

Appendix F

BGS Borehole Logs

(Refer to Drawing “Envirocheck Information” in Appendix A for borehole locations)

BGS Geological Site Assessment

Date/Time at Depth	Depth of Casing	Depth to Water	Description of Strata	Strata		Graphical Representation	Sampling/In situ testing			Lab. Testing					Additional Tests and Notes			
				Leg.	Reduced Level		Depth	Depth	No.	Blows	C ₁₀₀ %	U ₁ %	PL%	LL%	γ Mg/m ³	C _u kN/m ²	h	d _h
			TOPSOIL		103.38	0.00		1	(20)									
			Clay to stiff orange brown becoming grayish brown initially sandy silty CLAY with an increasing quantity of fine limonite gravel with depth. (Forest Marble)		103.18	0.20		2	(45)									
								3		66	21	23	40	2.01	90			
								4		78	23	21	53					
								5	(100)	58	22	22	40	2.10	105			
								6										
					101.78	1.60		7	10*/38	96							2.63	75
			Moderately strong grey and blue banded very thinly bedded medium to coarse grained very shelly LIMESTONE with small diffuse patches of light greenish grey calcifuge with very thin tabular bedded and laminae of stiff brown weathered orange silty clay. (Forest Marble)		101.23	2.15												
					100.63	2.75				95	100	16	16	34				
25.5.79			Very weak light brownish grey fissured and jointed calcareous LIMESTONE faintly weathered orange brown on joints. (Forest Marble)							39								
										84	100	18	16	40				
					99.43	3.95				78								
			Very stiff becoming hard grey extensively mottled orange and orange brown thinly to very thinly interbedded very silty CLAY and clayey SILT. (Forest Marble)															
					98.78	4.60												
			From 3.26 to 3.50m with occasional very thin interbeds of weak and moderately weak grey shelly limestone.							89	98	16	36	62				
			Below 3.50m clay dark grey/black carbonaceous with some included very weak micritic limestone pebbles. At 3.85m erosion surface.							36								
			Weak to very weak light greenish grey silty calcareous LIMESTONE initially with some patches and wisps of green clay and carbonized wood fragments. (White Limestone - Bindon)							96								
			Below 4.10m limestone with included gravel-size fragments of underlying limestone.							71								
15.00	3.00	NIL			96.38	7.00												
11.00	3.00	1.20	Moderately weak light grey mottled mid grey very fine grained micritic LIMESTONE with orange stained spalling fractured. (White Limestone - Bindon)							64								
			Below 4.85m limestone becoming pelletal.							17								
			From 5.25 to 5.31m erosion horizon - surface bedded at 15°															
			Below 5.30m limestone moderately strong light grey/white blocky bedded fine grained pelletal bedded with well developed vertical stylolites.															
			Moderately weak rapidly becoming moderately weak to moderately strong light grey medium bedded fine to medium grained bedded white and pelletal LIMESTONE with occasional very thin beds of brown silty calcareous clay. (White Limestone - Ardley)															
			From 7.30 to 7.50m limestone moderately fractured.							95								
										59								

WATER: First water strike Y Subsequent water strikes PIZOMETER: Upper seal, Response length, Lower seal

SAMPLE AND TEST KEY: D Small disturbed sample, U Undisturbed sample, etc.

Blows: N = N value, etc.

Vane strength kN/m²: Natural, Remould, etc.

Director: J. Tiplady BSC. C.Eng. FICE, FIHE

Eastern Road Construction Unit, 38/39 Bodington Road, Bedford.

Additional notes: Forest Marble fm, Ardley Mbr, etc.

ENGINEER OVE AHN & PARTNERS

OXFORD TO BIRMINGHAM NEW ROUTE - OXFORD TO BANBURY SECTION

GROUND LEVEL 103.38 m O.D.

HOLE NO. **SP52SW64**

LOGGED BY: Exploration Associates
FIELDWORK BY: Exploration Associates
LAB. TESTING BY: Exploration Associates

EXCAVATION METHODS Rotary Coring - Dando 220 rig.
105 mm diameter Rotary Coring from G.L. to 20.0 m.

COORDINATES 454914 E 224608 N

SHEET 2 OF 2

DATES 25.5.79 to 30.5.79

FIGURE A

Coring No.	Depth of Casing	Depth to Water	Description of Strata	Strata		Graphical Representation	Sampling/In situ testing			Lab. Testing						Additional Tests and Notes				
				Log	Reduced Level		Depth	Depth	No.	Blows	$\frac{W}{L}$ RCO	A25 %	W %	PL %	LL %	γ Mg/m ³	Cu kN/m ²	I _h	d _h	I _v
			White Limestone - Ardley as above														3.65	74	3.49	61
			Below 12.00m limestone becoming moderately strong and slightly silty/clayey.		90.93	12.45														
			At 12.15m leached fossil shell horizon. Weak grey weathered orange brown silty calcareous SANDSTONE. (Weathered White Limestone - Ardley)		90.83	12.55														
			Dense dark grey finely weathered brown slightly clayey fine sandy Silt becoming more clayey with depth. (White Limestone - Shipton)		90.53	12.85					89	20	17	39						
			Mediocre weak to moderately strong mid to dark grey silty and weathered bedded fine to medium grained bioturbated calcareous oolitic Limestone. (White Limestone - Shipton)																	
30.5.79			From 13.06 to 13.15m, 13.65 to 13.80m and 16.20 to 16.25m very stiff dark grey very silty clay and clayey silt.																	
			From 16.50 to 17.20m limestone weak dark grey very fractured with some vertical cañonite veining.																	
			Below 17.30m limestone moderately weak dark grey very muddy with an increasing number of diffuse patches of interite.																	
					85.53	17.85														
			Weak greenish green silty LIMESTONE and very stiff greyish green and dark grey silty CLAY with whole and fragmented oysters. (Hampton Marly Beds)																	
			From 18.05 to 18.75m clay hard greenish grey mottled black and laminated.																	
			Below 18.75 clay slightly to very sandy with occasional carbonized wood fragments.																	
					83.88	19.50														
			Modestly weak to moderately strong limestone green medium bedded very fine grained calcareous SANDSTONE. (Hampton Marly Beds)																	
					83.38	20.00														

Ardley Mbr

Shipton Mbr

17.85

Authly Fm

WATER 1 First water strike
2 Subsequent water strikes

PIEZOMETER 1 Upper seal
2 Response length
3 Lower seal

SAMPLE D Small disturbed sample
AND B Bulk disturbed sample
TEST W Water sample
KEY U Undisturbed sample

1 Rotary core recovery to scale
2 Initial cone test
3 Standard penetration test
C Cone penetration test
K Permeability test
I Initial density test

Blows N - H value
25/100 blows for 100mm drive after seating
25% blows for part or whole of testing drive only
(25) Undisturbed sample blow count

V Vane strength kN/m²
Natural
Remould
C1 Core recovery %
RMS Rock quality assessment
-R25 Sample & passing 425µm sieve

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FIG. A

SHEET 2 OF 2

HOLE NO. SP52SW64

DEPTH All depths, levels and thicknesses in metres

19/02/1987

* Point Load Index < 0.10 MN/m²

LOGGED BY: JHR
 FIELDWORK BY: Exploration Associates
 LAB. TESTING BY: Exploration Associates

EXCAVATION METHODS Rotary Coring - Dando 220 rig.
 105 mm Rotary Coring from G.L. to 14.5 m.

COORDINATES 454705 E 223333 N

SHEET 1 OF 2

DATES 4.6.79 to 5.6.79

FIGURE A

Date/Time of Depth	Depth of Casing	Depth to Water	Description of Strata	Leg.	Strata		Graphical Representation	Sampling/In situ testing			Lab. Testing						Additional Tests and Notes						
					Reduced Level	Depth		Depth	No.	Blows	Cr/ROD	425 %	U %	PL %	LL %	γ Mg/m ³	Cu kN/m ²	l _h	d _h	l _v	d _v		
4.6.79			TOPSOIL Thin brown mottled grey and orange silty CLAY with a trace of fine to medium angular limestone gravel and with occasional small pockets of fine sand. (Colburn/Watered Forest Marble) Below 0.50m clay firm to very stiff with some limestone gravel and fine gravel size calcareous concretions.		90.32 90.12	0.00 0.20																	
			Very stiff grey streaked orange brown very thin bedded silty CLAY with very thin interbeds and laminae of weak orange calcareous siltstone and moderately weak fine grained sparry limestone. (Forest Marble) Bedding dip 10°		88.57	1.75																	
			Moderately strong grey fine grained silty (finely sparry sandy textured) LIMESTONE. (White Limestone - Bladon)		86.32	4.00																	
			Initially weak and very broken becoming moderately weak light greyish green calcareous micritic MUDSTONE with occasional pellets and some worm burrows. (White Limestone - Bladon)		85.92	4.40																	
			Moderately weak very light grey very broken very fine grained micritic LIMESTONE with diffuse silty traces and slightly perturbed stylolites. (White Limestone - Bladon) Below 4.67m limestone light greyish green slightly fossiliferous.		85.37	4.95																	
			Weak greyish brown mottled orange jointed silty calcareous MUDSTONE with carbonized wood fragments and branching rootlets and some clay filled burrows. (White Limestone - Bladon) Below 7.0m mudstone with included subangular gravel size fragments of weak white and light brown limestone.		83.92	6.40																	
			5.6.79			KATIC horizon consists of moderately weak light orange brown silty LIMESTONE with very irregular lumpy burrowing interconnecting of moderately weak to moderately strong orange fine grained slightly pelletoidal and shelly micritic LIMESTONE. (White Limestone - Ardley) Below 8.70m limestone grey to light weathered orange finely pelletoidal with sandy texture.		81.92	8.40														

* WATER 7 First water strike V Subsequent water strikes DEPTH All depths, levels and thicknesses in metres	PIEZOMETER Upper seat Response length Lower seat	SAMPLE D Small disturbed sample AND B Bulk disturbed sample TEST W Water sample KEY U Undisturbed sample Solid line (mm) 1 MPa Distance between piezo m vertical h- horizon cm	Rotary core recovery to scale In situ vane test Standard penetration test Cone penetration test Permeability test In situ density test	Blows N - N value 28/150, blows for 150mm drive after sealing 20°, blows for part or whole of sealing drive only (24) Undisturbed sample blow count	V Vane strength kN/m ² Natural Remould Cr Core recovery % ROD Rock quality designation 425 Sieve % passing 425µm sieve	J. Tiplady BSc. C.Eng. FICE, FIME Director Eastern Road Construction Unit, 59/63 Goldington Road, Bedford.	FIG. A SHEET 1 OF 2 HOLE NO. SP52SW49 B471 2333 1/9
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ENGINEER OVE ARUP & PARTNERS				OXFORD TO BIRMINGHAM NEW ROUTE - OXFORD TO BANBURY SECTION				GROUND LEVEL 90.32 m O.D.		HOLE NO. SP52SW49												
LOGGED BY: Exploration Associates				EXCAVATION METHODS Rotary Coring - Danlo 220 rig.				COORDINATES 4547105 E 223333 N		SHEET 2 OF 2												
LAB. TESTING BY: Exploration Associates				105 mm Rotary Coring from G.L. to 14.5 m.				DATES 4.6.79 to 5.6.79		FIGURE A												
Date/Time at Depth	Depth of Ceiling	Depth to Water	Plaz.	Strata		Graphical Representation		Sampling/In situ testing		Lab. Testing				Additional Tests and Notes								
				Leg.	Reduced Level	Depth		Depths	TYP	No.	Blows	V _C / ROD	425 %	W %	PL %	LL %	γ Mg/m ³	C _v kN/m ²	I _h	d _h	I _v	d _v
												98/65							1.26	76	1.37	87
					79.82	10.50		10.60				98/72							1.06	77	2.06	54
5.6.79					79.72	10.60		11.70				89/79							1.39	76	1.28	83
								13.40				75/53							1.75	76	3.00	73
18.00	N11	12.00			75.82	14.50		14.50										3.08	76			
				END															3.12	76	0.39	107

SP 52 SW / 49
 5471 2333

WATER: First water strike (X), Subsequent water strikes (Y)
 PIEZOMETER: Upper seal (hatched), Response length (dotted), Lower seal (hatched)
 SAMPLE: D Small disturbed sample, AND Bulk disturbed sample, TEST Water sample, KEY Undisturbed sample
 Unit Load Index 1 MN
 (1) Lance base seal platens 100 mm
 v. vert. h. hor. l. millim.

Rotary core recovery to scale (R)
 Insitu vane test (V)
 Standard penetration test (S)
 Cone penetration test (C)
 Permeability test (K)
 Insitu density test (I)

Blows: H - N value, 28/150, blows for 150mm drive after seating, 28", blows for part or whole of seating drive only (28) Undisturbed sample blow count

V Vane strength kN/m²
 Natural Remould
 Cr Core recovery %
 ROD Rock quality designation
 425 Sample % passing
 475µm sieve

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FIG. A
 SHEET 2 OF 2
 HOLE NO. 065

DEPTH: All depths, levels and thicknesses in metres

ENGINEER OVE ARUP & PARTNERS		OXFORD TO BIRMINGHAM NEW ROUTE--OXFORD TO BANBURY SECTION		GROUND LEVEL R1.21 m O.D.		HOLE NO. SP52SW38	
LOGGED BY JHR		EXCAVATION METHODS Percussion Boring - Pilcon Wayfarer		COORDINATES 454711 E 220053 N		SHEET OF 1	
FIELDWORK BY Exploration Associates		150 mm diameter hole cored to 3.5 m		DATES 3.7.79 to 4.7.79		FIGURE A	
LAB. TESTING BY Exploration Associates		146 mm diameter Rotary Coring from 3.6 to 10.2 m					

Date/Time at Depth	Depth of Casing	Depth to Water	Description of Strata	Strata		Graphical Representation	Sampling/in situ testing			Lab. Testing						Additional Tests and Notes		
				Log.	Reduced Level		Depth	Depths	TYPE	No.	Blows	N ₆₀	W ₄₂₅ %	U ₄₂₅ %	PL %		LL %	γ Mg/m ³
			TOPSOIL		81.21	0.00												
			Soft to firm dark brown silty CLAY. (Alluvium)		81.01	0.20		0.25	U	1	(15)		100	36	17	37	1.84	115
			Below 0.50m clay becoming yellowish brown very silty very sandy.					0.70	D	2			100	36				
								0.95	S		N=5							
					79.81	1.40		1.25	D	3								
3.7.79			Loose brown mottled reddish brown very silty clayey SAND with some angular fine to medium limestone gravel. (Alluvium)					1.30	U	4	(20)							Failed U102
								1.70	D	6								
								1.90	W	7								
					78.81	2.40		2.50	S	5	N=29							
			Firm becoming firm to stiff light yellowish brown silty calcareous CLAY and angular GRAVEL and CONGLOMERATES of moderately weak light yellowish brown fine grained limestone. (Weathered White Limestone)					3.00	D	8	N=28							
18.00	3.50	1.70						3.50	S	9	N=37		74	10	14	20		Core diameter 114mm
					77.61	3.60		3.60	S	10	24/75							
			Moderately weak to moderately strong light yellowish brown initially highly fractured becoming moderately fractured thinly bedded fine grained micritic pelletal LIMESTONE. (White Limestone - Ardley)					4.50			20*/75		78					
			From 4.95 to 4.10m dense light orange brown sandy slightly clayey calcareous silt.										83					
			Below 4.50m limestone finely pelletal with sandy texture.										15					
			Below 5.20m limestone slightly silty with abundant thin walled brachiopods and high spined gastropods.															
			At 7.10m horizon of leached fossils.															
					74.06	7.15												
			Initially weak dark grey calcareous SLTSTONE with specks of carbon and oyster shell debris becoming a very dense weakly cemented silty slightly clay (fine SAND more clayey with depth. (White Limestone - Shipdon)															
					73.71	7.50												
			Moderately weak to moderately strong grey thinly bedded thickly bedded fine to medium grained micritic pelletal extensively biolobated LIMESTONE. (White Limestone - Shipdon)															
			From 7.50 to 7.80m limestone highly fossiliferous with green micritic filled burrows.															
			From 8.90 to 8.95m weak dark grey calcareous SLTSTONE.															
18.00	3.50	0.00			71.01	10.20		10.20										

SP52SW/38
 5471 2305

* WATER 1 First water strike 2 Subsequent water strikes	PIEZOMETER Upper seal Response length Lower seal	SAMPLE AND TEST KEY D Small disturbed sample B Bulk disturbed sample W Water sample U Undisturbed sample	Rotary core recovery to scale V Initial vane test S Standard penetration test C Cone penetration test K Permeability test I In situ density test	Blows N = N value 28/150, blows for 150mm drive after seating 28% blows for part or whole of seating drive only (28) Undisturbed sample blow count	V Vane strength kN/m ² Natural Remould C _r Case recovery % R ₆₀ Rock quality designation *425 Sample % passing 425µm sieve	J. Tiptady BSC. C.Eng. FICE, FIME Director Eastern Road Construction Unit, 89/93 Goldington Road, Bedford.	FIG. A SHEET 1 OF 1 HOLE NO. SP52SW/38
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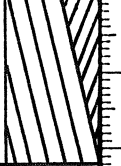
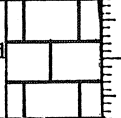
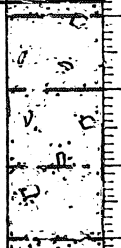
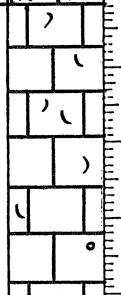
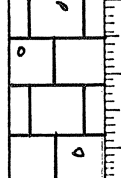
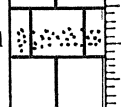

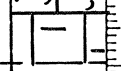
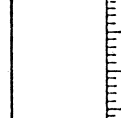
DEPTH All depths, levels and thicknesses in metres

LOCATION: Gowell Farm, Bicester.

BOREHOLE No. Two

SP52SE209

DATE OF BORING: 06.04.1989.

Description of Strata	STRATA CHANGE		R O D %	T C R %	S C R %	Description of Discontinuities	STATE OF WEATHERING
	LEGEND	DEPTH M					
TOPSOIL		0.54					
CORNBRASH Light brown grey, coarse grained LIMESTONE - moderately strong to strong		0.95					
Light brown slightly sandy CLAY with limestone fragments		1.00	0	37	22	Non - intact with horizontal discontinuities.	W.II
Light grey, weathered light brown fossiliferous LIMESTONE - moderately strong to strong		1.79					
- pitted		2.00	0	90	72	I _f = 50mm, non - intact ffrom 2.30-2.90m. Horizontal discontinuities	W.II- W.III
Mid grey, coarse grained LIMESTONE with occasional black lithic fragments - strong		2.58	30	100	100	I _f = 6mm. Horizontal discontinuities.	W.II
Mid, dark grey, medium grained LIMESTONE with a brown weathered sandy lens - strong		3.32					
- black with abundant large shells - weak		4.00	58	100	88	I _f = 9mm. Horizontal and vertical discontinuities	W.II
- mid grey, clayey - weak to moderately weak		4.22					
		5.00					

BOREHOLE DIAMETER: 46.30mm

GROUND LEVEL :

WATER LEVEL : 0.90m after 22 days

REMARKS : Borehole drilled from existing ground level

DEPTH OF CASING :

DRILLING METHOD : Rotary/Water Flush

ORIENTATION : Vertical

OS GRID REFERENCE:

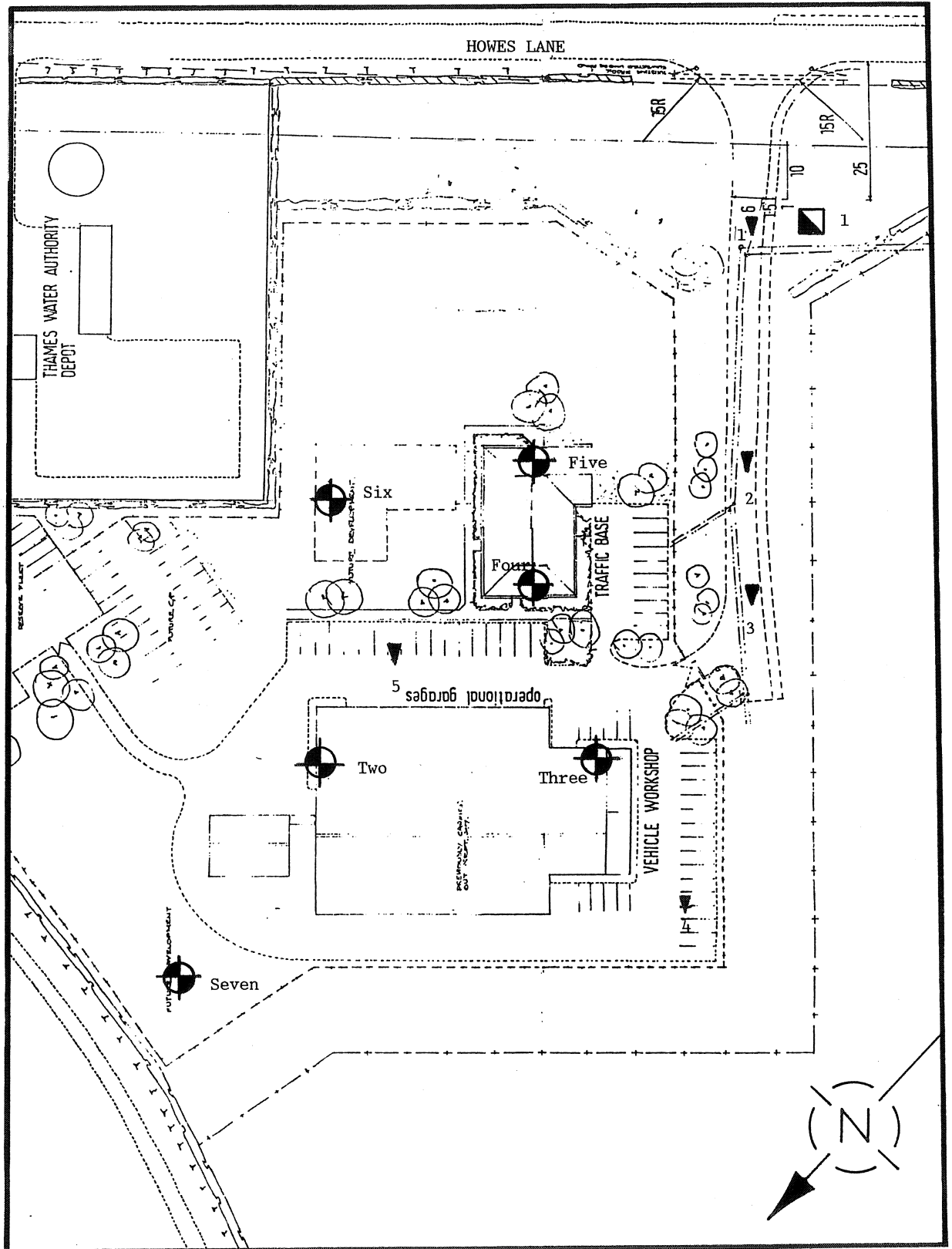
DATE

April 1989

BOREHOLE LOG

REPORT NO.

S.929(i)



Borehole Location



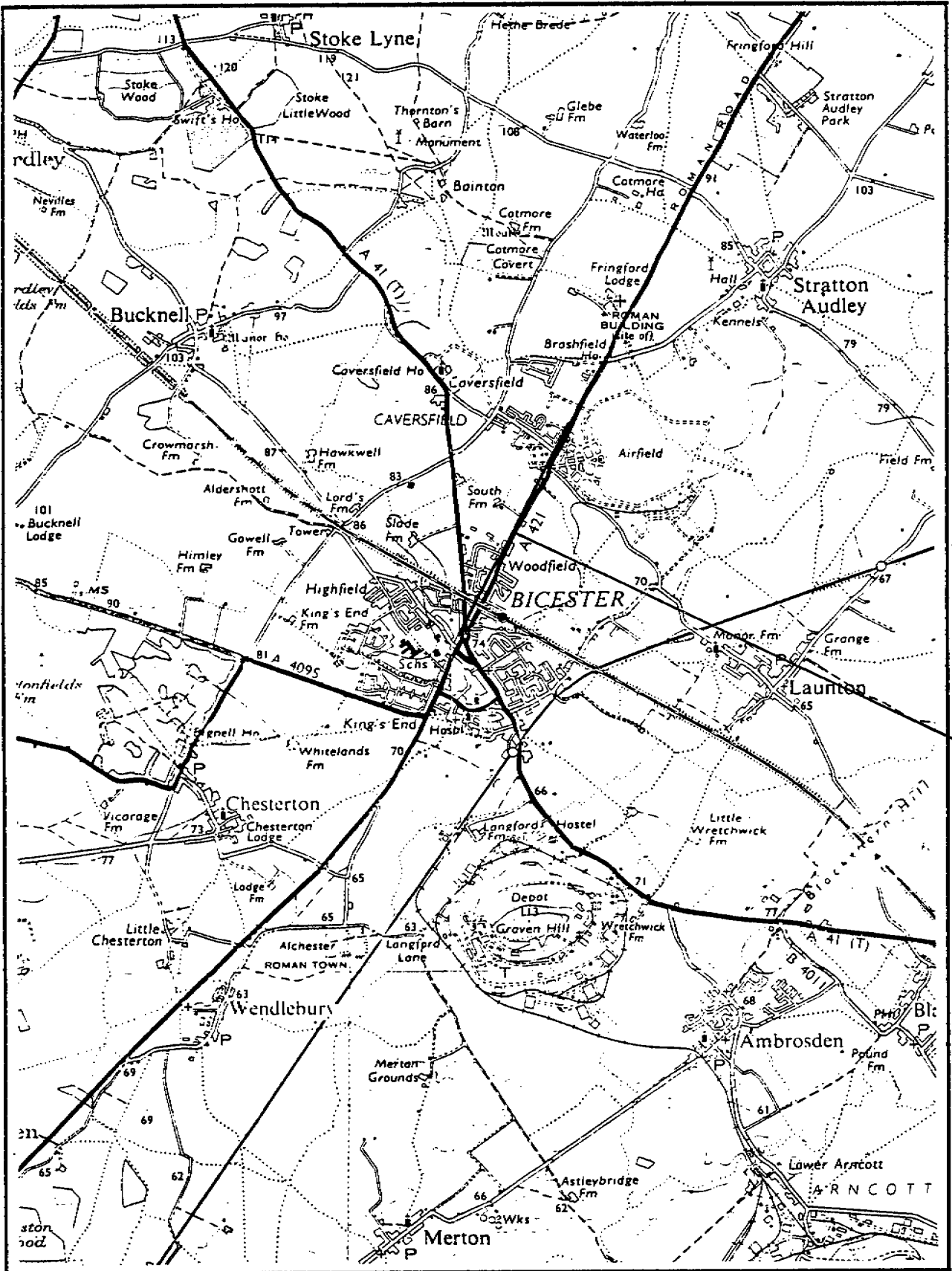
Trial Pit Location



MEXE Probe Location

<p>Date April 1989</p>	<p>BOREHOLE / TRIAL PIT LOCATION PLAN</p>	<p>Report No. S.929(i)</p>
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TYRONE



THE SITE

KEY PLAN

Location No. 7209/13

Location BICESTER

1 : 50 000

SP 52 SE

O.S. Sheet No 7209/13

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SOIL MECHANICS LIMITED
ASKERN ROAD
CARCROFT
DONCASTER



SP52SE55



SP 52 SE / S1753

Equipment & Methods Hand dug pit to 1.00m Cable tool boring, 150mm diameter, 1.00m to 5.50m	Location No. 7209/13 Location CAVERSFIELD FOUL OUTFALL SEWER GR210 REF: 59080 24550
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Carried out for Thames Water Authority	Ground Level 81.61m OD	Coordinates See site plan	Date 22.10.85
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Description	Reduced Level	Legend	Depth and Thickness	Samples/Tests			Field Records	
				Depth	Sample			
					Type	No.		Test
Friable dark brown sandy slightly gravelly TOPSOIL. Occasional rootlets	81.61		0.00 (0.80)	0.50	D	1		
Recovered as subangular to subrounded gravel and cobbles of brown and grey medium grained generally moderately or highly weathered LIMESTONE moderately strong becoming strong with variable amounts of calcareous sand or clay (Probably Highly Weathered Limestone with occasional Clay Bands)	80.81		0.80	0.80 - 1.00	B	2	C N=44	
				1.00 - 1.45	B	3		
			(2.25)	1.80	WS	11		Water struck at 1.80m
				1.85 - 3.05	B	4		
Very stiff grey calcareous CLAY becoming moderately weathered calcareous MUDSTONE weak Bands of grey strong limestone.	78.50		3.05	3.05 - 3.50	U	5		
				3.55	D	6		
			(2.45 pen)	4.20 - 4.65	U	7		
				4.70	D	8		
				5.00 - 5.075	D	9	S (100)	
				5.40 - 5.475	D	10	S (100)	
BOREHOLE COMPLETE AT 5.50m								

BOREHOLE COMPLETE AT 5.50m

Water Level Observations During Boring

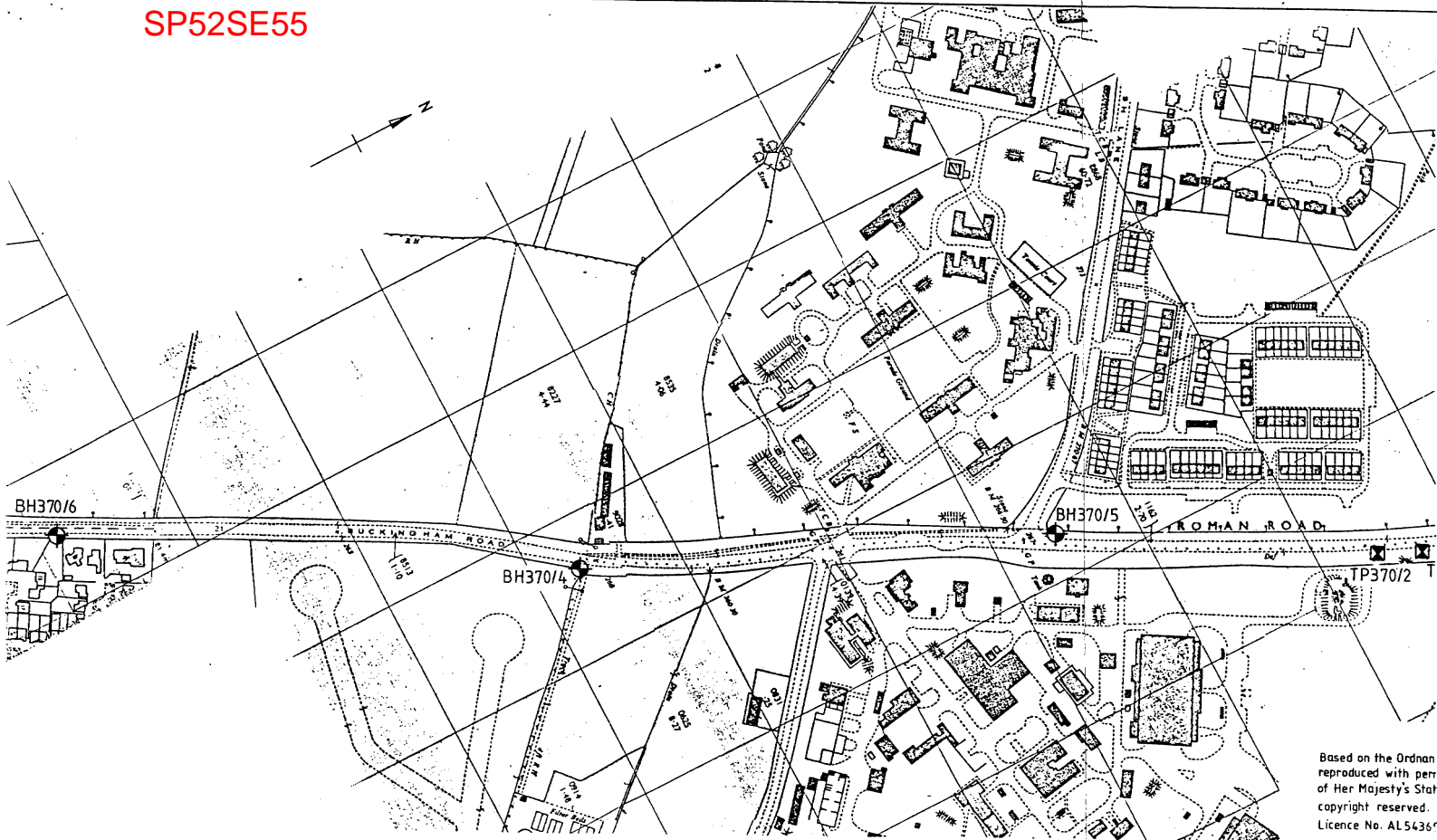
Date	Time	Depth of Hole m	Depth of Casing m	Depth to Water m	Remarks
1985					
22.10	1530	1.80	0.00	1.80	Water struck

Remarks					
1. Chiselling 1.85m to 3.05m, 4.50 hours; 4.75m to 5.50m, 2.50 hours					

Notes:
Materials are described in accordance with Appendices. For explanation of symbols and abbreviations see Fig. 1.
All depths and reduced levels in metres. Thicknesses given in brackets in depth column.


Logged by TS
Scale 1:50
Fig. 7

D1:685 © Soil Mechanics Limited, Bracknell, England



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- KEY**
-  Borehole
 -  Trial Pit

SITE
CAVERSFIELD FARM
 Soil Mechanics

5, BICESTER URBAN DISTRICT COUNCIL

WATER SUPPLY AND IMPROVEMENTS TO HEADWORKS

219
75

<p><i>Clerk to the Council</i></p> <p>LEONARD V. MURPHY</p> <p>Council Offices The Causeway BICESTER</p> <p>Tel. : Bicester 49</p>	<p>From: -</p> <p><i>Consulting Engineer</i></p> <p>W. HERBERT BATEMAN M.C., M.Inst.C.E.</p> <p>Batheaston BATH</p> <p>Phone : Batheaston 8283-4 Victoria St., S.W.1. Tel. : Victoria 0093</p> <p>also ST. MICHAEL'S CHAMBERS, ST. ANDREW ST., NORWICH Tel. : Norwich 3688</p>	<p><i>Clerk of Works</i></p> <p>A. P. BOUGHEN</p> <p>BICESTER WATERWORKS BICESTER</p> <p>Tel. : Bicester 195</p>	<p><i>Contractors</i></p> <p>W. HAINES & SON</p> <p>Tel. 239 CAMPDEN, GLOS. & BICESTER WATERWORKS BICESTER</p> <p>Tel. : Bicester 195</p>
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SP52SE29

My Ref. EB/SM

Tuesday,
7th March,
1939

Dear Sir,

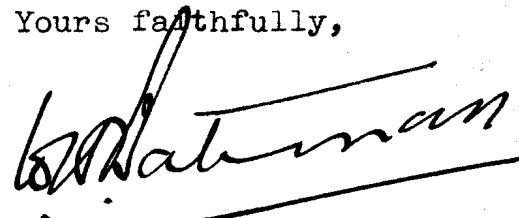
I return herewith a form headed Record of Bore which Messrs Francois Cementation Company forwarded to me and asked me to complete. I have fully completed this form except for the information regarding pumping, which I have no doubt the Council will be able to give you. I believe that the amount pumped daily is ^{100,} 8,000 galls over a 15 hour day.

In addition to the form, I attach a copy of a 6" Ordnance Sheet, a $\frac{1}{8}$ " scale plant of the site and also a copy of the analysis of the water.

I trust that the information given meets your requirements.

R.V. Melville, Esq.,
Geological Survey and Museum,
Exhibition Road,
South Kensington,
LONDON, S.W.7.

Yours faithfully,



Consulting Engineer
to the Council.



219/75

THE COUNTIES PUBLIC HEALTH LABORATORIES,
91. QUEEN VICTORIA STREET, LONDON, E.C.4.

Ref. L. 886

SP52SE29

Analysis of a sample of water received on 1.7.37 from Francois
Cementation Co. Ltd., per W.H. Bateman, Esq., Bath.

Labelled Discharge main of Borehole via tank.

Taken by D.A. Derry. Witness W.J. Llewellyn. Date 30.6.37. 5.25 p.m.
Chemical Results in Parts per 100,000

Appearance. Slight film deposit of mineral matter.

Colour Faint yellowish white, odour nil.
(settles clear and bright).

Reaction pH Neutral: 7.4. Free Carbonic Acid 2.2

Electric Conductivity at 20° C. 6000
Total Solids, 180 C. 40.0

Chlorine in Chlorides 1.8

Nitrogen in Nitrates nil Nitrites absent.

Hardness. Permanent. 0.0
Temporary. 22.0
Total. 22.0

Metals Iron 0.022 Nil in solution
Manganes, Zinc, Lead, etc. absent

Free Ammonia 0.0360 Ammoniacal Nitrogen. -

Albuminoid Ammonia 0.0360 Albuminoid Nitrogen -

Oxygen absorbed in 4 hrs at 80° F. 0.020

Bacteriological Results.

No. of Bacteria per c.c. of water
on agar in 3 days at 20° C. 960
1 day at 30° C. 960
2 days at 37° C. 450
130

The Bacillus Coli Present in - Absent in 100 c.c.

Bacillus Welchii (B Enteritidis Sporogenes) Present in - Absent in 100 c.c.

Report. This is a faintly opalescent water showing deposit in slight amount, of siliceous matter. It is of faint yellow colour, neutral reaction and contains an appreciable trace of free carbonic acid.

The water contains no excess of saline matter and contains only a small trace of iron. It is hard in character, although not unduly so, and the hardness is entirely of a temporary nature.

The water is of a high degree of Organic quality and with the exception of a large number of bacteria, none of which are of an objectionable character, and probably due to recent boring operations, it is of a high degree of bacterial purity.

With the exception of the suspended matter which unless diminution occurs on pumping, will require preliminary removal, we regard the water as pure and wholesome, suitable for drinking and domestic purposes.

(Sgd) John F. Beale Beale.
For Drs. Beale & Suckling.



W. HERBERT BATEMAN,
 M.C., M.INST.C.E.,
 CONSULTING CIVIL ENGINEER,
 BATHEASTON, BATH.
 47 VICTORIA ST., S. W. 1.
 & ST. MICHAEL'S CHAMBERS, NORWICH.
 7 MAR 1939

W. HERBERT BATEMAN,
 M.C., M.INST.C.E.,
 CONSULTING CIVIL ENGINEER,
 BATHEASTON, BATH.
 47 VICTORIA ST., S. W. 1.
 & ST. MICHAEL'S CHAMBERS, NORWICH.
 7 MAR 1939

219

SP52SE29

B 75-0

<u>Ft.</u>	<u>ins.</u>	
1.	6	Surface Soil
3.	0	Grey Rock.
8..	0.	Sandy Marl
3.	0.	Blue Rock
2.	6	Light Shale
2.	0	Limestone.
3.	6	Blue Shale.
7.	0	White Rock.
12.	6	Grey Shale with hard beds.
6.	0	Grey Rock.
1.	0	Dark Shale.
	6	Rock
2.	0	Blue Binds.
1.	6	Blue Shale.
3.	0	Grey Rock.
1.	0	Grey Shale.
1.	0	Grey Rock.
3.	6	Variegated Shale.
3.	0	Grey Rock.
7.	0	Dark Shale.
2.	0	Rock.
5.	0	Blue Clay.
2.	6	Blue Rock.
3.	0	Blue Shale with hard ribs.
1.	6	Limestone.
3.	0	Limestone with Shale beds.
1.	0	Blue Shale.
2.	0	Grey Sandy Shale.
2.	6	Grey Rock.
2.	6	Dark Sandy Shale.
2.	0	Light Sandy Shale.
2.	6	Grey Rock.
6.	0	Soft Rock.
1.	3	Peat.
	8	Light Sand.
2.	4	Dark Clay and Sand. Rock.

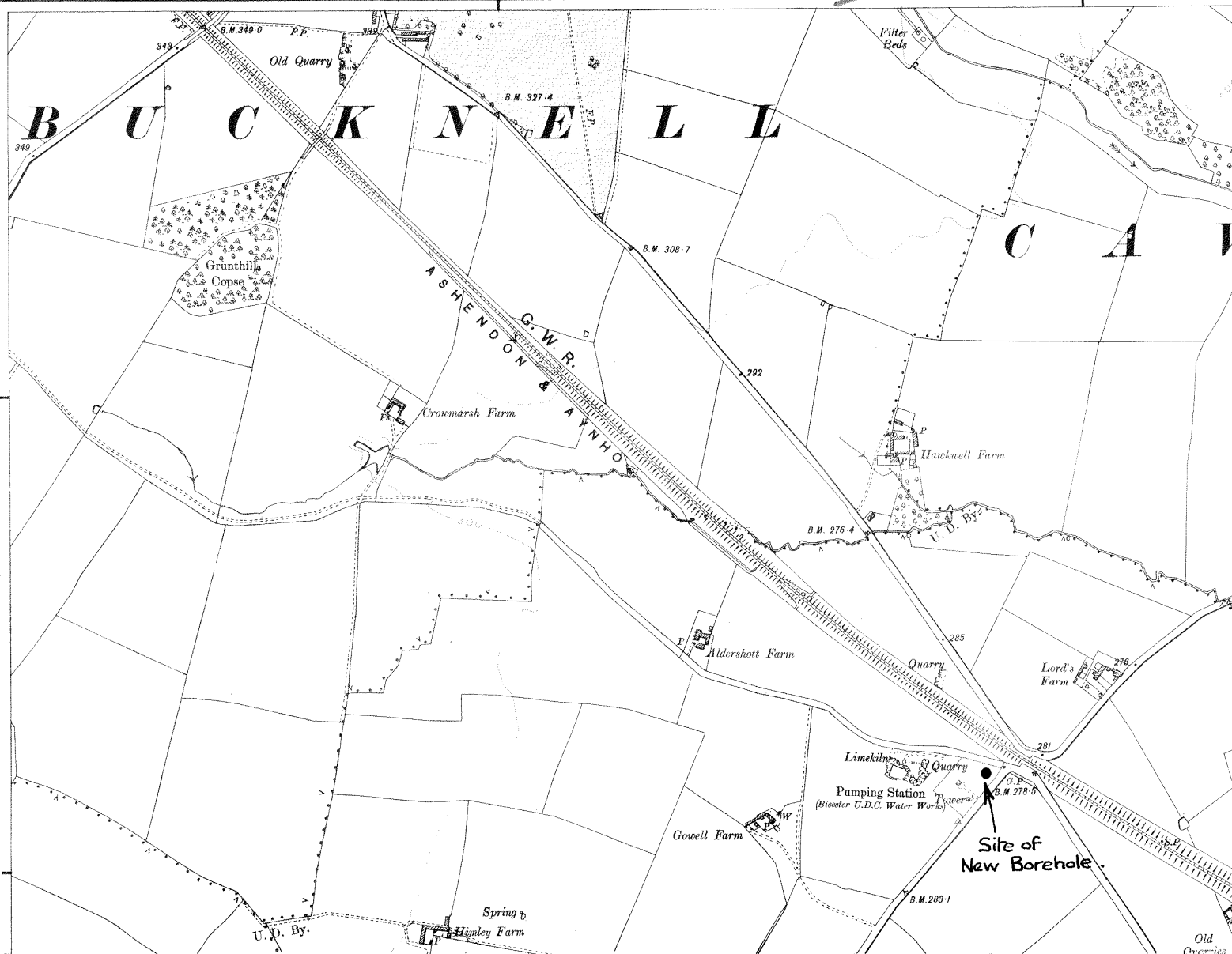
SP 219/75
SP52SE29

EDITION
HENLEY

LON 1° 11' W

1° 10'

XVII



British Geological Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL

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[SP52SE BJ 29.]

RECORD OF WELL (SHAFT OR BORE)

219 / 75
 SP52SE29

At Waterworks, House Lane
 Town or Village BICESTER
 County Six-inch quarter sheet
 For Mr. Blease U.D.C.

Exact site of well _____

Attach a tracing from a map, or a sketch-map, if possible.

Level of ground surface above sea-level (O.D.) _____ feet.

(B)

Is well-top at ground level? _____ If not, state how far above; _____ below; _____ feet.

Shaft _____ ft., diameter _____ ft. Details of headings _____

Bore 140 1/2 ft.; diameter of bore: at top 26 ins.; at bottom 23 1/2 ins.

Lengths, diameters, perforations, etc., of lining tubes 24" to 100', 42" x 23 1/2" perforated tubes inserted to bottom of b.h.

Water struck at depths, below well-top, of (feet) _____

TEST DETAILS { Rest-level of water 75 ft. above well-top. Suction at 99 ft. Yield on 14 hours' days' pumping 6,500 gallons per 2 * (max. capacity of pump _____ g.p.h.), with depression of 20 feet. Recovery to _____ in _____ mins. hours.

WORKING CONDITIONS { Rest-level of water in _____ (month), _____ (year), _____ ft. above below well-top. Highest ,, in _____ (month), _____ (year), _____ ft. above below ,, Lowest ,, in _____ (month), _____ (year), _____ ft. above below ,, Suction at _____ ft. Rate of pumping _____ galls. per _____ for _____ hours per day. with average depression of _____ ft. Recovery to _____ in _____ mins. hours

Quality of water (attach copy of analysis if available) _____

Well made by Francis Cementation Co Date of well 1937

Information from _____

ADDITIONAL NOTES.

* At first, yield was 8-9,000, but later dropped to this figure.

LOG OF STRATA OVERLEAF.

GEOLOGICAL SURVEY AND MUSEUM,
 SOUTH KENSINGTON,
 LONDON, S.W.7.

Date received.	G.S.M. Office File No.	1" N.S. Map No.	1" O.S. Map No.	Site marked (use symbol) on 1" Map. on 6" Map.	
<u>June, 1941</u>					

(17208) Wt.42901/0877 10,000 2/41 A.& E.W.Ltd. Gp.686

NATURE OF STRATA

SP52SE29

If measurements start below
ground surface, state how far... ..

THICKNESS

Feet Inches

... ..

DEPTH

Feet Inches

NATURE OF STRATA	THICKNESS		DEPTH	
	Feet	Inches	Feet	Inches
?			13	6
Blue clay	7	-	20	6
Gray rock	11	6	32	-
" " , broken	5	-	37	-
" " , w. vert. joints	1	6	38	6
Gray rock	37	6	76	-
Rock ; sandy clay	4	-	80	-
Shale w. bands of gray rock	6	-	86	-
Clay	1	6	87	6
Gray rock w. soft joints	2	6	90	-
Gray rock	5	6	95	6
" " , dark	11	-	106	6
Soft rock	5	-	111	6
Soft sand	7	-	118	6
Light gray sand	4	-	122	6
Light sandstone	4	-	126	6
Dark " w. bands of sandy clay			5	
	4	-	130	6
Dark clay	10	-	140	6

Copy

50-52 Lyfmore St.
SP52SE29

13th Nov. 1935

75

Lab. report No 121135/1

Sample of water from Bicester Water works - No 3 pumping at 6740 gph.

Total solids 31.6 parts/100,000
Chlorine 2.2

Solids consist of Magnesium bicarbonate & sulphate
Traces of sodium & chlorine. No calcium salts present.

No 3a pumping at 6740 gph

Total solids 39.6 parts/100,000
Chlorine 3.2

Solids as above

No 4 pumping at 7020 gph.

Total solids 39.0 parts/100,000
Chlorine 2.1

Solids as above

No 4a pumping at 7020 gph

Total solids 40.6 parts/100,000
Chlorine 2.3

Solids as above

No 5 pumping at 6420 gph.

Total solids 40.0 parts/100,000
Chlorine 2.2

Solids as above.

(Sgd)
John Bell & Coyle

219

219

SP52SE29

75

50-52 Wignore Pt. W.I.

Copy

Laboratory report No 71135/2

Sample of water from Bicester Water Works.

21st Oct. 1935.

Results in Parts per 100,000

Appearance -	very slightly opaque
" of solids on ignition -	white
Total solids	30
Chlorine	1.30
Nitrites	nil
Nitrates	0.002
Total hardness	21.4
Poisonous metals	Copper & lead absent
Total ammonia	0.02
Oxygen absorbed	0.56
Uncombined ammonia	0.001

Opinion — a perfectly good sample of drinking water

(signed)

John Bell & Coysden

Bacteriological Examination

No. of organisms capable of growth on gelatin plates at 22°C after 72 hrs. incubation	116 per c.c.
" " " " " " " Agar " " 37°C " 48 " " "	40 " "
B. coli absent in 100 c.c.	

RECORD OF WELL (SHAFT OR BORE)

1" N.S. 29
45 P.E.
219
O.D.
Ref.

6
Gorell Farm no 2.

SP52SE29

Town or Village Bicester County Oxon. Six-inch quarter sheet XX 121 NW.
Exact site See 6 inch & 1/8 inch scale plans attached

in parish of Bicester U.D.C. (A rough sketch-map or a tracing from a map is very desirable)

Level of ground surface above sea-level (O.D.) 280.50 ft. If well starts below ground surface, state how far

Shaft 440 ft., diameter 24" ft. Bore 142 1/2 ft. Diameter of bore: at top 26 ins.; at bottom 23 ins.

Details of permanent lining tubes (internal diameters preferred) 24 inch inside diam. to 187.34 O.D.
Remainder 22 3/8 inch inside diam. to 141.00 O.D.

Water struck at depths of (feet) SP 5715 2388

Rest-level of water below top of well 226.00 feet. o.d. Suction at 141.69 feet. o.d. Yield on 14 hours' test

7,069 gallons per hour (with pump of capacity - g.p.h.); depressing water level to 92 feet

below top. Time of recovery - hrs. Amount normally pumped daily - g.p.h. for - hours.

Quality (attach copy of analysis if available)

Sunk by Francis Cementing Co Ltd for Bicester U.D.C. Date of well 1936

Information from Bicester U.D.C. + Francis Cementation Co, + W.H. Belman, Eng. M.C. M.I.C.E.

(For Survey use only). GEOLOGICAL CLASSIFICATION.	NATURE OF STRATA (and any additional remarks).	THICKNESS		DEPTH	
		Feet.	Inches.	Feet.	Inches.
<u>Made ground, dug through clay, on site of old Cornish mill</u>	<u>Surface soil</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>0</u>
	<u>Yellow clay</u>	<u>10</u>	<u>0</u>	<u>11</u>	<u>0</u>
	<u>Blue clay</u>	<u>6</u>	<u>0</u>	<u>17</u>	<u>0</u>
<u>? Wyckwood Beds?</u>	<u>White rock</u>	<u>2</u>	<u>0</u>	<u>19</u>	<u>0</u>
	<u>Blue clay</u>	<u>7</u>	<u>0</u>	<u>26</u>	<u>0</u>
<u>Remble Beds</u>	<u>Grey shale</u>	<u>1</u>	<u>6</u>	<u>27</u>	<u>6</u>
<u>13' 6"</u>	<u>Grey rock</u>	<u>3</u>	<u>6</u>	<u>31</u>	<u>0</u>
	<u>Grey shale</u>	<u>1</u>	<u>6</u>	<u>32</u>	<u>6</u>
<u>Fimbricata-walteri beds</u>	<u>Grey clay rock</u>	<u>8</u>	<u>0</u>	<u>40</u>	<u>6</u>
<u>9'</u>	<u>Grey sand clay</u>	<u>1</u>	<u>0</u>	<u>41</u>	<u>6</u>
	<u>Grey rock</u>	<u>7</u>	<u>0</u>	<u>48</u>	<u>6</u>
<u>White Leds</u>	<u>Sandy shale</u>	<u>1</u>	<u>0</u>	<u>49</u>	<u>6</u>
<u>31' 6"</u>	<u>Grey rock with bands of shale.</u>	<u>17</u>	<u>0</u>	<u>66</u>	<u>6</u>
	<u>Grey sandy clay</u>	<u>6</u>	<u>6</u>	<u>73</u>	<u>0</u>
	<u>Grey rock</u>	<u>5</u>	<u>0</u>	<u>78</u>	<u>0</u>
<u>Hambden Marls</u>	<u>Clay</u>	<u>3</u>	<u>6</u>	<u>81</u>	<u>6</u>
<u>13'</u>	<u>Shale with bands of clay rock</u>	<u>4</u>	<u>6</u>	<u>86</u>	<u>0</u>
<u>Tegult Stone</u>	<u>Grey rock with bands of shale.</u>	<u>4</u>	<u>0</u>	<u>90</u>	<u>0</u>
<u>16'</u>	<u>Grey rock</u>	<u>12</u>	<u>0</u>	<u>102</u>	<u>0</u>
<u>Swerford & Hook</u>	<u>light grey sand.</u>	<u>16</u>	<u>0</u>	<u>118</u>	<u>0</u>
<u>Alston Beds</u>	<u>light sandstone</u>	<u>6</u>	<u>0</u>	<u>124</u>	<u>0</u>
<u>25'</u>	<u>Dark sandstone</u>	<u>3</u>	<u>0</u>	<u>127</u>	<u>0</u>
<u>U. Lias</u>	<u>Dark clay</u>	<u>15</u>	<u>6</u>	<u>142</u>	<u>6</u>
<u>15' 6"</u>					
	<u>See letter from H.F. Smith Esq., Surveyor, Bicester U.D.C. dated 26. VI. 40, in 9509/28. P.W.L. 94' b.p. Suction 108 1/2' b.p. Now 26. VI. 40.</u>				

R.V.M.
16. 3. 39

GEOLOGICAL SURVEY AND MUSEUM.
SOUTH KENSINGTON.
LONDON, S.W.7.

For Survey use only

Date received	G.S.M. Office File No.	Site marked on 1" map (use symbol)
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(7993) Wt. 38064/0849 5,000 12/33
A.&E.W.Ltd. Gp. 686