ARCADIS TERENCE E. DUDLEY & ASSOCIATES
STRUCTURAL & CIVIL CONSULTING ENGINEERS

Desk Study Report

on land South of

Bleachcroft Way, Stairfoot, Barnsley

April 2009

Ref: SC/08363

Introduction

Arcadis Terence E Dudley were requested by Stainsby Grange (Wombwell) Ltd to undertake a desk study of land at Stairfoot in Barnsley.

This study involves the examination of Historical Maps of the area, and a Geotechnical/ Environmental report undertaken by this Company on the Retail Development Site immediately to the North of the Development Site which encompassed an area within the Northern Boundary of the Site under consideration.

The author has been involved in research & development of this site for in excess of the past 10 years.

1.00 General Setting

The land involved covers an area of approximately 11.00 hectares and slopes about 25 metres from its Southern end to the North where it then flattens out, joining the adjacent developed Site.

On the eastern boundary is the disused and mainly dry remains of the Dearne & Dove Canal, whilst on the Western boundary is the disused Dearne Valley Railway.

A large Retail Warehouse and small starter Business centre occupy the site immediately to the North West, these are separated from other small retail and warehouse units to the North East by Bleachcroft Way.

The large retail unit constructed in the year 2003 was preceded by Glass Bottle Warehouses. A surface water collection lagoon was constructed, at the time of the retail unit; which is located adjacent to the former canal in the North Eastern corner at the Site.

Stairfoot Roundabout lies approximately 300 metres from the Northern Boundary to the North West.

2.00 Potentially Contaminative Land Use and Pollution Incidents

Envirotech data searches undertaken at the time of the original report indicated there were four waste treatment/ disposal sites within 1 kilometre of the property. 14 landfill sites were present within 1km of the Site, none of which at the time of the research had a valid license, however none were located within 250 metres of the Site.

The dismantled railway is at the lower end of the Site comprises an embankment of made ground materials. Common contaminates of which are normally experienced in these situations involve arsenic, chromium and lead.

3.00 Historical Use

Maps dating from 1855 to the year 1989 have been examined from which the following data was retrieved.

1855 Open field with small quarry at the top of South East corner.
The Dearne Dove Canal was present on the eastern boundary.

1894 The quarry has disappeared in this map but a reservoir is now present in an approximately opposite position on the West side boundary. The canal is still operational.

1906 The Stairfoot and Cudworth Railway line is now shown on the Western boundary, otherwise no change.

1938 No change

1955 No change

1966 The reservoir is now missing but the Dob Syke Beck has appeared in the South and East boundaries draining into the canal.

1980 No change

1989 The railway line is now disused along with the Canal, landfill is described on the flat area adjacent to the northern boundary at the bottom of the hill, now developed.

4.00 Coal Mining

The Site lies in an area of extensive coalmining. A mining report for the developed Site on the Northern Boundary indicates that the area is within the likely zone of influence on the surface from workings in eleven coal seams at approximately 120m to 610m depth, the last date of working being 1987.

According to the British Coal Authority report ground movement from these workings should now have ceased.

5.00 Geology

Trial pits undertaken in 1999 indicate generally topsoil averaging 300mm. This covered sandy soil over loose or very soft sandy clay of average depth 1.2meteres, overlying loose to medium dense sandy silt.

At the upper reaches of the slope, gravel and sandstone are expected to occur hence the presence of the quarry.

6.00 Landfill Gases

During the excavation of the trial pits, particularly in the developed Site to the immediate North, levels of Carbon Dioxide, methane and oxygen were measured. No abnormal gas levels were detected, henceforth gases are therefore not expected to present a problem on the Site.

7.00 Contamination

The historical use of the Site would indicate that the risk of significant contamination is remote.

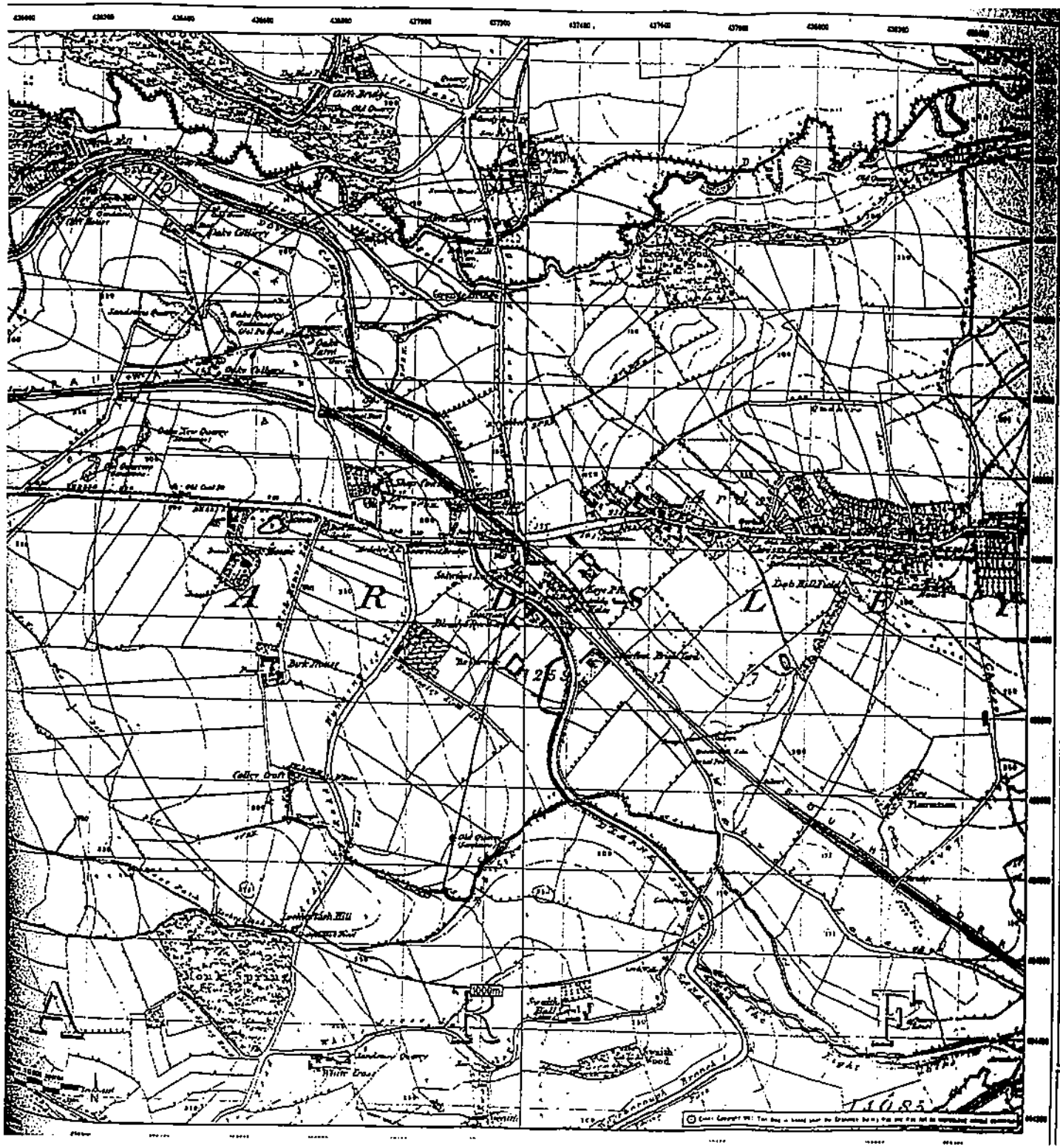
Tests on the fill material to the railway embankment taken on the adjacent site showed no levels of contamination of concern. All levels of contamination falling below the then current ICRCL threshold criteria.

8.00 Conclusion

Whilst a detailed Geo-Environmental investigation is recommended before development, based upon the information obtained in this desk study no Environmental or Geological problems exist which would prevent the development of the site for domestic use.

Appendix 1

Relevant Historical Maps



EnviroCheck

Environmental Site Sensitivity Data

CLIENT DETAILS Order No. EH12708-4

Customer: Delft Phil Studds
Address: Geraghty & Miller Intl Inc
Wakefield House 6 Feastfield, Horsforth
LEEDS
West Yorkshire LS18 4TJ

SITE DETAILS Grid Reference 437200 405500

Site in Barnsley

Historical Map Legend

Quarry
Shingle
Railway over Road
Road over Railway
Railway over River
Gravel Pit
Sand Pit
Level Crossing
Other Pits
Road over River or Canal
Road over Stream
Mixed Wood
Rough Pasture
Road over Stream
Marsh
Sunken Road
Raised Road
Sketched Contour
Instrumental Contour
Arrow denotes flow of water

YORKSHIRE county

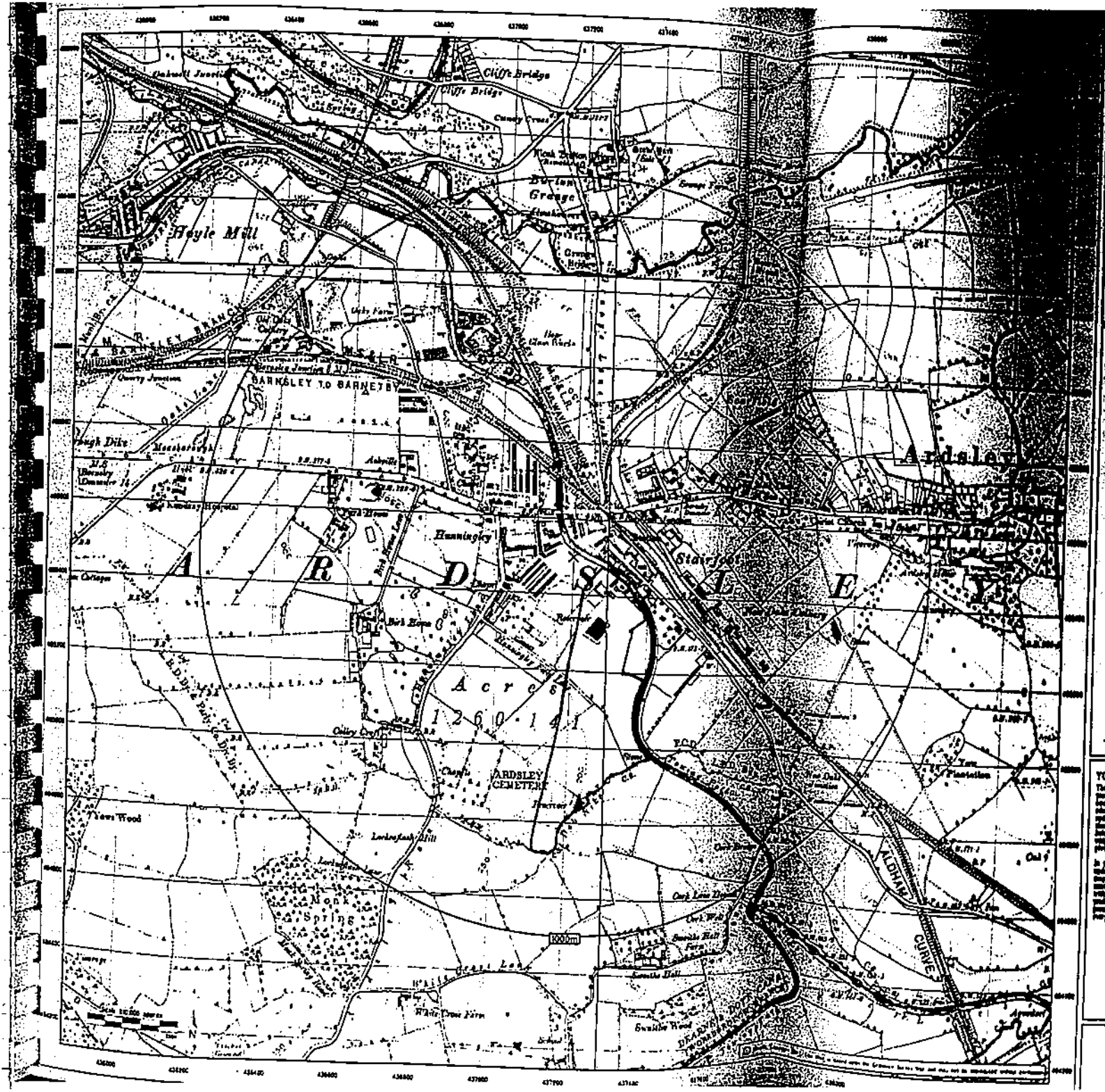
[illegible]

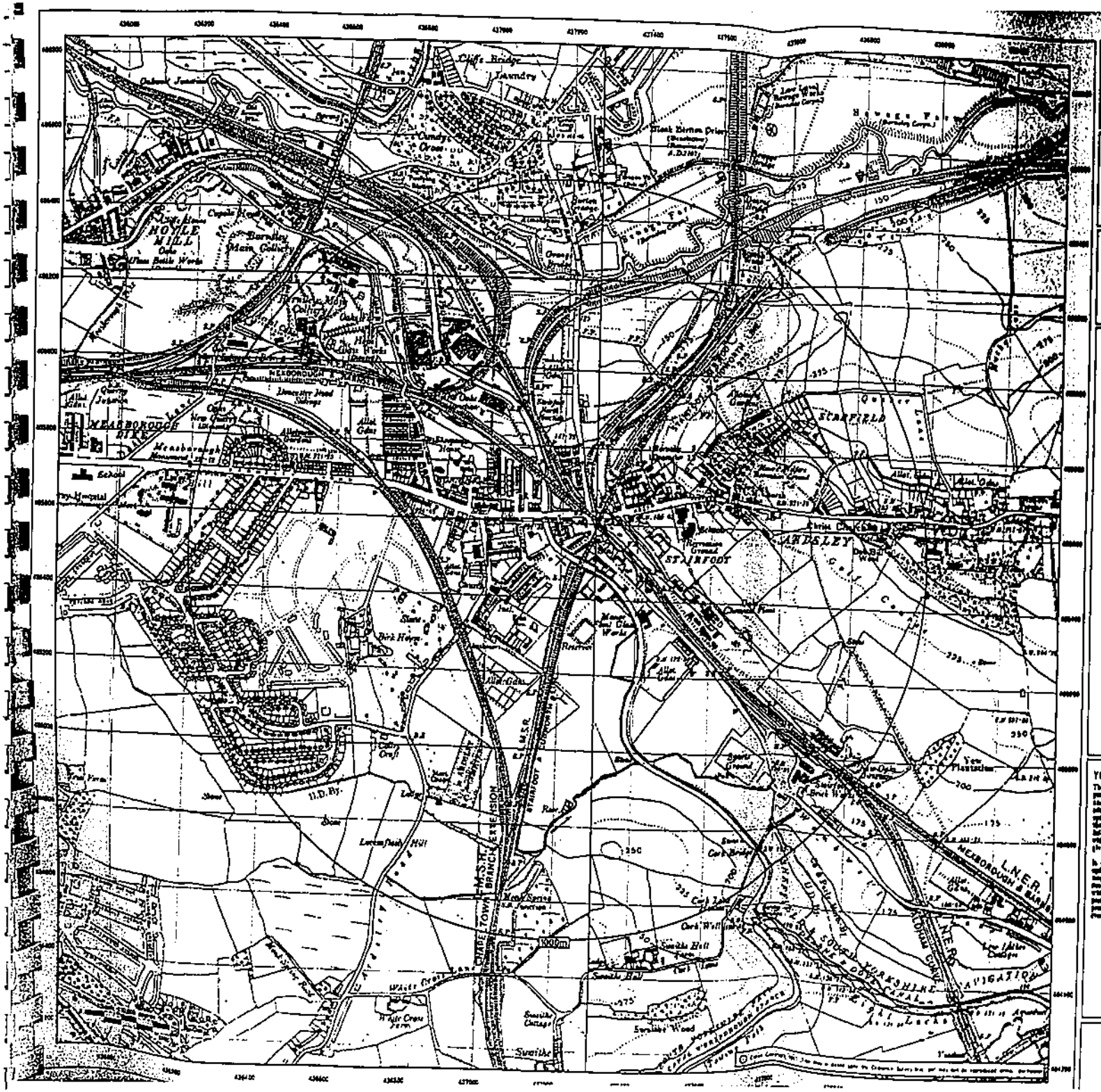
3853	3854

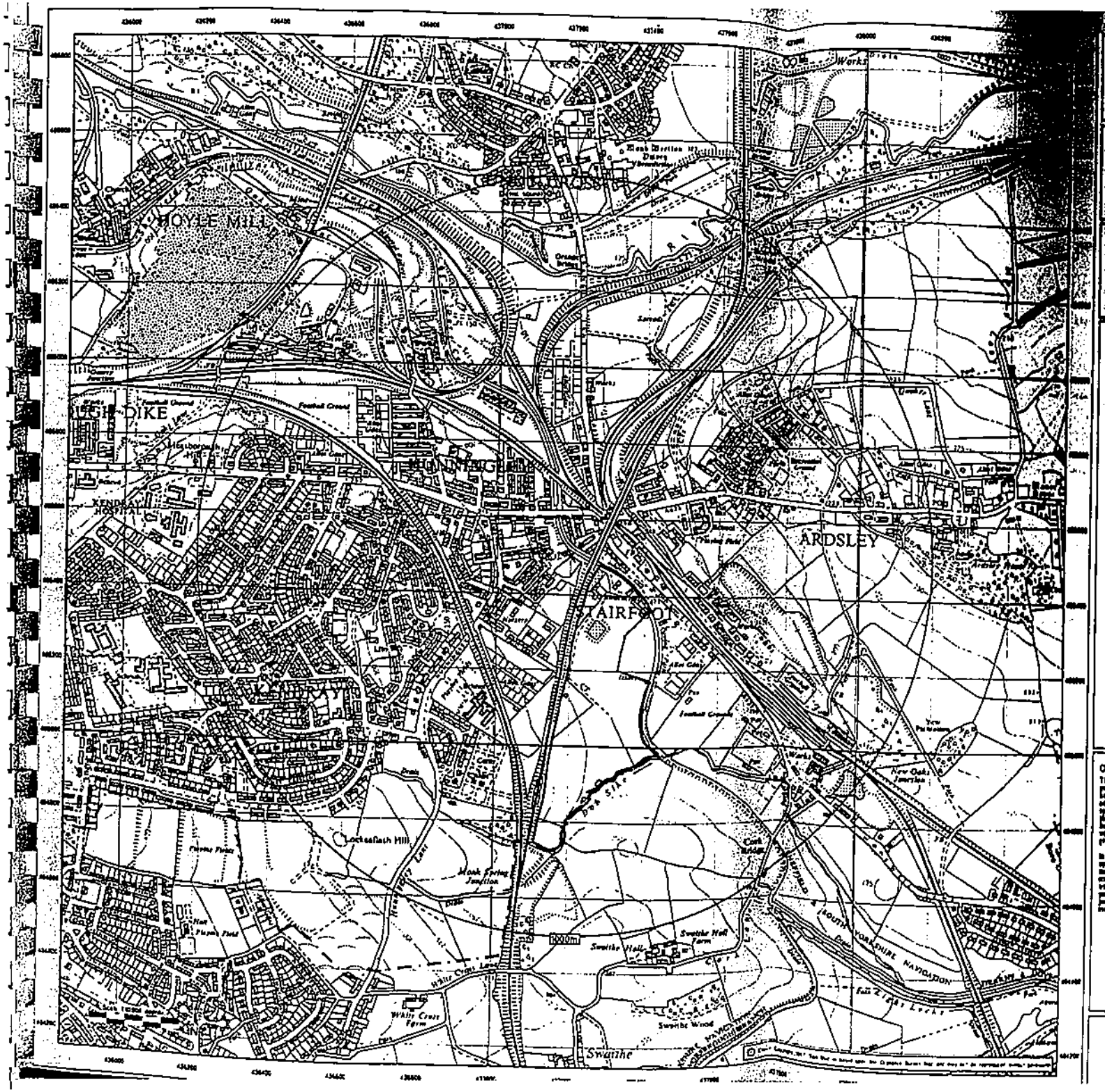
Date(s) of Publication

Ordnance Survey
Value Added Reseller

Landmark Information Group Limited
[illegible]
Telephone [illegible] Fax [illegible]


Cliffe Bridge
Hoyle Mill
Grange Farm
Grange Bridge
Old Dam
Quarry
Quarry Junction
BARNSLEY TO BARNETBY
Barnsley Junction
Barnsley Jn
Barnsley Dimmeler St.
Barnsley Monkbridge
Monkbridge Jn
Monk Bridge Ironworks
Monk Bridge Colliery
Monk Bridge Ironworks
Monk Bridge Ironworks Sidings
Monk Bridge Ironworks Sidings
Monk Bridge Ironworks Sidings


Cliffe Bridge
Laundry
Cundy's Cross
Stank Burton Priory
(Remains of)
HOYLE MILL
Barnsley Main Colliery
Chapel House
Wesleyan
Methodist Chapel
Oaks Colliery
Oaks Hall
Oaks Works
(Disused)
Allot. Gdns.
Meadowfield
Meadowfield Methodist Chapel
Meadowfield Methodist Chapel (Remains of)
Meadowfield Methodist Chapel (Disused)
Meadowfield Methodist Chapel (Rebuilt)
Meadowfield Methodist Chapel (Rebuilt)
Meadowfield Methodist Chapel (Rebuilt



EnviroCheck

Environmental Site Sensitivity Data

CLIENT DETAILS

Order No. EH12708-4

Customer Ref: Phil Stoddy
Arcadis Geraghty & Miller Intl Inc
Wharfedale House 6 Forster Field, Hunsforth
LEEDS
West Yorkshire LS31 4TJ

SITE DETAILS

Grid Reference 437200 405500

Site in Barnsley

S70 3NX

Historical Map Legend

Quarry
Shingle
Railway over Road
Road over Railway
Railway over River
Gravel Pit
Sand Pit
Level Crossing
Other Pits
Road over River or Canal
Road over Stream
Mixed Wood
Rough Pasture
Road over Stream
Marsh
Sunken Road
Raised Road
Sketched Contour
Arrow denotes flow of water
Instrumental Contour

Ordnance Survey Map

The historical maps shown were reproduced from copies conditionally held at the scale selected for England, Wales and Scotland in the 1840's. In 1855 the 25,000 scale was adopted for mapping urban areas where work began to update the 1:10,560 maps. The published date given on the title sometimes is when work was first done, but surveyed date is given where work was done after the original publication date. All OS maps are based on the Cassini Projection, and historical surveys of a high accuracy as quality of measurement was limited by the instruments available. Surveyed detail was updated periodically, with new editions appearing every 10 years or so for urban areas.

In the late 1880's, 2 national editions were published, which updated the 1:10,560 mapping from a number of sources. The maps appear unclassified - with all military usage and certain existing sites removed. These maps were basically produced with the National Grid. In 1905, the first 25,000 maps were published using the Transverse Mercator Projection. The original provisions continued until generally, with new editions appearing every 10 years or so for urban areas.

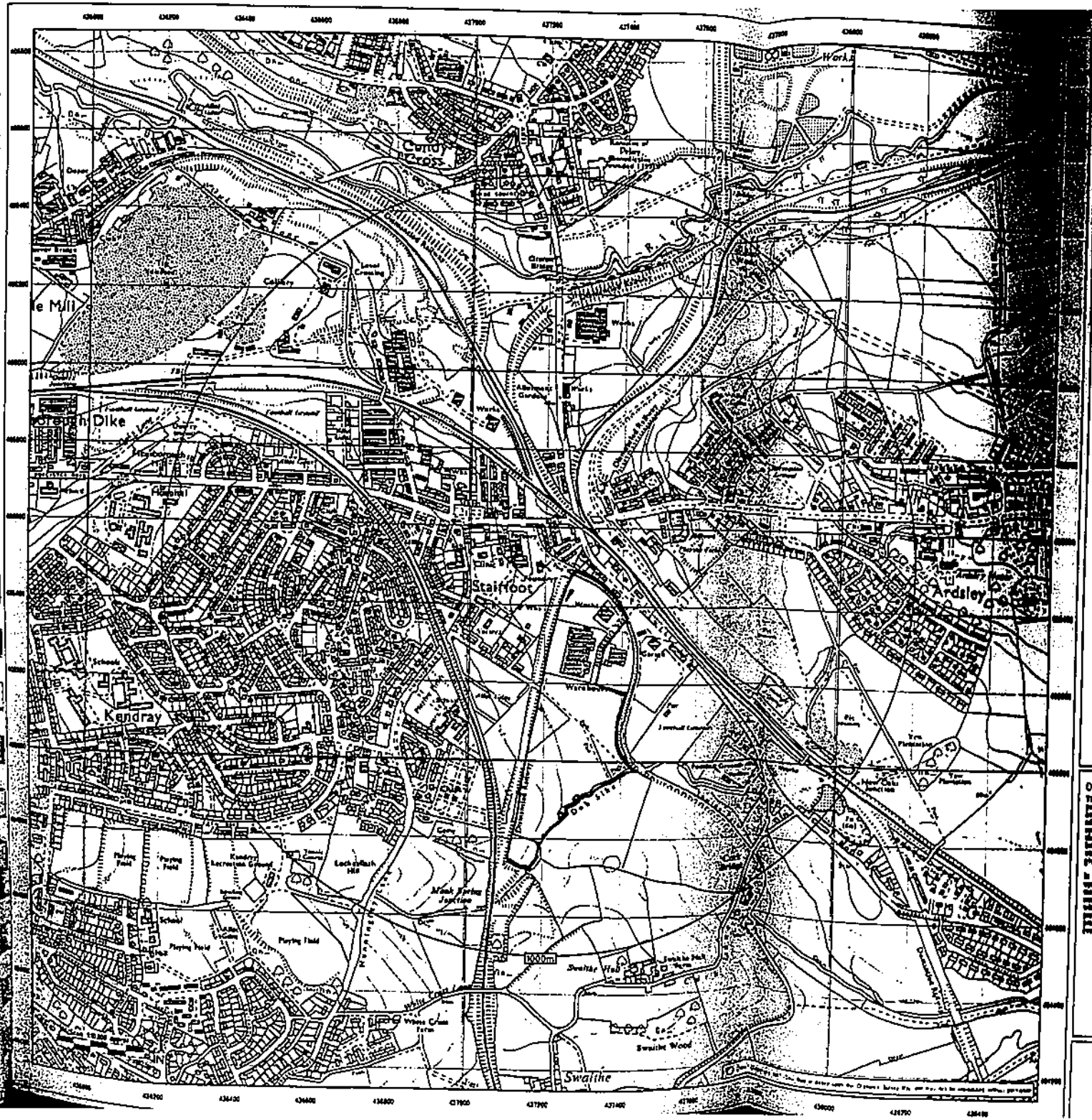
1944

1944

Date(s) of Publication

Ordnance Survey
Value Added Reseller

Landmark Information Group Limited
7 Abbey Court, Eagle Way, Sowton
Exeter, EX2 7HY
Telephone 0870 606 1244
Fax 0870 606 1245



EnviroCheck

Environmental Site Sensitivity Data

CLIENT DETAILS

Customer Ref: Phil Studds
Arcadis Geraghty & Miller Soil Sec
Wharfedale House 6 Fountfield, Horsforth
LEEDS
West Yorkshire LS18 4TJ

Order No. EH12708-4

SITE DETAILS

Site in Barnsley

Grid Reference 437200 405500

S70 3NX

Historical Map Legend

Quarry
Shingle
Railway over Road
Road over Railway
Railway over River
Gravel Pit
Sand Pit
Level Crossing
Other Pits
Road over River or Canal
Road over Stream
Mixed Wood
Rough Pasture
Road over Stream
Marsh
Sunken Road
Raised Road
Sketched Contour
Instrumental Contour
Arrow denotes flow of water

Ordnance Survey Plan

[illegible]

Date(s) of Publication

Ordnance Survey
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Landmark Information Group Limited
Abbey Court, Lage Way, Sowton
Exeter, EX5 1HY
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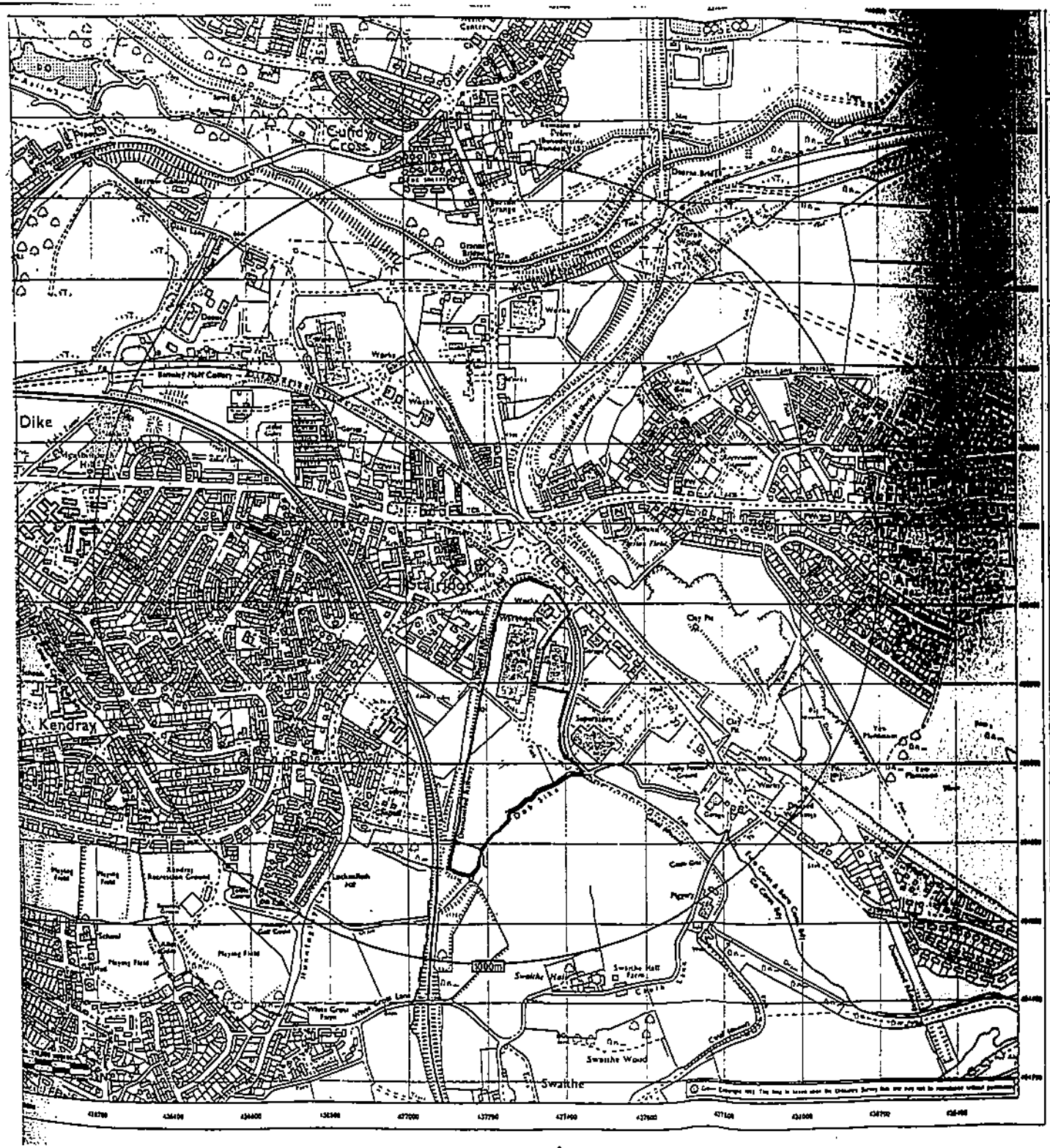

EnviroCheck

Date

CLIENT DE[illegible] Order No. EH12708-4

Customer [illegible]
Arcadis Ger[illegible]
Wharfedale [illegible]
LEEDS
West Yorkshire [illegible]

SITE DE[illegible] 437200 405500

Site in [illegible]

570 3NX

Quarry
Gravel
Mixed Woodland
Marsh
Road over Railway
Railway over River
Road over Stream
Road over Stream
Sunken Road
Raised Road
Sketched Contour
Instrumental Contour
Arrow denotes flow of water

Ordnance Survey Plan

[illegible]

Date(s) of Publication

Ordnance Survey
Value Added Reseller

Landmark Information Group Limited
[illegible]
LANDMARK

Appendix 2

Trial Pit & Borehole Records at the Northern (Lower) portion of the Site

ARCADIS GERAGHTY & MILLER INTERNATIONAL, INC.

BOREHOLE LOG

(Ref: 9HLDEFA)

BOREHOLE ID: **BH4**

FIGURE:

PROJECT NUMBER:	91071	DATE BEGUN:	4/11/99
CLIENT:	Terence Dudley & Associates	DATE COMPLETED:	5/11/99
SITE:	Wombwell Lane, Barnsley	SURFACE ELEVATION:	71.0m
		TOC ELEVATION:	
LOCATION:		TOTAL DEPTH:	5.0m
GRID REFERENCE:	SE 373 052	BOREHOLE DIAMETER:	100mm
DRILLING COMPANY:	Thyssen Geotechnical	SCREEN DIAMETER:	
DRILLING METHOD:	Tracked Mini Rig	SLOT SIZE:	
ENGINEER:	J. Simpson	FILTER PACK:	
CHECKED BY:		SHEET:	1 OF 1

COMMENTS: D = Disturbed sample U = Undisturbed sample

Groundwater not encountered

DEPTH (m)	SAMPLE DEPTH	SAMPLE TYPE	PID READING (max ppm)	WATER LEVEL	ELEVATION (mAOD)	LITHOLOGY DEPTH (m)	LEGEND	DESCRIPTION OF STRATA	WELL INSTALLATION
0.0	0.0	U			71	0.0		MADE GROUND: Loose dark brown topsoil.	
						0.2		MADE GROUND: Loose brown sandy topsoil with some sandstone gravel.	NO WELL
						0.6		SANDY GRAVEL: Light brown very sandy gravel of sandstone (moderately to highly weathered).	INSTALLED
1.0					70	1.2		SANDSTONE: Light grey and orange fine to medium grained sandstone. Thinly bedded with close to medium spaced discontinuities. Moderately strong.	
2.0	2.0	U			69				
3.0	3.0	U			68	3.0		CLAY: Stiff brown sandy silty clay with much gravel and cobbles of siltstone and sandstone (fully weathered).	
4.0	4.0	U			67	4.0		SANDY GRAVEL: Becoming grey/brown clayey sandy gravel of siltstone (highly weathered).	
						4.25		SILTSTONE: Grey siltsone. Highly weathered with closely spaced discontinuities.	
5.0					66	4.75		SANDSTONE: Light grey/brown fine grained sandstone with close to medium spaced discontinuties.	
						5.0		END OF BOREHOLE AT 5.0m	
6.0					65				
7.0					64				
8.0					63				

ARCADIS GERAGHTY & MILLER INTERNATIONAL, INC.

BOREHOLE LOG

(Ref: BHLOGFA)

BOREHOLE ID: **BH5**

FIGURE:

PROJECT NUMBER:	91071	DATE BEGUN:	5/11/99
CLIENT:	Terence Dudley & Associates	DATE COMPLETED:	5/11/99
SITE:	Wombwell Lane, Barnsley	SURFACE ELEVATION:	60.0m
		TOC ELEVATION:	
LOCATION:		TOTAL DEPTH:	6.0m
GRID REFERENCE:	SE 373 052	BOREHOLE DIAMETER:	100mm
DRILLING COMPANY:	Thyssen Geotechnical	SCREEN DIAMETER:	
DRILLING METHOD:	Tracked Mini Rig	SLOT SIZE:	
ENGINEER:	J. Simpson	FILTER PACK:	
CHECKED BY:		SHEET:	1 OF 1

COMMENTS: D = Disturbed sample U = Undisturbed sample

Groundwater not encountered

DEPTH (m)	SAMPLE DEPTH	SAMPLE TYPE	PID READING (max ppm)	WATER LEVEL	ELEVATION (mAOD)	LITHOLOGY DEPTH (m)	LEGEND	DESCRIPTION OF STRATA	WELL INSTALLATION
0.0					60	0.0		MADE GROUND: Loose dark brown topsoil.	
						0.2		MADE GROUND: Loose brown sandy topsoil with occasional sandstone gravel.	NO WELL
1.0					59	0.5		SANDY CLAY: Soft to firm orange brown sandy clay with some gravel of sandstone (highly weathered).	INSTALLED
	1.65	U				1.6		SANDY GRAVEL: Orange brown and grey slightly clayey very sandy gravel of sandstone (highly weathered).	
2.0					58	2.0		SANDSTONE: Light brown and grey medium grained sandstone with close to medium spaced discontinuities. Weak.	
	2.4	U				2.4		SANDSTONE: Cobbles and boulders of orange brown sandstone.	
3.0					57	2.7		CLAY: Stiff orange brown/grey mottled silty sandy clay with occasional gravel of sandstone and siltstone (highly weathered).	
4.0	4.0	U			56	4.0		SILTSTONE: Grey siltstone. Highly weathered with closely spaced discontinuities. Very weak	
5.0	5.0	U			55				
6.0					54	6.0		END OF BOREHOLE AT 6.0m	
7.0					53				
8.0					52				

ARCADIS GERAGHTY & MILLER INTERNATIONAL, INC.

BOREHOLE LOG

(Ref: BHLDEFA)

BOREHOLE ID: TP12

FIGURE:

ROJECT NUMBER:	91071	DATE BEGUN:	21/10/99
IENT:	Terrence Dudley & Associates	DATE COMPLETED:	-
TE:	Wombwell Lane, Barnsley	SURFACE ELEVATION:	53.5m
		TOC ELEVATION:	-
OCATION:	-	TOTAL DEPTH:	2.7m
RID REFERENCE:	SE 373052	BOREHOLE DIAMETER:	-
RILLING COMPANY:	E.J. Lidster	SCREEN DIAMETER:	-
RILLING METHOD:	JCB Excavator	SLOT SIZE:	-
NGINEER:	J. Simpson	FILTER PACK:	-
HECKED BY:		SHEET:	1 OF 1

OMMENTS: D = Disturbed sample B = Bulk sample
* = Sample forwarded to laboratory

Groundwater not encountered

DEPTH (m)	SAMPLE DEPTH	SAMPLE TYPE	PID READING (max ppm)	WATER LEVEL	ELEVATION (mAOD)	LITHOLOGY DEPTH (m)	LEGEND	DESCRIPTION OF STRATA	WELL INSTALLATION
0						-0.0		MADE GROUND: Loose moist dark brown topsoil.	
	0.4	D	0.0		53	-0.45		SANDY CLAY: Soft orange-brown/grey mottled sandy clay.	NO WELL
.0	1.0	B							INSTALLED
						-1.2		CLAY: Firm brown/grey mottled silty clay with sand lenses and coarse sandstone gravel.	
					52				
						-1.7		CLAY: Stiff dark grey clay/very weak mudstone. Friable.	
.0									
						-2.3		MUDSTONE: Becoming grey/brown weathered mudstone/siltstone with much dark brown silt. Very weak with extremely closely spaced discontinuities.	
					51				
						-2.7		Trial Pit Completed at 2.7m	
.0									
					50				
.0									

ARCADIS GERAGHTY & MILLER INTERNATIONAL, INC.

BOREHOLE LOG

(Ref: BHLDEFA)

BOREHOLE ID: TP13

FIGURE:

PROJECT NUMBER:	91071	DATE BEGUN:	21/10/99
CLIENT:	Terrence Dudley & Associates	DATE COMPLETED:	-
SITE:	Wombwell Lane, Barnsley	SURFACE ELEVATION:	57.5m
		TOC ELEVATION:	-
LOCATION:	-	TOTAL DEPTH:	2.5m
GRID REFERENCE:	SE 373052	BOREHOLE DIAMETER:	-
DRILLING COMPANY:	E.J. Lidster	SCREEN DIAMETER:	-
DRILLING METHOD:	JCB Excavator	SLOT SIZE:	-
ENGINEER:	J. Simpson	FILTER PACK:	-
CHECKED BY:		SHEET:	1 OF 1

COMMENTS: D = Disturbed sample B = Bulk sample
* = Sample forwarded to laboratory

Groundwater not encountered

DEPTH (m)	SAMPLE DEPTH	SAMPLE TYPE	PID READING (max ppm)	WATER LEVEL	ELEVATION (mAOD)	LITHOLOGY DEPTH (m)	LEGEND	DESCRIPTION OF STRATA	WELL INSTALLATION
0.0						-0.0		MADE GROUND: Loose dark brown topsoil.	
					57	-0.4		SANDY CLAY: Soft to firm orange-brown sandy clay with occasional sandstone gravel pieces.	NO WELL
	0.6	D	0.0						
1.0	1.0	B				-1.0		CLAY: Firm light grey clay.	INSTALLED
					56	-1.5		CLAY: Firm to stiff grey/brown mottled very silty clay. Completely weathered mudstone.	
2.0						-2.0		MUDSTONE: Becoming grey/brown thinly laminated weathered mudstone/siltstone. Very weak with extremely closely spaced discontinuities.	
					55	-2.5		Trial Pit Completed at 2.5m	
3.0									
					54				
4.0									

RCADIS GERAGHTY & MILLER INTERNATIONAL, INC.

BOREHOLE LOG

(Ref: BHLOEFA)

BOREHOLE ID: TP14

FIGURE:

OJECT NUMBER:	91071	DATE BEGUN:	21/10/99
IENT:	Terrence Dudley & Associates	DATE COMPLETED:	-
E:	Wombwell Lane, Barnsley	SURFACE ELEVATION:	60.6m
		TOC ELEVATION:	-
CATION:	-	TOTAL DEPTH:	2.5m
ID REFERENCE:	SE 373052	BOREHOLE DIAMETER:	-
ILLING COMPANY:	E.J. Lidster	SCREEN DIAMETER:	-
ILLING METHOD:	JCB Excavator	SLOT SIZE:	-
GINEER:	J. Simpson	FILTER PACK:	-
ECKED BY:		SHEET:	1 OF 1

MMENTS: D = Disturbed sample B = Bulk sample

* = Sample forwarded to laboratory

Groundwater not encountered

SAMPLE DEPTH	SAMPLE TYPE	PID READING (max ppm)	WATER LEVEL	ELEVATION (mAOD)	LITHOLOGY DEPTH (m)	LEGEND	DESCRIPTION OF STRATA	WELL INSTALLATION
0					-0.0		MADE GROUND: Loose dark brown topsoil.	
					-0.3		SANDY CLAY: Loose brown sandy clay soil with occasional sandstone gravel.	NO WELL
0.5	D	0.0		60	-0.6		CLAY: Soft to firm light brown sandy very silty clay.	INSTALLED
1.3	B				-1.2		CLAY: Firm to stiff grey silty clay, blocky in appearance.	
				59	-1.5		CLAY: Firm grey/brown mottled silty clay with many lithorelics of weathered mudstone/siltstone.	
					-2.1		CLAY: Becoming grey/brown thinly laminated weathered mudstone/siltstone. Very weak with extremely closely spaced discontinuities.	
				58	-2.5		Trial Pit Completed at 2.5m	
				57				

ARCADIS GERAGHTY & MILLER INTERNATIONAL, INC.

BOREHOLE LOG

(Ref: BHLDEFA)

BOREHOLE ID: TP15

FIGURE:

ROJECT NUMBER:	91071	DATE BEGUN:	21/10/99
LIENT:	Terrence Dudley & Associates	DATE COMPLETED:	-
TE:	Wombwell Lane, Barnsley	SURFACE ELEVATION:	65.2m
		TOC ELEVATION:	-
OCATION:	-	TOTAL DEPTH:	2.4m
RID REFERENCE:	SE 373052	BOREHOLE DIAMETER:	-
RILLING COMPANY:	E.J. Lidster	SCREEN DIAMETER:	-
RILLING METHOD:	JCB Excavator	SLOT SIZE:	-
NGINEER:	J. Simpson	FILTER PACK:	-
HECKED BY:		SHEET:	1 OF 1

OMMENTS: D = Disturbed sample B = Bulk sample

* = Sample forwarded to laboratory

Groundwater not encountered

DEPTH (m)	SAMPLE DEPTH	SAMPLE TYPE	PID READING (max ppm)	WATER LEVEL	ELEVATION (mAOD)	LITHOLOGY DEPTH (m)	LEGEND	DESCRIPTION OF STRATA	WELL INSTALLATION
0						-0.0		MADE GROUND: Loose dark brown topsoil.	
					65	-0.3		SANDY CLAY: Loose brown sandy clay soil with occasional sandstone gravel.	
	0.5	D	0.0						NO WELL
	0.8	B				-0.8		SANDY SILT: Loose to medium dense brown sandy silt with occasional coarse siltstone gravel.	
					64				INSTALLED
						-1.5		SANDY SILT: Medium dense brown sandy silt with many cobble sized lithorelics of siltstone.	
					63				
						-2.3		MUDSTONE: Becoming grey/brown thinly laminated weathered mudstone/siltstone. Very weak with extremely closely spaced discontinuities.	
						-2.4		Trial Pit Completed at 2.4m	
					62				