VOLUME 1:
FACTUAL GEOTECHNICAL REPORT FOR PLANNING APPLICATION FOR DEVELOPMENT OF THE BRICKPIT AND ADJOINING LAND, ASHBY ROAD, HINCKLEY

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GEOJOB/04-128R
Date: June 2004

Summary Of Results
Murray Rix Ltd - Ashby Road, Hinchley

ANALYTES	UNITS	Pit W1											
		S0418816											
Arsenic	ug/l	<1.0	#	#	#	#	#	#	#	#	#	#	#
Cadmium	ug/l	<0.1	#	#	#	#	#	#	#	#	#	#	#
Chromium	mg/l	0.01	#	#	#	#	#	#	#	#	#	#	#
Lead	mg/l	0.04	#	#	#	#	#	#	#	#	#	#	#
Mercury	ug/l	<0.1	#	#	#	#	#	#	#	#	#	#	#
Selenium	ug/l	<1.0	#	#	#	#	#	#	#	#	#	#	#
Copper	mg/l	<0.01	#	#	#	#	#	#	#	#	#	#	#
Nickel	mg/l	<0.01	#	#	#	#	#	#	#	#	#	#	#
Zinc	mg/l	<0.01	#	#	#	#	#	#	#	#	#	#	#
pH	N/A	7.5	#	#	#	#	#	#	#	#	#	#	#
TPH	mg/l	<0.01	#	#	#	#	#	#	#	#	#	#	#

Water samples analysed as received.
: Analyte not requested

APPENDIX D

TABLE 1: RESULTS OF GROUNDWATER AND GAS MONITORING IN BOREHOLES

TABLE 1: GAS AND WATER MONITORING RESULTS ASHBY ROAD, HINCKLEY

POSITION	DATE	METHANE (%)*		O_2 (%)	CO_2 (%)	WATER
		LEL**	TOTAL GAS***			LEVEL (m)
BH1	12.5.2004	0.1	0	19.8	0	6.83
BH2		0.4	0	19.8	0	9.9
BH3		0	0	20.2	0	DRY
BH1	17.5.2004	0.1-0.2	0	16.5	1	6.84
BH2		0.4	0-1	18.3	0.3	6.56
BH3		0	0.1	19.3	0.1	7.24
BH1	7.6.2..4	0.1	0	18	0.9	6.87
BH2		0.4	1	18.8	1.6	2.28
BH3		0	0	18.9	0.7	4.35
BH1	10.6.2004	0.3	0	16.5	1.8	6.88
BH2		0.3-0.4	0	18.8	1.5	2.18
BH3		0-0.1	0	18.8	1.6	4

NOTES:
*the instrument is calibrated for methane
**LEL - Lower Explosive Limit (results expressed as %LEL being 5% in air)
***the results on the total gas scale (methane) are within the error reading of the instrument.
A more accurate indication of gas levels is given by the LEL scale.

APPENDIX C

CONTAMINATION TEST RESULTS

ECõS

Analytical Test Report
For

MURRAY RIX LTD
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Upton lane
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CV13 6EU

PROJECT ID: ASHBY ROAD, HINCKLEY

Report No.: R04/1932t

Copies To:
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File

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THE ENVIRONMENTAL INDUSTRIES COMMISSION

AGS ASSOCIATION OF GEOTECHNICAL SPECIALISTS

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- Accreditation of testing is granted by the United Kingdom Accreditation Service (UKAS).
- It's your assurance that the work has been carried out to the highest standards.
- The laboratory issuing the test report has been stringently assessed by independent experts.
- You are assured that the agreed or specified methods and procedures have been followed.
- Measurements are traceable to national and international standards.

Comments:
Sampling & tests marked † in this report are not included in the UKAS Accreditation Schedule for the testing laboratory.
Any opinions and interpretations expressed herein are outside the scope of the testing laboratory's UKAS Accreditation.
The Coefficient of Variation CV_T (where CV_T = standard deviation/mean*100) is better than 15%
All analysis carried out using ECoS standard methods unless otherwise agreed
The test results in this report refer only to the actual samples on which testing has been performed.
This test report shall not be reproduced, except in full, without written approval of ECoS Environmental.

The laboratory cannot be held responsible for the condition or suitability of samples submitted for testing by a third party or for the competency of personnel other than its own staff.

Date submitted for analysis : 17/05/04

Your Job/Order Number :

Analyst(s) : HP PSW CM SJF CP SML SL SPA

Report Approval

Approved signatories: J R Brown (Customer Services Manager)
E Dewell (Production Manager)
P Richardson (Quality Manager)
J Stoddart (Technical Manager)

Signature :

Report date : 11 June 2004

SOIL

ANALYTE	METHOD OF DETECTION	LIMIT OF DETECTION
Arsenic	ICP-OES	1.0 mg/kg
Cadmium	ICP-OES	0.2 mg/kg
Chromium (total)	ICP-OES	0.2 mg/kg
Lead	ICP-OES	0.5 mg/kg
Mercury	ICP-OES	1.0 mg/kg
Selenium	ICP-OES	1.0 mg/kg
Copper	ICP-OES	0.2 mg/kg
Nickel	ICP-OES	0.2 mg/kg
Zinc	ICP-OES	0.2 mg/kg
pH	pH-meter	N/A
Phenols	Colorimetry	1.0 mg/kg
PCBs	GC-MS	0.1 mg/kg
TPH	GC-FID	0.1 mg/kg
TPH C9-C15	GC-FID	0.1 mg/kg
TPH C16-C20	GC-FID	0.1 mg/kg
TPH C21-C30	GC-FID	0.1 mg/kg
TPH C31-C40	GC-FID	0.1 mg/kg
Vinyl chloride	HS-GC-MS	0.005 mg/kg
Chloromethane	HS-GC-MS	0.005 mg/kg
Bromomethane	HS-GC-MS	0.005 mg/kg
Chloroethane	HS-GC-MS	0.005 mg/kg
Trichlorofluoromethane	HS-GC-MS	0.005 mg/kg
1,1-Dichloroethene	HS-GC-MS	0.005 mg/kg
Methylene chloride	HS-GC-MS	0.005 mg/kg
trans-1,2-Dichloroethene	HS-GC-MS	0.005 mg/kg
1,1-Dichloroethane	HS-GC-MS	0.005 mg/kg
2,2-Dichloropropane	HS-GC-MS	0.005 mg/kg
cis-1,2-Dichloroethene	HS-GC-MS	0.005 mg/kg
Chloroform	HS-GC-MS	0.005 mg/kg
Bromochloromethane	HS-GC-MS	0.005 mg/kg
1,1,1-Trichloroethane	HS-GC-MS	0.005 mg/kg
1,1-Dichloropropene	HS-GC-MS	0.005 mg/kg
Carbon tetrachloride	HS-GC-MS	0.005 mg/kg
1,2-Dichloroethane	HS-GC-MS	0.005 mg/kg
Benzene	HS-GC-MS	0.005 mg/kg
Trichloroethene	HS-GC-MS	0.005 mg/kg
1,2-Dichloropropane	HS-GC-MS	0.005 mg/kg
Bromodichloromethane	HS-GC-MS	0.005 mg/kg
Dibromomethane	HS-GC-MS	0.005 mg/kg
Toluene	HS-GC-MS	0.005 mg/kg
1,1,2-Trichloroethane	HS-GC-MS	0.005 mg/kg
Tetrachloroethene	HS-GC-MS	0.005 mg/kg
1,3-Dichloropropane	HS-GC-MS	0.005 mg/kg
Dibromochloromethane	HS-GC-MS	0.005 mg/kg
cis-1,3-Dichloropropene	HS-GC-MS	0.005 mg/kg
trans-1,3-Dichloropropene	HS-GC-MS	0.005 mg/kg
1,2-Dibromoethane	HS-GC-MS	0.005 mg/kg
Chlorobenzene	HS-GC-MS	0.005 mg/kg
Ethylbenzene	HS-GC-MS	0.005 mg/kg
1,1,1,2-Tetrachloroethane	HS-GC-MS	0.005 mg/kg
m+p-Xylene	HS-GC-MS	0.005 mg/kg
o-Xylene	HS-GC-MS	0.005 mg/kg
Styrene	HS-GC-MS	0.005 mg/kg
Bromoform	HS-GC-MS	0.005 mg/kg
Isopropylbenzene	HS-GC-MS	0.005 mg/kg

SOIL

ANALYTE	METHOD OF DETECTION	LIMIT OF DETECTION
1,1,2,2-Tetrachloroethane	HS-GC-MS	0.005 mg/kg
1,2,3-Trichloropropane	HS-GC-MS	0.005 mg/kg
Bromobenzene	HS-GC-MS	0.005 mg/kg
n-Propylbenzene	HS-GC-MS	0.005 mg/kg
2-Chlorotoluene	HS-GC-MS	0.005 mg/kg
1,3,5-Trimethylbenzene	HS-GC-MS	0.005 mg/kg
4-Chlorotoluene	HS-GC-MS	0.005 mg/kg
tert-Butylbenzene	HS-GC-MS	0.005 mg/kg
1,2,4-Trimethylbenzene	HS-GC-MS	0.005 mg/kg
sec-Butylbenzene	HS-GC-MS	0.005 mg/kg
p-Isopropyltoluene	HS-GC-MS	0.005 mg/kg
1,3-Dichlorobenzene	HS-GC-MS	0.005 mg/kg
1,4-Dichlorobenzene	HS-GC-MS	0.005 mg/kg
n-Butylbenzene	HS-GC-MS	0.005 mg/kg
1,2-Dichlorobenzene	HS-GC-MS	0.005 mg/kg
1,2-Dibromo-2-chloropropane	HS-GC-MS	0.005 mg/kg
1,2,4-Trichlorobenzene	HS-GC-MS	0.005 mg/kg
Hexachlorobutadiene	HS-GC-MS	0.005 mg/kg
Naphthalene	HS-GC-MS	0.005 mg/kg
1,2,3-Trichlorobenzene	HS-GC-MS	0.005 mg/kg
Organic Matter	BS1377	0.1 %
Arsenic (available)	ICP-OES	1.0 mg/kg
Nickel (available)	ICP-OES	0.2 mg/kg
Zinc (available)	ICP-OES	0.2 mg/kg
Phenols (leachable)	Colorimetry	0.01 mg/l
TPH (leachable)	GC-FID	0.01 mg/l
TPH C9-C15 (leachable)	GC-FID	0.01 mg/l
TPH C16-C20 (leachable)	GC-FID	0.01 mg/l
TPH C21-C30 (leachable)	GC-FID	0.01 mg/l
TPH C31-C40 (leachable)	GC-FID	0.01 mg/l

Report R04/1932t is a supplement to R04/1932s, containing additional available metals and leachate analysis.

ASBESTOS BULK MATERIAL ANALYSIS

Samples analysed using polarised light optical microscopy with dispersion staining in accordance with a documented in-house procedure based on HSE Method MDHS 77 - Asbestos in Bulk Materials.

KEY TO ASBESTOS RESULTS

The standard analytical method used for asbestos identification cannot give an accurate quantitative value for percentage asbestos content. The following numerical categories however may be used to assess the approximate quantity of asbestos present in the sample as submitted to the laboratory:

ND - no fibres detected (based on a detection limit of 0.01% by volume)
1 - fibres detected - greater than 0.01% but less than 2% by volume
2 - fibres detected - greater than 2% but less than 50% by volume
3 - fibres detected - more than 50% by volume
P - Non-asbestos fibres present

Quantitative estimates, to which the above numerical categories apply, are outside the scope of the laboratory's UKAS accreditation which covers asbestos identification only.

Summary Of Results
Murray Rix Ltd - Ashby Road, Hinckley

ANALYTES	UNITS	TP4 J1 (0.45m)	TP3 J1 (0.40m)	BH1 J1 (0.50m)	BH2 J1 (0.50m)	BH2 J2 (0.90m)	BH3 J1 (0.50m)	BH3 J2 (0.90m)	MP10	MP4	MP9		
		S0418796	S0418797	S0418798	S0418799	S0418800	S0418802	S0418803	S0418804	S0418806	S0418808		
Arsenic	mg/kg	14.1	1.6	12.9	11.9	#	14.7	19.1	24.5	17.5	21.4	#	#
Cadmium	mg/kg	<0.2	<0.2	<0.2	<0.2	#	0.3	<0.2	<0.2	<0.2	<0.2	#	#
Chromium (total)	mg/kg	20.8	15.7	20.4	23.5	#	24.3	44.9	32.5	23.9	31.1	#	#
Lead	mg/kg	162.4	24.8	96.3	92.9	#	189.3	56.2	89.5	60.0	113.5	#	#
Mercury	mg/kg	<1.0	<1.0	<1.0	<1.0	#	<1.0	<1.0	<1.0	<1.0	<1.0	#	#
Selenium	mg/kg	<1.0	<1.0	<1.0	<1.0	#	<1.0	<1.0	<1.0	<1.0	<1.0	#	#
Copper	mg/kg	36.4	5.7	29.5	25.2	#	66.9	22.8	32.5	24.4	33.7	#	#
Nickel	mg/kg	25.2	9.3	21.4	20.2	#	22.5	50.3	36.1	29.5	30.1	#	#
Zinc	mg/kg	108.0	43.5	99.6	125.0	#	763.4	93.3	305.2	158.8	254.6	#	#
pH	N/A	7.3	5.1	6.2	7.3	#	6.8	7.3	7.6	7.5	7.4	#	#
Phenols	mg/kg	<1.0	#	#	#	<1.0	#	#	10.6	7.2	#	#	#
PCBs	mg/kg	#	#	#	<0.1	#	#	#	<0.1	#	#	#	#
Chrysotile (white)	Category	#	#	#	ND	#	#	#	#	#	#	#	#
Amosite (brown)	Category	#	#	#	ND	#	#	#	#	#	#	#	#
Crocidolite (blue)	Category	#	#	#	ND	#	#	#	#	#	#	#	#
Anthophyllite	Category	#	#	#	ND	#	#	#	#	#	#	#	#
Actinolite	Category	#	#	#	ND	#	#	#	#	#	#	#	#
Tremolite	Category	#	#	#	ND	#	#	#	#	#	#	#	#
Non-Asbestos fibres	Category	#	#	#	P	#	#	#	#	#	#	#	#
TPH	mg/kg	#	#	#	#	<0.1	#	#	#	#	520.4	#	#

†

Results for soil samples expressed as dry weight. For explanation of numerical categories for asbestos results see key page 4.
: Analyte not requested

Summary Of Results
Murray Rix Ltd - Ashby Road, Hinckley

ANALYTES	UNITS	TP4 J1 (0.45m)	TP3 J1 (0.40m)	BH1 J1 (0.50m)	BH2 J1 (0.50m)	BH2 J2 (0.90m)	BH3 J1 (0.50m)	BH3 J2 (0.90m)	MP10	MP4	MP9		
		S0418796	S0418797	S0418798	S0418799	S0418800	S0418802	S0418803	S0418804	S0418806	S0418808		
Vinyl chloride	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Chloromethane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Bromomethane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Chloroethane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Trichlorofluoromethane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
1,1-Dichloroethene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Methylene chloride	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
trans-1,2-Dichloroethene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
1,1-Dichloroethane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
2,2-Dichloropropane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
cis-1,2-Dichloroethene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Chloroform	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Bromochloromethane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
1,1,1-Trichloroethane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
1,1-Dichloropropene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Carbon tetrachloride	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
1,2-Dichloroethane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Benzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Trichloroethene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
1,2-Dichloropropane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#

Results for soil samples expressed as dry weight
: Analyte not requested

Summary Of Results
Murray Rix Ltd - Ashby Road, Hinckley

ANALYTES	UNITS	TP4 J1 (0.45m)	TP3 J1 (0.40m)	BH1 J1 (0.50m)	BH2 J1 (0.50m)	BH2 J2 (0.90m)	BH3 J1 (0.50m)	BH3 J2 (0.90m)	MP10	MP4	MP9		
		S0418796	S0418797	S0418798	S0418799	S0418800	S0418802	S0418803	S0418804	S0418806	S0418808		
Bromodichloromethane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Dibromomethane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Toluene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
1,1,2-Trichloroethane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Tetrachloroethene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
1,3-Dichloropropane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Dibromochloromethane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
cis-1,3-Dichloropropene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
trans-1,3-Dichloropropene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
1,2-Dibromoethane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Chlorobenzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Ethylbenzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
1,1,1,2-Tetrachloroethane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
m+p-Xylene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
o-Xylene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Styrene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Bromoform	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
Isopropylbenzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
1,1,2,2-Tetrachloroethane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#
1,2,3-Trichloropropane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#

Results for soil samples expressed as dry weight
: Analyte not requested

Summary Of Results
Murray Rix Ltd - Ashby Road, Hinckley

ANALYTES	UNITS	TP4 J1 (0.45m)	TP3 J1 (0.40m)	BH1 J1 (0.50m)	BH2 J1 (0.50m)	BH2 J2 (0.90m)	BH3 J1 (0.50m)	BH3 J2 (0.90m)	MP10	MP4	MP9			
		S0418796	S0418797	S0418798	S0418799	S0418800	S0418802	S0418803	S0418804	S0418806	S0418808			
Bromobenzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
n-Propylbenzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
2-Chlorotoluene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
1,3,5-Trimethylbenzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
4-Chlorotoluene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
tert-Butylbenzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
1,2,4-Trimethylbenzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
sec-Butylbenzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
p-Isopropyltoluene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
1,3-Dichlorobenzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
1,4-Dichlorobenzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
n-Butylbenzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
1,2-Dichlorobenzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
1,2-Dibromo-2-chloropropane	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
1,2,4-Trichlorobenzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
Hexachlorobutadiene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
Naphthalene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
1,2,3-Trichlorobenzene	mg/kg	#	#	#	#	<0.005	#	#	<0.005	#	#	#	#	
TPH C9-C15	mg/kg	#	#	#	#	<0.1	#	#	#	#	<0.1	#	#	†
TPH C16-C20	mg/kg	#	#	#	#	<0.1	#	#	#	#	13.0	#	#	†

Results for soil samples expressed as dry weight
: Analyte not requested

Summary Of Results
Murray Rix Ltd - Ashby Road, Hinckley

ANALYTES	UNITS	TP4 J1 (0.45m)	TP3 J1 (0.40m)	BH1 J1 (0.50m)	BH2 J1 (0.50m)	BH2 J2 (0.90m)	BH3 J1 (0.50m)	BH3 J2 (0.90m)	MP10	MP4	MP9			
		S0418796	S0418797	S0418798	S0418799	S0418800	S0418802	S0418803	S0418804	S0418806	S0418808			
TPH C21-C30	mg/kg	#	#	#	#	<0.1	#	#	#	#	363.7	#	#	†
TPH C31-C40	mg/kg	#	#	#	#	<0.1	#	#	#	#	143.8	#	#	†
Zinc (available)	mg/kg	#	#	#	#	#	363.0	#	158.9	#	106.5	#	#	†
Nickel (available)	mg/kg	#	#	#	#	#	#	1.4	#	#	#	#	#	†
Arsenic (available)	mg/kg	#	#	#	#	#	#	#	3	#	3	#	#	†
Phenols (leachable)	mg/l	#	#	#	#	#	#	#	0.08	0.06	#	#	#	
Organic Matter	%	#	#	#	#	#	#	#	#	5.6	#	#	#	†
TPH (leachable)	mg/l	#	#	#	#	#	#	#	#	#	<0.01	#	#	
TPH C9-C15 (leachable)	mg/l	#	#	#	#	#	#	#	#	#	<0.01	#	#	†
TPH C16-C20 (leachable)	mg/l	#	#	#	#	#	#	#	#	#	<0.01	#	#	†
TPH C21-C30 (leachable)	mg/l	#	#	#	#	#	#	#	#	#	<0.01	#	#	†
TPH C31-C40 (leachable)	mg/l	#	#	#	#	#	#	#	#	#	<0.01	#	#	†

Results for soil samples expressed as dry weight
Samples submitted for leachate determination were prepared using agreed procedures and analysed using UKAS accredited methodology where appropriate
: Analyte not requested

Analytical Test Report
For

MURRAY RIX LTD
13 Willow Park
Upton lane
Stoke Golding
Nuneaton
Warwickshire
CV13 6EU

PROJECT ID: ASHBY ROAD, HINCHLEY

Report No.: R04/1933

Copies To:
Mr E Murray
File

ECõS ENVIRONMENTAL
Low Moor Business Park, Common Road, Bradford BD12 0NB
Tel: 01274 691122 - Fax: 01274 608100
www: soil.engineering.co.uk
E-mail: info@ecos.co.uk

A Division of Norwest Holst Soil Engineering Ltd
Registered in England No.980795
Registered Office: Parkside Lane, Dewsbury Road, Leeds LS11 5SX

THE ENVIRONMENTAL INDUSTRIES COMMISSION
AGS ASSOCIATION OF GEOTECHNICAL SPECIALISTS
UKAS TESTING
0618
VINCI

UKAS TESTING
0618

What's so special about a UKAS report or certificate?
- Accreditation of testing is granted by the United Kingdom Accreditation Service (UKAS).
- It's your assurance that the work has been carried out to the highest standards.
- The laboratory issuing the test report has been stringently assessed by independent experts.
- You are assured that the agreed or specified methods and procedures have been followed.
- Measurements are traceable to national and international standards.

Comments:
Sampling & tests marked † in this report are not included in the UKAS Accreditation Schedule for the testing laboratory.
Any opinions and interpretations expressed herein are outside the scope of the testing laboratory's UKAS Accreditation.
The Coefficient of Variation CV_T (where CV_T = standard deviation/mean*100) is better than 15%
All analysis carried out using ECoS standard methods unless otherwise agreed
The test results in this report refer only to the actual samples on which testing has been performed.
This test report shall not be reproduced, except in full, without written approval of ECoS Environmental.

The laboratory cannot be held responsible for the condition or suitability of samples submitted for testing by a third party or for the competency of personnel other than its own staff.

Date submitted for analysis : 17/05/04

Your Job/Order Number :

Analyst(s) : SJF DF HP SPT SML

Report Approval

Approved signatories: J R Brown (Customer Services Manager)
E Dewell (Production Manager)
P Richardson (Quality Manager)
J Stoddart (Technical Manager)

Signature :

Report date : 1 June 2004

APPENDIX E

MAPS HELD AT LEICESTRESHIRE COUNTY COUNCIL RECORDS OFFICE SOUTH WIGSTON (DO NOT SCALE)

Figure 1 - County Series Leicestershire Sheet XLII.4, 25" to 1ml, circa 1884
Figure 2 - County Series Leicestershire Sheet XLII.4, 25" to 1ml, 1903
Figure 3 - County Series Leicestershire Sheet XLII.4, 25" to 1ml, 1924
Figure 4 - County Series Leicestershire Sheet XLII.4, 6" to 1ml, Provisional Edition 1923 (with additions 1938)
Figure 5 - Ordnance Survey Plan SP4295 and SP4395, 1:10,000, 1965
Figure 6 - Ordnance Survey Sheet SP49NW, 1:10,000, 1980
Figure 7 - Ordnance Survey Sheet SP4395SW, 1:1250, 1959
Figure 8 - Ordnance Survey Sheet SP4395SW, 1:1250, 1976
Figure 9 - Ordnance Survey Sheet SP4394NW, 1:1250, 1960

FIGURE 1: COUNTY SERIES LEICESTERSHIRE SHEET XL11.4, 25" TO 1ML, CIRCA 1884

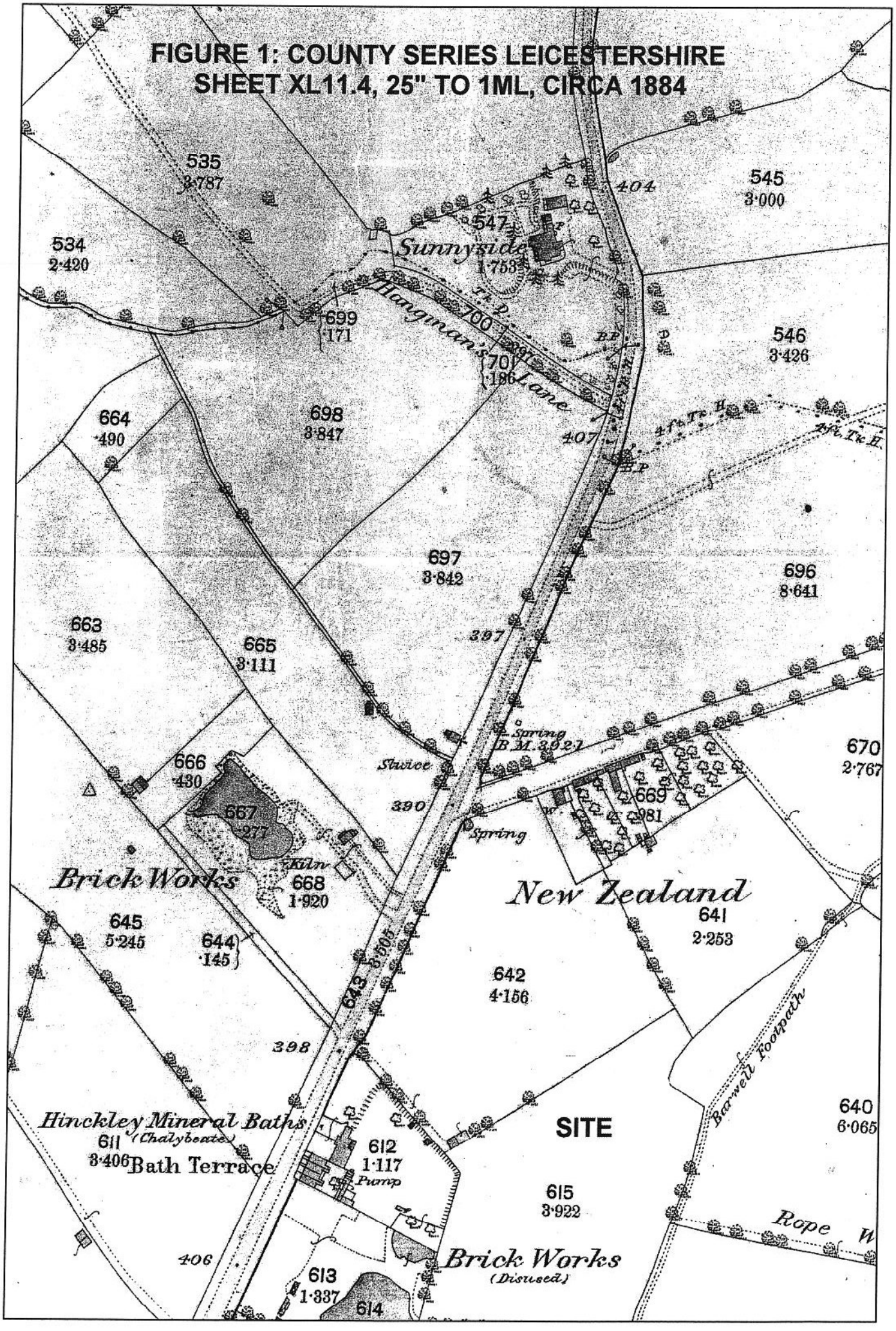


FIGURE 2: COUNTY SERIES LEICESTERSHIRE SHEET XLIV.4, 25" TO 1ML, 1903

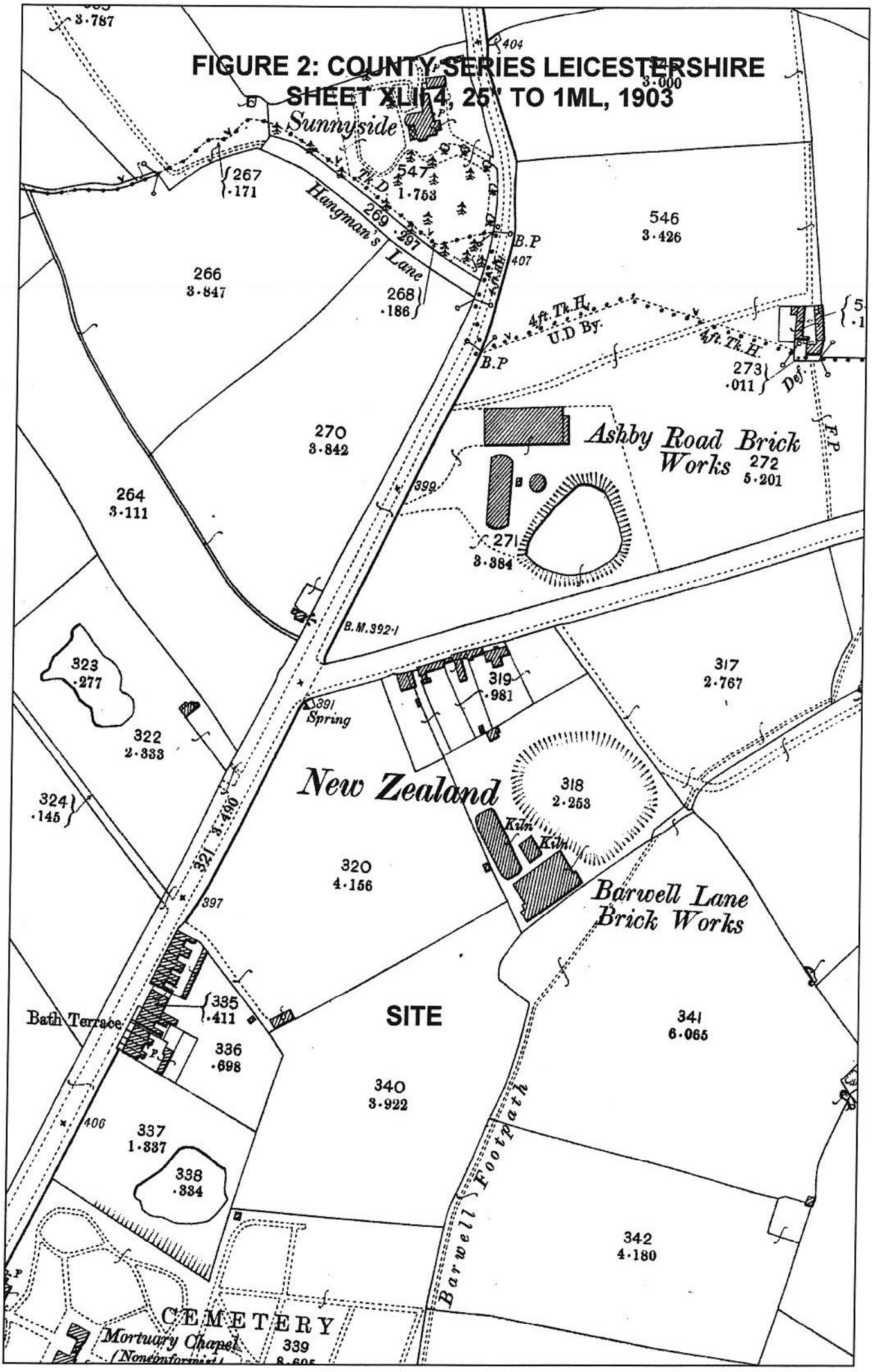
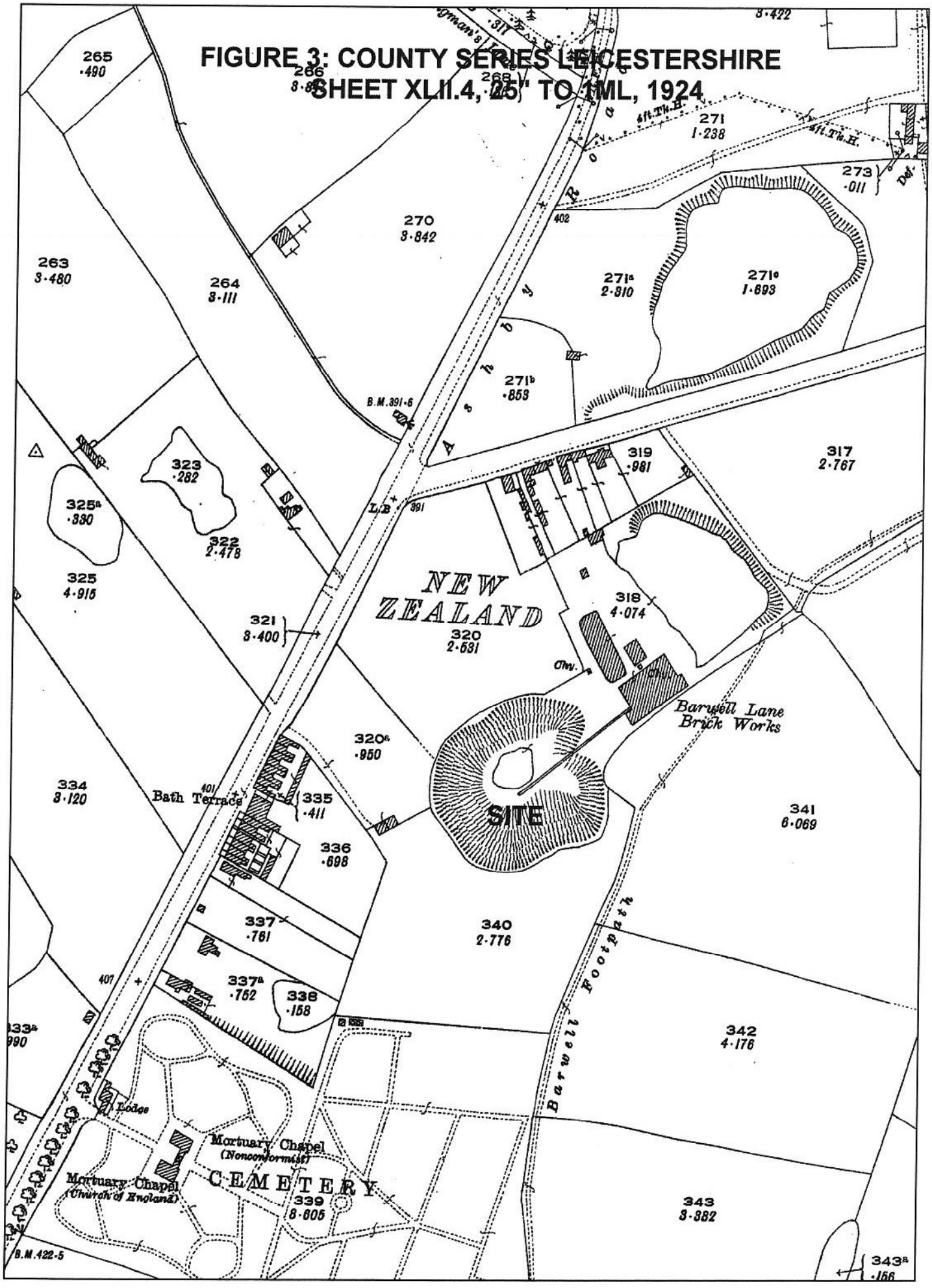


FIGURE 3: COUNTY SERIES LEICESTERSHIRE SHEET XLII.4, 25" TO 1ML, 1924



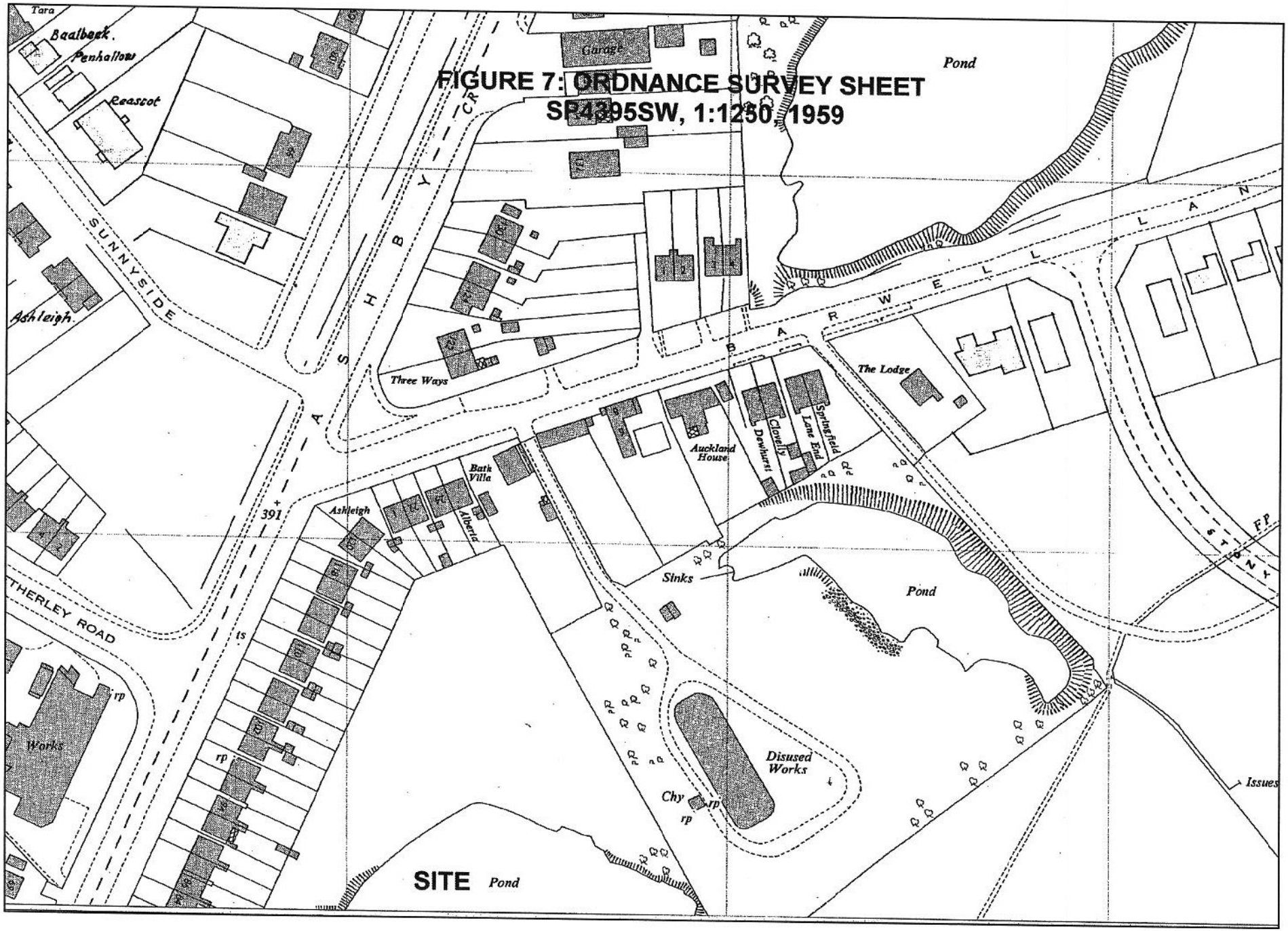


FIGURE 7: ORDNANCE SURVEY SHEET SP4395SW, 1:1250, 1959

FIGURE 4: COUNTY SERIES LEICESTERSHIRE SHEET XLII.4, 6" TO 1ML, 1923 (WITH ADDITIONS 1938)

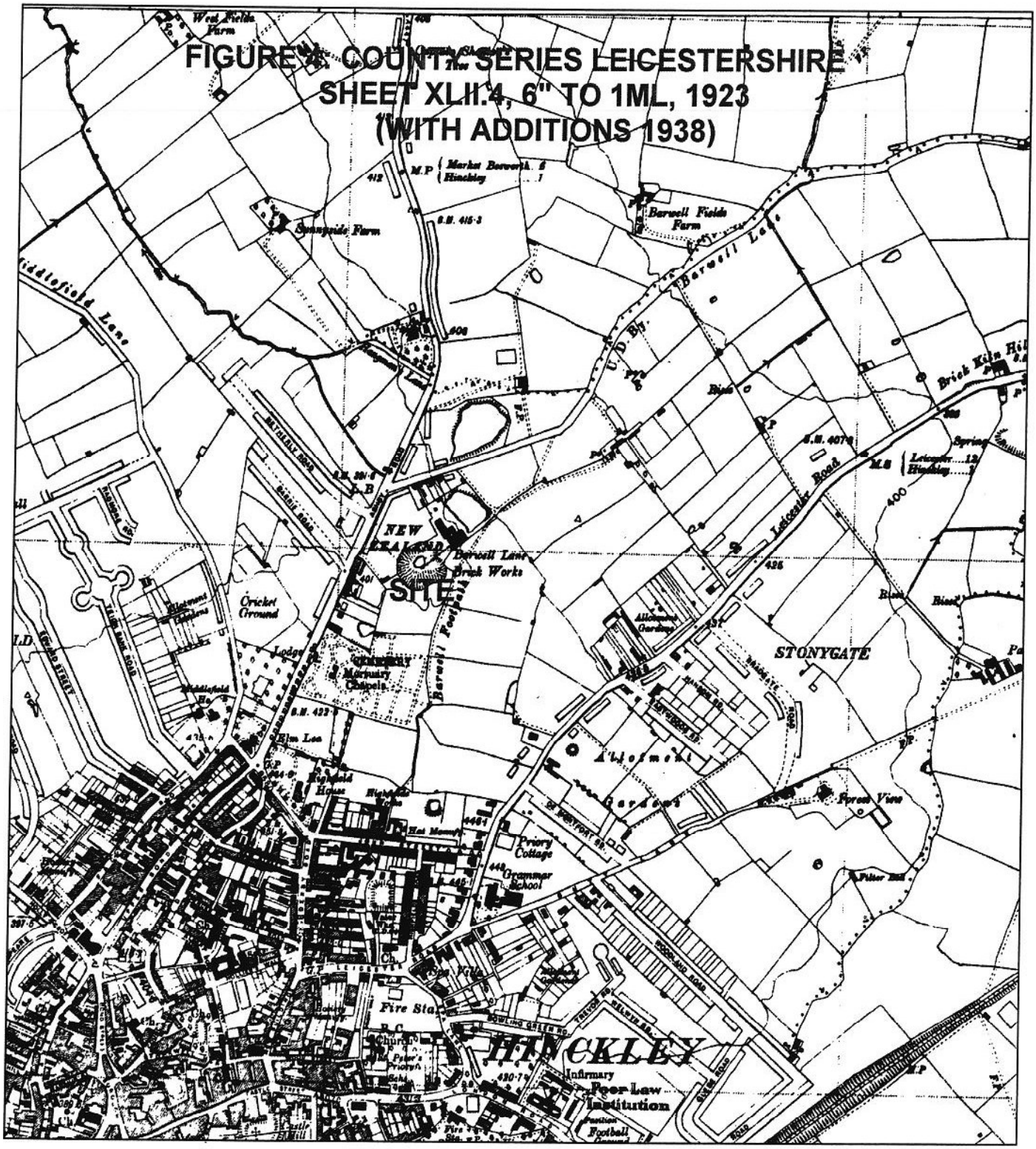


FIGURE 5: ORDNANCE SURVEY PLAN SP4295 AND SP4395, 1:10,000, 1965

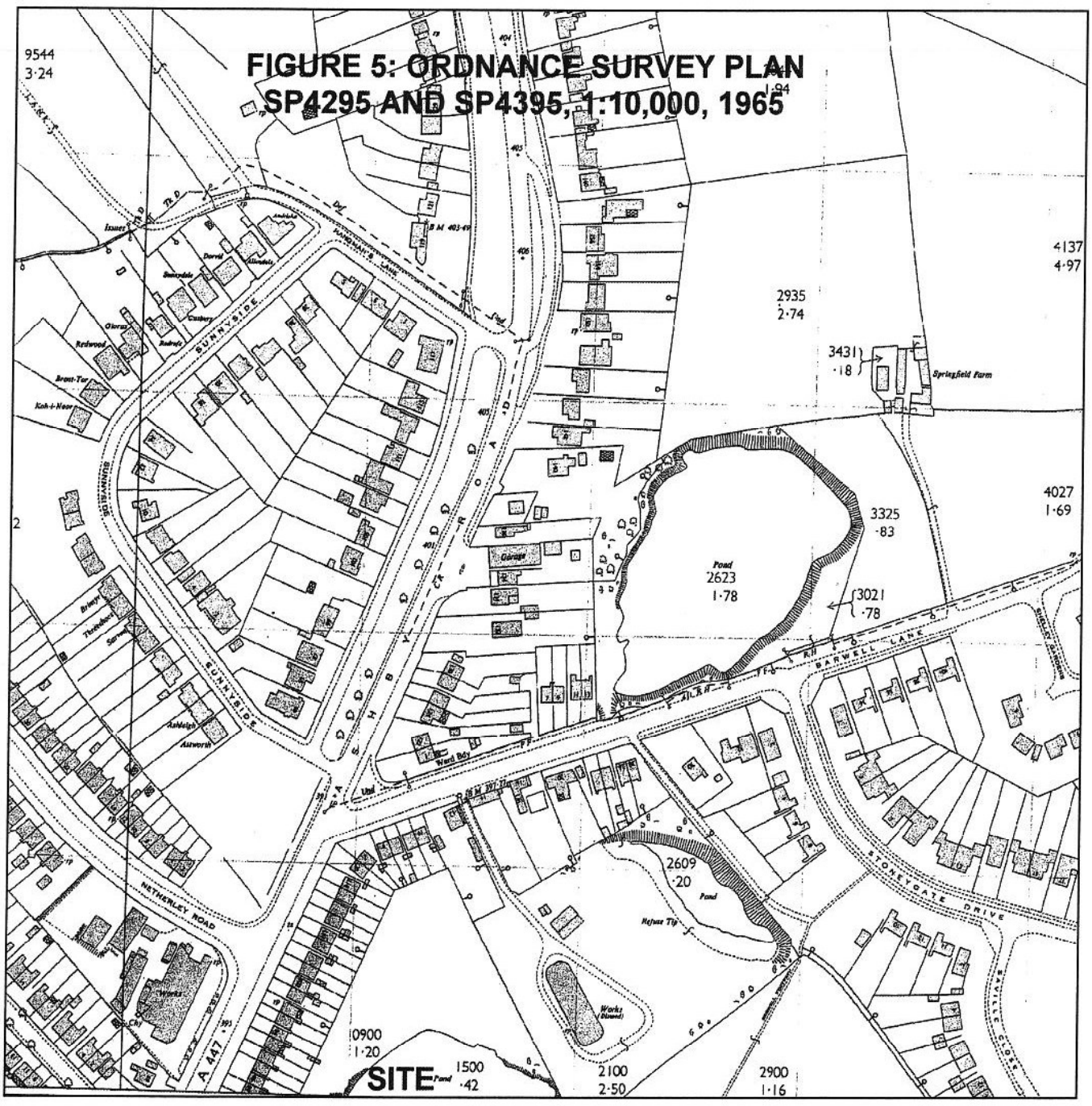
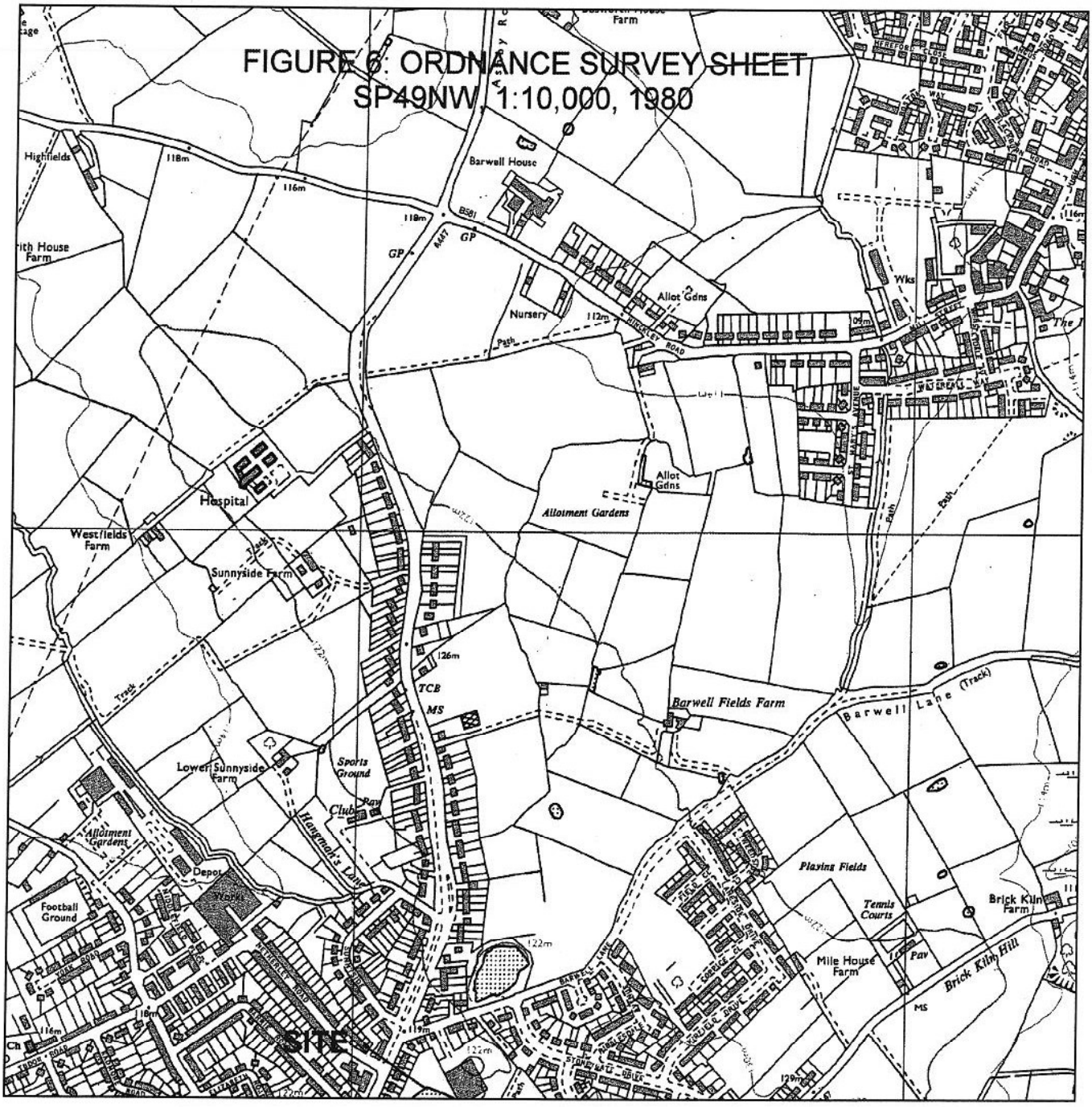


FIGURE 6: ORDNANCE SURVEY SHEET SP49NW, 1:10,000, 1980



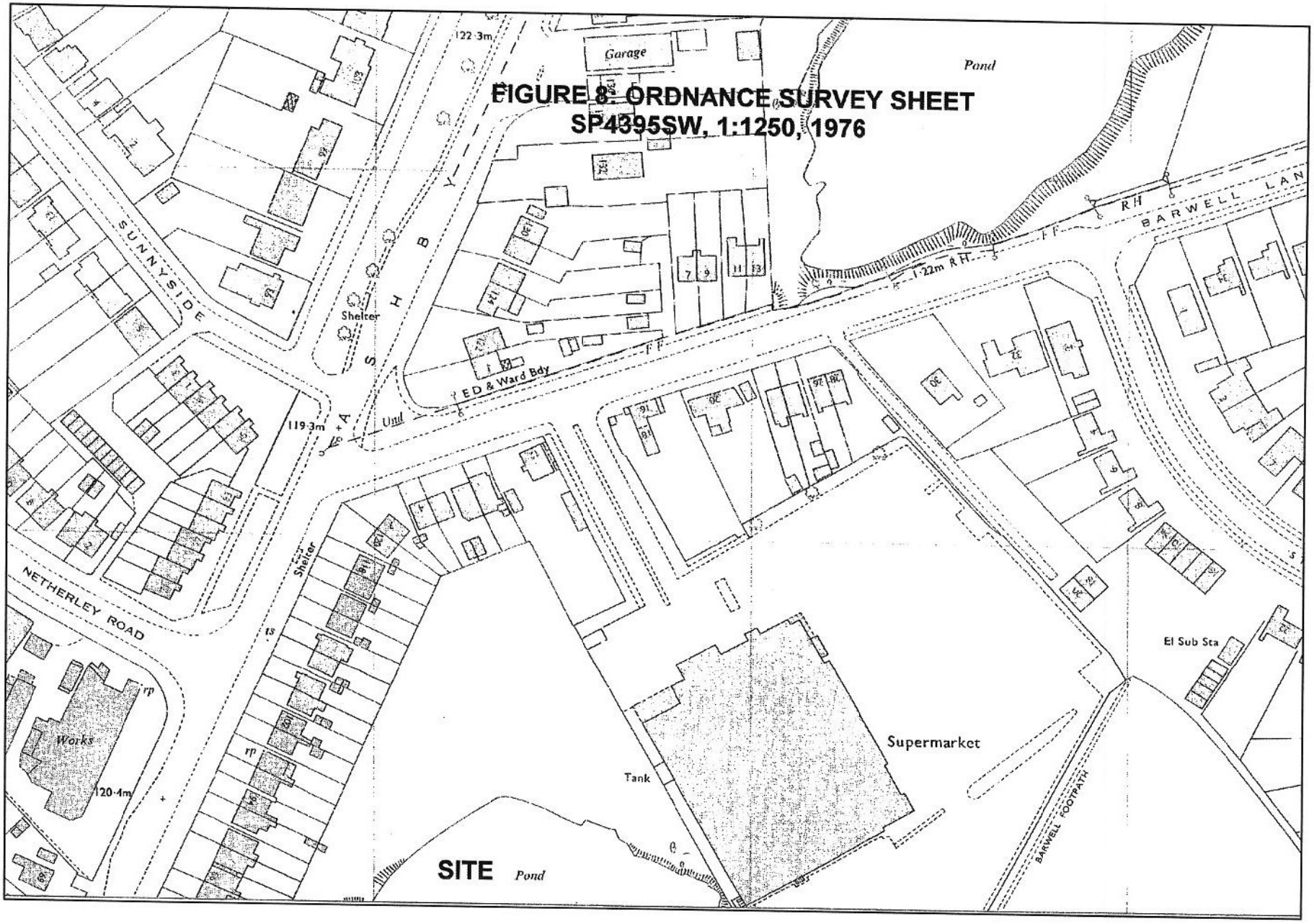


FIGURE 8: ORDNANCE SURVEY SHEET
SP4395SW, 1:1250, 1976
122·3m
Garage
Pond
SUNNYSIDE
SHIRLEY
Shelter
ED & Ward Bdy
119·3m
Und
BARWELL LANE
RH
1·22m RH
NETHERLEY ROAD
Shelter
Works
120·4m
Supermarket
Tank
El Sub Sta
SITE
Pond
BARWELL FOOTPATH

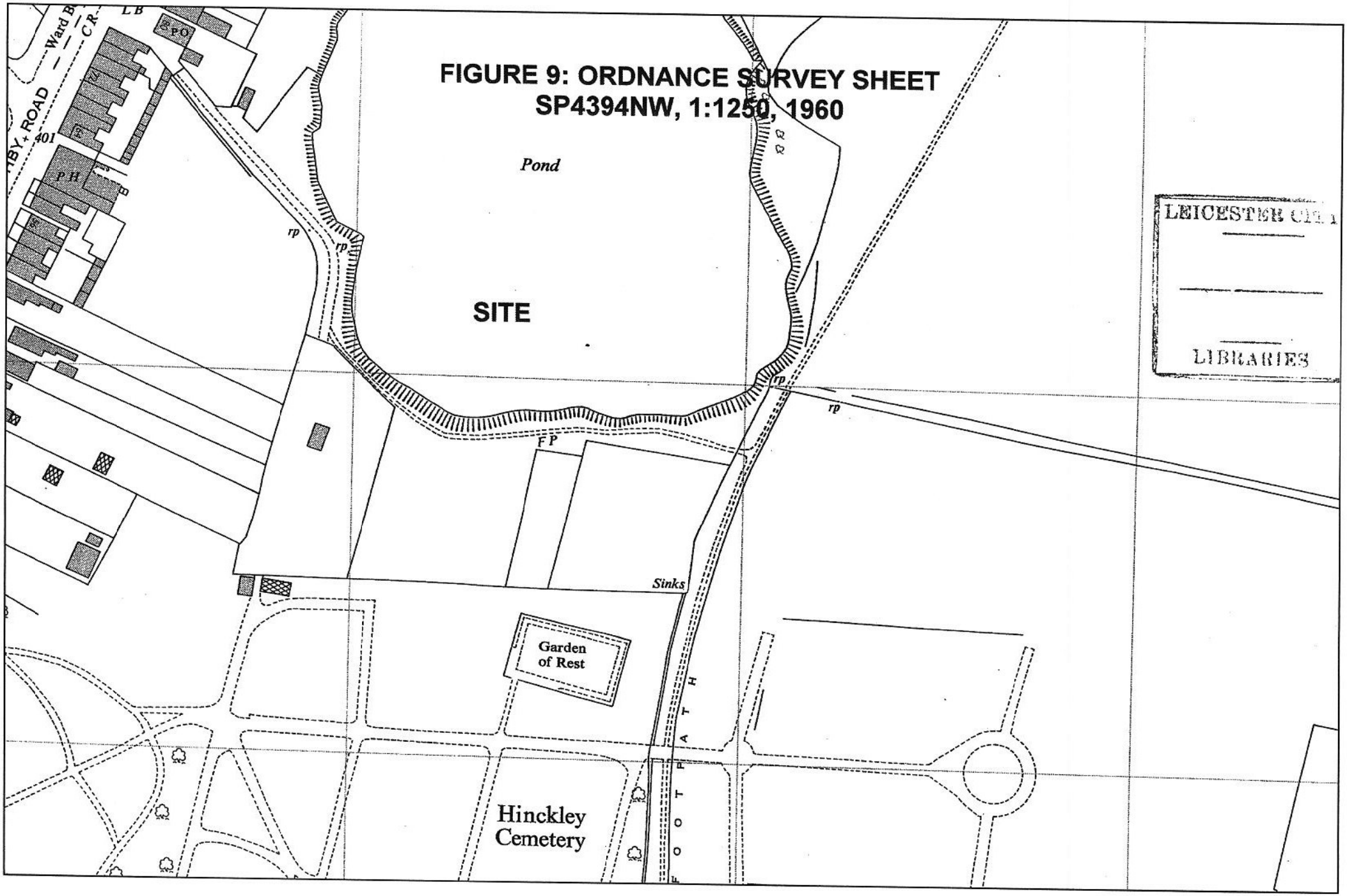


FIGURE 9: ORDNANCE SURVEY SHEET
SP4394NW, 1:1250, 1960
Pond
SITE
rp
rp
rp
rp
F P
Sinks
Garden
of Rest
Hinckley
Cemetery
FOOTPATH
P H
P O
401
LEICESTER
LIBRARIES

APPENDIX F

REPORTS FROM THE ENVIRONMENT AGENCY

Our Ref: CSC.10162/PDG
Your Ref: EJM/GEOLET/01-1281

2 June 2004

ENVIRONMENT AGENCY

Murray Rix Geotechnical
13 Willow Park
Upton Lane
Stoke Golding
Nuneaton
Warwickshire
CV13 6EU

Dear Sir/Madam

ASHBY ROAD, HINCKLEY, LEICESTERSHIRE

I refer to your letter dated 13 May 2004 requesting information relating to the above site.

- According to our records there is one landfill site located within a 500m radius of the site. Please find enclosed the Agency's data sheet for, and a plan showing the approximate location of this landfill site.
- We hold no GQA/water quality information relating to local surface watercourses.
- According to our records there are no current water abstraction relating to the subject site. We do not record unlicensed abstractions and you should contact the relevant Local Authority for records of private drinking water supplies.

It must be understood that the information provided above is based on records and files from various sources and of varying reliability. Consequently the Environment Agency is not able to offer any warranty as to the accuracy or completeness of the information provided, nor can it accept any liability whatsoever for any loss or damage arising from the interpretation and/or use of the information.

The Agency has only very limited records of coal and colliery wastes. Therefore, we recommend that you also make enquiries to The Coal Authority, Mining Reports Office, Bretby Business Park, Ashby Road, Burton upon Trent Staffordshire DE15 0QD.

A site inspection has not been carried out in relation to your request for information. This information is provided under the conditions for use of data or information attached.

Yours faithfully,

PAUL GETHINS
Customer Contact Officer

Environment Agency
Sentinel House, 9 Wellington Crescent, Fradley Park, Lichfield
Staffordshire, WS13 8RR **T** 01543 444141 **F** 01543 444161

STANDARD NOTICE FOR THE SUPPLY OF AGENCY INFORMATION

1. Nothing in this notice will in any way restrict your statutory or any other rights of access to the Data. If you wish to do anything in excess of those rights you may do so in accordance with the following paragraphs only if you agree to all the terms.
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4. The Agency cannot ensure and therefore gives no promise that the Data in its possession will always be accurate, complete, up to date or valid.
5. The Agency will use reasonable care to ensure that you are provided with an accurate copy of the Data from our records.
6. If we have specified that a payment is required this must be made to us before we respond to your request and you will only be able to cancel and request your fee back up to the point when we start work on providing the requested information.
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11. OTHER USE. You must contact the Agency's Data and Information Exploitation Unit if you wish to use Agency Data or Derived Data in any way other than as set out above UNLESS we have already indicated to you that your proposed use is agreed OR you are satisfied that such use would not infringe our intellectual property rights. Examples of when you need to contact us include publishing on the Internet, passing on for commercial gain (for example by way of rental, licence, sale or providing services for consideration) or using our information (including creating and passing on data derived from Agency Data) in connection with or to promote a commercial service.
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13. USE BY PUBLIC AUTHORITIES Nothing in this notice shall restrict the ability of a public authority to charge a fee limited to costs recovery in accordance with the Environmental Information Regulations or the Freedom of Information Act.

NB Please also read any additional information or warning we give you about specific Data

Environment Agency, Sentinel House, 9 Wellington Crescent,
Fradley Park, Lichfield, Staffordshire, WS13 8YU
Tel 01543 444141 Fax 01543 444161

Landfill Query Report

ENVIRONMENT AGENCY

Site Reference Number	2400/1258
OS Grid reference	SK 433 951
Site Name	OFF BARWELL LANE
Property	
Street	BARWELL LANE
Locality	
Town	HINCKLEY
County	LEICESTERSHIRE
Local Authority	HINCKLEY & BOSWORTH BOROUGH COUNCIL
Most Recent Licence Holder	NOT LICENSED
WM Licence Reference	
Alternative Reference 1	GDO289
Alternative Reference 2	
Date Licence issued	
Date Licence Surrendered	
Date of first waste input (K)nown or (E)stimated or (U)nknow	U
Date of last waste input (K)nown or (E)stimated or (U)nknow	U

Site Details

Max volume of waste permitted (Million m^3)	
Total Site Area (ha)	

Possible Waste Types

Inert	☐
Household	☐
Commercial	☐
Industrial	☐
Special	☐
Liquid and Sludge	☐
Unknown waste type in site	☑

Type of Site

Land Raise	
Natural depression?	
Man-made depression?	
Type Unknown	Y

It must be understood that the information provided above is based on records and files from various sources and of varying reliability. Consequently the Environment Agency is not able to offer any warranty as to the accuracy or completeness of the information provided, nor can it accept any liability whatsoever for any loss or damage arising from the interpretation and/or use of the information. A site inspection has not been carried out in relation to your request for information.

Engineered Cap

Low permeability (Clay)	
Permeable soils	
Synthetic membrane	
Type of cap unknown	Y

Engineered Containment

Synthetic membrane liner	
Clay liner	
Other liner	
Type of liner unknown	Y

Landfill Gas

Is gas monitoring conducted at the site?	N
Are there landfill gas control systems in place?	N
Is a perimeter passive migration control system used?	N
Is a perimeter active migration control system used?	N
Is a passive gas venting system used in the body of the site?	N
Is an active gas extraction system used in the body of the site?	N

Last Update 30 August 2002

Comments

Inherited map records indicate that the site was infilled at some time prior to the introduction of Waste Disposal Licensing controls in 1976.

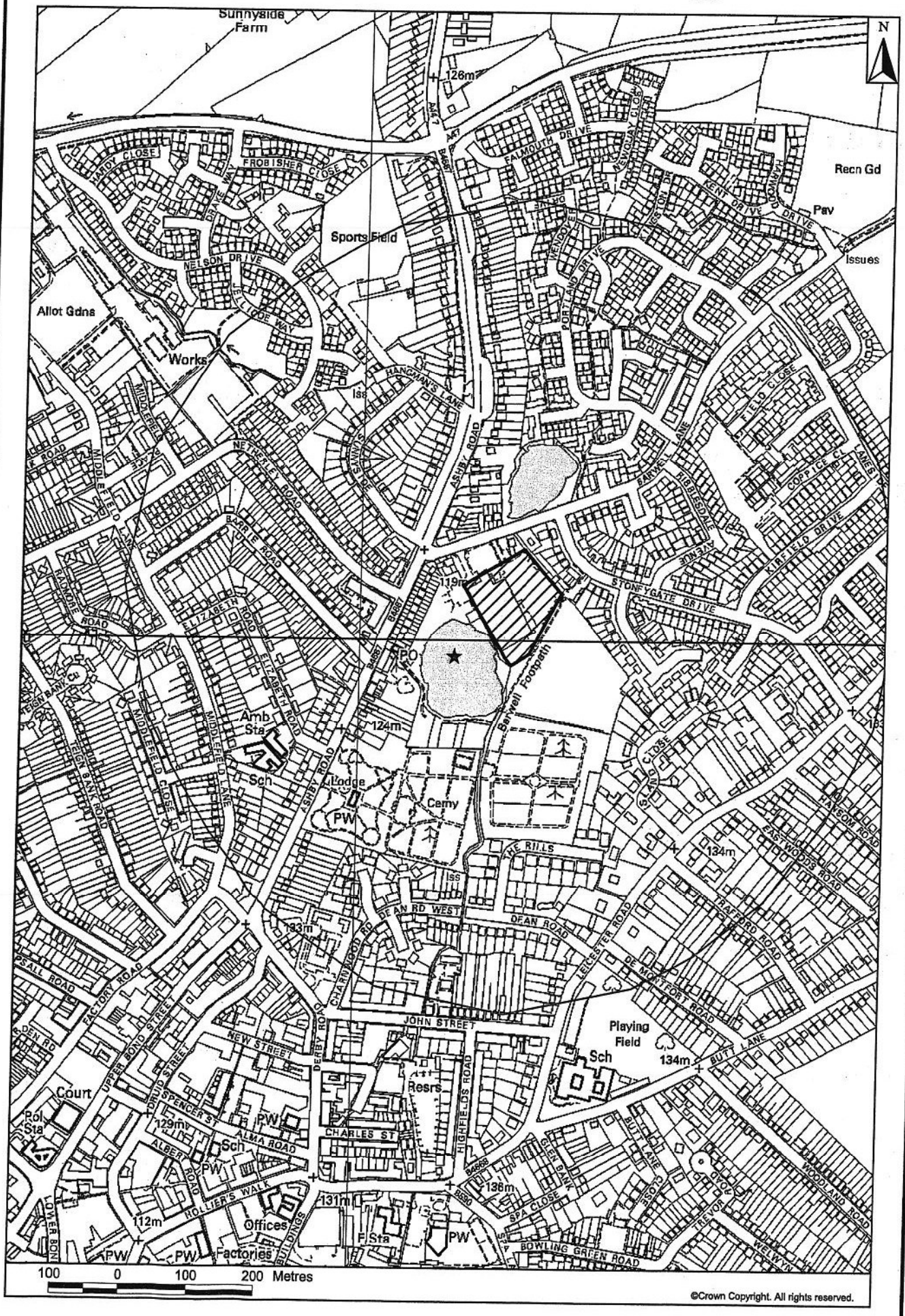
Unfortunately, the Agency holds no further information to confirm the exact location, extent or nature of the wastes deposited at this site.

The Agency is not aware of any landfill gas monitoring or control measures at this site.

It must be understood that the information provided above is based on records and files from various sources and of varying reliability. Consequently the Environment Agency is not able to offer any warranty as to the accuracy or completeness of the information provided, nor can it accept any liability whatsoever for any loss or damage arising from the interpretation and/or use of the information. A site inspection has not been carried out in relation to your request for information.

Landfill Site Location Plan

ENVIRONMENT AGENCY



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ENVIRONMENT AGENCY

Summary Risk Report (Residential Property)

This Report relates to the following Environment Agency Property Search ("the Search"):

Customer: **Environment Agency**

Address: **Templeborough House**
Broadmarsh Business Park
Bowbridge Close
Rotherham
S60 1BY

Property that the information in the search relates to:

LAND AT
ASHBY ROAD
HINCKLEY
LEICESTERSHIRE

Date of Search: 20 May 2004

Our Ref: 200405200001415401
NLIS Ref: 1CH_TERA-685110
Your Ref: 4198/04

The Environment Agency hereby confirms that its response to the Search identifies no relevant Agency records relating to a typical purchase of residential property (i.e. a domestic property having mains supply water and sewerage; there is no watercourse in direct proximity and the property does not require a licence from the Agency to abstract from or discharge to waters). No further action is likely to be needed as a direct result of the Search if the property meets those criteria*.

If you are a professional adviser please provide a copy of the Search to your client.

✓conditional

* You may need to take further action if this is not a typical property as described above. There is additional guidance on the back of this report. This risk report is based only on environmental data within the responsibility of the Environment Agency that have been requested in the Search and that lie within 500 metres of the property (see notes overleaf).

Subject to standard terms of conditions as included in the Search.

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Guidance Notes on the Summary Risk Report

This report is designed to help house purchasers and their advisers to assess the environmental risk of the information provided in an Environment Agency standard property search.

You should note that much of the data in the Search is dynamic and can change regularly. For technical reasons, which we are working on, the Agency can only currently update its property search database every three months. When we update our database, the data will be no more than a few days old but immediately prior to the following update the data may be up to three months old.

House purchasers should always make sufficient visits to the site and the nearby vicinity to see if there is any wider environmental concern evident from such a visit, for example noise, smell and visual nuisance.

The Agency is in the process of adding additional datasets to the standard report and as these are added the comprehensiveness of the report will increase accordingly. In the meantime you should always consider whether the Environment Agency search request meets your particular requirements and whether or not other environmental information is needed.

When identifying matters within 500 metres we use a point that is intended to be the centre point of the property. If you have provided us with precise co-ordinates we will have used this point. You should always check when receiving the Search what point has actually been used. It will be identified on the plan by cross hairs and clearly be the centre of the circle which shows the area of the search.

Additional Guidance to be used when the property is not typical as outlined on the front page. The vast majority of house purchasers will not need to apply this guidance.

You should also note that the Search has indicated water discharge consents and/or abstractions in the area. If these relate to the property being purchased (please check the plan and if relevant the details of consent or licence holder identified in the search) you should make further enquiries of the vendor and if necessary check the details with us. If not within the boundaries of the property being purchased there would not normally be a risk for a residential house although it may be of interest to some purchasers.

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ENVIRONMENT AGENCY

Environmental Property Search

LAND AT
ASHBY ROAD
HINCKLEY
LEICESTERSHIRE

0.50km radial search around

National Grid Reference:
443133, 294986

OS Grid Reference:
SP4313394986

Date: 20 May 2004

An Environment Agency Service
Our Ref: 200405200001415401
Your Ref: 1CH_TERA-685110

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Introduction

The Environment Agency is the leading public organisation for protecting and enhancing the environment in England and Wales. We regulate industry and inspect industrial sites to protect the environment and people from pollution and environmental risks to health, maintain essential flood defences, water resources and river structures and monitor and assess the environment.

This bespoke report consists of:

1) a Risk Summary Report which is intended to give solicitors or other professionals acting in a residential property conveyance (or anyone doing their own conveyancing) an immediate indication of whether any further action is needed as a result of the report

2) a map of the searched area, followed by

3) the report which is divided into two sections. The first being a question and answer section followed by the second part that gives more detailed answers to the questions.

The report has been compiled from the data gathered from our activities. It provides potential house purchasers with the necessary environmental information for more informed decision making regarding the property in question.

Further Information

Sometimes, you may require the Environment Agency to provide information beyond that contained in this report. We may have to charge for this service to cover costs, but we will always let you know in advance how much it will be.

You may also want to refer to the Public Registers of environmental information held at Environment Agency offices. These may provide more information on any waste management licences, industrial permits and authorisations and water discharge consents and abstraction licences referred to in this report.

For both of the above, please contact us on 08702 42 01 99.

For further information on flooding, call our Floodline service (0845 988 1188) or go to:-

www.environment-agency.gov.uk/floodline

Other organisations that also hold relevant information are referred to where appropriate in this report.

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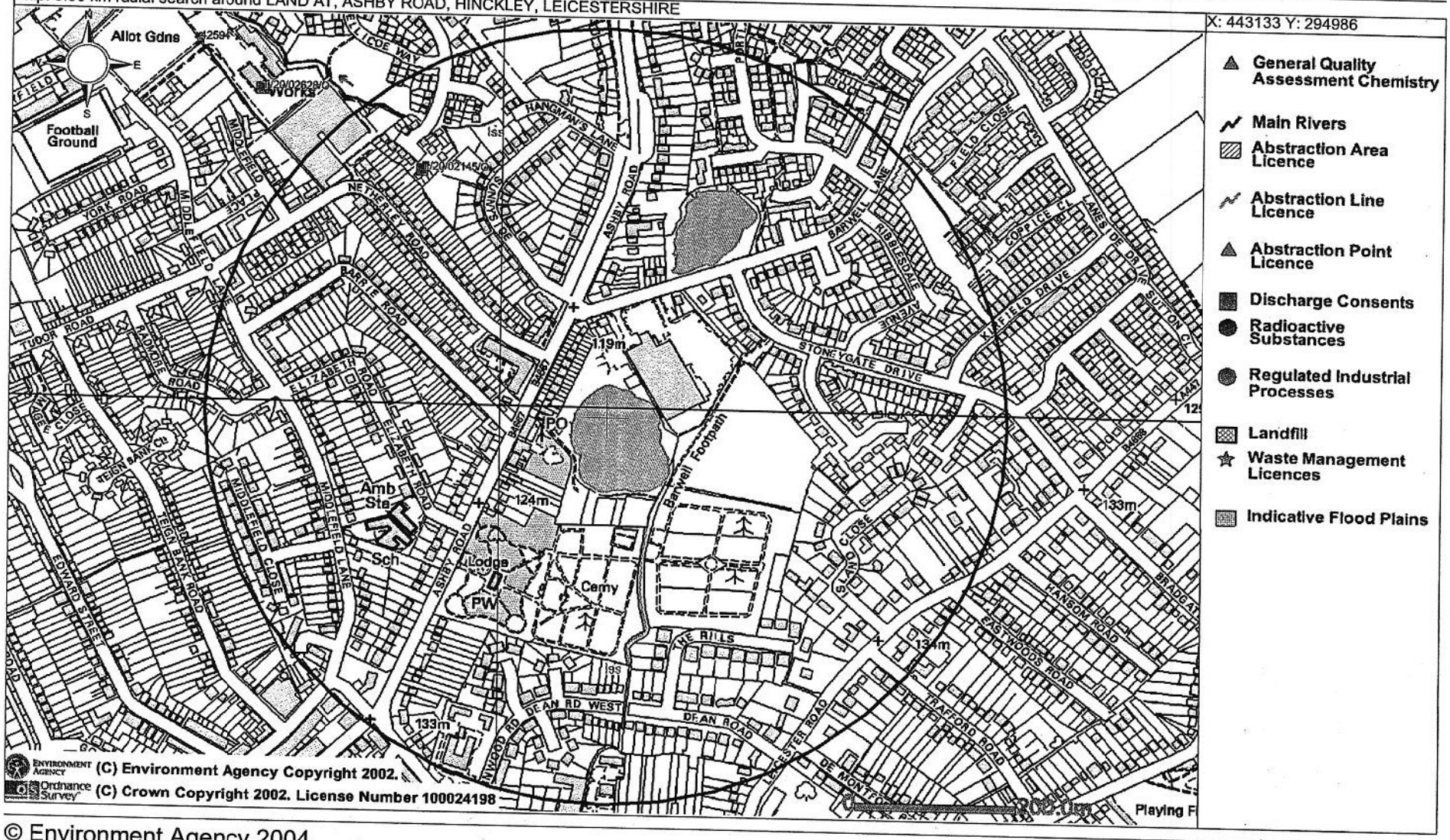
Map: 0.50 km radial search around LAND AT, ASHBY ROAD, HINCKLEY, LEICESTERSHIRE



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Question	Answer	Comments
1. Is the property on or within 500 metres of a floodplain as indicated on the Agency`s Indicative Floodplain maps?	No	**What is a floodplain?** A floodplain is the natural overspill area when a river rises above its banks, or when high tides or stormy seas cause low-lying coastal areas to flood. **Is there any risk of flooding?** Not being in a floodplain does not guarantee your home or business will not be flooded. Flood forecasting is not an exact science and our maps only give an indication of the areas at risk. They indicate the extent of flooding for a one in one hundred (1%) chance of flooding each year from a river, and a one in two hundred (0.5%) chance of flooding each year from the sea and tidal estuaries, or the highest known flood level. Properties well outside the indicative flood plain may be at risk from flooding from more extreme events. There is also the possibility of localised flooding from local ditches or small watercourses, overflowing drains, burst water mains or sewers, or from groundwater when the ground becomes saturated beyond its ability to absorb. Our maps are periodically revised to incorporate up-to-date information. If your home or business is at the edge of a floodplain, you should be aware of the local flood warning system and know how to prepare for flooding. Call our Floodline on 0845 988 1188 to receive a free pack on what to do before, during and after a flood and for information about the flood warning service.
2. Is there an Agency waste management licence in force for operation of a landfill site, waste treatment centre, waste transfer station or similar waste disposal facility on or within 500 metres of the property?	No	Under the Environment Protection Act 1990, the Agency regulates the storage and treatment of waste to make sure that waste disposal operations do not pollute the environment or endanger human health. Those involved in waste disposal must be licensed by the Agency to do so. Anyone not licensed accordingly is liable to prosecution.
3. Does the property lie within 500 metres of a currently licensed landfill site boundary?	No	A landfill site is a place where waste is taken and compacted with other wastes. When they are full of waste, landfill sites are capped, covered with earth and put back into use. Some sites can produce a flammable gas ("methane") - which may also contribute to climate change and a liquid ("leachate") which has the potential to pollute rivers and groundwater. Other problems can include noise, dust, odours and litter.
4. Is there an Agency authorisation or permit in force for the operation of an industrial process on or within 500 metres of the property?	No	Under the Environment Protection Act 1990 and the Pollution Prevention and Control Act 1999 (and regulations), the Environment Agency has a duty to protect the environment from pollution from certain prescribed industrial processes. Industries which

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		present the greatest risk to the environment are subject to systems of control by which the Agency authorises certain processes or permits certain installations to minimise the harmful effects of substances released into the environment. It is a criminal offence to carry out any of these processes or operate such installations except under and in accordance with an authorisation or permit.
5. Is there an Agency registration to hold radioactive materials (on premises or for mobile plant) or authorisation for disposal or accumulation of radioactive waste in force on or within 500 metres of the property?	**No**	Radioactive material arises in connection with the generation of electricity from nuclear power, but also from medicine, research and other industries which make use of them. Under the Radioactive Substances Act 1993, the Agency registers radioactive sources and issues authorisations to regulate how radioactive waste is disposed of from nuclear sites, hospitals and other establishments. There is a natural background radioactivity to which we are all exposed. Exposure from nuclear facilities is less than 0.1% of average exposure and is well within the recommended safety limit.
6. Is there an Agency consent in force to discharge effluent from this property or within 500 metres of the property?	**Yes**	The Environment Agency has a duty to protect controlled waters from pollution. Controlled waters include watercourses, lakes, canals, coastal waters and groundwater. The formal consent of the Agency is required for many discharges into controlled waters. Exceptions currently include some discharges of small volumes of sewage effluent from septic tank soakaways in areas where there is a low risk to groundwater. Where a consent has been issued, this can be transferred. To do this, the new holder must inform the Agency within 21 days of the change. If you are in any doubt about whether a discharge from a property or premise requires consent, please contact us.
7. Is there an Agency water abstraction licence in force for the property, or within 500 metres of the property? (point licence):	**No**	Questions 7, 8 and 9 all relate to similar information. At the moment, the Environment Agency holds these different types of licences as different "layers" of information. Until we further develop our systems, we have to some extent duplicate our answers in this report to ensure you receive the fullest information possible. Point licences allow abstraction only at a point specified on the licence. Under the Water Resources Act 1991, the Environment Agency is required to keep a sustainable balance between how we use water and the effect that such use might have on river and wetland habitats.

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People wishing to abstract water from the watercourse or to in any way obstruct it (dam, weir, culvert) must have a licence issued by the Environment Agency to do so. Interfering with the watercourse in any way without a licence risks prosecution. Please contact us for further advice.

8. Is there an Agency water abstraction licence in force for the property, or within 500 metres of the property? (linear licence):	**No**	Linear licences allow abstraction along a line specified on the licence.
9. Is there an Agency water abstraction licence in force for the property, or within 500 metres of the property? (area licence):	**No**	Area licences allow abstraction within an area specified on the licence.
10. Is any watercourse on, abutting, or within 500 metres of the property designated as a main river?	**No**	**What is a "main river"?** Main river refers to specific watercourses upon which the Environment Agency is directly empowered to act. The Agency also has a duty to supervise all matters relating to flood defences. As the Agency's records are limited primarily to main rivers, there may be a watercourse of a different category on or abutting this property. If so, the following notes apply. In the absence of any express agreement to the contrary, any responsibilities for maintenance or repair of the watercourse and any structure affecting the channel rests with the riparian owner (the owner of land adjoining any watercourse). The local authority has certain statutory powers to carry out maintenance or repairs but it does not have to do so. **Internal Drainage Boards** In some areas streams may come under the jurisdiction of Internal Drainage Boards. They have to give written consent to certain work in, over or under the channel of the watercourse, or on the banks, or within the distance from the channel specified in the byelaws. They have a statutory power to carry out maintenance and repairs but are not under any duty to do so. **Land Drainage Act 1991** This Act protects the flow of all watercourses. The written consent of the Agency (or if applicable, the Internal Drainage Board) is needed for the construction or alteration of any weir, dam, culvert, or the construction of anything within the channel which may interfere with or obstruct the flow in any way. Further details are available in the Agency booklet "Living On The Edge" which is available free, together with the relevant flood defence Byelaws for your location, from your local Agency office.

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11. Is there information on the designated quality of any watercourse on, abutting, or within 500 metres of the property as defined by the Agency`s Chemistry General Quality Assessment?	**No**	**The Scheme** The General Quality Assessment (GQA) scheme provides a national method for measuring water quality in rivers and canals. It enables the Environment Agency, and others, to assess and monitor the state of water quality. The chemical GQA relates to the most common types of organic pollution from sewage treatment works, agriculture and industry.
12. Is the property situated within a Groundwater Source Protection Zone as defined by the Agency?	**No**	**What is groundwater?** Groundwater is the water stored in underground rocks and strata. It provides one-third of all our drinking water and maintains the flow in many of our rivers. It is often an extremely high quality source of water but is very vulnerable to pollution - leaks of oil, fuel or chemicals on the soil may seep into groundwater and cause pollution which is extremely expensive or impossible to clean up. **Source Protection Zones (SPZs)** These zones identify areas of concern around water wells and springs used for public drinking water supply. Based on the time of travel for any pollutant entering the groundwater to reach the water well they provide a basis for protecting our drinking water.
13. Is there information about groundwater vulnerability in the area of the property?	**Yes**	Groundwater vulnerability maps provide an indication of the ease with which groundwater in a particular area could become polluted by contaminants spilt on the surface of the ground. The maps are an aid to allowing better informed judgements on the location of new developments, avoiding potentially polluting activities in high vulnerability areas, while giving greater leeway for development in low vulnerability areas. These maps cover the whole of England and Wales and are therefore at a small scale (1:100,000). Therefore, any project with a potential impact on ground or surface water will require site specific investigations to ascertain its acceptability or otherwise.

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Detailed Information

This section gives specific details of the answers given in Section 1. The databases from which the results are drawn are also listed here. To find out more about any of the specifics shown on this report, please contact the Environment Agency, quoting the appropriate references as shown in the results tables.

1. Is the property on or within 500 metres of a floodplain as indicated on the Agency`s Indicative Floodplain maps?

No

Source database: SDE.INDICATIVE_FLOOD_MERGED_10K

Date compiled: December 2003

2. Is there an Agency waste management licence in force for operation of a landfill site, waste treatment centre, waste transfer station or similar waste disposal facility on or within 500 metres of the property?

No

Source database: SDE.REGIS

Date compiled: December 2003

3. Does the property lie within 500 metres of a currently licensed landfill site boundary?

No

Source database: SDE.LANDFILL_010K

Date compiled: December 2003

4. Is there an Agency authorisation or permit in force for the operation of an industrial process on or within 500 metres of the property?

No

Source database: SDE.IPC_NA_

Date compiled: December 2003

5. Is there an Agency registration to hold radioactive materials (on premises or for mobile plant) or authorisation for disposal or accumulation of radioactive waste in force on or within 500 metres of the property?

No

Source database: SDE.RAS_NA_

Date compiled: December 2003

6. Is there an Agency consent in force to discharge effluent from this property or within 500 metres of the property?

Yes

Record	Address	Type	Consent Number
[redacted]	SUNNYSIDE HINCKLEY	Sewerage Network - Sewers - water company	T/20/02145/O

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Source database: SDE.DISCHARGE_CONSENTS_NA_

Date compiled: December 2003

7. Is there an Agency water abstraction licence in force for the property, or within 500 metres of the property? (point licence):

No

Source database: SDE.NALD_POINT_NA_

Date compiled: December 2003

8. Is there an Agency water abstraction licence in force for the property, or within 500 metres of the property? (linear licence):

No

Source database: SDE.NALD_REACH

Date compiled: December 2003

9. Is there an Agency water abstraction licence in force for the property, or within 500 metres of the property? (area licence):

No

Source database: SDE.NALD_AREA

Date compiled: December 2003

10. Is any watercourse on, abutting, or within 500 metres of the property designated as a main river?

No

Source database: SDE.INDIC_MAINRIVERS_FLOOD_10K

Date compiled: December 2003

11. Is there information on the designated quality of any watercourse on, abutting, or within 500 metres of the property as defined by the Agency`s Chemistry General Quality Assessment?

No

Source database: SDE.GQA_CHEMISTRY_POINTS

Date compiled: December 2003

12. Is the property situated within a Groundwater Source Protection Zone as defined by the Agency?

No

Source database: SDE.SPZ_50K

Date compiled: December 2003

13. Is there information about groundwater vulnerability in the area of the property?

Yes

Record	**Vulnerability Class**
	Minor Aquifer Intermediate
	Minor Aquifer High

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Source database: SDE.GWV_100K

Date compiled: December 2003

Explanation of vulnerability:		
	Minor Aquifer High	These can be fractured or potentially fractured rocks which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although these aquifers will seldom produce large quantities of water for abstraction, they are important both for local supplies and in supplying base flow to rivers.
	Minor Aquifer Intermediate	These can be fractured or potentially fractured rocks which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although these aquifers will seldom produce large quantities of water for abstraction, they are important both for local supplies and in supplying base flow to rivers.

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Background Notes and Conditions

1. Reference to "the Agency" is intended to include reference (where appropriate) to any predecessor body. However the Agency cannot warrant the completeness or accuracy of information deriving from predecessor authorities.

2. Applicants should note that some information held by the Agency in records before 1st September 1989 may be incomplete. Applicants are advised to pay particular attention to replies provided by the Agency where specific mention of difficulties with its records is highlighted.

3. All intellectual property rights in the replies supplied to you (Data) whether owned by the Agency (Agency Data) or third parties (Third Party Data) will continue to be owned by the respective parties.

4. The Data has not been prepared to meet your or anyone else's individual requirements and it is therefore your responsibility to ensure that the Data meet your needs. In particular you should note that the search includes only environmental information that the Agency possesses that is readily available. You should make your own checks to see if other information might be needed from the Agency by a separate request and to see if other environmental information not available from the Agency is needed.

5. The replies are furnished after appropriate searches of our databases and are believed to be in accordance with the information at present available to the Agency. Except where it is established that the Agency has acted negligently, all liability whether based in contact or in tort is excluded. Any liability for negligence by the Agency is limited to the person by or on whose behalf these enquiries are made.

6. This search is carried out in respect of the address, postcode or grid reference supplied by the Applicant and the Agency can accept no responsibility for search later indicated to be for the wrong location if the error was in the information supplied to it.

7. Nothing in these notes will in any way restrict your statutory or any other rights of access to the Data.

8. Your right to use agency data supplied in response to this search:

a) You may use Agency Data for your own private use or for use including copying within your business without restriction (it should be noted that this paragraph does not give you the right to pass the data to others - but see paragraghs b) and c) below.

b) If you are a professional adviser you may give a single copy to your client provided that you also attach a copy of these notes and conditions. Recipients should also be advised that they must comply with them.

c) If you wish to use Agency Data in any way other than as set out above (including in particular for commercial gain, for example by way of rental, licence, sale or providing services for consideration) you should contact us with details of what you are proposing to do, UNLESS we have already indicated to you that your proposed use is agreed OR you are satisfied that such use would not infringe our intellectual property rights.

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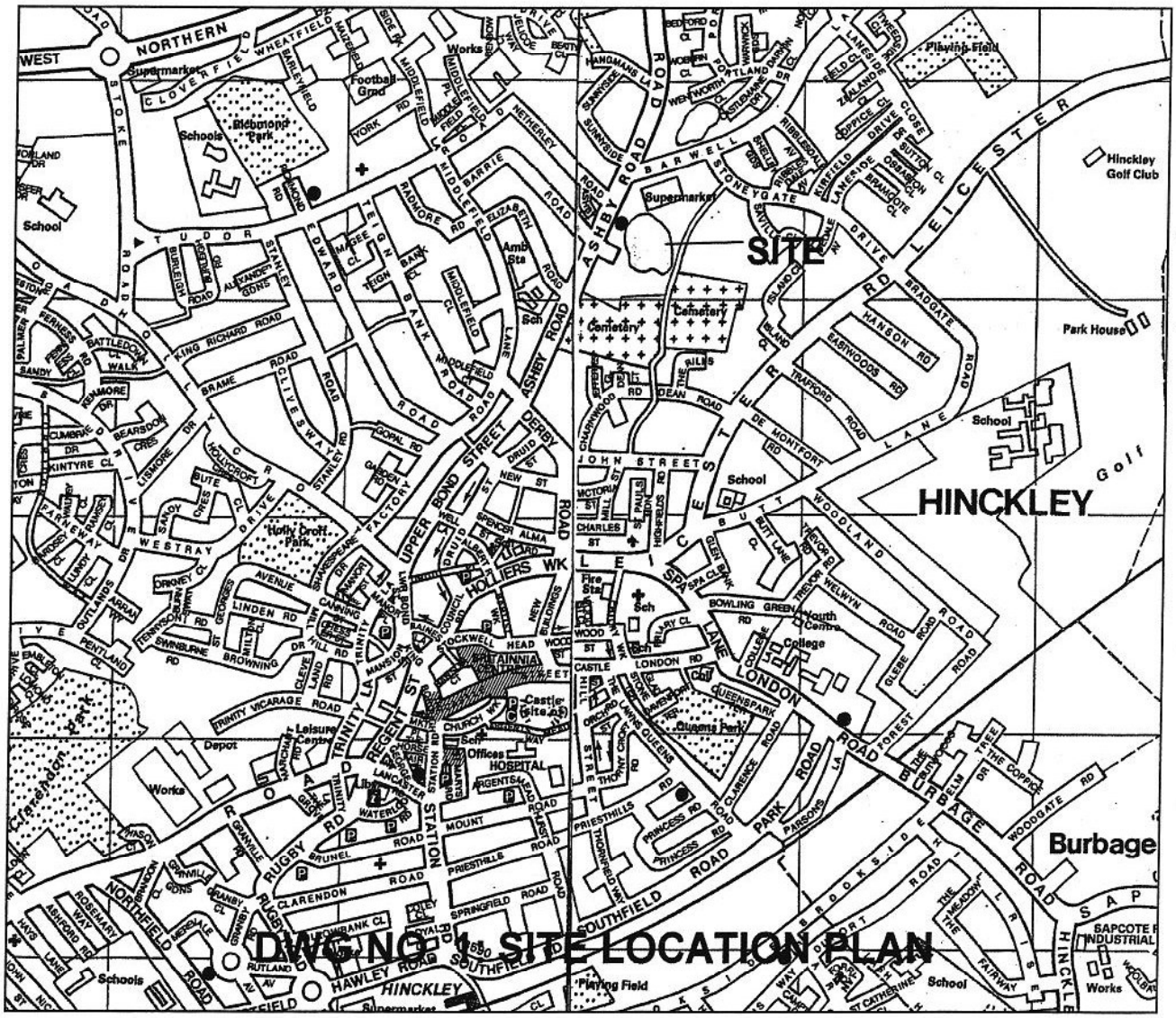
APPENDIX G

DRAWINGS

Dwg No. 1 – Site Location Plan
Dwg No. 2 – Investigation Location Plan


SITE
HINCKLEY
Golf
Hinckley Golf Club
Burbage
Park House
Pinwin Field
Supermarket
Cemetery
School
Offices
HOSPITAL
Fire Sta
Sch
Leisure Centre
Depot
Works
Schools
Football Grnd
Recreation Ground
Holly Croft Park
Queens Park
Castle (site of)
Tourn Centre
College
Playing Field
Amb Sta
Church
Supermarket
Supermarket
Works
Works
Schools
Schools
School
School
School
School
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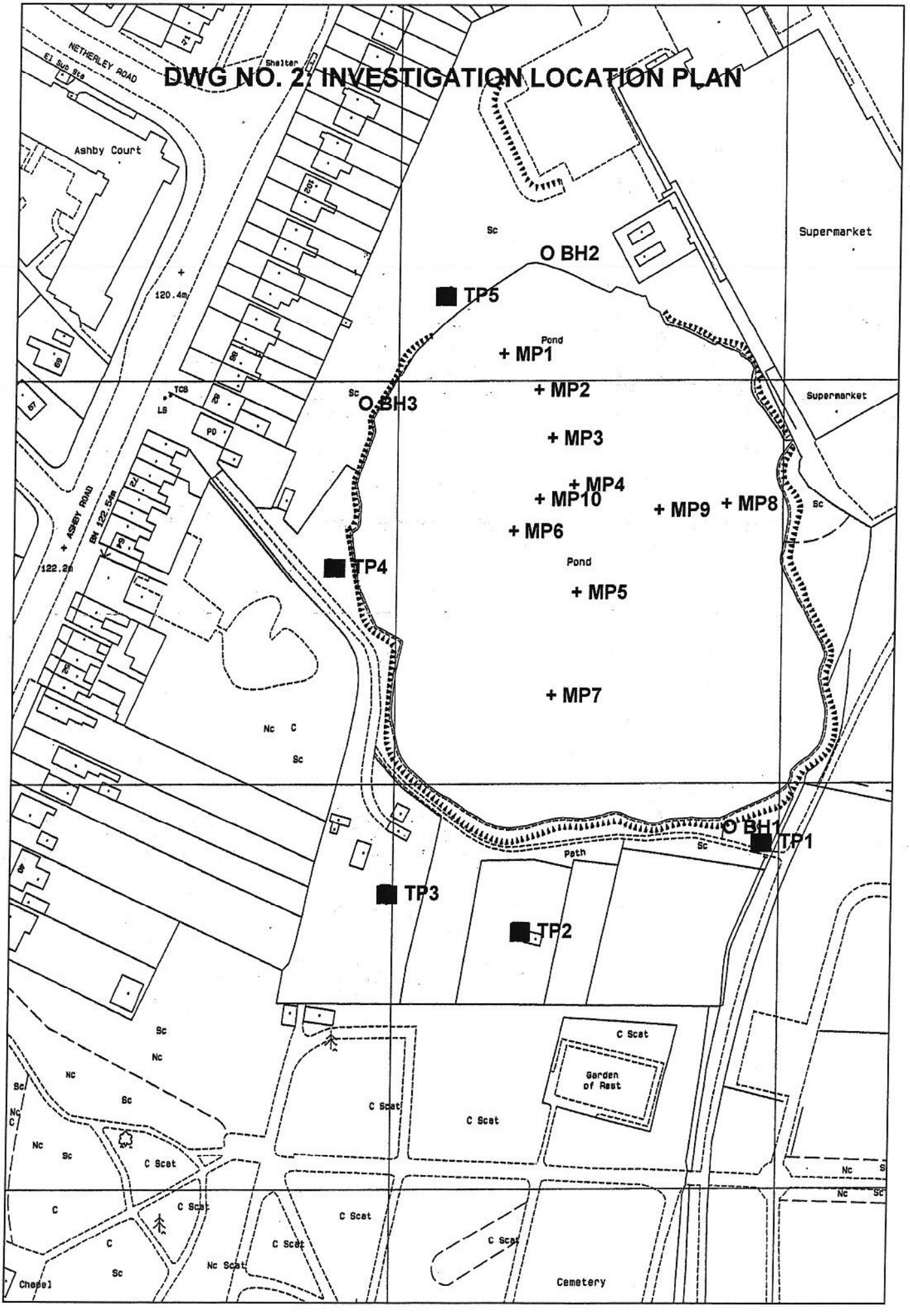
DWG NO. 2: INVESTIGATION LOCATION PLAN



APPENDIX H

SELECTED PHOTOGRAPHS OF THE BRICKPIT



VIEW NORTH ACROSS BRICKPIT TOWARDS BH2 POSITION [illegible]



VIEW NORTH-EAST FACE OF BRICKPIT TOWARDS POSITION [illegible] CHANNEL



VIEW WEST ALONG SOUTHERN FACE

VOLUME 1:
FACTUAL GEOTECHNICAL REPORT
FOR PLANNING APPLICATION
FOR DEVELOPMENT OF
THE BRICKPIT AND ADJOINING LAND,
ASHBY ROAD, HINCKLEY

INDEX:

1. Introduction
2. Site Observations
3. Geology and Ground Conditions
4. Hydrology and Hydrogeology
5. Study of Historic Maps
6. Site Investigation Fieldwork
7. Soil Property Laboratory Testing
8. Contamination Laboratory Testing

References
Appendices:
Appendix A – Borehole Logs (BH1 and BH3) (including details of gas and water monitoring installations)
Trial Pit Logs (TP1 to TP5)
Probing Logs (MP1 to MP10)
Appendix B – Soil Property Test Results
Appendix C - Contamination Test Results
Appendix D – Table 1: Results of Groundwater and Gas Monitoring in Boreholes
Appendix E - Maps Held at Leicestershire County Records Office South Wigston
Figure 1 - County Series Leicestershire Sheet XLII.4, 25" to 1ml, circa 1884
Figure 2 – County Series Leicestershire Sheet XLII.4, 25" to 1ml, 1903
Figure 3 – County Series Leicestershire Sheet XLII.4, 25" to 1ml, 1924
Figure 4 – County Series Leicestershire Sheet XLII.4, 6" to 1ml, Provisional Edition 1923 (with additions 1938)
Figure 5 - Ordnance Survey Plan SP4295 and SP4395, 1:10,000, 1965
Figure 6 – Ordnance Survey Sheet SP49NW, 1:10,000, 1980
Figure 7 - Ordnance Survey Sheet SP4395SW, 1:1250, 1959
Figure 8 - Ordnance Survey Sheet SP4395SW, 1:1250, 1976
Figure 9 - Ordnance Survey Sheet SP4394NW, 1:1250, 1960

Appendix F - Reports from the Environment Agency
Appendix G - Drawings
Dwg No. 1 – Site Location Plan
Dwg No. 2 – Investigation Location Plan
Appendix H – Selected Photographs of the Brickpit

VOLUME 1:
FACTUAL GEOTECHNICAL REPORT
FOR PLANNING APPLICATION
FOR DEVELOPMENT OF
THE BRICKPIT AND ADJOINING LAND,
ASHBY ROAD, HINCKLEY

1. INTRODUCTION

1.1 Mr Rod Gretton of Cedar Court, Ivydene Close, Earl Shilton LE9 7NR has appointed Murray Rix Geotechnical to investigate and draw up outline proposals for the safe and satisfactory development of the site of the brickpit and land to the south, off Ashby Road, Hinckley. The site is to be developed for residential usage. This report (Volume 1) deals with the factual information compiled in investigation of the site and forms a component of the Planning Application. Volume 2 (bound separately) contains a detailed interpretation of the information as it relates to the proposed development of the land to the south of the brickpit.

1.2 The site is situated 1.2km NNE of Hinckley town centre, east of Ashby Road behind the properties fronting Ashby Road at and around Ordnance Survey grid reference SP 4315 9495 (Reference 1). The site shown on Dwg Nos. 1 and 2 of Appendix G is bounded by an Asda store to the north and north-east, beyond which is Barwell Lane, by Barwell footpath to the east and by Hinckley cemetery to the south.

1.3 The site comprises the brickpit and land immediately adjoining, primarily to the south. The brickpit was created by clay extraction for brick making. The excavation floods naturally but at present the water is pumped to maintain a low level. The flooded excavation has been used primarily for coarse fishing. The total volume of the excavation void is shown as 88048m^3 on Midland Surveys Limited Dwg. No. 7160/2 dated April, 2004 and has a maximum depth of 14m.

1.4 In order to formulate a satisfactory development strategy the following investigative works and consultations have taken place:

- Study of geological, hydrogeological and topographical information on the area of the site;
- Desk Study of maps and plans held at Leicestershire County Records Office, South Wigston;
- A Walkover Inspection of the Site and its Environs;
- An intrusive borehole and trial pit investigation of land surrounding the lake and probing in the sediment within the dewatered lake to establish ground and pond bottom conditions at the site (including in-situ testing)
- Laboratory soil property and contamination testing;
- Monitoring of groundwater and gas levels in the ground surrounding the site;
- Commissioning of reports from the Environment Agency.

1.5 The following presents details and outlines the outlines the findings of the investigative works and consultations.

2. SITE OBSERVATIONS

2.1 The site is described in section 1.3 and the brickpit excavation is shown in selected photographs presented in Appendix H.

2.2 A small stream feeds the pit excavation from the south-east. The stream flows northwards along the line of Barwell footpath. The water in the pit is currently kept low by pumping from the north and discharging into a ditch, which runs away towards Ashby Road. The pumping operations are carried out with the agreement of the Environment Agency.

2.3 The sides of the brickpit are steep and there is evidence of soft materials in the base and on the flanks. Some debris including old drums, bricks and other such materials is in evidence. The west, north and east sides of the pit appear stable with no indications of instability but there is some evidence of sands running into the pit on the south face. This appears to have lead to minor slipping and slumping problems in this face of the pit and there is some evidence that this has lead to minor subsidence problems locally around the periphery of the excavation.

2.4 The land surrounding the brickpit is generally vegetated with grass, trees and brambles. A small track running from Ashby Road in the west skirts the southern part of the pit. Some fishing platforms are present around the edge of the brickpit consistent with its usage in the past by a fishing club.

3. GEOLOGY AND GROUND CONDITIONS

3.1 Published geological information (e.g. Reference 2) suggests the site is in an area where the following downward strata succession of the Wolston Glacial succession exists:

Oadby Till – mainly grey pebbly clay with chalk
Wolston Sand and Gravel – yellow or red sand and gravel
Wolston Clay – grey stoneless clay and silt

No faulting is shown at or within the immediate vicinity of the site.

3.2 The published geological information indicates only the Wolston Clay as present at the site with the other glacial deposits shown in surrounding areas. However, the investigation and observations on site have shown the Oadby Till or the Wolston Sand and Gravel as overlying the Wolston Clay in different parts of the site. Within the lake area very soft, generally black and organic, sediment was encountered.

4. HYDROGEOLOGY AND HYDROLOGY

4.1 The Environment Agency groundwater vulnerability map (Reference 5) relates to the potential for pollution migration. The plan is generally consistent with the published geology of the area and indicates the site is predominantly on a non-aquifer other than possibly in the south where a Minor Aquifer appears to encroach onto the site. The minor aquifer swings around to the east and north of the site and corresponds in part with the Wolston Sand and Gravel shown on the geological map for the area (Reference 2). A report from the Environment Agency contained in Appendix F identifies the site as being on a minor aquifer as discussed further in section 5.

4.2 The published information indicates the non-aquifer indicated by Reference 5 as corresponding to the Wolston Clay and is classed as being of negligible permeability. The minor aquifer (Wolston Sand and Gravel) is classed as HU. The minor aquifer in the south is consistent with the presence of the sands in the investigation and identified in the south face of the brickpit. The HU classification indicates soils that have little ability to attenuate diffuse source pollutants and in which non-adsorbed diffuse source pollutants and liquid discharges have the potential to move rapidly to underlying strata or to shallow groundwater. The classification HU is given as a worst case as the site is in an urban area where there is uncertainty because of limited observations.

4.3 Topographical information and site observations indicate that the surrounding ground falls gently from south-east to north-west towards Ashby Road. As discussed in section 5, a number of springs are recorded on the historic maps for the area, and the surface flow direction is towards a small stream which emerges as an 'issue' at the end of Hangman's Lane some 350m north-west of the site. The stream eventually discharges into the River Tweed. As outlined in section 2.2, the brickpit is fed from the south-east by a small stream that flows northwards following the line of Barwell footpath and pumped water from the excavation is fed into a ditch that is believed eventually makes its way towards the River Tweed.

5. INFORMATION FROM THE ENVIRONMENT AGENCY

5.1 Two reports from the Environment Agency are included in Appendix F. The reports cover different aspects of environmental information for the area.

5.2 The main points from the information provided by the Environment Agency are summarised below:

- There is one landfill site located within 500m of the site. This corresponds to the filled pit in the area of the Asda store to the north as discussed further in section 6. There is no currently licensed landfill within 500m of the site.
- The Environment Agency holds no GQA/water quality data relating to local surface watercourses.
- There is no current water abstraction licence for the property or within 500m of the property.
- There is Environment Agency consent in force to allow discharge effluent from Sunnyside (within 500m of the site) but this should not affect the site.
- There is no watercourse within 500m of the site designated a main river.
- The site is not within a Groundwater Source Protection Zone (SPZ).
- The Environment Agency report designates the site as a Minor Aquifer (designated as Intermediate and High leaching potential). This is discussed further in section 4.

6. STUDY OF HISTORICAL MAPS

6.1 A visit was made to Leicestershire County Council Records Office in South Wigston, Leicester to study maps held covering the site under investigation. The maps examined comprised the following (copies of selected maps are included as Figures 1 to 9 in Appendix E):

- County Series Leicestershire Sheet XLII.4, 25" to 1ml, circa 1884 (Figure 1)
- County Series Leicestershire Sheet XLII.4, 25" to 1ml, 1903 (Figure 2)
- County Series Leicestershire Sheet XLII.4, 25" to 1ml, 1924 (Figure 3)
- County Series Leicestershire Sheet XLII.NE, 6" to 1ml, Second Edition 1904
- County Series Leicestershire Sheet XLII.4, 6" to 1ml, Provisional Edition 1923 (with additions 1938) (Figure 4)
- County Series Leicestershire Sheet XLII.4, 6" to 1ml, 1925
- Ordnance Survey Plan SP4295 and SP4395, 1:10,000, 1965 (Figure 5)
- Ordnance Survey Sheet SP49NW, 1:10,000, 1980 (Figure 6)
- Ordnance Survey Sheet SP49SW, 1:10,000, 1984
- Ordnance Survey Sheet SP4395SW, 1:1250, 1959 (Figure 7)
- Ordnance Survey Sheet SP4395SW, 1:1250, 1964
- Ordnance Survey Sheet SP4395SW, 1:1250, 1976 (Figure 8)
- Ordnance Survey Sheet SP4395SW, 1:1250, 1983
- Ordnance Survey Sheet SP4395SW, 1:1250, 1993
- Ordnance Survey Sheet SP4394NW, 1:1250, 1960 (Figure 9)
- Ordnance Survey Sheet SP4394NW, 1:1250, 1967
- Ordnance Survey Sheet SP4394NW, 1:1250, 1991
- Ordnance Survey Sheet SP4394NW, 1:1250, 1992

6.2 The earliest 25" to 1ml map circa 1884 (Figure 1, Appendix E) shows the site as undeveloped. Some houses are shown on Barwell Lane to the north and Hinckley Mineral Baths (with a pump) is shown to the west-south-west. To the south-west is a Brickworks (disused) and a large pit excavation beyond which is a cemetery. A further Brick Works with a pit and kiln is shown to the north-west on the opposite side of Ashby Road. A spring is shown at the junction of Barwell Lane and Ashby Road to the north.

6.3 The 25" to 1ml map of 1903 (Figure 2) and the 6" to 1ml map of 1904 still do not show any development at the site. The Brickworks to the south-west and north-west shown on the 1884 plan are both abandoned but the pits are still present. Barwell Lane Brickworks with kilns, buildings and a brickpit (in the area currently occupied by the Asda store immediately to the north-east) is now present along with Ashby Road Brickworks (buildings and pit) further north on the opposite side of Barwell Lane. The Mineral Baths is no longer identified by name.

6.4 The 6" to 1ml, Provisional Edition of 1923 (with additions 1938) (Figure 4), the 25" to 1ml map of 1924 (Figure 3) and the 6" to 1ml map of 1925 show excavation of the brickpit at the site and forming part of the Barwell Lane Brickworks. The brickpit for the Ashby Road Brickworks to the north of Barwell Lane is fully developed and the buildings removed. There has been some infilling of the former brickpit to the south-west and further development of the cemetery. There has been housing development along Ashby Road.

6.5 The 1:1250 map of 1959 (Figure 7) and 1960 (Figure 9) show the Barwell Lane Brickworks as disused and the brickpit below the area currently occupied by Asda as partly infilled. The former brickpit to the south-west is no longer shown and is presumed filled.

6.6 By the 1:10,000 map of 1965 (Figure 5) there has been further housing development particularly along Barwell Lane. The disused Barwell Lane Brickworks and Ashby Road Brickworks are shown unchanged. The area of the Barwell Lane Brickworks is identified as a Refuse Tip. The brickpit to the north-west on the opposite side of Ashby Road is shown as infilled with extensive housing locally.

6.7 By the 1:1250 map of 1976 (Figure 8) and the 1:10,000 map of 1980 (Figure 6) there has been further house construction locally. The excavation for Barwell Lane Brickworks in the area of Asda has been backfilled and the store is shown as present. The brickpit at the site conforms closely to the situation pertaining at present. By the 1:1000 map of 1984 and the 1:1250 maps of 1992 and 1993 the site and its environs comply closely with current conditions.

6.8 The conclusion from the study of historical maps are:

- The brickpit was dug some time pre 1923 and formed part of Barwell Lane Brickworks. By 1959 the brickpit is believed to have been no longer in use.
- There is evidence of a number of other brickpits locally that have been backfilled and developed for retail purposes (Asda) or housing.
- The excavations for clay for brickmaking, including that on the site, appear to readily fill with water as the maps indicate all the excavations as flooded.

7. SITE INVESTIGATION FIELDWORK

7.1 The fieldwork comprised boreholes, trial pits and probing details of which are presented below. The investigation has been carried out in general accordance with B.S.5930:1999 (Reference 3).

7.2 Three 150mm diameter light cable percussion boreholes (BH1 to BH3) were drilled to 8.00m to 10.00m around the periphery of the pit. In the boreholes 100mm diameter open tube samples (U samples) were recovered from cohesive strata where possible and in-situ Standard Penetration Tests (SPT's) carried out in granular strata. Small disturbed and bulk disturbed soil samples (D and B samples respectively) were recovered throughout the boreholes and glass jar samples (J samples) recovered from selected materials. Monitoring pipes (with a gas valve) were installed in the boreholes to allow longer term monitoring of gas and water levels.

7.3 Five trial pits (TP1 to TP5) were excavated by mechanical backhoe excavator to depths of 0.90 to 2.75m in the land around the pit. Hand shear vane strength determinations (HSV) were carried out using a Pilcon 19mm vane and small disturbed soil samples and glass jar samples (D and J samples) were recovered from selected materials.

7.4 A probing exercise (using a Macintosh probe) was also carried out in nine locations (MP1 to MP9) within the pit area to determine the depth of softened materials in the pond bottom. Glass jar samples (J samples) were recovered from selected locations. In addition, a further jar sample was recovered from position MP10 but no probing carried out.

7.5 The boreholes, trial pits and probing was carried out in the period 6 to 12 May 2004.

7.6 The logs of the exploratory positions are included in Appendix A and th positions are marked on Dwg No. 2 of Appendix G.

7.7 Soil samples were transported to the laboratory for detailed examination and selected samples were programmed for testing.

7.8 Gas and water monitoring pipes were installed in all three boreholes and the gas concentrations (methane, oxygen and carbon dioxide) along with groundwater levels monitored on 4 separate occasions subsequent to the fieldwork. Details of the installations are given on the relevant borehole logs of Appendix A. The results of the monitoring are included in Table 1, Appendix D.

8. SOIL PROPERTY LABORATORY TESTING

8.1 The following soil property testing has been carried out on selected soil samples recovered from the boreholes and trial pits:

Natural Moisture Content determinations
Liquid Limit and Plastic Limit determinations
Particle Size Distributions (wet sieving)
Multi-stage Triaxial Strength determinations (102mm diameter samples)
Soluble Sulphate concentrations
pH values

8.2 The laboratory testing for soil properties was carried out in the period 10 May to 4 June 2004.

8.3 The soil property results are included in Appendix B.

8. CONTAMINATION LABORATORY TESTING

8.1 The testing is described in the following in terms of fill materials and natural soils, as encountered in the boreholes and trial pits around the brickpit, and pond bottom material, these being the materials encountered in the probing of the soft sediment in the brickpit excavation. The testing regime adopted is in general accordance with the guidance given in Reference 4 of the Environment Agency and NHBC (2001) for the safe development of housing on land affected by contamination. It is standard practice to undertake such analyses in the proposed redevelopment of industrial land.

8.2 The following general suite of testing was carried out on 9 sample of soil (3 samples of fill, 3 samples of natural ground, 3 samples of pond bottom material). The results are presented in Laboratory Report No. RO4/1932t in Appendix C:

Arsenic
Cadmium
Chromium (total)
Lead
Mercury
Selenium
Copper

Nickel
Zinc
pH

8.3 The following testing was carried out on selected samples of fill and pond bottom material (the appropriate Laboratory Report Number within Appendix C is indicated):

Asbestos (1 sample of fill) (Laboratory Report No. RO4/1932t)
Total Petroleum Hydrocarbons (TPH) with carbon banding (1 sample of fill and 1 sample of pond bottom material) (Laboratory Report No. RO4/1932t)
Volatile Organic Compounds (VOC's) (1 sample of fill, 1 sample of pond bottom material) (Laboratory Report No. RO4/1932t)
Semi-Volatile Organic Compounds (SVOC's) (1 samples of fill, 1 samples of pond bottom material) (Laboratory Report No. RO4/1933)
Polychlorinated Biphenyls (PCB's) (1 sample of fill, 1 sample of pond bottom material) (Laboratory Report No. RO3/1932t)
Phenols (2 samples of fill, 2 samples of pond bottom material) (Laboratory Report No. RO4/1932t)
Organic Matter Content (1 sample of pond bottom material) (Laboratory Report No. RO4/1932t)

(Note: VOC's include chlorinated aliphatic, chlorinated aromatic hydrocarbons and BTEX ranges; SVOC's include PAH's. Aromatic Hydrocarbons are included in VOC's and SVOC's)

8.4 The following testing was carried out on a water sample from the brickpit. The results are contained in Laboratory Report Number RO4/1933 within Appendix C:

Arsenic
Cadmium
Chromium (total)
Lead
Mercury
Selenium
Copper
Nickel
Zinc
pH
Total Petroleum Hydrocarbons (TPH)

8.5 The following additional testing was carried on samples of natural soil, fill material and pond bottom material in response to the results from the above testing and are also included in Appendix C under the appropriate report number:

Available As (2 samples of pond bottom material) (Laboratory Report No. RO4/1932t)
Available Zn (1 sample of fill, 2 samples of pond bottom material) (Laboratory Report No. RO4/1932t)
Available Ni (1 sample of natural soil) (Laboratory Report No. RO4/1932t)
Leachable phenols (2 samples of pond bottom material) (Laboratory Report Nos. RO4/1932t)

Leachable TPH with carbon banding (1 sample of pond bottom material) (Laboratory Report No. RO4/1932t)

8.6 The laboratory contamination testing was carried out in the period 17 May 2004 to 11 June 2004.

E.J.Murray BSc, PhD, CEng, FICE, CGeol, FGS, MaPS

References

1. O.S. Sheet 140, Leicester and Coventry area, 1:50,000.

2. British Geological Survey, Sheet 169 Coventry, Solid and Drift, 1:50,000.

3. BS5930:1999. British Standards Code of Practice for Site Investigation.

4. Environment Agency and NHBC (2001). Guidance for the Safe Development of Housing on Land Affected by Contamination, R & D Publication 66.

5. Environment Agency (1996). Policy and Practice for the Protection of Groundwater. Groundwater Vulnerability of Leicestershire, Sheet 23.

APPENDIX A

BOREHOLE LOGS (BH1 to BH3) (including details of gas and water monitoring installations)
TRIAL PIT LOGS (TP1 to TP5)
PROBING LOGS (MP1 to MP10)

Murray Rix Geotechnical

Our Ref: GEOLET/04-128L(B)
Date: 11 June 2004

FAO: Mr Rod Gretton
C/o James Bailey
James Bailey Planning
9 Hinckley Road
Burbage
Leicestershire
LE10 2AF

RECEIVED
14 JUN 2004

Dear Sir,

RE: Proposed Housing Development at Ashby Road Lake, Ashby Road, Hinckley

The fieldwork (boreholes, trial pitting and probing) is complete and samples have been tested for a range of soil properties. Monitoring of groundwater levels has also been undertaken on 4 occasions in standpipes in the boreholes. Based on this data and the detailed topographical survey carried out by Midland Survey Limited I have undertaken a stability analysis of the side of the lake closest to the properties on Ashby Road. This letter outlines the conclusions of the investigation and analysis.

The geological map for the area indicates the Wolston Clay of the Wolston Glacial succession as present in the area. The investigation has uncovered 3.0 to 4.0m of Oadby Till overlying the Wolston Clay below the area surrounding the 'lake' closest to the properties. The glacial clays are firm to stiff near-surface but become very stiff with depth. The water is obviously drawn down in the 'lake' but there has been only a limited influence on the water table around the edge.

A large number of computerized slip circle analyses have been carried out for the area of concern to determine the minimum factors of safety using both worst credible effective strength parameters for the soils and moderately conservative strength parameters. This has allowed the sensitivity of the area to instability to be appraised. The analyses do not indicate instability of the quarry faces as likely to affect the properties along Ashby Road. In addition, the investigation has not revealed any other mechanism that might influence the properties under consideration and there is no evidence on site of problematic conditions.

Yours sincerely,

E.J.Murray BSc, PhD, CEng, FICE, CGeol, FGS, MaPS

cc Rod Gretton

Consulting Civil and Geotechnical Engineers

13 Willow Park
Upton Lane
Stoke Golding
Nuneaton
Warwickshire
CV13 6EU
Tel: 01455 213311
Fax: 01455 213969
Email: ted@murrayrix.co.uk
Murray Rix Geotechnical is the trading name for Edward J Murray Limited
Registered in England 4150577

BOREHOLE LOG - MURRAY RIX GEOTECHNICAL

HOLE NO. BH1
Sheet 1 of 1

CLIENT	SITE
MR R. GRETTON	ASHBY ROAD, HINCKLEY

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	OPERATOR	LOGGED BY	JOB NO.
06/05/04	1:50	122.19m aOD SEE LOCATION PLAN	TM	EJM	GEOJOB/04-128

SAMPLE DEPTH	RECORD TYPE	SPT N (Cu-kN/m²)	Standp/ Piezo	DESCRIPTION OF STRATUM (thickness)	DEPTH	LEGEND
				TOPSOIL with roots (0.50)		
0.30	D1					
0.50	J1					
0.50 - 1.00	B1			Firm fissured brown and grey CLAY with a trace of flint gravel and roots (OT) (0.75)	0.50	
0.90	J2					
1.00 - 1.45	U1					
1.50	D2			Stiff fissured brown and grey mottled CLAY with a trace of gravel (OT) (1.05)	1.25	
2.00	U2					
2.50 - 2.95	S1	12		Medium dense orange-brown silty and very silty fine to medium SAND with occasional laminations of clay (WSG) (0.90)	2.30	
2.50	D3					
2.50 - 3.00	B2					
2.95	D4					
3.20	D5					
3.30	U3			Soft to firm brown CLAY/SILT (WSG) (0.10)	3.20	
				Loose becoming medium dense orange-brown slightly silty and silty fine to medium SAND with a trace of rounded gravel and occasional laminations of firm clay (WSG) (5.10)	3.30	
3.80 - 4.25	S2	8				
3.80	D6					
3.80 - 4.30	B3					
4.25	D7					
4.80 - 5.25	S3	12				
4.80 - 5.30	B4					
5.25 - 6.30	D8					
5.80 - 6.25	S4	15				
5.80 - 6.30	B5					
6.25	D9					
6.80 - 6.25	D10					
7.30	S5	17				
7.30 - 7.80	B6					
7.75	D11					
8.40 - 7.75	D12					
8.50	S6	18				
8.50	W1			Firm to stiff fissured dark grey CLAY (WC) (0.10)	8.40	
8.50 - 9.00	B7			Medium dense grey fine sandy SILT/very silty fine SAND (WC) (1.50)	8.50	
8.95	D13					
9.50 - 8.95	S7	20				
9.50 -10.00	B8					
9.95	D14			BOTTOM OF BOREHOLE	10.00	

GROUNDWATER AND CASING INFORMATION

DEPTH STRUCK	DEPTH CASED	ELAPSED TIME	WATER LEVEL	DEPTH SEALED	REMARKS ON GROUNDWATER AND CASING
-					Water added to assist drilling 4.80 to 8.50m
8.50	8.50				Slow seepage
-		5MIN	8.40		
-		10MIN	8.30		
-		15MIN	8.20		
9.10					On completion of boring and removal of casing

BORING METHOD AND REMARKS

150mm light cable percussion cased to 10.00m
U-100mm diam. 'undisturbed' sample;
S-Standard Penetration Test; B-bulk sample;
D-disturbed sample; J-glass jar sample;
W-water sample
OT-Oadby Till; WSG-Wolston Sand and Gravel;
WC-Wolston Clay
Standpipe with gas tap: 0-1.0m concrete on bentonite; 1.0-10.0m gravel/perforated pipe

All dimensions are in metres unless otherwise stated

BOREHOLE LOG - MURRAY RIX GEOTECHNICAL

HOLE NO. BH2
Sheet 1 of 1

CLIENT	SITE
MR R. GRETTON	ASHBY ROAD, HINCKLEY

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	OPERATOR	LOGGED BY	JOB NO.
10/05/04	1:50	119.935m aOD SEE LOCATION PLAN	TM	EJM	GEOJOB/04-128

SAMPLE DEPTH	RECORD TYPE	SPT N (Cu-kN/m^2)	Standp/ Piezo	DESCRIPTION OF STRATUM (thickness)	DEPTH	LEGEND
0.30	D1			MADE GROUND: Dark brown topsoil, brick, concrete, clay, gravel (0.50)		
0.50	J1				0.50	
0.50 - 0.90	B1			MADE GROUND: Soft to firm grey and brown sandy clay (slight organic odour) (0.50)		
0.90	J2				1.00	
1.00 - 1.45	U1			Firm brown and grey clay with a trace of gravel, fragmented brick etc (0.60)		
1.00 - 1.50	B2					
1.60	D2				1.60	
1.70 - 2.15	U2			Stiff fissured orange-brown and grey mottled CLAY with occasional concretions (OT) (2.20)		
2.10	D3					
2.70 - 3.15	U3					
3.20	D4					
3.70 - 4.15	U4					
					3.80	
4.20	D5			Stiff to very stiff dark grey CLAY (WC) (6.20)		
4.70 - 5.15	U5					
5.20	D6					
5.70 - 6.15	U6					
6.00	D7					
6.70	D8					
7.20 - 7.65	U7					
7.70	D9					
8.20	D10					
8.50 - 8.95	U8					
9.00	D11					
9.50 - 9.95	U9					
10.00	D12			BOTTOM OF BOREHOLE	10.00	

GROUNDWATER AND CASING INFORMATION

DEPTH STRUCK	DEPTH CASED	ELAPSED TIME	WATER LEVEL	DEPTH SEALED	REMARKS ON GROUNDWATER AND CASING
1.00					Seepage (perched water)

BORING METHOD AND REMARKS

150mm light cable percussion borehole cased to 1.70m
U-100mm diam. 'undisturbed' sample; B-bulk soil sample; D-small disturbed soil sample; J-glass jar sample
OT-Oadby Till; WC-Wolston Clay
Standpipe with gas tap: 0-1.0m concrete on bentonite seal; 1.00-10.00m pea gravel around perforated pipe

All dimensions are in metres unless otherwise stated

BOREHOLE LOG - MURRAY RIX GEOTECHNICAL

HOLE NO. BH3
Sheet 1 of 1

CLIENT	SITE
MR R. GRETTON	ASHBY ROAD, HINCKLEY

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	OPERATOR	LOGGED BY	JOB NO.
11/05/04	1:50	120.325m aOD SEE LOCATION PLAN	TM	EJM	GEOJOB/04-128

SAMPLE DEPTH	RECORD TYPE	SPT N (Cu-kN/m^2)	Standp/ Piezo	DESCRIPTION OF STRATUM (thickness)	DEPTH	LEGEND
0.30	D1			MADE GROUND: Topsoil, clay with a trace of brick (0.70)		
0.50	J1					
0.70	D2				0.70	
0.90	J2			Firm to stiff orange-brown and grey mottled CLAY with a trace of rounded gravel and roots (OT) (2.30)		
1.00 - 1.45	U1					
1.50	D3					
2.00 - 2.45	U2					
2.50	D4					
3.00 - 3.45	U3				3.00	
3.50	D5			Stiff becoming very stiff dark grey CLAY (WC) (5.00)		
4.00 - 4.45	U4					
4.50	D6					
5.00 - 5.45	U5					
5.50	D7					
6.00	D8					
6.50 - 6.95	U6					
7.00	D9					
7.50 - 7.95	U7					
8.00	D8			BOTTOM OF BOREHOLE	8.00	

GROUNDWATER AND CASING INFORMATION

DEPTH STRUCK	DEPTH CASED	ELAPSED TIME	WATER LEVEL	DEPTH SEALED	REMARKS ON GROUNDWATER AND CASING
-					No groundwater seepage encountered

BORING METHOD AND REMARKS

150mm light cable percussion borehole
U-100mm diam. 'undisturbed' sample; D-small disturbed soil sample; J-glass jar sample
OT-Oadby Till; WC-Wolston Clay
Standpipe with gas tap: 0-1.0m concrete on bentonite seal; 1.00-8.00m pea gravel around perforated pipe

All dimensions are in metres unless otherwise stated

TRIAL PIT LOG - MURRAY RIX GEOTECHNICAL

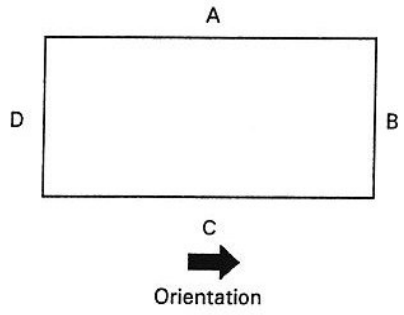
TRIAL PIT NO. TP1
Sheet 1 of 1

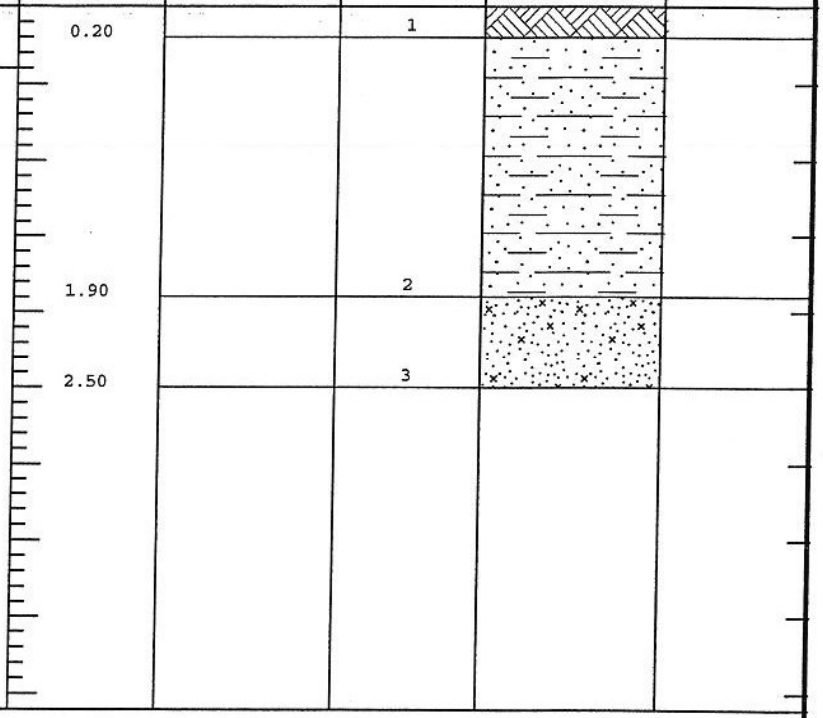
CLIENT	SITE
MR R. GRETTON	ASHBY ROAD, HINCKLEY

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
12/05/04	1:50	123.14m aOD SEE LOCATION PLAN	EJM	GEOJOB/04-128

PIT DIMENSIONS A/C : B/D :

ORIENTATION





FACE AND POSITION LOGGED

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
			0.20	TOPSOIL (0.20)	1	
0.40	J1			Firm fissured orange-brown and grey sandy CLAY with a trace of gravel (OT) (1.70)	2	
0.90	D1					
1.00	HSV	70, 78, 64				
1.75	HSV	50, 58, 64				
2.00	D2		1.90	Loose to medium dense orange-brown silty fine to medium SAND (WSG) (0.60)	3	
			2.50	BOTTOM OF TRIAL PIT		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
-			No groundwater seepage encountered

EXCAVATION METHOD AND REMARKS

Excavated by mechanical backhoe excavator with 600mm bucket
No notable falls during excavation, backfilled immediately
HSV-hand shear vane strength (kPa); D-small disturbed soil sample;
J-glass jar sample
OT-Oadby Till; WSG-Wolston Sand and Gravel

All dimensions are in metres unless otherwise stated

TRIAL PIT LOG - MURRAY RIX GEOTECHNICAL

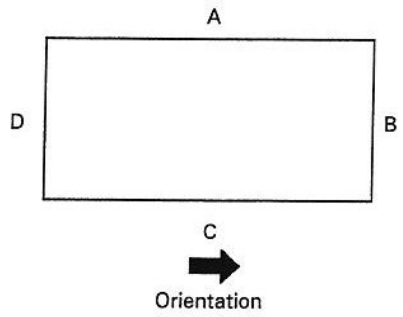
TRIAL PIT NO. TP2
Sheet 1 of 1

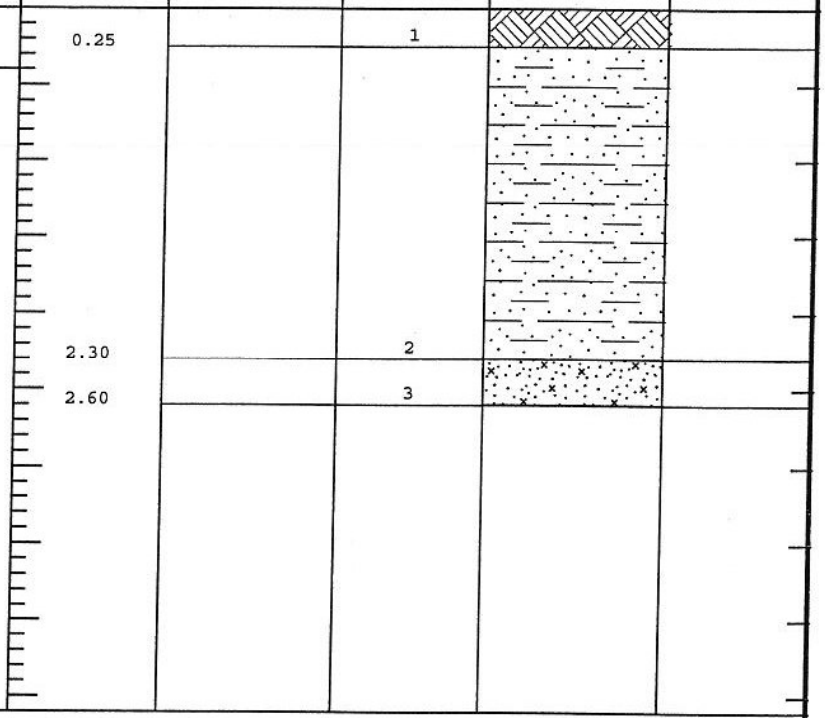
CLIENT	SITE
MR R. GRETTON	ASHBY ROAD, HINCKLEY

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
12/05/04	1:50	123.50m aOD SEE LOCATION PLAN	EJM	GEOJOB/04-128

PIT DIMENSIONS A/C :
B/D :

ORIENTATION





FACE AND POSITION LOGGED

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
			0.25	TOPSOIL (0.25)	1	
0.45	J1			Firm becoming stiff fissured orange-brown, red-brown and grey sandy CLAY with a trace of gravel, occasional cobbles and lenses of sand (OT) (2.05)	2	
0.90	HSV	72, 70				
1.30	D1V					
1.35	HSV	104, 105, 104				
			2.30			
2.40	D2		2.60	Loose to medium dense orange-brown silty fine SAND with occasional bands of firm clay and black carbonaceous material (WSG) (0.30)	3	
				BOTTOM OF TRIAL PIT		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
-			No groundwater seepage encountered

EXCAVATION METHOD AND REMARKS

Excavated by mechanical backhoe excavator with 600mm bucket
No notable falls during excavation, backfilled immediately
HSV-hand shear vane strength (kPa); D-small disturbed soil sample; J-glass jar sample
OT-Oadby Till; WSG-Wolston Sand and Gravel

All dimensions are in metres unless otherwise stated

TRIAL PIT LOG - MURRAY RIX GEOTECHNICAL

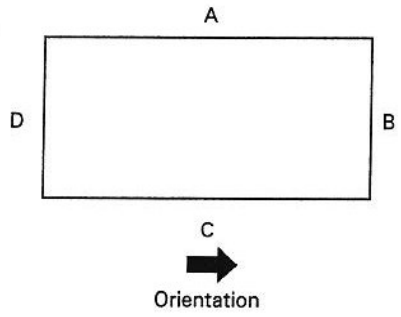
TRIAL PIT NO. TP3
Sheet 1 of 1

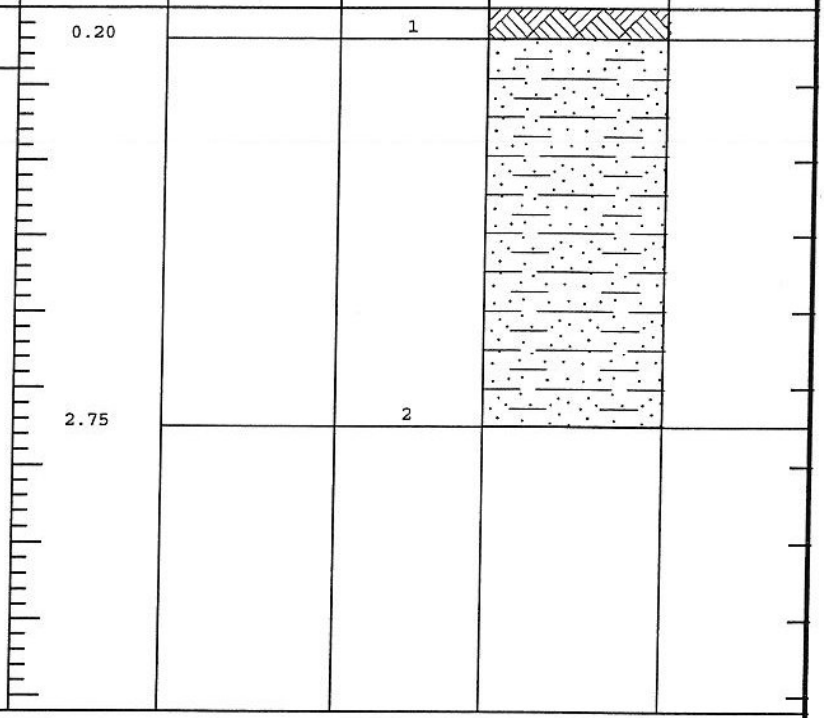
CLIENT	SITE
MR R. GRETTON	ASHBY ROAD, HINCKLEY

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
12/05/04	1:50	123.56m aOD SEE LOCATION PLAN	EJM	GEOJOB/04-128

PIT DIMENSIONS A/C :
B/D :

ORIENTATION





FACE AND POSITION LOGGED

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
			0.20	TOPSOIL (0.20)	1	
0.60	J1			Firm becoming stiff fissured orange-brown, red-brown and grey sandy CLAY with a trace of gravel and occasional pockets of sand and roots (OT) (2.55)	2	
1.10	D1					
1.10	HSV	96, 78, 97				
2.50	D2					
			2.75	BOTTOM OF TRIAL PIT		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
-			No groundwater seepage encountered

EXCAVATION METHOD AND REMARKS

Excavated by mechanical backhoe excavator with 600mm bucket
No notable falls during excavation, backfilled immediately
HSV-hand shear vane strength (kPa); D-small disturbed soil sample;
J-glass jar sample
OT-Oadby Till

All dimensions are in metres unless otherwise stated

TRIAL PIT LOG - MURRAY RIX GEOTECHNICAL

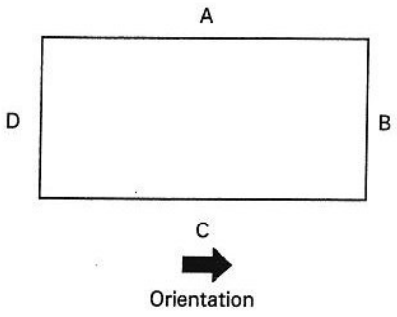
TRIAL PIT NO. TP4
Sheet 1 of 1

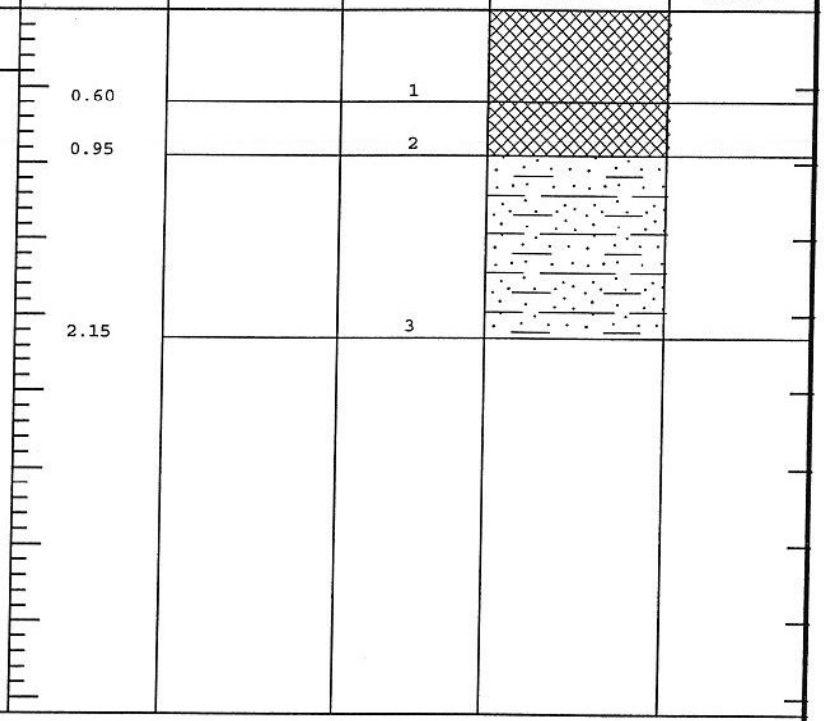
CLIENT	SITE
MR R. GRETTON	ASHBY ROAD, HINCKLEY

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
12/05/04	1:50	121.61m aOD SEE LOCATION PLAN	EJM	GEOJOB/04-128

PIT DIMENSIONS A/C :
B/D :

ORIENTATION





FACE AND POSITION LOGGED

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				MADE GROUND: Topsoil, brick, mortar, roots (0.60)	1	
0.45	J1		0.60			
				DISTURBED GROUND: Firm light brown friable CLAY with atrace of brick fragments (0.35)	2	
0.90	J2		0.95			
				Stiff fissured brown and grey sandy CLAY with a trace of gravel and roots (OT) (1.20)	3	
1.35	D1					
1.50	HSV	122, 118, 112				
			2.15	BOTTOM OF TRIAL PIT		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
-			No groundwater seepage encountered

EXCAVATION METHOD AND REMARKS

Excavated by mechanical backhoe excavator with 600mm bucket
No notable falls during excavation, backfilled immediately
HSV-hand shear vane strength (kPa); D-small disturbed soil sample;
J-glass jar sample
OT-Oadby Till

All dimensions are in metres unless otherwise stated

TRIAL PIT LOG - MURRAY RIX GEOTECHNICAL

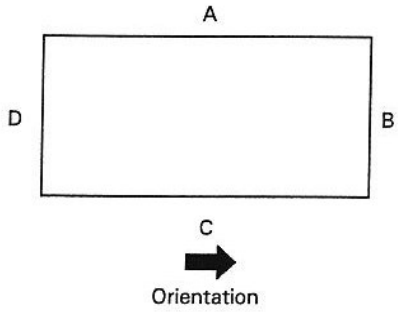
TRIAL PIT NO. TP5
Sheet 1 of 1

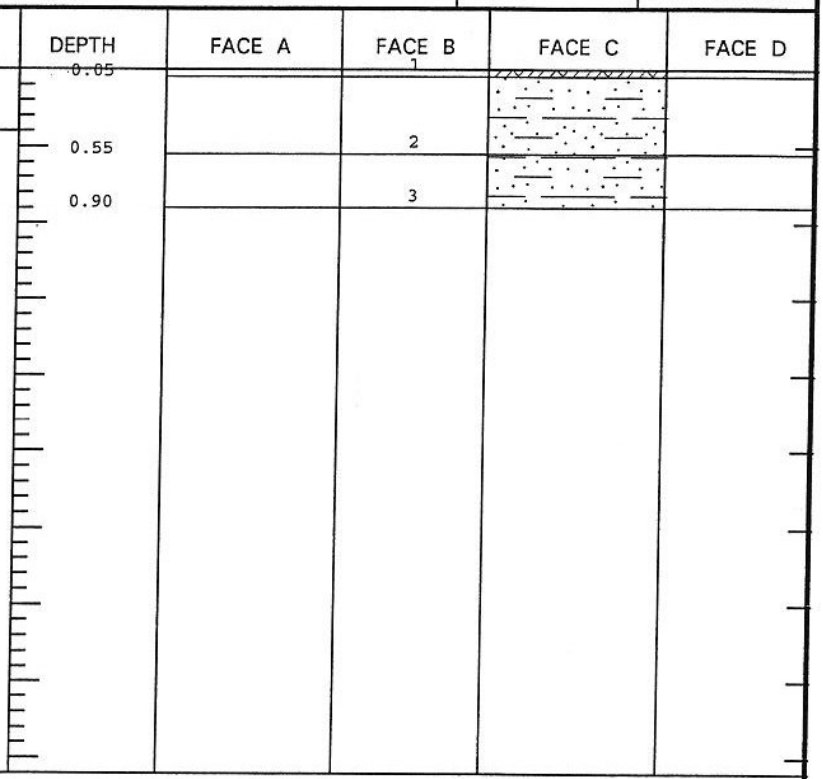
CLIENT	SITE
MR R. GRETTON	ASHBY ROAD, HINCKLEY

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
12/05/04	1:50	119.33m aOD SEE LOCATION PLAN	EJM	GEOJOB/04-128

PIT DIMENSIONS A/C :
B/D :

ORIENTATION





FACE AND POSITION LOGGED

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
			0.05	TOPSOIL (0.05)	1	
				Firm orange-brown and grey sandy CLAY (OT) (0.50)	2	
0.45	J1		0.55			
				Firm to stiff fissured orange-brown, brown and grey sandy CLAY with occasional small pockets of sand (OT) (0.35)	3	
0.90	HSV	95, 105, 95	0.90	BOTTOM OF TRIAL PIT		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
-			No groundwater seepage encountered

EXCAVATION METHOD AND REMARKS

Excavated by mechanical backhoe excavator with 600mm bucket
No notable falls during excavation, backfilled immediately
HSV-hand shear vane strength (kPa); J-glass jar sample
OT-Oadby Till

All dimensions are in metres unless otherwise stated

PROBING LOGS MP1 TO MP10

	Depth of soft ground (m)	Sample
MP1	4.50	-
MP2	3.00	yes
MP3	2.75	-
MP4	3.77	yes
MP5	3.55	-
MP6	3.20	-
MP7	3.80	-
MP9	2.30	yes
MP10	-	yes

Water sample also taken from pit (PIT W1)

APPENDIX B

SOIL PROPERTY TEST RESULTS

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

DATE OF ISSUE : 04/06/04 PAGE 1 of 19 Pages

Contract: Ashby Road, HINCKLEY.

Serial No. X15586

UKAS TESTING 0998

CLIENT:

MURRAY RIX LIMITED.
13 WILLOW PARK
UPTON LANE
STOKE GOLDING
NUNEATON
WARWICKSHIRE
CV13 6EU

Soil Property Testing

18 Halcyon Court, St Margarets Way,
Stukeley Meadows, Huntingdon,
Cambs. PE29 6DG.

Telephone (01480) 455579 Fax (01480) 453619
Email sptownend@btclick.com

SAMPLES SUBMITTED BY:

MURRAY RIX LIMITED.

APPROVED SIGNATORIES:

☐ **S.P.TOWNEND FGS**
Technical Manager

☐ **W.JOHNSTONE**
Deputy Technical/Quality Manager

☑ **J.C.GARNER B.Eng(Hons.) FGS**
Quality Manager

SAMPLES LABELLED:

HINCKLEY

DATE RECEIVED: 10/05/04

SAMPLES TESTED BETWEEN 10/05/04 **and** 04/06/04

REMARKS: For the attention of Dr E Murray

NOTES:

1. All remaining samples or remnants from this contract will be disposed of after 28 days from today, unless we are notified to the contrary.
2. (a) UKAS - United Kingdom Accreditation Service.
   (b) Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.
3. Tests marked "NOT UKAS ACCREDITED" in this test report are not included in the UKAS Accreditation Schedule for this testing laboratory.
4. This test report may not be reproduced other than in full except with the prior written approval of the issuing laboratory.

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

DATE OF ISSUE : As page 1 PAGE 2 of 19

Contract
Ashby Road, HINCKLEY.

Serial No.
X15586

SCHEDULE OF LABORATORY TESTS

Bh./ Tp No.	Sample Ref	Depth (from)	14:Triaxial Test m/s 102mm dia	7:PSD by Wet Sieve	1:Moisture Content Determination	4:Liquid/Plastic limit 1 point	34:Sulphate Test (2:1 Water Soil)	36:ph value of Soil or Water	Remarks
1	U2	2.00	*						50/100/150 kPa
	B3	3.80		*					
	B8	9.50		*					
2	D2	1.60			*	*	*	*	
	U3	2.70	*						75/175/275 kPa
	D6	5.20			*	*			
	U6	5.70	*						150/250/350 kPa
	U8	8.50	*						200/300/400 kPa
3	D3	1.50					*	*	
	U2	2.00	*						50/100/150 kPa
	U8	6.50	*						150/250/350 kPa
	D9	7.00			*	*			
-	-	-	6	2	3	3	2	2	<— Total Number of Tests ——

Scheduled by: MURRAY RIX LIMITED.

Target Date: 30/05/04

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

DATE OF ISSUE : As page 1 PAGE 3 of 19

Contract
Ashby Road, HINCKLEY.

Serial No.
X15586

UKAS TESTING
0998

SUMMARY OF MOISTURE CONTENT, LIQUID LIMIT, PLASTIC LIMIT, PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole/ Pit No.	Depth m.	Sample	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Liquidity Index (%)	SAMPLE PREPARATION Method S/N	Ret'd 0.425um (%)	Corr'd M/C <0.425um	Curing Time (hrs.)	Description	CLASS
2	1.60	D2	23	52	21	31	0.06	N	O(A)		168	Stiff brown CLAY with occasional grey pockets, calcareous aggregations and rare decayed roots	CH
2	5.20	D6	19	45	20	25	-0.04	N	O(A)		27	Very stiff dark grey CLAY	CI
3	7.00	D9	21	45	20	25	0.04	N	O(A)		27	Stiff dark grey CLAY	CI

METHOD OF PREPARATION : BS 1377:PART 1:1990:7.4 & PART 2:1990:4.2 S = Wet Sieved Specimen N = prepared from Natural

METHOD OF TEST : BS 1377:PART 2:1990:3.2, 4.4, 5.3, 5.4

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter. A = Assumed, M = Measured

COMMENTS :

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.

TEST REPORT.

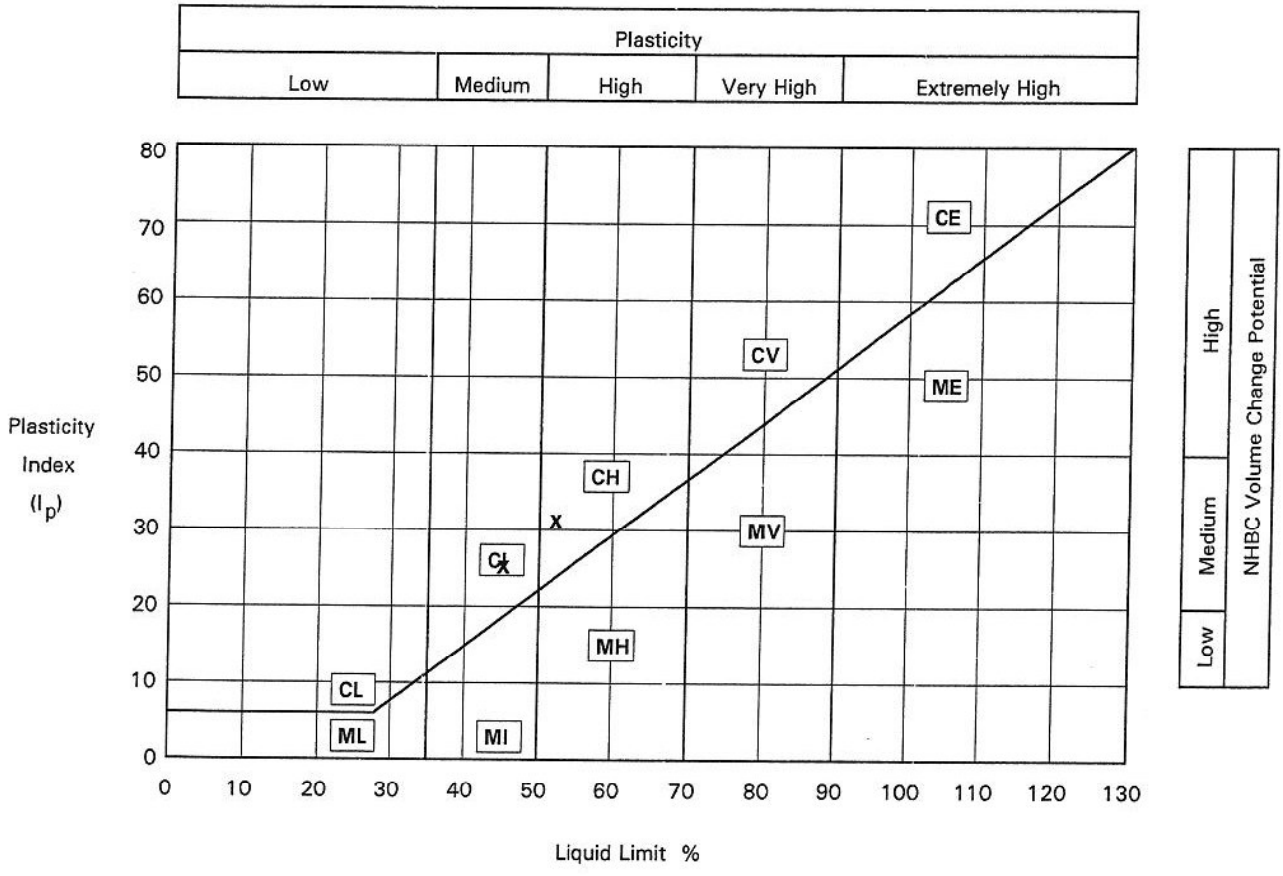
ISSUED BY : SOIL PROPERTY TESTING LTD.

DATE OF ISSUE : As page 1 PAGE 4 of 19

Contract: Ashby Road, HINCKLEY.

Serial No. X15586

PLOT OF PLASTICITY INDEX AGAINST LIQUID LIMIT USING CASAGRANDE CLASSIFICATION CHART



METHOD OF PREPARATION: BS 1377:PART 1:1990:7.4 & PART 2:1990:4.2

METHOD OF TEST : BS 1377:PART 2:1990:3.2, 4.4, 5.3, 5.4

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter

COMMENTS : VOLUME CHANGE POTENTIAL: NHBC Standards Chapter 4.2 Unmodified Plasticity Index PLASTICITY CHART BS5930:1999:Figure 18

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

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Serial No. X15586

UKAS TESTING 0998

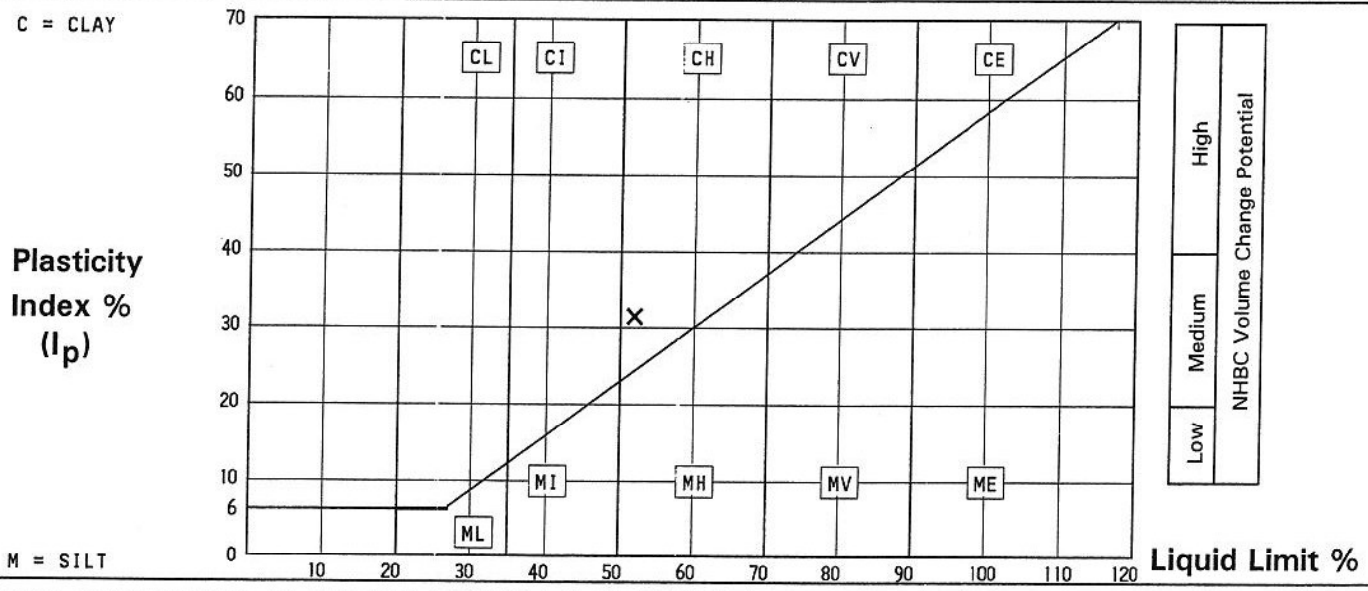
DETERMINATION OF MOISTURE CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole/ Pit No.	Depth m.	Sample	Moisture Content %	Description	Remarks
2	1.60	D2	23	Stiff brown CLAY with occasional grey pockets, calcareous aggregations and rare decayed roots	

PREPARATION

Method of Preparation	Specimen from Natural Soil
Sample retained 0.425 sieve (Assumed)	0 %
Corrected moisture content for material passing 0.425mm	%
Curing Time	168 Hours

Liquid Limit	52 %
Plastic Limit	21 %
Plasticity Index	31 %
Liquidity Index	0.06
Clay Content	Not analysed. %
Derived Activity (PI/CC)	Not analysed.



METHOD OF PREPARATION: BS 1377:PART 1:1990:7.4 & PART 2:1990:4.2

METHOD OF TEST : BS 1377:PART 2:1990:3.2, 4.4 , 5.3, 5.4

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter

COMMENTS : PLASTICITY CHART BS5930:1999:Figure 18
VOLUME CHANGE POTENTIAL: NHBC Standards Chapter 4.2 Unmodified Plasticity Index
NOTE: Modified Plasticity Index I'p = Ip x (% less than 425 microns/100)

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

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UKAS TESTING 0998

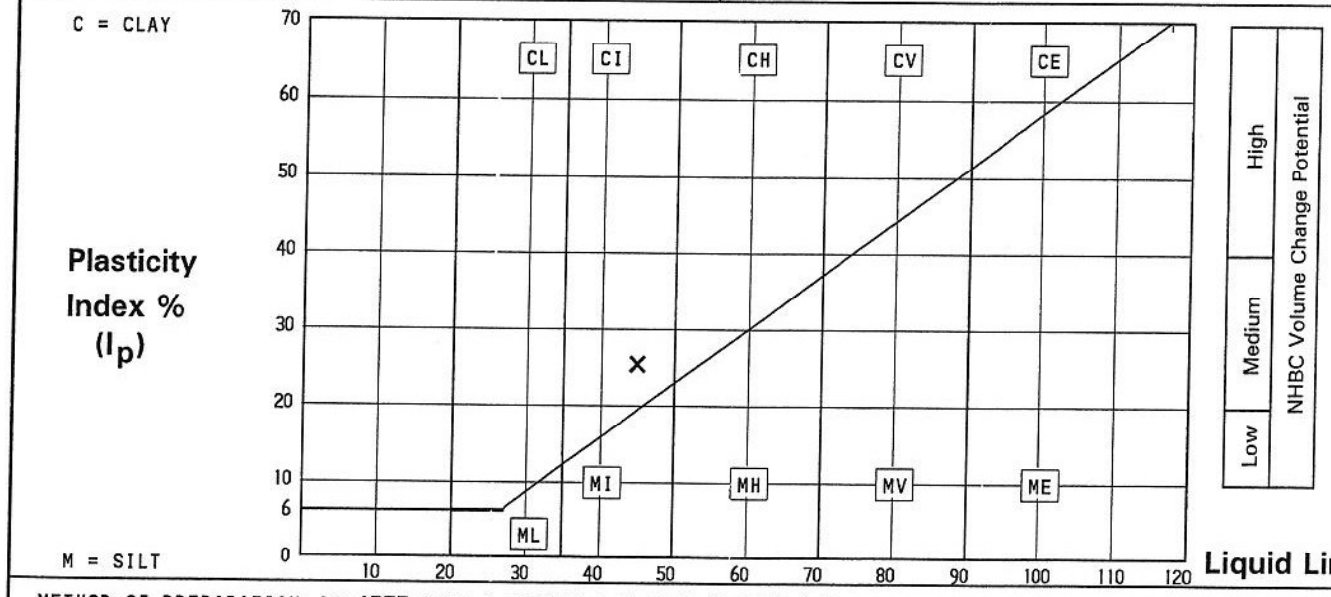
DETERMINATION OF MOISTURE CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole/ Pit No.	Depth m.	Sample	Moisture Content %	Description	Remarks
2	5.20	D6	19	Very stiff dark grey CLAY	

PREPARATION

Method of Preparation	Specimen from Natural Soil
Sample retained 0.425 sieve (Assumed)	0 %
Corrected moisture content for material passing 0.425mm	%
Curing Time	27 Hours

Liquid Limit	45 %
Plastic Limit	20 %
Plasticity Index	25 %
Liquidity Index	-0.04
Clay Content	Not analysed. %
Derived Activity (PI/CC)	Not analysed.



METHOD OF PREPARATION: BS 1377:PART 1:1990:7.4 & PART 2:1990:4.2

METHOD OF TEST : BS 1377:PART 2:1990:3.2, 4.4 , 5.3, 5.4

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter

COMMENTS : PLASTICITY CHART BS5930:1999:Figure 18
VOLUME CHANGE POTENTIAL: NHBC Standards Chapter 4.2 Unmodified Plasticity Index
NOTE: Modified Plasticity Index I'p = Ip x (% less than 425 microns/100)

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

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UKAS TESTING 0998

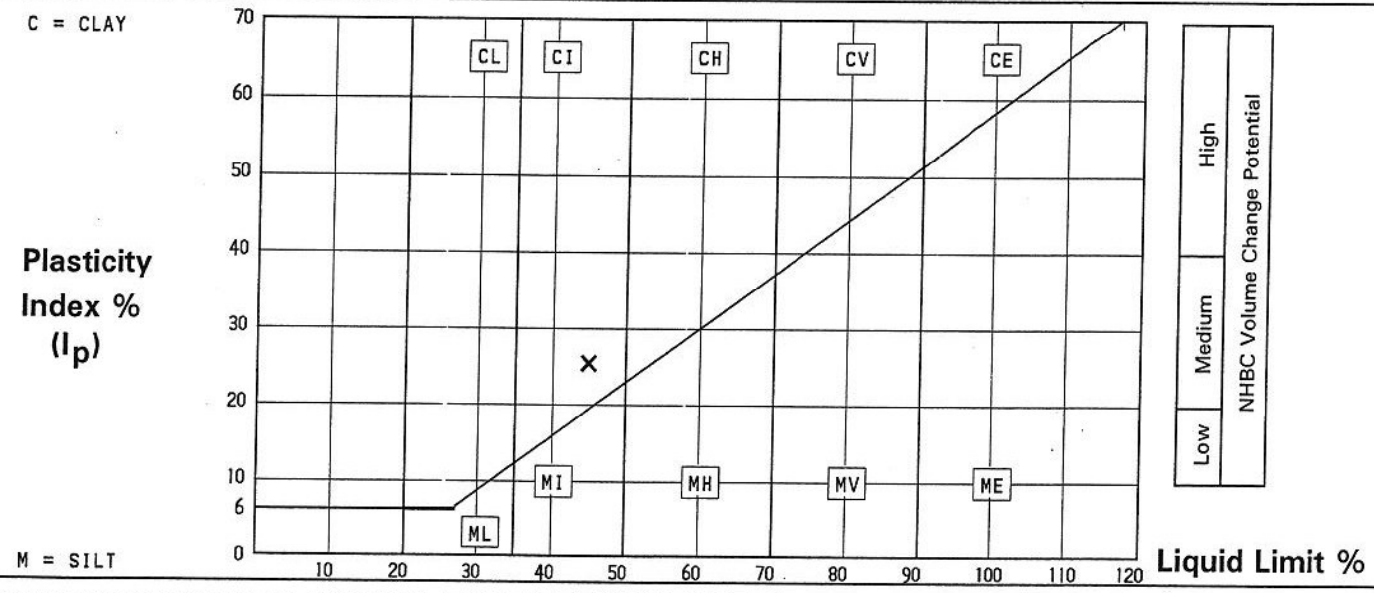
DETERMINATION OF MOISTURE CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole/ Pit No.	Depth m.	Sample	Moisture Content %	Description	Remarks
3	7.00	D9	21	Stiff dark grey CLAY	

PREPARATION

Method of Preparation	Specimen from Natural Soil
Sample retained 0.425 sieve (Assumed)	0 %
Corrected moisture content for material passing 0.425mm	%
Curing Time	27 Hours

Liquid Limit	45 %
Plastic Limit	20 %
Plasticity Index	25 %
Liquidity Index	0.04
Clay Content	Not analysed. %
Derived Activity (PI/CC)	Not analysed.



METHOD OF PREPARATION: BS 1377:PART 1:1990:7.4 & PART 2:1990:4.2

METHOD OF TEST : BS 1377:PART 2:1990:3.2, 4.4 , 5.3, 5.4

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter

COMMENTS : PLASTICITY CHART BS5930:1999:Figure 18
VOLUME CHANGE POTENTIAL: NHBC Standards Chapter 4.2 Unmodified Plasticity Index
NOTE: Modified Plasticity Index I'p = Ip x (% less than 425 microns/100)

TEST REPORT.

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UKAS TESTING 0998

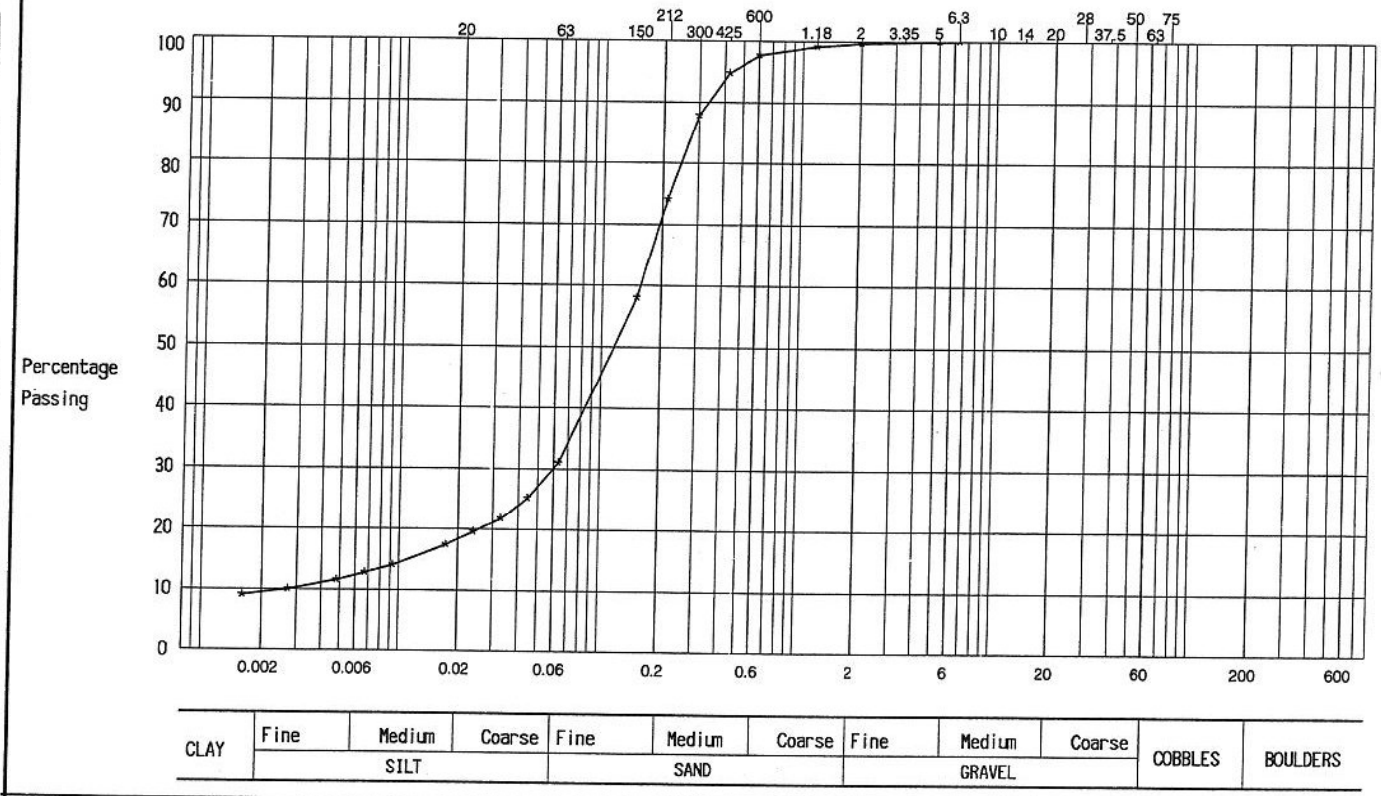
DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole/ Pit No.	Depth m.	Sample	Description	Remarks
1	3.80	B3	Brown very silty SAND with occasional firm sandy clay lumps and rare angular light brown and reddish brown sandstone fragments	

Method of Test: Wet Sieve + Hydrometer

Method of pre-treatment: NOT REQUIRED

	Size (microns)																Size (mm)										
Sieve Size	1.6	2.7	4.8	6.7	9.3	17.3	23.9	33	44.6	63	150	212	300	425	600	1.18	2	5	6.3	10	14	20	28	37.5	50	75
Percentage by Mass passing Sieve	9	10	11	13	14	17	20	22	25	31	58	74	88	95	98	99	100	100	100	-	-	-	-	-	-	-



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

METHOD OF PREPARATION: BS 1377:PART 1:1990:7.3 & 7.4.5

METHOD OF TEST : BS 1377:PART 2:1990:9.2 + 9.5

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter

COMMENTS :

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.

TEST REPORT.

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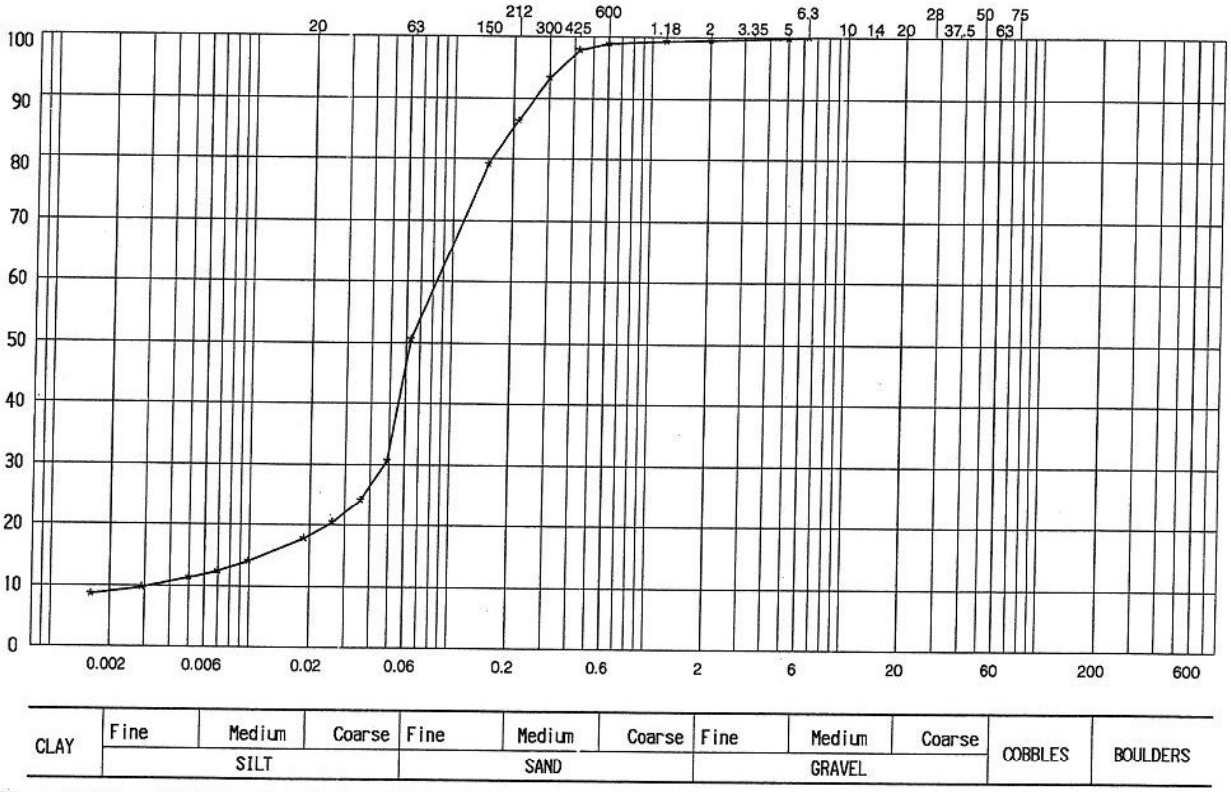
DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole/ Pit No.	Depth m.	Sample	Description	Remarks
1	9.50	B8	Brown sandy SILT with rare angular light brown sandstone fragments	

Method of Test: Wet Sieve + Hydrometer

Method of pre-treatment: NOT REQUIRED

	Size (microns)																	Size (mm)											
Sieve Size	1.6	2.9	5	7	9.9	18.7	26	36	48.9	63	150	212	300	425	600	1.18	2	5	6.3	10	14	20	28	37.5	50	75
Percentage by Mass passing Sieve	9	10	11	12	14	18	20	24	31	51	79	86	93	98	99	99	99	100	100	-	-	-	-	-	-	-



METHOD OF PREPARATION: BS 1377:PART 1:1990:7.3 & 7.4.5

METHOD OF TEST : BS 1377:PART 2:1990:9.2 + 9.5

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter

COMMENTS :

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.

TEST REPORT.

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UKAS TESTING
0998

DETERMINATION OF DENSITY, MOISTURE CONTENT AND UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole/ Pit No.	Depth m.	Sample	Moisture Content (%)	Bulk Density (Mg/m^3)	Dry Density (Mg/m^3)	Lateral Pressure (kPa)	Deviator Stress (kPa)	Shear Stress (kPa)	MOHRS CIRCLE ANALYSIS Cu (kPa)	MOHRS CIRCLE ANALYSIS Ø (degrees)	Description
1	2.00	U2	25	2.01	1.61	47 105 151	201 211 217	100 105 108	90.3	4.1	Stiff brown CLAY with occasional grey mottling, decayed roots and rare calcareous aggregations
2	2.70	U3	22	2.06	1.69	71 174 275	185 195 200	93 97 100	86.9	2.1	Stiff brown CLAY with occasional grey veining and occasional decayed roots
2	5.70	U6	21	2.12	1.75	152 254 350	338 345 360	169 172 180	152.1	3.0	Very stiff dark grey CLAY
2	8.50	U8	19	2.14	1.80	199 304 407	408 425 435	204 213 218	180.6	3.5	Very stiff dark grey CLAY
3	2.00	U2	25	2.02	1.62	45 105 152	149 157 161	74 78 80	68.6	3.0	Stiff brown CLAY with rare grey mottling, silt pockets and decayed roots
3	6.50	U6	21	2.11	1.74	150 256 357	342 358 370	171 179 185	150.9	3.7	Very stiff dark grey CLAY

METHOD OF PREPARATION : BS 1377:PART 1:1990:7.4.2 & 8 PART 2:1990:7.2 PART 7:1990:8.3

METHOD OF TEST : BS 1377:PART 2:1990:3 Determination of Moisture Content 1990:7 Determination of Density
:PART 7:1990:8 Undrained Shear Strength 1990:9 Multi-stage test
Note Multi-stage test used when specimen has granular content / behaviour and length of specimen precludes the taking of 3 x 100mm dia by 200mm long specimens.

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter

COMMENTS :

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.

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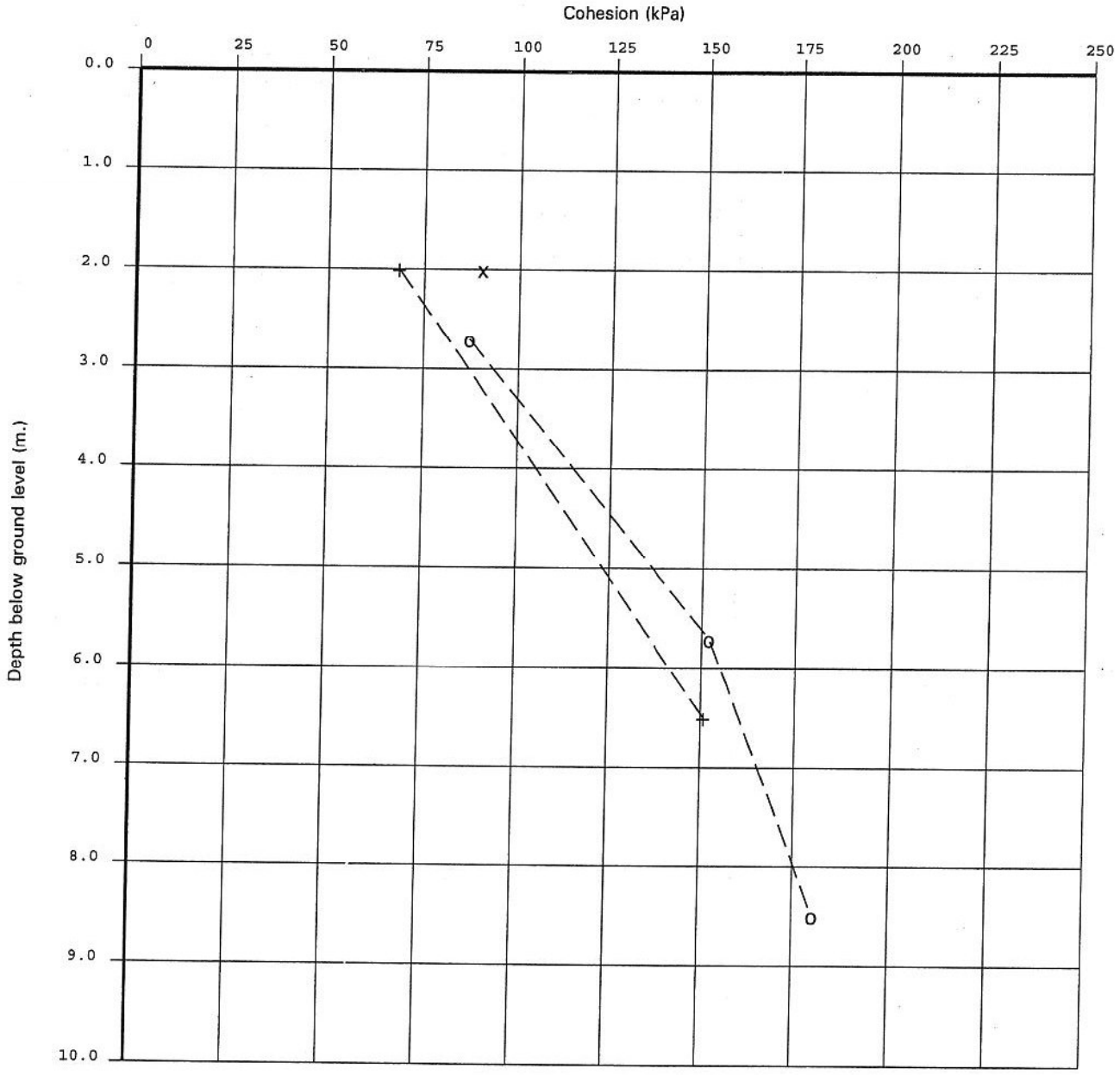
Cohesion (kPa) vs Depth below ground level (m.).



Key to Data Points	x : 1	o : 2	+ : 3					

SPTPLOT

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

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Contract: Ashby Road, HINCKLEY.

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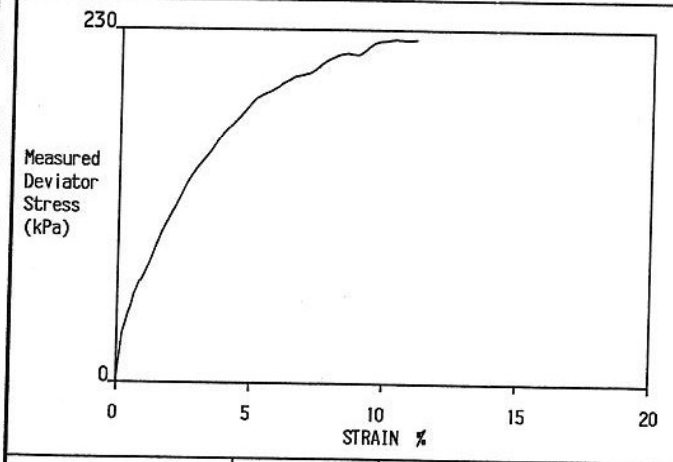
UKAS TESTING 0998

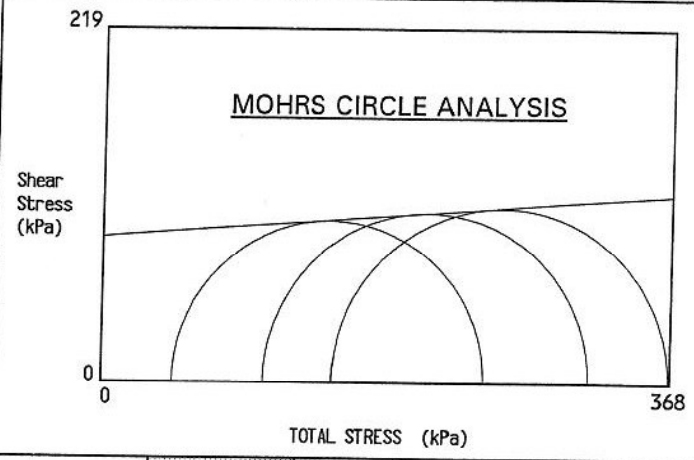
DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole/ Pit No.	Depth m.	Sample	Description	Remarks
1	2.00	U2	Stiff brown CLAY with occasional grey mottling, decayed roots and rare calcareous aggregations	

Initial Specimen	Height mm	Diameter mm	Weight g	Moisture Content %	Wet Density Mg/m^3	Dry Density Mg/m^3
Depth of Top of Specimen (m) 2.06	200.1	102.9	3350	25	2.01	1.61

TEST INFORMATION — Rate of Strain 1.9 % per Min — Rubber Membrane Thickness 0.5 mm





Specimen at Failure	Measured Cell Pressure $\sigma 3$ (kPa)	Strain at Failure (%)	Stress Correction (kPa)		Corrected Max. Deviator Stress $\sigma 1 - \sigma 3$ (kPa)	Shear Stress Cu $\frac{1}{2}(\sigma 1 - \sigma 3)_f$ (kPa)	Mohrs Circle Analysis	
			Membrane Thickness	Piston Friction			Cu (kPa)	PHI °
	47	7.1	0.7	/	201	100		
	105	8.3	0.9	4.5	211	105	90.26	4.10
	151	11.1	1.2	6.9	217	108		

METHOD OF PREPARATION: BS 1377:PART 1:1990:

METHOD OF TEST : BS 1377:PART 7:1990:8 Definitive Method. 1990:9 Multi-stage loading - used when specimen has granular content / behaviour and length of specimen precludes the taking of 3 x 100mm dia by 200mm long specimens.

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter

COMMENTS : Tested in Vertical Orientation.
UKAS Calibration - loads from 0.2 to 10kN.

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

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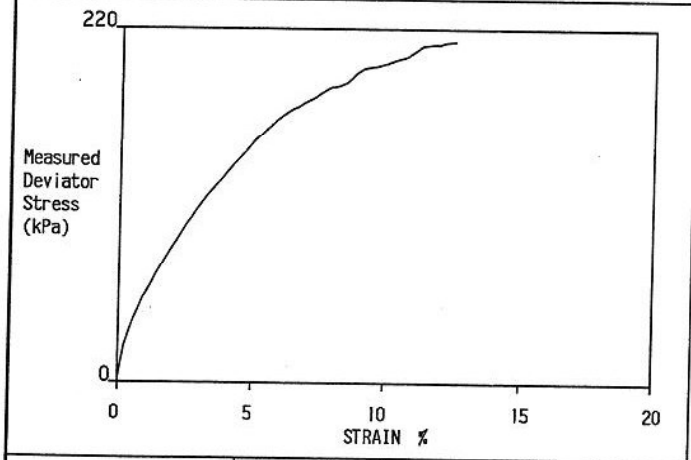
UKAS TESTING 0998

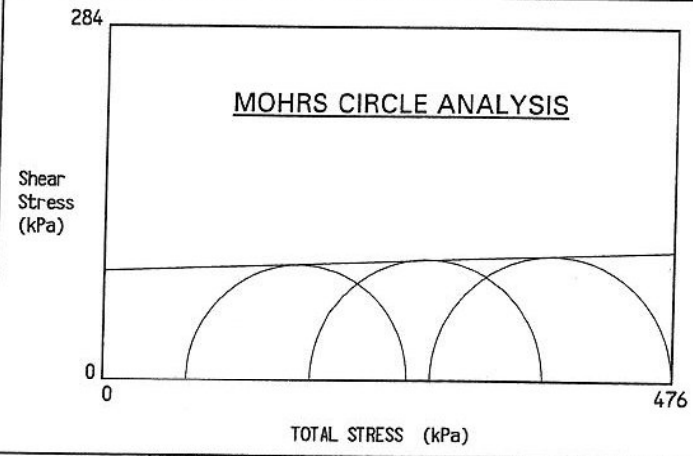
DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole/ Pit No.	Depth m.	Sample	Description	Remarks
2	2.70	U3	Stiff brown CLAY with occasional grey veining and occasional decayed roots	

Initial Specimen	Height mm	Diameter mm	Weight g	Moisture Content %	Wet Density Mg/m^3	Dry Density Mg/m^3
Depth of Top of Specimen (m) 2.75	200.3	103.2	3444	22	2.06	1.69

TEST INFORMATION — Rate of Strain 1.0 % per Min — Rubber Membrane Thickness 0.5 mm





Specimen at Failure	Measured Cell Pressure $\sigma 3$ (kPa)	Strain at Failure (%)	Stress Correction (kPa)		Corrected Max. Deviator Stress $\sigma 1 - \sigma 3$ (kPa)	Shear Stress Cu $\frac{1}{2}(\sigma 1 - \sigma 3)_f$ (kPa)	Mohrs Circle Analysis	
			Membrane Thickness	Piston Friction			Cu (kPa)	PHI °
	71	8.5	1.0	/	185	93		
	174	10.7	1.2	6.7	195	97	86.93	2.08
	275	12.3	1.2	12.1	200	100		

METHOD OF PREPARATION: BS 1377:PART 1:1990:

METHOD OF TEST : BS 1377:PART 7:1990:8 Definitive Method. 1990:9 Multi-stage loading - used when specimen has granular content / behaviour and length of specimen precludes the taking of 3 x 100mm dia by 200mm long specimens.

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter

COMMENTS : Tested in Vertical Orientation.
UKAS Calibration - loads from 0.2 to 10kN.

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

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Contract: Ashby Road, HINCKLEY.

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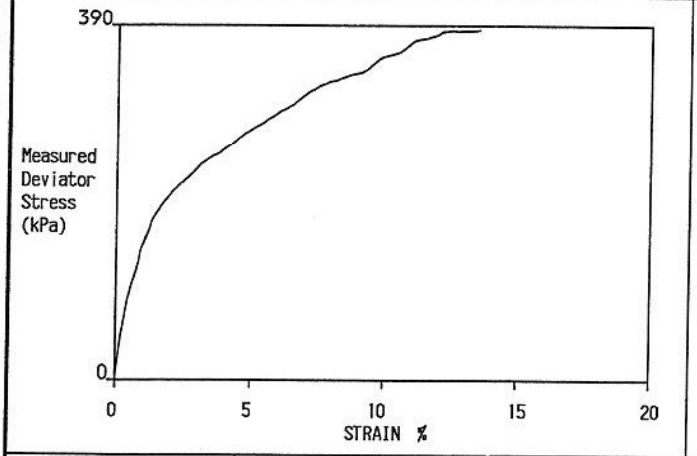
UKAS TESTING 0998

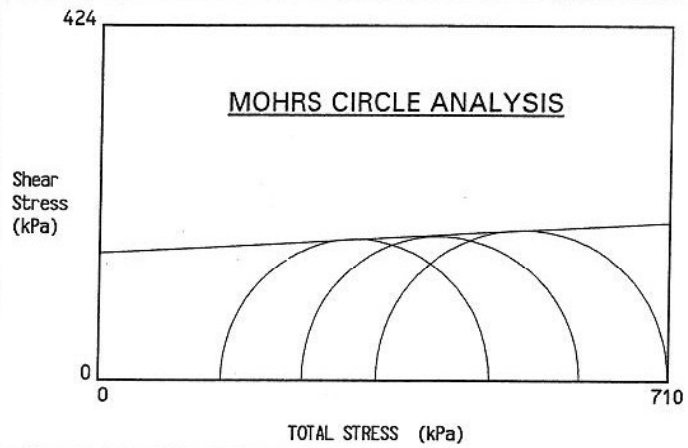
DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole/ Pit No.	Depth m.	Sample	Description	Remarks
2	5.70	U6	Very stiff dark grey CLAY	

Initial Specimen	Height mm	Diameter mm	Weight g	Moisture Content %	Wet Density Mg/m^3	Dry Density Mg/m^3
Depth of Top of Specimen (m) 5.73	74.6	37.8	177	21	2.12	1.75

TEST INFORMATION — Rate of Strain 1.3 % per Min — Rubber Membrane Thickness 0.3 mm





Specimen at Failure	Measured Cell Pressure σ_3 (kPa)	Strain at Failure (%)	Stress Correction (kPa)		Corrected Max. Deviator Stress $\sigma_1 - \sigma_3$ (kPa)	Shear Stress Cu $\frac{1}{2}(\sigma_1 - \sigma_3)_f$ (kPa)	Mohrs Circle Analysis	
			Membrane Thickness	Piston Friction			Cu (kPa)	PHI °
	152	9.3	1.7	/	338	169	152.05	2.97
	254	10.5	1.9	13.6	345	172		
	350	12.3	2.0	25.1	360	180		

METHOD OF PREPARATION: BS 1377:PART 1:1990:

METHOD OF TEST : BS 1377:PART 7:1990:8 Definitive Method. 1990:9 Multi-stage loading - used when specimen has granular content / behaviour and length of specimen precludes the taking of 3 x 100mm dia by 200mm long specimens.

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter

COMMENTS : Tested in Vertical Orientation.
UKAS Calibration - loads from 0.2 to 10kN.

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

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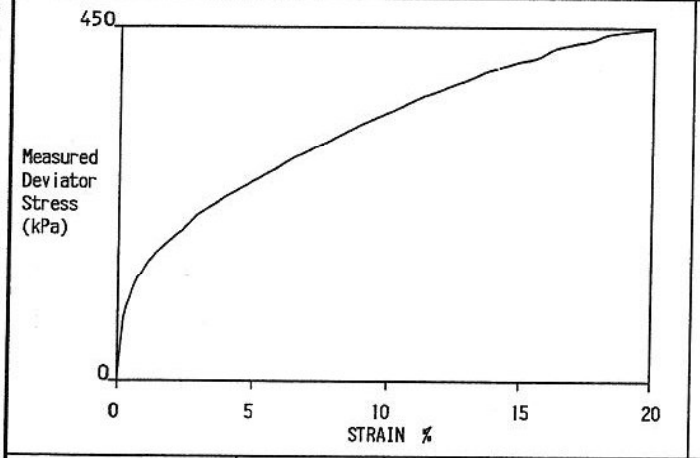
UKAS TESTING 0998

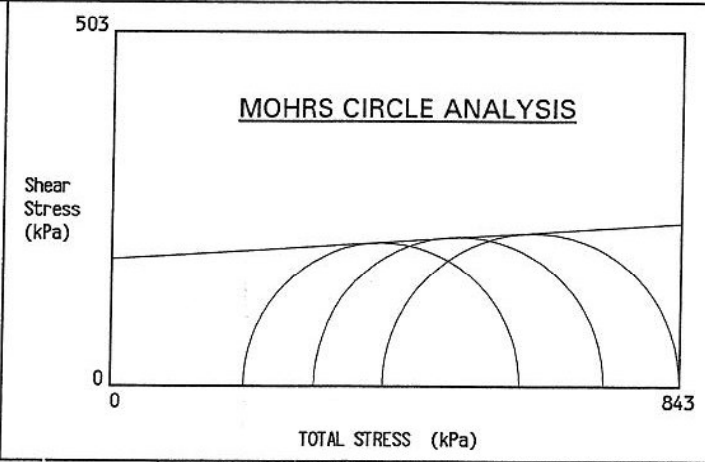
DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole/ Pit No.	Depth m.	Sample	Description	Remarks
2	8.50	U8	Very stiff dark grey CLAY	

Initial Specimen	Height mm	Diameter mm	Weight g	Moisture Content %	Wet Density Mg/m^3	Dry Density Mg/m^3
Depth of Top of Specimen (m) 8.58	200.2	102.6	3548	19	2.14	1.80

TEST INFORMATION — Rate of Strain 1.8 % per Min — Rubber Membrane Thickness 0.5 mm





Specimen at Failure	Measured Cell Pressure σ_3 (kPa)	Strain at Failure (%)	Stress Correction (kPa)		Corrected Max. Deviator Stress $\sigma_1 - \sigma_3$ (kPa)	Shear Stress Cu $\frac{1}{2}(\sigma_1 - \sigma_3)_f$ (kPa)	Mohrs Circle Analysis	
			Membrane Thickness	Piston Friction			Cu (kPa)	PHI °
	199	15.5	1.6	/	408	204		
	304	17.3	1.6	5.3	425	213	180.61	3.48
	407	19.9	1.9	10.9	435	218		

METHOD OF PREPARATION: BS 1377:PART 1:1990:

METHOD OF TEST : BS 1377:PART 7:1990:8 Definitive Method. 1990:9 Multi-stage loading - used when specimen has granular content / behaviour and length of specimen precludes the taking of 3 x 100mm dia by 200mm long specimens.

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter

COMMENTS : Tested in Vertical Orientation.
UKAS Calibration - loads from 0.2 to 10kN.

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

DATE OF ISSUE : As page 1 PAGE 16 of 19

Contract: Ashby Road, HINCKLEY.

Serial No. X15586

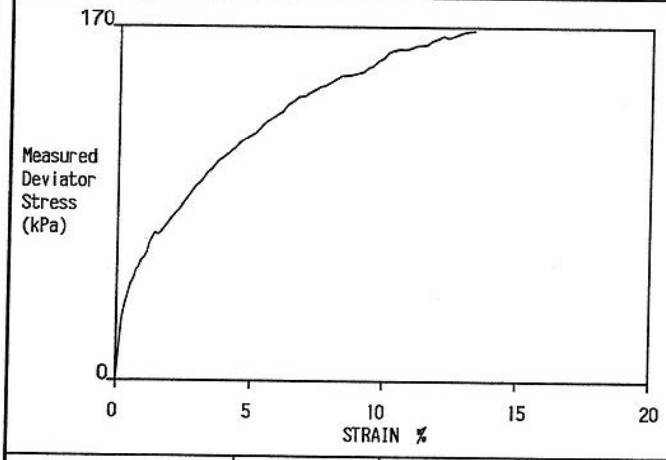
UKAS TESTING 0998

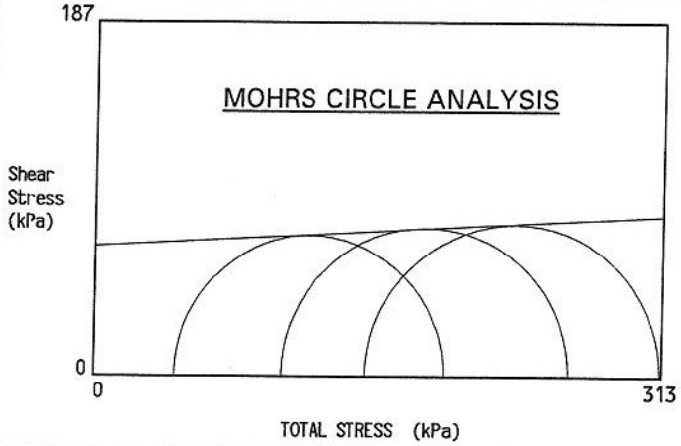
DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole/ Pit No.	Depth m.	Sample	Description	Remarks
3	2.00	U2	Stiff brown CLAY with rare grey mottling, silt pockets and decayed roots	

Initial Specimen	Height mm	Diameter mm	Weight g	Moisture Content %	Wet Density Mg/m^3	Dry Density Mg/m^3
Depth of Top of Specimen (m) 2.05	200.3	102.8	3366	25	2.02	1.62

TEST INFORMATION — Rate of Strain 1.3 % per Min — Rubber Membrane Thickness 0.5 mm





Specimen at Failure	Measured Cell Pressure $\sigma 3$ (kPa)	Strain at Failure (%)	Stress Correction (kPa)		Corrected Max. Deviator Stress $\sigma 1 - \sigma 3$ (kPa)	Shear Stress Cu $\frac{1}{2}(\sigma 1 - \sigma 3)_f$ (kPa)	Mohrs Circle Analysis	
			Membrane Thickness	Piston Friction			Cu (kPa)	PHI °
	45	9.1	1.0	/	149	74		
	105	11.3	1.2	4.1	157	78	68.56	2.98
	152	13.5	1.4	6.7	161	80		

METHOD OF PREPARATION: BS 1377:PART 1:1990:

METHOD OF TEST : BS 1377:PART 7:1990:8 Definitive Method. 1990:9 Multi-stage loading - used when specimen has granular content / behaviour and length of specimen precludes the taking of 3 x 100mm dia by 200mm long specimens.

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter

COMMENTS : Tested in Vertical Orientation.
UKAS Calibration - loads from 0.2 to 10kN.

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

DATE OF ISSUE : As page 1 PAGE 17 of 19

Contract: Ashby Road, HINCKLEY.

Serial No. X15586

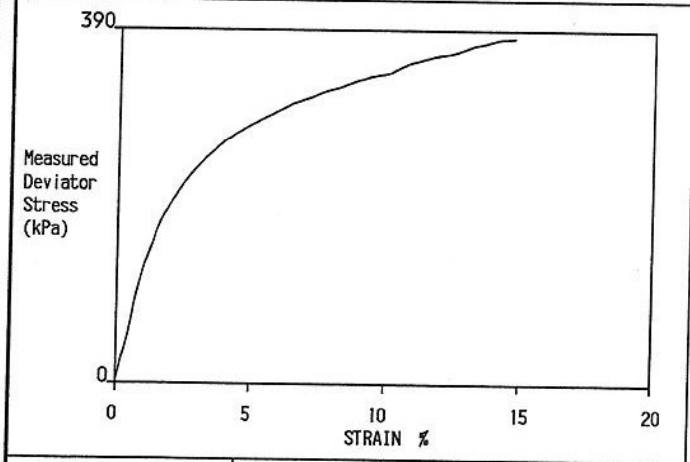
UKAS TESTING 0998

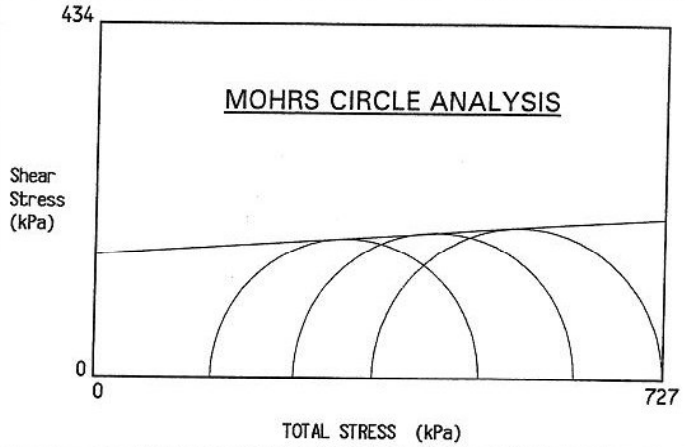
DETERMINATION OF UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole/ Pit No.	Depth m.	Sample	Description	Remarks
3	6.50	U6	Very stiff dark grey CLAY	

Initial Specimen	Height mm	Diameter mm	Weight g	Moisture Content %	Wet Density Mg/m^3	Dry Density Mg/m^3
Depth of Top of Specimen (m) 6.55	200.1	103.3	3538	21	2.11	1.74

TEST INFORMATION — Rate of Strain 1.0 % per Min — Rubber Membrane Thickness 0.5 mm





Specimen at Failure	Measured Cell Pressure $\sigma 3$ (kPa)	Strain at Failure (%)	Stress Correction (kPa)		Corrected Max. Deviator Stress $\sigma 1 - \sigma 3$ (kPa)	Shear Stress Cu $\frac{1}{2}(\sigma 1 - \sigma 3)_f$ (kPa)	Mohrs Circle Analysis	
			Membrane Thickness	Piston Friction			Cu (kPa)	PHI °
	150	10.1	1.1	/	342	171		
	256	12.5	1.3	5.9	358	179	150.89	3.68
	357	14.9	1.5	10.8	370	185		

METHOD OF PREPARATION: BS 1377:PART 1:1990:

METHOD OF TEST : BS 1377:PART 7:1990:8 Definitive Method. 1990:9 Multi-stage loading - used when specimen has granular content / behaviour and length of specimen precludes the taking of 3 x 100mm dia by 200mm long specimens.

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter

COMMENTS : Tested in Vertical Orientation.
UKAS Calibration - loads from 0.2 to 10kN.

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

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Contract
Ashby Road, HINCKLEY.

Serial No.
X15586

"TEST NOT UKAS ACCREDITED"

DETERMINATION OF THE SULPHATE CONTENT OF SOIL AND GROUNDWATER

Borehole/ Pit No.	Depth m.	Sample	Concentration of Soluble Sulphate: Soil – Acid Soluble SO3 %	Soil – Water Soluble 2:1 SO3 g/l	Groundwater g/l	% of sample passing 2mm sieve	Description	Remarks
2	1.60	D2		0.06		100	Stiff brown CLAY with occasional grey pockets, calcareous aggregations and rare decayed roots	
3	1.50	D3		0.03		100	Stiff brown CLAY with occasional grey pockets and rare decayed roots	

METHOD OF PREPARATION: BS 1377:PART 1:1990:7.5 BS1377:PART 3:1990:5.2 Acid Soluble, 5.3 Soil/Water Extract :5.4 Groundwater

METHOD OF TEST : BS 1377:PART 3:1990:5.5

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter

COMMENTS :

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.

TEST REPORT.

ISSUED BY : SOIL PROPERTY TESTING LTD.

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Ashby Road, HINCKLEY.

Serial No.
X15586

"TEST NOT UKAS ACCREDITED"

DETERMINATION OF THE pH VALUE

Borehole/ Pit No.	Depth m.	Sample	pH Value	Description	Remarks
2	1.60	D2	7.3	Stiff brown CLAY with occasional grey pockets, calcareous aggregations and rare decayed roots	
3	1.50	D3	6.9	Stiff brown CLAY with occasional grey pockets and rare decayed roots	

METHOD OF PREPARATION: BS 1377:PART 1:1990:7 BS 1377:PART 3:1990:9.4

METHOD OF TEST : BS 1377:PART 3:1990:9.5

TYPE OF SAMPLE KEY : U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter

COMMENTS :

REMARKS TO INCLUDE : Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample. Oven drying temperature if not 105-110 deg C.

SOIL

ANALYTE	METHOD OF DETECTION	LIMIT OF DETECTION
N-Nitrosodimethylamine	GC-MS	0.1 mg/kg
Phenol	GC-MS	0.1 mg/kg
Bis(2-chloroethyl)ether	GC-MS	0.1 mg/kg
2-Chlorophenol	GC-MS	0.1 mg/kg
1,3-Dichlorobenzene	GC-MS	0.1 mg/kg
1,4-Dichlorobenzene	GC-MS	0.1 mg/kg
1,2-Dichlorobenzene	GC-MS	0.1 mg/kg
2-Methylphenol	GC-MS	0.1 mg/kg
Bis(2-chloroisopropyl)ether	GC-MS	0.1 mg/kg
4-Methylphenol	GC-MS	0.1 mg/kg
N-Nitrosodi-n-propylamine	GC-MS	0.1 mg/kg
Hexachloroethane	GC-MS	0.1 mg/kg
Nitrobenzene	GC-MS	0.1 mg/kg
Isophorone	GC-MS	0.1 mg/kg
2-Nitrophenol	GC-MS	0.1 mg/kg
2,4-Dimethylphenol	GC-MS	0.1 mg/kg
Bis(2-chloroethoxy)methane	GC-MS	0.1 mg/kg
2,4-Dichlorophenol	GC-MS	0.1 mg/kg
1,2,4-Trichlorobenzene	GC-MS	0.1 mg/kg
Naphthalene	GC-MS	0.1 mg/kg
4-Chloroaniline	GC-MS	0.1 mg/kg
Hexachlorobutadiene	GC-MS	0.1 mg/kg
4-Chloro-3-methylphenol	GC-MS	0.1 mg/kg
2-Methylnaphthalene	GC-MS	0.1 mg/kg
Hexachlorocyclopentadiene	GC-MS	0.1 mg/kg
2,4,6-Trichlorophenol	GC-MS	0.1 mg/kg
2,4,5-Trichlorophenol	GC-MS	0.1 mg/kg
2-Chloronaphthalene	GC-MS	0.1 mg/kg
2-Nitroaniline	GC-MS	0.1 mg/kg
Dimethyl phthalate	GC-MS	0.1 mg/kg
2,6-Dinitrotoluene	GC-MS	0.1 mg/kg
Acenaphthylene	GC-MS	0.1 mg/kg
3-Nitroaniline	GC-MS	0.1 mg/kg
Acenaphthene	GC-MS	0.1 mg/kg
2,4-Dinitrophenol	GC-MS	0.1 mg/kg
4-Nitrophenol	GC-MS	0.1 mg/kg
Dibenzofuran	GC-MS	0.1 mg/kg
2,4-Dinitrotoluene	GC-MS	0.1 mg/kg
Diethyl phthalate	GC-MS	0.1 mg/kg
Fluorene	GC-MS	0.1 mg/kg
4-Chlorophenylphenyl ether	GC-MS	0.1 mg/kg
4-Nitroaniline	GC-MS	0.1 mg/kg
2-Methyl-4,6-dinitrophenol	GC-MS	0.1 mg/kg
Azobenzene	GC-MS	0.1 mg/kg
4-Bromophenylphenyl ether	GC-MS	0.1 mg/kg
Hexachlorobenzene	GC-MS	0.1 mg/kg
Pentachlorophenol	GC-MS	0.1 mg/kg
Phenanthrene	GC-MS	0.1 mg/kg
Anthracene	GC-MS	0.1 mg/kg
Carbazole	GC-MS	0.1 mg/kg
Di-n-butyl phthalate	GC-MS	0.1 mg/kg
Fluoranthene	GC-MS	0.1 mg/kg
Pyrene	GC-MS	0.1 mg/kg
Butylbenzyl phthalate	GC-MS	0.1 mg/kg
Benzo(a)anthracene	GC-MS	0.1 mg/kg
Chrysene	GC-MS	0.1 mg/kg
Bis(2-ethylhexyl)phthalate	GC-MS	0.1 mg/kg
Di-n-octyl phthalate	GC-MS	0.1 mg/kg

SOIL

ANALYTE	METHOD OF DETECTION	LIMIT OF DETECTION
Benzo(b)fluoranthene	GC-MS	0.1 mg/kg
Benzo(k)fluoranthene	GC-MS	0.1 mg/kg
Benzo(a)pyrene	GC-MS	0.1 mg/kg
Indeno(1,2,3-cd)pyrene	GC-MS	0.1 mg/kg
Dibenzo(a,h)anthracene	GC-MS	0.1 mg/kg
Benzo(ghi)perylene	GC-MS	0.1 mg/kg

WATER

ANALYTE	METHOD OF DETECTION	LIMIT OF DETECTION
Arsenic	AAS-HYDRIDE	1.0 ug/l
Cadmium	GF-AAS	0.1 ug/l
Chromium	ICP-OES	0.01 mg/l
Lead	ICP-OES	0.03 mg/l
Mercury	AAS-HYDRIDE	0.1 ug/l
Selenium	AAS-HYDRIDE	1.0 ug/l
Copper	ICP-OES	0.01 mg/l
Nickel	ICP-OES	0.01 mg/l
Zinc	ICP-OES	0.01 mg/l
pH	pH-meter	N/A
TPH	GC-FID	0.01 mg/l

Summary Of Results
Murray Rix Ltd - Ashby Road, Hinchley

ANALYTES	UNITS	BH2 J2 (0.90m)	MP10											
		S0418811	S0418812											
N-Nitrosodimethylamine	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Phenol	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Bis(2-chloroethyl)ether	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
2-Chlorophenol	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
1,3-Dichlorobenzene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
1,4-Dichlorobenzene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
1,2-Dichlorobenzene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
2-Methylphenol	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Bis(2-chloroisopropyl)ether	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
4-Methylphenol	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
N-Nitrosodi-n-propylamine	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Hexachloroethane	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Nitrobenzene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Isophorone	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
2-Nitrophenol	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
2,4-Dimethylphenol	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Bis(2-chloroethoxy)methane	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
2,4-Dichlorophenol	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
1,2,4-Trichlorobenzene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Naphthalene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†

Results for soil samples expressed as dry weight.
: Analyte not requested

Summary Of Results
Murray Rix Ltd - Ashby Road, Hinchley

ANALYTES	UNITS	BH2 J2 (0.90m)	MP10											
		S0418811	S0418812											
4-Chloroaniline	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Hexachlorobutadiene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
4-Chloro-3-methylphenol	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
2-Methylnaphthalene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Hexachlorocyclopentadiene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
2,4,6-Trichlorophenol	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
2,4,5-Trichlorophenol	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
2-Chloronaphthalene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
2-Nitroaniline	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Dimethyl phthalate	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
2,6-Dinitrotoluene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Acenaphthylene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
3-Nitroaniline	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Acenaphthene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
2,4-Dinitrophenol	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
4-Nitrophenol	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Dibenzofuran	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
2,4-Dinitrotoluene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Diethyl phthalate	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Fluorene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†

Results for soil samples expressed as dry weight.
: Analyte not requested

Summary Of Results
Murray Rix Ltd - Ashby Road, Hinchley

ANALYTES	UNITS	BH2 J2 (0.90m)	MP10											
		S0418811	S0418812											
4-Chlorophenylphenyl ether	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
4-Nitroaniline	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
2-Methyl-4,6-dinitrophenol	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Azobenzene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
4-Bromophenylphenyl ether	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Hexachlorobenzene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Pentachlorophenol	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Phenanthrene	mg/kg	<0.1	0.3	#	#	#	#	#	#	#	#	#	#	†
Anthracene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Carbazole	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Di-n-butyl phthalate	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Fluoranthene	mg/kg	0.1	1.4	#	#	#	#	#	#	#	#	#	#	†
Pyrene	mg/kg	0.1	1.0	#	#	#	#	#	#	#	#	#	#	†
Butylbenzyl phthalate	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Benzo(a)anthracene	mg/kg	<0.1	0.5	#	#	#	#	#	#	#	#	#	#	†
Chrysene	mg/kg	<0.1	0.8	#	#	#	#	#	#	#	#	#	#	†
Bis(2-ethylhexyl)phthalate	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Di-n-octyl phthalate	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Benzo(b)fluoranthene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Benzo(k)fluoranthene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†

Results for soil samples expressed as dry weight.
: Analyte not requested

Summary Of Results
Murray Rix Ltd - Ashby Road, Hinchley

ANALYTES	UNITS	BH2 J2 (0.90m)	MP10											
		S0418811	S0418812											
Benzo(a)pyrene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Indeno(1,2,3-cd)pyrene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†
Benzo(ghi)perylene	mg/kg	<0.1	<0.1	#	#	#	#	#	#	#	#	#	#	†

Results for soil samples expressed as dry weight.
: Analyte not requested