

B4S
S097

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SITE

PINCHES

Borehole 1 Test No 1
 Test Section 3.00 to 4.00m
 Length of Test Section (L) 1.00m
 Diameter of test section (D) 110mm
 Depth to water level before test Dry
 Depth of water level after test
 Gauge Height above ground level(Hg) 0.40m
 Depth of borehole 4.00m
 Depth of casing 1.00m
 Centre test of Section 3.50m
 Date of test 8/9/05
 Rock type: Sandstone

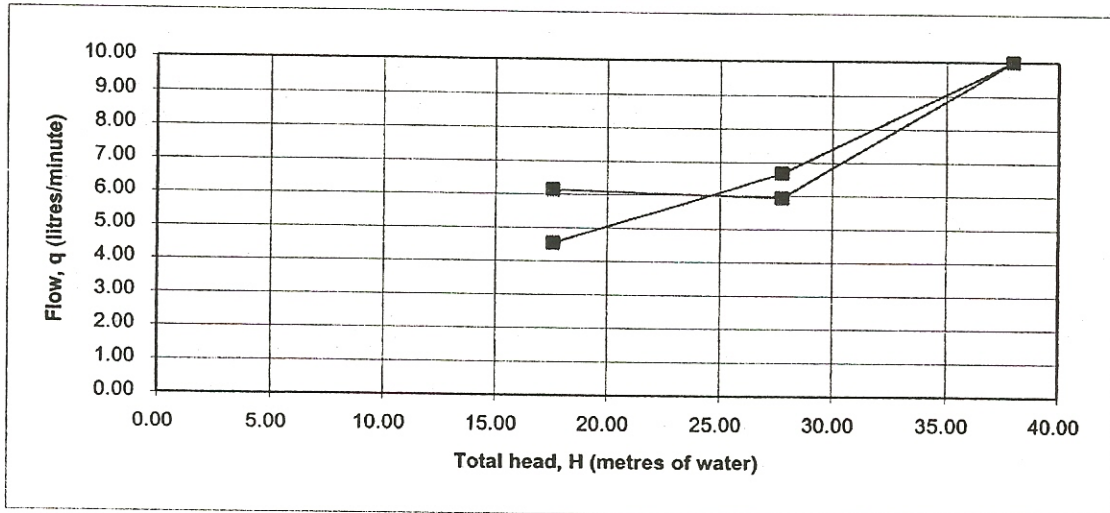
Pressure gauge type Bourdon Drill rod type HWY
 Range Water source Bowser (1100 gal)
 Number Pump type Triplex 40
 Flowmeter type KENT Test type Double packer
 Size Packer type Pneumatic
 Number Packer pressures (kPa) 1200

Stage	Gauge pressure (kPa)	TIME (minutes) AND WATER QUANTITIES (litres)						Average flow, q (l/min)
		Time	0	5	10	15		
1	100	Flowmeter reading	40126.0	40157.0	40176.0	40194.0	4.53	
		Water take		31.0	19.0	18.0		
2	200	Flowmeter reading	40202.0	40214.0	40266.0	40302.0	6.67	
		Water take		12.0	52.0	36.0		
3	300	Flowmeter reading	40314.0	40394.0	40454.0	40464.0	10.00	
		Water take		80.0	60.0	10.0		
4	200	Flowmeter reading	40526.0	40587.0	40602.0	40615.0	5.93	
		Water take		61.0	15.0	13.0		
5	100	Flowmeter reading	40684.0	40726.0	40761.0	40776.0	6.13	
		Water take		42.0	35.0	15.0		

Stage	Average flow q (l/min)	Gauge pressure Gp (metres head of water)	Friction head loss FHL (metres head of water)	Total head H=Gp+Hw+Hg-FHL (metres head of water)	Stage* coefficient of permeability k (m/s)	Stage* Lugeon value Lu (lugeon units)
1	4.53	10.19	0.01	17.58	2.0E-06	26
2	6.67	20.39	0.02	27.77	1.8E-06	24
3	10.00	30.58	0.04	37.94	2.0E-06	26
4	5.93	20.39	0.02	27.77	1.6E-06	21
5	6.13	10.19	0.02	17.58	2.7E-06	35

AVERAGE = 2.02E-6

* Computed in accordance with BS 5930, Section 21.5



IN SITU PERMEABILITY (PACKER) TEST

Location P J HIRONS: CHADWICH LANE QUARRY, BROMSGROVE

Loc No.

TEST 1

Fig

Borehole 1

Borehole 2 Test No 2
 Test Section 11.00 to 12.00m
 Length of Test Section (L) 1.00m
 Diameter of test section (D) 110mm
 Depth to water level before test Dry
 Depth of water level after test
 Gauge Height above ground level(Hg) 0.40m
 Depth of borehole 15.00m
 Depth of casing 1.00m
 Centre test of Section 11.50m
 Date of test 8/9/05
 Rock type: Sandstone

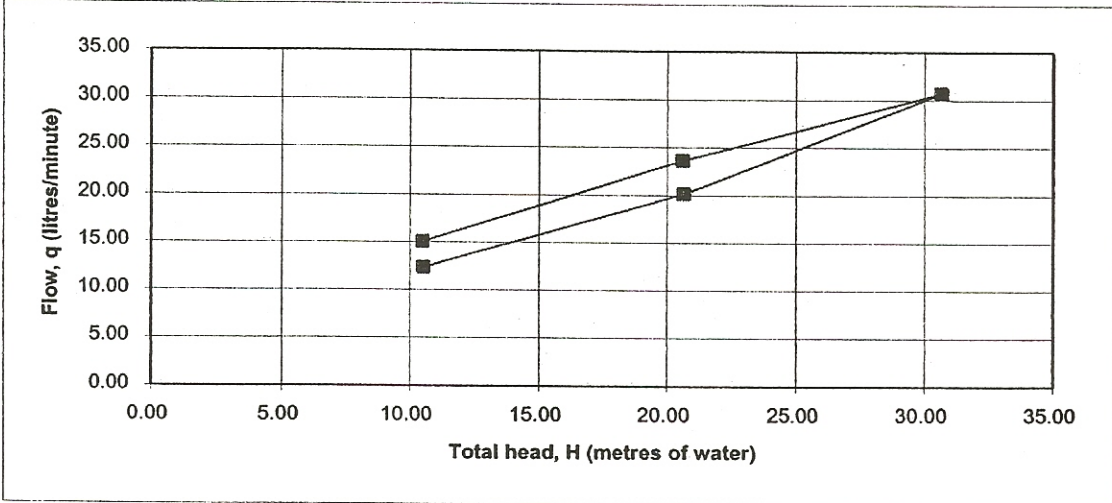
Pressure gauge type Bourdon Drill rod type HWY
 Range Water source Bowser (1100 gal)
 Number Pump type Triplex 40
 Flowmeter type KENT Test type Double packer
 Size Packer type Pneumatic
 Number Packer pressures (kPa) 1200

Stage	Gauge pressure (kPa)	TIME (minutes) AND WATER QUANTITIES (litres)						Average flow, q (l/min)
		Time	0	5	10	15		
1	100	Flowmeter reading	31938.0	32003.0	32060.0	32123.0		12.33
		Water take		65.0	57.0	63.0		
2	200	Flowmeter reading	32139.0	32237.5	32240.5	32441.0		20.13
		Water take		98.5	3.0	200.5		
3	300	Flowmeter reading	32455.0	32591.0	32746.0	32915.0		30.67
		Water take		136.0	155.0	169.0		
4	200	Flowmeter reading	32922.0	33052.0	33162.0	33276.0		23.60
		Water take		130.0	110.0	114.0		
5	100	Flowmeter reading	33289.0	33372.5	33435.0	33514.0		15.00
		Water take		83.5	62.5	79.0		

Stage	Average flow q (l/min)	Gauge pressure Gp (metres head of water)	Friction head loss FHL (metres head of water)	Total head H=Gp+Hw+Hg-FHL (metres head of water)	Stage* coefficient of permeability k (m/s)	Stage* Lugeon value Lu (lugeon units)
1	12.33	10.19	0.06	10.53	9.0E-06	117
2	20.13	20.39	0.15	20.64	7.5E-06	98
3	30.67	30.58	0.32	30.66	7.7E-06	100
4	23.60	20.39	0.20	20.59	8.8E-06	115
5	15.00	10.19	0.08	10.51	1.1E-05	143

AVERAGE 8 E-6 m/s.

* Computed in accordance with BS 5930, Section 21.5



IN SITU PERMEABILITY (PACKER) TEST

Location P J HIRONS: CHADWICH LANE QUARRY, BROMSGROVE
 Loc No. TEST 2
 Fig Borehole 2