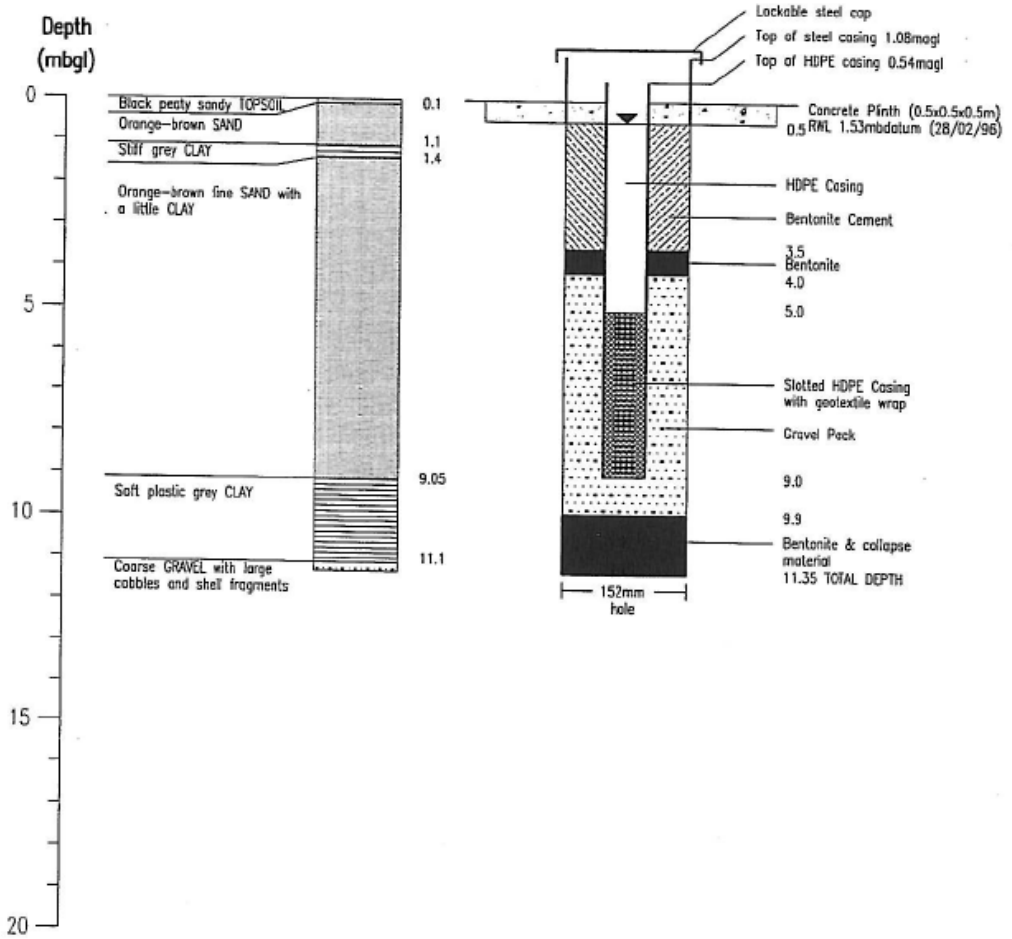
Construction Diagram CATFIELD FEN

Site No: 33	Water Level: 0.60maOD (28/02/96)
Borehole No: P1	Datum Elevation: 2.127maOD
Grid Reference: TG 3664 2139	Datum Location: Top of steel casing



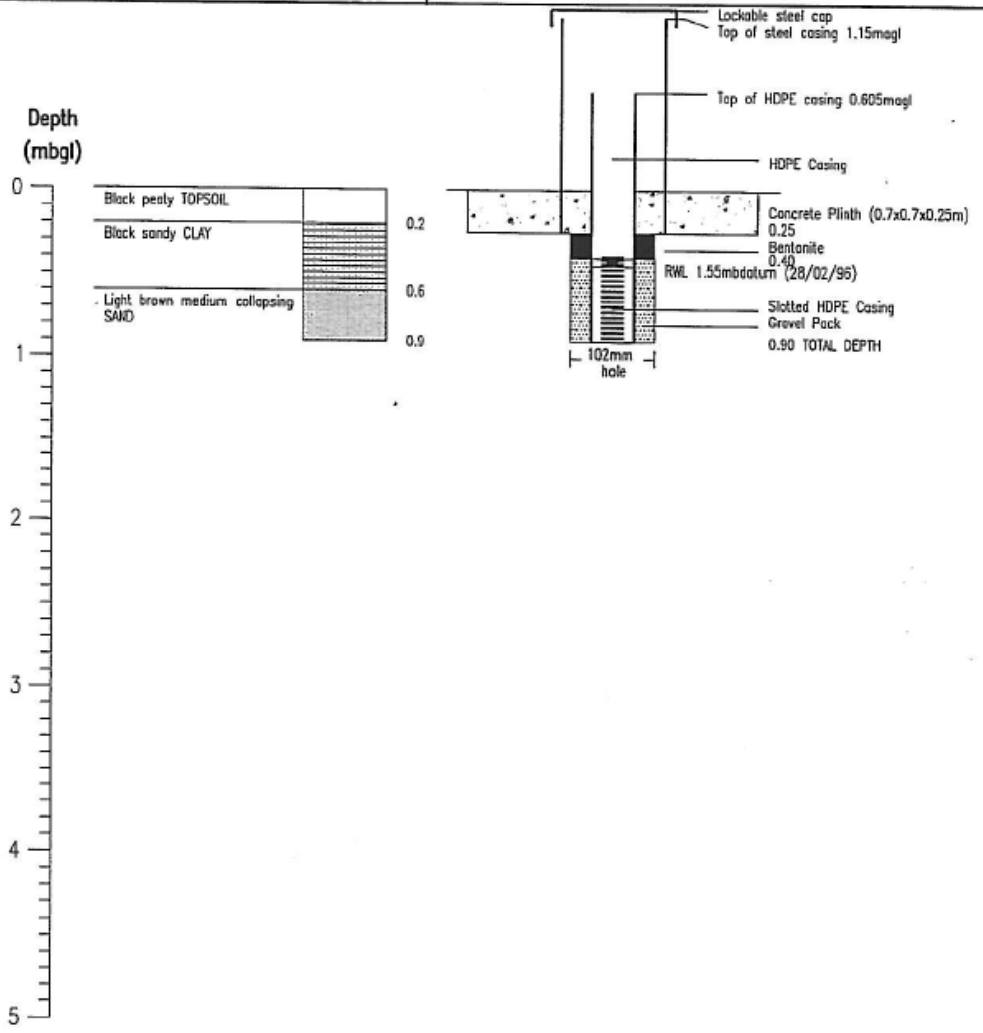
NOTES
All depths are in metres below ground level unless otherwise stated
HDPE Casing 51mm ID, 63mm OD, screw jointed
Slotted HDPE Casing – as casing with 2mm slots, 50 per metre, 4.5% open area
Gravel Pack – 3 to 6mm well rounded gravel
Steel Surface Casing – 158mm ID 168mm OD Steel

Hydrological Monitoring of Wetlands

hsi
Hydrogeological Services International Ltd.
172b Epsom Road, Guildford, Surrey. GU1 2RR.
Tel: 01483 504221 Fax: 01483 35759

Construction Diagram CATFIELD FEN

Site No: 33	Water Level: 0.58maOD (28/02/96)
Borehole No: P2	Datum Elevation: 2.129maOD
Grid Reference: TG 3664 2139	Datum Location: Top of steel casing



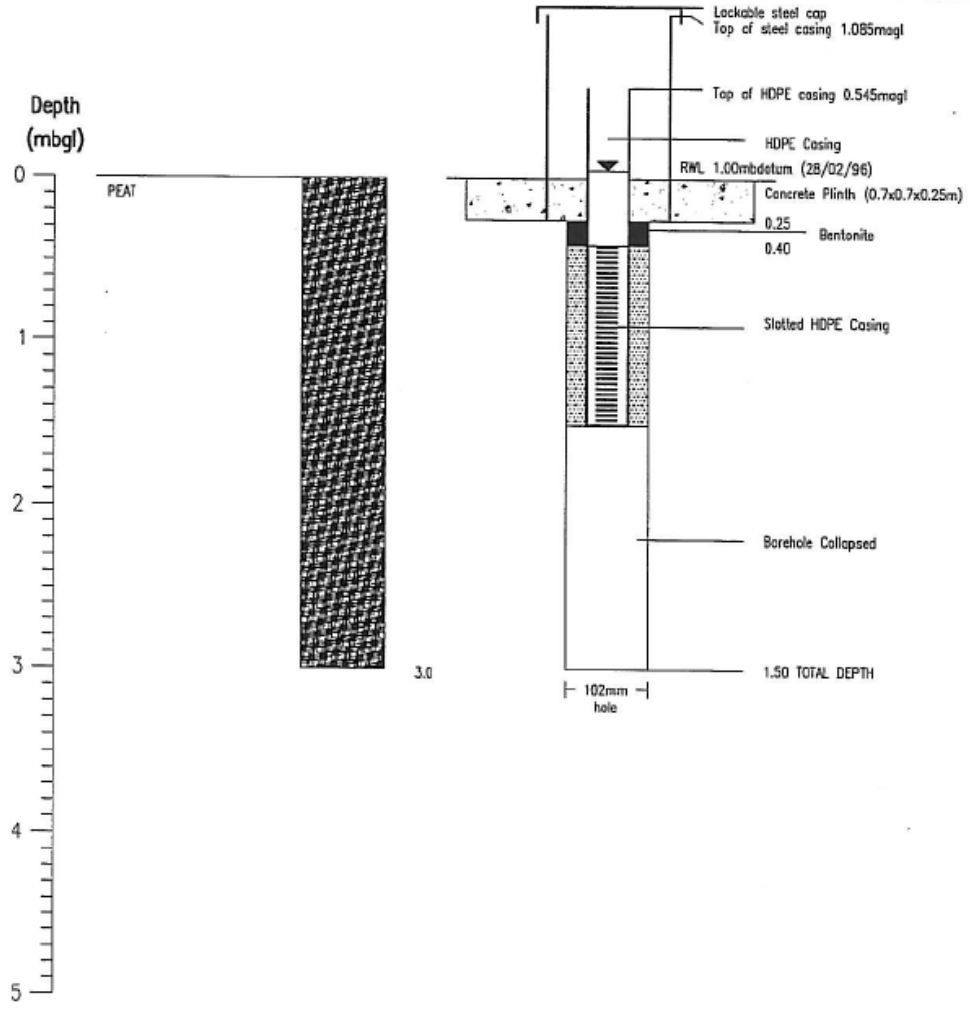
NOTES
All depths are in metres below ground level unless otherwise stated
HDPE Casing 51mm ID, 63mm OD, screw jointed
Slotted HDPE Casing – as casing with 2mm slots, 50 per metre, 4.5% open area
Gravel Pack – 3 to 6mm well rounded gravel
Steel Surface Casing – 158mm ID 168mm OD Steel

Hydrological Monitoring of Wetlands

bsi
Hydrogeological Services International Ltd.
172b Epsom Road, Guildford, Surrey. GU1 2RR.
Tel: 01483 504221 Fax: 01483 35759

Construction Diagram CATFIELD FEN

Site No: 33	Water Level: 0.51maOD (28/02/96)
Borehole No: P3	Datum Elevation: 1.506maOD
Grid Reference: TG 3676 2131	Datum Location: Top of steel casing



NOTES
All depths are in metres below ground level unless otherwise stated
HDPE Casing 51mm ID, 63mm OD, screw jointed
Slotted HDPE Casing – as casing with 2mm slots, 50 per metre, 4.5% open area
Gravel Pack – 3 to 6mm well rounded gravel
Steel Surface Casing – 158mm ID 168mm OD Steel

Hydrological Monitoring of Wetlands

bsi
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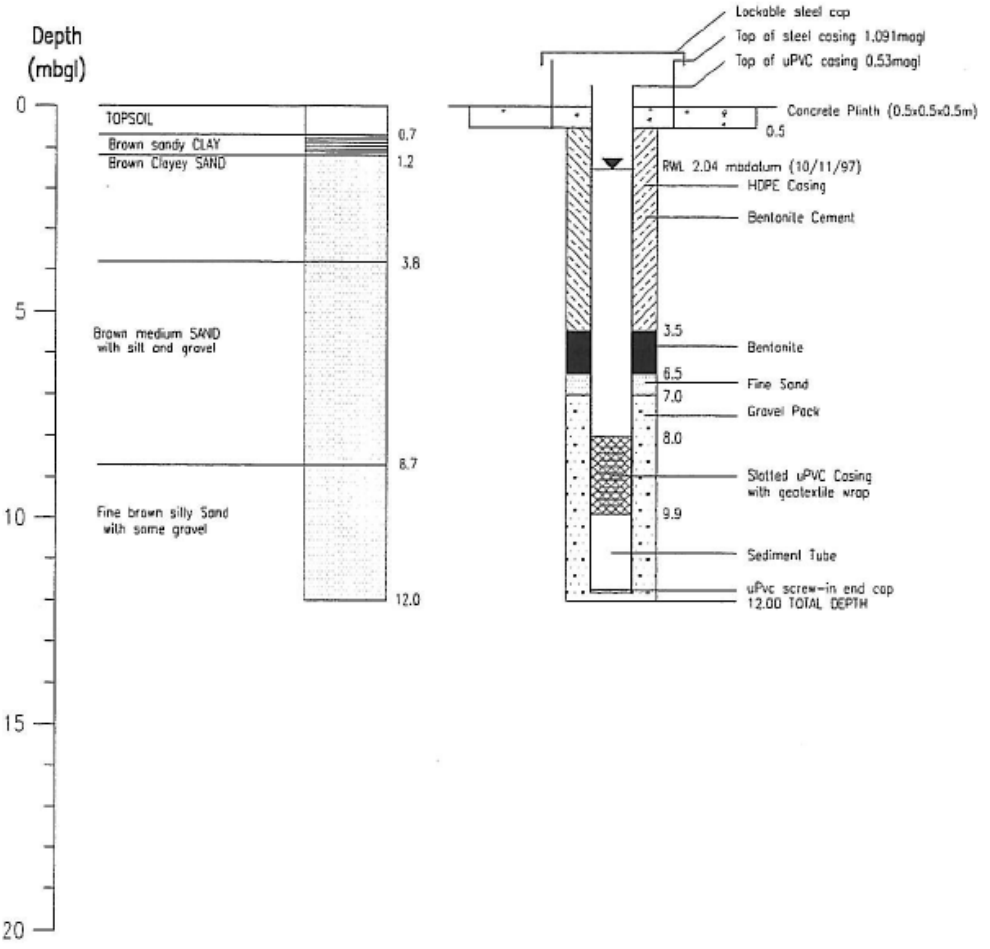
172b Epsom Road, Guildford, Surrey. GU1 2RR.
Tel: 01483 504221 Fax: 01483 35759

Construction Diagram CATFIELD FEN

Site No: 33	Water Level: 0.528 maOD (10/11/97)
Borehole No: NTG3270P4	Datum Elevation: 2.568maOD
Grid Reference: TG 3777 2039	Datum Location: Top of steel casing



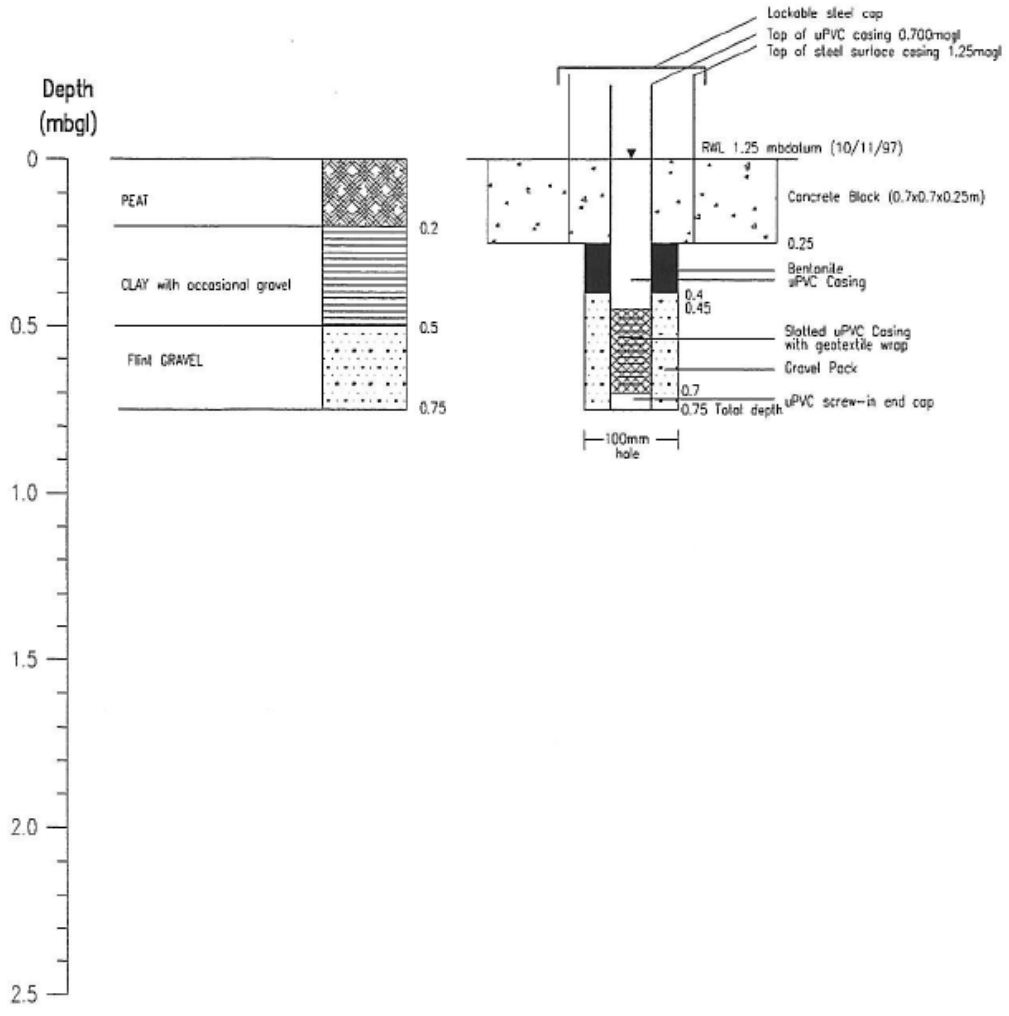
NOTES
All depths are in metres below ground level unless otherwise stated
uPVC Casing 49mm ID, 61mm OD, screw jointed
Slotted uPVC Casing - as casing with 45x1.5mm slots, 320per metre, 11.8% open area
Gravel Pack - 2 to 6mm well rounded gravel
Steel Surface Casing - 200mm ID 206mm OD Steel

Hydrological Monitoring of Wetlands

bsi
Hydrogeological Services International Ltd.
6 Millmead, Guildford, Surrey. GU2 5BE.
Tel: 01483 504221 Fax: 01483 535759

Construction Diagram CATFIELD FEN

Site No: 33	Water Level: 0.34 maOD (10/11/97)
Borehole No: NTG3270P5	Datum Elevation: 1.590maOD
Grid Reference: TG 3774 2041	Datum Location: Top of steel casing



NOTES
All depths are in metres below ground level unless otherwise stated
uPVC Casing 49mm ID, 61mm OD, screw jointed
Slotted uPVC Casing - as casing with 45x1.5mm slots, 320per metre, 11.8% open area
Gravel Pack - 2 to 6mm well rounded gravel
Steel Surface Casing - 200mm ID 206mm OD Steel

Hydrological Monitoring of Wetlands

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Hydrogeological Services International Ltd.
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Tel: 01483 504221 Fax: 01483 535759

bsi Hydrogeological Services International Limited
172b Epsom Road, Guildford, Surrey, GU1 2RR. UK
Telephone: 01483 504221 Fax: 01483 35759

Client: NRA (Anglian Region)
Project: Wetlands Hydrological Monitoring

Site: 33
Bh: P1

Contractor: Norwest Holst
Equipment: Pilkon Wayfarer
Method: SHELL & AUGER

Location: CATFIELD FEN
Grid Ref: TG 3664 2139
Ground Level: 1.05 mAOD

Dates: 24/10/95 – 27/10/95

DESCRIPTIVE LOG	DEPTH	DEPTH	SAMPLE TYPE	SAMPLE No.	TEST TYPE	TEST No.	WATER INTERSECT.
0-0.1 Black peaty sandy soil.	0	0.2	D	1			
0.1-0.3 Brown clayey sand.		0.5	D	2			
0.3-0.85 Orange brown sand with a little clay. Sand is rounded quartz - medium grains.			D	3			0.75
1.1 – Stiff grey clay	1	1.1					0.85
1.5 - Brown sand		1.4	D	4			
2.2 - Light brown fine grained sand with some clay.	2	2.20	D	5			
2.65 - Brown grey interlayered fine grained sand and clay		2.65	D	6			
2.95 Orange brown fine grained micaceous sandy clay with dark red/brown iron rich spots	3	2.95	D	7			
3.95 Orange brown clayey sand.	4	3.95	D	8			
5.30 Orange brown clayey sand - fine grained	5	4.95	D	9			
	6	5.95	D	10			
	7	6.95	D	11			
	8	7.95	D	12			
	9	8.95	D	13			
Soft grey clay.		9.05	D	14			
	10		D	15			

INSTALLATIONS: CONCRETE 0.5m; BENTONITE CEMENT 0.5-3.5m; HDPE BLANK CASING 0.54m agl - 5.0m; BENTONITE 3.5-4.0m; GRAVEL 4.0 ~ 9.9m; SLOTTED CASING WITH GEOTEXTILE WRAP 5.0-9.0m; 3.5m; 4.0m; 9.9m

Sample Key
D = disturbed sample
B = bulk disturbed sample
U = unconsolidated sample
C = cored sample
W = water sample

Test Key
b = bailer test
c = constant head test
f = falling head test
p = packer test
e = conductivity test

Notes:

RECORDED BY A-MH

SHEET 1 of 2

bsi Hydrogeological Services International Limited

172b Epsom Road, Guildford, Surrey, GU1 2RR. UK
Telephone: 01483 504221 Fax: 01483 35759

Client: NRA (Anglian Region)
Project: Wetlands Hydrological Monitoring

Site: 33
Bh: P1

Contractor: Norwest Holst
Equipment: Pilkon Wayfarer
Method: Shell & Auger

Location: Catfield Fen
Grid Ref: TG 3664 2139
Ground Level: 1·05 mAOD

Dates:
24/10/95
27/10/95

DESCRIPTIVE LOG	LEGEND	DEPTH	DEPTH	INSTALLATIONS	SAMPLE TYPE	SAMPLE No.	TEST TYPE	TEST No.	WATER INTERSECT.	FLUSH RETURNS	DRILLING PROGRESS
Soft plastic grey clay.		10		Bentonite + Collapsed Material 9.9 – 11.35m	D	17					
Coarse gravel with large cobbles and shell fragments.		11			D	18					
		12		11.35m							
		13									

Sample Key
- D = disturbed sample
- B = bulk disturbed sample
- U = unconsolidated sample
- C = cored sample
- W = water sample

Test Key
- b = boiler test
- c = constant head test
- f = falling head test
- p = packer test
- e = conductivity test

Notes:

RECORDED BY A-MH

SHEET 2 of 2

bsi Hydrogeological Services International Limited

172b Epsom Road, Guildford, Surrey, GU1 2RR. UK
Telephone: 01483 504221 Fax: 01483 35759

Client: NRA (Anglian Region)
Project: Wetlands Hydrological Monitoring

Site: 33
Bh: P2

Contractor: Norwest Holst
Equipment:
Method: Hand Auger

Location: CATFIELD FEN
Grid Ref: TG 3664 2139
Ground Level: 0.98 mAOD

Dates:
25/10/95
25/10/95

DESCRIPTIVE LOG	LEGEND	DEPTH	DEPTH	INSTALLATIONS	SAMPLE TYPE	SAMPLE No.	TEST TYPE	TEST No.	WATER INTERSECT.	FLUSH RETURNS	DRILLING PROGRESS
Soil - black peaty organic rich.		0		CONCRETE 0.25							
Black sandy clayey peat with root matter		0.2		0.4m							
Grey sandy clay with roots		0.4	0.5	0.4m SLOTTED CASING 0.4m - 0.9m GRAVEL	D	1					
Light brown medium grained sand.		0.6							No Rise 0.65		
Collapsing sand		0.8		0.9m Slotted casing 0.55sand -0.9mbgl SLOTTED CASING TAPED FROM G.L.-0.4m BENTONITE PELLETS 0.25-0.4m							
		1.0									
		1.2									
		1.4									
		1.6									
		1.8									
		2.0									

Sample Key
D = disturbed sample
B = bulk disturbed sample
U = unconsolidated sample
C = cored sample
W = water sample

Test Key
b = bailer test
c = constant head test
f = falling head test
p = packer test
e = conductivity test

Notes:

RECORDED BY A-MH

SHEET 1 of 1

bsi Hydrogeological Services International Limited
172b Epsom Road, Guildford, Surrey, GU1 2RR. UK
Telephone: 01483 504221 Fax: 01483 35759

Client: NRA (Anglian Region)
Project: Wetlands Hydrological Monitoring

Site: 33
Bh: P3

Contractor: Norwest Holst
Equipment:
Method: HAND AUGER

Location: CATFIELD FEN
Grid Ref: TG 3676 2131
Ground Level: 0.42 mAOD

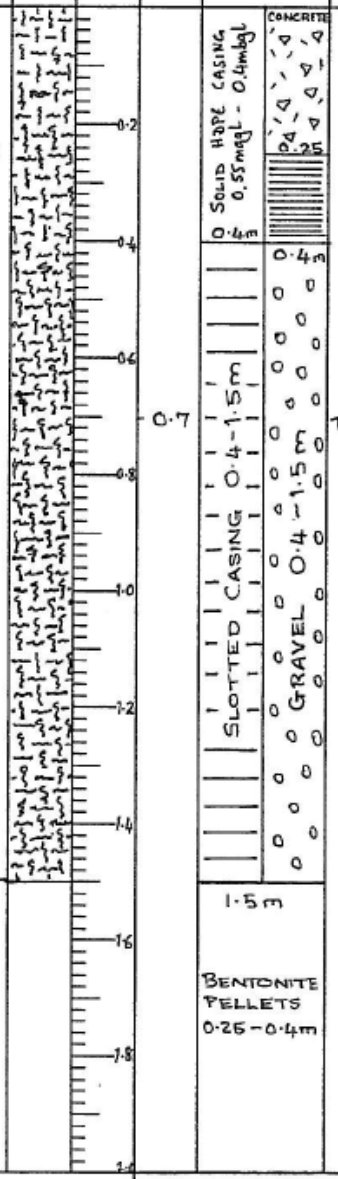
Dates:
25/10/95
25/10/95

DESCRIPTIVE LOG

Black organic rich peat

Sludgy black organic rich peat.

N.B - auger could be driven into 3m but hole only stayed open to 1.5m. Peat to 3m



Sample Key
D = disturbed sample
B = bulk disturbed sample
U = unconsolidated sample
C = cored sample
W = water sample

Test Key
b = boiler test
c = constant head test
f = falling head test
p = packer test
e = conductivity test

Notes:

RECORDED BY
A-MH

SHEET 1 of 1

Soil Mechanics

Borehole No. NTG3270P4

Sheet 1 of 4

Equipment & Methods
Cable tool boring in 150mm diameter to a depth of 12.00m.
Standpipe piezometer installed.

Location No. 8118/28
Location SITE 33, CATFIELD FEN

Carried out for
ENVIRONMENT AGENCY

Ground Level
1.477

Coordinates
3777 mE
2039 mN

Date
10/07/97

Description	Reduced Level	Legend	Depth (Thick)	Samples/Tests: Depth	Sample Type	Sample No.	Test	Field Records
(soft) Dark brown sandy CLAY with some subangular to subrounded fine to coarse gravel of flint and occasional plant rootlets. (TOPSOIL)	1.477		(0.70)	0.50	D	1		
	0.78		0.70					
(soft) Dark brown very sandy CLAY with some subangular to subrounded fine to medium gravel of flint and occasional plant rootlets.	0.28		(0.50) 1.20	1.10	D	2		
				1.70	D	3		
Brown clayey medium to coarse SAND with some subangular to subrounded fine to coarse gravel of flint and occasional plant rootlets.			(2.60)	2.50	W	5		
				2.70	D	4		
	-2.32		3.80	3.70	D	6		
Brown yellow medium to coarse SAND with some subangular to subrounded fine to coarse gravel of flint.			(1.90)	4.70	D	7		
	-4.22		5.70	5.70	D	8		
Brown grey silty medium to coarse SAND with some subangular to subrounded fine to coarse gravels of flint.			(1.00)					
	-5.22		6.70	6.70	D	9		
Brown yellow medium to coarse SAND with some subangular to subrounded fine to coarse gravels of flint.			(2.00)	7.70	D	10		
	-7.22		8.70	8.70	D	11		
Brown slightly clayey fine to medium SAND with a little subangular to subrounded fine to medium gravel of flint.			(1.30)	9.70	D	12		
	-8.52		10.00					

Remarks

Logged by: AB

Scale: 1:50

Notes:
Materials are described in accordance with Appendices. For explanation of symbols and abbreviations see Fig. 1.

09/10/97 11:54:30

Fig. 2

Soil Mechanics

Borehole No. NTG3270P4

Sheet 2 of 4

Equipment & Methods: As sheet 1

Location No. 8118/28

Location: SITE 33, CATFIELD FEN

Carried out for: ENVIRONMENT AGENCY

Ground Level:

Coordinates: As sheet 1

Date:

Description	Reduced Level	Legend	Depth (Thick)	Samples/Tests: Depth	Sample Type	Sample No.	Test	Field Records
See sheet 1	-8.62	x	(0.10) 10.10					
		x						
		x		10.70	D	13		
Grey brown clayey fine to medium silty SAND with a little subangular to subrounded fine to medium gravel of flint.		x	(1.90 pen)					
		x						
		x		11.70	D	14		
BOREHOLE ENDS AT 12.00 m.	-10.52	x	12.00					

Remarks

Logged by: AB

Scale: 1:50

Notes:

Materials are described in accordance with Appendices. For explanation of symbols and abbreviations see Fig. 1.

09/10/97 11:54:59

Fig. 2

Soil Mechanics

Borehole No. NTG3270P4

Sheet 3 of 4

Equipment & Methods	Location No.	8118/28
As sheet 1	Location	SITE 33, CATFIELD FEN

Carried out for	Ground Level	Coordinates	Date
ENVIRONMENT AGENCY		As sheet 1	

Water Level Observations During Boring

Date	Time	Depth of Hole (m)	Depth of Casing (m)	Depth to Water (m)	Remarks
10/07/97	-	1.80	1.80	-	Water added to assit boring.
10/07/97	-	12.00	12.00	3.00	End of borehole.

Hole Diameter by Depth Table

Depth of Hole (m)	Diameter of Hole (mm)	Diameter of Casing (mm)	Depth of Casing (m)
12.00	150	150	12.00

Water Strike Table

Depth of Strike (m)	Casing Depth (m)	Date	Time	Post Strike Depth (m)	Minutes After Strike	Sealed at (m)	Remarks
3.00	3.00	10/07/97		2.05	5	-	
3.00	3.00	10/07/97		2.00	10	-	
3.00	3.00	10/07/97		1.90	15	-	
3.00	3.00	10/07/97		1.90	20	-	

Remarks

'Casing' refers to temporary casing used during boring.

Logged by: AB

Scale: 1:50

Notes:

Materials are described in accordance with Appendices. For explanation of symbols and abbreviations see Fig. 1.

11/11/97 12:23:53

Fig. 2

Soil Mechanics

BOREHOLE No. NTG3270P4

Sheet 4 of 4

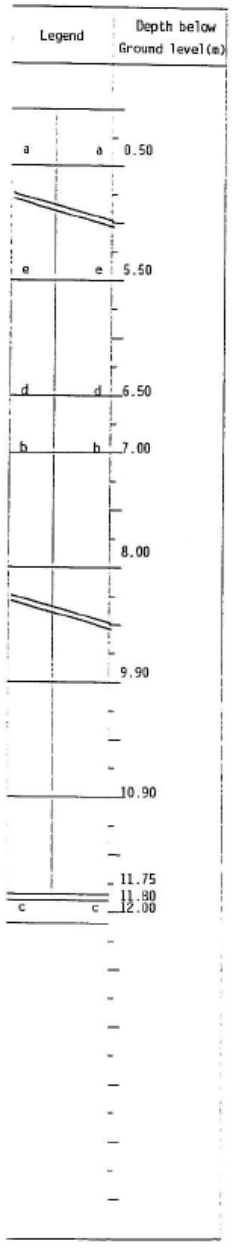
Location No. 8118/28
Location SITE 33, CATFIELD FEN

Carried out for ENVIRONMENT AGENCY

Type of installation Standpipe
Date of installation 10/07/97
Internal diameter of tubing 49 mm
Length of filter 5.50 m
Diameter of filter 150 mm

SUMMARY OF INSTALLATION

Depth (m bgl) From	Depth (m bgl) To	
		Surface protection : Lockable Top Cap
0.00	0.50	Concrete
0.50	5.50	Bentonite/cement grout
5.50	6.50	Bentonite seal
6.50	7.00	Fine sand filter
0.00	8.00	UPVC Solid casing
8.00	9.90	UPVC Slotted casing 1.5mm slots, 15% open area
8.00	10.90	Geotextile wrap
9.90	11.75	UPVC Sediment tube
11.75	11.80	UPVC Screw in end cap
7.00	12.00	Gravel filter, 2-6mm diameter



key

a	Concrete	d	Bentonite seal
b	Sand filter	e	Bentonite/cement grout
c	Gravel filter	f	Backfill

Remarks

1. Ground level and coordinates as sheet 1

DETAILS OF INSTRUMENTS

Soil Mechanics

Borehole No. NTG3270P5

Sheet 1 of 2

Equipment & Methods
Hand Auger, 100mm dia to 0.75m.
Standpipe piezometer installed.

Location No. 8118/28
Location SITE 33, CATFIELD FEN

Carried out for
ENVIRONMENT AGENCY

Ground Level
0.340

Coordinates
3774 mE
2041 mN

Date
10/07/97

Description	Reduced Level	Legend	Depth (Thick)	Samples/Tests: Depth	Sample Type	Sample No.	Test	Field Records
Dark brown slightly spongy fibrous PEAT.	0.340		(0.20)	0.10	D	1		
(soft) Orange CLAY with occasional subangular to subrounded fine to medium gravel of flint.	0.14		0.20 (0.05)	0.20	D	2		
(soft) Black CLAY.	0.09		0.25 (0.25)	0.30	D	3		
Brown subangular to subrounded coarse GRAVEL to COBBLES of flint.	-0.16		0.50 (0.25 pen)	0.60	D	4		
BOREHOLE ENDS AT 0.75 m.	-0.41		0.75					

Remarks

Hole abandoned at 0.75m due to hand auger unable to penetrate gravel.

Groundwater level on completion of hole was 0.10 m bgl.

Notes:

Materials are described in accordance with Appendices. For explanation of symbols and abbreviations see Fig. 1.

11/11/97 12:23:56

Logged by
PSG

Scale
1:10

Fig. 3

Soil Mechanics

BOREHOLE No. NTG3270P5

Sheet 2 of 2

Location No. 8118/28
Location SITE 33, CATFIELD FEN

Carried out for ENVIRONMENT AGENCY

Type of installation Standpipe
Date of installation 10/07/97
Internal diameter of tubing 49 mm
Length of filter 0.35 m
Diameter of filter 100 mm

SUMMARY OF INSTALLATION

Depth (m bgl) From	Depth (m bgl) To	
		Surface protection : Lockable Top Cap
0.00	0.25	Concrete
0.25	0.40	Bentonite seal
0.00	0.45	UPVC Solid casing
0.45	0.70	UPVC Slotted casing 1.5mm slots, 15% open area
0.40	0.75	Gravel filter, 2-6mm diameter
0.45	0.75	Geotextile wrap
0.70	0.75	UPVC Screw in end cap

Legend		Depth below Ground level (m)
a	a	0.25
d	d	0.40 0.45
		0.70
c	c	0.75

key

a	Concrete	d	Bentonite seal
b	Sand filter	e	Bentonite/cement grout
c	Gravel filter	f	Backfill

Remarks

1. Ground level and coordinates as sheet 1

DETAILS OF INSTRUMENTS

JDIH	BOREHOLE DATA SHEET	Borehole ID	ABM20
		Landowner	Catfield Charities
		Contact number	Dr Kevin Bacon 01692 581314

Site information

JDIH Engineer	Patrick Lamphee	Drilling method	C / Percussion
BH Grid Ref *(Hand held GPS)*	TG 36660 21390	Design depth	35m
Date Started	10th May 2006	Completion depth (measured)	24m
Date Finished	25th May 2006	RWL (mbgl) & Date	0.6mbgl 17th May 2006 *(Measured before development)*

Daily record

Date	Activity	Comments	Initials
10th May 2006	Moved Rig over to site. Unable to get rig to pegged location due to soft ground and therefore located borehole approximately 3 - 4m from original position. Spoke to Dr Bacon about relocating borehole. Set up rig, refilled bowser and moved trailer from Decoy Farm.	BH located to NGR (see above) after speaking to land owner. Ground very soft. Public Footpath runs past site - site fenced off over weekend.	PL
11th May 2006	Drilled from ground level down to a depth of approx 11m before hitting fine sands which slowed drilling. Spoil having to be carried to dump truck also slowing progress.	Discussed with Mike Dickin security concerns - AEG agreed to put a fence up around borehole. Skip arriving tomorrow	PL
12th May 2006	Awaiting delivery of skip - due am. Drilled to depth of aprox 14m and had to stop as skip not arrived. Skip arrived 12pm but had drop down front so water would escape. New skip ordered for Monday	Secured site for weekend with fencing and immobilised rig and dumper truck. (See Fig) Left site aprox 12:45pm	PL
16th May 2006	Drilled to depth of 19m before casing became stuck. Tried to pull casing up but to no avail. Removed 10 inch casing and carried on drilling with 8 inch casing to stop the two sets of casing from sticking. Once 10 inch casing removed drilled to depth of 21m. Water pressure pushing fine sands back into borehole making it silt up. After a 30 min break borehole silted up from 21m to 17m.	Fine sands slowed drilling down all day. Water pressure also slowing drilling down due to borehole silting up. Ecologist from Atkins visited site and expressed concern about noise levels disturbing local birds. Reported this back to office. Resolved at end of day with Atkins and Office	PL
17th May 2006	Borehole silted back up to 17m. Continued drilling and hit clay at 23m. After consulting with Chris Barbour [JDIH] we decided to terminate BH at 28m as the fine sands had slowed us down considerably, and backfilled to 24m. The borehole design states monitoring groundwater in the Crag. Backfilled to leave 1m sump in clay with 2m slotted at base of crag. Hole grouted up and allowed to settle over night. Large hole approx 1m square opened up around top of borehole - fenced off for safety. Headworks to be put in place following grout setting. Left site aprox 5pm to move rig to next site.	Large hole may worsen over night. If so then we will acquire topsoil / peat to infill the hole. Slotted section has been placed in the correct geology (CRAG)	PL
25th May 2006	Developed the borehole for 2 hours. Headworks set in place and borehole completed.	Hole around headworks has been infilled with peat.	PL

Continued overleaf

ABM20

Geology

Depth (mbgl) From	Depth (mbgl) to	Description of Strata	Water strike (mbgl)
0	0.5	Peat	0.5
0.5	9	Bright orange fine grained sand with silt and some clay (Superficials)	
9	11	Stiff grey / brown clay with fine sands and silt (Weathered Upper Surface of Crag)	11.3
11	23	Grey medium / course grained sand with shell fragments (Crag)	
23	28	Stiff grey clay with some sand (London Clay)	

* Crag identified by meduim to coarse grained sands with limited amounts of clay and shell fragments.

Construction details

Completion depth		24 m		
Drilled Diameter		200 mm		
Casing Diameter		75 mm		
Plain casing	from	0.5 magl	to	21 m
Sump	from	23	to	24 m
Slotted casing	from	21	to	23 m

Construction Materials

Bentonite	from	17.5	to	20 m
Sand Pack	from	20	to	24 m

Other details

Last 4m of the BH were backfilled from 28m to 24m with sand and bentonite leaving a 1m sump in the clay

After speaking to office [CB] JDIH decided that the borehole should be terminated at 28m and backfilled to 24m. At this depth the borehole is monitoring the CRAG consistent with the design specification.

Issues *(access problems, landowner concerns, ground conditions, security etc)*

None

Notes

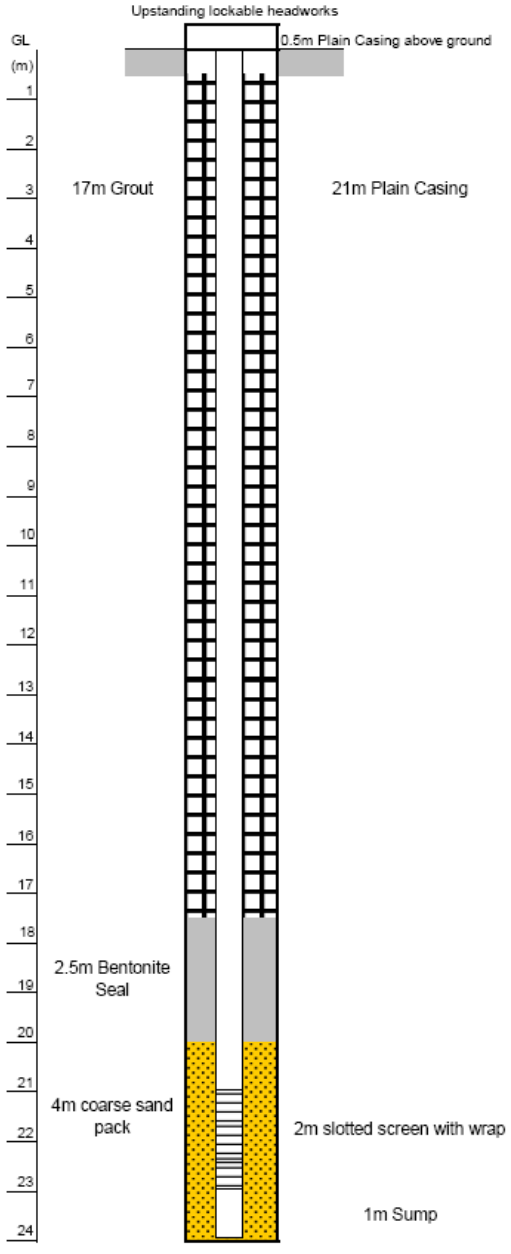
Due to nature of material drilled through it was decided to use coarse sand as filter pack.

Keys supplied by AEG and headworks marked with borehole identification number in order to aid surveying

Other information

Photographic record	YES
Drillers log provided	YES
Additional sheets attached	NO

Construction log



JDIH ENVIREAU

BOREHOLE DATA SHEET

Borehole ID	ABM 42a (Deep)
Landowner	
Contact number	

Site information

JDIH Engineer	Patrick Lamphee	Drilling method	Rotary
BH Grid Ref *(Hand held GPS)*	TG 37131 19860	Design depth	35 - 45m
Date Started	9th August 2007	Completion depth (measured)	50m
Date Finished	14th August 2007	RWL (mbgl) & Date	3.11mbgl 22nd August 2007 *(Measured before development)*

Daily record

Date	Activity	Comments	Initials
9th August 2007	Arrived on site at approx 11.30am to find that no drilling had yet taken place. This was due to skips not being delivered on time. Once skips filled with water polymer was added and drilling started at approx 5.30pm	Skips needed to be filled with water, which due to low water pressure off the mains meant five trips each taking approx 1 hour to get the water needed. By end of the day the first 6m of casing had been installed	PL
10th August 2007	Arrived on site as drilling got underway. At 27m drilling stopped as skips needed to be refilled with water which required two trips. Drilling started again at approx 12pm. BY the end of the day had reached a depth of 51m	Expected to hit the London Clay before this depth at approx 40m. Decided that drillers were to carry on drilling on Monday until they proved the top of the London Clay. Agreed they should drill at least 5m into the top of the London Clay and then back fill to base of Crag.	PL
13th August	Drilling restarted from 51m to a depth of approx 60m where the top of the Chalk was hit. Carried on 3m into the Chalk before backfilling to the base of the Crag	As there was no London Clay office notified and borehole design modified. Samples taken at each change of geology to confirm that there was no London Clay	PL
13th August 2007	Plain and slotted pipe installed along with filter pack, sand pack and bentonite. Borehole then grouted and lower part of head works set in place and allowed to set over night.	Rig then moved over ready to drill ABM 42b (Shallow)	PL
14th August	Upper part of headworks bolted in place and padlock put on borehole		PL

Continued overleaf

ABM 42a (Deep)

Geology

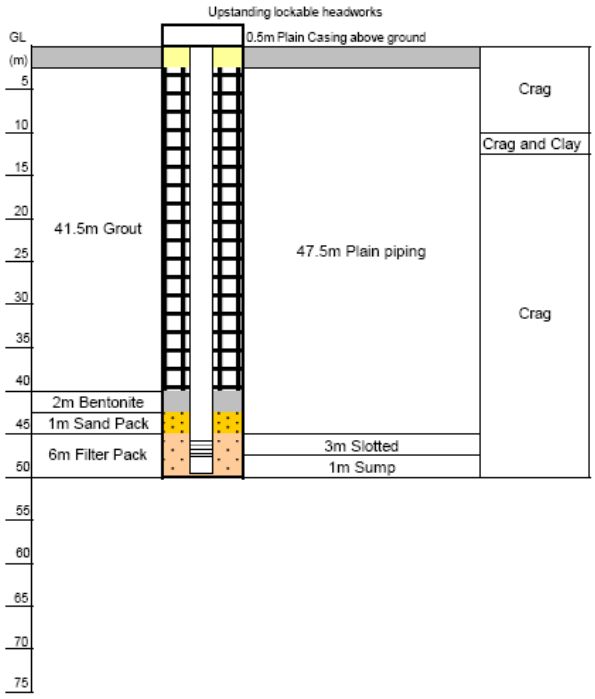
Depth (mbgl) From	Depth (mbgl) to	Description of Strata	Water strike (mbgl)
0	0.4	Top Soil	
0.4	1.7	Brown medium to coarse grained sand	
1.7	7	Brown medium to coarse grained sand, with some small angular gravels	
7	9	Brown medium to coarse grained sand with sandy brown clay	
9	14	Stiff grey clay	
14	30	Grey coarse grained sand with some clay and shell fragments	
30	42	Grey silty sand with some dark black mudstone	
42	51	Grey coarse grained sand with some clay and shell fragments	

Construction details

Completion depth	51m	m		
Drilled Diameter		200	mm	
Casing Diameter		75	mm	
Plain casing	from	0	to	47 m
sump		50	to	51 m
Slotted casing	from	47	to	50 m
Construction Materials				
Bentonite	from	42	to	44 m
Sand Pack	from	44	to	45 m
Filter Pack	from	45	to	51 m

Other details

Construction log



Issues *(access problems, landowner concerns, ground conditions, security etc)*

When we came to plumb the borehole there is still a lot of sand in the bottom. The dip meter would not go all the wat to the bottom, so a completeion depth will be confirmed after development

Notes

No London Clay beneath the site. Geology went from Crag into Chalk. The only band of clay was encountered at approx 9m and was 5m thick

Other information

Photographic record	YES
Drillers log provided	YES
Additional sheets attached	NO

JDIH ENVIREAM

BOREHOLE DATA SHEET

Borehole ID	ABM 42b (Shallow)
Landowner	
Contact number	

Site information

JDIH Engineer	Patrick Lamphee	Drilling method	Rotary
BH Grid Ref *(Hand held GPS)*	TG 37136 19867	Design depth	10 - 15m
Date Started	13th August 2007	Completion depth (measured)	Yet to be measured
Date Finished	15th August 2007	RWL (mbgl) & Date	3.11mbgl 22nd August 2007 *(Measured before development)*

Daily record

Date	Activity	Comments	Initials
13th August 2007	Moved rig over and got into position. Dug trail pit and put first 4m of casing into the ground. By the end of the day the borehole had reached depth of 10m (1m into clay band within the Crag)	Filled bowser back up with water which took approx 1 hour due to low water pressure again	PL
14th August 2007	Pipe, filter pack and sand pack all put in place along with Bentonite and then borehole grouted back to within 0.5m of the surface. Lower part to headworks set in place and allowed to set over night.	All equipment then moved over to next site in Wrotham (BBM 27)	PL
15th August 2007	Upper part of head works attached and bolted in place. Patrick Lamphee (JDIH) fitted EA padlocks to both boreholes		PL

Continued overleaf

ABM 42b (Shallow)

Geology

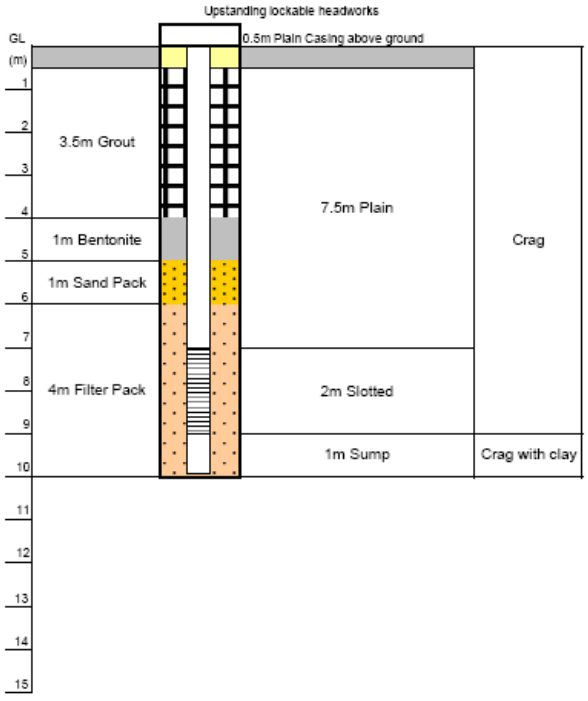
Depth (mbgl) From	Depth (mbgl) to	Description of Strata	Water strike (mbgl)
0	0.5	Top soil	
0.5	1.9	Brown medium grained sand with some clay	
1.9	7.2	Medium grained brown sand with some clay and small amounts of gravel	
7.2	9	Brown medium grained sand with some clay	
9	10	Stiff grey clay	

Construction details

Completion depth		11.5 m	
Drilled Diameter		200 mm	
Casing Diameter		75 mm	
Plain casing	from	0 to	7 m
sump		9 to	10 m
Slotted casing	from	7 to	9 m
Construction Materials			
Bentonite	from	4 to	5 m
Sand Pack	from	5 to	6 m
Filter Pack	from	6 to	10 m

Other details

Construction log



Issues *(access problems, landowner concerns, ground conditions, security etc)*

Notes

Other information

Photographic record	YES
Drillers log provided	YES
Additional sheets attached	NO

BRACE - DAILY SITE REPORT - LACK

Date: 17/12/91

Site: CATFIELD

Bore: 1

Ground Conditions

from	to	consistency or density/colour/type
		REPAIRED WATER MAIN
0.0	0.3m	TURF OVER TOPSOIL
0.3		ORANGE/BROWN & GREY SILTY SANDY CLAY OCC STONES IN PLACES/MORE
	2.9m	SANDY FROM 2.4m)
2.9		BROWN SAND WITH OCC TRACES OF ORANGE/
	6.8m	BROWN SILTY CLAY
6.8		BROWN SAND & FINE
	7.0m	GRAVEL
7.0		ORANGE/BROWN SILTY
	7.3m	CLAY
7.3		BROWN SAND & FINE
	8.5m	GRAVEL

Disturbed Samples

no.	depth
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	
D 10	
D 11	
D 12	
D 13	
D 14	
D 15	
D 16	
D 17	
D 18	
D 19	
D 20	

Undisturbed Samples

no.	depth	length	blows
U 1			
U 2			
U 3			
U 4			
U 5			
U 6			
U 7			
U 8			
U 9			
U 10			
U 11			
U 12			
U 13			
U 14			
U 15			

Penetration Tests

type/no.	depth	150	75	75	75	75
S/C 1						
S/C 2						
S/C 3						
S/C 4						
S/C 5						
S/C 6						
S/C 7						
S/C 8						
S/C 9						
S/C 10						
S/C 11						
S/C 12						
S/C 13						
S/C 14						
S/C 15						

Bulk Samples

no.	from	to
B 1		
B 2		
B 3		
B 4		
B 5		
B 6		
B 7		
B 8		
B 9		
B 10		
B 11		

Ground Water

depth struck	6.2m		
casing depth	6.0		
inflow rate	STEADY		
rose to	—		
sealed out at			
sample no.	W	W	W
sample depth			
water level at start of boring			
water level at finish of boring			7.0m
water level when casing removed			

	Yes	No
Borehole complete	~~Yes~~	
Depth of borehole cased	8.5m	
Piezometer/Standpipe?	depth	

Chisel or pits

from	
to	
hours	

Remarks

Water added

from	2.9
to	8.5m
litres	90 GALLONS

driller M J BRACE

BRACE - **DAILY SITE REPORT** - LACK

18/12/91

CATFIELD

1

Ground Conditions

from	to	consistency or density/colour/type
ES		BROWN SAND & FINE
	8.8m	GRAVEL
		BH Comp 8.8m
		PIPE INST AT 8.5m
		EXISTING SURROUND FROM
		ES - 0.3m
		CONCRETE FROM 0.3 -
		GL, WITH COVER INSTALLED
		TOP & BOTTOM CAP
		FITTED ON PIPE.

Disturbed Samples

no.	depth
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	
D 10	
D 11	
D 12	
D 13	
D 14	
D 15	
D 16	
D 17	
D 18	
D 19	
D 20	

Undisturbed Samples

no.	depth	length	blows
U 1			
U 2			
U 3			
U 4			
U 5			
U 6			
U 7			
U 8			
U 9			
U 10			
U 11			
U 12			
U 13			
U 14			
U 15			

Penetration Tests

type/no.	depth	150	75	75	75	75
S/C 1						
S/C 2						
S/C 3						
S/C 4						
S/C 5						
S/C 6						
S/C 7						
S/C 8						
S/C 9						
S/C 10						
S/C 11						
S/C 12						
S/C 13						
S/C 14						
S/C 15						

Bulk Samples

no.	from	to
B 1		
B 2		
B 3		
B 4		
B 5		
B 6		
B 7		
B 8		
B 9		
B 10		
B 11		

Ground Water

depth struck			
casing depth			
inflow rate			
rose to			
sealed out at			
sample no.	W	W	W
sample depth			
water level at start of boring			0.2m
water level at finish of boring			0.2m
water level when casing removed			

Borehole complete	Yes	No	
Depth of borehole cased	8.8m		
Piezometer/Standpipe?	depth	8.5m	

Chisel or pits

from	
to	
hours	

Remarks

Water added

from	
to	
litres	

driller M & J BRACE

BRACE - DAILY SITE REPORT - LACK

Date: 18/12/91

Site: CHEFIELD

2

Ground Conditions

from	to	consistency or density/colour/type
	0.3m	TURF OVER TOPSOIL
		BROWN SAND WITH
	0.9m	TRACES OF CLAY
0.9	3.8m	BROWN SAND
3.8		BROWN SAND & FINE
	6.8m	GRAVEL
		GREY / BROWN SOFT
		SILTY / SANDY CLAY

Disturbed Samples

no.	depth
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	
D 10	
D 11	
D 12	
D 13	
D 14	
D 15	
D 16	
D 17	
D 18	
D 19	
D 20	

Undisturbed Samples

no.	depth	length	blows
U 1			
U 2			
U 3			
U 4			
U 5			
U 6			
U 7			
U 8			
U 9			
U 10			
U 11			
U 12			
U 13			
U 14			
U 15			

Penetration Tests

type/no.	depth	150	75	75	75	75
S/C 1						
S/C 2						
S/C 3						
S/C 4						
S/C 5						
S/C 6						
S/C 7						
S/C 8						
S/C 9						
S/C 10						
S/C 11						
S/C 12						
S/C 13						
S/C 14						
S/C 15						

Bulk Samples

no.	from	to
B 1		
B 2		
B 3		
B 4		
B 5		
B 6		
B 7		
B 8		
B 9		
B 10		
B 11		

Ground Water

depth struck	6.8m		
casing depth	6.8m		
inflow rate	STEADY		
rose to	—		
sealed out at			
sample no.	W	W	W
sample depth			
water level at start of boring			
water level at finish of boring			6.8m
water level when casing removed			

	Yes	No
Borehole complete	~~Yes~~	
Depth of borehole cased	7.0m	
Piezometer/Standpipe?	depth	

Chisel or pits

from	
to	
hours	

Remarks

HAND DUG PIT TO 1.2m

Water added

from	0.9
to	6.8m
litres	90 GALLONS

driller M A BRACE

BRACE - **DAILY SITE REPORT** - LACR

19/12/91

CATFIELD

2

Ground Conditions

from	to	consistency or density/colour/type
6.8		GREY/BROWN SOFT SILTY
	7.2m	SANDY CLAY
7.2		BROWN SAND WITH FINE
		GRAVEL, SOME M/C GRAVEL
	9.0m	PRESENT
		PIPE INST AT 8.8m
		SHINGLE SURROUND FROM
		1.0 - 0.3m
		CONCRETE FROM 0.3 - GL
		WITH COVER FITTED
		TOP & BOTTOM CAPS
		INST

Disturbed Samples

no.	depth
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	
D 10	
D 11	
D 12	
D 13	
D 14	
D 15	
D 16	
D 17	
D 18	
D 19	
D 20	

Undisturbed Samples

no.	depth	length	blows
U 1			
U 2			
U 3			
U 4			
U 5			
U 6			
U 7			
U 8			
U 9			
U 10			
U 11			
U 12			
U 13			
U 14			
U 15			

Penetration Tests

type/no.	depth	150	75	75	75	75
S/C 1						
S/C 2						
S/C 3						
S/C 4						
S/C 5						
S/C 6						
S/C 7						
S/C 8						
S/C 9						
S/C 10						
S/C 11						
S/C 12						
S/C 13						
S/C 14						
S/C 15						

Bulk Samples

no.	from	to
B 1		
B 2		
B 3		
B 4		
B 5		
B 6		
B 7		
B 8		
B 9		
B 10		
B 11		

Ground Water

depth struck			
casing depth			
inflow rate			
rose to			
sealed out at			
sample no.	W	W	W
sample depth			
water level at start of boring			6.5m
water level at finish of boring			6.4m
water level when casing removed			

Borehole complete	Yes ~~No~~
Depth of borehole cased	9.0m
Piezometer/Standpipe?	depth 8.8m

Chisel or pits

from	
to	
hours	

Remarks

Water added

from	6.8
to	9.0m
litres	45 GALLONS

driller M I RIZAL

BRACE - DAILY SITE REPORT - LACK

Date: 19/12/91

Site: CATFIELD

Borehole: 3

Ground Conditions

from	to	consistency or density/colour/type
0	0.3	TARE OVER TOPSOIL
0.3		BROWN SAND WITH
		SLIGHT TRACES OF
	1.1m	CLAY
1.1	3.7m	BROWN SAND
3.7		BROWN SAND & FINE
	5.1m	GRAVEL

Disturbed Samples

no.	depth
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	
D 10	
D 11	
D 12	
D 13	
D 14	
D 15	
D 16	
D 17	
D 18	
D 19	
D 20	

Undisturbed Samples

no.	depth	length	blows
U 1			
U 2			
U 3			
U 4			
U 5			
U 6			
U 7			
U 8			
U 9			
U 10			
U 11			
U 12			
U 13			
U 14			
U 15			

Penetration Tests

type/no.	depth	150	75	75	75	75
S/C 1						
S/C 2						
S/C 3						
S/C 4						
S/C 5						
S/C 6						
S/C 7						
S/C 8						
S/C 9						
S/C 10						
S/C 11						
S/C 12						
S/C 13						
S/C 14						
S/C 15						

Bulk Samples

no.	from	to
B 1		
B 2		
B 3		
B 4		
B 5		
B 6		
B 7		
B 8		
B 9		
B 10		
B 11		

Ground Water

depth struck	4.6m		
casing depth	4.5m		
inflow rate	STEADY		
rose to			
sealed out at			
sample no.	W	W	W
sample depth			
water level at start of boring			
water level at finish of boring			4.1m
water level when casing removed			

driller M & BRACE

Borehole complete	~~Yes~~	No
Depth of borehole cased	6.9m	
Piezometer/Standpipe?	depth	

Chisel or pits

from	
to	
hours	

Remarks

HAND DUG PIT TO 1.5m

Water added

from	1.0
to	6.8m
litres	90 GALLONS

BRACE - **DAILY SITE REPORT** - LACK

20/12/91

CATFIELD

3

Ground Conditions

from	to	consistency or density/colour/type
[illegible]		BROWN SAND & TRACES
	7.2m	OF CLAY
[illegible]		BROWN SAND & FINE
	7.5m	GRAVEL
		BH COMP 7.5m
		PIPE INST AT 7.5m
		SLOTTED FROM 7.5 - 0.3m
		CONCRETE FROM 0.3 - GL
		WITH COVER FITTED
		TOP & BOTTOM CAPS
		INST

Disturbed Samples

no.	depth
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	
D 10	
D 11	
D 12	
D 13	
D 14	
D 15	
D 16	
D 17	
D 18	
D 19	
D 20	

Undisturbed Samples

no.	depth	length	blows
U 1			
U 2			
U 3			
U 4			
U 5			
U 6			
U 7			
U 8			
U 9			
U 10			
U 11			
U 12			
U 13			
U 14			
U 15			

Penetration Tests

type/no.	depth	150	75	75	75	75
S/C 1						
S/C 2						
S/C 3						
S/C 4						
S/C 5						
S/C 6						
S/C 7						
S/C 8						
S/C 9						
S/C 10						
S/C 11						
S/C 12						
S/C 13						
S/C 14						
S/C 15						

Bulk Samples

no.	from	to
B 1		
B 2		
B 3		
B 4		
B 5		
B 6		
B 7		
B 8		
B 9		
B 10		
B 11		

Ground Water

depth struck			
casing depth			
inflow rate			
rose to			
sealed out at			
sample no.	W	W	W
sample depth			
water level at start of boring			4.6
water level at finish of boring			4.6m
water level when casing removed			

	Yes	No
Borehole complete		✓
Depth of borehole cased	7.5m	
Piezometer/Standpipe?	depth	7.5m

Chisel or pits

from	
to	
hours	

Remarks

Water added

from	6.3
to	7.5m
litres	20 GALLONS

driller M J BRACE

BRACE - DAILY SITE REPORT - LAUK

Date: 20/12/91

Site: CATFIELD

Sheet: 4

Ground Conditions

from	to	consistency or density/colour/type
0.0	0.3m	TURF OVER TOPSOIL
0.3		FIRM ORANGE/BROWN
	3.4m	SANDY CLAY
3.4	4.4m	BROWN SAND
4.4		BROWN SAND & FINE
	6.0m	GRAVEL

Disturbed Samples

no.	depth
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	
D 10	
D 11	
D 12	
D 13	
D 14	
D 15	
D 16	
D 17	
D 18	
D 19	
D 20	

Undisturbed Samples

no.	depth	length	blows
U 1			
U 2			
U 3			
U 4			
U 5			
U 6			
U 7			
U 8			
U 9			
U 10			
U 11			
U 12			
U 13			
U 14			
U 15			

Penetration Tests

type/no.	depth	150	75	75	75	75
S/C 1						
S/C 2						
S/C 3						
S/C 4						
S/C 5						
S/C 6						
S/C 7						
S/C 8						
S/C 9						
S/C 10						
S/C 11						
S/C 12						
S/C 13						
S/C 14						
S/C 15						

Bulk Samples

no.	from	to
B 1		
B 2		
B 3		
B 4		
B 5		
B 6		
B 7		
B 8		
B 9		
B 10		
B 11		

Ground Water

depth struck			
casing depth			
inflow rate			
rose to			
sealed out at			
sample no.	W	W	W
sample depth			
water level at start of boring			
water level at finish of boring			
water level when casing removed			

	Yes	No
Borehole complete	~~Yes~~	
Depth of borehole cased	6.0m	
Piezometer/Standpipe?	depth	

Chisel or pits

from	
to	
hours	

Water added

from	3.9
to	6.0m
litres	40 GALLONS

Remarks

1-HAND DUG PIT TO 1.5m

driller M J DRAKE

BRACE - **DAILY SITE REPORT** - LACK

23/12/91

CATFIELD

4

Ground Conditions

from	to	consistency or density/colour/type
		BROWN SAND & FINE
	6.3m	GRAVEL
	8.5	BROWN SAND
		PIPE INST AT 8.5m
		SHINGLE FROM 8.5 - 0.3m
		CONCRETE FROM 0.3 - GL
		COVER FITTED.
		CAP - TOP & BOTTOM
		INST

Disturbed Samples

no.	depth
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	
D 10	
D 11	
D 12	
D 13	
D 14	
D 15	
D 16	
D 17	
D 18	
D 19	
D 20	

Undisturbed Samples

no.	depth	length	blows
U 1			
U 2			
U 3			
U 4			
U 5			
U 6			
U 7			
U 8			
U 9			
U 10			
U 11			
U 12			
U 13			
U 14			
U 15			

Penetration Tests

type/no.	depth	150	75	75	75	75
S/C 1						
S/C 2						
S/C 3						
S/C 4						
S/C 5						
S/C 6						
S/C 7						
S/C 8						
S/C 9						
S/C 10						
S/C 11						
S/C 12						
S/C 13						
S/C 14						
S/C 15						

Bulk Samples

no.	from	to
B 1		
B 2		
B 3		
B 4		
B 5		
B 6		
B 7		
B 8		
B 9		
B 10		
B 11		

Ground Water

depth struck	6.3m		
casing depth	6.0m		
inflow rate	STEADY		
rose to	NO RISE		
sealed out at			
sample no.	W	W	W
sample depth			
water level at start of boring			
water level at finish of boring			6.5m
water level when casing removed			

driller M ST BRIDE

Borehole complete	Yes	~~No~~
Depth of borehole cased	8.5m	
Piezometer/Standpipe?	depth	8.5m

Chisel or pits

from	
to	
hours	

Remarks

Water added

from	6.0
to	8.5m
litres	40 GALLONS

BRACE - DAILY SITE REPORT - LACK

Date: 3/1/91

Site: CATFIELD

5

Ground Conditions

from	to	consistency or density/colour/type
GL	0.2m	TURF OVER TOPSOIL
0.2		ORANGE/BROWN SAND
		WITH TRACES OF SILTY
	1.9m	CLAY
1.9		BROWN SAND, M/C GRAVEL
	4.3m	IN PLACES
4.3	4.5m	BROWN SILTY CLAY
4.5		BROWN SAND WITH
		SLIGHT TRACES OF
	6.0m	SILTY CLAY
		PIPE LOST AT 6.0m
		SHINGLE FROM 6.0 - 0.3m
		CONCRETE FROM 0.3 - GL
		WITH COVER LOST.
		TOP & BOTTOM CAPS
		FITTED.

Disturbed Samples

no.	depth
D 1	
D 2	
D 3	
D 4	
D 5	
D 6	
D 7	
D 8	
D 9	
D 10	
D 11	
D 12	
D 13	
D 14	
D 15	
D 16	
D 17	
D 18	
D 19	
D 20	

Undisturbed Samples

no.	depth	length	blows
U 1			
U 2			
U 3			
U 4			
U 5			
U 6			
U 7			
U 8			
U 9			
U 10			
U 11			
U 12			
U 13			
U 14			
U 15			

Penetration Tests

type/no.	depth	150	75	75	75	75
S/C 1						
S/C 2						
S/C 3						
S/C 4						
S/C 5						
S/C 6						
S/C 7						
S/C 8						
S/C 9						
S/C 10						
S/C 11						
S/C 12						
S/C 13						
S/C 14						
S/C 15						

Bulk Samples

no.	from	to
B 1		
B 2		
B 3		
B 4		
B 5		
B 6		
B 7		
B 8		
B 9		
B 10		
B 11		

Ground Water

depth struck	1.8		
casing depth			
inflow rate			
rose to	—		
sealed out at			
sample no.	w	w	w
sample depth			
water level at start of boring			
water level at finish of boring			1.8m
water level when casing removed			

Borehole complete	Yes / ~~No~~
Depth of borehole cased	6.0m
Piezometer/Standpipe?	depth 6.0m

Chisel or pits

from	
to	
hours	

Remarks

HAND DUG PIT TO 1.5m

Water added

from	1.5m
to	6.0m
litres	45 GALLONS

driller M J BRACE

SOLO DESIGNS

BUILDING CONSULTANTS

STOCKYARD BARN
106 NORTH STREET
BURWELL
CAMBRIDGE
CB5 0BB

Tel: Newmarket 742858

4th March, 1992

T. Bear, Esq.,
Land and Water Resource Consultants,
Quy Station,
Stow Cum Quy,
Cambridge.
CB5 9AJ

Dear Mr. Bear,

Re: Catfield Bore Holes

As instructed on your order no. 0115 we carried out a level survey of 8 no. bore-holes at the above site on 25th February, 1992. The results of which are indicated below. The levels were taken at the points you requested and are given in metres above sea level.

Trial bore-hole	1	1.505m above sea level	) Related to O.B.M. on
" "	05	2.630m " "	) Guttermere Bridge
Bore-hole	P6	3.172m " "	) farm building.
Bore-hole	P1	7.074m " "	- Related to O.B.M. on Catfield Post Office
Bore-hole	P2	7.405m " "	)
"	P3	4.505m " "	) Related to O.B.M.
"	P4	6.754m " "	) on Catfield Church.
"	P5	1.630m " "	)

Please do not hesitate to contact me if you have any queries. Meanwhile I enclose our account, which I have set at the upper level, due to increased travelling and surveying time as caused by the inclement weather conditions encountered on the day.

Also enclosed, the Allen key you gave us on site.

Lastly I wonder if you have yet made a decision on the levels for the Thetford Site?

I look forward to hearing from you soon.

Yours sincerely,

M. R. Dunes-Smith

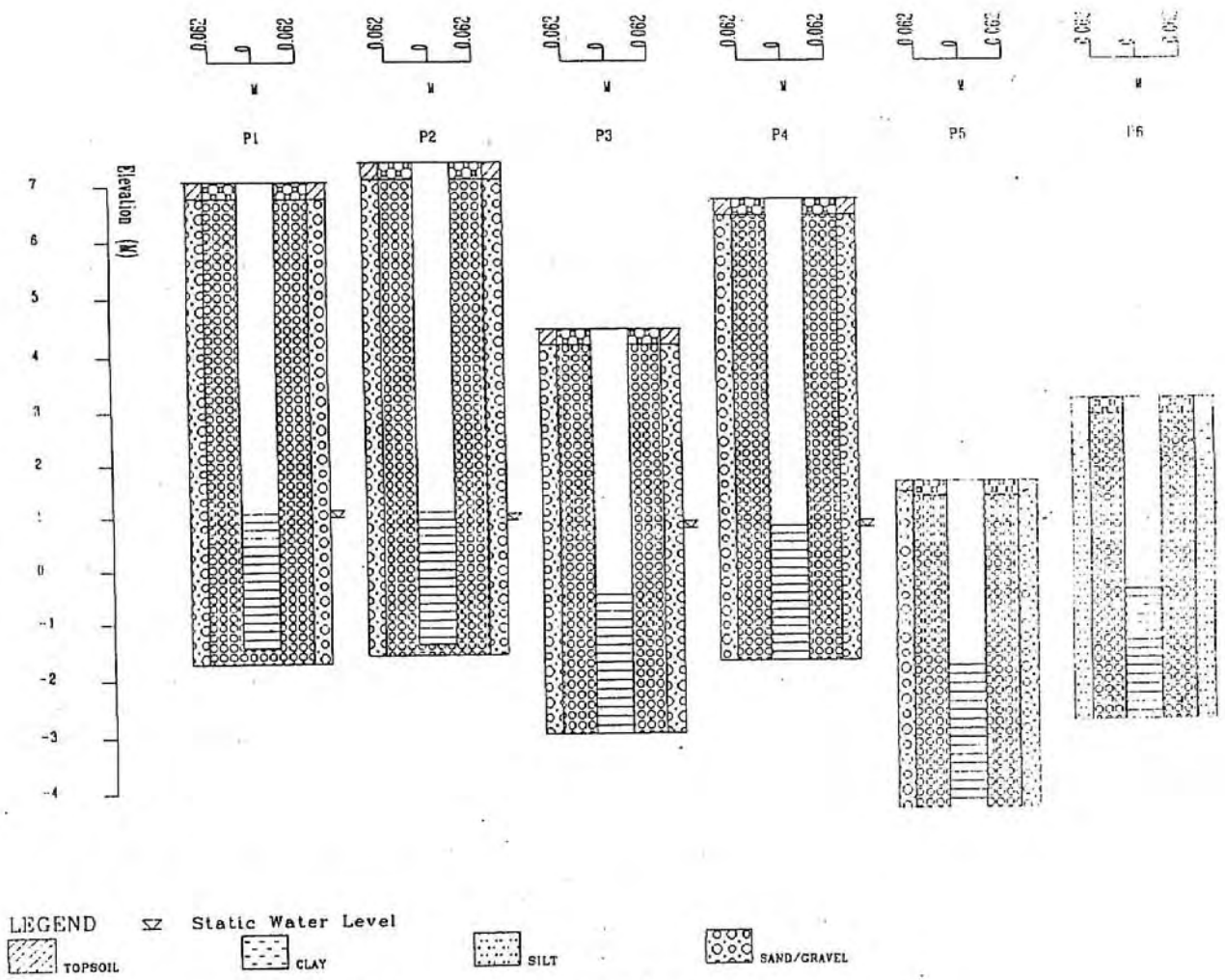


Figure 3 Construction of piezometers

(For Institute use only) Geological Classification	Nature of Strata (If measurements start below ground surface, state how far.)	Thickness Feet	Thickness Inches	Thickness Metres	Depth Feet	Depth Inches	Depth Metre
	Top soil and loam	4	0	1.21	4	0	1.21
	Soft brown Sand	6	0	1.82	10	0	3.04
Not classified in detail.	Coarse light brown Sand, clay and small gravel	4	0	1.21	14	0	4.26
Thin Glacial deposits (to c 14 ft)	Red brown Sand with small gravel	2	0	0.60	16	0	4.87
on Crag (to c 65 ft)	Sharp light brown Sand and gravel	19	0	5.79	35	0	10.66
	Soft brown sandy clay	6	6	1.97	41	6	12.64
	Soft brown and blue sandy clay.	2	6	0.75	44	0	13.41
on Tertiaries	Tough light grey sandy clay	5	0	1.52	49	0	14.93
(London Clay and W. + Reading Beds)	Stiff blue-grey clay with streaks of Sand	7	0	2.13	56	0	17.06
	Tough blue-grey clay with bands of Sand and grit	5	6	1.67	61	6	18.74
	Hard blue clay with bands of Sand and gravel	4	0	1.21	65	6	19.96
	Blue-grey clay with bands of Sand and Silt	4	6	1.36	70	0	21.33
Crag ↓	Blue clay with bands of Sand and Shells	15	0	4.57	85	0	25.90
	Soft blue clay with bands of Sand and Shells	10	0	3.04	95	0	28.95
	Tough green Sand and clay	20	0	6.09	115	0	35.05
	Soft grey sandy clay	13	0	3.96	128	0	39.02
	Hard grey and green Sand and clay	8	0	2.43	136	0	41.45
	Coarse grey sand with broken Shells	43	0	13.10	179	0	54.55
	Sand, shells and small flints with large pieces of green rock.	5	0	1.52	184	0	56.08
	Firm light brown silty clay	6	0	1.82	190	0	57.91
	Soft blue and brown sandy clay	7	0	2.13	197	0	60.04

Rev. R G. 30/9/75

Date Bank

RECORD OF WELL

N. 14094

148 / 40 F TG31/38

At Salhouse

Town or Village ......

County Norfolk

EXACT SITE OF WELL

Six-inch County Sheet NORFOLK 53 NW/E

Six-inch National Grid sheet and reference TG 31 NE (3853 1995)

For Anglian Water Authority, Norwich Water Division

State whether owner, tenant, builder, contractor, consultant, etc.:—

Address (if different from above) 28, St Giles Street, Norwich NR2 1TJ.

Level of ground surface above sea level (O.D.) About 16 ft (...... m)

*DELETE AS NECESSARY

If well top is not at ground level, state how far above:* below: — ft (— m)

SHAFT — ft (...... m); diameter ...... ft (...... m);

HEADINGS (please attach details—dimensions and directions)

BORE 197 ft (60.04 m); diameter: at top 30 in (762 mm); at bottom 21 in (533.4 mm)

Full details of permanent lining tubes (position, length, diameter, plain, slotted, etc.) About 59 (192 ft) metres of 16 inch (406 mm) Johnson Screen, of which the top 8 (26 ft) metres was plain tube. Top 1 metre below surface. Above tubes are cement grouted outside, from about 19 metres below surface up to the top of the tubes.

Water struck at depths of 14 ft (4.26 m) below well top

TEST CONDITIONS

Rest level of water 22 ft (6.79 m) above* below well top. Suction at 158 ft (48 m)

Yield on ...... for 168 hours* days* test pumping at 29,900 galls (37.7577 l/s) per hour with depression to 153' 9" ft (46.85 m) below well top. Recovery to rest level in 5 hours

Capacity of pump ...... g.p.h. (...... m³/h)

Date of measurements 5th to 12th June 1975

DESCRIPTION OF PERMANENT PUMPING EQUIPMENT: not known. Date Bank

NORMAL CONDITIONS

Make and/or type ...... Motive power ......

Capacity ...... galls (...... m³) per hour. Suction at ...... ft (...... m) below well top. Amount pumped ...... galls (...... m³) per day. Estimated consumption ...... galls (...... m³) per week

Well made by Le Grand Well Drilling and Engineering Co. Ltd. Date of sinking commenced 10/3/1975 completed 8/5/1975.

ADDITIONAL NOTES ANALYSIS (please attach copy if available)

LOG OF STRATA OVERLEAF

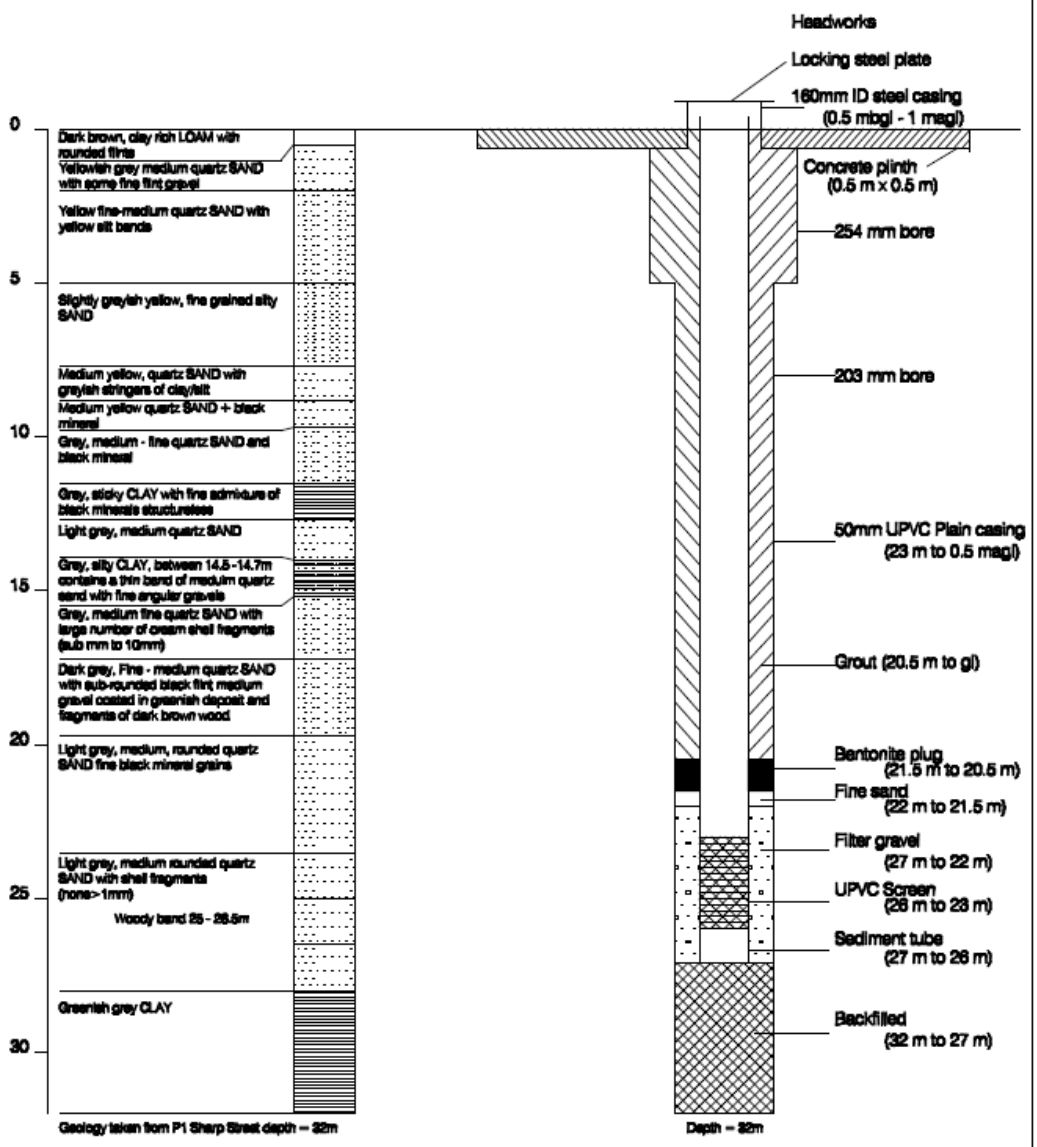
Temporary 33, 30, 27, 24, and 21 inch tubes used to support strata before the 16" Johnson slotted screen tube was fixed. Annular space outside of the screen and the temporary tubes was filled with pea gravel during the withdrawal of the temporary tubes. Top of pea gravel 70 feet, then a grommet to support cement grout up to 1.0 metre below ground level.

Received from	Le Grand
Date	9-7-75
Observation well	
Recorder	
E.R. log	
Site marked on 1" map	☐
6" map	☐
(use symbol)	
Copy to	A.W.A. (S.W.N.)
	C.W.P.U. / W.R.C.
Date	

INSTITUTE OF GEOLOGICAL SCIENCES, WATER DEPARTMENT, SOUTH KENSINGTON, LONDON, S.W.7.

Borehole Lithology & Construction: Catfield Sharp Street P1

Grid Reference:	TG 3813 2011	Aquifers:	Crag
Constructed:	June 2001	Well top maOD:	2.159
Datum Location:	Ground Level	Ground Level maOD:	1.685
		Water Level maOD:	0.689 (20/02/2002)



NOTES

All depths are in metres below ground level unless otherwise stated

PVC slotted and plain casing with ID 50 mm

Slot width 2 mm with geotextile wrap

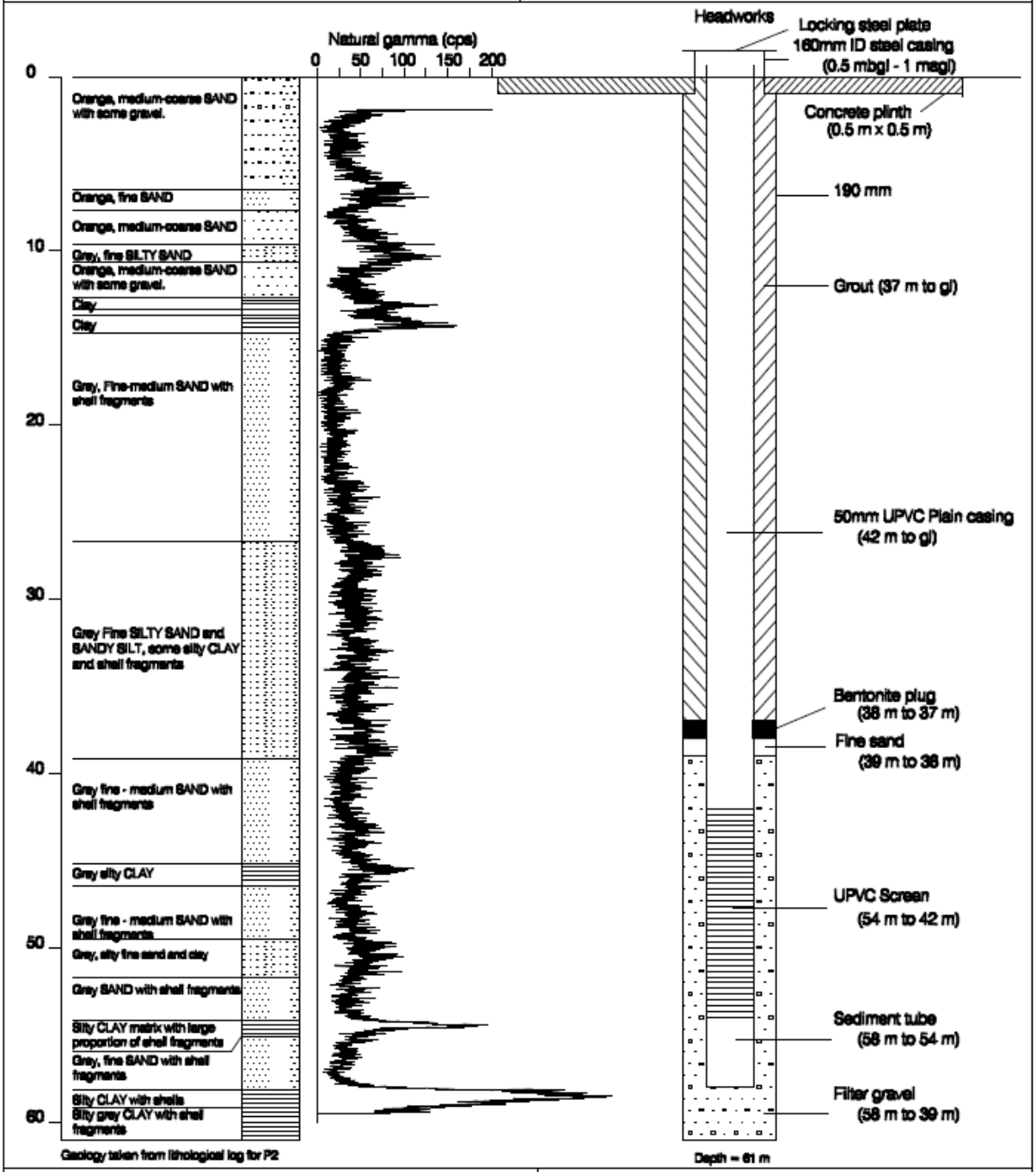
AMP 3 Investingations
Catfield Fen
Observation Boreholes 2001

bsi

Hydrogeological Services International Ltd
77 Portsmouth Road, Guildford. GU2 4BB
01483 504221 mail@hsiltd.co.uk

Borehole Lithology & Construction: Catfield Sharp Street P2

Grid Reference:	TG 3813 2011	Aquifers:	Crag
Constructed:	June 2002	Well top maOD:	2.108
Datum Location:	Ground Level	Ground Level maOD:	1.628
		Water Level maOD:	0.04 (11/07/02)



NOTES

All depths are in metres below ground level unless otherwise stated

PVC slotted and plain casing with ID 50 mm

Slot width 0.5 mm

Gravel Pack 2-5 mm

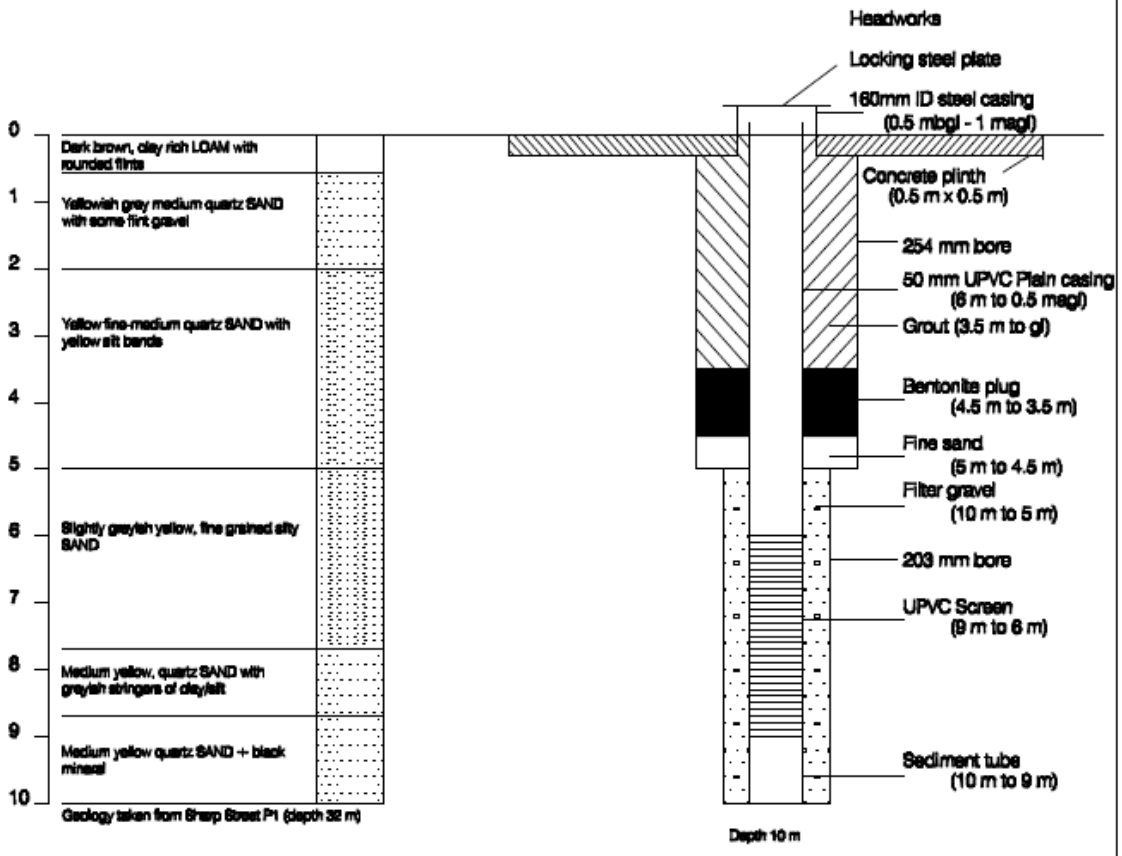
AMP 3 Investingations
Catfield Fen
Observation Boreholes 2002

bsi

Hydrogeological Services International Ltd
77 Portsmouth Road, Guildford, Surrey. GU2 4BB
01483 504221 mail@hsiltd.co.uk

Borehole Lithology & Construction: Catfield Sharp Street P3

Grid Reference:	TG 3813 2011	Aquifer:	Drift
Constructed:	June 2001	Well top maOD:	2.272
Datum Location:	Ground Level	Ground level maOD:	1.716
		Water level maOD:	1.282 (20/02/2002)



NOTES

All depths are in metres below ground level unless otherwise stated

PVC slotted and plain casing with ID 50 mm

Slot width 2 mm

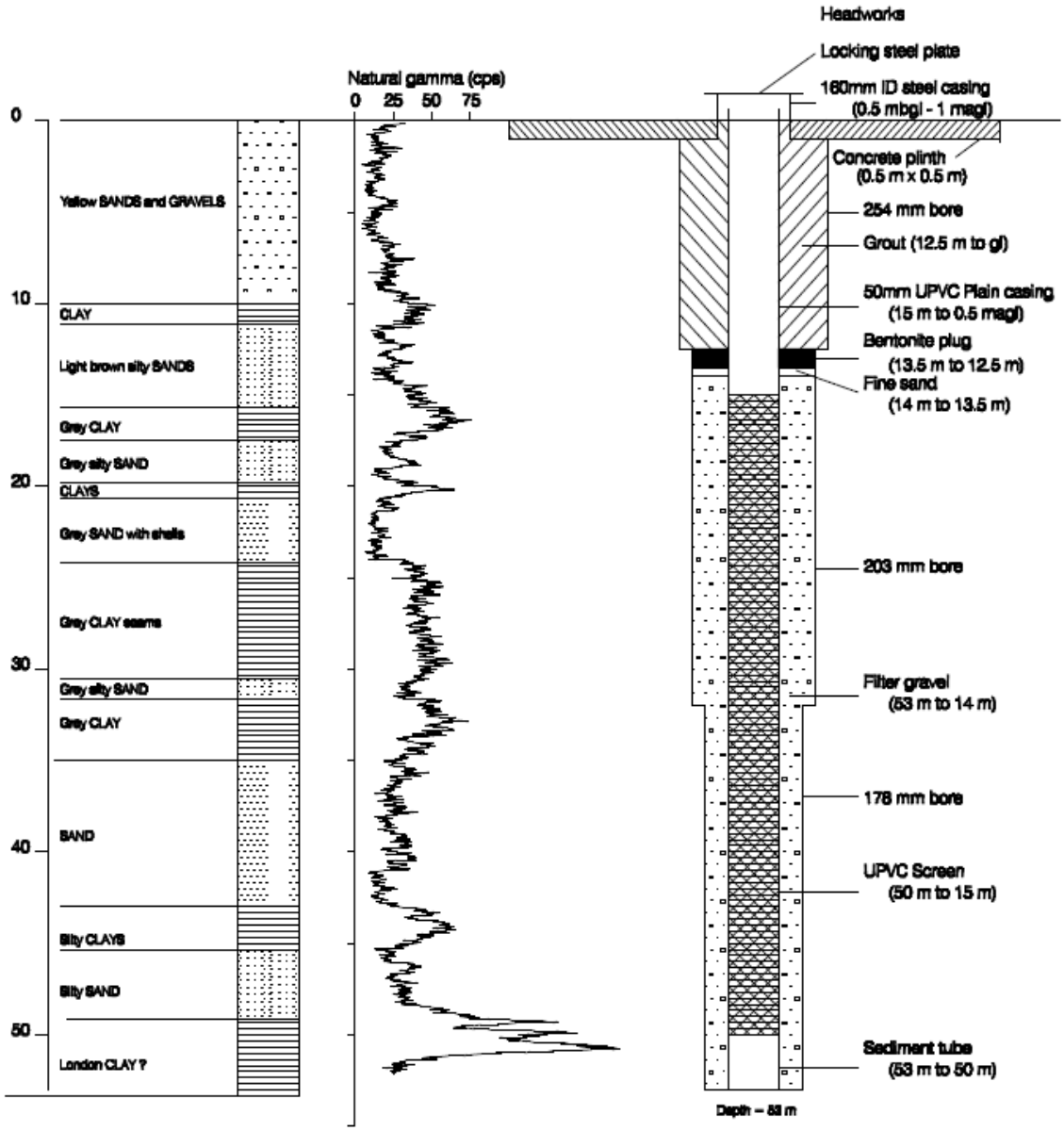
AMP 3 Investingations
Catfield Fen
Observation Boreholes 2001

bsi

Hydrogeological Services International Ltd
77 Portsmouth Road, Guildford. GU2 4BB
01483 504221 mail@hsiltd.co.uk

Borehole Lithology & Construction: Catfield Ludham PS P4 (Abandoned)

Grid Reference:	TG 3853 1995	Aquifers:	Crag
Constructed:	July 2001	Well top maOD:	6.542
Datum Location:	Ground Level	Ground Level maOD:	5.856
		Water Level maOD:	3.042 (20/02/2002)



Geology taken from geophysical log and drillers lithological log for P4

Note: The borehole is not used for water level monitoring as it has been found to be hydraulically insensitive

NOTES

All depths are in metres below ground level unless otherwise stated

PVC slotted and plain casing with ID 50 mm

Slot width 2 mm with geotextile wrap

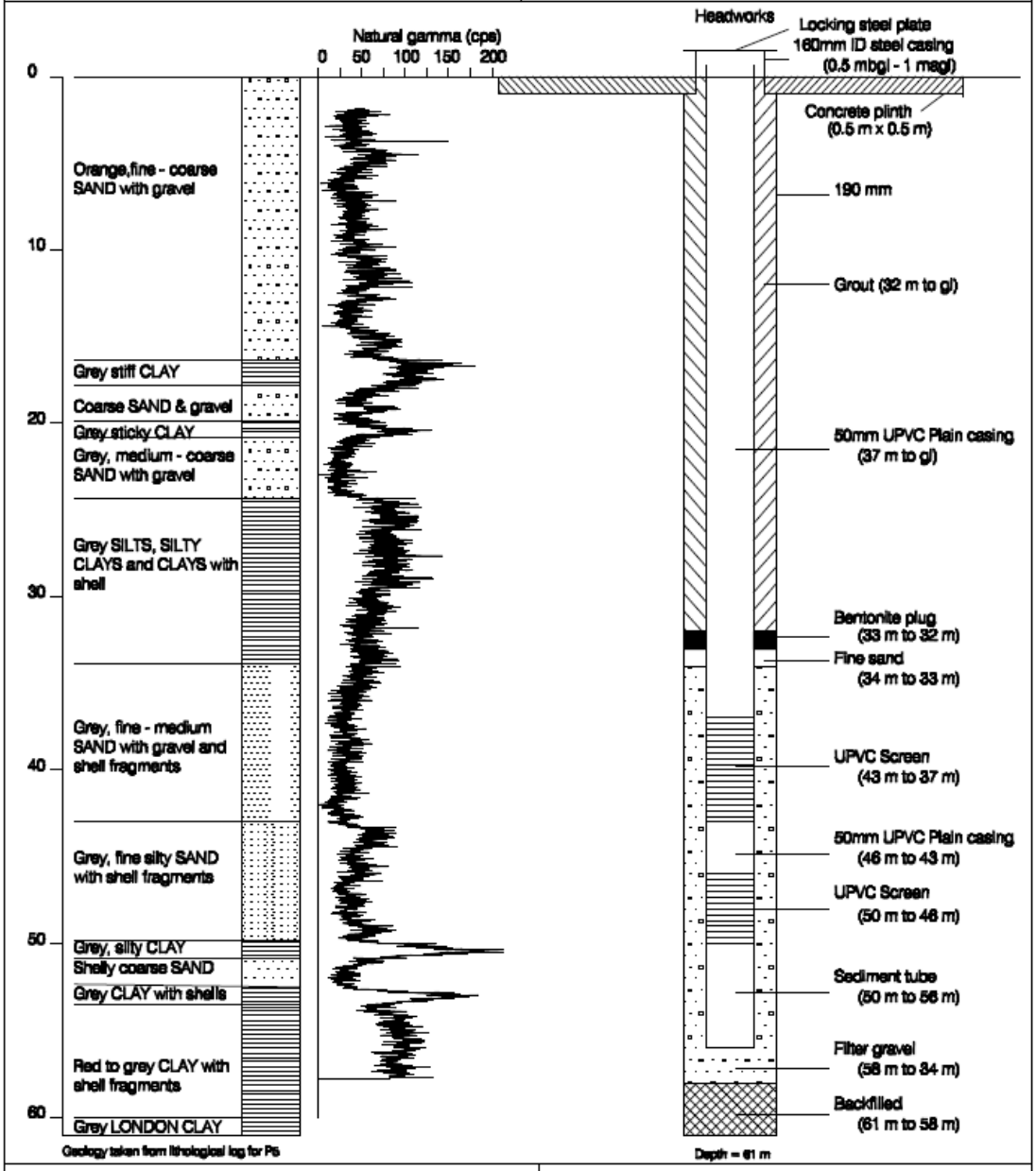
AMP 3 Investingations
Catfield Fen
Observation Boreholes 2001

bsi

Hydrogeological Services International Ltd
77 Portsmouth Road, Guildford. GU2 4BB
01483 604221 mail@hsiltd.co.uk

Borehole Lithology & Construction: Catfield Ludham PS P5

Grid Reference:	TG 3853 1995	Aquifers:	Crag
Constructed:	June 2002	Well top maOD:	6.615
Datum Location:	Ground Level	Ground Level maOD:	5.845
		Water Level maOD:	-1.245 (11/07/2002)



NOTES

All depths are in metres below ground level unless otherwise stated

PVC slotted and plain casing with ID 50 mm

Slot width 0.5 mm

Gravel Pack 2-5 mm

AMP 3 Investingations
Catfield Fen
Observation Boreholes 2001

bsi

Hydrogeological Services International Ltd
77 Portsmouth Road, Guildford. GU2 4BB
01483 504221 mail@hsiltd.co.uk

Drillers Log for Mr Alston's Plumgate Road abstraction borehole

RECORD OF WELL

For Institute use only Licence No.

N .....

TG 32 /101

At Holly Farm

..... Wood Street

Town or Village Catfield

County Norfolk

148 TG32 SE/2

EXACT SITE OF WELL

Six-inch National Grid sheet and reference TG 3818 2230

For W. & A. W. Alston AWA licence No. E7:34:9:6:108

State whether owner, tenant, builder, contractor, consultant, etc.: .....

Address (if different from above) .....

.....

Level of ground surface above sea level (O.D.) ..... ft (.....m)

*DELETE AS NECESSARY

If well top is not at ground level state how far above:* below: .....ft (.....m)

SHAFT.....ft (.....m); diameter.....ft (.....m);

HEADINGS (please attach details—dimensions and directions)

BORE 68 ft (20.73 m); diameter: at top 12 in (305 mm);

at bottom.....in (.....mm)

Full details of permanent lining tubes (position, length, inner and outer diameters, plain slotted etc.):

no details

.....

.....

.....

TEST CONDITIONS

Water struck at depths of .....ft (.....m) below well top

Rest level of water.....ft (.....m) above* below well top. Suction at..... ft (.....m)

Yield on.....hours'* days' test pumping at.....galls per ..... (..... l/s) with

depression to.....ft (.....m) below well top. Recovery to rest level in ..... mins* hours

Capacity of pump.....g.p.h. (.....l/s)

Date of measurements.....

NORMAL CONDITIONS

DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:

Make and/or type ..... Motive power.....

Capacity.....galls (.....m³) per hour. Suction at ..... ft (.....m)

below well top. Amount pumped.....galls (.....m³) per day. Estimated

consumption .....galls (.....m³) per week

Well made by Dereham Water Supplies..... Date of sinking Jan 1986

ADDITIONAL NOTES ANALYSIS (please attach copy if available)

LOG OF STRATA OVERLEAF

Received from AWA

.....

.....

Date 24.3.86

Observation well.....

Recorder .....

ER log .....

Site marked on

1" map .....

6" map—Grid Sheet.....

(use symbol)

Copy to.....

.....

Date.....

INSTITUTE OF GEOLOGICAL SCIENCES
HYDROGEOLOGY UNIT
EXHIBITION ROAD
LONDON SW7 2DE

IGS 2454 10 000 7/79

For Institute use only

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA *If measurements start below ground surface, state how far.*	THICKNESS Feet	Inches	Metres	DEPTH Feet	Inches	Metres
	Topsoil	2	-	0.61	2	-	0.61
? Drift	Marl sandy clay	3	-	0.91	5	-	1.52
on Crag	Silver sand and gravel	12	-	3.66	17	-	5.18
	Yellow and grey clays	10	-	3.05	27	-	8.23
	Green sand and grey clay	10	-	3.05	37	-	11.28
	Green sand	3	-	0.91	40	-	12.19
	Grey clay	1	-	0.31	41	-	12.50
	Grey sand and gravel	4	-	1.22	45	-	13.72
	Grey sandy clay	8	-	2.43	53	-	16.15
	Fine green sand and clay	4	-	1.22	57	-	17.37
	Fine green sand	11	-	3.36	68	-	20.73

Drillers Log for Mr Alston's Ludham Road abstraction borehole

A.W.A. Eastern.

RECORD OF WELL

For Institute use only Licence No. N —

Tg 32/102 102-1

148 Tg32SE/3

At Holly Farm

Town or Village Wood Street, Catfield

County G.T. Yarmouth

EXACT SITE OF WELL

Six-inch National Grid sheet and reference Tg 3859 2060

For W.A.W. Alston

State whether owner, tenant, builder, contractor, consultant, etc.:

Address (if different from above)

Level of ground surface above sea level (O.D.) ..... ft (..... m)

*DELETE AS NECESSARY

If well top is not at ground level state how far above:* below: ..... ft (..... m)

SHAFT..... ft (..... m); diameter..... ft (..... m);

HEADINGS (please attach details—dimensions and directions)

BORE..... ft (33·52 m); diameter: at top..... in (300 mm);

at bottom..... in (..... mm)

Full details of permanent lining tubes (position, length, inner and outer diameters, plain slotted etc.):

12" dia. lined with 29 metres screen. 6 metres plain casing.

TEST CONDITIONS

Water struck at depths of ..... ft (..... m) below well top

Rest level of water..... ft (..... m) above* below well top. Suction at..... ft (..... m)

Yield on..... hours'* days' test pumping at..... galls per ..... (..... l/s) with

depression to..... ft (..... m) below well top. Recovery to rest level in ..... mins* hours

Capacity of pump..... g.p.h. (..... l/s)

Date of measurements... July 1987

NORMAL CONDITIONS

DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:

Make and/or type ..... Motive power.....

Capacity..... galls (..... m^3) per hour. Suction at ..... ft (..... m)

below well top. Amount pumped..... galls (..... m^3) per day. Estimated

consumption ..... galls (..... m^3) per week

Well made by ..Dereham Water Supplies..... Date of sinking... July 1987.....

ADDITIONAL NOTES ANALYSIS (please attach copy if available)

LOG OF STRATA OVERLEAF

Received from A.W.A. Norwich Division

Date... 11/3/88

Observation well.....

Recorder.....

ER log.....

Site marked on

1" map.....

6" map—Grid Sheet.....

(use symbol)

Copy to.....

Date.....

INSTITUTE OF GEOLOGICAL SCIENCES
HYDROGEOLOGY UNIT
EXHIBITION ROAD
LONDON SW7 2DE

IGS 2484 10 000 7/79

102-2.

For Institute use only

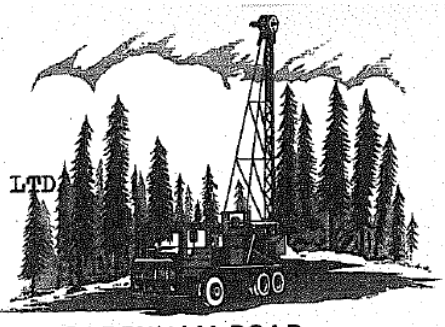
Geological Classification	Nature of Strata *If measurements start below ground surface, state how far.*	Thickness Feet	Thickness Inches	Thickness Metres	Depth Feet	Depth Inches	Depth Metres
	Top Soil			·31			·31
? Glacial Sand and Gravel ? of Kesgrave Formation	Orange Sand, Gravel			5·79			6·1
	Orange Sand, Gravel, Clay			1·52			7·6
	Hard Grey Clay, Sand, Stone			·31			7·9
	Blowing Orange Sand, Gravel			5·80			13·7
	Blowing Yellow Sand			1·22			14·9
	Green Sand, Grey Clay, Shells, Stone			2·44			17·4
	Grey Sand, Clay			0·91			18·3
CRAG	Hard Grey Clay			2·44			20·7
	Grey Sand, Shells, some Clay			0·91			21·6
	Hard Grey Clay			0·61			22·3
	Soft Clay, Shells, Stone, Sand, Flint			0·91			23·2
	Blowing Grey Sand, Shells			8·53			31·6
	Grey Sand (now Blowing) Clay, Shells			1·8			33·5

Drillers Log for Mr Alston's Ludham Road abstraction borehole – letter from the driller Dereham Water Supplies

DEREHAM WATER SUPPLIES LTD

WATER SUPPLY ENGINEERS

BOREHOLES DRILLED ACIDISED AND TESTED
ALL TYPES OF PUMPS SUPPLIED AND REPAIRED
PUMP AND GENERATOR HIRE · MONO SERVICE AGENTS



BRADENHAM ROAD
SCARNING · NORFOLK NR19 2LA
WENDLING (036287) 613

HJVH/SJH.

30th July 1987.

Anglian Water,
Yare House,
62-64, Thorpe Road,
Norwich,
NR1 1SA.

For the attention of Mr.Hockerday.

Dear Sir,

Please find herewith Well Log for borehole constructed for Mr.Alston, at Catfield.

Original borehole (collapsed 1993?).

Well Log.

0.3	0 - 1 ft.	Top Soil.
	1 - 20 ft.	Orange Sand/ Gravel.
6.1	20 - 25 ft.	Orange Sand/Gravel/Clay.
7.6	25 - 26 ft.	Hard Grey Clay/Sand/Stone.
7.9	26 - 45 ft.	Blowing Orange Sand/Gravel.
13.7	45 - 49 ft.	Blowing Yellow Sand.
14.9	49 - 57 ft.	Green Sand, Grey Clay/Shells/Stone.
17.4	57 - 60 ft.	Grey Sand/Clay.
18.3	60 - 68 ft.	Hard Grey Clay.
20.7	68 - 71 ft.	Grey Sand/Shells, some clay.
21.6	71 - 73 ft.	Hard Grey Clay.
22.3	73 - 76 ft.	Soft Clay/Shells/Stone/Sand/Flint.
23.2	76 -104 ft.	Blowing Grey Sand/Shells.
31.6	104 -110 ft.	Grey Sand (now blowing) Clay/Shells.

33.5

12" dia. Lined with 29 metres screen. 6 metres plain casing.

Yours faithfully.

S. Hewson
PP Henry.J.V.Hewson.

Construction details for AWS Ludham Borehole 1 (BGS No. 148/40d - Drillers log not publicly available from British Geological Survey website)

(b) (formerly Air Ministry. No. 2 bore). (Partly filled in). Surface +20½. Lining tubes: 138 x 18 in from 2 down; 131 x 15 in from 119 down. Ck -207½. Water struck at +8½, -229½, -256½ and -269½. R.W.L. +½. P.W.L. -5½. Suction -183½. Yield 10,060 g.p.h. (6 d. test). Hardness: P. 45, T. 180. Anal. *LeGrand, Apr., 1944.*

(c) Trial. Surface +20½. Bore 191. Lining tubes: 176 x 6 in from 3 above; 21 x 4½ in from 168 down. (perforated 173 to 185). Water struck at +½. When bore 174, R.W.L. -9½; bore 191, R.W.L. +3¼. P.W.L. +½. Yield 1,100 g.p.h. (27½ h. test). Hardness: total 268. Anal. R.W.L. +2½. P.W.L. -1. Recovered to +3 in 110 min. Yield 3,800 g.p.h. (72 h. test). *Smith, F., Jan., 1951.*

AWS LUDHAM BOREHOLE 1

TG31 NE 24 25 26 27 28

(d) Surface +20½. Bore 196. Lining tubes: 168½ x 24 in from surface; 79½ x 15 in from 116½ down (perforated 167 to 187); gravel pack outside 15 in tubes from 120 down. R.W.L. +2½. P.W.L. -36½. Yield 32,000 g.p.h. (10 d. test). *Smith, F., July 1951.*

Surged. Yield 45,000 g.p.h. Air lift. *1951.* R.W.L. -1½. P.W.L. -6½. Yield 3,700 g.p.h. *Oct. 1955.* R.W.L. +1½. P.W.L. -9½. Yield 9,000 g.p.h. *Oct. 1957.* Anal. *Dec. 1959.* Anal. *Apr. 1960.* R.W.L. -½. P.W.L. -11½. Yield 9,000 g.p.h. *Oct. 1964.*

(e) (for Cambridge University). Trial. (Sealed). Proc. Roy. Soc., Ser. B, *155*, no. 960, p. 437. Surface +21. Bore 4 in. *Wimpey, 1959.*

(a)		Black earth	...	1½	1½
	Pleist. Drift	Brown sand	...	4½	6
	12	Brown sand with loam streaks	...	6	12
		Light brown sand and ballast	...	13	25
		Brown boiling sand	...	23	48
		Grey sand with blue loam layers	...	13	61
		Blue loam	...	3	64
	Crag	Grey sand and shell with			
	101	black flints	...	3	67
		Grey loam	...	4	71
		Grey sand and shell	...	5	76
		Bed of black flints	...	2	78
		Grey loam	...	7	85
		Grey sand and some shell	...	5	90
		Grey loam and sand streaks	...	22	112
		Grey flints	...	1	113
		Brown brickearth	...	49	162
	? Crag)	Black heavy loam	...	27	189
	LC)	Brown brickearth	...	6	195
	125	Grey and green loam	...	33	228
		Brown loam	...	7	235
		Green loam	...	3	238
	UCk	Chalk	...	42	280
	47				
(b)		Top soil	...	2½	2½
	Pleist. Drift	Sand	...	5½	8
	13	Sand, stones with layers of loamy sand	...	5	13
		Gravel	...	7	20
		Hard loamy sand	...	10	30
		Blowing sand	...	25	55
	Crag	Grey sand with layers			
	177	of blue loam	...	18	73
		Blue loam, shells and black flints	...	104	177
		Black flints	...	2	179
		Shells	...	11	190

Drillers Log for AWS Ludham Borehole 2 (BGS No. 148/40f)

RECORD OF WELL

For Institute use only Licence No. N. 14094

148 TG31/38
40 F

At Ludham

Town or Village

County Norfolk

EXACT SITE OF WELL

Six-inch County Sheet NORFOLK 53 NW/E

Six-inch National Grid sheet and reference TG. 31 NE (3853 1995)

For Anglian Water Authority. Norwich Water Division

State whether owner, tenant, builder, contractor, consultant, etc.:—

Address (if different from above) 26, St Giles Street

Norwich NR2 1JJ

Level of ground surface above sea level (O.D.) About 16. ft (..... m)

*DELETE AS NECESSARY

If well top is not at ground level, state how far above:* below: ..... ft (..... m)

SHAFT..... ft (..... m); diameter..... ft (..... m);

HEADINGS (please attach details—dimensions and directions)

BORE 197 ft (60.04 m); diameter: at top 30 in (762 mm cm); at bottom 21 in (533.4 mm cm)

Full details of permanent lining tubes (position, length, diameter, plain, slotted, etc.)

About 59 metres (194 ft) of 16 (406 mm) inch Johnson Screen, of which the top 8 metres (26 ft) was plain tube, 1st 1 metre below surface. Above tubes are cement grouted outside, from about 19 metres below surface up to the top of the tubes.

Water struck at depths of 14 ft (4.26 m) below well top

Rest level of water 22 ft (6.79 m) above* below well top. Suction at 158 ft (48 m)

TEST CONDITIONS

Yield ~~on completion~~ after development 168 hours'* ~~days'~~ test pumping at 29,900 galls (37.7577 4/5) m³) per hour with depression to 153' 9" ft (46.85 m) below well top. Recovery to ~~rest level~~ in 5 hours (64 ft) during a 19.50 metres in 1 minute

Capacity of pump ..... g.p.h. (..... m³/h)

Date of measurements 5th to 12th June 1975

NORMAL CONDITIONS

DESCRIPTION OF PERMANENT PUMPING EQUIPMENT: Date Bank

Make and/or type..... Motive power.....

Capacity..... galls (..... m³) per hour. Suction at..... ft (..... m)

below well top. Amount pumped..... galls (..... m³) per day. Estimated

consumption..... galls (..... m³) per week

Well made by Le Grand Well Drilling and Engineering Co. Ltd. Date of sinking commenced 10/3/1975 completed 8/5/1975

ADDITIONAL NOTES ANALYSIS (please attach copy if available)

LOG OF STRATA OVERLEAF

Temporary 33, 30, 24, 24, and 21 inch tubes used to support strata before the 16" Johnson slotted screen tube was fixed. Annular space outside of the screen and the temporary tubes was filled with Pea gravel during the withdrawal of the temporary tubes. 1st of Pea gravel 70 feet, then a grommet to support cement grout up to 1.00 metres below ground level

INSTITUTE OF GEOLOGICAL SCIENCES,
WATER DEPARTMENT,
SOUTH KENSINGTON,
LONDON, S.W.7.

Received from Le Grand

Date 9-7-75

Observation well

Recorder

E.R. log

Site marked on

1" map

6" map

(use symbol)

Copy to A.W.A. (S.S.N.)

Date

(For Institute use only) GEOLOGICAL CLASSIFICATION	NATURE OF STRATA If measurements start below ground surface, state how far.	THICKNESS Feet	Inches	Metres	DEPTH Feet	Inches	Metre
	Top soil and loam	4	0	1.21	4	0	1.21
	Soft brown Sand	6	0	1.82	10	0	3.04
Not classified in detail. Thin glacial deposits (to c 14 ft) on Crag (to c 65 ft) on Tertiaries (London Clay and W. & Reading Beds).	Coarse light brown Sand, clay and small gravel	4	0	1.21	14	0	4.26
	Red brown Sand with small gravel	2	0	0.60	16	0	4.87
	Sharp light brown Sand and gravel	19	0	5.79	35	0	10.66
	Soft brown sandy clay	6	6	1.97	41	6	12.64
	Soft brown and blue sandy clay.	2	6	0.75	44	0	13.41
	Tough light grey sandy clay	5	0	1.52	49	0	14.93
	Stiff blue-grey clay with streaks of Sand	7	0	2.13	56	0	17.06
	Tough blue-grey clay with bands of Sand and flint	5	6	1.67	61	6	18.74
	Hard blue clay with bands of Sand and gravel	4	0	1.21	65	6	19.96
	Blue-grey clay with bands of Sand and Silt	4	6	1.36	70	0	21.33
	Blue clay with bands of Sand and Shells	15	0	4.57	85	0	25.90
	Soft blue clay with bands of Sand and Shells	10	0	3.04	95	0	28.95
	Tough green Sand and clay	20	0	6.09	115	0	35.05
	Soft grey sandy clay	13	0	3.96	128	0	39.02
	Hard grey and green Sand and clay	8	0	2.43	136	0	41.45
	Coarse grey sand with broken Shells	43	0	13.10	179	0	54.55
	Sand, shells and small flints with large pieces of green rock.	5	0	1.52	184	0	56.08
	Firm light brown silty clay	6	0	1.82	190	0	57.91
	Soft blue and brown sandy clay	7	0	2.13	197	0	60.04
Dai R.G. 30/9/75	Dai. Bank						

Abridged Drillers Log for the Royal Society borehole at AWS Ludham (BGS No. 148/40e)

Royal Society Borehole, Ludham (TG 31 NE 16) TG 3855 1992

Drilled in 1959
Surface level + 6.1 m
(Abridged and metricated from West, 1961)

	Thickness m	*Depth* m
?NORWICH BRICKEARTH (CORTON FORMATION)		
Sand, brown; stones	3.20	3.20
CRAG		
Sand, brown; clay seams, iron pan, sporadically pebbly	9.60	12.80
Sand, grey; clay partings, micaceous	3.35	16.15
Clay and silt, grey; sand partings, shell fragments	4.73	20.88
Core lost, except between 22.86 and 23.47 m; probably shelly sand	3.81	24.69
Clay, silty with sand partings, grey; locally shelly	9.14	33.83
Sand, shelly, grey; thin clay seams	18.90	52.73
Sand, shelly, grey; gravelly in places	2.74	55.47
Sand, shelly, grey; black flints up to 75 mm in diameter	0.31	55.78
LONDON CLAY		
Clay, brown	0.30	56.08