Sept 12. 1944 Mr Brown Mather + Platt

671250 per 24 hrs = 466 gals per min.

2 Pumps as working would jointly pump 560 gals per min

therefore they would deal with the 24 hrs yield in 20 hrs pumping time

Yield in 20 hrs is 560 000 ✓

Quantity pumped by 2 pumps in 20 hrs 672 000 ✓

difference 112000 gals

therefore if pumping done in one shift of 20 hrs, the Reservoir would have to hold the gal of 112 000

alternative is automatic control

Population Census 1939. 7374. (1) BROWN. Mather & Platt [illegible]

331 Pastore Rd DEC. 1. 1943

Rm 5.

Uttoxeter Water Supply

General Particulars. Dec 1st 1943.

Available supply already collected at end of September 1943

Somersal supply gauge 1.00 = 21600 per day

Bramshall supply 1.00 gauge = 43200

Crumpwood supply 400320 gals per day

400320 gals per day = 16430 gals per hour

21.600
43200
400320
465120 Total collected

Total amount of Water used at end of September 1943 per day

1.00 = 21600 | 21600 43200 248400 313200 | 1.00 g = 43200

2 Turbines Running at 42 R.P.M for 23 hrs. = 5400 per hour × 23 × 2 = 248400

Total Amount of Water used per day for week ending Friday Dec 10. 1943

·9 gauge = 18396 ·9 gauge 36808. 2 Turbines @ 10400 × 23.64 255312 Total = 310516 gals per day.

Total Amount of Water used per day for week ending Friday Dec. 17. 1943

·9 gauge = 18396 ·9 gauge 36808 Total 349691 see Page 2.

Total Consumption per day by all sources at end of Sept 1943 in All areas	Total Consumption by All sources within U. Area per day	Total consumption as Metered Supplies with Urban Area per day	Total consumption used as Domestic purposes per day including Smallfield and Croft.	Consumption per head per day including Metered supplies in Urban Area	Consumption per head per day excluding Metered supplies within Urban Area
From Somersal = 21600 per day " Bramshall 43200. " Crumpwood 248400 313200	313200 29299 less Metered 283901 supplies in R.A	48700	235201	283901 / 7374 = 38.5 gals	235201 / 7374 = 31.9 say 32 gals per head

Supplies not yet Collected.

Railway Spring 237600 gals per day

Holme Springs 381330 gals per day

618930 gals per day

Existing Commitments to Rural District

Locality	Max per day	Present Rate 1/2 Year ending Sept 1943 of Supply per day	Balance of supply per day	Consumption Sept 1/2 Year 1940
Denstone	6000	2358	3642	3277
Rocester	30000	9063	20937	9408
Bramshall	7000	1382	5618.	3518
Stramshall	6000	4761	1239	4020
Doveridge say	11000 60000	11735		11302
Ellastone Wootton	10000 5000 15000	60000 15000 75000	29299	Query Abbots Holme 4000.	31525

Turbines at time of test pumped 5400 gals per hour each (2)
Electric Plant at test do 15300 gals per hour see Note book 40.

Greenwood Supply Week ending Friday Dec 17. 1943 February 7. 1944.

Sat. Dec 11th Motor Electric 7.30 AM till 4.55 PM = 9 hrs 25 mins
5.40 P.M till 7.40 P.M = 2 hrs
11¼ @ 15300 = 172125 gals

(Duty 21 hrs 35 mins) 2 Turbines 7.40 P.M till 11 P.M = 3 hrs 20 mins
12 P.M till 7 AM = 7 hrs 10 hrs 20 mins
10⅓ @ 10800 = 111600 gals

Sunday Dec 12 Motor Electric 8. AM till 12.30 = 4. 30 mins
1.45 till 7.45 = 6 hrs } 11 hrs 45 mins
(Duty 20½ hrs) 8.45 till 10. P.M = 1 hrs 15 mins = 179775

2 turbines 10. P.M till 3.30 AM = 5½ hrs = 5½ hrs = 59400 gals
1 Turbine 3.30 AM till 7.30 AM = 4 hrs = 4 hrs = 21600 gals

Monday Dec 13 Motor Electric 7.30 AM till 10 P.M = 14½ hrs @ 15300 = 221850
+ 15 mins
(Duty 23 hrs) 2 turbines 10. P.M till 6.15 AM = 8 hrs 15 mins 8½ hrs @ 10800 = 91800
-15

Tues. Dec 14 Electric Motor 7.15 AM till 6.45 = 11 hrs 30 mins } 13½ hrs @ 15300 =
(Duty 23 hrs) 7.45 P.M till 10 P.M = 2 hrs. 15 } 206550
2 Turbines 11. P.M till 8 AM = 9 hrs - 30 mins 9½ @ 10800 = 102600

Wed. Dec 15 Electric Motor 8 AM till 6.40 = 10 hrs 40 mins } 13¼ @ 15300
(Duty 23¼ hrs) 7.25 till 10 P.M = 2 hrs 35 mins } = 202725
2 Turbines 10 P.M. till 3.30 AM = 5 hrs 30 mins + 30 mins = 64800
6 hrs @ 10800
1 Turbine half speed 3.30 till 7.30 AM = 4 hrs = 1 hrs @ 10800 = 10800
525

Thurs Dec 16 Electric Motor 7.30 AM till 10.30 PM = 15 hrs @ 15300 = 229500
(Duty 23½ hrs) 2 Turbines 10.30 PM till 7. AM = 8 hrs 30 mins
= 8½ hrs. @ 10800 = 91800
321300

Friday Dec 17 Electric Motor 7 AM electricity
(Duty 15½ hrs) went off lost 1 ft. in Reservoir
Electric Motor 4 P.M till 10.15 P.M = 6 hrs 15 mins
2 Turbines 10.15 P.M till 7.30 AM. = 9 hrs 15 mins

Date. 1943	Pumped by Turbines	Pumped by Electric Motor	Total for Greenwood	Somersal Supply	Bramshall Supply	Total Consumption
Sat. Dec 11	111600	172125	283725	18396	36808	338929
Sun 12	81000	179775	260775	18396	36808	315979
Mon 13	91800	221850	313650	18396	36808	368854
Tues 14	102600	206550	309150	18396	36808	364354
Wed 15	75600	202725	278325	18396	36808	333529
Thurs 16	91800	229500	321300	18396	36808	376504
			6) 1766925			6) 2098149
			294487			349691
						349691.5

Feb 8. 1944

Uttoxeter Urban District Council

Water Supply

Present conditions Consumption of Water

Population according to Census 1939 was 7314.

Consumption of Water per day by all areas at end of Sept. 1943

Bomeral Supply	21600
Bramshall Supply	43200
Crumpwood do	248400
	313200
	29299 less Metered supplies in Rural Area
	283901 Consumed by all sources in Urban Area which equals 38·5 gals per head per day
	48700 less Metered supplies in Urban area
	235201 Consumed by Domestic Users which equals 32 gals per head per day

Sources of Supply

Quantities already collected at end of Sept. 1943

Bomeral	21600
Bramshall	43200
Crumpwood	400320
	465120

Quantities not yet collected

Railway Springs	237600 gals per day
Hulme Springs	381330 gals per day
	618930

Present capacity of Service Reservoirs

Existing Bramshall Reservoir	150000 gals
do Prestwood do	100000
	250000 gals

This figure based on the total consumption per day in all areas equals ·8 times the daily consumption

The usual storage capacity of Service Reservoirs allowed for by some Water Undertakings is 3 times the daily consumption, where there is no duplicate pumping plant, and from 2 to 2½ times the daily consumption if there is duplicate pumping plant, therefore to bring the accommodation of the Service Reservoirs up to a little over twice the present

(see over page)

Present capacity of Pumping Plant as tested on Friday Dec 31. 1943

Three turbines with ram Pumps.

Each turbine lifted at the rate of 5400 gals per hour running at 42 R.P.M

Two turbines running for 23.64 hours per day on Dec 10th 1943

pumped 255·312 gals. which is considered the maximum

Electric Motor when tested on Friday Dec 31. 1943

pumped at the rate of 15246 gals per hour

Pumping the maximum of 24 hrs per day the total pumped would

be 15246 × 24 = 365904 gals per day

at the present time however these two means of pumping cannot be run at the same time owing to the capacity of the 7" Rising main

Originally the 7" Rising Main was designed to deliver 10000 gals per hour, but is now being reamed to deliver 15246 gals per hour.

Three turbines running for 22 hrs per day each pumping 5000 gals per hour at 40 R.P.M = 5000 × 3 × 22 = 330 000 gals per day.

Capacity of Mains

The existing 7" main from Prestwood Reservoir to Bramshall 11720 yards long and with a hydraulic Gradient of 1 in 314 when new was capable of discharging 288 000 per 24 hrs at Bramshall, I have no reason to doubt that its discharging capacity remains the same

Total amount of Water available for consumption issues from Lowerwood and Holme Springs = Already collected 400 320 gals per day

Railway Spring 237 600 do

Holme Springs 381 330 do

1019250

Existing 7" main discharges 288 000 gals per day

a new 9" main would discharge 630000 "

918 000 gals per day.

a new 10" main would discharge at Bramshall 760 000 gals per day

Therefore to make provision for conveying the balance of 73125·0 gals per day to Aylesbury and district it was necessitate a new 10" main from Prestwood, this I would suggest might be carried along the opposite side of the Aylesbury Ashbourne Road, and of Trouble

(see over page)

Dec 4 1943

in the fields between the improvement line and the building line decided upon by the County Council, until it reached the shaft crossing, from whence it would be carried along the Urban Boundary until it reached the Pottheries Road at the intersection of the Rye farm road

From this point it would follow the proposed link road joining the Potteries Road with the Store Road near Lebanon Villa, and then proceed along the Store Road to the Bramshall Reservoirs

The existing 7" main from Prestwood would be continued as such to Byrds Lane, at which point the portion in Byrds Lane to the Bramshall Reservoir would be cut off, and the 7" main continue as at present as a 5" high pressure main supplying the Timber Lane and Balance Hill districts

The portion of the 7" main cut off in Byrds Lane would be altered as a distribution main from Bramshall Reservoir, and continued along Holly Road to the Three Tuns as a 7" main, and pick up the 3" branch in New Road and the service mains of the Council houses at a point near Johnson Road

Such main would also connect up with the 3" main in Holly Rd between Byrds Lane and Bramshall Rd creating a circuit and relieving the demands at present made on the 8" delivery main from Bramshall Reservoir to the Town.

The portions of the Town such as Store Rd from the junction with Smethfield Road and Castle St, Old Fields Rd Hockley Rd past Castle St past Balance St, and Penfold St now served from the High pressure main would be re-connected to the low pressure system

Present consumption and commitments

Ratio of Metered Trade Consumption to Domestic Consumption within Urban Area is approx 20.7 per cent. say 20%.

Present consumption from all Sources including Urban and Rural areas 313200

Balance for Denstone 3642

" Rocester 20937

" Bramshall 5618

" Stramshall 1239

Doveridge balance of commitment 16000

Ellastone 10000

Wootton 5000

365636 say 365000 gals

Total amount of water available see Page 4 = 1019250

Present commitments 385000

634250

634250 gals per day available for increased consumption by Trade and Domestic Users therefore in the ratio of 20% Trade as against Domestic the proportions are as follows

80% of 634250 = 507400 for Domestic

20% of 634250 = 126850 for Trade

assuming the consumption for Domestic Use to be based on 30 gals per head per day this would equal an increase in population of $\frac{507400}{30}$ = 16913 persons say 16000

In giving the figure of 1019250 gals as being the amount of available water per day, such figure is based on the present yield of the Springs at the surface, and without making any allowance for compensation water, such compensation water if claimed could I think be met by opening up the outlet of the Hulme Springs and increasing the yield thereby

The question of increasing the Pumping plant and rising main also needs serious consideration, and in order to pump the balance of the Shrinkwood Springs, the Railway Spring and the Turbine Spring of the following amounts

			365904
			330000
Shrinkwood Spring Present Yield	400320	2	695904
less at present pumped on an average between 3 Turbines and the Electric Motor	348000		347952
	52320	Balance unpumped	say 348000

	52320
Railway Spring	237600
Turbine Spring	381330
466 gals per min = 27969 per hour	671250 per day

* An Electric Pump similar to the one already installed would pump 280 gals per min

Duplicate to the above ... H.P. Motor and ... 280 do do

and would necessitate a new 9" Rising main Total per min 560

Two Duplicate Pumps would deal with the 24 hrs yield of 671250 gals in 20 hrs

Collection of the Turbine Springs Also This would not prove to be a difficult matter, as it could be conveyed by gravitation, with the available head of 10 ft by means of a 9" Pipe

Collection of Railway Spring

These springs would have to be conveyed by a separate connection to the Pumpwell across the Channel, and would not present any great difficulty

* Particulars as suggested Present Floor level of No 2 Pump house 306.60

Bottom of Pumpwell 294.50. Est Water level at Pinkwood 512.00

Pumpwell

Provision would have to be made for a new pumpwell, and if the yield of 672000 was to be pumped in 20 hrs this would necessitate a pumpwell having a capacity of 112000 gals, which would not be economical and in order to avoid such a necessity, the pumps would have to be automatically controlled by the rise and fall in the new and smaller pumpwell

2V6 7/0 5/6

daily consumption it would necessitate building an additional Reservoir at Bramhall of 250 000 capacity, and one at Prestwood of 200 000 gals capacity, such reservoirs would be built in such a manner so as to enable them to be added to from time to time.