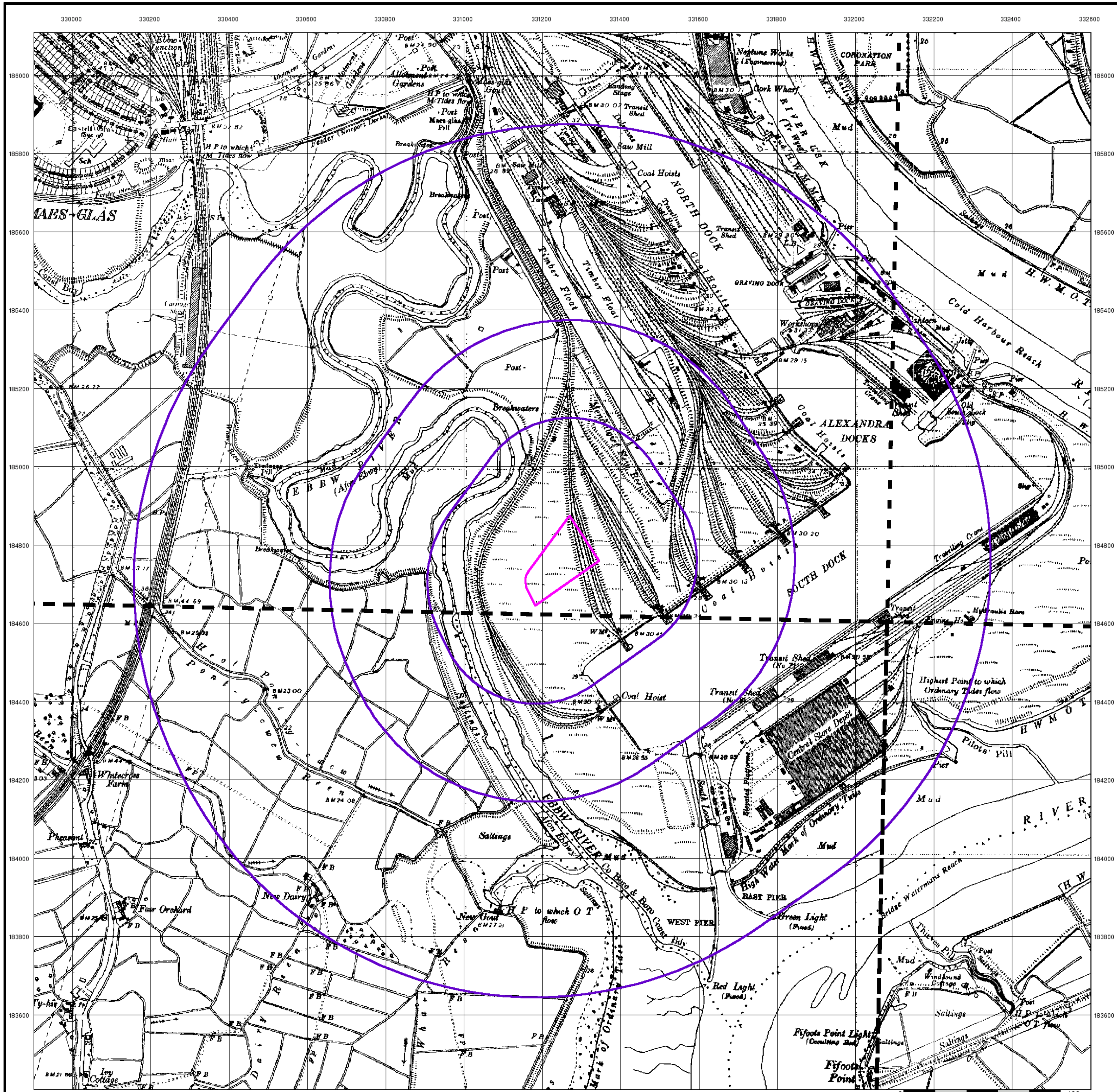
Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	1000

Site Details

Site at, Newport, Newport

LANDMARK Information Group

Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

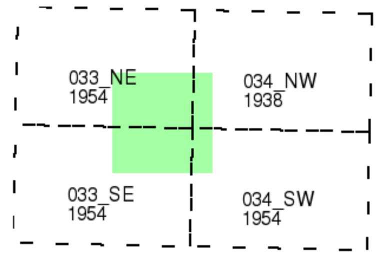
Monmouthshire

Published 1938 - 1954

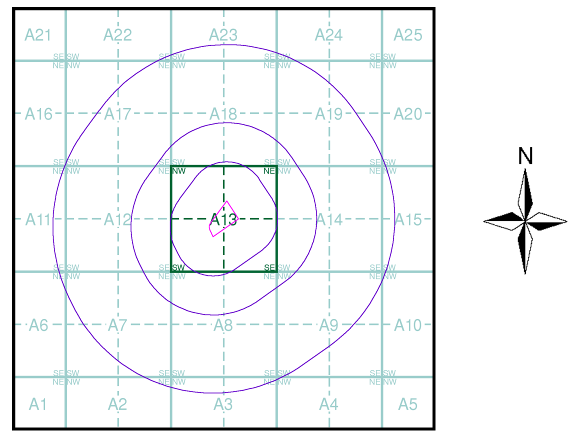
Source map scale - 1:10,560

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



Order Details

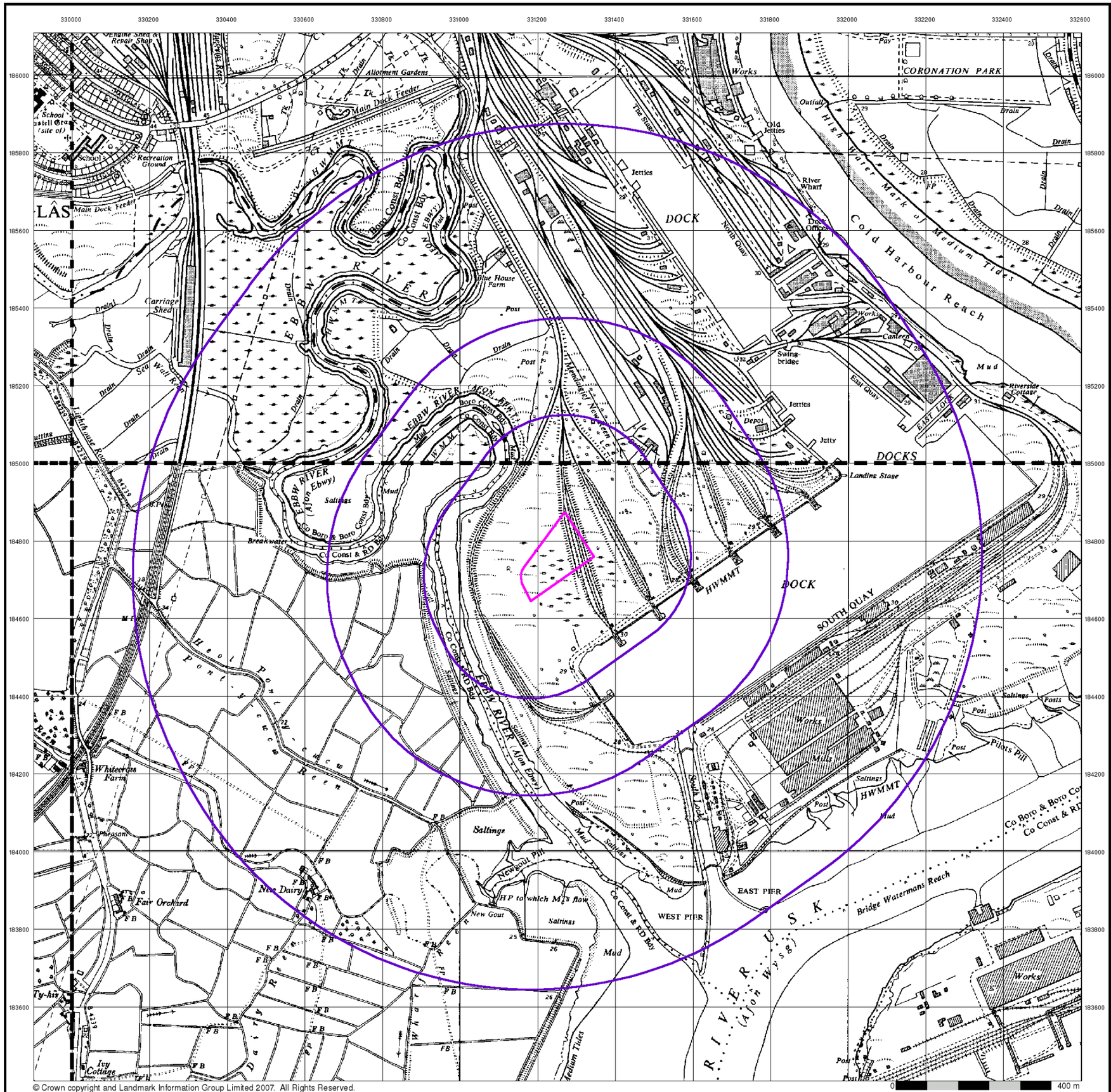
Order Number: 23849817_1_1
Customer Ref: NE033910
National Grid Reference: 331250, 184750
Slice: A
Site Area (Ha): 2.03
Search Buffer (m): 1000

Site Details

Site at, Newport, Newport

LANDMARK® Information Group

Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

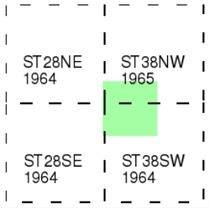
Ordnance Survey Plan

Published 1964 - 1965

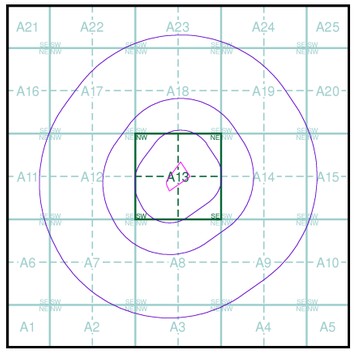
Source map scale - 1:10,560

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



Order Details

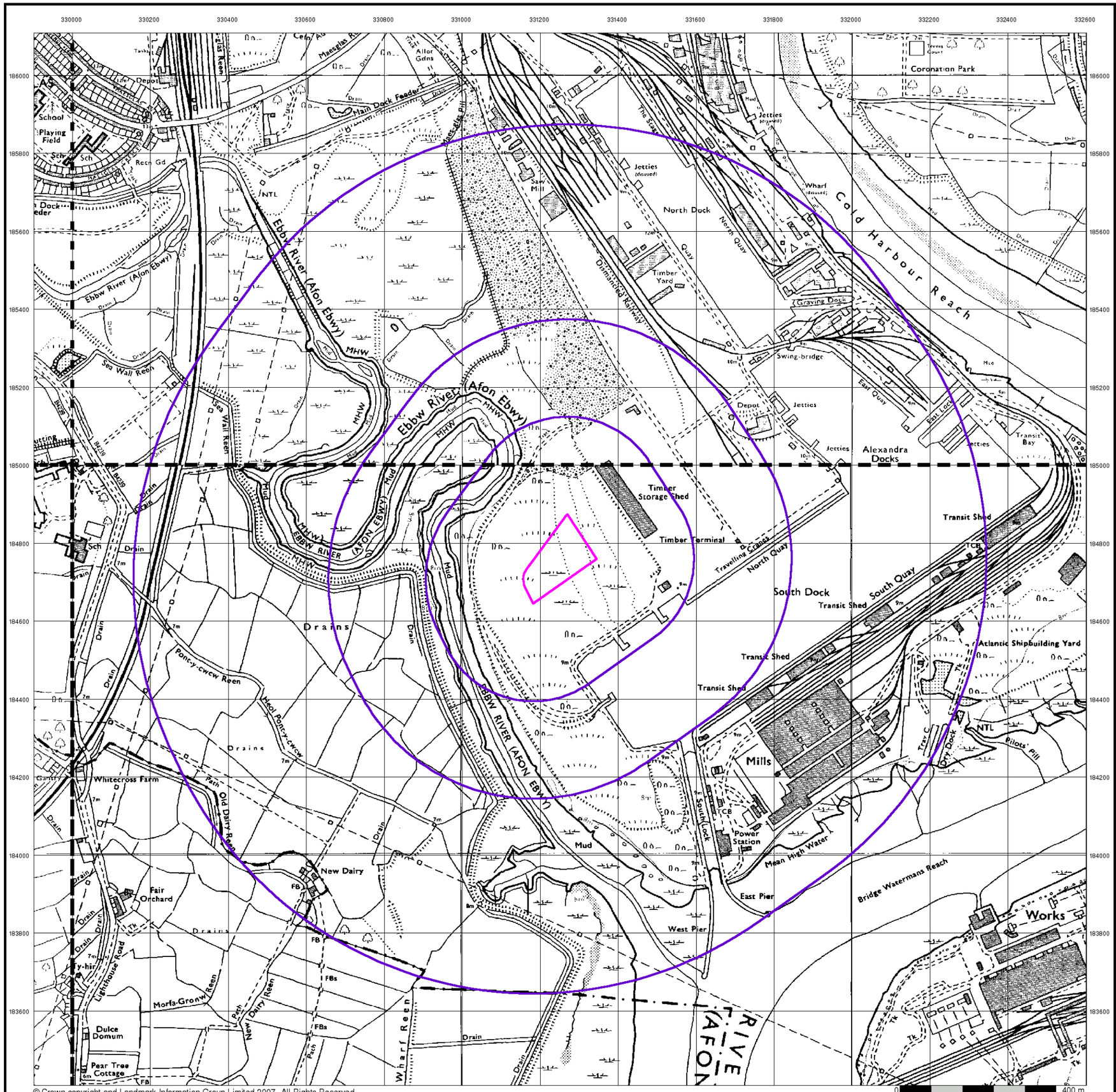
Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	1000

Site Details

Site at, Newport, Newport

LANDMARK Information Group

Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

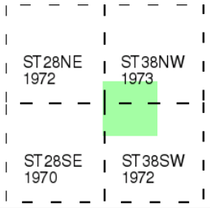
Ordnance Survey Plan

Published 1970 - 1973

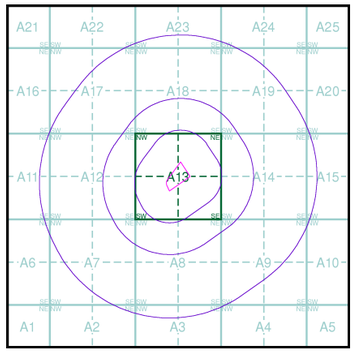
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



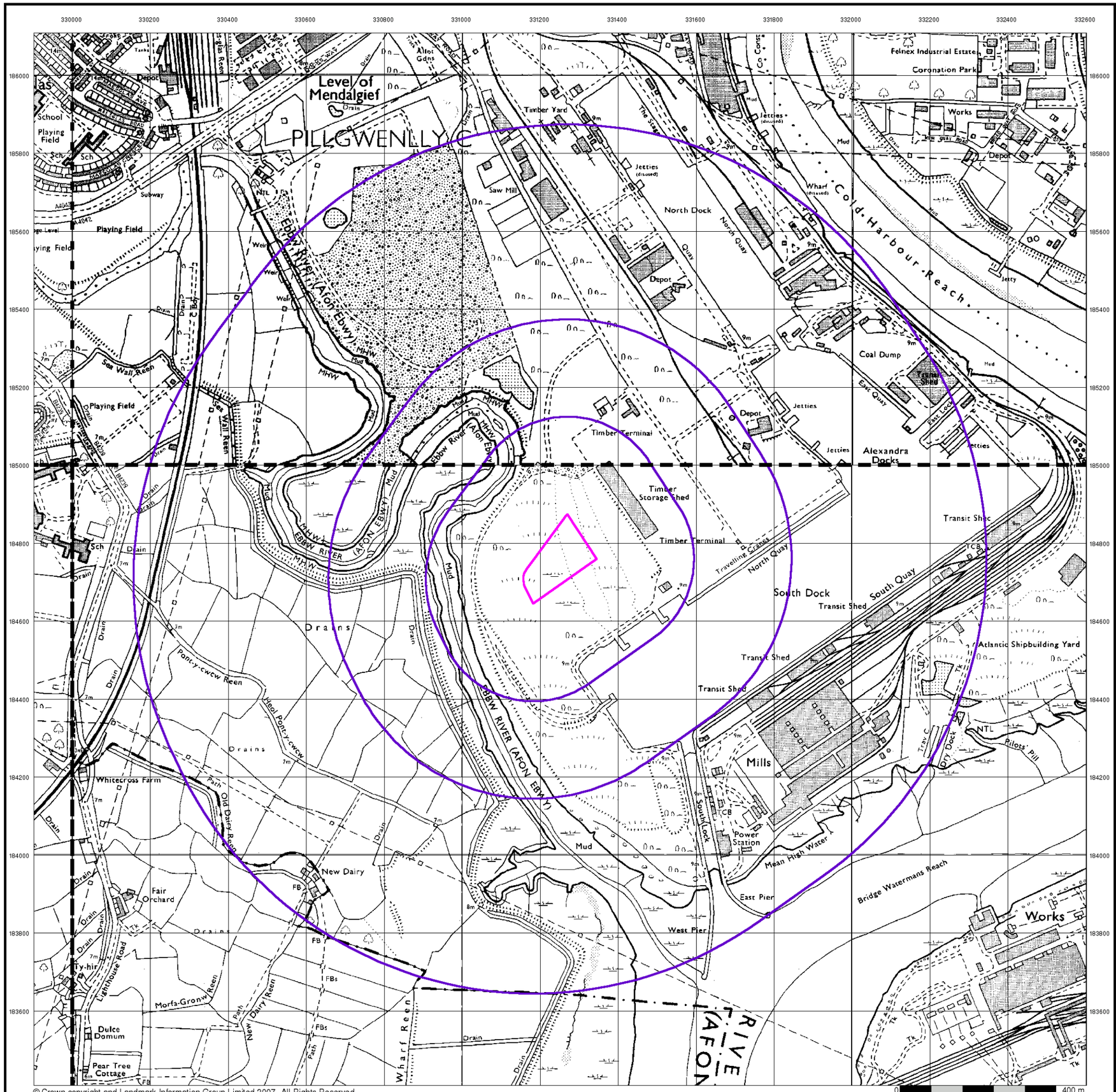
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	1000

Site Details

Site at, Newport, Newport

LANDMARK® Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

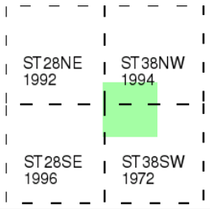
Ordnance Survey Plan

Published 1972 - 1996

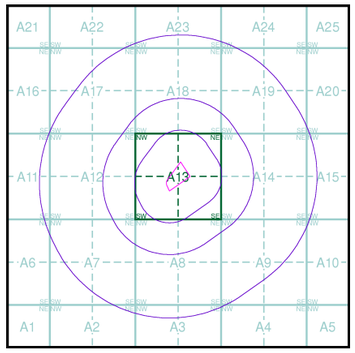
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



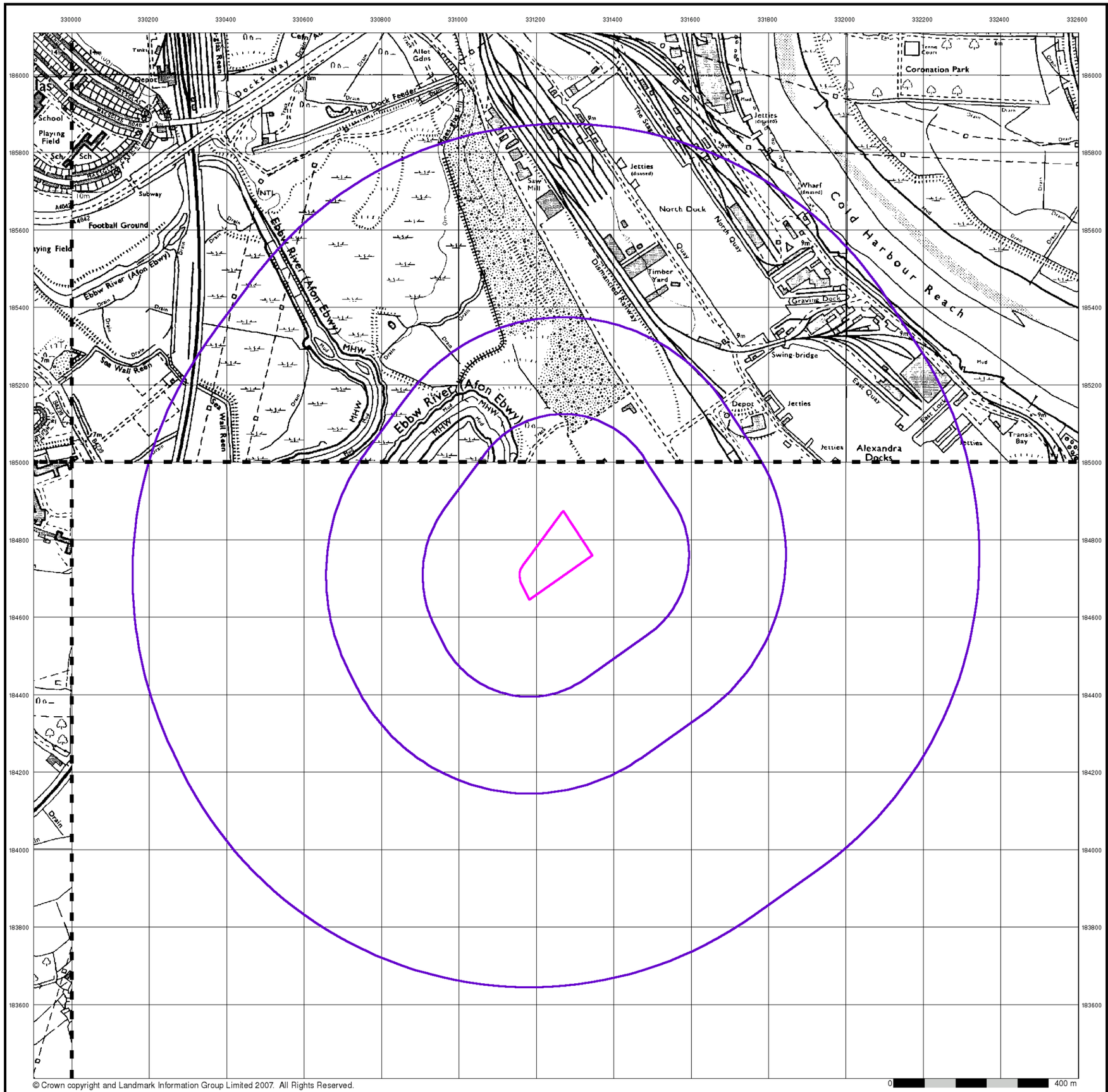
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	1000

Site Details

Site at, Newport, Newport

LANDMARK® Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

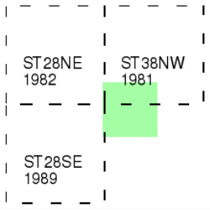
Ordnance Survey Plan

Published 1981 - 1989

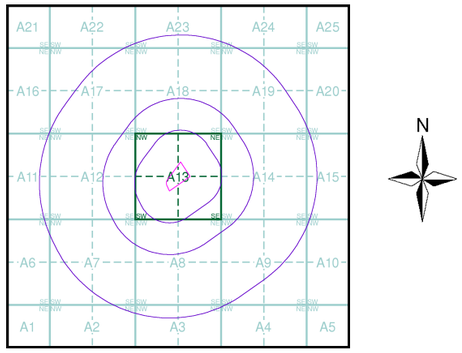
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



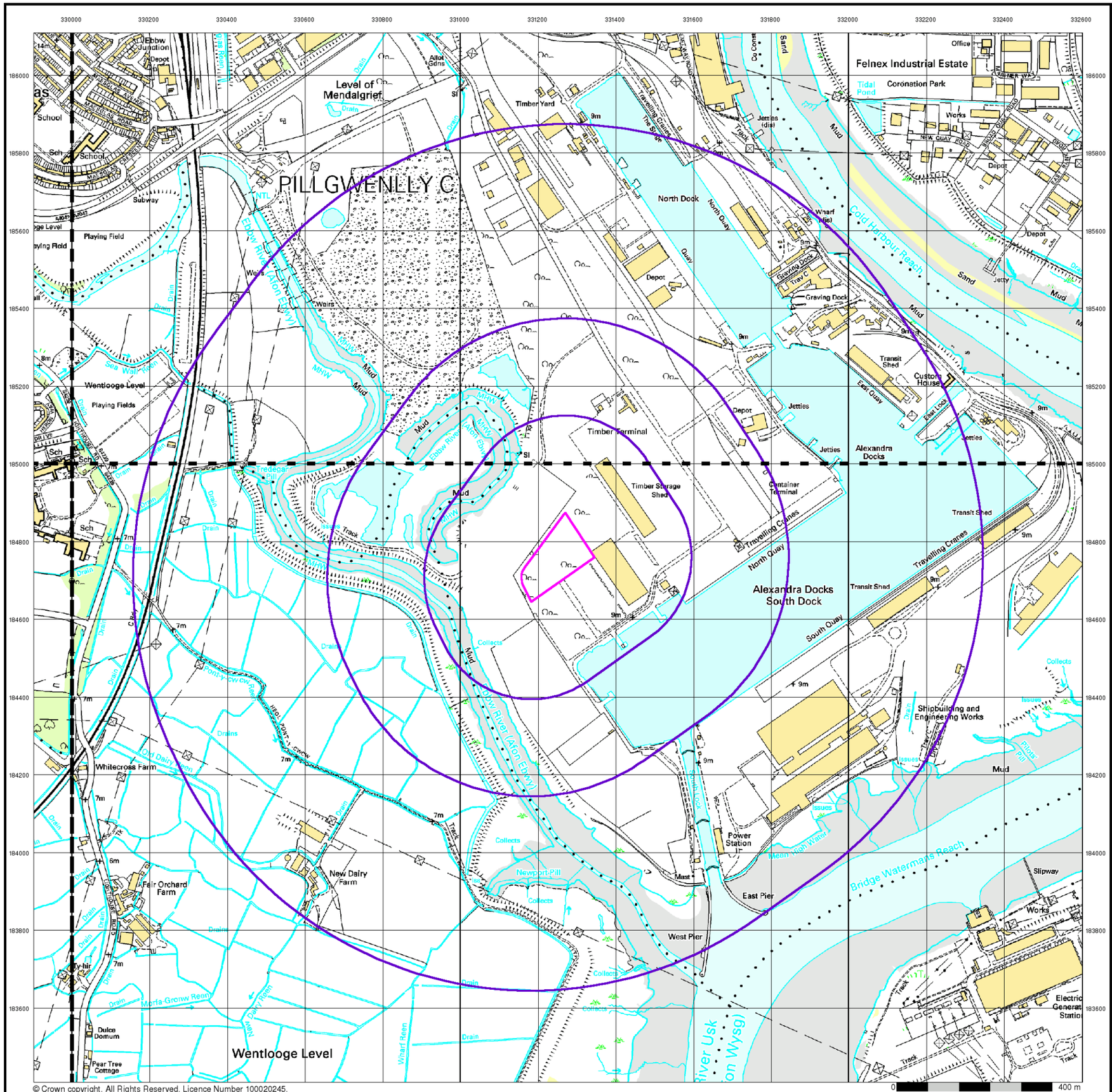
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	1000

Site Details

Site at, Newport, Newport

LANDMARK® Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

10K Raster Mapping

Published 1999

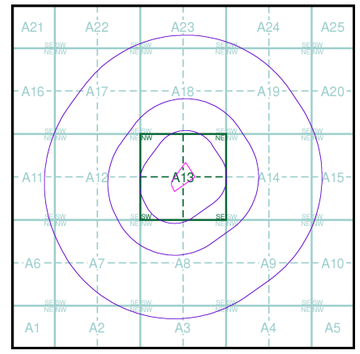
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

ST28NE 1999	ST38NW 1999
ST28SE 1999	ST38SW 1999

Historical Map - Slice A



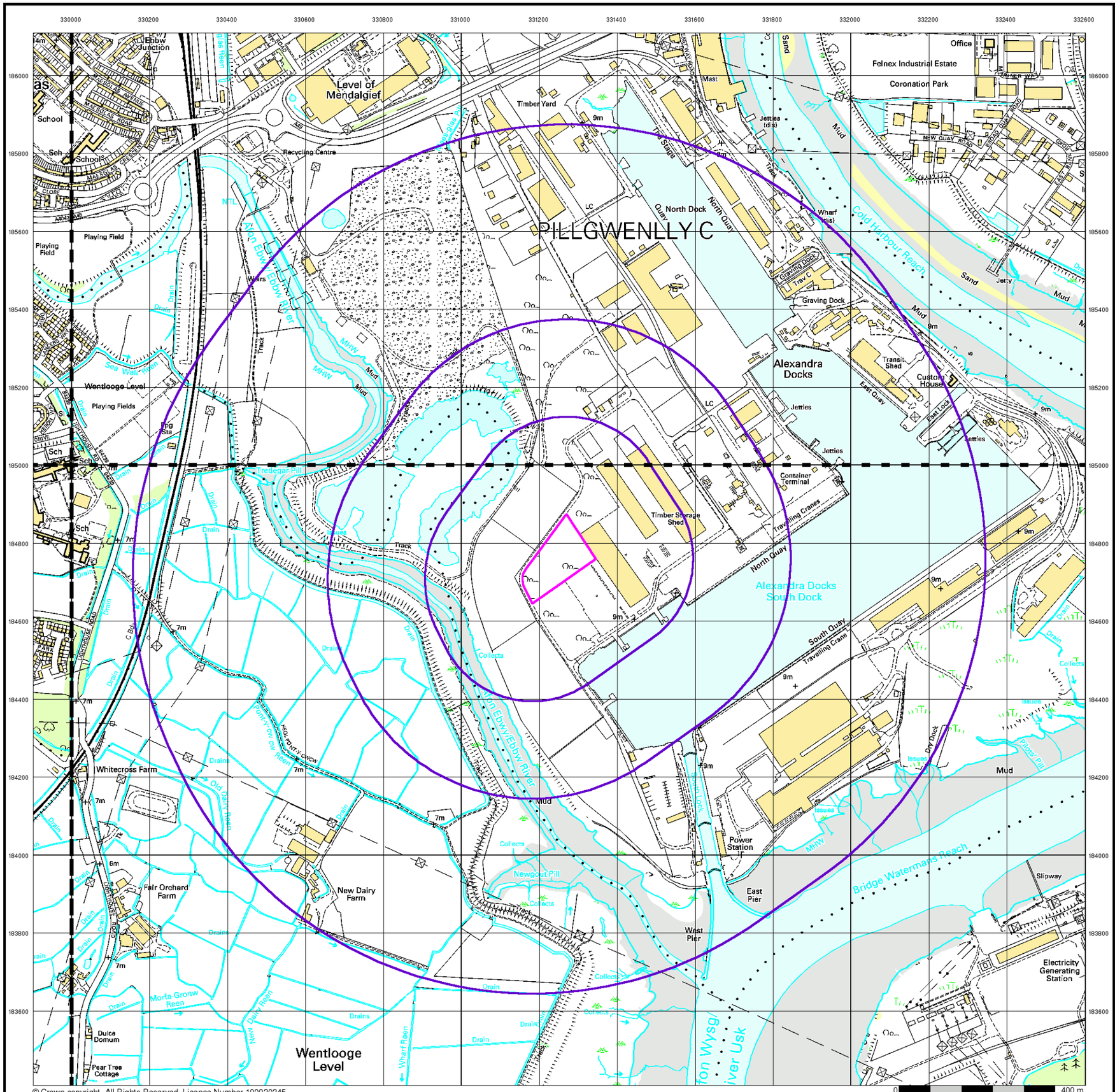
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	1000

Site Details

Site at, Newport, Newport

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

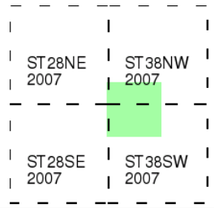
10K Raster Mapping

Published 2007

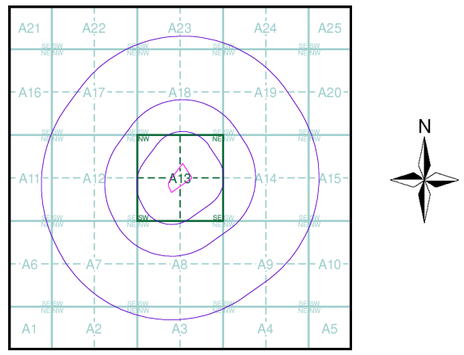
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



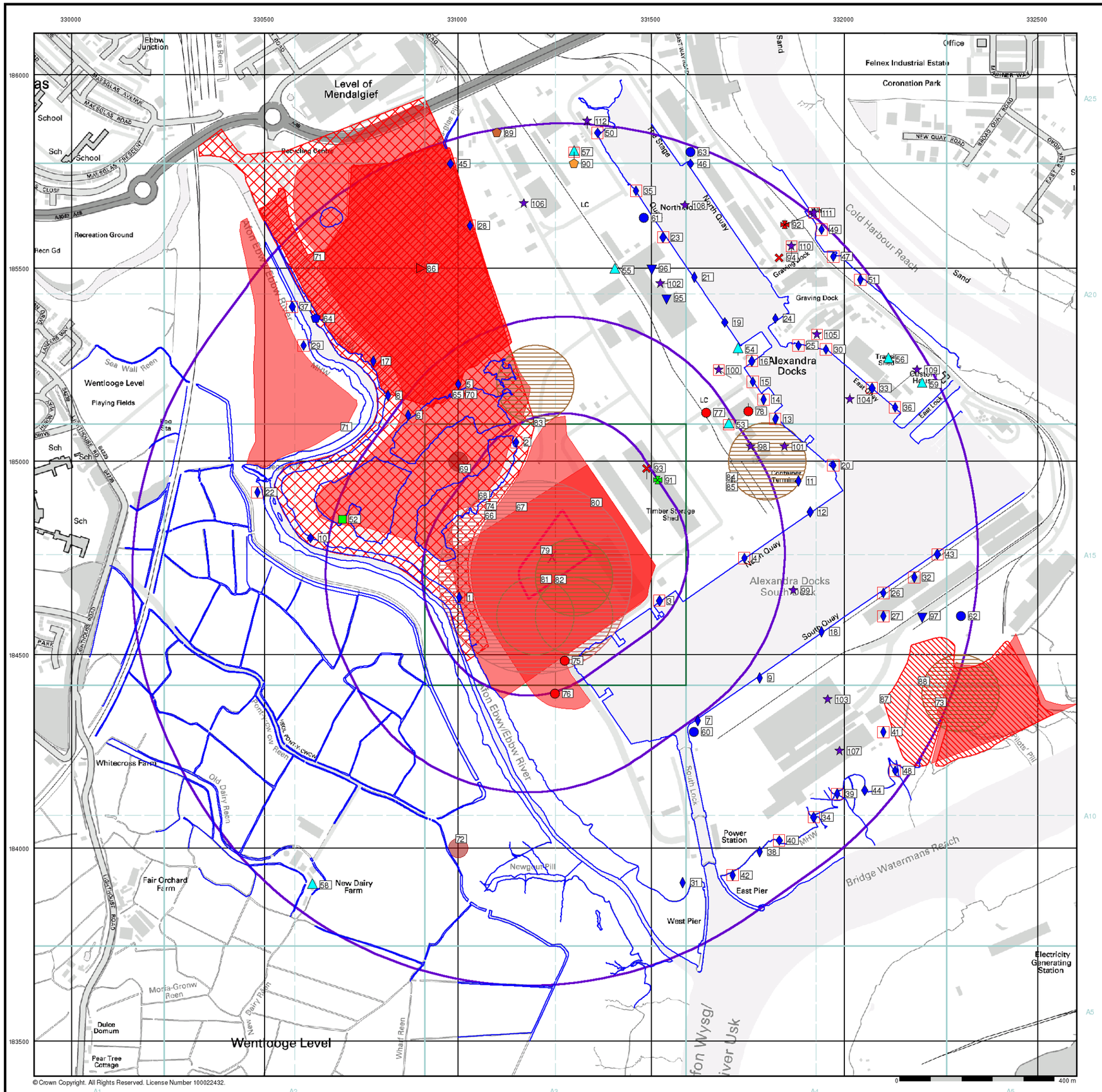
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	1000

Site Details

Site at, Newport, Newport

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

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

Geological

- BGS Recorded Mineral Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

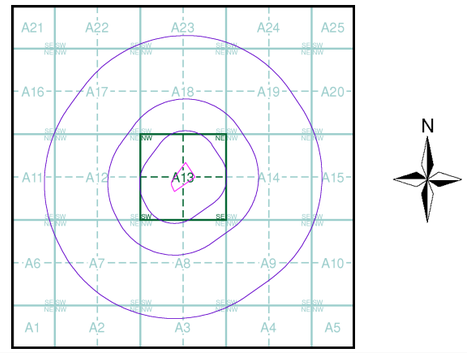
Waste

- 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
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Hazardous Substances

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

Site Sensitivity Map - Slice A



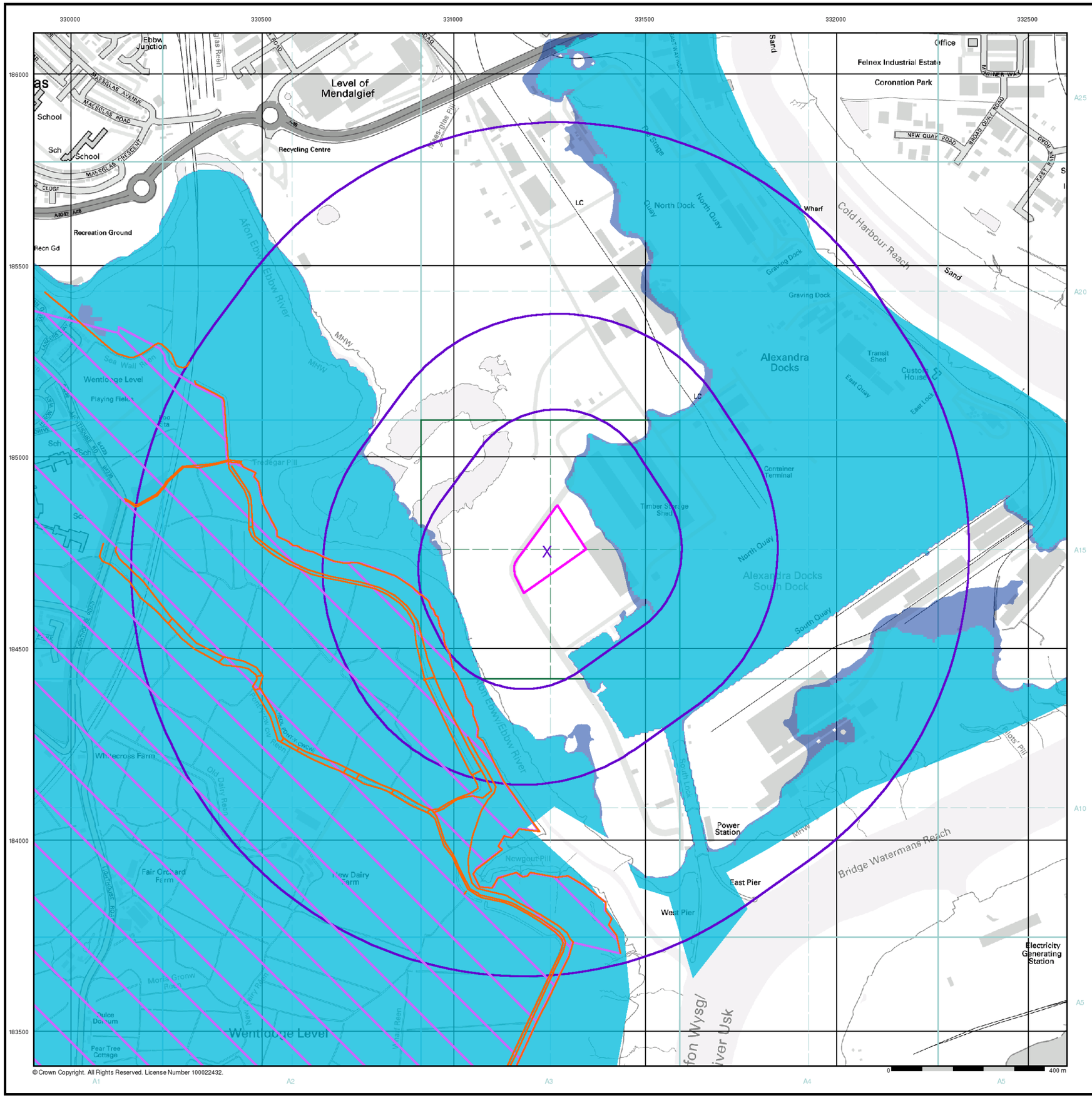
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	1000

Site Details

Site at, Newport, Newport

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

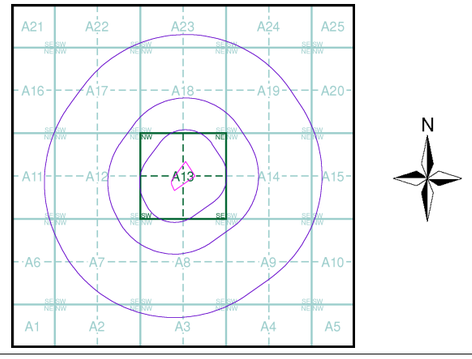
General

- 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



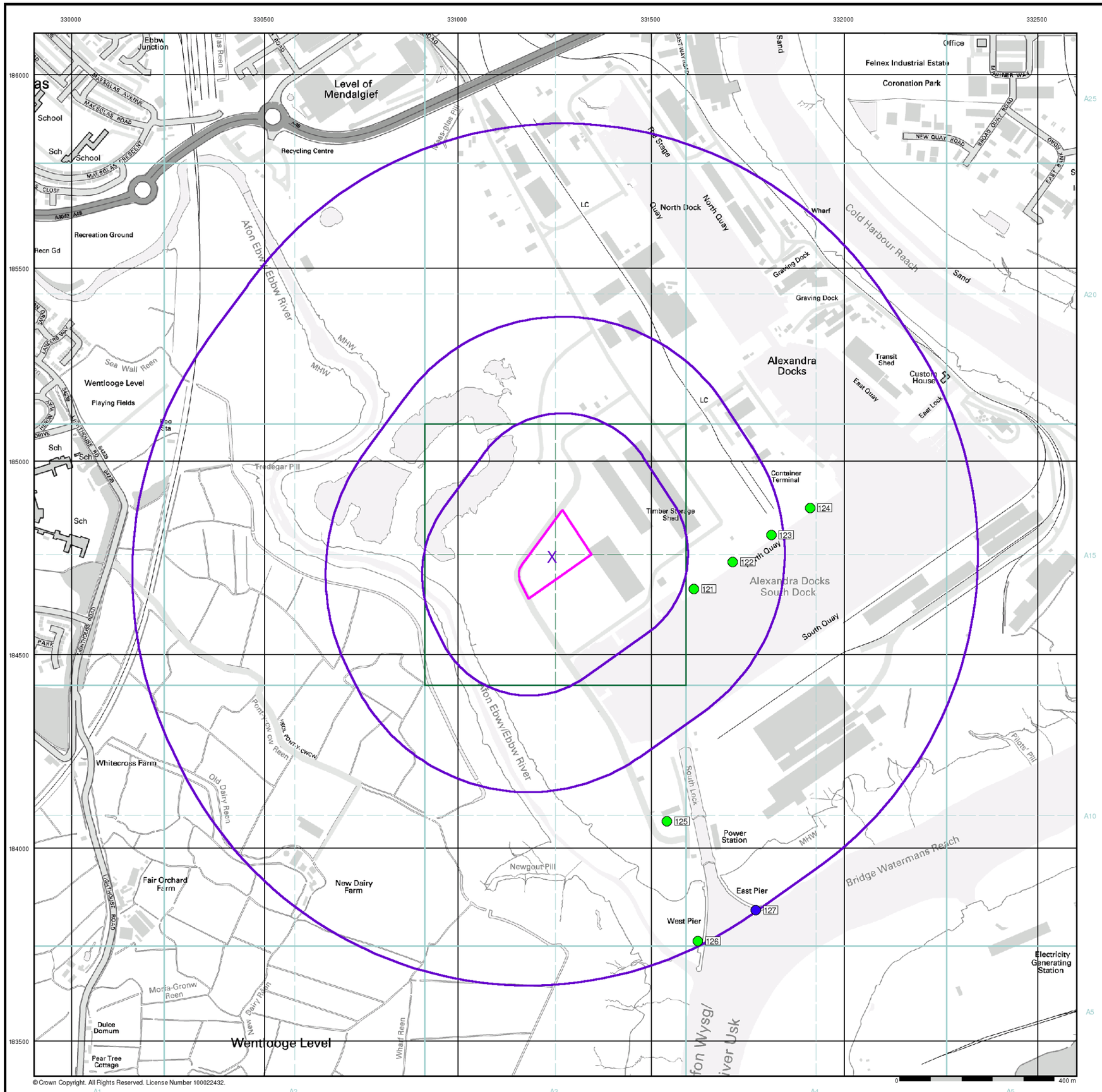
Order Details

Order Number:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	1000

Site Details

Site at, Newport, Newport

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



Envirocheck®
A Landmark service

General

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

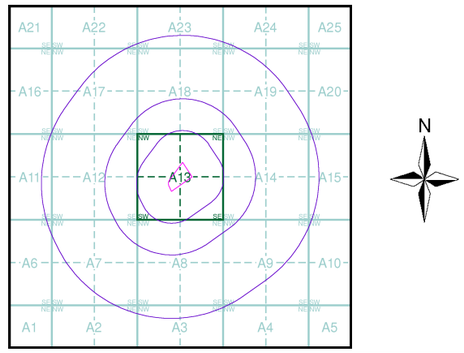
Agency and Hydrological (Boreholes)

- 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:	23849817_1_1
Customer Ref:	NE033910
National Grid Reference:	331250, 184750
Slice:	A
Site Area (Ha):	2.03
Search Buffer (m):	1000

Site Details

Site at, Newport, Newport

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk

Appendix D

Site Conceptual Model

Key To Contaminant Source:
R = Railway Sidings, L = Landfill Sites, T = Timber Yards and Storage, D = Docklands and Harbours, C = Travelling Cranes

Source	Contaminant	Pathway	Receptor	Plausible	Likelihood	Severity	Risk	Comments
R, L, T, D, C	Cadmium	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Chromium	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Copper	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Lead	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Nickel	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, C	Vanadium	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
L, T, D, C	Zinc	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, C	Boron	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
D, C	Mercury	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
L, T, D, C	Arsenic	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, T, D	Sulphate	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Asbestos	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, C	PCB	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	PAHs	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Hydrocarbons	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, D, C	Phenol	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, D, C	HCH (hexachlorocyclohexane)	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, C	Dieldrin	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, C	Organotin Compounds	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
L	Dioxins	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
L	Furans	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, C	Acetone	Ingestion of soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists

Key To Contaminant Source:
R = Railway Sidings, L = Landfill Sites, T = Timber Yards and Storage, D = Docklands and Harbours, C = Travelling Cranes

Source	Contaminant	Pathway	Receptor	Plausible	Likelihood	Severity	Risk	Comments
R, L, T, D, C	Cadmium	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Chromium	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Copper	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Lead	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Nickel	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, C	Vanadium	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
L, T, D, C	Zinc	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, C	Boron	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
D, C	Mercury	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
L, T, D, C	Arsenic	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, T, D	Sulphate	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Asbestos	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, C	PCB	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	PAHs	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Hydrocarbons	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, D, C	Phenol	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, D, C	HCH (hexachlorocyclohexane)	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, C	Dieldrin	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, C	Organotin Compounds	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
L	Dioxins	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
L	Furans	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, C	Acetone	Dermal Contact	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists

Key To Contaminant Source:
R = Railway Sidings, L = Landfill Sites, T = Timber Yards and Storage, D = Docklands and Harbours, C = Travelling Cranes

Source	Contaminant	Pathway	Receptor	Plausible	Likelihood	Severity	Risk	Comments
R, L, T, D, C	Cadmium	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Chromium	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Copper	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Lead	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Nickel	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, C	Vanadium	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
L, T, D, C	Zinc	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, C	Boron	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
D, C	Mercury	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
L, T, D, C	Arsenic	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, T, D	Sulphate	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Asbestos	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, C	PCB	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	PAHs	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
R, L, T, D, C	Hydrocarbons	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, D, C	Phenol	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, D, C	HCH (hexachlorocyclohexane)	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, C	Dieldrin	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, C	Organotin Compounds	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
L	Dioxins	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
L	Furans	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists
T, C	Acetone	Inhalation of contaminated soils	Human Beings	No	N/A	N/A	N/A	Humans are un-likely to eat soil at the site, and in future the site will be developed as office and work accommodation and will be covered by hard standing. Therefore no pathway exists

Key To Contaminant Source:
R = Railway Sidings, L = Landfill Sites, T = Timber Yards and Storage, D = Docklands and Harbours, C = Travelling Cranes

Source	Contaminant	Pathway	Receptor	Plausible	Likelihood	Severity	Risk	Comments
R, L, T, D, C	Cadmium	Inhalation of soil vapours	Human Beings	No	N/A	N/A	N/A	Contaminant doesn't give off vapours
R, L, T, D, C	Chromium	Inhalation of soil vapours	Human Beings	No	N/A	N/A	N/A	Contaminant doesn't give off vapours
R, L, T, D, C	Copper	Inhalation of soil vapours	Human Beings	No	N/A	N/A	N/A	Contaminant doesn't give off vapours
R, L, T, D, C	Lead	Inhalation of soil vapours	Human Beings	No	N/A	N/A	N/A	Contaminant doesn't give off vapours
R, L, T, D, C	Nickel	Inhalation of soil vapours	Human Beings	No	N/A	N/A	N/A	Contaminant doesn't give off vapours
R, C	Vanadium	Inhalation of soil vapours	Human Beings	No	N/A	N/A	N/A	Contaminant doesn't give off vapours
L, T, D, C	Zinc	Inhalation of soil vapours	Human Beings	No	N/A	N/A	N/A	Contaminant doesn't give off vapours
T, C	Boron	Inhalation of soil vapours	Human Beings	No	N/A	N/A	N/A	Contaminant doesn't give off vapours
D, C	Mercury	Inhalation of soil vapours	Human Beings	No	N/A	N/A	N/A	Contaminant doesn't give off vapours
L, T, D, C	Arsenic	Inhalation of soil vapours	Human Beings	No	N/A	N/A	N/A	Contaminant doesn't give off vapours
R, T, D	Sulphate	Inhalation of soil vapours	Human Beings	No	N/A	N/A	N/A	Contaminant doesn't give off vapours
R, L, T, D, C	Asbestos	Inhalation of soil vapours	Human Beings	No	N/A	N/A	N/A	Contaminant doesn't give off vapours
R, L, C	PCB	Inhalation of soil vapours	Human Beings	No	N/A	N/A	N/A	Contaminant doesn't give off vapours
R, L, T, D, C	PAHs	Inhalation of soil vapours	Human Beings	Yes	Likely	Severe	High	Current risk as site is accessable however futurs use will be hard standing. Contaminant will move between soil and vapour phase
R, L, T, D, C	Hydrocarbons	Inhalation of soil vapours	Human Beings	Yes	Likely	Severe	High	Current risk as site is accessable however futurs use will be hard standing. Contaminant will move between soil and vapour phase
T, D, C	Phenol	Inhalation of soil vapours	Human Beings	Yes	Likely	Severe	High	Current risk as site is accessable however futurs use will be hard standing. Contaminant will move between soil and vapour phase
T, D, C	HCH (hexachlorocyclohexane)	Inhalation of soil vapours	Human Beings	Yes	Un-likely	Severe	Low	Contaminant can exist as a vapour phase, and is likely to have dispersed.
T, C	Dieldrin	Inhalation of soil vapours	Human Beings	Yes	Low Likelihood	Mild	Low	Dieldrin vapour is heavier than air, and only poses a risk to confined areas, contaminant unlikely to migrate. Some atmospheric dispersion will take place
T, C	Organotin Compounds	Inhalation of soil vapours	Human Beings	Yes	Likely	Severe	High	Current risk as site is accessable however futurs use will be hard standing. Contaminant will move between soil and vapour phase
L	Dioxins	Inhalation of soil vapours	Human Beings	No	N/A	N/A	N/A	Contaminant doesn't give off vapours
L	Furans	Inhalation of soil vapours	Human Beings	No	N/A	N/A	N/A	Contaminant doesn't give off vapours
T, C	Acetone	Inhalation of soil vapours	Human Beings	`	Likely	Severe	High	Current risk as site is accessable however futurs use will be hard standing. Causes irritation after short term exposure. Will affect male and female reproductive systems

Key To Contaminant Source:
R = Railway Sidings, L = Landfill Sites, T = Timber Yards and Storage, D = Docklands and Harbours, C = Travelling Cranes

Source	Contaminant	Pathway	Receptor	Plausible	Likelihood	Severity	Risk	Comments
R, L, T, D, C	Cadmium	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
R, L, T, D, C	Chromium	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
R, L, T, D, C	Copper	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
R, L, T, D, C	Lead	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
R, L, T, D, C	Nickel	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
R, C	Vanadium	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
L, T, D, C	Zinc	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
T, C	Boron	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
D, C	Mercury	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
L, T, D, C	Arsenic	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
R, T, D	Sulphate	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
R, L, T, D, C	Asbestos	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
R, L, C	PCB	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
R, L, T, D, C	PAHs	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
R, L, T, D, C	Hydrocarbons	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
T, D, C	Phenol	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
T, D, C	HCH (hexachlorocyclohexane)	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
T, C	Dieldrin	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
T, C	Organotin Compounds	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
L	Dioxins	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
L	Furans	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site
T, C	Acetone	Direct Diffusion / partition through soils	Groundwater	No	N/A	N/A	N/A	Groundwater as defined by Water Resources Act 1991does not exist below the site

Key To Contaminant Source:
R = Railway Sidings, L = Landfill Sites, T = Timber Yards and Storage, D = Docklands and Harbours, C = Travelling Cranes

Source	Contaminant	Pathway	Receptor	Plausible	Likelihood	Severity	Risk	Comments
R, L, T, D, C	Cadmium	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
R, L, T, D, C	Chromium	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
R, L, T, D, C	Copper	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
R, L, T, D, C	Lead	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
R, L, T, D, C	Nickel	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
R, C	Vanadium	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
L, T, D, C	Zinc	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
T, C	Boron	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
D, C	Mercury	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
L, T, D, C	Arsenic	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
R, T, D	Sulphate	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
R, L, T, D, C	Asbestos	Migration through soils via diffusion and soil partition	River Ebbw	No	N/A	N/A	N/A	Asbestos does not cause harm to the water environment
R, L, C	PCB	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Un-likely	Medium	Low	Soil / geology comprises saturated estuarine mud's. Therefore diffusion is limited, PCB's are heavy and lateral migration is limited.
R, L, T, D, C	PAHs	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Low Likelihood	Medium	Medium	Soil / geology comprises saturated estuarine mud's. Therefore diffusion is limited, PAH's are mobile and will move laterally in a saturated environment.
R, L, T, D, C	Hydrocarbons	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Low Likelihood	Medium	Medium	Soil / geology comprises saturated estuarine mud's. Therefore diffusion is limited, Hydrocarbons are mobile and will move laterally in a saturated environment.
T, D, C	Phenol	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Un-likely	Severe	Moderate	Soil / geology comprises saturated estuarine mud's. Therefore diffusion is limited, and remains in soil for a short time.
T, D, C	HCH (hexachlorocyclohexane)	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Low Likelihood	Medium	Medium	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
T, C	Dieldrin	Migration through soils via diffusion and soil partition	River Ebbw	Yes	Low Likelihood	Mild	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
T, C	Organotin Compounds	Migration through soils via diffusion and soil partition	River Ebbw	No	N/A	N/A	N/A	River would act as pathway to human health.
L	Dioxins	Migration through soils via diffusion and soil partition	River Ebbw	No	N/A	N/A	N/A	No risk in aquatic environment
L	Furans	Migration through soils via diffusion and soil partition	River Ebbw	No	N/A	N/A	N/A	No risk in aquatic environment
T, C	Acetone	Migration through soils via diffusion and soil partition	River Ebbw	No	N/A	N/A	N/A	Acetone does not absorb onto soil matrix, behave as gas

Key To Contaminant Source:
R = Railway Sidings, L = Landfill Sites, T = Timber Yards and Storage, D = Docklands and Harbours, C = Travelling Cranes

Source	Contaminant	Pathway	Receptor	Plausible	Likelihood	Severity	Risk	Comments
R, L, T, D, C	Cadmium	Migration through groundwater	River Ebbw	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
R, L, T, D, C	Chromium	Migration through groundwater	River Ebbw	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
R, L, T, D, C	Copper	Migration through groundwater	River Ebbw	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
R, L, T, D, C	Lead	Migration through groundwater	River Ebbw	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
R, L, T, D, C	Nickel	Migration through groundwater	River Ebbw	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
R, C	Vanadium	Migration through groundwater	River Ebbw	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
L, T, D, C	Zinc	Migration through groundwater	River Ebbw	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
T, C	Boron	Migration through groundwater	River Ebbw	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
D, C	Mercury	Migration through groundwater	River Ebbw	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
L, T, D, C	Arsenic	Migration through groundwater	River Ebbw	Yes	Un-likely	Medium	Low	Most arsenic compounds dissolve in water and ultimately end up in the soil or sediments.
R, T, D	Sulphate	Migration through groundwater	River Ebbw	Yes	Un-likely	Medium	Low	May reduce pH in aquatic environment
R, L, T, D, C	Asbestos	Migration through groundwater	River Ebbw	No	N/A	N/A	N/A	Contaminant does not sorb into water
R, L, C	PCB	Migration through groundwater	River Ebbw	Yes	Low Likelihood	Mild	Low	In water, a small amount of PCBs may remain dissolved, but most stick to organic particles and bottom sediments
R, L, T, D, C	PAHs	Migration through groundwater	River Ebbw	Yes	Likely	Severe	High	PAHs move through soil to contaminate underground water. Do not dissolve easily in water. They stick to solid particles and settle to the bottoms of lakes or rivers
R, L, T, D, C	Hydrocarbons	Migration through groundwater	River Ebbw	Yes	Likely	Severe	High	hydrocarbons move through soil to contaminate underground water. Do not dissolve easily in water. They stick to solid particles and settle to the bottoms of lakes or rivers
T, D, C	Phenol	Migration through groundwater	River Ebbw	Yes	Un-likely	Severe	Moderate	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited, and remains in soil for a short time.
T, D, C	HCH (hexachlorocyclohexane)	Migration through groundwater	River Ebbw	Yes	Low Likelihood	Mild	Low	Contaminant is broken down to less toxic substances by algae, fungi, and bacteria, this process can take a long time.
T, C	Dieldrin	Migration through groundwater	River Ebbw	No	N/A	N/A	N/A	Contaminant unlikely to transfer from soils to water.
T, C	Organotin Compounds	Migration through groundwater	River Ebbw	No	N/A	N/A	N/A	River would act as pathway to human health.
L	Dioxins	Migration through groundwater	River Ebbw	No	N/A	N/A	N/A	No risk in aquatic environment
L	Furans	Migration through groundwater	River Ebbw	No	N/A	N/A	N/A	No risk in aquatic environment
T, C	Acetone	Migration through groundwater	River Ebbw	Yes	Low Likelihood	Medium	Medium	Able to migrate to ground water from soils. The breakdown time varies with situation.

Key To Contaminant Source:
R = Railway Sidings, L = Landfill Sites, T = Timber Yards and Storage, D = Docklands and Harbours, C = Travelling Cranes

Source	Contaminant	Pathway	Receptor	Plausible	Likelihood	Severity	Risk	Comments
R, L, T, D, C	Cadmium	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Chromium	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Copper	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Lead	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Nickel	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, C	Vanadium	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L, T, D, C	Zinc	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Boron	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
D, C	Mercury	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L, T, D, C	Arsenic	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, T, D	Sulphate	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Asbestos	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, C	PCB	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	PAHs	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Hydrocarbons	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, D, C	Phenol	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, D, C	HCH (hexachlorocyclohexane)	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Dieldrin	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Organotin Compounds	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L	Dioxins	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L	Furans	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Acetone	Migration through soils via diffusion and soil partition	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.

Key To Contaminant Source:
R = Railway Sidings, L = Landfill Sites, T = Timber Yards and Storage, D = Docklands and Harbours, C = Travelling Cranes

Source	Contaminant	Pathway	Receptor	Plausible	Likelihood	Severity	Risk	Comments
R, L, T, D, C	Cadmium	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Chromium	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Copper	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Lead	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Nickel	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, C	Vanadium	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L, T, D, C	Zinc	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Boron	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
D, C	Mercury	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L, T, D, C	Arsenic	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, T, D	Sulphate	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Asbestos	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, C	PCB	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	PAHs	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Hydrocarbons	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, D, C	Phenol	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, D, C	HCH (hexachlorocyclohexane)	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Dieldrin	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Organotin Compounds	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L	Dioxins	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L	Furans	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Acetone	Migration through groundwater	River Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.

Key To Contaminant Source:
R = Railway Sidings, L = Landfill Sites, T = Timber Yards and Storage, D = Docklands and Harbours, C = Travelling Cranes

Source	Contaminant	Pathway	Receptor	Plausible	Likelihood	Severity	Risk	Comments
R, L, T, D, C	Cadmium	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
R, L, T, D, C	Chromium	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
R, L, T, D, C	Copper	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
R, L, T, D, C	Lead	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
R, L, T, D, C	Nickel	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
R, C	Vanadium	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
L, T, D, C	Zinc	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
T, C	Boron	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
D, C	Mercury	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
L, T, D, C	Arsenic	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
R, T, D	Sulphate	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	May reduce pH in aquatic environment
R, L, T, D, C	Asbestos	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	No	N/A	N/A	N/A	Asbestos does not cause harm to the water environment
R, L, C	PCB	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Located within 400m of the site and comprises saturated sediments. Therefore diffusion is limited, PAH's are heavy and lateral migration is limited.
R, L, T, D, C	PAHs	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Low Likelihood	Medium	Medium	Located within 400m of the site and comprises saturated sediments.Therefore diffusion is limited, PCB's are heavy and lateral migration is limited.
R, L, T, D, C	Hydrocarbons	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Low Likelihood	Medium	Medium	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited, Hydrocarbons are mobile and will move laterally in a saturated environment.
T, D, C	Phenol	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Un-likely	Severe	Moderate	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited, and remains in soil for a short time.
T, D, C	HCH (hexachlorocyclohexane)	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Low Likelihood	Medium	Medium	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited, HCH is mobile and will move laterally in a saturated environment.
T, C	Dieldrin	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Soil / geology comprise saturated estuarine mud. Therefore diffusion is limited
T, C	Organotin Compounds	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	No	N/A	N/A	N/A	Lake would act as pathway to human health.
L	Dioxins	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	No	N/A	N/A	N/A	No risk in aquatic environment
L	Furans	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	No	N/A	N/A	N/A	No risk in aquatic environment
T, C	Acetone	Migration through soils via diffusion and soil partition	Ebbw River Ox Bow Lake	No	N/A	N/A	N/A	Does not absorb onto soil matrix.

Key To Contaminant Source:
R = Railway Sidings, L = Landfill Sites, T = Timber Yards and Storage, D = Docklands and Harbours, C = Travelling Cranes

Source	Contaminant	Pathway	Receptor	Plausible	Likelihood	Severity	Risk	Comments
R, L, T, D, C	Cadmium	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
R, L, T, D, C	Chromium	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
R, L, T, D, C	Copper	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
R, L, T, D, C	Lead	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
R, L, T, D, C	Nickel	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
R, C	Vanadium	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
L, T, D, C	Zinc	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
T, C	Boron	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
D, C	Mercury	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Groundwater comprises water contained in clays and silts, therefore migration will be limited
L, T, D, C	Arsenic	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	Most arsenic compounds dissolve in water and ultimately end up in the soil or sediments.
R, T, D	Sulphate	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Un-likely	Medium	Low	May reduce pH in aquatic environment but contaminant likely to disperse in contaminant plume
R, L, T, D, C	Asbestos	Migration through groundwater	Ebbw River Ox Bow Lake	No	N/A	N/A	N/A	Asbestos does not cause harm to the water environment
R, L, C	PCB	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Low Likelihood	Mild	Low	In water, a small amount of PCBs may remain dissolved, but most stick to organic particles and bottom sediments
R, L, T, D, C	PAHs	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Likely	Severe	High	PAHs move through soil to contaminate underground water. Do not dissolve easily in water. They stick to solid particles and settle to the bottoms of lakes or rivers
R, L, T, D, C	Hydrocarbons	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Likely	Severe	High	PAHs move through soil to contaminate underground water. Do not dissolve easily in water. They stick to solid particles and settle to the bottoms of lakes or rivers
T, D, C	Phenol	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Un-likely	Severe	Moderate	Soil / geology comprises saturated estuarine mud's. Therefore diffusion is limited, and remains in soil for a short time.
T, D, C	HCH (hexachlorocyclohexane)	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Low Likelihood	Mild	Low	Contaminant is broken down to less toxic substances by algae, fungi, and bacteria, this process can take a long time.
T, C	Dieldrin	Migration through groundwater	Ebbw River Ox Bow Lake	No	N/A	N/A	N/A	Contaminant unlikely to transfer from soils to water.
T, C	Organotin Compounds	Migration through groundwater	Ebbw River Ox Bow Lake	No	N/A	N/A	N/A	Lake would act as pathway to human health.
L	Dioxins	Migration through groundwater	Ebbw River Ox Bow Lake	No	N/A	N/A	N/A	No risk in aquatic environment
L	Furans	Migration through groundwater	Ebbw River Ox Bow Lake	No	N/A	N/A	N/A	No risk in aquatic environment
T, C	Acetone	Migration through groundwater	Ebbw River Ox Bow Lake	Yes	Low Likelihood	Medium	Medium	Able to migrate to ground water from soils. The breakdown time varies with situation.

Key To Contaminant Source:
R = Railway Sidings, L = Landfill Sites, T = Timber Yards and Storage, D = Docklands and Harbours, C = Travelling Cranes

Source	Contaminant	Pathway	Receptor	Plausible	Likelihood	Severity	Risk	Comments
R, L, T, D, C	Cadmium	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Chromium	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Copper	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Lead	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Nickel	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, C	Vanadium	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L, T, D, C	Zinc	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Boron	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
D, C	Mercury	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L, T, D, C	Arsenic	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, T, D	Sulphate	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Asbestos	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, C	PCB	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	PAHs	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Hydrocarbons	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, D, C	Phenol	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, D, C	HCH (hexachlorocyclohexane)	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Dieldrin	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Organotin Compounds	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L	Dioxins	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L	Furans	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Acetone	Migration through soils to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.

Key To Contaminant Source:
R = Railway Sidings, L = Landfill Sites, T = Timber Yards and Storage, D = Docklands and Harbours, C = Travelling Cranes

Source	Contaminant	Pathway	Receptor	Plausible	Likelihood	Severity	Risk	Comments
R, L, T, D, C	Cadmium	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Chromium	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Copper	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Lead	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Nickel	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, C	Vanadium	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L, T, D, C	Zinc	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Boron	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
D, C	Mercury	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L, T, D, C	Arsenic	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, T, D	Sulphate	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Asbestos	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, C	PCB	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	PAHs	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
R, L, T, D, C	Hydrocarbons	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, D, C	Phenol	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, D, C	HCH (hexachlorocyclohexane)	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Dieldrin	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Organotin Compounds	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L	Dioxins	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
L	Furans	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.
T, C	Acetone	Migration through Groundwater to River	SSSI within Usk	No	N/A	N/A	N/A	River is located 1km away from the site. It is unlikely that contaminates will migrate for this distance through estuarine deposits. A concrete dock wall lies between the site and the river.