

# Environmental Protection Report

## EAST DEVON PUBLIC WATER SUPPLY STRATEGY – PRELIMINARY ASSESSMENT OF THE YIELD OF CLATWORTHY RESERVOIR

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## List of Abbreviations

ADF - Average Daily Flow

cumecs - metres cubed per second

ExeSim - Computer model used by SWWSL to model the proposed Wimbleball Pumped Storage Scheme

Ml - Megalitres

Ml/d - Megalitres per day

NRA - National Rivers Authority

NRA SW - National Rivers Authority South West Region

SWWSL - South West Water Services Limited

WTW - Water Treatment Works

WWSL - Wessex Water Services Limited

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## SUMMARY

Wimbleball reservoir is presently used by both South West Water Services Limited (SWWSL) and Wessex Water Services Limited (WWSL) for public water supply. Both SWWSL and WWSL expect to require increased resources to meet forecast public water supply demands. SWWSL have demonstrated a need for additional resources in their East Devon supply area and have been granted a licence to develop Wimbleball pump storage. WWSL have still to fully justify the need for additional resources in Somerset. Many of the details relating to the proposed pump storage scheme including the relative allocation of any increased yield between the two companies has still to be determined via an Operational Management Strategy involving SWWSL, WWSL and the National Rivers Authority (NRA).

The purpose of this study was to consider the yield available from Clatworthy reservoir which is an important part of the resource-demand balance for WWSL Somerset supply area. WWSL have recently estimated the yield available from Clatworthy using behaviour analysis. A different approach, also using behaviour analysis has been used by NRA SW to check this yield estimate, to test the sensitivity of reservoir yield to the amount of reserve storage and the demand profile, and to determine whether the system is one or two season critical.

The yield estimates from this study are very similar to the WWSL estimate and clearly show that Clatworthy is two season critical. The results suggest that the yield estimate is most sensitive to the demand profile. The possibilities for conjunctive use with Wimbleball reservoir and a pumped storage scheme for Clatworthy require further consideration.

## 1.0 Introduction.

Wimbleball Lake on Exmoor is used by South West Water Services Limited (SWWSL) as a regulating reservoir to support the downstream licensed public water supply abstractions at Bolham and Northbridge. The reservoir is also used by Wessex Water Services Limited (WWSL) for a direct supply abstraction to Maundown Water Treatment Works (see Figure 1).

To meet increased demand in East Devon SWWSL applied for a licence to abstract water at Exebridge to pump to Wimbleball to supplement natural inflows and therefore guarantee refill.

WWSL have also highlighted a need for increased resources to meet forecast public water supply demands until 2001. Although several options are available to WWSL to meet this predicted need increased yield from Wimbleball reservoir is their preferred option.

In 1993 SWWSL were granted a licence to abstract 13633 Ml per year at Exebridge to pump to Wimbleball. However, in order to ensure that the resource is used properly the NRA have included in the licence a condition requiring the production of an Operational Management Strategy. The Operational Management Strategy makes provision for the availability and allocation of Wimbleball resources between users and must be in place before any water is abstracted at Exebridge. In order to determine the appropriate allocation of resources between users it is necessary to develop resource demand balances for the East Devon and Somerset supply areas.

After Wimbleball and Durleigh Reservoirs Clatworthy reservoir represents the largest source in the Somerset supply area. The yield available from Clatworthy reservoir is therefore an important part of the resource demand balance for WWSL Somerset supply area.

This report presents the results of NRA SW assessment of the yield available from Clatworthy reservoir. This assessment uses a spreadsheet and the 1975/76 inflow sequence to determine if the system is two season critical and to test the relative sensitivity of the yield estimate to the amount of reserve storage and the demand profile.

## 2.0 Clatworthy Reservoir - Site Details.

Clatworthy reservoir is situated in the Brendon Hills and impounds the headwaters of the River Tone. Clatworthy is a direct supply reservoir with a gross storage capacity of 5404 Ml, a catchment area of 18.2 km<sup>2</sup> and a compensation flow requirement of 4.55 Ml/d (0.053 cumecs). Water from Clatworthy is conveyed by gravity a distance of 4km (2½ miles) to Maundown Water Treatment Works before being used for public water supply mainly in Taunton, Wellington and Bridgwater (see Figure 1).

### **3.0 Definitions of Yield and Methods of Yield Assessment.**

There are many different definitions of yield. The average annual drought reliable yield, for example, can be defined as the average annual output available from a source for public water supply throughout a 1:50 year (2%) drought.

A National NRA Research and Development project (R&D Project 414) is currently considering the existing methods of surface water yield assessment. This project, which is due to be completed by October 1993, should recommend a methodology for assessing reservoir yields which, if adopted, may lead to a more consistent approach to yield assessment between the NRA regions and the Water Companies. Investigations undertaken during phase 1 of the R&D project have concluded that behaviour analysis and probability matrix approaches are presently the most common methods of yield assessment in the UK.

Behaviour analysis can be used with either historic or synthetic flow sequences to simulate the performance of the system and determine the available yield. Behaviour analysis can be used to develop operating rules and strategies and to illustrate the consequences of different abstraction rates. Probability matrix calculations are often used to support other methods of yield assessment including behaviour analysis. To determine the yield from multiple or complex systems simplifying assumptions are often needed when using a probability matrix approach. For more details on the results from the R & D project and other references see Surface Water Yield Assessment R&D Project 414 Interim report Phase 1 (1991, October) and Phase 2 (1992, November).

### **4.0 WWSL yield estimate.**

In 1992 WWSL reduced their estimate of the yield of Clatworthy reservoir. Yield calculations taking into account 1990 and 1991 data showed that an earlier figure based on licensed quantity could not be sustained. The most recent estimate of 15.8 Ml/d is equivalent to the highest average annual output which can be sustained over the critical period and has been assessed using a methodology developed by K.L Jones in 1991. This method of yield assessment which is based on behaviour analysis, has four main stages and is explained in more detail in Appendix 2. The results from this method show that the critical period is over two seasons for Clatworthy whereas earlier analysis appeared to have assumed a one year critical period.

### **5.0 NRA SW yield estimate.**

The NRA SW preliminary assessment of the yield of Clatworthy reservoir was based on behaviour analysis and used a daily time-step. The period from the beginning of 1975 to the end of 1976 was used in this study as being representative of a 1:50 year design drought event. A spreadsheet model was used in this assessment to increase the average demand until the reservoir

reached some pre-defined failure criterion such as 20% gross storage. The inflow sequence, demand profile and detailed modelling assumptions used in this assessment are discussed below.

## 5.1 Inflows to Clatworthy.

### 5.1.1 Wessex Water inflow sequence.

The inflow sequence supplied to NRA SW in a spreadsheet (see Appendix 1) was used in the Wessex Water assessment of the yield of Clatworthy reservoir as described in Appendix 2. The WWSL inflow sequence is based on a water balance. The components of the water balance including storage, abstraction, compensation and overspill are also contained in the spreadsheet.

This weekly sequence contained several negative values. It had been smoothed but it is unknown how this was done, who did it, or why there were still a number of negative values. NRA SW removed the negatives by averaging over progressively longer periods until a small positive flow was produced, subject to the total inflow for 1975/76 not being exceeded.

Closer examination of the WWSL spreadsheet revealed several differences between this data and the original paper records held by Wessex NRA. For example, the WWSL spreadsheet suggests that the compensation release of 4.55 Ml/d was released every day throughout the 1975/76 sequence whereas Wessex NRA paper records suggests the full compensation release was not met during the summer months in 1976.

### 5.1.2 NRA SW inflow sequence.

A synthetic inflow sequence was produced for 1975/76 by NRA SW using the naturalised Wimbleball inflow sequence (Watson Hawksley, Appendix A4, 1993) and the ratio of theoretical ADFs at Clatworthy and Wimbleball dam. The theoretical ADFs at these sites were calculated using a method developed by the Institute of Hydrology (Bullock, A. and Gustard, A., 1989).

### 5.1.3 Comparison of inflows.

The averaged Wessex inflows and the NRA SW synthetic sequence are compared in Figure 2. From a comparison of 1975/76 totals the Wessex Water inflow sequence gives 4.9% more flow than the NRA SW synthetic sequence.

Due to the uncertainties with the Wessex Water inflow sequence described previously the NRA SW synthetic sequence was used for this yield assessment. It also represents a worst case situation.

## 5.2 Demand profile.

The weekly abstraction values used to produce demand profiles for Clatworthy were taken from spreadsheet data supplied to NRA SW by WWSL (the data for 1975/76 is shown in Appendix 1). The weekly abstraction values for 1990 and 1991 are shown graphically in Figures 3 and 4 respectively.

The demand profiles used for this study consist of 52 values and have been derived using the ratio of the weekly abstraction quantity to the yearly average. The profiles for 1990 and 1991 are shown in Figures 5 and 6 respectively. The 1991 profile is high throughout the early summer but drops considerably from July to October. The 1990 profile shows the opposite, with low demands throughout the summer but higher values in the winter period from November to March.

A comparison of annual abstraction totals suggests that Clatworthy was used more than Wimbleball in 1991 but less in 1990.

The 1991 profile which represents a recent year and is similar to the 1976 profile has been used to determine the yield available from Clatworthy and the 1990 profile to determine the sensitivity of the yield estimate to the choice of demand profile.

## 5.3 Other Modelling Assumptions.

The assumptions used in this assessment are explained below and are summarised by case (scenario) in Table 1.

- \* Clatworthy reservoir was full at the beginning of 1975. Results from running the Water Resources Planning Model (for more details see Blackwell, S. R. and Maddocks, S., 1988) confirmed that Wimbleball was full at the beginning of 1975 and as Wimbleball is much larger than Clatworthy it is reasonable to assume that Clatworthy would also have been full at the beginning of 1975.
- \* The same demand profile, either 1991 or 1990, has been used in this assessment for both 1975 and 1976.
- \* The statutory compensation release for Clatworthy of 4.55 Ml/d was released every day.
- \* No leakage from Clatworthy has been included.
- \* Direct rainfall into the reservoir has not been included.
- \* With the exception of case 3 no evaporation from the reservoir has been included in this analysis. The monthly evaporation rates used in case 3 were taken from the ExeSim modelling of the Wimbleball system (Watson Hawksley, Appendix A2, 1993). These values represent long term averages at Yeovilton (NGR ST 54 22).

- \* With the exception of case 1 when the reservoir was drawn down to zero live storage, it was assumed that 20% of gross storage was left in the reservoir at the end of the drought.

#### 5.4 Results

Figures 7 to 16 show the drawdown plots for 1975 and 1976 for each case used in this assessment, the details of each different case and the results are summarised in Table 1. The appendices at the back of this report contain the spreadsheet printout from each case.

For the five cases modelled yield varied from 20.05 Ml/d (case 5) to 16.2 Ml/d (case 4). A yield of 18.95 Ml/d was produced with case 1, using the 1991 demand ratio, excluding evaporation and reserving zero live storage. Reserving 20% of gross storage reduces the yield by 1.2 Ml/d (case 2) and incorporating evaporation in case 3 reduces the yield by a further 0.74 Ml/d.

Case 4 which used the averaged WWSL inflow sequence produced an average annual drought reliable yield estimate of 16.2 Ml/d which is very similar to the WWSL estimate of 15.8 Ml/d. The 0.4 Ml/d difference may reflect the use of different demand profiles by WWSL and NRA SW. For example, WWSL used a monthly profile whilst NRA SW used a weekly one.

The significant difference between cases 2, 3 and 4 and case 5 suggests the yield of Clatworthy is most sensitive to the demand profile.

Inspection of the drawdown plots for 1975 and 1976 for all cases modelled clearly indicates that Clatworthy is a two season critical reservoir.

#### 6.0 Conclusions.

- a) The yield estimates calculated by NRA SW are similar to the WWSL recent estimate of 15.8 Ml/d.
- b) The yield of Clatworthy reservoir appears to be most sensitive to the demand profile rather than the percentage of gross storage remaining at the end of the drought.
- c) Clatworthy is two season critical.

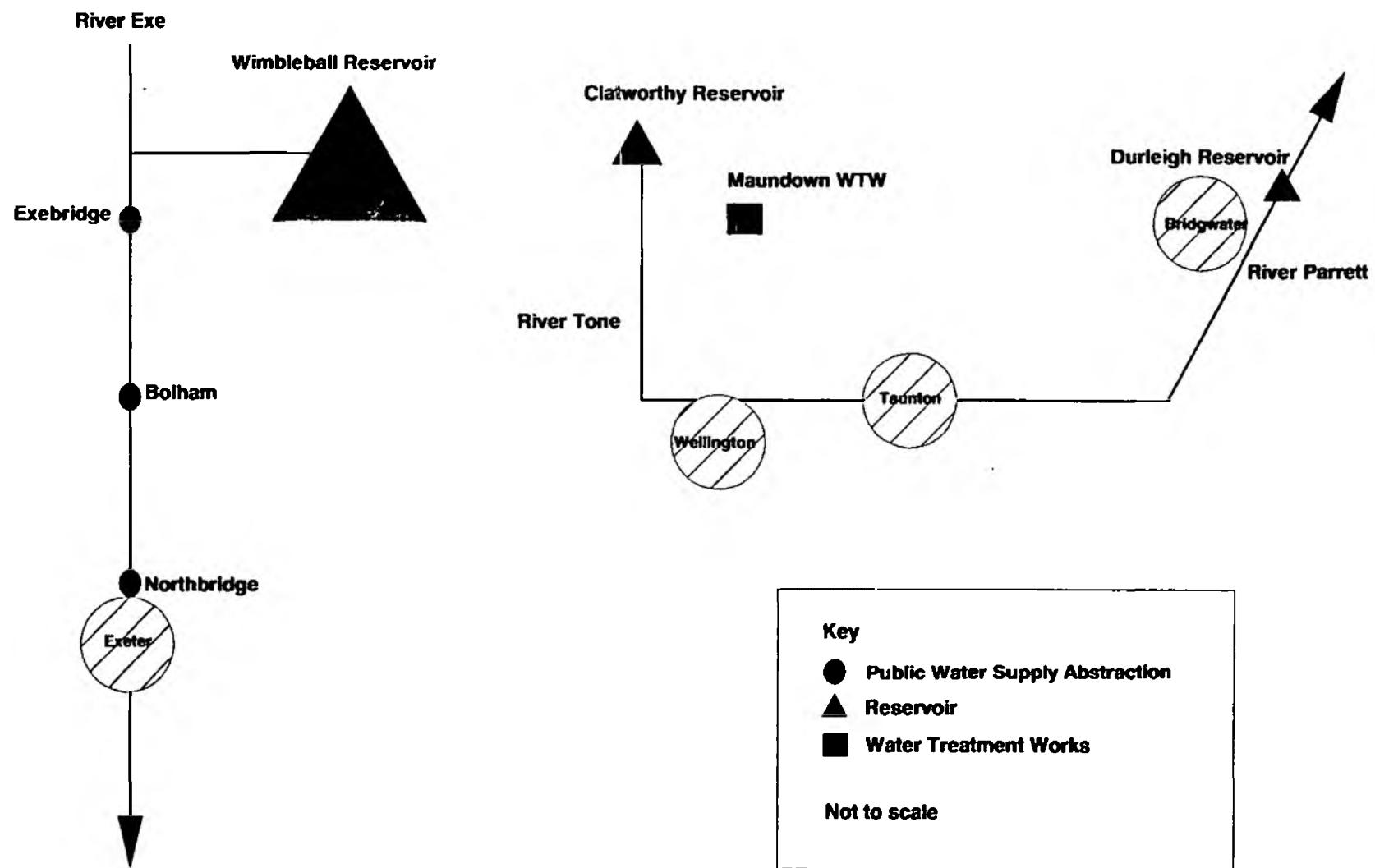
## **7.0 Recommendations.**

- a) As a two season critical reservoir Clatworthy could possibly be developed as a pumped storage reservoir. WWSL however, have suggested that problems with water quality and low flows in the River Tone may prevent this development. These potential difficulties will need more detailed investigation.
- b) Wimbleball and Clatworthy need to be considered together. At present it appears the two sources are used conjunctively by WWSL but to no obvious operational strategy. WWSL have suggested that conjunctive use of these reservoirs does not significantly affect the yields and that use varies depending on whether it is an average or very dry year.
- c) Further work is required to derive a long inflow sequence for Clatworthy. Behaviour analysis using a long flow sequence incorporating the affects of conservation measures to specified levels of service could be used to assess the standard of service yield available from conjunctive use with Wimbleball or from the pumped storage of Clatworthy.

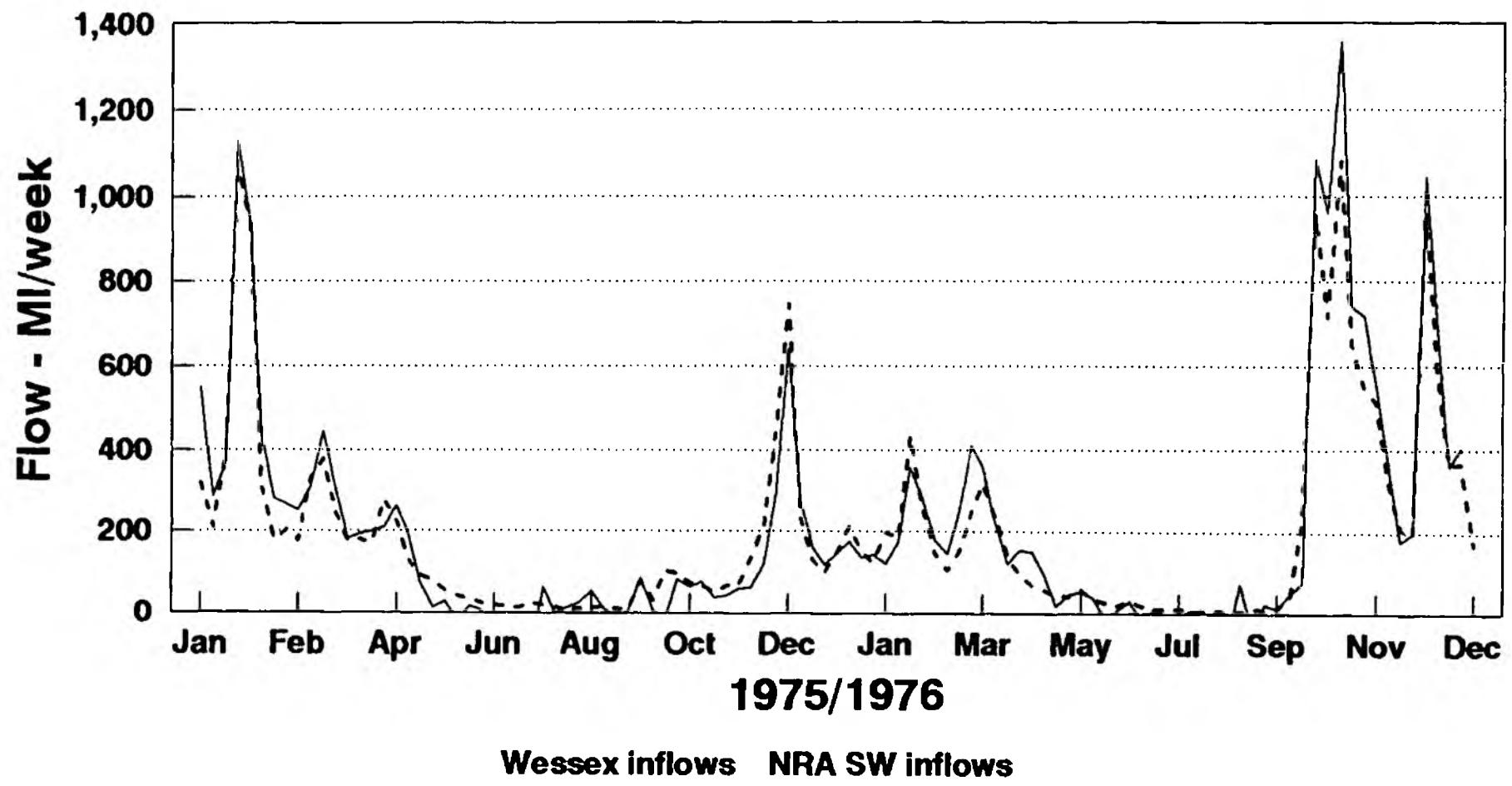
**List of References.**

- Blackwell, S. R. and Maddocks, S. (1988, August) - University of Lancaster, Department of Operational Research, Conjunctive Use Model.
- Bullock, A. and Gustard, A. (1989) - Average and Low Flow Estimation in the South West Water Region.
- Wallace Evans (1991, October) - Surface Water Yield Assessment R&D Project 414 Interim Report Phase 1.
- Wallace Evans (1992, November) - Surface Water Yield Assessment R&D Project 414 Interim Report Phase 2.
- Watson Hawksley (1993) - East Devon Water Resources Wimbleball Pumped Storage Scheme, Appendix A2 Hydrological Data (RP-PLA-1981AO-030(01)).
- Watson Hawksley (1993) - East Devon Water Resources Wimbleball Pumped Storage Scheme, Appendix A4 Reservoir Inflow Series (RP-PLA-1981AO-032(01)).

## Figure 1: Location of sites



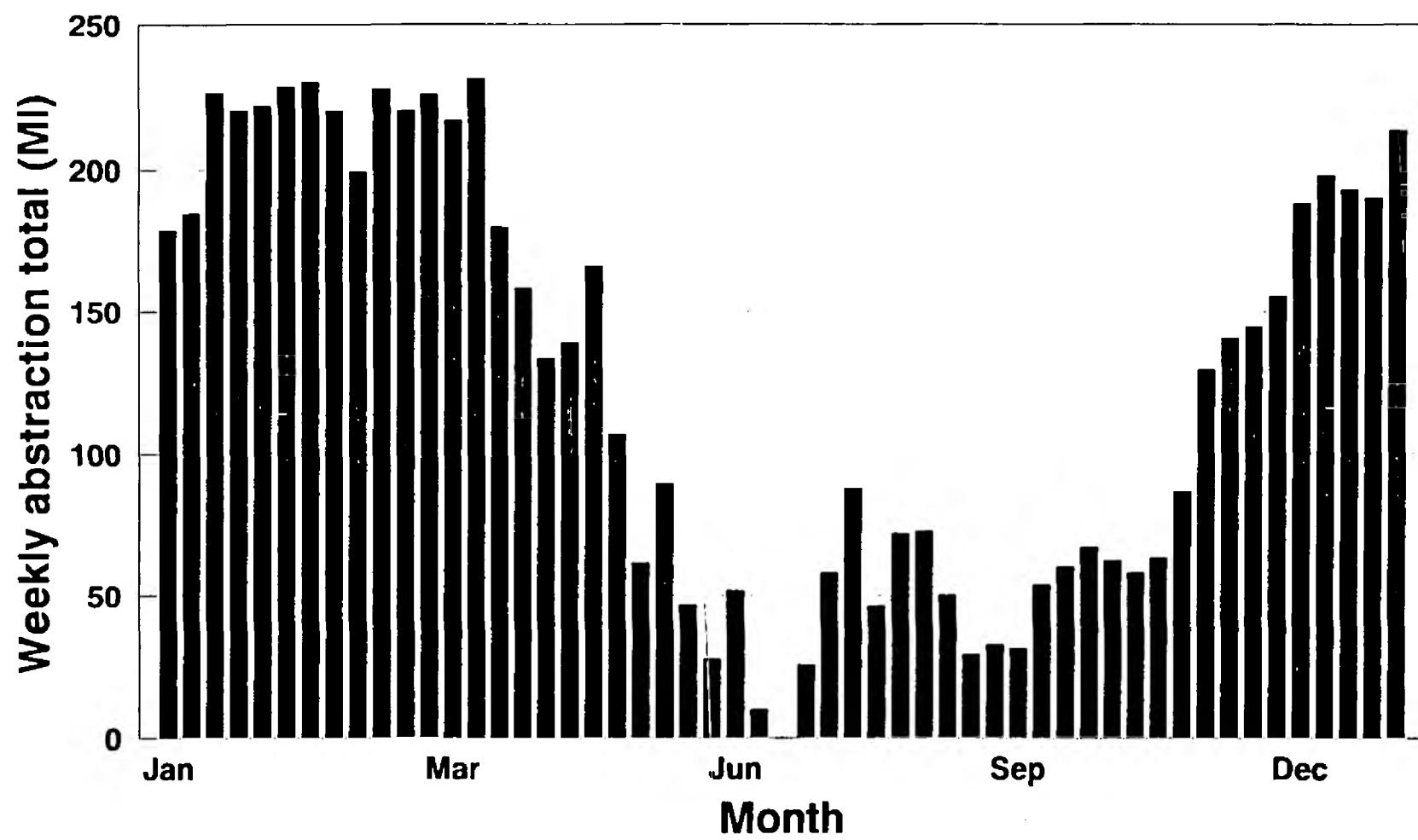
**Figure 2      Clatworthy Reservoir  
1975/76 inflows**



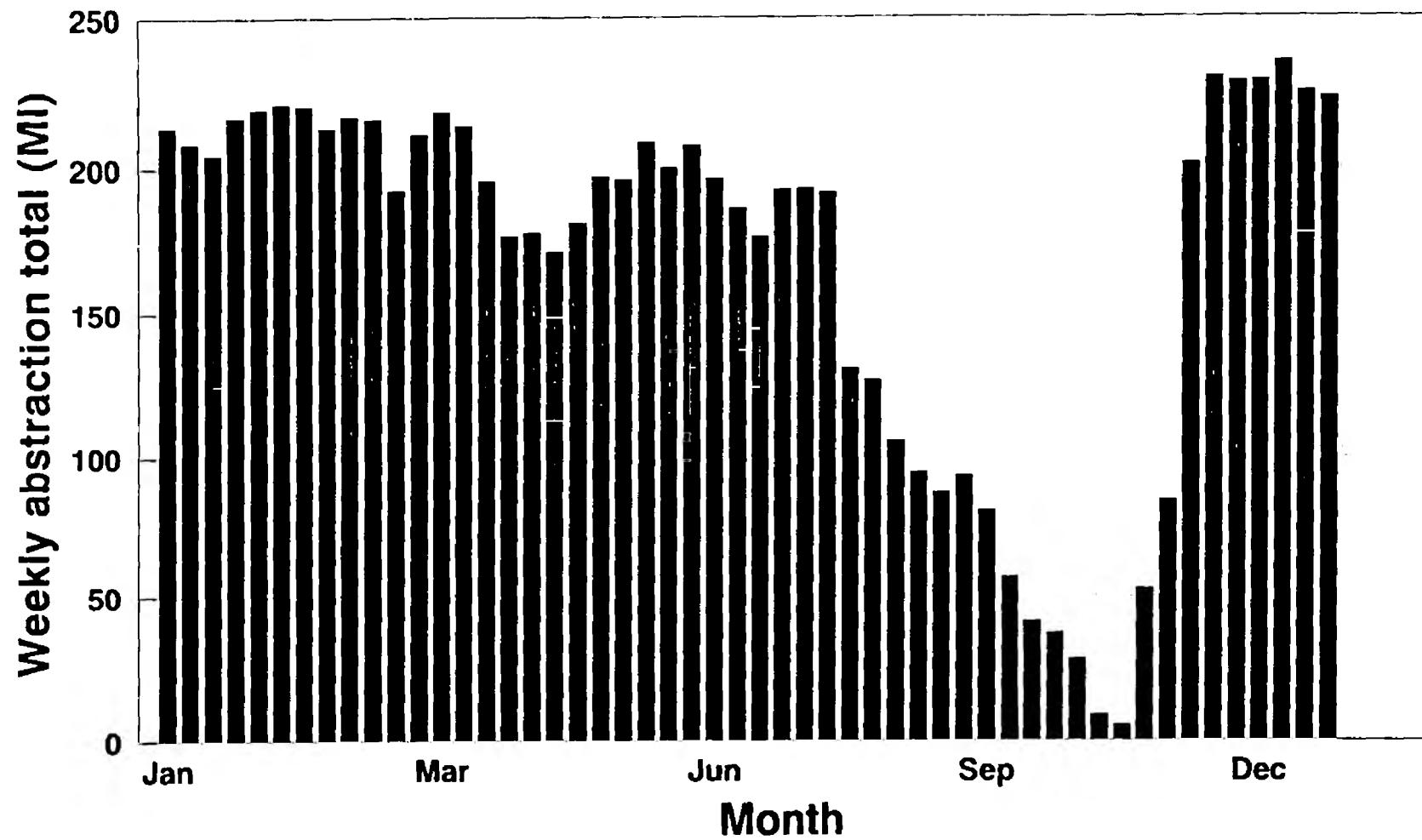
**Wessex inflows have been averaged to remove  
negatives.**

Figure 3

**Clatworthy Reservoir  
1990 Abstraction Values**



**Figure 4**      **Clatworthy Reservoir**  
**1991 Abstraction Values**



**Figure 5**    **Clatworthy Reservoir**  
**1990 Abstraction Profile**

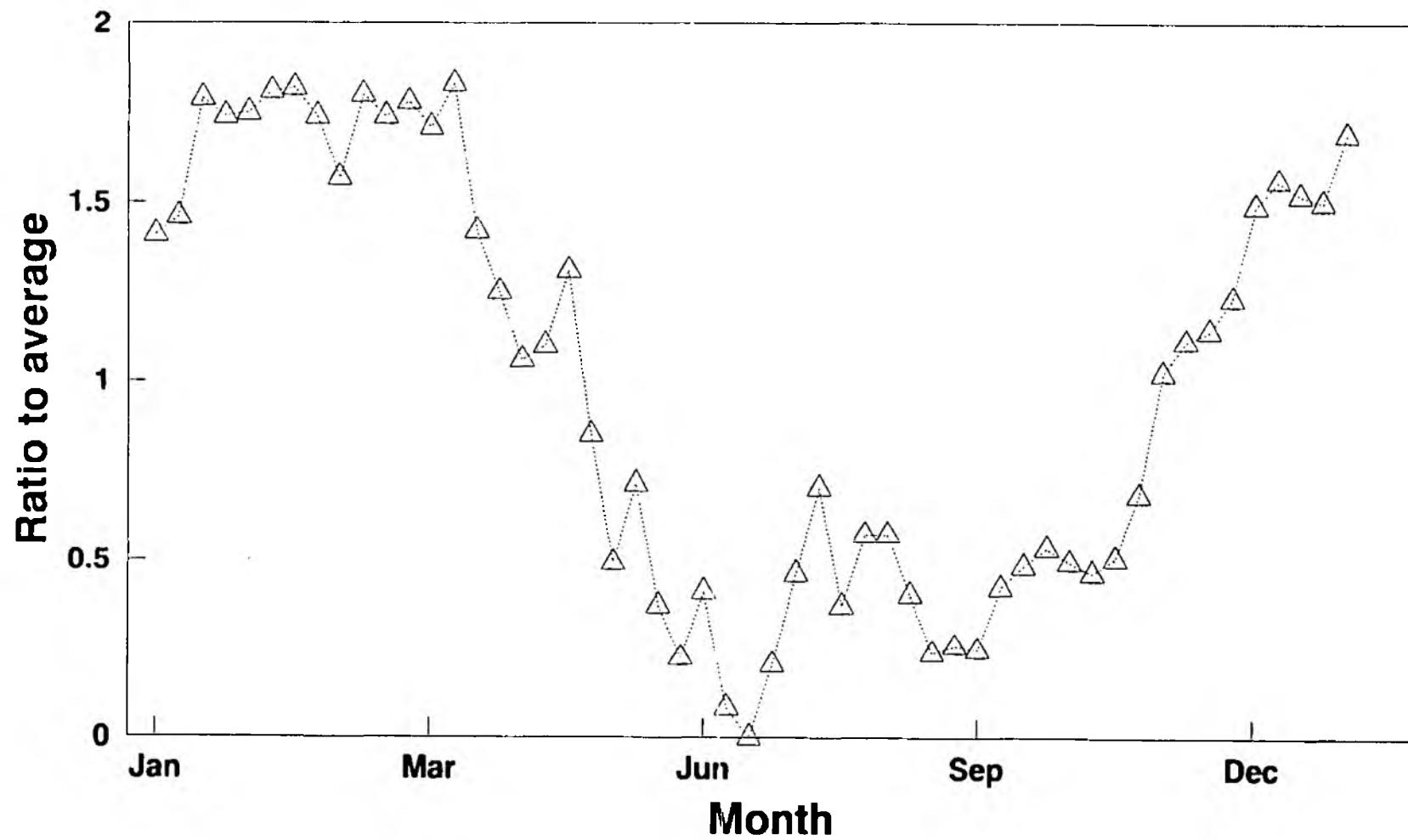


Figure 6

**Clatworthy Reservoir  
1991 Abstraction Profile**

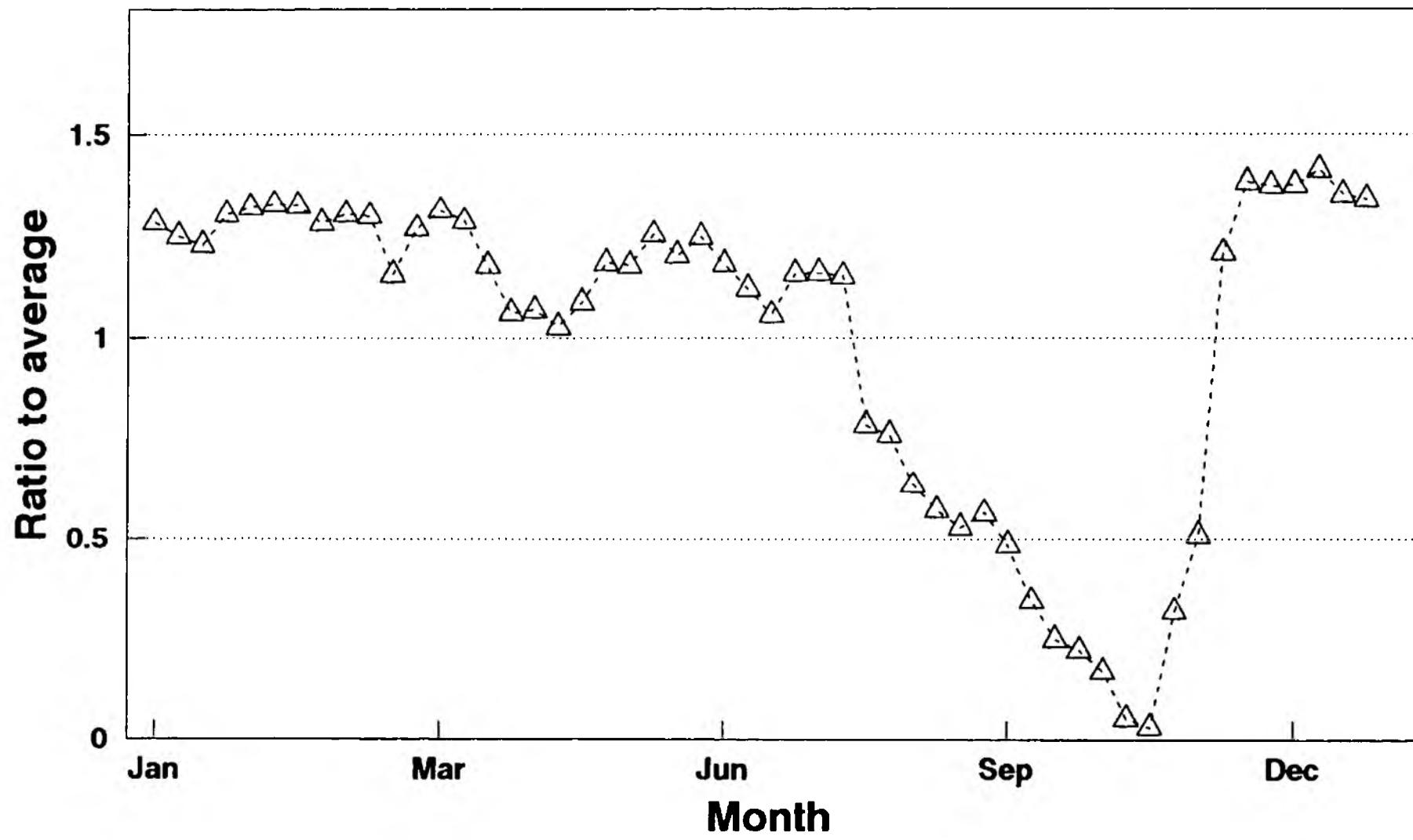
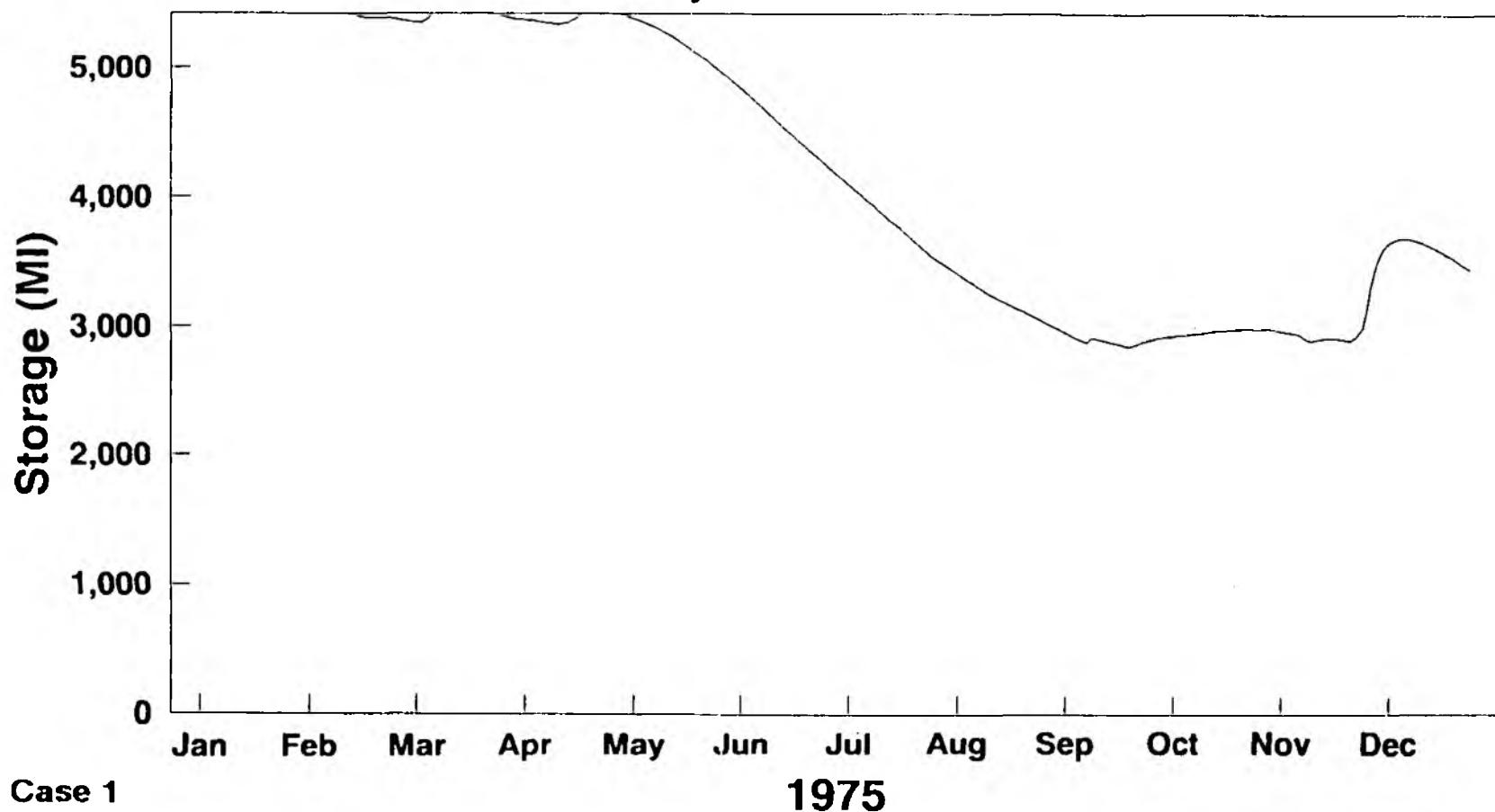


Figure 7      Clatworthy Reservoir 1975



Case 1

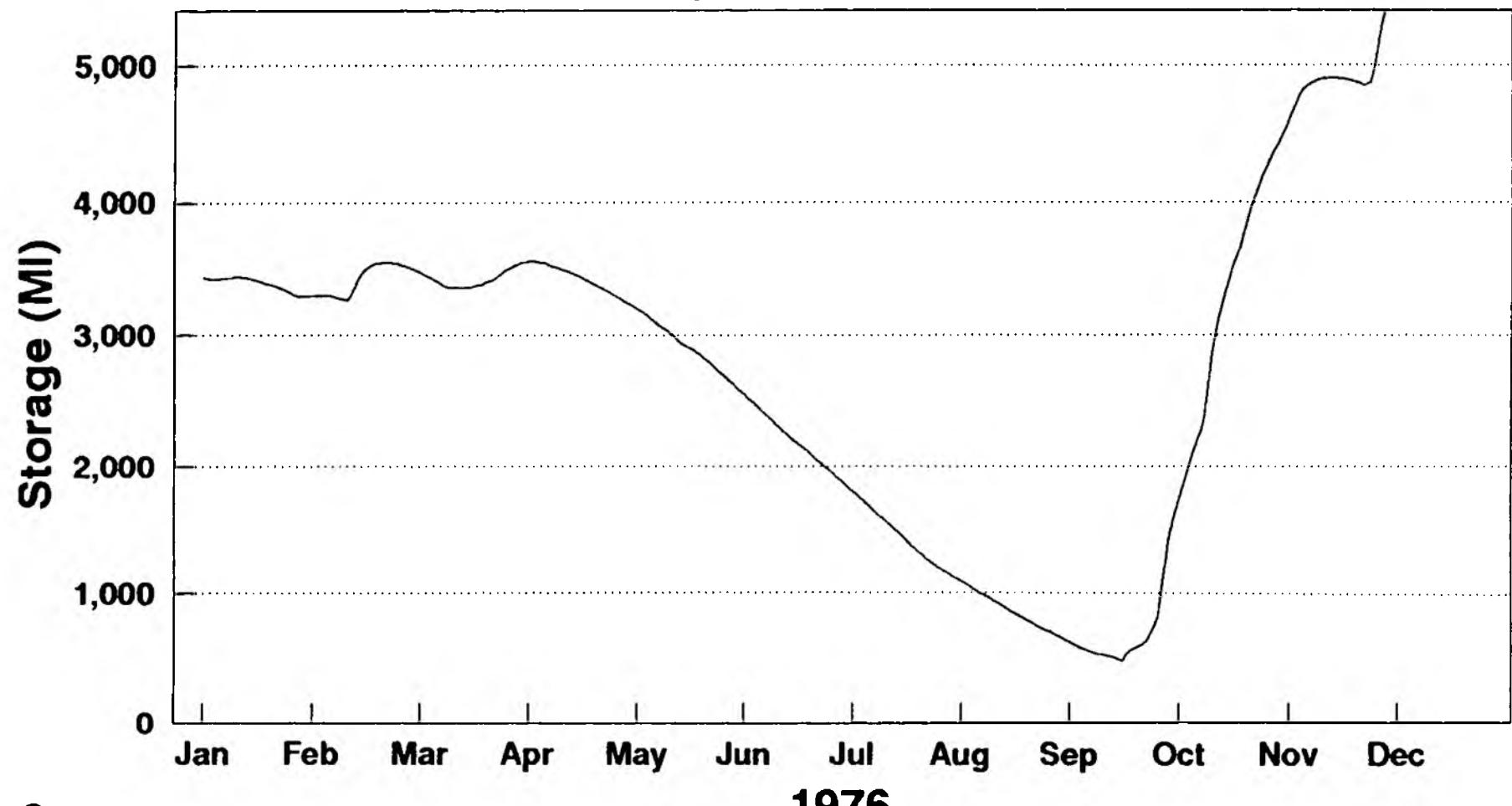
1975

1991 reduced abstractions - 18.95 MI/d

Lowest storage in 1976 483MI

Zero live storage 486MI

Figure 8      Clatworthy Reservoir 1976



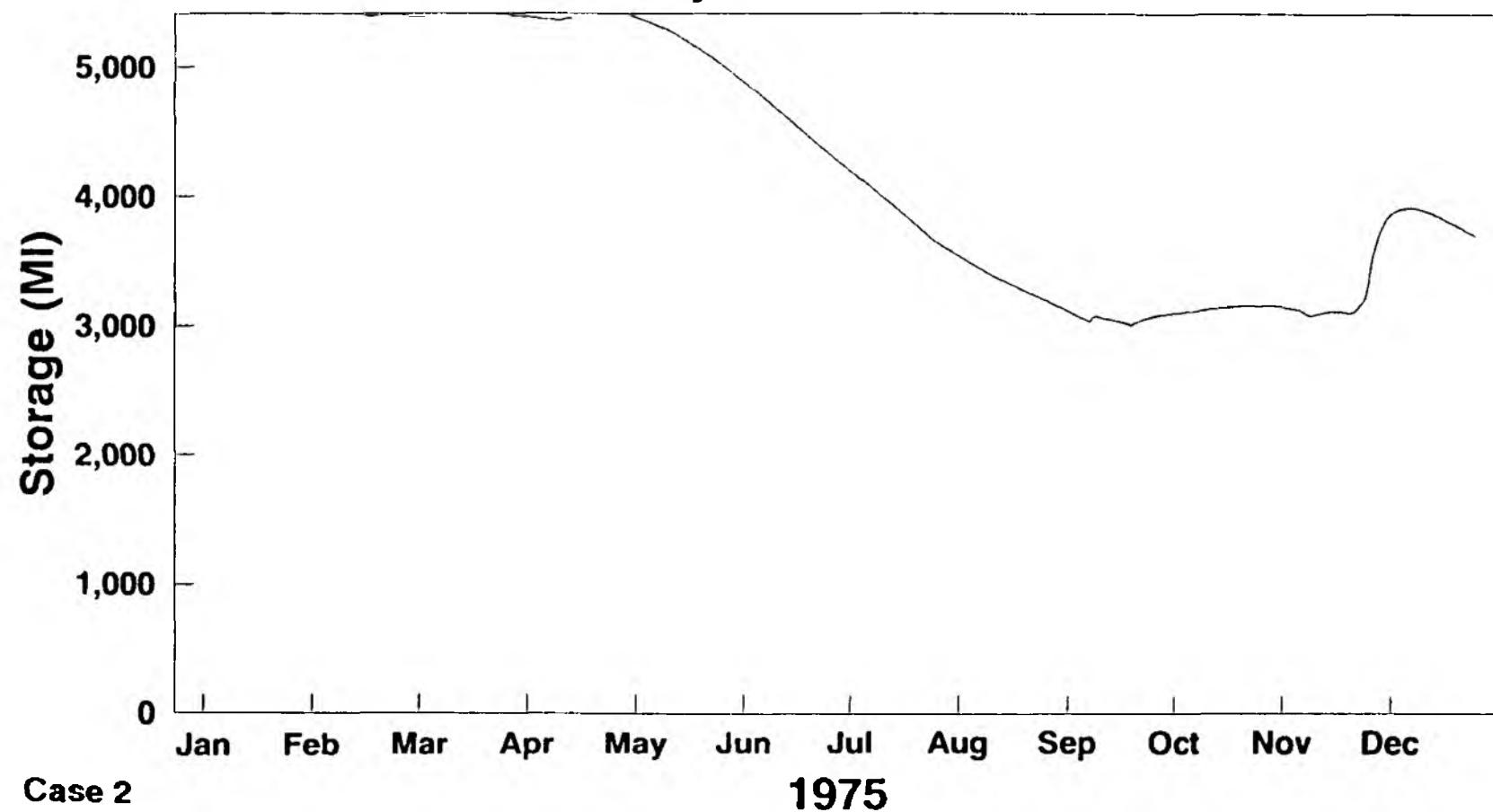
Case 1

1991 reduced abstractions - 18.95 MI/d

Reservoir drawn down to 483MI

Dead storage 486 MI

**Figure 9 Clatworthy Reservoir 1975**



**Case 2**

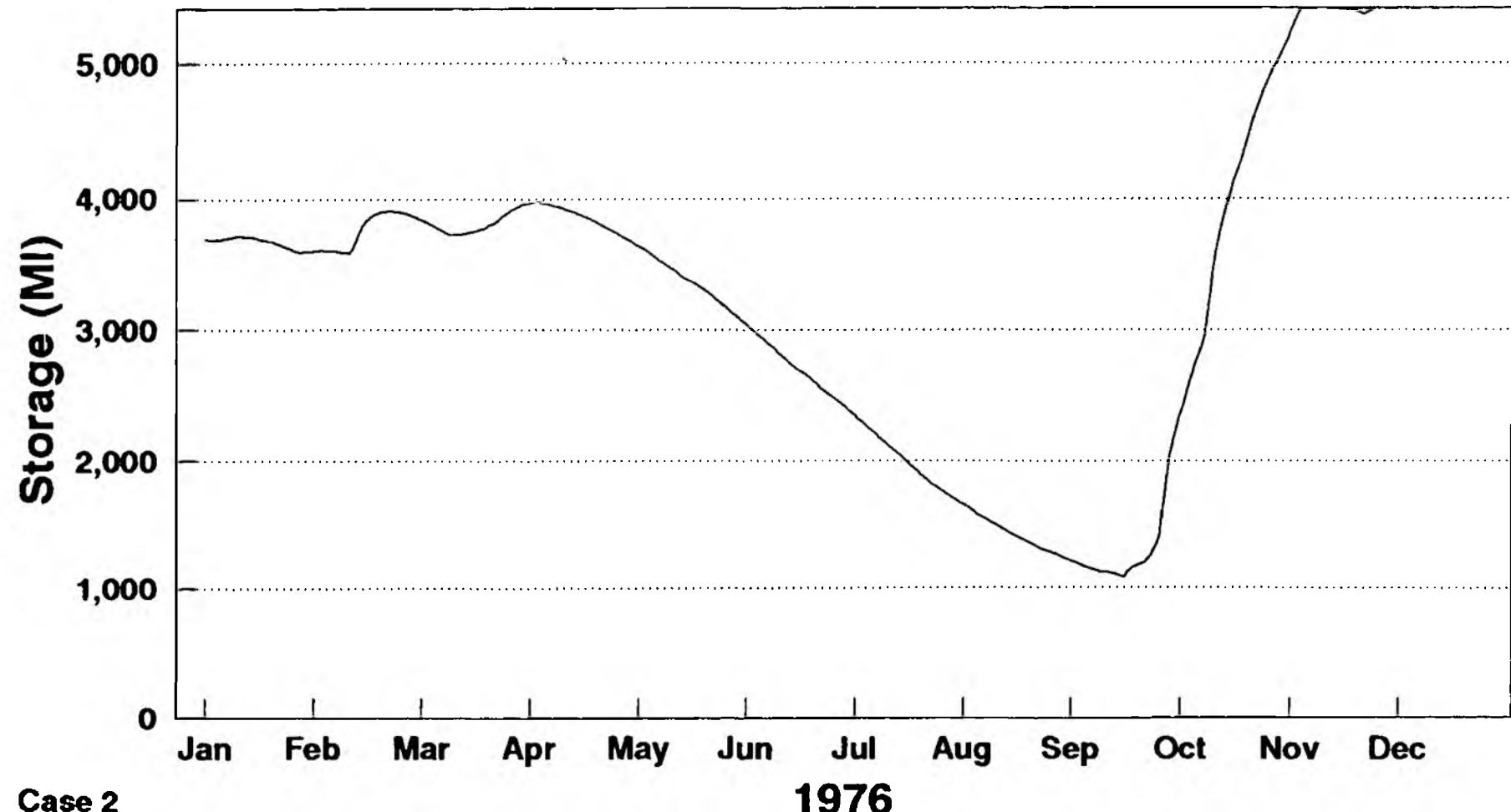
**1975**

**1991 reduced abstractions - 17.75 MI/d**

**20% of gross storage 1080.8MI**

**Lowest storage in 76 - 1086MI**

**Figure 10 Clatworthy Reservoir 1976**



**Case 2**

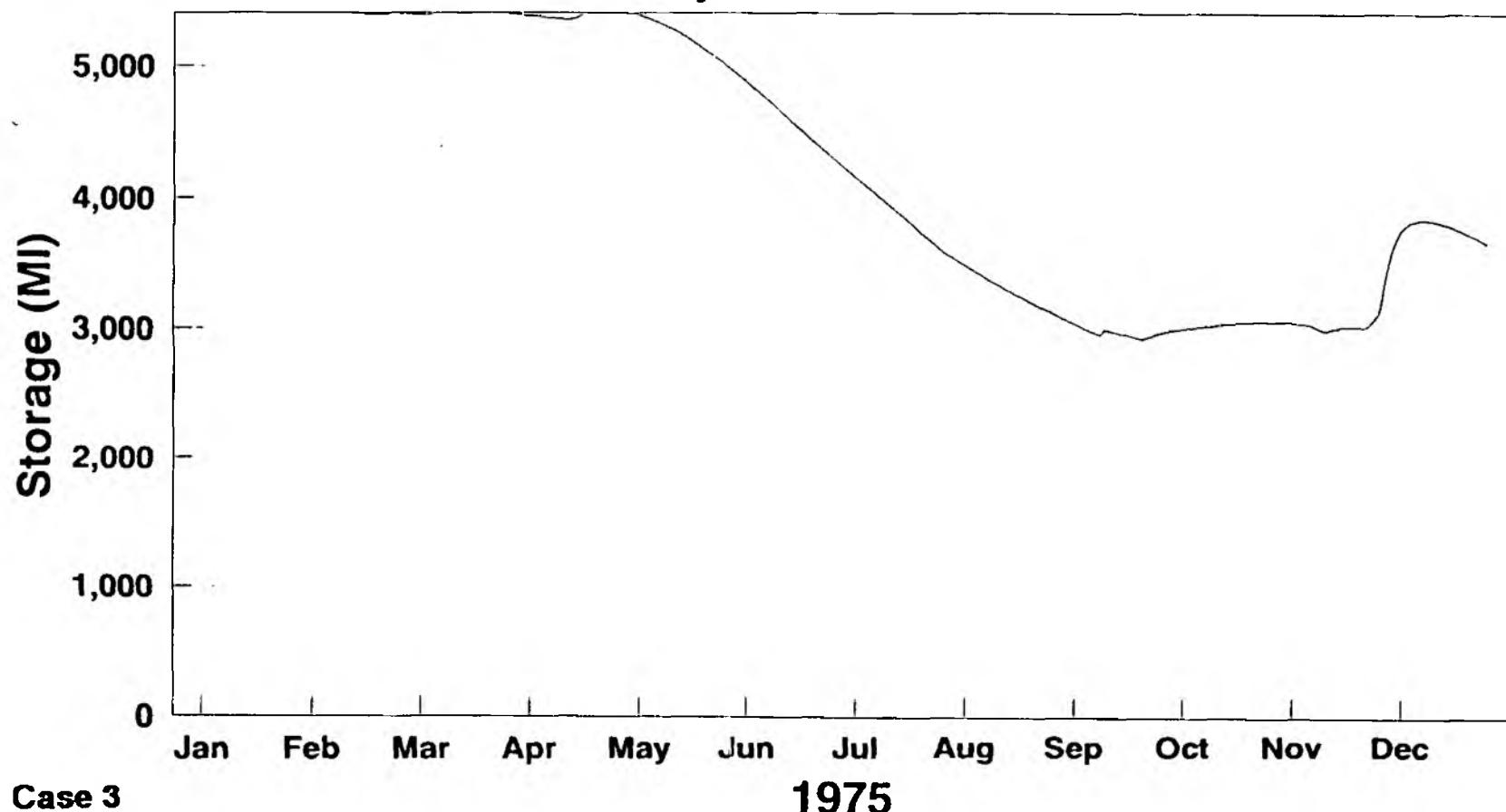
**1976**

**1991 reduced abstractions - 17.75ml/d**

**20% of gross storage 1080.8MI**

**Lowest storage in 76 - 1086MI**

Figure 11 Clatworthy Reservoir 1975



Case 3

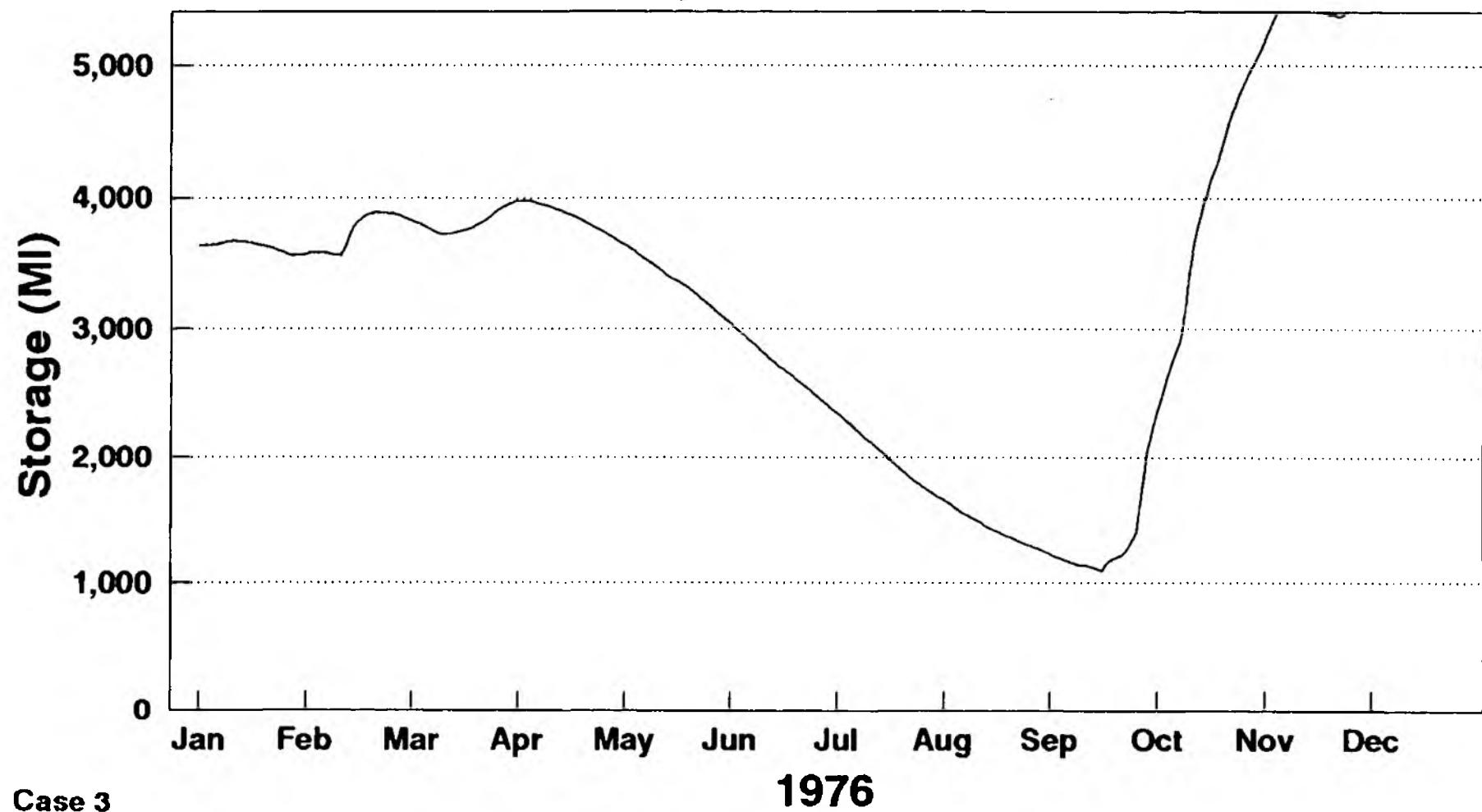
1975

1991 reduced abstractions - 17.01 MI/d

20% of gross storage 1080.8MI

Lowest storage in 76 - 1086MI

**Figure 12 Clatworthy Reservoir 1976**



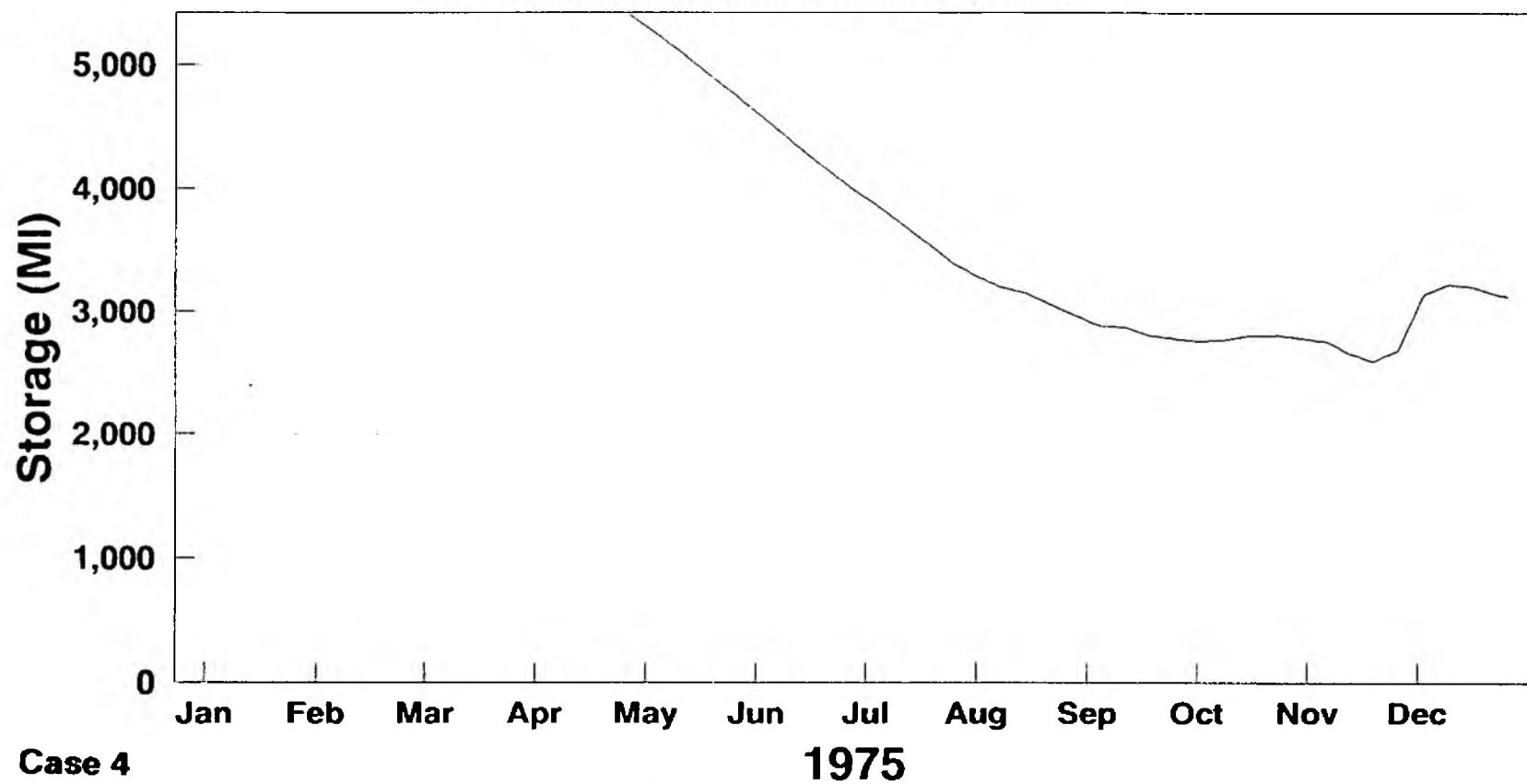
**Case 3**

**1991 reduced abstractions - 17.01 MI/d**

**20% of gross storage 1080.8MI**

**Evaporation included in assessment**

Figure 13 Clatworthy Reservoir 1975  
Using averaged Wessex Water inflows



Case 4

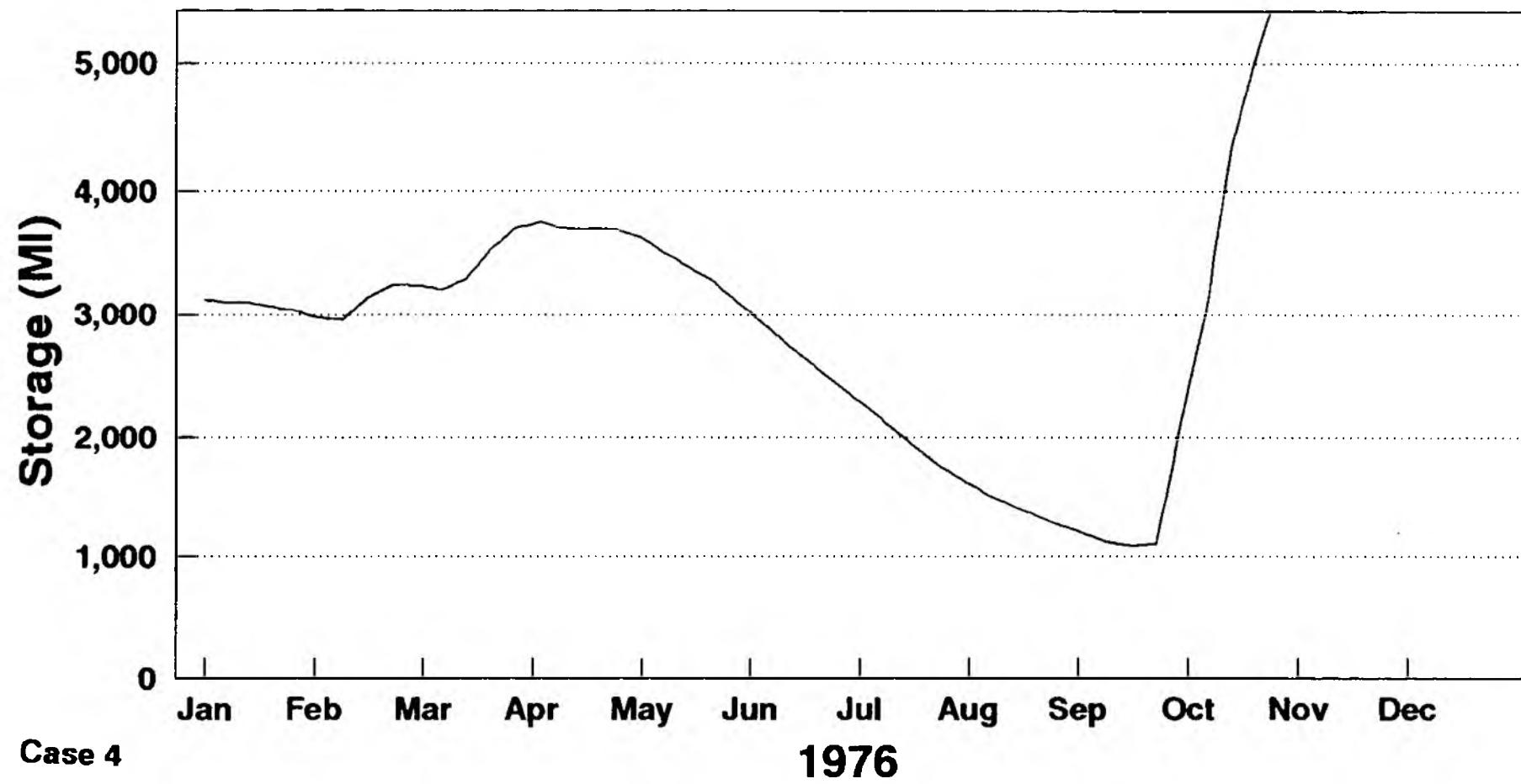
1975

1991 reduced abstractions - 16.2 MI/d

20% of gross storage 1080.8MI

Lowest storage in 76 - 1085.8MI

**Figure 14 Clatworthy Reservoir 1976**  
**Using averaged Wessex Water inflows**



**Case 4**

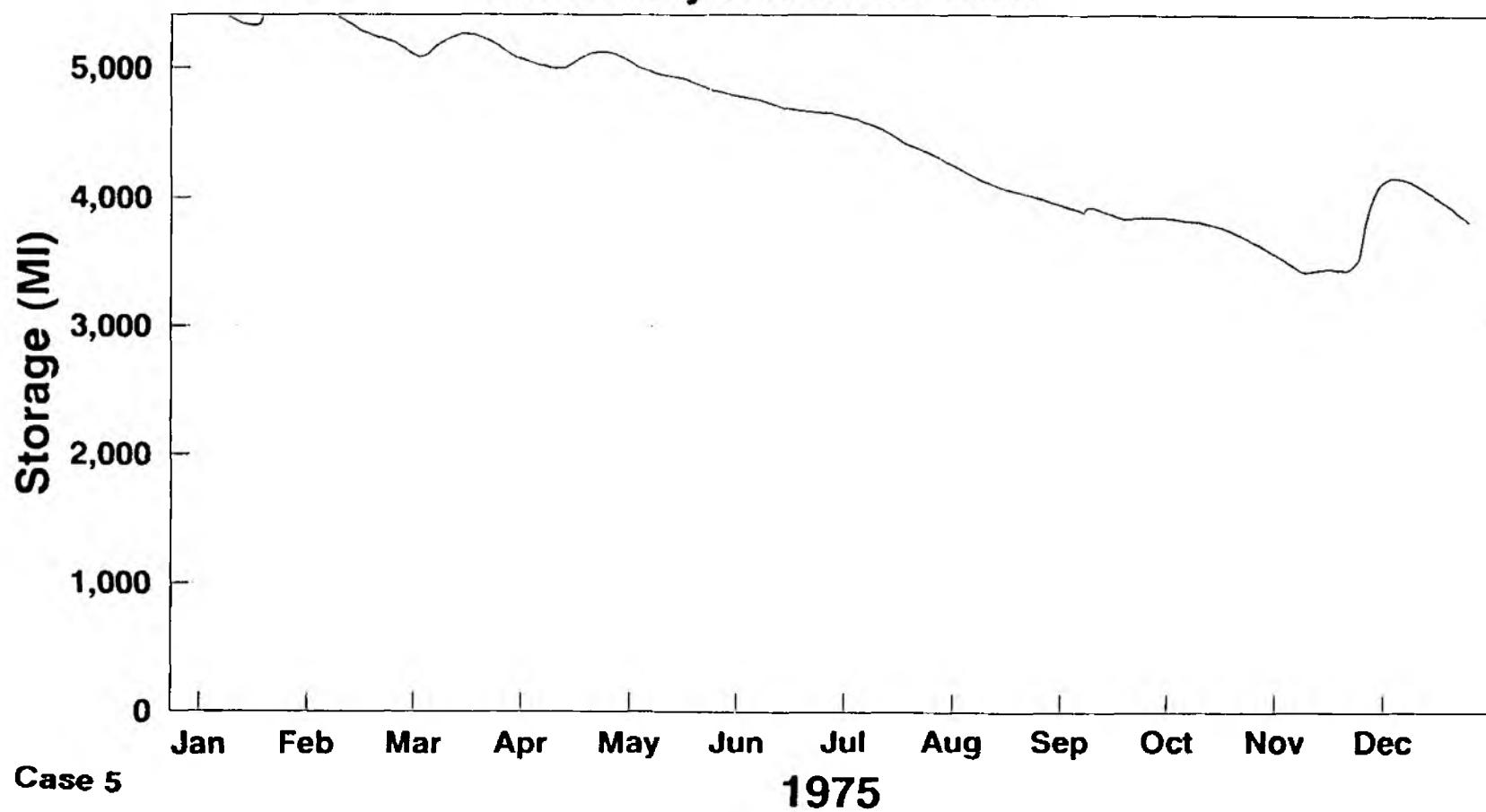
**1976**

**1991 reduced abstractions - 16.2Ml/d**

**20% of gross storage 1080.8Ml**

**Lowest storage in 76 - 1085.8Ml**

Figure 15      Clatworthy Reservoir 1975



Case 5

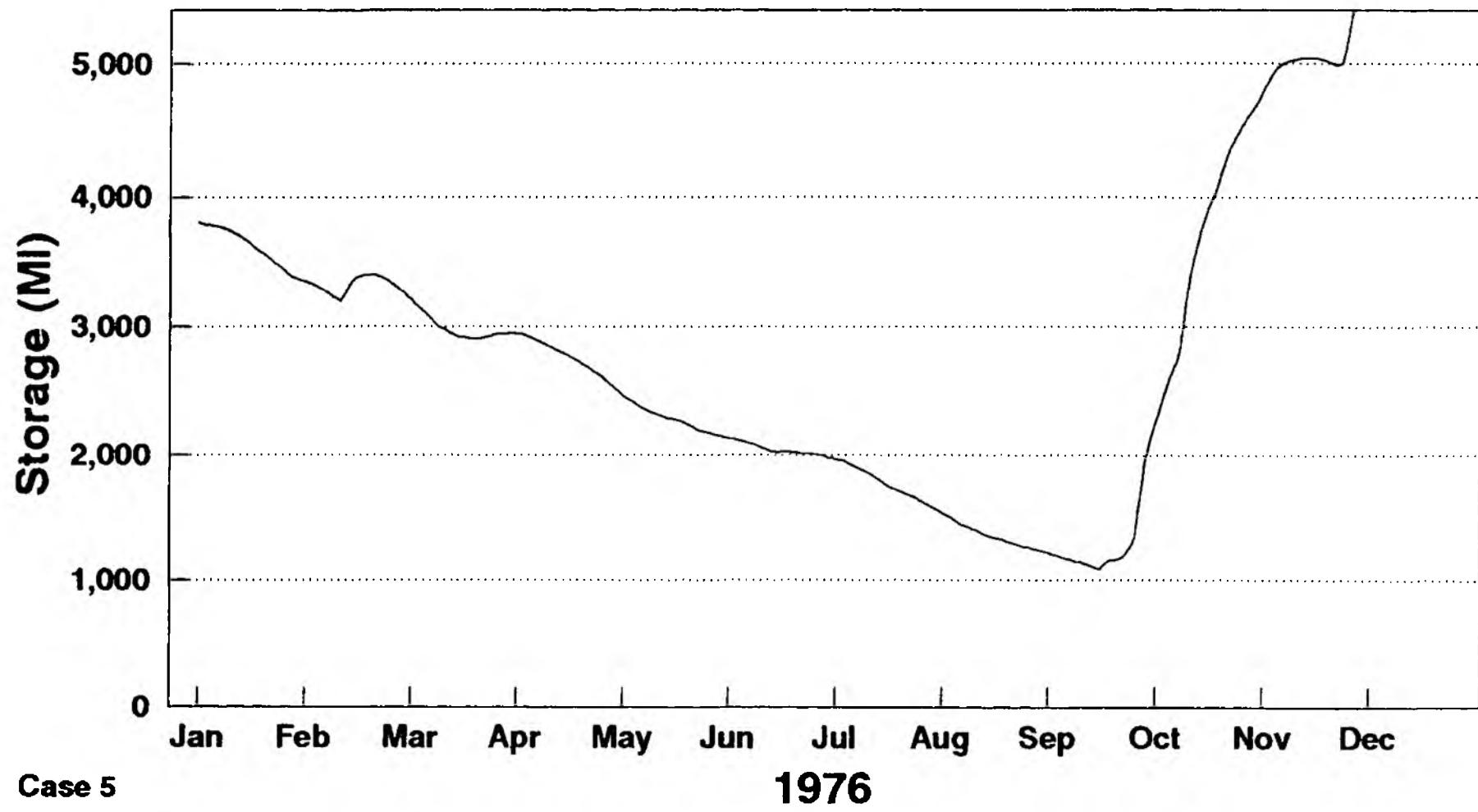
1975

1990 increased abstractions - 20.05 MI/d

20% of gross storage 1080.8MI

Lowest storage in 76 - 1081MI

**Figure 16 Clatworthy Reservoir 1976**



**Case 5**

**1976**

**1990 increased abstractions - 20.05ml/d**

**20% of gross storage 1080.8Ml**

**Lowest storage in 76 - 1081Ml**

Table 1: Clatworthy Reservoir - Summary of results

Case	1	2	3	4
Inflows	NRA SW 75/76	NRA SW 75/76	NRA SW 75/76	Wessex Water 75/76
Failure criteria	Zero live storage	20% gross storage	20% gross storage	20% gross storage
Demand ratio	1991	1991	1991	1991
Evaporation	No	No	Yes	No
Average Annual Drought Reliable Yield	18.95	17.75	17.01	16.2

All values given in Ml/d

Gross capacity of Clatworthy 5404 Ml

20% of gross capacity = 1080.8Ml

Dead storage = 486Ml

A.H  
4/3/93

5

NRA SW 75/76

20t gross storage

1990

No

20.05

### Inflows

NRA SW inflows have been calculated using the naturalised Wimbleball inflow sequence and the ratios of ADF at Clatworthy and Wimbleball dam. WW inflows have been calculated using a water balance and have been averaged by NRA SW to remove the negatives.

### NRA SW Assumptions.

1975/76 is equivalent to the 1:50 year critical drought.  
18 month critical period.  
No leakage from the reservoir.  
With the exception of case 3 it is assumed there is no direct evaporation from the reservoir.  
No direct rainfall into the reservoir.  
The licensed compensation release of 4.55Ml/d is released every day.  
Reservoir was full at the beginning of the analysis.  
The same demand profile has been applied to both 1975 and 1976.  
Weekly abstraction values from the Wessex Water spreadsheet have been used to produce the demand profiles.

Wessex Water average annual drought reliable yield = 15.8 Ml/d.

### Wessex Water assumptions.

2 year critical period.

**APPENDIX 1**

## Wessex Water spreadsheet

DATE wk ending	Inflow Smoothed Corrected	Comp. flow and Overflow	Output	Change in storage	Storage
06/01/75	548.8	335.2	161.6	52.0	5160.0
13/01/75	284.1	39.3	142.8	102.0	5314.0
20/01/75	373.9	253.7	152.2	-32.0	5282.0
27/01/75	1127.1	921.2	156.0	50.0	5332.0
03/02/75	934.4	841.3	161.1	-68.0	5264.0
10/02/75	435.9	325.9	162.0	-52.0	5212.0
17/02/75	278.4	32.7	159.7	86.0	5298.0
24/02/75	264.1	33.6	164.5	66.0	5364.0
03/03/75	247.4	99.5	163.9	-16.0	5348.0
10/03/75	314.0	136.8	161.2	16.0	5364.0
17/03/75	445.0	335.0	143.0	-33.0	5331.0
24/03/75	302.1	158.3	143.8	0.0	5331.0
31/03/75	179.9	59.4	137.5	-17.0	5314.0
07/04/75	193.1	37.7	138.4	17.0	5331.0
14/04/75	196.7	45.1	151.6	0.0	5331.0
21/04/75	206.9	45.7	161.2	0.0	5331.0
28/04/75	261.5	54.7	163.8	33.0	5704.0
05/05/75	193.1	46.7	160.5	-16.0	5648.0
12/05/75	71.8	31.6	102.4	-122.0	5226.0
19/05/75	11.0	31.1	160.8	-178.0	3648.0
26/05/75	28.3	31.9	158.2	-158.0	4891.0
02/06/75	-18.2	31.9	163.4	-203.0	4681.0
09/06/75	16.8	31.9	165.4	-176.0	4505.0
16/06/75	7.5	31.9	163.1	-174.0	4381.0
23/06/75	-61.7	31.9	154.3	-233.0	4093.0
30/06/75	-50.3	31.9	152.6	-232.0	3561.0
07/07/75	-36.0	31.9	147.7	-144.0	3817.0
14/07/75	-75.7	32.5	126.0	-238.0	3873.0
21/07/75	62.5	32.6	119.9	-90.0	3289.0
28/07/75	-0.5	32.8	149.6	-184.0	3103.0
04/08/75	12.7	31.9	150.8	-109.0	2896.0
11/08/75	24.0	32.0	157.0	-163.0	2773.0
18/08/75	52.8	32.5	142.3	-122.0	2651.0
25/08/75	10.7	32.5	133.2	-155.0	2470.0
01/09/75	-7.7	34.3	145.0	-187.0	2303.0
08/09/75	0.0	33.1	140.0	-163.0	2141.0
15/09/75	60.2	31.0	136.1	-83.0	21.02.
22/09/75	7.0	72.7	140.5	-163.0	1867.0
29/09/75	-11.1	52.3	198.7	-152.0	1715.0
06/10/75	81.0	31.9	130.9	-73.0	1747.0
13/10/75	65.4	31.9	137.7	-103.0	1774.0
20/10/75	74.0	31.9	167.3	-113.0	1661.0
27/10/75	37.9	31.9	125.5	-113.0	1296.0
03/11/75	42.0	31.9	121.4	-105.0	1181.0
10/11/75	50.8	31.0	113.7	-77.0	1114.0
17/11/75	61.8	31.9	116.8	-73.0	1041.0
24/11/75	116.1	31.9	103.7	0.0	1041.0
01/12/75	280.0	31.9	101.8	164.0	127.03
08/12/75	641.6	31.9	104.1	522.0	1797.0
15/12/75	221.3	31.9	105.9	160.0	1837.0
22/12/75	161.1	31.0	103.7	37.0	1700.0
29/12/75	138.0	31.1	106.6	-7.0	1317.0
05/01/76	145.8	31.9	103.6	23.0	1340.0
12/01/76	72.0	31.7	109.6	56.0	1854.0
19/01/76	104.1	31.9	108.7	22.0	2076.0
26/01/76	112.1	31.9	111.0	17.0	2019.0
02/02/76	120.2	31.9	113.6	-7.0	2019.0
09/02/76	172.0	31.9	116.9	41.0	2052.0
16/02/76	184.4	31.9	113.7	226.0	2278.0
23/02/76	130.9	31.9	114.0	153.0	2436.0

01/03/76	175.5	31.9	102.0	60.0	2496.0
08/03/76	143.9	31.9	130.4	6.0	2496.0
15/03/76	250.2	31.9	111.7	129.0	2625.0
22/03/76	411.5	31.9	119.9	283.0	2908.0
29/03/76	381.5	31.9	116.0	237.0	3145.0
05/04/76	221.2	31.9	122.1	102.0	3247.0
12/04/76	119.9	31.9	113.4	0.0	3226.0
19/04/76	150.6	31.9	103.1	11.0	3322.0
26/04/76	146.7	31.9	108.2	34.0	3311.0
03/05/76	54.5	31.9	98.4	-11.0	3046.0
10/05/76	38.7	31.9	97.0	-84.0	3227.0
17/05/76	45.4	31.9	100.4	-61.0	2916.0
24/05/76	8.9	31.9	99.5	-51.0	3115.0
31/05/76	93.7	31.9	101.7	-59.0	3046.0
07/06/76	-11.3	31.9	113.6	-130.0	2808.0
14/06/76	14.7	31.9	112.7	-108.0	2720.0
21/06/76	28.6	31.9	111.5	-88.0	2599.0
28/06/76	-14.7	31.9	101.2	-121.0	2478.0
05/07/76	8.6	31.9	122.3	-121.0	1996.0
12/07/76	-3.7	31.9	106.9	-119.0	1882.0
19/07/76	-7.0	31.9	107.6	-123.0	2236.0
26/07/76	9.2	31.9	117.8	-117.0	1727.0
02/08/76	-8.9	31.9	105.8	-123.0	2119.0
09/08/76	-9.8	31.9	95.9	-144.0	1695.0
16/08/76	-57.8	31.9	96.2	-155.0	1568.0
23/08/76	70.9	31.9	94.0	-21.0	1509.0
30/08/76	-41.9	31.9	76.9	-127.0	1442.0
06/09/76	21.6	31.9	72.9	-59.0	1436.0
13/09/76	10.8	31.9	75.9	-73.0	1409.0
20/09/76	45.9	31.9	65.1	-27.0	1364.0
27/09/76	76.0	31.9	65.0	32.0	1353.0
04/10/76	1983.1	31.9	55.7	1045.0	1261.0
11/10/76	961.6	31.9	63.6	683.0	1261.0
18/10/76	1357.2	31.9	67.3	86.5	1261.0
25/10/76	741.4	31.9	698.7	155.1	1261.0
01/11/76	546.0	31.9	113.1	556.1	1261.0
08/11/76	364.1	31.9	118.1	1261.0	1261.0
15/11/76	395.6	31.9	114.0	136.9	1261.0
22/11/76	336.6	31.9	120.0	146.0	1261.0
29/11/76	1127.1	31.9	115.0	152.7	1261.0
06/12/76	1036.6	31.9	112.0	164.5	1261.0
13/12/76	376.1	31.9	110.0	174.0	1261.0

**APPENDIX 2**

## **METHOD USED BY WESSEX WATER SERVICES LIMITED TO CALCULATE THE YIELD AVAILABLE FROM CLATWORTHY RESERVOIR**

This method of yield assessment has four main stages, as detailed below:

### **1. Calculation of Historic Inflows.**

Historic net inflows were calculated for 1975-1991 using a simple water balance equation. Inflow = storage at start of time step - storage at end of time step + output to supply + outflow from reservoir. Storage data for the start and end of each time-step along with the resultant change in storage, output to supply and outflow from the reservoir for 1975/76 are shown in Appendix 1.

Overspill is not measured at Clatworthy. Therefore when the reservoir was full inflows were calculated from correlation with either a reservoir with measured spillage or recorded flows at a nearby gauging station with similar catchment characteristics. Evaporation, leakage and direct rainfall onto the reservoir were not modelled. The absence of evaporation and leakage terms and possibly measurement error meant negative inflows were calculated during long, hot, dry periods when evaporation and leakage were greater than gross inflow.

### **2. Yield Analysis using the Historic Inflows Data.**

The inflows and monthly demand variations were input into a model to calculate, for every year, the inflows that occurred in periods starting each week of the year and lasting for between 1 and 104 weeks. On a monthly basis the storage required to meet various levels of demand for durations up to two years were calculated. The maximum required storage is the highest value, out of all the durations considered, of demand less the inflow. The duration that gives this maximum required storage is termed the critical period. If this is less than 52 weeks the reservoir will fill each winter even under design drought conditions.

### **3. Reliable Yield.**

The reliable yield of Clatworthy was taken as the highest yield which has monthly maximum required storage values all below the storage capacity of the reservoir. This assessment assumed 80% of gross storage was available for use and 20% was reserved for use in the greater than 1:50 year design drought event.

### **4. Control Curve.**

The monthly maximum required storage value for the reliable yield can then be used to produce a control curve.

**APPENDIX 3**

CASE 1: Clatworthy Reservoir  
 1991

Date	Inflow (cumecs)	Inflow (Ml/d)	Ratio to Average	Reduced Abstraction 18.95 Ml/d	C.R.	Outflow (Ml/d)	Storage change
01-JAN-75	0.889	76.810	1.283	24.306	4.55	28.856	47.954
02-JAN-75	0.751	64.886	1.283	24.306	4.55	28.856	36.031
03-JAN-75	0.628	54.259	1.283	24.306	4.55	28.856	25.404
04-JAN-75	0.536	46.310	1.283	24.306	4.55	28.856	17.455
05-JAN-75	0.472	40.781	1.283	24.306	4.55	28.856	11.925
06-JAN-75	0.441	38.102	1.283	24.306	4.55	28.856	9.247
07-JAN-75	0.402	34.733	1.283	24.306	4.55	28.856	5.877
08-JAN-75	0.370	31.968	1.250	23.684	4.55	28.234	3.734
09-JAN-75	0.340	29.376	1.250	23.684	4.55	28.234	1.142
10-JAN-75	0.317	27.389	1.250	23.684	4.55	28.234	-0.845
11-JAN-75	0.308	26.611	1.250	23.684	4.55	28.234	-1.623
12-JAN-75	0.356	30.758	1.250	23.684	4.55	28.234	2.524
13-JAN-75	0.324	27.994	1.250	23.684	4.55	28.234	-0.241
14-JAN-75	0.393	33.955	1.250	23.684	4.55	28.234	5.721
15-JAN-75	0.418	36.115	1.228	23.270	4.55	27.820	8.295
16-JAN-75	0.421	36.374	1.228	23.270	4.55	27.820	8.554
17-JAN-75	0.504	43.546	1.228	23.270	4.55	27.820	15.726
18-JAN-75	0.536	46.310	1.228	23.270	4.55	27.820	18.490
19-JAN-75	1.119	96.682	1.228	23.270	4.55	27.820	68.862
20-JAN-75	1.202	103.853	1.228	23.270	4.55	27.820	76.033
21-JAN-75	1.383	119.491	1.228	23.270	4.55	27.820	91.671
22-JAN-75	2.653	229.219	1.303	24.696	4.55	29.246	199.973
23-JAN-75	2.168	187.315	1.303	24.696	4.55	29.246	158.069
24-JAN-75	1.705	147.312	1.303	24.696	4.55	29.246	118.066
25-JAN-75	1.554	134.266	1.303	24.696	4.55	29.246	105.020
26-JAN-75	1.537	132.797	1.303	24.696	4.55	29.246	103.551
27-JAN-75	1.313	113.443	1.303	24.696	4.55	29.246	84.197
28-JAN-75	2.211	191.030	1.303	24.696	4.55	29.246	161.784
29-JAN-75	1.823	157.507	1.320	25.007	4.55	29.557	127.951
30-JAN-75	1.678	144.979	1.320	25.007	4.55	29.557	115.423
31-JAN-75	1.606	138.758	1.320	25.007	4.55	29.557	109.202
01-FEB-75	1.412	121.997	1.320	25.007	4.55	29.557	92.440
02-FEB-75	1.149	99.274	1.320	25.007	4.55	29.557	69.717
03-FEB-75	0.938	81.043	1.320	25.007	4.55	29.557	51.487
04-FEB-75	0.769	66.442	1.320	25.007	4.55	29.557	36.885
05-FEB-75	0.643	55.555	1.328	25.174	4.55	29.724	25.831
06-FEB-75	0.565	48.816	1.328	25.174	4.55	29.724	19.092
07-FEB-75	0.487	42.077	1.328	25.174	4.55	29.724	12.353
08-FEB-75	0.420	36.288	1.328	25.174	4.55	29.724	6.564
09-FEB-75	0.360	31.104	1.328	25.174	4.55	29.724	1.380
10-FEB-75	0.373	32.227	1.328	25.174	4.55	29.724	2.503
11-FEB-75	0.330	28.512	1.328	25.174	4.55	29.724	-1.212
12-FEB-75	0.316	27.302	1.325	25.102	4.55	29.652	-2.350
13-FEB-75	0.292	25.229	1.325	25.102	4.55	29.652	-4.423
14-FEB-75	0.278	24.019	1.325	25.102	4.55	29.652	-5.633
15-FEB-75	0.266	22.982	1.325	25.102	4.55	29.652	-6.670
16-FEB-75	0.266	22.982	1.325	25.102	4.55	29.652	-6.670
17-FEB-75	0.306	26.438	1.325	25.102	4.55	29.652	-3.214
18-FEB-75	0.366	31.622	1.325	25.102	4.55	29.652	1.970
19-FEB-75	0.323	27.907	1.282	24.290	4.55	28.840	-0.932
20-FEB-75	0.329	28.426	1.282	24.290	4.55	28.840	-0.414
21-FEB-75	0.330	28.512	1.282	24.290	4.55	28.840	-0.328

## Storage

20-APR-75	0.489	42.250	1.061	20.107	4.55	24.657	17.592
21-APR-75	0.516	44.582	1.061	20.107	4.55	24.657	19.925
22-APR-75	0.470	40.608	1.061	20.107	4.55	24.657	15.951
23-APR-75	0.429	37.066	1.068	20.235	4.55	24.785	12.281
24-APR-75	0.388	33.523	1.068	20.235	4.55	24.785	8.738
25-APR-75	0.360	31.104	1.068	20.235	4.55	24.785	6.319
26-APR-75	0.329	28.426	1.068	20.235	4.55	24.785	3.641
27-APR-75	0.303	26.179	1.068	20.235	4.55	24.785	1.394
28-APR-75	0.282	24.365	1.068	20.235	4.55	24.785	-0.420
29-APR-75	0.267	23.069	1.068	20.235	4.55	24.785	-1.716
30-APR-75	0.245	21.168	1.028	19.486	4.55	24.036	-2.868
01-MAY-75	0.235	20.304	1.028	19.486	4.55	24.036	-3.732
02-MAY-75	0.218	18.835	1.028	19.486	4.55	24.036	-5.201
03-MAY-75	0.200	17.280	1.028	19.486	4.55	24.036	-6.756
04-MAY-75	0.187	16.157	1.028	19.486	4.55	24.036	-7.879
05-MAY-75	0.172	14.861	1.028	19.486	4.55	24.036	-9.175
06-MAY-75	0.153	13.219	1.028	19.486	4.55	24.036	-10.817
07-MAY-75	0.150	12.960	1.088	20.625	4.55	25.175	-12.215
08-MAY-75	0.157	13.565	1.088	20.625	4.55	25.175	-11.610
09-MAY-75	0.156	13.478	1.088	20.625	4.55	25.175	-11.697
10-MAY-75	0.150	12.960	1.088	20.625	4.55	25.175	-12.215
11-MAY-75	0.134	11.578	1.088	20.625	4.55	25.175	-13.597
12-MAY-75	0.155	13.392	1.088	20.625	4.55	25.175	-11.783
13-MAY-75	0.160	13.824	1.088	20.625	4.55	25.175	-11.351
14-MAY-75	0.149	12.874	1.184	22.441	4.55	26.991	-14.118
15-MAY-75	0.136	11.750	1.184	22.441	4.55	26.991	-15.241
16-MAY-75	0.122	10.541	1.184	22.441	4.55	26.991	-16.451
17-MAY-75	0.114	9.850	1.184	22.441	4.55	26.991	-17.142
18-MAY-75	0.106	9.158	1.184	22.441	4.55	26.991	-17.833
19-MAY-75	0.100	8.640	1.184	22.441	4.55	26.991	-18.351
20-MAY-75	0.089	7.690	1.184	22.441	4.55	26.991	-19.302
21-MAY-75	0.084	7.258	1.178	22.330	4.55	26.880	-19.622
22-MAY-75	0.089	7.690	1.178	22.330	4.55	26.880	-19.190
23-MAY-75	0.107	9.245	1.178	22.330	4.55	26.880	-17.635
24-MAY-75	0.091	7.862	1.178	22.330	4.55	26.880	-19.018
25-MAY-75	0.090	7.776	1.178	22.330	4.55	26.880	-19.104
26-MAY-75	0.085	7.344	1.178	22.330	4.55	26.880	-19.536
27-MAY-75	0.073	6.307	1.178	22.330	4.55	26.880	-20.573
28-MAY-75	0.071	6.134	1.253	23.748	4.55	28.298	-22.164
29-MAY-75	0.073	6.307	1.253	23.748	4.55	28.298	-21.991
30-MAY-75	0.072	6.221	1.253	23.748	4.55	28.298	-22.077
31-MAY-75	0.067	5.789	1.253	23.748	4.55	28.298	-22.509
01-JUN-75	0.065	5.616	1.253	23.748	4.55	28.298	-22.682
02-JUN-75	0.071	6.134	1.253	23.748	4.55	28.298	-22.164
03-JUN-75	0.066	5.702	1.253	23.748	4.55	28.298	-22.596
04-JUN-75	0.064	5.530	1.202	22.784	4.55	27.334	-21.804
05-JUN-75	0.062	5.357	1.202	22.784	4.55	27.334	-21.977
06-JUN-75	0.056	4.838	1.202	22.784	4.55	27.334	-22.496
07-JUN-75	0.052	4.493	1.202	22.784	4.55	27.334	-22.841
08-JUN-75	0.051	4.406	1.202	22.784	4.55	27.334	-22.928
09-JUN-75	0.050	4.320	1.202	22.784	4.55	27.334	-23.014
10-JUN-75	0.049	4.234	1.202	22.784	4.55	27.334	-23.100
11-JUN-75	0.045	3.888	1.247	23.636	4.55	28.186	-24.298
12-JUN-75	0.042	3.629	1.247	23.636	4.55	28.186	-24.558
13-JUN-75	0.039	3.370	1.247	23.636	4.55	28.186	-24.817
14-JUN-75	0.037	3.197	1.247	23.636	4.55	28.186	-24.990
15-JUN-75	0.036	3.110	1.247	23.636	4.55	28.186	-25.076

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12-AUG-75	0.016	1.382	0.763	14.451	4.55	19.001	-17.619
13-AUG-75	0.016	1.382	0.636	12.053	4.55	16.603	-15.221
14-AUG-75	0.016	1.382	0.636	12.053	4.55	16.603	-15.221
15-AUG-75	0.026	2.246	0.636	12.053	4.55	16.603	-14.357
16-AUG-75	0.028	2.419	0.636	12.053	4.55	16.603	-14.184
17-AUG-75	0.031	2.678	0.636	12.053	4.55	16.603	-13.925
18-AUG-75	0.027	2.333	0.636	12.053	4.55	16.603	-14.270
19-AUG-75	0.032	2.765	0.636	12.053	4.55	16.603	-13.838
20-AUG-75	0.036	3.110	0.571	10.826	4.55	15.376	-12.266
21-AUG-75	0.028	2.419	0.571	10.826	4.55	15.376	-12.957
22-AUG-75	0.026	2.246	0.571	10.826	4.55	15.376	-13.130
23-AUG-75	0.024	2.074	0.571	10.826	4.55	15.376	-13.303
24-AUG-75	0.023	1.987	0.571	10.826	4.55	15.376	-13.389
25-AUG-75	0.021	1.814	0.571	10.826	4.55	15.376	-13.562
26-AUG-75	0.019	1.642	0.571	10.826	4.55	15.376	-13.735
27-AUG-75	0.017	1.469	0.528	10.006	4.55	14.556	-13.087
28-AUG-75	0.017	1.469	0.528	10.006	4.55	14.556	-13.087
29-AUG-75	0.016	1.382	0.528	10.006	4.55	14.556	-13.173
30-AUG-75	0.016	1.382	0.528	10.006	4.55	14.556	-13.173
31-AUG-75	0.016	1.382	0.528	10.006	4.55	14.556	-13.173
01-SEP-75	0.016	1.382	0.528	10.006	4.55	14.556	-13.173
02-SEP-75	0.016	1.382	0.528	10.006	4.55	14.556	-13.173
03-SEP-75	0.016	1.382	0.563	10.675	4.55	15.225	-13.843
04-SEP-75	0.016	1.382	0.563	10.675	4.55	15.225	-13.843
05-SEP-75	0.016	1.382	0.563	10.675	4.55	15.225	-13.843
06-SEP-75	0.015	1.296	0.563	10.675	4.55	15.225	-13.929
07-SEP-75	0.016	1.382	0.563	10.675	4.55	15.225	-13.843
08-SEP-75	0.016	1.382	0.563	10.675	4.55	15.225	-13.843
09-SEP-75	0.018	1.555	0.563	10.675	4.55	15.225	-13.670
10-SEP-75	0.017	1.469	0.485	9.185	4.55	13.735	-12.266
11-SEP-75	0.022	1.901	0.485	9.185	4.55	13.735	-11.834
12-SEP-75	0.041	3.542	0.485	9.185	4.55	13.735	-10.193
13-SEP-75	0.563	48.643	0.485	9.185	4.55	13.735	34.908
14-SEP-75	0.182	15.725	0.485	9.185	4.55	13.735	1.990
15-SEP-75	0.085	7.344	0.485	9.185	4.55	13.735	-6.391
16-SEP-75	0.062	5.357	0.485	9.185	4.55	13.735	-8.378
17-SEP-75	0.056	4.838	0.343	6.501	4.55	11.051	-6.212
18-SEP-75	0.058	5.011	0.343	6.501	4.55	11.051	-6.039
19-SEP-75	0.051	4.406	0.343	6.501	4.55	11.051	-6.644
20-SEP-75	0.050	4.320	0.343	6.501	4.55	11.051	-6.731
21-SEP-75	0.046	3.974	0.343	6.501	4.55	11.051	-7.076
22-SEP-75	0.043	3.715	0.343	6.501	4.55	11.051	-7.335
23-SEP-75	0.042	3.629	0.343	6.501	4.55	11.051	-7.422
24-SEP-75	0.044	3.802	0.249	4.724	4.55	9.274	-5.472
25-SEP-75	0.237	20.477	0.249	4.724	4.55	9.274	11.203
26-SEP-75	0.192	16.589	0.249	4.724	4.55	9.274	7.315
27-SEP-75	0.265	22.896	0.249	4.724	4.55	9.274	13.622
28-SEP-75	0.200	17.280	0.249	4.724	4.55	9.274	8.006
29-SEP-75	0.197	17.021	0.249	4.724	4.55	9.274	7.747
30-SEP-75	0.192	16.589	0.249	4.724	4.55	9.274	7.315
01-OCT-75	0.165	14.256	0.223	4.222	4.55	8.772	5.484
02-OCT-75	0.178	15.379	0.223	4.222	4.55	8.772	6.607
03-OCT-75	0.159	13.738	0.223	4.222	4.55	8.772	4.965
04-OCT-75	0.155	13.392	0.223	4.222	4.55	8.772	4.620
05-OCT-75	0.145	12.528	0.223	4.222	4.55	8.772	3.756
06-OCT-75	0.142	12.269	0.223	4.222	4.55	8.772	3.497
07-OCT-75	0.137	11.837	0.223	4.222	4.55	8.772	3.065

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04-DEC-75	1.340	115.776	1.376	26.074	4.55	30.624	85.152
05-DEC-75	1.128	97.459	1.376	26.074	4.55	30.624	66.835
06-DEC-75	0.907	78.365	1.376	26.074	4.55	30.624	47.741
07-DEC-75	0.731	63.158	1.376	26.074	4.55	30.624	32.534
08-DEC-75	0.602	52.013	1.376	26.074	4.55	30.624	21.389
09-DEC-75	0.504	43.546	1.376	26.074	4.55	30.624	12.921
10-DEC-75	0.437	37.757	1.413	26.767	4.55	31.317	6.440
11-DEC-75	0.395	34.128	1.413	26.767	4.55	31.317	2.811
12-DEC-75	0.392	33.869	1.413	26.767	4.55	31.317	2.552
13-DEC-75	0.339	29.290	1.413	26.767	4.55	31.317	-2.028
14-DEC-75	0.306	26.438	1.413	26.767	4.55	31.317	-4.879
15-DEC-75	0.279	24.106	1.413	26.767	4.55	31.317	-7.212
16-DEC-75	0.258	22.291	1.413	26.767	4.55	31.317	-9.026
17-DEC-75	0.237	20.477	1.353	25.644	4.55	30.194	-9.717
18-DEC-75	0.223	19.267	1.353	25.644	4.55	30.194	-10.927
19-DEC-75	0.214	18.490	1.353	25.644	4.55	30.194	-11.704
20-DEC-75	0.208	17.971	1.353	25.644	4.55	30.194	-12.223
21-DEC-75	0.200	17.280	1.353	25.644	4.55	30.194	-12.914
22-DEC-75	0.178	15.379	1.353	25.644	4.55	30.194	-14.815
23-DEC-75	0.175	15.120	1.353	25.644	4.55	30.194	-15.074
24-DEC-75	0.176	15.206	1.341	25.421	4.55	29.971	-14.764
25-DEC-75	0.171	14.774	1.341	25.421	4.55	29.971	-15.196
26-DEC-75	0.168	14.515	1.341	25.421	4.55	29.971	-15.456
27-DEC-75	0.159	13.738	1.341	25.421	4.55	29.971	-16.233
28-DEC-75	0.150	12.960	1.341	25.421	4.55	29.971	-17.011
29-DEC-75	0.144	12.442	1.341	25.421	4.55	29.971	-17.529
30-DEC-75	0.146	12.614	1.341	25.421	4.55	29.971	-17.356
31-DEC-75	0.160	13.824	1.283	24.306	4.55	28.856	-15.032
01-JAN-76	0.168	14.515	1.283	24.306	4.55	28.856	-14.340
02-JAN-76	0.255	22.032	1.283	24.306	4.55	28.856	-6.824
03-JAN-76	0.286	24.710	1.283	24.306	4.55	28.856	-4.145
04-JAN-76	0.339	29.290	1.283	24.306	4.55	28.856	0.434
05-JAN-76	0.359	31.018	1.283	24.306	4.55	28.856	2.162
06-JAN-76	0.361	31.190	1.283	24.306	4.55	28.856	2.335
07-JAN-76	0.369	31.882	1.250	23.684	4.55	28.234	3.647
08-JAN-76	0.376	32.486	1.250	23.684	4.55	28.234	4.252
09-JAN-76	0.370	31.968	1.250	23.684	4.55	28.234	3.734
10-JAN-76	0.350	30.240	1.250	23.684	4.55	28.234	2.006
11-JAN-76	0.318	27.475	1.250	23.684	4.55	28.234	-0.759
12-JAN-76	0.286	24.710	1.250	23.684	4.55	28.234	-3.524
13-JAN-76	0.270	23.328	1.250	23.684	4.55	28.234	-4.906
14-JAN-76	0.261	22.550	1.228	23.270	4.55	27.820	-5.270
15-JAN-76	0.248	21.427	1.228	23.270	4.55	27.820	-6.393
16-JAN-76	0.240	20.736	1.228	23.270	4.55	27.820	-7.084
17-JAN-76	0.228	19.699	1.228	23.270	4.55	27.820	-8.121
18-JAN-76	0.218	18.835	1.228	23.270	4.55	27.820	-9.985
19-JAN-76	0.233	20.131	1.228	23.270	4.55	27.820	-7.689
20-JAN-76	0.258	22.291	1.228	23.270	4.55	27.820	-5.529
21-JAN-76	0.215	18.576	1.303	24.696	4.55	29.246	-10.670
22-JAN-76	0.204	17.626	1.303	24.696	4.55	29.246	-11.620
23-JAN-76	0.197	17.021	1.303	24.696	4.55	29.246	-12.225
24-JAN-76	0.193	16.675	1.303	24.696	4.55	29.246	-12.571
25-JAN-76	0.183	15.811	1.303	24.696	4.55	29.246	-13.435
26-JAN-76	0.185	15.984	1.303	24.696	4.55	29.246	-13.262
27-JAN-76	0.192	16.589	1.303	24.696	4.55	29.246	-12.657
28-JAN-76	0.263	22.723	1.320	25.007	4.55	29.557	-6.833
29-JAN-76	0.374	32.314	1.320	25.007	4.55	29.557	2.757

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27-MAR-76	0.545	47.088	1.313	24.887	4.55	29.437	17.651
28-MAR-76	0.536	46.310	1.313	24.887	4.55	29.437	16.873
29-MAR-76	0.519	44.842	1.313	24.887	4.55	29.437	15.404
30-MAR-76	0.479	41.386	1.313	24.887	4.55	29.437	11.948
31-MAR-76	0.448	38.707	1.287	24.385	4.55	28.935	9.772
01-APR-76	0.449	38.794	1.287	24.385	4.55	28.935	9.858
02-APR-76	0.402	34.733	1.287	24.385	4.55	28.935	5.798
03-APR-76	0.358	30.931	1.287	24.385	4.55	28.935	1.996
04-APR-76	0.328	28.339	1.287	24.385	4.55	28.935	-0.596
05-APR-76	0.298	25.747	1.287	24.385	4.55	28.935	-3.188
06-APR-76	0.270	23.328	1.287	24.385	4.55	28.935	-5.607
07-APR-76	0.252	21.773	1.176	22.282	4.55	26.832	-5.059
08-APR-76	0.231	19.958	1.176	22.282	4.55	26.832	-6.874
09-APR-76	0.217	18.749	1.176	22.282	4.55	26.832	-8.083
10-APR-76	0.211	18.230	1.176	22.282	4.55	26.832	-8.602
11-APR-76	0.202	17.453	1.176	22.282	4.55	26.832	-9.379
12-APR-76	0.183	15.811	1.176	22.282	4.55	26.832	-11.021
13-APR-76	0.183	15.811	1.176	22.282	4.55	26.832	-11.021
14-APR-76	0.178	15.379	1.061	20.107	4.55	24.657	-9.278
15-APR-76	0.162	13.997	1.061	20.107	4.55	24.657	-10.660
16-APR-76	0.158	13.651	1.061	20.107	4.55	24.657	-11.006
17-APR-76	0.146	12.614	1.061	20.107	4.55	24.657	-12.043
18-APR-76	0.142	12.269	1.061	20.107	4.55	24.657	-12.388
19-APR-76	0.136	11.750	1.061	20.107	4.55	24.657	-12.907
20-APR-76	0.128	11.059	1.061	20.107	4.55	24.657	-13.598
21-APR-76	0.123	10.627	1.068	20.235	4.55	24.785	-14.158
22-APR-76	0.120	10.368	1.068	20.235	4.55	24.785	-14.417
23-APR-76	0.114	9.850	1.068	20.235	4.55	24.785	-14.935
24-APR-76	0.110	9.504	1.068	20.235	4.55	24.785	-15.281
25-APR-76	0.107	9.245	1.068	20.235	4.55	24.785	-15.540
26-APR-76	0.099	8.554	1.068	20.235	4.55	24.785	-16.231
27-APR-76	0.097	8.381	1.068	20.235	4.55	24.785	-16.404
28-APR-76	0.094	8.122	1.028	19.486	4.55	24.036	-15.914
29-APR-76	0.091	7.862	1.028	19.486	4.55	24.036	-16.173
30-APR-76	0.092	7.949	1.028	19.486	4.55	24.036	-16.087
01-MAY-76	0.089	7.690	1.028	19.486	4.55	24.036	-16.346
02-MAY-76	0.091	7.862	1.028	19.486	4.55	24.036	-16.173
03-MAY-76	0.089	7.690	1.028	19.486	4.55	24.036	-16.346
04-MAY-76	0.089	7.690	1.028	19.486	4.55	24.036	-16.346
05-MAY-76	0.086	7.430	1.088	20.625	4.55	25.175	-17.745
06-MAY-76	0.080	6.912	1.088	20.625	4.55	25.175	-18.263
07-MAY-76	0.075	6.480	1.088	20.625	4.55	25.175	-18.695
08-MAY-76	0.067	5.789	1.088	20.625	4.55	25.175	-19.386
09-MAY-76	0.065	5.616	1.088	20.625	4.55	25.175	-19.559
10-MAY-76	0.063	5.443	1.088	20.625	4.55	25.175	-19.732
11-MAY-76	0.066	5.702	1.088	20.625	4.55	25.175	-19.473
12-MAY-76	0.072	6.221	1.184	22.441	4.55	26.991	-20.771
13-MAY-76	0.066	5.702	1.184	22.441	4.55	26.991	-21.289
14-MAY-76	0.065	5.616	1.184	22.441	4.55	26.991	-21.375
15-MAY-76	0.064	5.530	1.184	22.441	4.55	26.991	-21.462
16-MAY-76	0.060	5.184	1.184	22.441	4.55	26.991	-21.807
17-MAY-76	0.060	5.184	1.184	22.441	4.55	26.991	-21.807
18-MAY-76	0.104	8.986	1.184	22.441	4.55	26.991	-18.006
19-MAY-76	0.150	12.960	1.178	22.330	4.55	26.880	-13.920
20-MAY-76	0.117	10.109	1.178	22.330	4.55	26.880	-16.771
21-MAY-76	0.085	7.344	1.178	22.330	4.55	26.880	-19.536
22-MAY-76	0.079	6.826	1.178	22.330	4.55	26.880	-20.054

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19-JUL-76	0.018	1.555	1.160	21.987	4.55	26.537	-24.982
20-JUL-76	0.017	1.469	1.160	21.987	4.55	26.537	-25.069
21-JUL-76	0.014	1.210	1.152	21.828	4.55	26.378	-25.168
22-JUL-76	0.014	1.210	1.152	21.828	4.55	26.378	-25.168
23-JUL-76	0.013	1.123	1.152	21.828	4.55	26.378	-25.255
24-JUL-76	0.012	1.037	1.152	21.828	4.55	26.378	-25.341
25-JUL-76	0.012	1.037	1.152	21.828	4.55	26.378	-25.341
26-JUL-76	0.012	1.037	1.152	21.828	4.55	26.378	-25.341
27-JUL-76	0.011	0.950	1.152	21.828	4.55	26.378	-25.428
28-JUL-76	0.010	0.864	0.787	14.905	4.55	19.455	-18.591
29-JUL-76	0.009	0.778	0.787	14.905	4.55	19.455	-18.678
30-JUL-76	0.010	0.864	0.787	14.905	4.55	19.455	-18.591
31-JUL-76	0.010	0.864	0.787	14.905	4.55	19.455	-18.591
01-AUG-76	0.011	0.950	0.787	14.905	4.55	19.455	-18.505
02-AUG-76	0.011	0.950	0.787	14.905	4.55	19.455	-18.505
03-AUG-76	0.011	0.950	0.787	14.905	4.55	19.455	-18.505
04-AUG-76	0.011	0.950	0.763	14.451	4.55	19.001	-18.051
05-AUG-76	0.011	0.950	0.763	14.451	4.55	19.001	-18.051
06-AUG-76	0.010	0.864	0.763	14.451	4.55	19.001	-18.137
07-AUG-76	0.010	0.864	0.763	14.451	4.55	19.001	-18.137
08-AUG-76	0.010	0.864	0.763	14.451	4.55	19.001	-18.137
09-AUG-76	0.010	0.864	0.763	14.451	4.55	19.001	-18.137
10-AUG-76	0.009	0.778	0.763	14.451	4.55	19.001	-18.224
11-AUG-76	0.009	0.778	0.636	12.053	4.55	16.603	-15.826
12-AUG-76	0.009	0.778	0.636	12.053	4.55	16.603	-15.826
13-AUG-76	0.009	0.778	0.636	12.053	4.55	16.603	-15.826
14-AUG-76	0.007	0.605	0.636	12.053	4.55	16.603	-15.998
15-AUG-76	0.007	0.605	0.636	12.053	4.55	16.603	-15.998
16-AUG-76	0.007	0.605	0.636	12.053	4.55	16.603	-15.998
17-AUG-76	0.007	0.605	0.636	12.053	4.55	16.603	-15.998
18-AUG-76	0.007	0.605	0.571	10.826	4.55	15.376	-14.772
19-AUG-76	0.006	0.518	0.571	10.826	4.55	15.376	-14.858
20-AUG-76	0.007	0.605	0.571	10.826	4.55	15.376	-14.772
21-AUG-76	0.006	0.518	0.571	10.826	4.55	15.376	-14.858
22-AUG-76	0.006	0.518	0.571	10.826	4.55	15.376	-14.858
23-AUG-76	0.006	0.518	0.571	10.826	4.55	15.376	-14.858
24-AUG-76	0.006	0.518	0.571	10.826	4.55	15.376	-14.858
25-AUG-76	0.007	0.605	0.528	10.006	4.55	14.556	-13.951
26-AUG-76	0.007	0.605	0.528	10.006	4.55	14.556	-13.951
27-AUG-76	0.006	0.518	0.528	10.006	4.55	14.556	-14.037
28-AUG-76	0.007	0.605	0.528	10.006	4.55	14.556	-13.951
29-AUG-76	0.014	1.210	0.528	10.006	4.55	14.556	-13.346
30-AUG-76	0.075	6.480	0.528	10.006	4.55	14.556	-8.076
31-AUG-76	0.024	2.074	0.528	10.006	4.55	14.556	-12.482
01-SEP-76	0.017	1.469	0.563	10.675	4.55	15.225	-13.756
02-SEP-76	0.014	1.210	0.563	10.675	4.55	15.225	-14.015
03-SEP-76	0.013	1.123	0.563	10.675	4.55	15.225	-14.102
04-SEP-76	0.013	1.123	0.563	10.675	4.55	15.225	-14.102
05-SEP-76	0.012	1.037	0.563	10.675	4.55	15.225	-14.188
06-SEP-76	0.011	0.950	0.563	10.675	4.55	15.225	-14.275
07-SEP-76	0.011	0.950	0.563	10.675	4.55	15.225	-14.275
08-SEP-76	0.010	0.864	0.485	9.185	4.55	13.735	-12.871
09-SEP-76	0.012	1.037	0.485	9.185	4.55	13.735	-12.698
10-SEP-76	0.047	4.061	0.485	9.185	4.55	13.735	-9.674
11-SEP-76	0.033	2.851	0.485	9.185	4.55	13.735	-10.884
12-SEP-76	0.027	2.333	0.485	9.185	4.55	13.735	-11.402
13-SEP-76	0.023	1.987	0.485	9.185	4.55	13.735	-11.748

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10-NOV-76	0.668	57.715	1.210	22.935	4.55	27.485	30.230
11-NOV-76	0.577	49.853	1.210	22.935	4.55	27.485	22.367
12-NOV-76	0.508	43.891	1.210	22.935	4.55	27.485	16.406
13-NOV-76	0.453	39.139	1.210	22.935	4.55	27.485	11.654
14-NOV-76	0.416	35.942	1.210	22.935	4.55	27.485	8.157
15-NOV-76	0.401	34.646	1.210	22.935	4.55	27.485	7.161
16-NOV-76	0.389	33.610	1.210	22.935	4.55	27.485	6.124
17-NOV-76	0.380	32.832	1.383	26.202	4.55	30.752	2.980
18-NOV-76	0.388	33.523	1.383	26.202	4.55	30.752	2.772
19-NOV-76	0.339	29.290	1.383	26.202	4.55	30.752	-1.462
20-NOV-76	0.317	27.389	1.383	26.202	4.55	30.752	-3.363
21-NOV-76	0.302	26.093	1.383	26.202	4.55	30.752	-4.659
22-NOV-76	0.283	24.451	1.383	26.202	4.55	30.752	-6.300
23-NOV-76	0.273	23.587	1.383	26.202	4.55	30.752	-7.164
24-NOV-76	0.267	23.069	1.373	26.018	4.55	30.568	-7.500
25-NOV-76	0.261	22.550	1.373	26.018	4.55	30.568	-8.018
26-NOV-76	0.256	22.118	1.373	26.018	4.55	30.568	-8.450
27-NOV-76	0.251	21.686	1.373	26.018	4.55	30.568	-8.882
28-NOV-76	0.463	40.003	1.373	26.018	4.55	30.568	9.435
29-NOV-76	0.491	42.422	1.373	26.018	4.55	30.568	11.854
30-NOV-76	1.640	141.696	1.373	26.018	4.55	30.568	111.128
01-DEC-76	2.234	193.018	1.376	26.074	4.55	30.624	162.393
02-DEC-76	2.146	185.414	1.376	26.074	4.55	30.624	154.790
03-DEC-76	1.684	145.498	1.376	26.074	4.55	30.624	114.873
04-DEC-76	1.254	108.346	1.376	26.074	4.55	30.624	77.721
05-DEC-76	1.126	97.286	1.376	26.074	4.55	30.624	66.662
06-DEC-76	0.990	85.536	1.376	26.074	4.55	30.624	54.912
07-DEC-76	1.064	91.930	1.376	26.074	4.55	30.624	61.305
08-DEC-76	1.138	98.323	1.413	26.767	4.55	31.317	67.006
09-DEC-76	1.144	98.842	1.413	26.767	4.55	31.317	67.524
10-DEC-76	1.049	90.634	1.413	26.767	4.55	31.317	59.316
11-DEC-76	0.912	78.797	1.413	26.767	4.55	31.317	47.480
12-DEC-76	0.771	66.614	1.413	26.767	4.55	31.317	35.297
13-DEC-76	0.662	57.197	1.413	26.767	4.55	31.317	25.880
14-DEC-76	0.568	49.075	1.413	26.767	4.55	31.317	17.758
15-DEC-76	0.502	43.373	1.353	25.644	4.55	30.194	13.179
16-DEC-76	0.476	41.126	1.353	25.644	4.55	30.194	10.932
17-DEC-76	0.648	55.987	1.353	25.644	4.55	30.194	25.793
18-DEC-76	0.595	51.408	1.353	25.644	4.55	30.194	21.214
19-DEC-76	0.665	57.456	1.353	25.644	4.55	30.194	27.262
20-DEC-76	0.755	65.232	1.353	25.644	4.55	30.194	35.038
21-DEC-76	0.766	66.182	1.353	25.644	4.55	30.194	35.988
22-DEC-76	0.724	62.554	1.341	25.421	4.55	29.971	32.583
23-DEC-76	0.650	56.160	1.341	25.421	4.55	29.971	26.189
24-DEC-76	0.582	50.285	1.341	25.421	4.55	29.971	20.314
25-DEC-76	0.537	46.397	1.341	25.421	4.55	29.971	16.426
26-DEC-76	0.500	43.200	1.341	25.421	4.55	29.971	13.229
27-DEC-76	0.477	41.213	1.341	25.421	4.55	29.971	11.242
28-DEC-76	0.438	37.843	1.341	25.421	4.55	29.971	7.872
29-DEC-76	0.414	35.770	1.283	24.313	4.55	28.863	6.907
30-DEC-76	0.533	46.051	1.283	24.313	4.55	28.863	17.188
31-DEC-76	0.533	46.051	1.283	24.313	4.55	28.863	17.188

Reduced Average Abst.

18.95



**APPENDIX 4**

CASE 2: Clatworthy Reservoir 1991							
Date	Inflow (cumecs)	Inflow (Ml/d)	Ratio to Average	Reduced Abstraction 17.75 Ml/d	C.R.	Outflow (Ml/d)	Storage change
01-JAN-75	0.889	76.810	1.283	22.766	4.55	27.316	49.493
02-JAN-75	0.751	64.886	1.283	22.766	4.55	27.316	37.570
03-JAN-75	0.628	54.259	1.283	22.766	4.55	27.316	26.943
04-JAN-75	0.536	46.310	1.283	22.766	4.55	27.316	18.994
05-JAN-75	0.472	40.781	1.283	22.766	4.55	27.316	13.464
06-JAN-75	0.441	38.102	1.283	22.766	4.55	27.316	10.786
07-JAN-75	0.402	34.733	1.283	22.766	4.55	27.316	7.416
08-JAN-75	0.370	31.968	1.250	22.184	4.55	26.734	5.234
09-JAN-75	0.340	29.376	1.250	22.184	4.55	26.734	2.642
10-JAN-75	0.317	27.389	1.250	22.184	4.55	26.734	0.654
11-JAN-75	0.308	26.611	1.250	22.184	4.55	26.734	-0.123
12-JAN-75	0.356	30.758	1.250	22.184	4.55	26.734	4.024
13-JAN-75	0.324	27.994	1.250	22.184	4.55	26.734	1.259
14-JAN-75	0.393	33.955	1.250	22.184	4.55	26.734	7.221
15-JAN-75	0.418	36.115	1.228	21.796	4.55	26.346	9.769
16-JAN-75	0.421	36.374	1.228	21.796	4.55	26.346	10.028
17-JAN-75	0.504	43.546	1.228	21.796	4.55	26.346	17.199
18-JAN-75	0.536	46.310	1.228	21.796	4.55	26.346	19.964
19-JAN-75	1.119	96.682	1.228	21.796	4.55	26.346	70.335
20-JAN-75	1.202	103.853	1.228	21.796	4.55	26.346	77.506
21-JAN-75	1.383	119.491	1.228	21.796	4.55	26.346	93.145
22-JAN-75	2.653	229.219	1.303	23.132	4.55	27.682	201.537
23-JAN-75	2.168	187.315	1.303	23.132	4.55	27.682	159.633
24-JAN-75	1.705	147.312	1.303	23.132	4.55	27.682	119.630
25-JAN-75	1.554	134.266	1.303	23.132	4.55	27.682	106.584
26-JAN-75	1.537	132.797	1.303	23.132	4.55	27.682	105.115
27-JAN-75	1.313	113.443	1.303	23.132	4.55	27.682	85.761
28-JAN-75	2.211	191.030	1.303	23.132	4.55	27.682	163.348
29-JAN-75	1.823	157.507	1.320	23.423	4.55	27.973	129.534
30-JAN-75	1.678	144.979	1.320	23.423	4.55	27.973	117.006
31-JAN-75	1.606	138.758	1.320	23.423	4.55	27.973	110.785
01-FEB-75	1.412	121.997	1.320	23.423	4.55	27.973	94.024
02-FEB-75	1.149	99.274	1.320	23.423	4.55	27.973	71.301
03-FEB-75	0.938	81.043	1.320	23.423	4.55	27.973	53.070
04-FEB-75	0.769	66.442	1.320	23.423	4.55	27.973	38.469
05-FEB-75	0.643	55.555	1.328	23.580	4.55	28.130	27.425
06-FEB-75	0.565	48.816	1.328	23.580	4.55	28.130	20.686
07-FEB-75	0.487	42.077	1.328	23.580	4.55	28.130	13.947
08-FEB-75	0.420	36.288	1.328	23.580	4.55	28.130	8.158
09-FEB-75	0.360	31.104	1.328	23.580	4.55	28.130	2.974
10-FEB-75	0.373	32.227	1.328	23.580	4.55	28.130	4.097
11-FEB-75	0.330	28.512	1.328	23.580	4.55	28.130	0.382
12-FEB-75	0.316	27.302	1.325	23.513	4.55	28.063	-0.760
13-FEB-75	0.292	25.229	1.325	23.513	4.55	28.063	-2.834
14-FEB-75	0.278	24.019	1.325	23.513	4.55	28.063	-4.043
15-FEB-75	0.266	22.982	1.325	23.513	4.55	28.063	-5.080
16-FEB-75	0.266	22.982	1.325	23.513	4.55	28.063	-5.080
17-FEB-75	0.306	26.438	1.325	23.513	4.55	28.063	-1.624
18-FEB-75	0.366	31.622	1.325	23.513	4.55	28.063	3.560
19-FEB-75	0.323	27.907	1.282	22.752	4.55	27.302	0.606
20-FEB-75	0.329	28.426	1.282	22.752	4.55	27.302	1.124
21-FEB-75	0.330	28.512	1.282	22.752	4.55	27.302	1.210

## Storage

20-APR-75	0.489	42.250	1.061	18.834	4.55	23.384	18.866
21-APR-75	0.516	44.582	1.061	18.834	4.55	23.384	21.198
22-APR-75	0.470	40.608	1.061	18.834	4.55	23.384	17.224
23-APR-75	0.429	37.066	1.068	18.953	4.55	23.503	13.562
24-APR-75	0.388	33.523	1.068	18.953	4.55	23.503	10.020
25-APR-75	0.360	31.104	1.068	18.953	4.55	23.503	7.601
26-APR-75	0.329	28.426	1.068	18.953	4.55	23.503	4.922
27-APR-75	0.303	26.179	1.068	18.953	4.55	23.503	2.676
28-APR-75	0.282	24.365	1.068	18.953	4.55	23.503	0.861
29-APR-75	0.267	23.069	1.068	18.953	4.55	23.503	-0.435
30-APR-75	0.245	21.168	1.028	18.252	4.55	22.802	-1.634
01-MAY-75	0.235	20.304	1.028	18.252	4.55	22.802	-2.498
02-MAY-75	0.218	18.835	1.028	18.252	4.55	22.802	-3.967
03-MAY-75	0.200	17.280	1.028	18.252	4.55	22.802	-5.522
04-MAY-75	0.187	16.157	1.028	18.252	4.55	22.802	-6.645
05-MAY-75	0.172	14.861	1.028	18.252	4.55	22.802	-7.941
06-MAY-75	0.153	13.219	1.028	18.252	4.55	22.802	-9.583
07-MAY-75	0.150	12.960	1.088	19.319	4.55	23.869	-10.909
08-MAY-75	0.157	13.565	1.088	19.319	4.55	23.869	-10.304
09-MAY-75	0.156	13.478	1.088	19.319	4.55	23.869	-10.391
10-MAY-75	0.150	12.960	1.088	19.319	4.55	23.869	-10.909
11-MAY-75	0.134	11.578	1.088	19.319	4.55	23.869	-12.291
12-MAY-75	0.155	13.392	1.088	19.319	4.55	23.869	-10.477
13-MAY-75	0.160	13.824	1.088	19.319	4.55	23.869	-10.045
14-MAY-75	0.149	12.874	1.184	21.020	4.55	25.570	-12.697
15-MAY-75	0.136	11.750	1.184	21.020	4.55	25.570	-13.820
16-MAY-75	0.122	10.541	1.184	21.020	4.55	25.570	-15.030
17-MAY-75	0.114	9.850	1.184	21.020	4.55	25.570	-15.721
18-MAY-75	0.106	9.158	1.184	21.020	4.55	25.570	-16.412
19-MAY-75	0.100	8.640	1.184	21.020	4.55	25.570	-16.930
20-MAY-75	0.089	7.690	1.184	21.020	4.55	25.570	-17.881
21-MAY-75	0.084	7.258	1.178	20.916	4.55	25.466	-18.208
22-MAY-75	0.089	7.690	1.178	20.916	4.55	25.466	-17.776
23-MAY-75	0.107	9.245	1.178	20.916	4.55	25.466	-16.221
24-MAY-75	0.091	7.862	1.178	20.916	4.55	25.466	-17.603
25-MAY-75	0.090	7.776	1.178	20.916	4.55	25.466	-17.690
26-MAY-75	0.085	7.344	1.178	20.916	4.55	25.466	-18.122
27-MAY-75	0.073	6.307	1.178	20.916	4.55	25.466	-19.159
28-MAY-75	0.071	6.134	1.253	22.244	4.55	26.794	-20.660
29-MAY-75	0.073	6.307	1.253	22.244	4.55	26.794	-20.487
30-MAY-75	0.072	6.221	1.253	22.244	4.55	26.794	-20.573
31-MAY-75	0.067	5.789	1.253	22.244	4.55	26.794	-21.005
01-JUN-75	0.065	5.616	1.253	22.244	4.55	26.794	-21.178
02-JUN-75	0.071	6.134	1.253	22.244	4.55	26.794	-20.660
03-JUN-75	0.066	5.702	1.253	22.244	4.55	26.794	-21.092
04-JUN-75	0.064	5.530	1.202	21.341	4.55	25.891	-20.362
05-JUN-75	0.062	5.357	1.202	21.341	4.55	25.891	-20.534
06-JUN-75	0.056	4.838	1.202	21.341	4.55	25.891	-21.053
07-JUN-75	0.052	4.493	1.202	21.341	4.55	25.891	-21.398
08-JUN-75	0.051	4.406	1.202	21.341	4.55	25.891	-21.485
09-JUN-75	0.050	4.320	1.202	21.341	4.55	25.891	-21.571
10-JUN-75	0.049	4.234	1.202	21.341	4.55	25.891	-21.658
11-JUN-75	0.045	3.888	1.247	22.140	4.55	26.690	-22.802
12-JUN-75	0.042	3.629	1.247	22.140	4.55	26.690	-23.061
13-JUN-75	0.039	3.370	1.247	22.140	4.55	26.690	-23.320
14-JUN-75	0.037	3.197	1.247	22.140	4.55	26.690	-23.493
15-JUN-75	0.036	3.110	1.247	22.140	4.55	26.690	-23.579

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12-AUG-75	0.016	1.382	0.763	13.536	4.55	18.086	-16.704
13-AUG-75	0.016	1.382	0.636	11.290	4.55	15.840	-14.458
14-AUG-75	0.016	1.382	0.636	11.290	4.55	15.840	-14.458
15-AUG-75	0.026	2.246	0.636	11.290	4.55	15.840	-13.594
16-AUG-75	0.028	2.419	0.636	11.290	4.55	15.840	-13.421
17-AUG-75	0.031	2.678	0.636	11.290	4.55	15.840	-13.162
18-AUG-75	0.027	2.333	0.636	11.290	4.55	15.840	-23.507
19-AUG-75	0.032	2.765	0.636	11.290	4.55	15.840	-13.075
20-AUG-75	0.036	3.110	0.571	10.141	4.55	14.691	-11.580
21-AUG-75	0.028	2.419	0.571	10.141	4.55	14.691	-12.272
22-AUG-75	0.026	2.246	0.571	10.141	4.55	14.691	-12.444
23-AUG-75	0.024	2.074	0.571	10.141	4.55	14.691	-12.617
24-AUG-75	0.023	1.987	0.571	10.141	4.55	14.691	-12.704
25-AUG-75	0.021	1.814	0.571	10.141	4.55	14.691	-12.876
26-AUG-75	0.019	1.642	0.571	10.141	4.55	14.691	-13.049
27-AUG-75	0.017	1.469	0.528	9.372	4.55	13.922	-12.453
28-AUG-75	0.017	1.469	0.528	9.372	4.55	13.922	-12.453
29-AUG-75	0.016	1.382	0.528	9.372	4.55	13.922	-12.540
30-AUG-75	0.016	1.382	0.528	9.372	4.55	13.922	-12.540
31-AUG-75	0.016	1.382	0.528	9.372	4.55	13.922	-12.540
01-SEP-75	0.016	1.382	0.528	9.372	4.55	13.922	-12.540
02-SEP-75	0.016	1.382	0.528	9.372	4.55	13.922	-12.540
03-SEP-75	0.016	1.382	0.563	9.999	4.55	14.549	-13.167
04-SEP-75	0.016	1.382	0.563	9.999	4.55	14.549	-13.167
05-SEP-75	0.016	1.382	0.563	9.999	4.55	14.549	-13.167
06-SEP-75	0.015	1.296	0.563	9.999	4.55	14.549	-13.253
07-SEP-75	0.016	1.382	0.563	9.999	4.55	14.549	-13.167
08-SEP-75	0.016	1.382	0.563	9.999	4.55	14.549	-13.167
09-SEP-75	0.018	1.555	0.563	9.999	4.55	14.549	-12.994
10-SEP-75	0.017	1.469	0.485	8.604	4.55	13.154	-11.685
11-SEP-75	0.022	1.901	0.485	8.604	4.55	13.154	-11.253
12-SEP-75	0.041	3.542	0.485	8.604	4.55	13.154	-9.611
13-SEP-75	0.563	48.643	0.485	8.604	4.55	13.154	35.490
14-SEP-75	0.182	15.725	0.485	8.604	4.55	13.154	2.571
15-SEP-75	0.085	7.344	0.485	8.604	4.55	13.154	-5.810
16-SEP-75	0.062	5.357	0.485	8.604	4.55	13.154	-7.797
17-SEP-75	0.056	4.838	0.343	6.089	4.55	10.639	-5.801
18-SEP-75	0.058	5.011	0.343	6.089	4.55	10.639	-5.628
19-SEP-75	0.051	4.406	0.343	6.089	4.55	10.639	-6.233
20-SEP-75	0.050	4.320	0.343	6.089	4.55	10.639	-6.319
21-SEP-75	0.046	3.974	0.343	6.089	4.55	10.639	-6.665
22-SEP-75	0.043	3.715	0.343	6.089	4.55	10.639	-6.924
23-SEP-75	0.042	3.629	0.343	6.089	4.55	10.639	-7.010
24-SEP-75	0.044	3.802	0.249	4.425	4.55	8.975	-5.173
25-SEP-75	0.237	20.477	0.249	4.425	4.55	8.975	11.502
26-SEP-75	0.192	16.589	0.249	4.425	4.55	8.975	7.614
27-SEP-75	0.265	22.896	0.249	4.425	4.55	8.975	13.921
28-SEP-75	0.200	17.280	0.249	4.425	4.55	8.975	8.305
29-SEP-75	0.197	17.021	0.249	4.425	4.55	8.975	8.046
30-SEP-75	0.192	16.589	0.249	4.425	4.55	8.975	7.614
01-OCT-75	0.165	14.256	0.223	3.955	4.55	8.505	5.751
02-OCT-75	0.178	15.379	0.223	3.955	4.55	8.505	6.874
03-OCT-75	0.159	13.738	0.223	3.955	4.55	8.505	5.233
04-OCT-75	0.155	13.392	0.223	3.955	4.55	8.505	4.887
05-OCT-75	0.145	12.528	0.223	3.955	4.55	8.505	4.023
06-OCT-75	0.142	12.269	0.223	3.955	4.55	8.505	3.764
07-OCT-75	0.137	11.837	0.223	3.955	4.55	8.505	3.332

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04-DEC-75	1.340	115.776	1.376	24.423	4.55	28.973	86.803
05-DEC-75	1.128	97.459	1.376	24.423	4.55	28.973	68.486
06-DEC-75	0.907	78.365	1.376	24.423	4.55	28.973	49.392
07-DEC-75	0.731	63.158	1.376	24.423	4.55	28.973	34.185
08-DEC-75	0.602	52.013	1.376	24.423	4.55	28.973	23.040
09-DEC-75	0.504	43.546	1.376	24.423	4.55	28.973	14.573
10-DEC-75	0.437	37.757	1.413	25.072	4.55	29.622	8.135
11-DEC-75	0.395	34.128	1.413	25.072	4.55	29.622	4.506
12-DEC-75	0.392	33.869	1.413	25.072	4.55	29.622	4.247
13-DEC-75	0.339	29.290	1.413	25.072	4.55	29.622	-0.333
14-DEC-75	0.306	26.438	1.413	25.072	4.55	29.622	-3.184
15-DEC-75	0.279	24.106	1.413	25.072	4.55	29.622	-5.517
16-DEC-75	0.258	22.291	1.413	25.072	4.55	29.622	-7.331
17-DEC-75	0.237	20.477	1.353	24.020	4.55	28.570	-8.093
18-DEC-75	0.223	19.267	1.353	24.020	4.55	28.570	-9.303
19-DEC-75	0.214	18.490	1.353	24.020	4.55	28.570	-10.080
20-DEC-75	0.208	17.971	1.353	24.020	4.55	28.570	-10.599
21-DEC-75	0.200	17.280	1.353	24.020	4.55	28.570	-11.290
22-DEC-75	0.178	15.379	1.353	24.020	4.55	28.570	-13.191
23-DEC-75	0.175	15.120	1.353	24.020	4.55	28.570	-13.450
24-DEC-75	0.176	15.206	1.341	23.811	4.55	28.361	-13.155
25-DEC-75	0.171	14.774	1.341	23.811	4.55	28.361	-13.587
26-DEC-75	0.168	14.515	1.341	23.811	4.55	28.361	-13.846
27-DEC-75	0.159	13.738	1.341	23.811	4.55	28.361	-14.624
28-DEC-75	0.150	12.960	1.341	23.811	4.55	28.361	-15.401
29-DEC-75	0.144	12.442	1.341	23.811	4.55	28.361	-15.920
30-DEC-75	0.146	12.614	1.341	23.811	4.55	28.361	-15.747
31-DEC-75	0.160	13.824	1.283	22.766	4.55	27.316	-13.492
01-JAN-76	0.168	14.515	1.283	22.766	4.55	27.316	-12.801
02-JAN-76	0.255	22.032	1.283	22.766	4.55	27.316	-5.284
03-JAN-76	0.286	24.710	1.283	22.766	4.55	27.316	-2.606
04-JAN-76	0.339	29.290	1.283	22.766	4.55	27.316	1.973
05-JAN-76	0.359	31.018	1.283	22.766	4.55	27.316	3.701
06-JAN-76	0.361	31.190	1.283	22.766	4.55	27.316	3.874
07-JAN-76	0.369	31.882	1.250	22.184	4.55	26.734	5.147
08-JAN-76	0.376	32.486	1.250	22.184	4.55	26.734	5.752
09-JAN-76	0.370	31.968	1.250	22.184	4.55	26.734	5.234
10-JAN-76	0.350	30.240	1.250	22.184	4.55	26.734	3.506
11-JAN-76	0.318	27.475	1.250	22.184	4.55	26.734	0.741
12-JAN-76	0.286	24.710	1.250	22.184	4.55	26.734	-2.024
13-JAN-76	0.270	23.328	1.250	22.184	4.55	26.734	-3.406
14-JAN-76	0.261	22.550	1.228	21.796	4.55	26.346	-3.796
15-JAN-76	0.248	21.427	1.228	21.796	4.55	26.346	-4.919
16-JAN-76	0.240	20.736	1.228	21.796	4.55	26.346	-5.610
17-JAN-76	0.228	19.699	1.228	21.796	4.55	26.346	-6.647
18-JAN-76	0.218	18.835	1.228	21.796	4.55	26.346	-7.511
19-JAN-76	0.233	20.131	1.228	21.796	4.55	26.346	-6.215
20-JAN-76	0.258	22.291	1.228	21.796	4.55	26.346	-4.055
21-JAN-76	0.215	18.576	1.303	23.132	4.55	27.682	-9.106
22-JAN-76	0.204	17.626	1.303	23.132	4.55	27.682	-10.056
23-JAN-76	0.197	17.021	1.303	23.132	4.55	27.682	-10.661
24-JAN-76	0.193	16.675	1.303	23.132	4.55	27.682	-11.007
25-JAN-76	0.183	15.811	1.303	23.132	4.55	27.682	-11.871
26-JAN-76	0.185	15.984	1.303	23.132	4.55	27.682	-11.698
27-JAN-76	0.192	16.589	1.303	23.132	4.55	27.682	-11.093
28-JAN-76	0.263	22.723	1.320	23.423	4.55	27.973	-5.250
29-JAN-76	0.374	32.314	1.320	23.423	4.55	27.973	4.341

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27-MAR-76	0.545	47.088	1.313	23.311	4.55	27.861	19.227
28-MAR-76	0.536	46.310	1.313	23.311	4.55	27.861	18.449
29-MAR-76	0.519	44.842	1.313	23.311	4.55	27.861	16.980
30-MAR-76	0.479	41.386	1.313	23.311	4.55	27.861	13.524
31-MAR-76	0.448	38.707	1.287	22.841	4.55	27.391	11.316
01-APR-76	0.449	38.794	1.287	22.841	4.55	27.391	11.403
02-APR-76	0.402	34.733	1.287	22.841	4.55	27.391	7.342
03-APR-76	0.358	30.931	1.287	22.841	4.55	27.391	3.540
04-APR-76	0.328	28.339	1.287	22.841	4.55	27.391	0.948
05-APR-76	0.298	25.747	1.287	22.841	4.55	27.391	-1.544
06-APR-76	0.270	23.328	1.287	22.841	4.55	27.391	-4.063
07-APR-76	0.252	21.773	1.176	20.871	4.55	25.421	-3.548
08-APR-76	0.231	19.958	1.176	20.871	4.55	25.421	-5.163
09-APR-76	0.217	18.749	1.176	20.871	4.55	25.421	-6.672
10-APR-76	0.211	18.230	1.176	20.871	4.55	25.421	-7.191
11-APR-76	0.202	17.453	1.176	20.871	4.55	25.421	-7.968
12-APR-76	0.183	15.811	1.176	20.871	4.55	25.421	-9.610
13-APR-76	0.183	15.811	1.176	20.871	4.55	25.421	-9.610
14-APR-76	0.178	15.379	1.061	18.834	4.55	23.384	-8.005
15-APR-76	0.162	13.997	1.061	18.834	4.55	23.384	-9.387
16-APR-76	0.158	13.651	1.061	18.834	4.55	23.384	-9.733
17-APR-76	0.146	12.614	1.061	18.834	4.55	23.384	-10.770
18-APR-76	0.142	12.269	1.061	18.834	4.55	23.384	-11.115
19-APR-76	0.136	11.750	1.061	18.834	4.55	23.384	-11.634
20-APR-76	0.128	11.059	1.061	18.834	4.55	23.384	-12.325
21-APR-76	0.123	10.627	1.068	18.953	4.55	23.503	-12.876
22-APR-76	0.120	10.368	1.068	18.953	4.55	23.503	-13.135
23-APR-76	0.114	9.850	1.068	18.953	4.55	23.503	-13.654
24-APR-76	0.110	9.504	1.068	18.953	4.55	23.503	-13.999
25-APR-76	0.107	9.245	1.068	18.953	4.55	23.503	-14.259
26-APR-76	0.099	8.554	1.068	18.953	4.55	23.503	-14.950
27-APR-76	0.097	8.381	1.068	18.953	4.55	23.503	-15.123
28-APR-76	0.094	8.122	1.028	18.252	4.55	22.802	-14.680
29-APR-76	0.091	7.862	1.028	18.252	4.55	22.802	-14.940
30-APR-76	0.092	7.949	1.028	18.252	4.55	22.802	-14.853
01-MAY-76	0.089	7.690	1.028	18.252	4.55	22.802	-15.112
02-MAY-76	0.091	7.862	1.028	18.252	4.55	22.802	-14.940
03-MAY-76	0.089	7.690	1.028	18.252	4.55	22.802	-15.112
04-MAY-76	0.089	7.690	1.028	18.252	4.55	22.802	-15.112
05-MAY-76	0.086	7.430	1.088	19.319	4.55	23.869	-16.139
06-MAY-76	0.080	6.912	1.088	19.319	4.55	23.869	-16.957
07-MAY-76	0.075	6.480	1.088	19.319	4.55	23.869	-17.389
08-MAY-76	0.067	5.789	1.088	19.319	4.55	23.869	-18.080
09-MAY-76	0.065	5.616	1.088	19.319	4.55	23.869	-18.253
10-MAY-76	0.063	5.443	1.088	19.319	4.55	23.869	-18.126
11-MAY-76	0.066	5.702	1.088	19.319	4.55	23.869	-18.167
12-MAY-76	0.072	6.221	1.184	21.020	4.55	25.570	-19.350
13-MAY-76	0.066	5.702	1.184	21.020	4.55	25.570	-19.868
14-MAY-76	0.065	5.616	1.184	21.020	4.55	25.570	-19.954
15-MAY-76	0.064	5.530	1.184	21.020	4.55	25.570	-20.041
16-MAY-76	0.060	5.184	1.184	21.020	4.55	25.570	-20.386
17-MAY-76	0.060	5.184	1.184	21.020	4.55	25.570	-20.386
18-MAY-76	0.104	8.986	1.184	21.020	4.55	25.570	-16.585
19-MAY-76	0.150	12.960	1.178	20.916	4.55	25.466	-12.506
20-MAY-76	0.117	10.109	1.178	20.916	4.55	25.466	-15.357
21-MAY-76	0.085	7.344	1.178	20.916	4.55	25.466	-18.122
22-MAY-76	0.079	6.826	1.178	20.916	4.55	25.466	-18.640

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19-JUL-76	0.018	1.555	1.160	20.595	4.55	25.145	-23.590
20-JUL-76	0.017	1.469	1.160	20.595	4.55	25.145	-23.676
21-JUL-76	0.014	1.210	1.152	20.446	4.55	24.996	-23.786
22-JUL-76	0.014	1.210	1.152	20.446	4.55	24.996	-23.786
23-JUL-76	0.013	1.123	1.152	20.446	4.55	24.996	-23.873
24-JUL-76	0.012	1.037	1.152	20.446	4.55	24.996	-23.959
25-JUL-76	0.012	1.037	1.152	20.446	4.55	24.996	-23.959
26-JUL-76	0.012	1.037	1.152	20.446	4.55	24.996	-23.959
27-JUL-76	0.011	0.950	1.152	20.446	4.55	24.996	-24.045
28-JUL-76	0.010	0.864	0.787	13.961	4.55	18.511	-17.647
29-JUL-76	0.009	0.778	0.787	13.961	4.55	18.511	-17.734
30-JUL-76	0.010	0.864	0.787	13.961	4.55	18.511	-17.647
31-JUL-76	0.010	0.864	0.787	13.961	4.55	18.511	-17.647
01-AUG-76	0.011	0.950	0.787	13.961	4.55	18.511	-17.561
02-AUG-76	0.011	0.950	0.787	13.961	4.55	18.511	-17.561
03-AUG-76	0.011	0.950	0.787	13.961	4.55	18.511	-17.561
04-AUG-76	0.011	0.950	0.763	13.536	4.55	18.086	-17.136
05-AUG-76	0.011	0.950	0.763	13.536	4.55	18.086	-17.136
06-AUG-76	0.010	0.864	0.763	13.536	4.55	18.086	-17.222
07-AUG-76	0.010	0.864	0.763	13.536	4.55	18.086	-17.222
08-AUG-76	0.010	0.864	0.763	13.536	4.55	18.086	-17.222
09-AUG-76	0.010	0.864	0.763	13.536	4.55	18.086	-17.222
10-AUG-76	0.009	0.778	0.763	13.536	4.55	18.086	-17.308
11-AUG-76	0.009	0.778	0.636	11.290	4.55	15.840	-15.062
12-AUG-76	0.009	0.778	0.636	11.290	4.55	15.840	-15.062
13-AUG-76	0.009	0.778	0.636	11.290	4.55	15.840	-15.062
14-AUG-76	0.007	0.605	0.636	11.290	4.55	15.840	-15.235
15-AUG-76	0.007	0.605	0.636	11.290	4.55	15.840	-15.235
16-AUG-76	0.007	0.605	0.636	11.290	4.55	15.840	-15.235
17-AUG-76	0.007	0.605	0.636	11.290	4.55	15.840	-15.235
18-AUG-76	0.007	0.605	0.571	10.141	4.55	14.691	-14.086
19-AUG-76	0.006	0.518	0.571	10.141	4.55	14.691	-14.172
20-AUG-76	0.007	0.605	0.571	10.141	4.55	14.691	-14.086
21-AUG-76	0.006	0.518	0.571	10.141	4.55	14.691	-14.172
22-AUG-76	0.006	0.518	0.571	10.141	4.55	14.691	-14.172
23-AUG-76	0.006	0.518	0.571	10.141	4.55	14.691	-14.172
24-AUG-76	0.006	0.518	0.571	10.141	4.55	14.691	-14.172
25-AUG-76	0.007	0.605	0.528	9.372	4.55	13.922	-13.317
26-AUG-76	0.007	0.605	0.528	9.372	4.55	13.922	-13.317
27-AUG-76	0.006	0.518	0.528	9.372	4.55	13.922	-13.404
28-AUG-76	0.007	0.605	0.528	9.372	4.55	13.922	-13.317
29-AUG-76	0.014	1.210	0.528	9.372	4.55	13.922	-12.713
30-AUG-76	0.075	6.480	0.528	9.372	4.55	13.922	-7.442
31-AUG-76	0.024	2.074	0.528	9.372	4.55	13.922	-11.849
01-SEP-76	0.017	1.469	0.563	9.999	4.55	14.549	-13.080
02-SEP-76	0.014	1.210	0.563	9.999	4.55	14.549	-13.339
03-SEP-76	0.013	1.123	0.563	9.999	4.55	14.549	-13.426
04-SEP-76	0.013	1.123	0.563	9.999	4.55	14.549	-13.426
05-SEP-76	0.012	1.037	0.563	9.999	4.55	14.549	-13.512
06-SEP-76	0.011	0.950	0.563	9.999	4.55	14.549	-13.599
07-SEP-76	0.011	0.950	0.563	9.999	4.55	14.549	-13.599
08-SEP-76	0.010	0.864	0.485	8.604	4.55	13.154	-12.290
09-SEP-76	0.012	1.037	0.485	8.604	4.55	13.154	-12.117
10-SEP-76	0.047	4.061	0.485	8.604	4.55	13.154	-9.093
11-SEP-76	0.033	2.851	0.485	8.604	4.55	13.154	-10.302
12-SEP-76	0.027	2.333	0.485	8.604	4.55	13.154	-10.821
13-SEP-76	0.023	1.987	0.485	8.604	4.55	13.154	-11.166

2013.56  
1989.88  
1966.10  
1942.31  
1918.44  
1894.48  
1870.52  
1846.56  
1822.51  
1804.87  
1787.13  
1769.49  
1751.84  
1734.28  
1716.72  
1699.16  
1682.02  
1664.88  
1647.66  
1630.44  
1613.22  
1596.00  
1578.69  
1563.63  
1548.56  
1533.50  
1518.27  
1503.03  
1487.80  
1472.56  
1458.47  
1444.30  
1430.22  
1416.04  
1401.87  
1387.70  
1373.53  
1360.21  
1346.89  
1333.49  
1320.17  
1307.46  
1300.02  
1288.17  
1275.09  
1261.75  
1248.32  
1234.90  
1221.38  
1207.79  
1194.19  
1181.90  
1169.78  
1160.69  
1150.38  
1139.56  
1128.40

10-NOV-76	0.668	57.715	1.210	21.483	4.55	26.033	31.682
11-NOV-76	0.577	49.853	1.210	21.483	4.55	26.033	23.820
12-NOV-76	0.508	43.891	1.210	21.483	4.55	26.033	17.858
13-NOV-76	0.453	39.139	1.210	21.483	4.55	26.033	13.106
14-NOV-76	0.416	35.942	1.210	21.483	4.55	26.033	9.909
15-NOV-76	0.401	34.646	1.210	21.483	4.55	26.033	8.613
16-NOV-76	0.389	33.610	1.210	21.483	4.55	26.033	7.577
17-NOV-76	0.380	32.832	1.383	24.542	4.55	29.092	3.740
18-NOV-76	0.388	33.523	1.383	24.542	4.55	29.092	4.401
19-NOV-76	0.339	29.290	1.383	24.542	4.55	29.092	0.197
20-NOV-76	0.317	27.389	1.383	24.542	4.55	29.092	-1.704
21-NOV-76	0.302	26.093	1.383	24.542	4.55	29.092	-3.000
22-NOV-76	0.283	24.451	1.383	24.542	4.55	29.092	-4.641
23-NOV-76	0.273	23.587	1.383	24.542	4.55	29.092	-5.505
24-NOV-76	0.267	23.069	1.373	24.371	4.55	28.921	-5.852
25-NOV-76	0.261	22.550	1.373	24.371	4.55	28.921	-6.370
26-NOV-76	0.256	22.118	1.373	24.371	4.55	28.921	-6.802
27-NOV-76	0.251	21.686	1.373	24.371	4.55	28.921	-7.234
28-NOV-76	0.463	40.003	1.373	24.371	4.55	28.921	11.082
29-NOV-76	0.491	42.422	1.373	24.371	4.55	28.921	13.502
30-NOV-76	1.640	141.696	1.373	24.371	4.55	28.921	112.775
01-DEC-76	2.234	193.018	1.376	24.423	4.55	28.973	164.441
02-DEC-76	2.146	185.414	1.376	24.423	4.55	28.973	156.441
03-DEC-76	1.684	145.498	1.376	24.423	4.55	28.973	116.525
04-DEC-76	1.254	108.346	1.376	24.423	4.55	28.973	79.373
05-DEC-76	1.126	97.286	1.376	24.423	4.55	28.973	68.313
06-DEC-76	0.990	85.536	1.376	24.423	4.55	28.973	56.563
07-DEC-76	1.064	91.930	1.376	24.423	4.55	28.973	62.957
08-DEC-76	1.138	98.323	1.413	25.072	4.55	29.622	68.701
09-DEC-76	1.144	98.842	1.413	25.072	4.55	29.622	69.219
10-DEC-76	1.049	90.634	1.413	25.072	4.55	29.622	61.011
11-DEC-76	0.912	78.797	1.413	25.072	4.55	29.622	49.175
12-DEC-76	0.771	66.614	1.413	25.072	4.55	29.622	36.992
13-DEC-76	0.662	57.197	1.413	25.072	4.55	29.622	27.575
14-DEC-76	0.568	49.075	1.413	25.072	4.55	29.622	19.453
15-DEC-76	0.502	43.373	1.353	24.020	4.55	28.570	14.803
16-DEC-76	0.476	41.126	1.353	24.020	4.55	28.570	12.556
17-DEC-76	0.648	55.987	1.353	24.020	4.55	28.570	27.417
18-DEC-76	0.595	51.408	1.353	24.020	4.55	28.570	22.838
19-DEC-76	0.665	57.456	1.353	24.020	4.55	28.570	28.886
20-DEC-76	0.755	65.232	1.353	24.020	4.55	28.570	36.662
21-DEC-76	0.766	66.182	1.353	24.020	4.55	28.570	37.612
22-DEC-76	0.724	62.554	1.341	23.811	4.55	28.361	34.192
23-DEC-76	0.650	56.160	1.341	23.811	4.55	28.361	27.799
24-DEC-76	0.582	50.285	1.341	23.811	4.55	28.361	21.924
25-DEC-76	0.537	46.397	1.341	23.811	4.55	28.361	18.036
26-DEC-76	0.500	43.200	1.341	23.811	4.55	28.361	14.839
27-DEC-76	0.477	41.213	1.341	23.811	4.55	28.361	12.852
28-DEC-76	0.438	37.843	1.341	23.811	4.55	28.361	9.482
29-DEC-76	0.414	35.770	1.283	22.773	4.55	27.323	8.446
30-DEC-76	0.533	46.051	1.283	22.773	4.55	27.323	18.728
31-DEC-76	0.533	46.051	1.283	22.773	4.55	27.323	18.728

Reduced Average Abst.

17.75



**APPENDIX 5**

CASE 3: Clatworthy Reservoir  
1991

Date	Inflow (cumecs)	Inflow (Ml/d)	Ratio to Average	Reduced Abstraction 17.01 Ml/d	C.R. (Ml/d)	Evaporation (Ml/d)	Outflow (Ml/d)
01-JAN-75	0.889	76.810	1.283	21.817	4.55	0.189	26.557
02-JAN-75	0.751	64.886	1.283	21.817	4.55	0.189	26.557
03-JAN-75	0.628	54.259	1.283	21.817	4.55	0.189	26.557
04-JAN-75	0.536	46.310	1.283	21.817	4.55	0.189	26.557
05-JAN-75	0.472	40.781	1.283	21.817	4.55	0.189	26.557
06-JAN-75	0.441	38.102	1.283	21.817	4.55	0.189	26.557
07-JAN-75	0.402	34.733	1.283	21.817	4.55	0.189	26.557
08-JAN-75	0.370	31.968	1.250	21.260	4.55	0.189	25.999
09-JAN-75	0.340	29.376	1.250	21.260	4.55	0.189	25.999
10-JAN-75	0.317	27.389	1.250	21.260	4.55	0.189	25.999
11-JAN-75	0.308	26.611	1.250	21.260	4.55	0.189	25.999
12-JAN-75	0.356	30.758	1.250	21.260	4.55	0.189	25.999
13-JAN-75	0.324	27.994	1.250	21.260	4.55	0.189	25.999
14-JAN-75	0.393	33.955	1.250	21.260	4.55	0.189	25.999
15-JAN-75	0.418	36.115	1.228	20.888	4.55	0.189	25.627
16-JAN-75	0.421	36.374	1.228	20.888	4.55	0.189	25.627
17-JAN-75	0.504	43.546	1.228	20.888	4.55	0.189	25.627
18-JAN-75	0.536	46.310	1.228	20.888	4.55	0.189	25.627
19-JAN-75	1.119	96.682	1.228	20.888	4.55	0.189	25.627
20-JAN-75	1.202	103.853	1.228	20.888	4.55	0.189	25.627
21-JAN-75	1.383	119.491	1.228	20.888	4.55	0.189	25.627
22-JAN-75	2.653	229.219	1.303	22.168	4.55	0.189	26.907
23-JAN-75	2.168	187.315	1.303	22.168	4.55	0.189	26.907
24-JAN-75	1.705	147.312	1.303	22.168	4.55	0.189	26.907
25-JAN-75	1.554	134.266	1.303	22.168	4.55	0.189	26.907
26-JAN-75	1.537	132.797	1.303	22.168	4.55	0.189	26.907
27-JAN-75	1.313	113.443	1.303	22.168	4.55	0.189	26.907
28-JAN-75	2.211	191.030	1.303	22.168	4.55	0.189	26.907
29-JAN-75	1.823	157.507	1.320	22.447	4.55	0.189	27.186
30-JAN-75	1.678	144.979	1.320	22.447	4.55	0.189	27.186
31-JAN-75	1.606	138.758	1.320	22.447	4.55	0.189	27.186
01-FEB-75	1.412	121.997	1.320	22.447	4.55	0.337	27.333
02-FEB-75	1.149	99.274	1.320	22.447	4.55	0.337	27.333
03-FEB-75	0.938	81.043	1.320	22.447	4.55	0.337	27.333
04-FEB-75	0.769	66.442	1.320	22.447	4.55	0.337	27.333
05-FEB-75	0.643	55.555	1.328	22.597	4.55	0.337	27.483
06-FEB-75	0.565	48.816	1.328	22.597	4.55	0.337	27.483
07-FEB-75	0.487	42.077	1.328	22.597	4.55	0.337	27.483
08-FEB-75	0.420	36.288	1.328	22.597	4.55	0.337	27.483
09-FEB-75	0.360	31.104	1.328	22.597	4.55	0.337	27.483
10-FEB-75	0.373	32.227	1.328	22.597	4.55	0.337	27.483
11-FEB-75	0.330	28.512	1.328	22.597	4.55	0.337	27.483
12-FEB-75	0.316	27.302	1.325	22.532	4.55	0.337	27.419
13-FEB-75	0.292	25.229	1.325	22.532	4.55	0.337	27.419
14-FEB-75	0.278	24.019	1.325	22.532	4.55	0.336	27.419
15-FEB-75	0.266	22.982	1.325	22.532	4.55	0.336	27.419
16-FEB-75	0.266	22.982	1.325	22.532	4.55	0.336	27.418
17-FEB-75	0.306	26.438	1.325	22.532	4.55	0.336	27.418
18-FEB-75	0.366	31.622	1.325	22.532	4.55	0.335	27.418
19-FEB-75	0.323	27.907	1.282	21.803	4.55	0.336	26.689
20-FEB-75	0.329	28.426	1.282	21.803	4.55	0.336	26.689
21-FEB-75	0.330	28.512	1.282	21.803	4.55	0.336	26.689

Storage change	Storage
	5404.00
50.253	5404.00
38.330	5404.00
27.703	5404.00
19.754	5404.00
14.224	5404.00
11.546	5404.00
8.176	5404.00
5.969	5404.00
3.377	5404.00
1.390	5404.00
0.612	5404.00
4.760	5404.00
1.995	5404.00
7.956	5404.00
10.488	5404.00
10.747	5404.00
17.919	5404.00
20.683	5404.00
71.055	5404.00
78.226	5404.00
93.864	5404.00
202.312	5404.00
160.408	5404.00
120.405	5404.00
107.359	5404.00
105.890	5404.00
86.536	5404.00
164.123	5404.00
130.321	5404.00
117.793	5404.00
111.572	5404.00
94.664	5404.00
71.940	5404.00
53.710	5404.00
39.108	5404.00
28.072	5404.00
21.333	5404.00
14.593	5404.00
8.805	5404.00
3.621	5404.00
4.744	5404.00
1.029	5404.00
-0.117	5403.88
-2.190	5401.69
-3.400	5398.29
-4.436	5393.86
-4.436	5389.42
-0.980	5388.44
4.205	5392.65
1.219	5393.87
1.737	5395.60
1.823	5397.43

20-APR-75	0.489	42.250	1.061	18.049	4.55	1.236	23.835
21-APR-75	0.516	44.582	1.061	18.049	4.55	1.236	23.835
22-APR-75	0.470	40.608	1.061	18.049	4.55	1.236	23.835
23-APR-75	0.429	37.066	1.068	18.163	4.55	1.236	23.949
24-APR-75	0.388	33.523	1.068	18.163	4.55	1.236	23.949
25-APR-75	0.360	31.104	1.068	18.163	4.55	1.236	23.949
26-APR-75	0.329	28.426	1.068	18.163	4.55	1.236	23.949
27-APR-75	0.303	26.179	1.068	18.163	4.55	1.236	23.949
28-APR-75	0.282	24.365	1.068	18.163	4.55	1.236	23.949
29-APR-75	0.267	23.069	1.068	18.163	4.55	1.236	23.949
30-APR-75	0.245	21.168	1.028	17.491	4.55	1.236	23.277
01-MAY-75	0.235	20.304	1.028	17.491	4.55	1.677	23.718
02-MAY-75	0.218	18.835	1.028	17.491	4.55	1.677	23.718
03-MAY-75	0.200	17.280	1.028	17.491	4.55	1.675	23.716
04-MAY-75	0.187	16.157	1.028	17.491	4.55	1.674	23.715
05-MAY-75	0.172	14.861	1.028	17.491	4.55	1.672	23.713
06-MAY-75	0.153	13.219	1.028	17.491	4.55	1.669	23.710
07-MAY-75	0.150	12.960	1.088	18.514	4.55	1.666	24.730
08-MAY-75	0.157	13.565	1.088	18.514	4.55	1.663	24.726
09-MAY-75	0.156	13.478	1.088	18.514	4.55	1.659	24.723
10-MAY-75	0.150	12.960	1.088	18.514	4.55	1.656	24.720
11-MAY-75	0.134	11.578	1.088	18.514	4.55	1.653	24.716
12-MAY-75	0.155	13.392	1.088	18.514	4.55	1.649	24.713
13-MAY-75	0.160	13.824	1.088	18.514	4.55	1.646	24.709
14-MAY-75	0.149	12.874	1.184	20.144	4.55	1.643	26.337
15-MAY-75	0.136	11.750	1.184	20.144	4.55	1.639	26.333
16-MAY-75	0.122	10.541	1.184	20.144	4.55	1.634	26.328
17-MAY-75	0.114	9.850	1.184	20.144	4.55	1.630	26.324
18-MAY-75	0.106	9.158	1.184	20.144	4.55	1.625	26.319
19-MAY-75	0.100	8.640	1.184	20.144	4.55	1.620	26.314
20-MAY-75	0.089	7.690	1.184	20.144	4.55	1.615	26.309
21-MAY-75	0.084	7.258	1.178	20.044	4.55	1.609	26.203
22-MAY-75	0.089	7.690	1.178	20.044	4.55	1.603	26.197
23-MAY-75	0.107	9.245	1.178	20.044	4.55	1.598	26.192
24-MAY-75	0.091	7.862	1.178	20.044	4.55	1.593	26.187
25-MAY-75	0.090	7.776	1.178	20.044	4.55	1.587	26.181
26-MAY-75	0.085	7.344	1.178	20.044	4.55	1.582	26.176
27-MAY-75	0.073	6.307	1.178	20.044	4.55	1.576	26.170
28-MAY-75	0.071	6.134	1.253	21.317	4.55	1.570	27.437
29-MAY-75	0.073	6.307	1.253	21.317	4.55	1.564	27.431
30-MAY-75	0.072	6.221	1.253	21.317	4.55	1.557	27.424
31-MAY-75	0.067	5.789	1.253	21.317	4.55	1.551	27.418
01-JUN-75	0.065	5.616	1.253	21.317	4.55	1.835	27.702
02-JUN-75	0.071	6.134	1.253	21.317	4.55	1.827	27.694
03-JUN-75	0.066	5.702	1.253	21.317	4.55	1.820	27.686
04-JUN-75	0.064	5.530	1.202	20.451	4.55	1.812	26.813
05-JUN-75	0.062	5.357	1.202	20.451	4.55	1.804	26.806
06-JUN-75	0.056	4.838	1.202	20.451	4.55	1.797	26.798
07-JUN-75	0.052	4.493	1.202	20.451	4.55	1.789	26.790
08-JUN-75	0.051	4.406	1.202	20.451	4.55	1.781	26.783
09-JUN-75	0.050	4.320	1.202	20.451	4.55	1.773	26.775
10-JUN-75	0.049	4.234	1.202	20.451	4.55	1.765	26.767
11-JUN-75	0.045	3.888	1.247	21.217	4.55	1.757	27.524
12-JUN-75	0.042	3.629	1.247	21.217	4.55	1.749	27.515
13-JUN-75	0.039	3.370	1.247	21.217	4.55	1.740	27.507
14-JUN-75	0.037	3.197	1.247	21.217	4.55	1.732	27.498
15-JUN-75	0.036	3.110	1.247	21.217	4.55	1.723	27.490

18.415	5404.00
20.748	5404.00
16.773	5404.00
13.116	5404.00
9.574	5404.00
7.155	5404.00
4.476	5404.00
2.230	5404.00
0.415	5404.00
-0.881	5403.12
-2.109	5401.01
-3.414	5397.60
-4.882	5392.71
-6.436	5386.28
-7.558	5378.72
-8.852	5369.87
-10.491	5359.38
-11.770	5347.61
-11.161	5336.45
-11.245	5325.20
-11.760	5313.44
-13.139	5300.30
-11.321	5288.98
-10.885	5278.10
-13.463	5264.63
-14.582	5250.05
-15.788	5234.26
-16.474	5217.79
-17.160	5200.63
-17.674	5182.95
-18.619	5164.34
-18.945	5145.39
-18.508	5126.88
-16.947	5109.94
-18.324	5091.61
-18.405	5073.21
-18.832	5054.37
-19.863	5034.51
-21.303	5013.21
-21.123	4992.09
-21.203	4970.88
-21.629	4949.25
-22.086	4927.17
-21.560	4905.61
-21.984	4883.62
-21.284	4862.34
-21.449	4840.89
-21.960	4818.93
-22.298	4796.63
-22.376	4774.26
-22.455	4751.80
-22.533	4729.27
-23.636	4705.63
-23.887	4681.75
-24.137	4657.61
-24.302	4633.31
-24.379	4608.93

12-AUG-75	0.016	1.382	0.763	12.972	4.55	1.013	18.535
13-AUG-75	0.016	1.382	0.636	10.819	4.55	1.009	16.378
14-AUG-75	0.016	1.382	0.636	10.819	4.55	1.004	16.374
15-AUG-75	0.026	2.246	0.636	10.819	4.55	1.000	16.369
16-AUG-75	0.028	2.419	0.636	10.819	4.55	0.996	16.365
17-AUG-75	0.031	2.678	0.636	10.819	4.55	0.992	16.361
18-AUG-75	0.027	2.333	0.636	10.819	4.55	0.988	16.357
19-AUG-75	0.032	2.765	0.636	10.819	4.55	0.984	16.353
20-AUG-75	0.036	3.110	0.571	9.718	4.55	0.980	15.248
21-AUG-75	0.028	2.419	0.571	9.718	4.55	0.977	15.245
22-AUG-75	0.026	2.246	0.571	9.718	4.55	0.973	15.241
23-AUG-75	0.024	2.074	0.571	9.718	4.55	0.970	15.238
24-AUG-75	0.023	1.987	0.571	9.718	4.55	0.966	15.234
25-AUG-75	0.021	1.814	0.571	9.718	4.55	0.962	15.230
26-AUG-75	0.019	1.642	0.571	9.718	4.55	0.958	15.227
27-AUG-75	0.017	1.469	0.528	8.981	4.55	0.955	14.486
28-AUG-75	0.017	1.469	0.528	8.981	4.55	0.951	14.482
29-AUG-75	0.016	1.382	0.528	8.981	4.55	0.947	14.479
30-AUG-75	0.016	1.382	0.528	8.981	4.55	0.944	14.475
31-AUG-75	0.016	1.382	0.528	8.981	4.55	0.940	14.471
01-SEP-75	0.016	1.382	0.528	8.981	4.55	0.608	14.139
02-SEP-75	0.016	1.382	0.528	8.981	4.55	0.605	14.137
03-SEP-75	0.016	1.382	0.563	9.582	4.55	0.603	14.735
04-SEP-75	0.016	1.382	0.563	9.582	4.55	0.600	14.733
05-SEP-75	0.016	1.382	0.563	9.582	4.55	0.598	14.730
06-SEP-75	0.015	1.296	0.563	9.582	4.55	0.595	14.727
07-SEP-75	0.016	1.382	0.563	9.582	4.55	0.593	14.725
08-SEP-75	0.016	1.382	0.563	9.582	4.55	0.590	14.722
09-SEP-75	0.018	1.555	0.563	9.582	4.55	0.588	14.720
10-SEP-75	0.017	1.469	0.485	8.245	4.55	0.585	13.380
11-SEP-75	0.022	1.901	0.485	8.245	4.55	0.583	13.378
12-SEP-75	0.041	3.542	0.485	8.245	4.55	0.581	13.376
13-SEP-75	0.563	48.643	0.485	8.245	4.55	0.579	13.374
14-SEP-75	0.182	15.725	0.485	8.245	4.55	0.586	13.381
15-SEP-75	0.085	7.344	0.485	8.245	4.55	0.586	13.381
16-SEP-75	0.062	5.357	0.485	8.245	4.55	0.585	13.380
17-SEP-75	0.056	4.838	0.343	5.835	4.55	0.584	10.969
18-SEP-75	0.058	5.011	0.343	5.835	4.55	0.583	10.968
19-SEP-75	0.051	4.406	0.343	5.835	4.55	0.582	10.967
20-SEP-75	0.050	4.320	0.343	5.835	4.55	0.580	10.965
21-SEP-75	0.046	3.974	0.343	5.835	4.55	0.579	10.964
22-SEP-75	0.043	3.715	0.343	5.835	4.55	0.578	10.963
23-SEP-75	0.042	3.629	0.343	5.835	4.55	0.577	10.962
24-SEP-75	0.044	3.802	0.249	4.240	4.55	0.575	9.366
25-SEP-75	0.237	20.477	0.249	4.240	4.55	0.574	9.365
26-SEP-75	0.192	16.589	0.249	4.240	4.55	0.576	9.367
27-SEP-75	0.265	22.896	0.249	4.240	4.55	0.578	9.368
28-SEP-75	0.200	17.280	0.249	4.240	4.55	0.581	9.371
29-SEP-75	0.197	17.021	0.249	4.240	4.55	0.582	9.371
30-SEP-75	0.192	16.589	0.249	4.240	4.55	0.584	9.371
01-OCT-75	0.165	14.256	0.223	3.790	4.55	0.278	8.618
02-OCT-75	0.178	15.379	0.223	3.790	4.55	0.278	8.618
03-OCT-75	0.159	13.738	0.223	3.790	4.55	0.279	8.619
04-OCT-75	0.155	13.392	0.223	3.790	4.55	0.279	8.619
05-OCT-75	0.145	12.528	0.223	3.790	4.55	0.280	8.620
06-OCT-75	0.142	12.269	0.223	3.790	4.55	0.280	8.620
07-OCT-75	0.137	11.837	0.223	3.790	4.55	0.280	8.620

-17.153	3354.96
-14.995	3339.97
-14.991	3324.98
-14.123	3310.85
-13.946	3296.91
-13.683	3283.22
-14.025	3269.20
-13.589	3255.61
-12.138	3243.47
-12.826	3230.65
-12.995	3217.65
-13.164	3204.49
-13.247	3191.24
-13.416	3177.83
-13.585	3164.24
-13.017	3151.22
-13.014	3138.21
-13.096	3125.11
-13.093	3112.02
-13.089	3098.93
-12.757	3086.17
-12.754	3073.42
-13.353	3060.07
-13.350	3046.72
-13.348	3033.37
-13.431	3019.94
-13.343	3006.60
-13.340	2993.26
-13.165	2980.09
-11.911	2968.18
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-9.833	2946.87
35.269	2982.14
2.344	2984.48
-6.037	2978.44
-8.023	2970.42
-6.130	2964.29
-5.957	2958.33
-6.560	2951.77
-6.645	2945.13
-6.990	2938.14
-7.248	2930.89
-7.333	2923.56
-5.564	2917.99
11.112	2929.11
7.222	2936.33
13.528	2949.86
7.909	2957.76
7.648	2965.41
7.215	2972.63
5.638	2978.27
6.761	2985.03
5.119	2990.15
4.773	2994.92
3.908	2998.83
3.649	3002.48
3.216	3005.69

04-DEC-75	1.340	115.776	1.376	23.405	4.55	0.067	28.022
05-DEC-75	1.128	97.459	1.376	23.405	4.55	0.069	28.023
06-DEC-75	0.907	78.365	1.376	23.405	4.55	0.070	28.025
07-DEC-75	0.731	63.158	1.376	23.405	4.55	0.071	28.026
08-DEC-75	0.602	52.013	1.376	23.405	4.55	0.071	28.026
09-DEC-75	0.504	43.546	1.376	23.405	4.55	0.072	28.027
10-DEC-75	0.437	37.757	1.413	24.027	4.55	0.072	28.649
11-DEC-75	0.395	34.128	1.413	24.027	4.55	0.072	28.649
12-DEC-75	0.392	33.869	1.413	24.027	4.55	0.072	28.649
13-DEC-75	0.339	29.290	1.413	24.027	4.55	0.072	28.649
14-DEC-75	0.306	26.438	1.413	24.027	4.55	0.072	28.649
15-DEC-75	0.279	24.106	1.413	24.027	4.55	0.072	28.649
16-DEC-75	0.258	22.291	1.413	24.027	4.55	0.072	28.649
17-DEC-75	0.237	20.477	1.353	23.019	4.55	0.072	27.641
18-DEC-75	0.223	19.267	1.353	23.019	4.55	0.072	27.641
19-DEC-75	0.214	18.490	1.353	23.019	4.55	0.072	27.640
20-DEC-75	0.208	17.971	1.353	23.019	4.55	0.072	27.640
21-DEC-75	0.200	17.280	1.353	23.019	4.55	0.071	27.640
22-DEC-75	0.178	15.379	1.353	23.019	4.55	0.071	27.640
23-DEC-75	0.175	15.120	1.353	23.019	4.55	0.071	27.640
24-DEC-75	0.176	15.206	1.341	22.818	4.55	0.071	27.439
25-DEC-75	0.171	14.774	1.341	22.818	4.55	0.070	27.439
26-DEC-75	0.168	14.515	1.341	22.818	4.55	0.070	27.439
27-DEC-75	0.159	13.738	1.341	22.818	4.55	0.070	27.438
28-DEC-75	0.150	12.960	1.341	22.818	4.55	0.070	27.438
29-DEC-75	0.144	12.442	1.341	22.818	4.55	0.069	27.438
30-DEC-75	0.146	12.614	1.341	22.818	4.55	0.069	27.438
31-DEC-75	0.160	13.824	1.283	21.817	4.55	0.069	26.436
01-JAN-76	0.168	14.515	1.283	21.817	4.55	0.130	26.497
02-JAN-76	0.255	22.032	1.283	21.817	4.55	0.130	26.497
03-JAN-76	0.286	24.710	1.283	21.817	4.55	0.129	26.497
04-JAN-76	0.339	29.290	1.283	21.817	4.55	0.129	26.497
05-JAN-76	0.359	31.018	1.283	21.817	4.55	0.129	26.497
06-JAN-76	0.361	31.190	1.283	21.817	4.55	0.129	26.497
07-JAN-76	0.369	31.882	1.250	21.260	4.55	0.130	25.939
08-JAN-76	0.376	32.486	1.250	21.260	4.55	0.130	25.939
09-JAN-76	0.370	31.968	1.250	21.260	4.55	0.130	25.940
10-JAN-76	0.350	30.240	1.250	21.260	4.55	0.130	25.940
11-JAN-76	0.318	27.475	1.250	21.260	4.55	0.130	25.940
12-JAN-76	0.286	24.710	1.250	21.260	4.55	0.130	25.940
13-JAN-76	0.270	23.328	1.250	21.260	4.55	0.130	25.940
14-JAN-76	0.261	22.550	1.228	20.888	4.55	0.130	25.568
15-JAN-76	0.248	21.427	1.228	20.888	4.55	0.130	25.568
16-JAN-76	0.240	20.736	1.228	20.888	4.55	0.130	25.567
17-JAN-76	0.228	19.699	1.228	20.888	4.55	0.130	25.567
18-JAN-76	0.218	18.835	1.228	20.888	4.55	0.129	25.567
19-JAN-76	0.233	20.131	1.228	20.888	4.55	0.129	25.567
20-JAN-76	0.258	22.291	1.228	20.888	4.55	0.129	25.567
21-JAN-76	0.215	18.576	1.303	22.168	4.55	0.129	26.846
22-JAN-76	0.204	17.626	1.303	22.168	4.55	0.128	26.846
23-JAN-76	0.197	17.021	1.303	22.168	4.55	0.128	26.846
24-JAN-76	0.193	16.675	1.303	22.168	4.55	0.128	26.845
25-JAN-76	0.183	15.811	1.303	22.168	4.55	0.127	26.845
26-JAN-76	0.185	15.984	1.303	22.168	4.55	0.127	26.845
27-JAN-76	0.192	16.589	1.303	22.168	4.55	0.126	26.844
28-JAN-76	0.263	22.723	1.320	22.447	4.55	0.126	27.123
29-JAN-76	0.374	32.314	1.320	22.447	4.55	0.126	27.122

87.754	3632.85
69.436	3702.28
50.340	3752.63
35.133	3787.76
23.987	3811.74
15.519	3827.26
9.108	3836.37
5.479	3841.85
5.220	3847.07
0.640	3847.71
-2.211	3845.50
-4.544	3840.96
-6.358	3834.60
-7.164	3827.43
-8.373	3819.06
-9.151	3809.91
-9.669	3800.24
-10.360	3789.88
-12.261	3777.62
-12.520	3765.10
-12.233	3752.87
-12.665	3740.20
-12.923	3727.28
-13.701	3713.58
-14.478	3699.10
-14.996	3684.10
-14.823	3669.28
-12.612	3656.67
-11.982	3644.69
-4.465	3640.22
-1.786	3638.43
2.793	3641.23
4.521	3645.75
4.694	3650.44
5.942	3656.38
6.547	3662.93
6.028	3668.96
4.300	3673.26
1.535	3674.80
-1.229	3673.57
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-3.017	3667.94
-4.140	3663.80
-4.831	3658.97
-5.868	3653.10
-6.732	3646.37
-5.436	3640.93
-3.275	3637.65
-8.270	3629.38
-9.221	3620.16
-9.825	3610.34
-10.170	3600.17
-11.034	3589.13
-10.861	3578.27
-10.255	3568.02
-4.399	3563.62
5.191	3568.81

27-MAR-76	0.545	47.088	1.313	22.339	4.55	0.493	27.382
28-MAR-76	0.536	46.310	1.313	22.339	4.55	0.495	27.385
29-MAR-76	0.519	44.842	1.313	22.339	4.55	0.498	27.387
30-MAR-76	0.479	41.386	1.313	22.339	4.55	0.500	27.389
31-MAR-76	0.448	38.707	1.287	21.889	4.55	0.502	26.940
01-APR-76	0.449	38.794	1.287	21.889	4.55	0.902	27.341
02-APR-76	0.402	34.733	1.287	21.889	4.55	0.905	27.344
03-APR-76	0.358	30.931	1.287	21.889	4.55	0.907	27.346
04-APR-76	0.328	28.339	1.287	21.889	4.55	0.908	27.346
05-APR-76	0.298	25.747	1.287	21.889	4.55	0.908	27.347
06-APR-76	0.270	23.328	1.287	21.889	4.55	0.907	27.346
07-APR-76	0.252	21.773	1.176	20.001	4.55	0.906	25.457
08-APR-76	0.231	19.958	1.176	20.001	4.55	0.906	25.457
09-APR-76	0.217	18.749	1.176	20.001	4.55	0.904	25.455
10-APR-76	0.211	18.230	1.176	20.001	4.55	0.903	25.454
11-APR-76	0.202	17.453	1.176	20.001	4.55	0.901	25.452
12-APR-76	0.183	15.811	1.176	20.001	4.55	0.899	25.450
13-APR-76	0.183	15.811	1.176	20.001	4.55	0.897	25.448
14-APR-76	0.178	15.379	1.061	18.049	4.55	0.895	23.494
15-APR-76	0.162	13.997	1.061	18.049	4.55	0.893	23.492
16-APR-76	0.158	13.651	1.061	18.049	4.55	0.891	23.490
17-APR-76	0.146	12.614	1.061	18.049	4.55	0.889	23.488
18-APR-76	0.142	12.269	1.061	18.049	4.55	0.886	23.485
19-APR-76	0.136	11.750	1.061	18.049	4.55	0.884	23.483
20-APR-76	0.128	11.059	1.061	18.049	4.55	0.881	23.480
21-APR-76	0.123	10.627	1.068	18.163	4.55	0.878	23.591
22-APR-76	0.120	10.368	1.068	18.163	4.55	0.875	23.589
23-APR-76	0.114	9.850	1.068	18.163	4.55	0.872	23.586
24-APR-76	0.110	9.504	1.068	18.163	4.55	0.869	23.582
25-APR-76	0.107	9.245	1.068	18.163	4.55	0.866	23.579
26-APR-76	0.099	8.554	1.068	18.163	4.55	0.863	23.576
27-APR-76	0.097	8.381	1.068	18.163	4.55	0.859	23.573
28-APR-76	0.094	8.122	1.028	17.491	4.55	0.856	22.897
29-APR-76	0.091	7.862	1.028	17.491	4.55	0.852	22.894
30-APR-76	0.092	7.949	1.028	17.491	4.55	0.849	22.890
01-MAY-76	0.089	7.690	1.028	17.491	4.55	1.148	23.189
02-MAY-76	0.091	7.862	1.028	17.491	4.55	1.143	23.184
03-MAY-76	0.089	7.690	1.028	17.491	4.55	1.139	23.180
04-MAY-76	0.089	7.690	1.028	17.491	4.55	1.134	23.175
05-MAY-76	0.086	7.430	1.088	18.514	4.55	1.129	24.193
06-MAY-76	0.080	6.912	1.088	18.514	4.55	1.124	24.188
07-MAY-76	0.075	6.480	1.088	18.514	4.55	1.119	24.182
08-MAY-76	0.067	5.789	1.088	18.514	4.55	1.113	24.177
09-MAY-76	0.065	5.616	1.088	18.514	4.55	1.108	24.171
10-MAY-76	0.063	5.443	1.088	18.514	4.55	1.102	24.166
11-MAY-76	0.066	5.702	1.088	18.514	4.55	1.096	24.160
12-MAY-76	0.072	6.221	1.184	20.144	4.55	1.091	25.785
13-MAY-76	0.066	5.702	1.184	20.144	4.55	1.085	25.779
14-MAY-76	0.065	5.616	1.184	20.144	4.55	1.079	25.773
15-MAY-76	0.064	5.530	1.184	20.144	4.55	1.072	25.766
16-MAY-76	0.060	5.184	1.184	20.144	4.55	1.066	25.760
17-MAY-76	0.060	5.184	1.184	20.144	4.55	1.060	25.754
18-MAY-76	0.104	8.986	1.184	20.144	4.55	1.054	25.748
19-MAY-76	0.150	12.960	1.178	20.044	4.55	1.048	25.642
20-MAY-76	0.117	10.109	1.178	20.044	4.55	1.045	25.638
21-MAY-76	0.085	7.344	1.178	20.044	4.55	1.040	25.634
22-MAY-76	0.079	6.826	1.178	20.044	4.55	1.034	25.628

19.706	3890.96
18.926	3909.89
17.455	3927.34
13.996	3941.34
11.767	3953.11
11.452	3964.56
7.389	3971.95
3.586	3975.53
0.993	3976.53
-1.599	3974.93
-4.018	3970.91
-3.685	3967.22
-5.498	3961.73
-6.707	3955.02
-7.223	3947.80
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-9.639	3930.16
-9.637	3920.52
-8.115	3912.41
-9.495	3902.91
-9.839	3893.07
-10.873	3882.20
-11.216	3870.98
-11.732	3859.25
-12.421	3846.83
-12.964	3833.87
-13.221	3820.65
-13.736	3806.91
-14.078	3792.83
-14.334	3778.50
-15.022	3763.47
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-14.775	3733.51
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-15.499	3688.04
-15.322	3672.71
-15.490	3657.22
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-16.762	3624.98
-17.276	3607.70
-17.702	3590.00
-18.388	3571.61
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-18.723	3534.33
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-20.076	3476.23
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-20.237	3435.84
-20.576	3415.26
-20.570	3394.69
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-12.682	3365.25
-15.530	3349.72
-18.290	3331.43
-18.802	3312.63

19-JUL-76	0.018	1.555	1.160	19.736	4.55	0.752	25.038	-23.483	2008.93
20-JUL-76	0.017	1.469	1.160	19.736	4.55	0.743	25.029	-23.560	1985.37
21-JUL-76	0.014	1.210	1.152	19.593	4.55	0.734	24.877	-23.668	1961.70
22-JUL-76	0.014	1.210	1.152	19.593	4.55	0.725	24.869	-23.659	1938.04
23-JUL-76	0.013	1.123	1.152	19.593	4.55	0.717	24.860	-23.737	1914.31
24-JUL-76	0.012	1.037	1.152	19.593	4.55	0.703	24.851	-23.814	1890.49
25-JUL-76	0.012	1.037	1.152	19.593	4.55	0.699	24.842	-23.805	1866.69
26-JUL-76	0.012	1.037	1.152	19.593	4.55	0.690	24.833	-23.797	1842.89
27-JUL-76	0.011	0.950	1.152	19.593	4.55	0.681	24.825	-23.874	1819.02
28-JUL-76	0.010	0.864	0.787	13.379	4.55	0.672	18.602	-17.738	1801.28
29-JUL-76	0.009	0.778	0.787	13.379	4.55	0.665	18.595	-17.817	1783.46
30-JUL-76	0.010	0.864	0.787	13.379	4.55	0.659	18.589	-17.725	1765.74
31-JUL-76	0.010	0.864	0.787	13.379	4.55	0.653	18.582	-17.718	1748.02
01-AUG-76	0.011	0.950	0.787	13.379	4.55	0.515	18.444	-17.494	1730.52
02-AUG-76	0.011	0.950	0.787	13.379	4.55	0.510	18.439	-17.489	1713.04
03-AUG-76	0.011	0.950	0.787	13.379	4.55	0.505	18.434	-17.484	1695.55
04-AUG-76	0.011	0.950	0.763	12.972	4.55	0.499	18.021	-17.071	1678.48
05-AUG-76	0.011	0.950	0.763	12.972	4.55	0.494	18.016	-17.066	1661.42
06-AUG-76	0.010	0.864	0.763	12.972	4.55	0.489	18.011	-17.147	1644.27
07-AUG-76	0.010	0.864	0.763	12.972	4.55	0.484	18.006	-17.142	1627.13
08-AUG-76	0.010	0.864	0.763	12.972	4.55	0.479	18.001	-17.137	1609.99
09-AUG-76	0.010	0.864	0.763	12.972	4.55	0.474	17.996	-17.132	1592.86
10-AUG-76	0.009	0.778	0.763	12.972	4.55	0.469	17.991	-17.213	1575.64
11-AUG-76	0.009	0.778	0.636	10.819	4.55	0.464	15.833	-15.056	1560.59
12-AUG-76	0.009	0.778	0.636	10.819	4.55	0.460	15.829	-15.051	1545.54
13-AUG-76	0.009	0.778	0.636	10.819	4.55	0.455	15.824	-15.047	1530.49
14-AUG-76	0.007	0.605	0.636	10.819	4.55	0.451	15.820	-15.215	1515.28
15-AUG-76	0.007	0.605	0.636	10.819	4.55	0.446	15.816	-15.211	1500.06
16-AUG-76	0.007	0.605	0.636	10.819	4.55	0.442	15.811	-15.206	1484.86
17-AUG-76	0.007	0.605	0.636	10.819	4.55	0.437	15.807	-15.202	1469.66
18-AUG-76	0.007	0.605	0.571	9.718	4.55	0.433	14.701	-14.096	1455.56
19-AUG-76	0.006	0.518	0.571	9.718	4.55	0.429	14.697	-14.178	1441.38
20-AUG-76	0.007	0.605	0.571	9.718	4.55	0.425	14.693	-14.088	1427.29
21-AUG-76	0.006	0.518	0.571	9.718	4.55	0.420	14.688	-14.170	1413.12
22-AUG-76	0.006	0.518	0.571	9.718	4.55	0.416	14.684	-14.166	1398.96
23-AUG-76	0.006	0.518	0.571	9.718	4.55	0.412	14.680	-14.162	1384.80
24-AUG-76	0.006	0.518	0.571	9.718	4.55	0.408	14.676	-14.158	1370.64
25-AUG-76	0.007	0.605	0.571	9.718	4.55	0.404	13.935	-13.330	1357.31
26-AUG-76	0.007	0.605	0.571	9.718	4.55	0.400	13.931	-13.327	1343.98
27-AUG-76	0.006	0.518	0.571	9.718	4.55	0.395	13.927	-13.409	1330.57
28-AUG-76	0.007	0.605	0.571	9.718	4.55	0.392	13.923	-13.319	1317.25
29-AUG-76	0.014	1.210	0.563	8.981	4.55	0.393	14.375	-13.166	1259.19
30-AUG-76	0.075	6.480	0.528	8.981	4.55	0.388	13.920	-12.710	1304.54
31-AUG-76	0.024	2.074	0.528	8.981	4.55	0.384	13.916	-7.436	1297.11
01-SEP-76	0.017	1.469	0.563	8.981	4.55	0.382	13.914	-11.840	1285.27
02-SEP-76	0.012	1.210	0.563	8.981	4.55	0.395	14.378	-12.909	1272.36
03-SEP-76	0.013	1.123	0.563	8.981	4.55	0.243	14.375	-13.166	1259.19
04-SEP-76	0.013	1.123	0.563	8.981	4.55	0.241	14.373	-13.250	1245.94
05-SEP-76	0.012	1.037	0.563	8.981	4.55	0.238	14.370	-13.247	1232.70
06-SEP-76	0.011	0.950	0.563	8.982	4.55	0.236	14.368	-13.331	1219.37
07-SEP-76	0.011	0.950	0.563	8.982	4.55	0.233	14.365	-13.415	1205.95
08-SEP-76	0.010	0.864	0.485	8.245	4.55	0.230	14.363	-13.412	1192.54
09-SEP-76	0.012	1.037	0.485	8.245	4.55	0.228	13.023	-12.159	1180.38
10-SEP-76	0.047	4.061	0.485	8.245	4.55	0.225	13.020	-11.984	1168.40
11-SEP-76	0.033	2.851	0.485	8.245	4.55	0.223	13.018	-8.957	1159.44
12-SEP-76	0.027	2.333	0.485	8.245	4.55	0.221	13.016	-10.165	1149.27
13-SEP-76	0.023	1.987	0.485	8.245	4.55	0.219	13.014	-10.682	1138.59
			8.245	4.55	0.217	13.012	-11.025	1127.57	

10-NOV-76	0.668	57.715	1.210	20.587	4.55	0.221	25.358
11-NOV-76	0.577	49.853	1.210	20.587	4.55	0.221	25.358
12-NOV-76	0.508	43.891	1.210	20.587	4.55	0.221	25.358
13-NOV-76	0.453	39.139	1.210	20.587	4.55	0.221	25.358
14-NOV-76	0.416	35.942	1.210	20.587	4.55	0.221	25.358
15-NOV-76	0.401	34.646	1.210	20.587	4.55	0.221	25.358
16-NOV-76	0.389	33.610	1.210	20.587	4.55	0.221	25.358
17-NOV-76	0.380	32.832	1.383	23.519	4.55	0.221	28.290
18-NOV-76	0.388	33.523	1.383	23.519	4.55	0.221	28.290
19-NOV-76	0.339	29.290	1.383	23.519	4.55	0.221	28.290
20-NOV-76	0.317	27.389	1.383	23.519	4.55	0.221	28.290
21-NOV-76	0.302	26.093	1.383	23.519	4.55	0.221	28.290
22-NOV-76	0.283	24.451	1.383	23.519	4.55	0.221	28.290
23-NOV-76	0.273	23.587	1.383	23.519	4.55	0.221	28.290
24-NOV-76	0.267	23.069	1.373	23.355	4.55	0.220	28.125
25-NOV-76	0.261	22.550	1.373	23.355	4.55	0.220	28.125
26-NOV-76	0.256	22.118	1.373	23.355	4.55	0.220	28.125
27-NOV-76	0.251	21.686	1.373	23.355	4.55	0.220	28.124
28-NOV-76	0.463	40.003	1.373	23.355	4.55	0.219	28.124
29-NOV-76	0.491	42.422	1.373	23.355	4.55	0.220	28.124
30-NOV-76	1.640	141.696	1.373	23.355	4.55	0.220	28.125
01-DEC-76	2.234	193.018	1.376	23.405	4.55	0.100	28.055
02-DEC-76	2.146	185.414	1.376	23.405	4.55	0.100	28.055
03-DEC-76	1.684	145.498	1.376	23.405	4.55	0.100	28.055
04-DEC-76	1.254	108.346	1.376	23.405	4.55	0.100	28.055
05-DEC-76	1.126	97.286	1.376	23.405	4.55	0.100	28.055
06-DEC-76	0.990	85.536	1.376	23.405	4.55	0.100	28.055
07-DEC-76	1.064	91.930	1.376	23.405	4.55	0.100	28.055
08-DEC-76	1.138	98.323	1.413	24.027	4.55	0.100	28.677
09-DEC-76	1.144	98.842	1.413	24.027	4.55	0.100	28.677
10-DEC-76	1.049	90.634	1.413	24.027	4.55	0.100	28.677
11-DEC-76	0.912	78.797	1.413	24.027	4.55	0.100	28.677
12-DEC-76	0.771	66.614	1.413	24.027	4.55	0.100	28.677
13-DEC-76	0.662	57.197	1.413	24.027	4.55	0.100	28.677
14-DEC-76	0.568	49.075	1.413	24.027	4.55	0.100	28.677
15-DEC-76	0.502	43.373	1.353	23.019	4.55	0.100	27.669
16-DEC-76	0.476	41.126	1.353	23.019	4.55	0.100	27.669
17-DEC-76	0.648	55.987	1.353	23.019	4.55	0.100	27.669
18-DEC-76	0.595	51.408	1.353	23.019	4.55	0.100	27.669
19-DEC-76	0.665	57.456	1.353	23.019	4.55	0.100	27.669
20-DEC-76	0.755	65.232	1.353	23.019	4.55	0.100	27.669
21-DEC-76	0.766	66.182	1.353	23.019	4.55	0.100	27.669
22-DEC-76	0.724	62.554	1.341	22.818	4.55	0.100	27.468
23-DEC-76	0.650	56.160	1.341	22.818	4.55	0.100	27.468
24-DEC-76	0.582	50.285	1.341	22.818	4.55	0.100	27.468
25-DEC-76	0.537	46.397	1.341	22.818	4.55	0.100	27.468
26-DEC-76	0.500	43.200	1.341	22.818	4.55	0.100	27.468
27-DEC-76	0.477	41.213	1.341	22.818	4.55	0.100	27.468
28-DEC-76	0.438	37.843	1.341	22.818	4.55	0.100	27.468
29-DEC-76	0.414	35.770	1.283	21.824	4.55	0.100	26.474
30-DEC-76	0.533	46.051	1.283	21.824	4.55	0.100	26.474
31-DEC-76	0.533	46.051	1.283	21.824	4.55	0.100	26.474

32.357	5404.00
24.495	5404.00
18.533	5404.00
13.781	5404.00
10.584	5404.00
9.288	5404.00
8.251	5404.00
4.542	5404.00
5.233	5404.00
0.999	5404.00
-0.901	5403.10
-2.197	5400.90
-3.839	5397.06
-4.703	5392.36
-5.056	5387.30
-5.574	5381.73
-6.006	5375.72
-6.438	5369.29
11.879	5381.16
14.298	5395.46
113.571	5404.00
164.963	5404.00
157.360	5404.00
117.443	5404.00
80.291	5404.00
69.232	5404.00
57.481	5404.00
63.875	5404.00
69.646	5404.00
70.165	5404.00
61.957	5404.00
50.120	5404.00
37.938	5404.00
28.520	5404.00
20.398	5404.00
15.704	5404.00
13.458	5404.00
28.319	5404.00
23.739	5404.00
29.787	5404.00
37.563	5404.00
38.514	5404.00
35.085	5404.00
28.692	5404.00
22.816	5404.00
18.928	5404.00
15.732	5404.00
13.744	5404.00
10.375	5404.00
9.296	5404.00
19.577	5404.00
19.577	5404.00

APPENDIX 6

CASE 4: Clatworthy Reservoir  
WW 1991

Date	Inflow (Ml/d)	Ratio to Average	Reduced Abstraction 16.2 Ml/d	C.R. (Ml/d)	Outflow (Ml/d)	Storage change
01-JAN-75	78.40	1.283	20.778	4.55	25.328	53.072
02-JAN-75	78.40	1.283	20.778	4.55	25.328	53.072
03-JAN-75	78.40	1.283	20.778	4.55	25.328	53.072
04-JAN-75	78.40	1.283	20.778	4.55	25.328	53.072
05-JAN-75	78.40	1.283	20.778	4.55	25.328	53.072
06-JAN-75	78.40	1.283	20.778	4.55	25.328	53.072
07-JAN-75	40.59	1.283	20.778	4.55	25.328	15.262
08-JAN-75	40.59	1.250	20.247	4.55	24.797	15.793
09-JAN-75	40.59	1.250	20.247	4.55	24.797	15.793
10-JAN-75	40.59	1.250	20.247	4.55	24.797	15.793
11-JAN-75	40.59	1.250	20.247	4.55	24.797	15.793
12-JAN-75	40.59	1.250	20.247	4.55	24.797	15.793
13-JAN-75	40.59	1.250	20.247	4.55	24.797	15.793
14-JAN-75	53.41	1.250	20.247	4.55	24.797	28.613
15-JAN-75	53.41	1.228	19.893	4.55	24.443	28.967
16-JAN-75	53.41	1.228	19.893	4.55	24.443	28.967
17-JAN-75	53.41	1.228	19.893	4.55	24.443	28.967
18-JAN-75	53.41	1.228	19.893	4.55	24.443	28.967
19-JAN-75	53.41	1.228	19.893	4.55	24.443	28.967
20-JAN-75	53.41	1.228	19.893	4.55	24.443	28.967
21-JAN-75	161.03	1.228	19.893	4.55	24.443	136.587
22-JAN-75	161.03	1.303	21.112	4.55	25.662	135.368
23-JAN-75	161.03	1.303	21.112	4.55	25.662	135.368
24-JAN-75	161.03	1.303	21.112	4.55	25.662	135.368
25-JAN-75	161.03	1.303	21.112	4.55	25.662	135.368
26-JAN-75	161.03	1.303	21.112	4.55	25.662	135.368
27-JAN-75	161.03	1.303	21.112	4.55	25.662	135.368
28-JAN-75	133.49	1.303	21.112	4.55	25.662	107.828
29-JAN-75	133.49	1.320	21.378	4.55	25.928	107.562
30-JAN-75	133.49	1.320	21.378	4.55	25.928	107.562
31-JAN-75	133.49	1.320	21.378	4.55	25.928	107.562
01-FEB-75	133.49	1.320	21.378	4.55	25.928	107.562
02-FEB-75	133.49	1.320	21.378	4.55	25.928	107.562
03-FEB-75	133.49	1.320	21.378	4.55	25.928	107.562
04-FEB-75	62.27	1.320	21.378	4.55	25.928	36.342
05-FEB-75	62.27	1.328	21.521	4.55	26.071	36.199
06-FEB-75	62.27	1.328	21.521	4.55	26.071	36.199
07-FEB-75	62.27	1.328	21.521	4.55	26.071	36.199
08-FEB-75	62.27	1.328	21.521	4.55	26.071	36.199
09-FEB-75	62.27	1.328	21.521	4.55	26.071	36.199
10-FEB-75	62.27	1.328	21.521	4.55	26.071	36.199
11-FEB-75	39.77	1.328	21.521	4.55	26.071	13.699
12-FEB-75	39.77	1.325	21.459	4.55	26.009	13.761
13-FEB-75	39.77	1.325	21.459	4.55	26.009	13.761
14-FEB-75	39.77	1.325	21.459	4.55	26.009	13.761
15-FEB-75	39.77	1.325	21.459	4.55	26.009	13.761
16-FEB-75	39.77	1.325	21.459	4.55	26.009	13.761
17-FEB-75	39.77	1.325	21.459	4.55	26.009	13.761
18-FEB-75	37.73	1.325	21.459	4.55	26.009	11.721
19-FEB-75	37.73	1.282	20.765	4.55	25.315	12.415
20-FEB-75	37.73	1.282	20.765	4.55	25.315	12.415
21-FEB-75	37.73	1.282	20.765	4.55	25.315	12.415

## Storage

20-APR-75	29.56	1.061	17.189	4.55	21.739	7.821	5404.00
21-APR-75	29.56	1.061	17.189	4.55	21.739	7.821	5404.00
22-APR-75	37.36	1.061	17.189	4.55	21.739	15.512	5404.00
23-APR-75	37.36	1.068	17.298	4.55	21.848	15.512	5404.00
24-APR-75	37.36	1.068	17.298	4.55	21.848	15.512	5404.00
25-APR-75	37.36	1.068	17.298	4.55	21.848	15.512	5404.00
26-APR-75	37.36	1.068	17.298	4.55	21.848	15.512	5404.00
27-APR-75	37.36	1.068	17.298	4.55	21.848	15.512	5404.00
28-APR-75	37.36	1.068	17.298	4.55	21.848	15.512	5404.00
29-APR-75	1.36	1.068	17.298	4.55	21.848	-20.488	5383.51
30-APR-75	1.36	1.028	16.658	4.55	21.208	-19.848	5363.66
01-MAY-75	1.36	1.028	16.658	4.55	21.208	-19.848	5343.82
02-MAY-75	1.36	1.028	16.658	4.55	21.208	-19.848	5323.97
03-MAY-75	1.36	1.028	16.658	4.55	21.208	-19.848	5304.12
04-MAY-75	1.36	1.028	16.658	4.55	21.208	-19.848	5284.27
05-MAY-75	1.36	1.028	16.658	4.55	21.208	-19.848	5264.42
06-MAY-75	1.36	1.028	16.658	4.55	21.208	-19.848	5244.57
07-MAY-75	1.36	1.088	17.632	4.55	22.182	-20.822	5223.75
08-MAY-75	1.36	1.088	17.632	4.55	22.182	-20.822	5202.93
09-MAY-75	1.36	1.088	17.632	4.55	22.182	-20.822	5182.11
10-MAY-75	1.36	1.088	17.632	4.55	22.182	-20.822	5161.29
11-MAY-75	1.36	1.088	17.632	4.55	22.182	-20.822	5140.46
12-MAY-75	1.36	1.088	17.632	4.55	22.182	-20.822	5119.64
13-MAY-75	1.36	1.088	17.632	4.55	22.182	-20.822	5098.82
14-MAY-75	1.36	1.184	19.185	4.55	23.735	-22.375	5076.45
15-MAY-75	1.36	1.184	19.185	4.55	23.735	-22.375	5054.07
16-MAY-75	1.36	1.184	19.185	4.55	23.735	-22.375	5031.70
17-MAY-75	1.36	1.184	19.185	4.55	23.735	-22.375	5009.32
18-MAY-75	1.36	1.184	19.185	4.55	23.735	-22.375	4986.95
19-MAY-75	1.36	1.184	19.185	4.55	23.735	-22.375	4964.57
20-MAY-75	1.36	1.184	19.185	4.55	23.735	-22.375	4942.20
21-MAY-75	1.36	1.178	19.089	4.55	23.639	-22.279	4919.92
22-MAY-75	1.36	1.178	19.089	4.55	23.639	-22.279	4897.64
23-MAY-75	1.36	1.178	19.089	4.55	23.639	-22.279	4875.36
24-MAY-75	1.36	1.178	19.089	4.55	23.639	-22.279	4853.08
25-MAY-75	1.36	1.178	19.089	4.55	23.639	-22.279	4830.80
26-MAY-75	1.36	1.178	19.089	4.55	23.639	-22.279	4808.52
27-MAY-75	1.36	1.178	19.089	4.55	23.639	-22.279	4786.24
28-MAY-75	1.36	1.253	20.302	4.55	24.852	-23.492	4762.75
29-MAY-75	1.36	1.253	20.302	4.55	24.852	-23.492	4739.26
30-MAY-75	1.36	1.253	20.302	4.55	24.852	-23.492	4715.77
31-MAY-75	1.36	1.253	20.302	4.55	24.852	-23.492	4692.28
01-JUN-75	1.36	1.253	20.302	4.55	24.852	-23.492	4668.78
02-JUN-75	1.36	1.253	20.302	4.55	24.852	-23.492	4645.29
03-JUN-75	1.36	1.253	20.302	4.55	24.852	-23.492	4621.80
04-JUN-75	1.36	1.202	19.478	4.55	24.028	-22.668	4599.13
05-JUN-75	1.36	1.202	19.478	4.55	24.028	-22.668	4576.46
06-JUN-75	1.36	1.202	19.478	4.55	24.028	-22.668	4553.80
07-JUN-75	1.36	1.202	19.478	4.55	24.028	-22.668	4531.13
08-JUN-75	1.36	1.202	19.478	4.55	24.028	-22.668	4508.46
09-JUN-75	1.36	1.202	19.478	4.55	24.028	-22.668	4485.79
10-JUN-75	1.36	1.202	19.478	4.55	24.028	-22.668	4463.13
11-JUN-75	1.36	1.247	20.206	4.55	24.756	-23.396	4439.73
12-JUN-75	1.36	1.247	20.206	4.55	24.756	-23.396	4416.33
13-JUN-75	1.36	1.247	20.206	4.55	24.756	-23.396	4392.94
14-JUN-75	1.36	1.247	20.206	4.55	24.756	-23.396	4369.54
15-JUN-75	1.36	1.247	20.206	4.55	24.756	-23.396	4346.15



12-AUG-75	7.54	0.763	12.354	4.55	16.904	-9.364
13-AUG-75	7.54	0.636	10.304	4.55	14.854	-7.314
14-AUG-75	7.54	0.636	10.304	4.55	14.854	-7.314
15-AUG-75	7.54	0.636	10.304	4.55	14.854	-7.314
16-AUG-75	7.54	0.636	10.304	4.55	14.854	-7.314
17-AUG-75	7.54	0.636	10.304	4.55	14.854	-7.314
18-AUG-75	7.54	0.636	10.304	4.55	14.854	-7.314
19-AUG-75	0.21	0.636	10.304	4.55	14.854	-14.644
20-AUG-75	0.21	0.571	9.255	4.55	13.805	-13.595
21-AUG-75	0.21	0.571	9.255	4.55	13.805	-13.595
22-AUG-75	0.21	0.571	9.255	4.55	13.805	-13.595
23-AUG-75	0.21	0.571	9.255	4.55	13.805	-13.595
24-AUG-75	0.21	0.571	9.255	4.55	13.805	-13.595
25-AUG-75	0.21	0.571	9.255	4.55	13.805	-13.595
26-AUG-75	0.21	0.571	9.255	4.55	13.805	-13.595
27-AUG-75	0.21	0.528	8.554	4.55	13.104	-12.894
28-AUG-75	0.21	0.528	8.554	4.55	13.104	-12.894
29-AUG-75	0.21	0.528	8.554	4.55	13.104	-12.894
30-AUG-75	0.21	0.528	8.554	4.55	13.104	-12.894
31-AUG-75	0.21	0.528	8.554	4.55	13.104	-12.894
01-SEP-75	0.21	0.528	8.554	4.55	13.104	-12.894
02-SEP-75	0.86	0.528	8.554	4.55	13.104	-12.244
03-SEP-75	0.86	0.563	9.126	4.55	13.676	-12.816
04-SEP-75	0.86	0.563	9.126	4.55	13.676	-12.816
05-SEP-75	0.86	0.563	9.126	4.55	13.676	-12.816
06-SEP-75	0.86	0.563	9.126	4.55	13.676	-12.816
07-SEP-75	0.86	0.563	9.126	4.55	13.676	-12.816
08-SEP-75	0.86	0.563	9.126	4.55	13.676	-12.816
09-SEP-75	11.89	0.563	9.126	4.55	13.676	-1.786
10-SEP-75	11.89	0.485	7.852	4.55	12.402	-0.512
11-SEP-75	11.89	0.485	7.852	4.55	12.402	-0.512
12-SEP-75	11.89	0.485	7.852	4.55	12.402	-0.512
13-SEP-75	11.89	0.485	7.852	4.55	12.402	-0.512
14-SEP-75	11.89	0.485	7.852	4.55	12.402	-0.512
15-SEP-75	11.89	0.485	7.852	4.55	12.402	-0.512
16-SEP-75	1.00	0.485	7.852	4.55	12.402	-11.402
17-SEP-75	1.00	0.343	5.557	4.55	10.107	-9.107
18-SEP-75	1.00	0.343	5.557	4.55	10.107	-9.107
19-SEP-75	1.00	0.343	5.557	4.55	10.107	-9.107
20-SEP-75	1.00	0.343	5.557	4.55	10.107	-9.107
21-SEP-75	1.00	0.343	5.557	4.55	10.107	-9.107
22-SEP-75	1.00	0.343	5.557	4.55	10.107	-9.107
23-SEP-75	5.04	0.343	5.557	4.55	10.107	-5.067
24-SEP-75	5.04	0.249	4.039	4.55	8.589	-3.549
25-SEP-75	5.04	0.249	4.039	4.55	8.589	-3.549
26-SEP-75	5.04	0.249	4.039	4.55	8.589	-3.549
27-SEP-75	5.04	0.249	4.039	4.55	8.589	-3.549
28-SEP-75	5.04	0.249	4.039	4.55	8.589	-3.549
29-SEP-75	5.04	0.249	4.039	4.55	8.589	-3.549
30-SEP-75	5.04	0.249	4.039	4.55	8.589	-3.549
01-OCT-75	5.04	0.223	3.609	4.55	8.159	-3.119
02-OCT-75	5.04	0.223	3.609	4.55	8.159	-3.119
03-OCT-75	5.04	0.223	3.609	4.55	8.159	-3.119
04-OCT-75	5.04	0.223	3.609	4.55	8.159	-3.119
05-OCT-75	5.04	0.223	3.609	4.55	8.159	-3.119
06-OCT-75	5.04	0.223	3.609	4.55	8.159	-3.119
07-OCT-75	9.06	0.223	3.609	4.55	8.159	0.901

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04-DEC-75	91.64	1.376	22.290	4.55	26.840	64.800
05-DEC-75	91.64	1.376	22.290	4.55	26.840	64.800
06-DEC-75	91.64	1.376	22.290	4.55	26.840	64.800
07-DEC-75	91.64	1.376	22.290	4.55	26.840	64.800
08-DEC-75	91.64	1.376	22.290	4.55	26.840	64.800
09-DEC-75	40.19	1.376	22.290	4.55	26.840	13.350
10-DEC-75	40.19	1.413	22.883	4.55	27.433	12.757
11-DEC-75	40.19	1.413	22.883	4.55	27.433	12.757
12-DEC-75	40.19	1.413	22.883	4.55	27.433	12.757
13-DEC-75	40.19	1.413	22.883	4.55	27.433	12.757
14-DEC-75	40.19	1.413	22.883	4.55	27.433	12.757
15-DEC-75	40.19	1.413	22.883	4.55	27.433	12.757
16-DEC-75	23.01	1.413	22.883	4.55	27.433	-4.423
17-DEC-75	23.01	1.353	21.923	4.55	26.473	-3.463
18-DEC-75	23.01	1.353	21.923	4.55	26.473	-3.463
19-DEC-75	23.01	1.353	21.923	4.55	26.473	-3.463
20-DEC-75	23.01	1.353	21.923	4.55	26.473	-3.463
21-DEC-75	23.01	1.353	21.923	4.55	26.473	-3.463
22-DEC-75	23.01	1.353	21.923	4.55	26.473	-3.463
23-DEC-75	16.86	1.353	21.923	4.55	26.473	-9.613
24-DEC-75	16.86	1.341	21.732	4.55	26.282	-9.422
25-DEC-75	16.86	1.341	21.732	4.55	26.282	-9.422
26-DEC-75	16.86	1.341	21.732	4.55	26.282	-9.422
27-DEC-75	16.86	1.341	21.732	4.55	26.282	-9.422
28-DEC-75	16.86	1.341	21.732	4.55	26.282	-9.422
29-DEC-75	16.86	1.341	21.732	4.55	26.282	-9.422
30-DEC-75	20.76	1.341	21.732	4.55	26.282	-5.522
31-DEC-75	20.76	1.283	20.778	4.55	25.328	-4.568
01-JAN-76	20.76	1.283	20.778	4.55	25.328	-4.568
02-JAN-76	20.76	1.283	20.778	4.55	25.328	-4.568
03-JAN-76	20.76	1.283	20.778	4.55	25.328	-4.568
04-JAN-76	20.76	1.283	20.778	4.55	25.328	-4.568
05-JAN-76	20.76	1.283	20.778	4.55	25.328	-4.568
06-JAN-76	24.76	1.283	20.778	4.55	25.328	-0.568
07-JAN-76	24.76	1.250	20.247	4.55	24.797	-0.037
08-JAN-76	24.76	1.250	20.247	4.55	24.797	-0.037
09-JAN-76	24.76	1.250	20.247	4.55	24.797	-0.037
10-JAN-76	24.76	1.250	20.247	4.55	24.797	-0.037
11-JAN-76	24.76	1.250	20.247	4.55	24.797	-0.037
12-JAN-76	24.76	1.250	20.247	4.55	24.797	-0.037
13-JAN-76	19.20	1.250	20.247	4.55	24.797	-5.597
14-JAN-76	19.20	1.228	19.893	4.55	24.443	-5.243
15-JAN-76	19.20	1.228	19.893	4.55	24.443	-5.243
16-JAN-76	19.20	1.228	19.893	4.55	24.443	-5.243
17-JAN-76	19.20	1.228	19.893	4.55	24.443	-5.243
18-JAN-76	19.20	1.228	19.893	4.55	24.443	-5.243
19-JAN-76	19.20	1.228	19.893	4.55	24.443	-5.243
20-JAN-76	20.33	1.228	19.893	4.55	24.443	-4.113
21-JAN-76	20.33	1.303	21.112	4.55	25.662	-5.332
22-JAN-76	20.33	1.303	21.112	4.55	25.662	-5.332
23-JAN-76	20.33	1.303	21.112	4.55	25.662	-5.332
24-JAN-76	20.33	1.303	21.112	4.55	25.662	-5.332
25-JAN-76	20.33	1.303	21.112	4.55	25.662	-5.332
26-JAN-76	20.33	1.303	21.112	4.55	25.662	-5.332
27-JAN-76	17.17	1.303	21.112	4.55	25.662	-8.492
28-JAN-76	17.17	1.320	21.378	4.55	25.928	-8.758
29-JAN-76	17.17	1.320	21.378	4.55	25.928	-8.758

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3005.61

27-MAR-76	51.64	1.313	21.276	4.55	25.826	25.814
28-MAR-76	51.64	1.313	21.276	4.55	25.826	25.814
29-MAR-76	51.64	1.313	21.276	4.55	25.826	25.814
30-MAR-76	31.60	1.313	21.276	4.55	25.826	5.774
31-MAR-76	31.60	1.287	20.846	4.55	25.396	6.204
01-APR-76	31.60	1.287	20.846	4.55	25.396	6.204
02-APR-76	31.60	1.287	20.846	4.55	25.396	6.204
03-APR-76	31.60	1.287	20.846	4.55	25.396	6.204
04-APR-76	31.60	1.287	20.846	4.55	25.396	6.204
05-APR-76	31.60	1.287	20.846	4.55	25.396	6.204
06-APR-76	17.13	1.287	20.846	4.55	25.396	-8.266
07-APR-76	17.13	1.176	19.049	4.55	23.599	-6.469
08-APR-76	17.13	1.176	19.049	4.55	23.599	-6.469
09-APR-76	17.13	1.176	19.049	4.55	23.599	-6.469
10-APR-76	17.13	1.176	19.049	4.55	23.599	-6.469
11-APR-76	17.13	1.176	19.049	4.55	23.599	-6.469
12-APR-76	17.13	1.176	19.049	4.55	23.599	-6.469
13-APR-76	21.51	1.176	19.049	4.55	23.599	-2.089
14-APR-76	21.51	1.061	17.189	4.55	21.739	-0.229
15-APR-76	21.51	1.061	17.189	4.55	21.739	-0.229
16-APR-76	21.51	1.061	17.189	4.55	21.739	-0.229
17-APR-76	21.51	1.061	17.189	4.55	21.739	-0.229
18-APR-76	21.51	1.061	17.189	4.55	21.739	-0.229
19-APR-76	21.51	1.061	17.189	4.55	21.739	-0.229
20-APR-76	21.24	1.061	17.189	4.55	21.739	-0.499
21-APR-76	21.24	1.068	17.298	4.55	21.848	-0.608
22-APR-76	21.24	1.068	17.298	4.55	21.848	-0.608
23-APR-76	21.24	1.068	17.298	4.55	21.848	-0.608
24-APR-76	21.24	1.068	17.298	4.55	21.848	-0.608
25-APR-76	21.24	1.068	17.298	4.55	21.848	-0.608
26-APR-76	21.24	1.068	17.298	4.55	21.848	-0.608
27-APR-76	13.39	1.068	17.298	4.55	21.848	-8.458
28-APR-76	13.39	1.028	16.658	4.55	21.208	-7.818
29-APR-76	13.39	1.028	16.658	4.55	21.208	-7.818
30-APR-76	13.39	1.028	16.658	4.55	21.208	-7.818
01-MAY-76	13.39	1.028	16.658	4.55	21.208	-7.818
02-MAY-76	13.39	1.028	16.658	4.55	21.208	-7.818
03-MAY-76	13.39	1.028	16.658	4.55	21.208	-7.818
04-MAY-76	2.71	1.028	16.658	4.55	21.208	-18.498
05-MAY-76	2.71	1.088	17.632	4.55	22.182	-19.472
06-MAY-76	2.71	1.088	17.632	4.55	22.182	-19.472
07-MAY-76	2.71	1.088	17.632	4.55	22.182	-19.472
08-MAY-76	2.71	1.088	17.632	4.55	22.182	-19.472
09-MAY-76	2.71	1.088	17.632	4.55	22.182	-19.472
10-MAY-76	2.71	1.088	17.632	4.55	22.182	-19.472
11-MAY-76	6.49	1.088	17.632	4.55	22.182	-15.692
12-MAY-76	6.49	1.184	19.185	4.55	23.735	-17.245
13-MAY-76	6.49	1.184	19.185	4.55	23.735	-17.245
14-MAY-76	6.49	1.184	19.185	4.55	23.735	-17.245
15-MAY-76	6.49	1.184	19.185	4.55	23.735	-17.245
16-MAY-76	6.49	1.184	19.185	4.55	23.735	-17.245
17-MAY-76	6.49	1.184	19.185	4.55	23.735	-17.245
18-MAY-76	7.79	1.184	19.185	4.55	23.735	-15.945
19-MAY-76	7.79	1.178	19.089	4.55	23.639	-15.849
20-MAY-76	7.79	1.178	19.089	4.55	23.639	-15.849
21-MAY-76	7.79	1.178	19.089	4.55	23.639	-15.849
22-MAY-76	7.79	1.178	19.089	4.55	23.639	-15.849

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19-JUL-76	0.11	1.160	18.797	4.55	23.347	-23.237	1963.81
20-JUL-76	0.11	1.160	18.797	4.55	23.347	-23.237	1940.58
21-JUL-76	0.11	1.152	18.660	4.55	23.210	-23.100	1917.48
22-JUL-76	0.11	1.152	18.660	4.55	23.210	-23.100	1894.38
23-JUL-76	0.11	1.152	18.660	4.55	23.210	-23.100	1871.27
24-JUL-76	0.11	1.152	18.660	4.55	23.210	-23.100	1848.17
25-JUL-76	0.11	1.152	18.660	4.55	23.210	-23.100	1825.07
26-JUL-76	0.11	1.152	18.660	4.55	23.210	-23.100	1801.97
27-JUL-76	0.11	1.152	18.660	4.55	23.210	-23.100	1778.87
28-JUL-76	0.11	0.787	12.742	4.55	17.292	-17.182	1761.69
29-JUL-76	0.11	0.787	12.742	4.55	17.292	-17.182	1744.51
30-JUL-76	0.11	0.787	12.742	4.55	17.292	-17.182	1727.33
31-JUL-76	0.11	0.787	12.742	4.55	17.292	-17.182	1710.14
01-AUG-76	0.11	0.787	12.742	4.55	17.292	-17.182	1692.96
02-AUG-76	0.11	0.787	12.742	4.55	17.292	-17.182	1675.78
03-AUG-76	0.11	0.787	12.742	4.55	17.292	-17.182	1658.60
04-AUG-76	0.11	0.763	12.354	4.55	16.904	-16.794	1641.80
05-AUG-76	0.11	0.763	12.354	4.55	16.904	-16.794	1625.01
06-AUG-76	0.11	0.763	12.354	4.55	16.904	-16.794	1608.22
07-AUG-76	0.11	0.763	12.354	4.55	16.904	-16.794	1591.42
08-AUG-76	0.11	0.763	12.354	4.55	16.904	-16.794	1574.63
09-AUG-76	0.11	0.763	12.354	4.55	16.904	-16.794	1557.83
10-AUG-76	0.11	0.763	12.354	4.55	16.904	-16.794	1541.04
11-AUG-76	0.11	0.636	10.304	4.55	14.854	-14.744	1526.30
12-AUG-76	0.11	0.636	10.304	4.55	14.854	-14.744	1511.55
13-AUG-76	0.11	0.636	10.304	4.55	14.854	-14.744	1496.81
14-AUG-76	0.11	0.636	10.304	4.55	14.854	-14.744	1482.06
15-AUG-76	0.11	0.636	10.304	4.55	14.854	-14.744	1467.32
16-AUG-76	0.11	0.636	10.304	4.55	14.854	-14.744	1452.58
17-AUG-76	0.11	0.636	10.304	4.55	14.854	-14.744	1437.83
18-AUG-76	0.11	0.571	9.255	4.55	13.805	-13.695	1424.14
19-AUG-76	0.11	0.571	9.255	4.55	13.805	-13.695	1410.44
20-AUG-76	0.11	0.571	9.255	4.55	13.805	-13.695	1396.75
21-AUG-76	0.11	0.571	9.255	4.55	13.805	-13.695	1383.05
22-AUG-76	0.11	0.571	9.255	4.55	13.805	-13.695	1369.36
23-AUG-76	0.11	0.571	9.255	4.55	13.805	-13.695	1355.66
24-AUG-76	0.11	0.571	9.255	4.55	13.805	-13.695	1341.97
25-AUG-76	0.11	0.528	8.554	4.55	13.104	-12.994	1328.97
26-AUG-76	0.11	0.528	8.554	4.55	13.104	-12.994	1315.98
27-AUG-76	0.11	0.528	8.554	4.55	13.104	-12.994	1302.98
28-AUG-76	0.11	0.528	8.554	4.55	13.104	-12.994	1289.99
29-AUG-76	0.11	0.528	8.554	4.55	13.104	-12.994	1277.00
30-AUG-76	0.11	0.528	8.554	4.55	13.104	-12.994	1264.00
31-AUG-76	3.09	0.528	8.554	4.55	13.104	-10.014	1253.99
01-SEP-76	3.09	0.563	9.126	4.55	13.676	-10.586	1243.40
02-SEP-76	3.09	0.563	9.126	4.55	13.676	-10.586	1232.82
03-SEP-76	3.09	0.563	9.126	4.55	13.676	-10.586	1222.23
04-SEP-76	3.09	0.563	9.126	4.55	13.676	-10.586	1211.64
05-SEP-76	3.09	0.563	9.126	4.55	13.676	-10.586	1201.06
06-SEP-76	3.09	0.563	9.126	4.55	13.676	-10.586	1190.47
07-SEP-76	1.51	0.563	9.126	4.55	13.676	-12.166	1178.31
08-SEP-76	1.51	0.485	7.852	4.55	12.402	-10.892	1167.42
09-SEP-76	1.51	0.485	7.852	4.55	12.402	-10.892	1156.52
10-SEP-76	1.51	0.485	7.852	4.55	12.402	-10.892	1145.63
11-SEP-76	1.51	0.485	7.852	4.55	12.402	-10.892	1134.74
12-SEP-76	1.51	0.485	7.852	4.55	12.402	-10.892	1123.85
13-SEP-76	1.51	0.485	7.852	4.55	12.402	-10.892	1112.95



10-NOV-76	54.03	1.210	19.607	4.55	24.157	29.873
11-NOV-76	54.03	1.210	19.607	4.55	24.157	29.873
12-NOV-76	54.03	1.210	19.607	4.55	24.157	29.873
13-NOV-76	54.03	1.210	19.607	4.55	24.157	29.873
14-NOV-76	54.03	1.210	19.607	4.55	24.157	29.873
15-NOV-76	54.03	1.210	19.607	4.55	24.157	29.873
16-NOV-76	24.97	1.210	19.607	4.55	24.157	0.813
17-NOV-76	24.97	1.383	22.399	4.55	26.949	-1.979
18-NOV-76	24.97	1.383	22.399	4.55	26.949	-1.979
19-NOV-76	24.97	1.383	22.399	4.55	26.949	-1.979
20-NOV-76	24.97	1.383	22.399	4.55	26.949	-1.979
21-NOV-76	24.97	1.383	22.399	4.55	26.949	-1.979
22-NOV-76	24.97	1.383	22.399	4.55	26.949	-1.979
23-NOV-76	28.84	1.383	22.399	4.55	26.949	1.891
24-NOV-76	28.84	1.373	22.243	4.55	26.793	2.047
25-NOV-76	28.84	1.373	22.243	4.55	26.793	2.047
26-NOV-76	28.84	1.373	22.243	4.55	26.793	2.047
27-NOV-76	28.84	1.373	22.243	4.55	26.793	2.047
28-NOV-76	28.84	1.373	22.243	4.55	26.793	2.047
29-NOV-76	28.84	1.373	22.243	4.55	26.793	2.047
30-NOV-76	149.10	1.373	22.243	4.55	26.793	122.307
01-DEC-76	149.10	1.376	22.290	4.55	26.840	122.260
02-DEC-76	149.10	1.376	22.290	4.55	26.840	122.260
03-DEC-76	149.10	1.376	22.290	4.55	26.840	122.260
04-DEC-76	149.10	1.376	22.290	4.55	26.840	122.260
05-DEC-76	149.10	1.376	22.290	4.55	26.840	122.260
06-DEC-76	149.10	1.376	22.290	4.55	26.840	122.260
07-DEC-76	97.80	1.376	22.290	4.55	26.840	70.960
08-DEC-76	97.80	1.413	22.883	4.55	27.433	70.367
09-DEC-76	97.80	1.413	22.883	4.55	27.433	70.367
10-DEC-76	97.80	1.413	22.883	4.55	27.433	70.367
11-DEC-76	97.80	1.413	22.883	4.55	27.433	70.367
12-DEC-76	97.80	1.413	22.883	4.55	27.433	70.367
13-DEC-76	97.80	1.413	22.883	4.55	27.433	70.367
14-DEC-76	51.36	1.413	22.883	4.55	27.433	23.927
15-DEC-76	51.36	1.353	21.923	4.55	26.473	24.887
16-DEC-76	51.36	1.353	21.923	4.55	26.473	24.887
17-DEC-76	51.36	1.353	21.923	4.55	26.473	24.887
18-DEC-76	51.36	1.353	21.923	4.55	26.473	24.887
19-DEC-76	51.36	1.353	21.923	4.55	26.473	24.887
20-DEC-76	51.36	1.353	21.923	4.55	26.473	24.887
21-DEC-76	57.94	1.353	21.923	4.55	26.473	31.467
22-DEC-76	57.94	1.341	21.732	4.55	26.282	31.658
23-DEC-76	57.94	1.341	21.732	4.55	26.282	31.658
24-DEC-76	57.94	1.341	21.732	4.55	26.282	31.658
25-DEC-76	57.94	1.341	21.732	4.55	26.282	31.658
26-DEC-76	57.94	1.341	21.732	4.55	26.282	31.658
27-DEC-76	57.94	1.341	21.732	4.55	26.282	31.658
28-DEC-76	53.74	1.341	21.732	4.55	26.282	27.458
29-DEC-76	53.74	1.283	20.785	4.55	25.335	28.405
30-DEC-76	53.74	1.283	20.785	4.55	25.335	28.405
31-DEC-76	53.74	1.283	20.785	4.55	25.335	28.405

21604.6

Wessex Water inflows - some have been averaged over a number of weeks to remove the negatives. The weekly values have been converted to daily values



**APPENDIX 7**

CASE 5: Clatworthy Reservoir  
 1990

Date	Inflow (cumecs)	Inflow (Ml/d)	1990 Abstraction	Ratio to Average	Increased Abstraction 20.05 Ml/d	C.R.	Outflow (Ml/d)	Storage change
01-JAN-75	0.889	76.810	25.5	1.425	28.563	4.55	33.113	43.697
02-JAN-75	0.751	64.886	26.39	1.474	29.560	4.55	34.110	30.777
03-JAN-75	0.628	54.259	26.39	1.474	29.560	4.55	34.110	20.149
04-JAN-75	0.536	46.310	26.39	1.474	29.560	4.55	34.110	12.201
05-JAN-75	0.472	40.781	26.39	1.474	29.560	4.55	34.110	6.671
06-JAN-75	0.441	38.102	26.39	1.474	29.560	4.55	34.110	3.993
07-JAN-75	0.402	34.733	26.39	1.474	29.560	4.55	34.110	0.623
08-JAN-75	0.370	31.968	26.39	1.474	29.560	4.55	34.110	-2.142
09-JAN-75	0.340	29.376	32.4	1.810	36.292	4.55	40.842	-11.466
10-JAN-75	0.317	27.389	32.4	1.810	36.292	4.55	40.842	-13.453
11-JAN-75	0.308	26.611	32.4	1.810	36.292	4.55	40.842	-14.230
12-JAN-75	0.356	30.758	32.4	1.810	36.292	4.55	40.842	-10.083
13-JAN-75	0.324	27.994	32.4	1.810	36.292	4.55	40.842	-12.848
14-JAN-75	0.393	33.955	32.4	1.810	36.292	4.55	40.842	-6.886
15-JAN-75	0.418	36.115	32.4	1.810	36.292	4.55	40.842	-4.726
16-JAN-75	0.421	36.374	31.5	1.760	35.284	4.55	39.834	-3.459
17-JAN-75	0.504	43.546	31.5	1.760	35.284	4.55	39.834	3.712
18-JAN-75	0.536	46.310	31.5	1.760	35.284	4.55	39.834	6.477
19-JAN-75	1.119	96.682	31.5	1.760	35.284	4.55	39.834	56.848
20-JAN-75	1.202	103.853	31.5	1.760	35.284	4.55	39.834	64.019
21-JAN-75	1.383	119.491	31.5	1.760	35.284	4.55	39.834	79.658
22-JAN-75	2.653	229.219	31.5	1.760	35.284	4.55	39.834	189.386
23-JAN-75	2.168	187.315	31.7	1.771	35.508	4.55	40.058	147.258
24-JAN-75	1.705	147.312	31.7	1.771	35.508	4.55	40.058	107.254
25-JAN-75	1.554	134.266	31.7	1.771	35.508	4.55	40.058	94.208
26-JAN-75	1.537	132.797	31.7	1.771	35.508	4.55	40.058	92.739
27-JAN-75	1.313	113.443	31.7	1.771	35.508	4.55	40.058	73.386
28-JAN-75	2.211	191.030	31.7	1.771	35.508	4.55	40.058	150.973
29-JAN-75	1.823	157.507	31.7	1.771	35.508	4.55	40.058	117.450
30-JAN-75	1.678	144.979	32.7	1.827	36.628	4.55	41.178	103.802
31-JAN-75	1.606	138.758	32.7	1.827	36.628	4.55	41.178	97.581
01-FEB-75	1.412	121.997	32.7	1.827	36.628	4.55	41.178	80.819
02-FEB-75	1.149	99.274	32.7	1.827	36.628	4.55	41.178	58.096
03-FEB-75	0.938	81.043	32.7	1.827	36.628	4.55	41.178	39.866
04-FEB-75	0.769	66.442	32.7	1.827	36.628	4.55	41.178	25.264
05-FEB-75	0.643	55.555	32.7	1.827	36.628	4.55	41.178	14.378
06-FEB-75	0.565	48.816	32.9	1.838	36.852	4.55	41.402	7.414
07-FEB-75	0.487	42.077	32.9	1.838	36.852	4.55	41.402	0.675
08-FEB-75	0.420	36.288	32.9	1.838	36.852	4.55	41.402	-5.114
09-FEB-75	0.360	31.104	32.9	1.838	36.852	4.55	41.402	-10.298
10-FEB-75	0.373	32.227	32.9	1.838	36.852	4.55	41.402	-9.174
11-FEB-75	0.330	28.512	32.9	1.838	36.852	4.55	41.402	-12.890
12-FEB-75	0.316	27.302	32.9	1.838	36.852	4.55	41.402	-14.099
13-FEB-75	0.292	25.229	31.5	1.760	35.284	4.55	39.834	-14.605
14-FEB-75	0.278	24.019	31.5	1.760	35.284	4.55	39.834	-15.814
15-FEB-75	0.266	22.982	31.5	1.760	35.284	4.55	39.834	-16.851
16-FEB-75	0.266	22.982	31.5	1.760	35.284	4.55	39.834	-16.851
17-FEB-75	0.306	26.438	31.5	1.760	35.284	4.55	39.834	-13.395
18-FEB-75	0.366	31.622	31.5	1.760	35.284	4.55	39.834	-8.211
19-FEB-75	0.323	27.907	31.5	1.760	35.284	4.55	39.834	-11.926
20-FEB-75	0.329	28.426	28.5	1.592	31.923	4.55	36.473	-8.048
21-FEB-75	0.330	28.512	28.5	1.592	31.923	4.55	36.473	-7.961

## Storage

20-APR-75	0.489	42.250	19.1	1.067
21-APR-75	0.516	44.582	19.1	1.067
22-APR-75	0.470	40.608	19.1	1.067
23-APR-75	0.429	37.066	19.1	1.067
24-APR-75	0.388	33.523	19.9	1.112
25-APR-75	0.360	31.104	19.9	1.112
26-APR-75	0.329	28.426	19.9	1.112
27-APR-75	0.303	26.179	19.9	1.112
28-APR-75	0.282	24.365	19.9	1.112
29-APR-75	0.267	23.069	19.9	1.112
30-APR-75	0.245	21.168	19.9	1.112
01-MAY-75	0.235	20.304	23.7	1.324
02-MAY-75	0.218	18.835	23.7	1.324
03-MAY-75	0.200	17.280	23.7	1.324
04-MAY-75	0.187	16.157	23.7	1.324
05-MAY-75	0.172	14.861	23.7	1.324
06-MAY-75	0.153	13.219	23.7	1.324
07-MAY-75	0.150	12.960	23.7	1.324
08-MAY-75	0.157	13.565	15.3	0.855
09-MAY-75	0.156	13.478	15.3	0.855
10-MAY-75	0.150	12.960	15.3	0.855
11-MAY-75	0.134	11.578	15.3	0.855
12-MAY-75	0.155	13.392	15.3	0.855
13-MAY-75	0.160	13.824	15.3	0.855
14-MAY-75	0.149	12.874	15.3	0.855
15-MAY-75	0.136	11.750	8.8	0.492
16-MAY-75	0.122	10.541	8.8	0.492
17-MAY-75	0.114	9.850	8.8	0.492
18-MAY-75	0.106	9.158	8.8	0.492
19-MAY-75	0.100	8.640	8.8	0.492
20-MAY-75	0.089	7.690	8.8	0.492
21-MAY-75	0.084	7.258	8.8	0.492
22-MAY-75	0.089	7.690	12.8	0.715
23-MAY-75	0.107	9.245	12.8	0.715
24-MAY-75	0.091	7.862	12.8	0.715
25-MAY-75	0.090	7.776	12.8	0.715
26-MAY-75	0.085	7.344	12.8	0.715
27-MAY-75	0.073	6.307	12.8	0.715
28-MAY-75	0.071	6.134	12.8	0.715
29-MAY-75	0.073	6.307	6.7	0.374
30-MAY-75	0.072	6.221	6.7	0.374
31-MAY-75	0.067	5.789	6.7	0.374
01-JUN-75	0.065	5.616	6.7	0.374
02-JUN-75	0.071	6.134	6.7	0.374
03-JUN-75	0.066	5.702	6.7	0.374
04-JUN-75	0.064	5.530	6.7	0.374
05-JUN-75	0.062	5.357	3.9	0.218
06-JUN-75	0.056	4.838	3.9	0.218
07-JUN-75	0.052	4.493	3.9	0.218
08-JUN-75	0.051	4.406	3.9	0.218
09-JUN-75	0.050	4.320	3.9	0.218
10-JUN-75	0.049	4.234	3.9	0.218
11-JUN-75	0.045	3.888	3.9	0.218
12-JUN-75	0.042	3.629	7.4	0.413
13-JUN-75	0.039	3.370	7.4	0.413
14-JUN-75	0.037	3.197	7.4	0.413
15-JUN-75	0.036	3.110	7.4	0.413

21.394	4.55	25.944	16.305	5063.28
21.394	4.55	25.944	18.638	5081.92
21.394	4.55	25.944	14.664	5096.58
21.394	4.55	25.944	11.121	5107.71
22.290	4.55	26.840	6.683	5114.39
22.290	4.55	26.840	4.264	5118.65
22.290	4.55	26.840	1.585	5120.24
22.290	4.55	26.840	-0.661	5119.58
22.290	4.55	26.840	-2.475	5117.10
22.290	4.55	26.840	-3.771	5113.33
22.290	4.55	26.840	-5.672	5107.66
26.547	4.55	31.097	-10.793	5096.87
26.547	4.55	31.097	-12.261	5084.60
26.547	4.55	31.097	-13.817	5070.79
26.547	4.55	31.097	-14.940	5055.85
26.547	4.55	31.097	-16.236	5039.61
26.547	4.55	31.097	-17.877	5021.73
26.547	4.55	31.097	-18.137	5003.60
17.138	4.55	21.688	-8.123	4995.47
17.138	4.55	21.688	-8.209	4987.27
17.138	4.55	21.688	-8.728	4978.54
17.138	4.55	21.688	-10.110	4968.43
17.138	4.55	21.688	-8.296	4960.13
17.138	4.55	21.688	-7.864	4952.27
17.138	4.55	21.688	-8.814	4943.45
9.857	4.55	14.407	-2.657	4940.80
9.857	4.55	14.407	-3.866	4936.93
9.857	4.55	14.407	-4.557	4932.37
9.857	4.55	14.407	-5.249	4927.13
9.857	4.55	14.407	-5.767	4921.36
9.857	4.55	14.407	-6.717	4914.64
9.857	4.55	14.407	-7.149	4907.49
14.337	4.55	18.887	-11.198	4896.29
14.337	4.55	18.887	-9.643	4886.65
14.337	4.55	18.887	-11.025	4875.63
14.337	4.55	18.887	-11.111	4864.51
14.337	4.55	18.887	-11.543	4852.97
14.337	4.55	18.887	-12.580	4840.39
14.337	4.55	18.887	-12.753	4827.64
7.505	4.55	12.055	-5.748	4821.89
7.505	4.55	12.055	-5.834	4816.06
7.505	4.55	12.055	-6.266	4809.79
7.505	4.55	12.055	-6.439	4803.35
7.505	4.55	12.055	-5.920	4797.43
7.505	4.55	12.055	-6.352	4791.08
7.505	4.55	12.055	-6.525	4784.55
4.368	4.55	8.918	-3.562	4780.99
4.368	4.55	8.918	-4.080	4776.91
4.368	4.55	8.918	-4.426	4772.49
4.368	4.55	8.918	-4.512	4767.97
4.368	4.55	8.918	-4.598	4763.38
4.368	4.55	8.918	-4.685	4758.69
4.368	4.55	8.918	-5.030	4753.66
8.289	4.55	12.839	-9.210	4744.45
8.289	4.55	12.839	-9.469	4734.98
8.289	4.55	12.839	-9.642	4725.34
8.289	4.55	12.839	-9.728	4715.61

12-AUG-75	0.016	1.382	10.4	0.581
13-AUG-75	0.016	1.382	10.4	0.581
14-AUG-75	0.016	1.382	7.2	0.402
15-AUG-75	0.026	2.246	7.2	0.402
16-AUG-75	0.028	2.419	7.2	0.402
17-AUG-75	0.031	2.678	7.2	0.402
18-AUG-75	0.027	2.333	7.2	0.402
19-AUG-75	0.032	2.765	7.2	0.402
20-AUG-75	0.036	3.110	7.2	0.402
21-AUG-75	0.028	2.419	4.1	0.229
22-AUG-75	0.026	2.246	4.1	0.229
23-AUG-75	0.024	2.074	4.1	0.229
24-AUG-75	0.023	1.987	4.1	0.229
25-AUG-75	0.021	1.814	4.1	0.229
26-AUG-75	0.019	1.642	4.1	0.229
27-AUG-75	0.017	1.469	4.1	0.229
28-AUG-75	0.017	1.469	4.6	0.257
29-AUG-75	0.016	1.382	4.6	0.257
30-AUG-75	0.016	1.382	4.6	0.257
31-AUG-75	0.016	1.382	4.6	0.257
01-SEP-75	0.016	1.382	4.6	0.257
02-SEP-75	0.016	1.382	4.6	0.257
03-SEP-75	0.016	1.382	4.6	0.257
04-SEP-75	0.016	1.382	4.4	0.246
05-SEP-75	0.016	1.382	4.4	0.246
06-SEP-75	0.015	1.296	4.4	0.246
07-SEP-75	0.016	1.382	4.4	0.246
08-SEP-75	0.016	1.382	4.4	0.246
09-SEP-75	0.018	1.555	4.4	0.246
10-SEP-75	0.017	1.469	4.4	0.246
11-SEP-75	0.022	1.901	7.7	0.430
12-SEP-75	0.041	3.542	7.7	0.430
13-SEP-75	0.563	48.643	7.7	0.430
14-SEP-75	0.182	15.725	7.7	0.430
15-SEP-75	0.085	7.344	7.7	0.430
16-SEP-75	0.062	5.357	7.7	0.430
17-SEP-75	0.056	4.838	7.7	0.430
18-SEP-75	0.058	5.011	8.6	0.480
19-SEP-75	0.051	4.406	8.6	0.480
20-SEP-75	0.050	4.320	8.6	0.480
21-SEP-75	0.046	3.974	8.6	0.480
22-SEP-75	0.043	3.715	8.6	0.480
23-SEP-75	0.042	3.629	8.6	0.480
24-SEP-75	0.044	3.802	8.6	0.480
25-SEP-75	0.237	20.477	9.6	0.536
26-SEP-75	0.192	16.589	9.6	0.536
27-SEP-75	0.265	22.896	9.6	0.536
28-SEP-75	0.200	17.280	9.6	0.536
29-SEP-75	0.197	17.021	9.6	0.536
30-SEP-75	0.192	16.589	9.6	0.536
01-OCT-75	0.165	14.256	9.6	0.536
02-OCT-75	0.178	15.379	8.9	0.497
03-OCT-75	0.159	13.738	8.9	0.497
04-OCT-75	0.155	13.392	8.9	0.497
05-OCT-75	0.145	12.528	8.9	0.497
06-OCT-75	0.142	12.269	8.9	0.497
07-OCT-75	0.137	11.837	8.9	0.497

11.649	4.55	16.199	-14.817	4153.46
11.649	4.55	16.199	-14.817	4138.65
8.065	4.55	12.615	-11.232	4127.41
8.065	4.55	12.615	-10.368	4117.05
8.065	4.55	12.615	-10.196	4106.85
8.065	4.55	12.615	-9.936	4096.91
8.065	4.55	12.615	-10.282	4086.63
8.065	4.55	12.615	-9.850	4076.78
8.065	4.55	12.615	-9.504	4067.28
4.592	4.55	9.142	-6.723	4060.55
4.592	4.55	9.142	-6.896	4053.66
4.592	4.55	9.142	-7.069	4046.59
4.592	4.55	9.142	-7.155	4039.43
4.592	4.55	9.142	-7.328	4032.11
4.592	4.55	9.142	-7.501	4024.61
4.592	4.55	9.142	-7.674	4016.93
5.153	4.55	9.703	-8.234	4008.70
5.153	4.55	9.703	-8.320	4000.38
5.153	4.55	9.703	-8.320	3992.06
5.153	4.55	9.703	-8.320	3983.74
5.153	4.55	9.703	-8.320	3975.42
5.153	4.55	9.703	-8.320	3967.10
5.153	4.55	9.703	-8.320	3958.78
4.928	4.55	9.478	-8.096	3950.68
4.928	4.55	9.478	-8.096	3942.59
4.928	4.55	9.478	-8.182	3934.40
4.928	4.55	9.478	-8.096	3926.31
4.928	4.55	9.478	-8.096	3918.21
4.928	4.55	9.478	-7.923	3910.29
4.928	4.55	9.478	-8.010	3902.28
8.625	4.55	13.175	-11.274	3891.00
8.625	4.55	13.175	-9.632	3881.37
8.625	4.55	13.175	35.468	3916.84
8.625	4.55	13.175	2.550	3919.39
8.625	4.55	13.175	-5.831	3913.56
8.625	4.55	13.175	-7.818	3905.74
8.625	4.55	13.175	-8.336	3897.40
9.633	4.55	14.183	-9.172	3888.23
9.633	4.55	14.183	-9.777	3878.46
9.633	4.55	14.183	-9.863	3868.59
9.633	4.55	14.183	-10.209	3858.38
9.633	4.55	14.183	-10.468	3847.92
9.633	4.55	14.183	-10.554	3837.36
9.633	4.55	14.183	-10.381	3826.98
10.753	4.55	15.303	5.174	3832.15
10.753	4.55	15.303	1.286	3833.44
10.753	4.55	15.303	7.593	3841.03
10.753	4.55	15.303	1.977	3843.01
10.753	4.55	15.303	1.718	3844.73
10.753	4.55	15.303	1.286	3846.01
10.753	4.55	15.303	-1.047	3844.97
9.969	4.55	14.519	0.860	3845.83
9.969	4.55	14.519	-0.781	3845.05
9.969	4.55	14.519	-1.127	3843.92
9.969	4.55	14.519	-1.991	3841.93
9.969	4.55	14.519	-2.250	3839.68
9.969	4.55	14.519	-2.682	3836.99

04-DEC-75	1.340	115.776	28.27	1.579
05-DEC-75	1.128	97.459	28.27	1.579
06-DEC-75	0.907	78.365	28.27	1.579
07-DEC-75	0.731	63.158	28.27	1.579
08-DEC-75	0.602	52.013	28.27	1.579
09-DEC-75	0.504	43.546	28.27	1.579
10-DEC-75	0.437	37.757	28.27	1.579
11-DEC-75	0.395	34.128	27.56	1.540
12-DEC-75	0.392	33.869	27.56	1.540
13-DEC-75	0.339	29.290	27.56	1.540
14-DEC-75	0.306	26.438	27.56	1.540
15-DEC-75	0.279	24.106	27.56	1.540
16-DEC-75	0.258	22.291	27.56	1.540
17-DEC-75	0.237	20.477	27.56	1.540
18-DEC-75	0.223	19.267	27.19	1.519
19-DEC-75	0.214	18.490	27.19	1.519
20-DEC-75	0.208	17.971	27.19	1.519
21-DEC-75	0.200	17.280	27.19	1.519
22-DEC-75	0.178	15.379	27.19	1.519
23-DEC-75	0.175	15.120	27.19	1.519
24-DEC-75	0.176	15.206	27.19	1.519
25-DEC-75	0.171	14.774	25.5	1.425
26-DEC-75	0.168	14.515	25.5	1.425
27-DEC-75	0.159	13.738	25.5	1.425
28-DEC-75	0.150	12.960	25.5	1.425
29-DEC-75	0.144	12.442	25.5	1.425
30-DEC-75	0.146	12.614	25.5	1.425
31-DEC-75	0.160	13.824	25.5	1.425
01-JAN-76	0.168	14.515	26.39	1.474
02-JAN-76	0.255	22.032	26.39	1.474
03-JAN-76	0.286	24.710	26.39	1.474
04-JAN-76	0.339	29.290	26.39	1.474
05-JAN-76	0.359	31.018	26.39	1.474
06-JAN-76	0.361	31.190	26.39	1.474
07-JAN-76	0.369	31.882	26.39	1.474
08-JAN-76	0.376	32.486	32.4	1.810
09-JAN-76	0.370	31.968	32.4	1.810
10-JAN-76	0.350	30.240	32.4	1.810
11-JAN-76	0.318	27.475	32.4	1.810
12-JAN-76	0.286	24.710	32.4	1.810
13-JAN-76	0.270	23.328	32.4	1.810
14-JAN-76	0.261	22.550	32.4	1.810
15-JAN-76	0.248	21.427	31.5	1.760
16-JAN-76	0.240	20.736	31.5	1.760
17-JAN-76	0.228	19.699	31.5	1.760
18-JAN-76	0.218	18.835	31.5	1.760
19-JAN-76	0.233	20.131	31.5	1.760
20-JAN-76	0.258	22.291	31.5	1.760
21-JAN-76	0.215	18.576	31.5	1.760
22-JAN-76	0.204	17.626	31.7	1.771
23-JAN-76	0.197	17.021	31.7	1.771
24-JAN-76	0.193	16.675	31.7	1.771
25-JAN-76	0.183	15.811	31.7	1.771
26-JAN-76	0.185	15.984	31.7	1.771
27-JAN-76	0.192	16.589	31.7	1.771
28-JAN-76	0.263	22.723	31.7	1.771
29-JAN-76	0.374	32.314	32.7	1.827

31.666	4.55	36.216	79.560	3998.23
31.666	4.55	36.216	61.244	4059.48
31.666	4.55	36.216	42.149	4101.63
31.666	4.55	36.216	26.943	4128.57
31.666	4.55	36.216	15.797	4144.37
31.666	4.55	36.216	7.330	4151.70
31.666	4.55	36.216	1.541	4153.24
30.870	4.55	35.420	-1.292	4151.94
30.870	4.55	35.420	-1.551	4150.39
30.870	4.55	35.420	-6.131	4144.26
30.870	4.55	35.420	-8.982	4135.28
30.870	4.55	35.420	-11.315	4123.97
30.870	4.55	35.420	-13.129	4110.84
30.870	4.55	35.420	-14.943	4095.89
30.456	4.55	35.006	-15.739	4080.15
30.456	4.55	35.006	-16.516	4063.64
30.456	4.55	35.006	-17.035	4046.60
30.456	4.55	35.006	-17.726	4028.88
30.456	4.55	35.006	-19.627	4009.25
30.456	4.55	35.006	-19.886	3989.37
30.456	4.55	35.006	-19.799	3969.57
28.563	4.55	33.113	-18.338	3951.23
28.563	4.55	33.113	-18.598	3932.63
28.563	4.55	33.113	-19.375	3913.25
28.563	4.55	33.113	-20.153	3893.10
28.563	4.55	33.113	-20.671	3872.43
28.563	4.55	33.113	-20.498	3851.93
28.563	4.55	33.113	-19.289	3832.64
29.560	4.55	34.110	-19.595	3813.05
29.560	4.55	34.110	-12.078	3800.97
29.560	4.55	34.110	-9.399	3791.57
29.560	4.55	34.110	-4.820	3786.75
29.560	4.55	34.110	-3.092	3783.66
29.560	4.55	34.110	-2.919	3780.74
29.560	4.55	34.110	-2.228	3778.51
36.292	4.55	40.842	-8.355	3770.16
36.292	4.55	40.842	-8.874	3761.28
36.292	4.55	40.842	-10.602	3750.68
36.292	4.55	40.842	-13.366	3737.31
36.292	4.55	40.842	-16.131	3721.18
36.292	4.55	40.842	-17.514	3703.67
36.292	4.55	40.842	-18.291	3685.38
35.284	4.55	39.834	-18.406	3666.97
35.284	4.55	39.834	-19.098	3647.87
35.284	4.55	39.834	-20.134	3627.74
35.284	4.55	39.834	-20.998	3606.74
35.284	4.55	39.834	-19.702	3587.04
35.284	4.55	39.834	-17.542	3569.50
35.284	4.55	39.834	-21.258	3548.24
35.508	4.55	40.058	-22.432	3525.81
35.508	4.55	40.058	-23.037	3502.77
35.508	4.55	40.058	-23.382	3479.39
35.508	4.55	40.058	-24.246	3455.14
35.508	4.55	40.058	-24.074	3431.07
35.508	4.55	40.058	-23.469	3407.60
35.508	4.55	40.058	-17.334	3390.27
36.628	4.55	41.178	-8.864	3381.40

27-MAR-76	0.545	47.088	33.1	1.849
28-MAR-76	0.536	46.310	33.1	1.849
29-MAR-76	0.519	44.842	33.1	1.849
30-MAR-76	0.479	41.386	33.1	1.849
31-MAR-76	0.448	38.707	33.1	1.849
01-APR-76	0.449	38.794	25.7	1.436
02-APR-76	0.402	34.733	25.7	1.436
03-APR-76	0.358	30.931	25.7	1.436
04-APR-76	0.328	28.339	25.7	1.436
05-APR-76	0.298	25.747	25.7	1.436
06-APR-76	0.270	23.328	25.7	1.436
07-APR-76	0.252	21.773	25.7	1.436
08-APR-76	0.231	19.958	22.6	1.263
09-APR-76	0.217	18.749	22.6	1.263
10-APR-76	0.211	18.230	22.6	1.263
11-APR-76	0.202	17.453	22.6	1.263
12-APR-76	0.183	15.811	22.6	1.263
13-APR-76	0.183	15.811	22.6	1.263
14-APR-76	0.178	15.379	22.6	1.263
15-APR-76	0.162	13.997	19.1	1.067
16-APR-76	0.158	13.651	19.1	1.067
17-APR-76	0.146	12.614	19.1	1.067
18-APR-76	0.142	12.269	19.1	1.067
19-APR-76	0.136	11.750	19.1	1.067
20-APR-76	0.128	11.059	19.1	1.067
21-APR-76	0.123	10.627	19.1	1.067
22-APR-76	0.120	10.368	19.9	1.112
23-APR-76	0.114	9.850	19.9	1.112
24-APR-76	0.110	9.504	19.9	1.112
25-APR-76	0.107	9.245	19.9	1.112
26-APR-76	0.099	8.554	19.9	1.112
27-APR-76	0.097	8.381	19.9	1.112
28-APR-76	0.094	8.122	19.9	1.112
29-APR-76	0.091	7.862	23.7	1.324
30-APR-76	0.092	7.949	23.7	1.324
01-MAY-76	0.089	7.690	23.7	1.324
02-MAY-76	0.091	7.862	23.7	1.324
03-MAY-76	0.089	7.690	23.7	1.324
04-MAY-76	0.089	7.690	23.7	1.324
05-MAY-76	0.086	7.430	23.7	1.324
06-MAY-76	0.080	6.912	15.3	0.855
07-MAY-76	0.075	6.480	15.3	0.855
08-MAY-76	0.067	5.789	15.3	0.855
09-MAY-76	0.065	5.616	15.3	0.855
10-MAY-76	0.063	5.443	15.3	0.855
11-MAY-76	0.066	5.702	15.3	0.855
12-MAY-76	0.072	6.221	15.3	0.855
13-MAY-76	0.066	5.702	8.8	0.492
14-MAY-76	0.065	5.616	8.8	0.492
15-MAY-76	0.064	5.530	8.8	0.492
16-MAY-76	0.060	5.184	8.8	0.492
17-MAY-76	0.060	5.184	8.8	0.492
18-MAY-76	0.104	8.986	8.8	0.492
19-MAY-76	0.150	12.960	8.8	0.492
20-MAY-76	0.117	10.109	12.8	0.715
21-MAY-76	0.085	7.344	12.8	0.715
22-MAY-76	0.079	6.826	12.8	0.715

37.076	4.55	41.626	5.462	2934.06
37.076	4.55	41.626	4.685	2938.75
37.076	4.55	41.626	3.216	2941.97
37.076	4.55	41.626	-0.240	2941.72
37.076	4.55	41.626	-2.918	2938.81
28.787	4.55	33.337	5.457	2944.26
28.787	4.55	33.337	1.396	2945.66
28.787	4.55	33.337	-2.406	2943.25
28.787	4.55	33.337	-4.998	2938.26
28.787	4.55	33.337	-7.590	2930.67
28.787	4.55	33.337	-10.009	2920.66
28.787	4.55	33.337	-11.564	2909.09
25.315	4.55	29.865	-9.906	2899.19
25.315	4.55	29.865	-11.116	2888.07
25.315	4.55	29.865	-11.634	2876.44
25.315	4.55	29.865	-12.412	2864.03
25.315	4.55	29.865	-14.053	2849.97
25.315	4.55	29.865	-14.053	2835.92
25.315	4.55	29.865	-14.485	2821.43
21.394	4.55	25.944	-11.947	2809.49
21.394	4.55	25.944	-12.293	2797.19
21.394	4.55	25.944	-13.330	2783.86
21.394	4.55	25.944	-13.675	2770.19
21.394	4.55	25.944	-14.194	2755.99
21.394	4.55	25.944	-14.885	2741.11
21.394	4.55	25.944	-15.317	2725.79
22.290	4.55	26.840	-16.472	2709.32
22.290	4.55	26.840	-16.991	2692.33
22.290	4.55	26.840	-17.336	2674.99
22.290	4.55	26.840	-17.595	2657.40
22.290	4.55	26.840	-18.287	2639.11
22.290	4.55	26.840	-18.459	2620.65
22.290	4.55	26.840	-18.719	2601.93
26.547	4.55	31.097	-23.234	2578.70
26.547	4.55	31.097	-23.148	2555.55
26.547	4.55	31.097	-23.407	2532.14
26.547	4.55	31.097	-23.234	2508.91
26.547	4.55	31.097	-23.407	2485.50
26.547	4.55	31.097	-23.407	2462.10
26.547	4.55	31.097	-23.666	2438.43
17.138	4.55	21.688	-14.776	2423.65
17.138	4.55	21.688	-15.208	2408.45
17.138	4.55	21.688	-15.899	2392.55
17.138	4.55	21.688	-16.072	2376.48
17.138	4.55	21.688	-16.245	2360.23
17.138	4.55	21.688	-15.985	2344.25
17.138	4.55	21.688	-15.467	2328.78
9.857	4.55	14.407	-8.705	2320.07
9.857	4.55	14.407	-8.791	2311.28
9.857	4.55	14.407	-8.877	2302.41
9.857	4.55	14.407	-9.223	2293.18
9.857	4.55	14.407	-9.223	2283.96
9.857	4.55	14.407	-5.421	2278.54
9.857	4.55	14.407	-1.447	2277.09
14.337	4.55	18.887	-8.779	2268.31
14.337	4.55	18.887	-11.543	2256.77
14.337	4.55	18.887	-12.062	2244.71

19-JUL-76	0.018	1.555	12.6	0.704	1
20-JUL-76	0.017	1.469	12.6	0.704	1
21-JUL-76	0.014	1.210	12.6	0.704	1
22-JUL-76	0.014	1.210	6.7	0.374	
23-JUL-76	0.013	1.123	6.7	0.374	
24-JUL-76	0.012	1.037	6.7	0.374	
25-JUL-76	0.012	1.037	6.7	0.374	
26-JUL-76	0.012	1.037	6.7	0.374	
27-JUL-76	0.011	0.950	6.7	0.374	
28-JUL-76	0.010	0.864	6.7	0.374	
29-JUL-76	0.009	0.778	10.3	0.575	
30-JUL-76	0.010	0.864	10.3	0.575	
31-JUL-76	0.010	0.864	10.3	0.575	
01-AUG-76	0.011	0.950	10.3	0.575	
02-AUG-76	0.011	0.950	10.3	0.575	
03-AUG-76	0.011	0.950	10.3	0.575	
04-AUG-76	0.011	0.950	10.3	0.575	
05-AUG-76	0.011	0.950	10.4	0.581	
06-AUG-76	0.010	0.864	10.4	0.581	
07-AUG-76	0.010	0.864	10.4	0.581	
08-AUG-76	0.010	0.864	10.4	0.581	
09-AUG-76	0.010	0.864	10.4	0.581	
10-AUG-76	0.009	0.778	10.4	0.581	
11-AUG-76	0.009	0.778	10.4	0.581	
12-AUG-76	0.009	0.778	7.2	0.402	
13-AUG-76	0.009	0.778	7.2	0.402	
14-AUG-76	0.007	0.605	7.2	0.402	
15-AUG-76	0.007	0.605	7.2	0.402	
16-AUG-76	0.007	0.605	7.2	0.402	
17-AUG-76	0.007	0.605	7.2	0.402	
18-AUG-76	0.007	0.605	7.2	0.402	
19-AUG-76	0.006	0.518	4.1	0.229	
20-AUG-76	0.007	0.605	4.1	0.229	
21-AUG-76	0.006	0.518	4.1	0.229	
22-AUG-76	0.006	0.518	4.1	0.229	
23-AUG-76	0.006	0.518	4.1	0.229	
24-AUG-76	0.006	0.518	4.1	0.229	
25-AUG-76	0.007	0.605	4.1	0.229	
26-AUG-76	0.007	0.605	4.6	0.257	
27-AUG-76	0.006	0.518	4.6	0.257	
28-AUG-76	0.007	0.605	4.6	0.257	
29-AUG-76	0.014	1.210	4.6	0.257	
30-AUG-76	0.075	6.480	4.6	0.257	
31-AUG-76	0.024	2.074	4.6	0.257	
01-SEP-76	0.017	1.469	4.6	0.257	
02-SEP-76	0.014	1.210	4.4	0.246	
03-SEP-76	0.013	1.123	4.4	0.246	
04-SEP-76	0.013	1.123	4.4	0.246	
05-SEP-76	0.012	1.037	4.4	0.246	
06-SEP-76	0.011	0.950	4.4	0.246	
07-SEP-76	0.011	0.950	4.4	0.246	
08-SEP-76	0.010	0.864	4.4	0.246	
09-SEP-76	0.012	1.037	7.7	0.430	
10-SEP-76	0.047	4.061	7.7	0.430	
11-SEP-76	0.033	2.851	7.7	0.430	
12-SEP-76	0.027	2.333	7.7	0.430	
13-SEP-76	0.023	1.987	7.7	0.430	

4.113	4.55	18.663	-17.108	1780.71
4.113	4.55	18.663	-17.195	1763.51
4.113	4.55	18.663	-17.454	1746.06
7.505	4.55	12.055	-10.845	1735.21
7.505	4.55	12.055	-10.932	1724.28
7.505	4.55	12.055	-11.018	1713.26
7.505	4.55	12.055	-11.018	1702.25
7.505	4.55	12.055	-11.018	1691.23
7.505	4.55	12.055	-11.104	1680.12
7.505	4.55	12.055	-11.191	1668.93
1.537	4.55	16.087	-15.310	1653.62
1.537	4.55	16.087	-15.223	1638.40
1.537	4.55	16.087	-15.223	1623.18
1.537	4.55	16.087	-15.137	1608.04
1.537	4.55	16.087	-15.137	1592.90
1.537	4.55	16.087	-15.137	1577.77
1.537	4.55	16.087	-15.137	1562.63
1.649	4.55	16.199	-15.249	1547.38
1.649	4.55	16.199	-15.335	1532.05
1.649	4.55	16.199	-15.335	1516.71
1.649	4.55	16.199	-15.335	1501.38
1.649	4.55	16.199	-15.335	1486.04
1.649	4.55	16.199	-15.422	1470.62
1.649	4.55	16.199	-15.422	1455.20
8.065	4.55	12.615	-11.837	1443.36
8.065	4.55	12.615	-11.837	1431.52
8.065	4.55	12.615	-12.010	1419.51
8.065	4.55	12.615	-12.010	1407.50
8.065	4.55	12.615	-12.010	1395.49
8.065	4.55	12.615	-12.010	1383.48
8.065	4.55	12.615	-12.010	1371.47
4.592	4.55	9.142	-8.624	1362.85
4.592	4.55	9.142	-8.538	1354.31
4.592	4.55	9.142	-8.624	1345.69
4.592	4.55	9.142	-8.624	1337.06
4.592	4.55	9.142	-8.624	1328.44
4.592	4.55	9.142	-8.624	1319.81
4.592	4.55	9.142	-8.538	1311.28
5.153	4.55	9.703	-9.098	1302.18
5.153	4.55	9.703	-9.184	1293.00
5.153	4.55	9.703	-9.098	1283.90
5.153	4.55	9.703	-8.493	1275.40
5.153	4.55	9.703	-3.223	1272.18
5.153	4.55	9.703	-7.629	1264.55
5.153	4.55	9.703	-8.234	1256.32
4.928	4.55	9.478	-8.269	1248.05
4.928	4.55	9.478	-8.355	1239.70
4.928	4.55	9.478	-8.355	1231.34
4.928	4.55	9.478	-8.442	1222.90
4.928	4.55	9.478	-8.528	1214.37
4.928	4.55	9.478	-8.528	1205.84
4.928	4.55	9.478	-8.614	1197.23
8.625	4.55	13.175	-12.138	1185.09
8.625	4.55	13.175	-9.114	1175.98
8.625	4.55	13.175	-10.324	1165.65
8.625	4.55	13.175	-10.842	1154.81
8.625	4.55	13.175	-11.188	1143.62

10-NOV-76	0.668	57.715	20.1	1.123
11-NOV-76	0.577	49.853	20.7	1.156
12-NOV-76	0.508	43.891	20.7	1.156
13-NOV-76	0.453	39.139	20.7	1.156
14-NOV-76	0.416	35.942	20.7	1.156
15-NOV-76	0.401	34.646	20.7	1.156
16-NOV-76	0.389	33.610	20.7	1.156
17-NOV-76	0.380	32.832	20.7	1.156
18-NOV-76	0.388	33.523	22.2	1.240
19-NOV-76	0.339	29.290	22.2	1.240
20-NOV-76	0.317	27.389	22.2	1.240
21-NOV-76	0.302	26.093	22.2	1.240
22-NOV-76	0.283	24.451	22.2	1.240
23-NOV-76	0.273	23.587	22.2	1.240
24-NOV-76	0.267	23.069	22.2	1.240
25-NOV-76	0.261	22.550	26.9	1.503
26-NOV-76	0.256	22.118	26.9	1.503
27-NOV-76	0.251	21.686	26.9	1.503
28-NOV-76	0.463	40.003	26.9	1.503
29-NOV-76	0.491	42.422	26.9	1.503
30-NOV-76	1.640	141.696	26.9	1.503
01-DEC-76	2.234	193.018	26.9	1.503
02-DEC-76	2.146	185.414	28.27	1.579
03-DEC-76	1.684	145.498	28.27	1.579
04-DEC-76	1.254	108.346	28.27	1.579
05-DEC-76	1.126	97.286	28.27	1.579
06-DEC-76	0.990	85.536	28.27	1.579
07-DEC-76	1.064	91.930	28.27	1.579
08-DEC-76	1.138	98.323	28.27	1.579
09-DEC-76	1.144	98.842	27.56	1.540
10-DEC-76	1.049	90.634	27.56	1.540
11-DEC-76	0.912	78.797	27.56	1.540
12-DEC-76	0.771	66.614	27.56	1.540
13-DEC-76	0.662	57.197	27.56	1.540
14-DEC-76	0.568	49.075	27.56	1.540
15-DEC-76	0.502	43.373	27.56	1.540
16-DEC-76	0.476	41.126	27.19	1.519
17-DEC-76	0.648	55.987	27.19	1.519
18-DEC-76	0.595	51.408	27.19	1.519
19-DEC-76	0.665	57.456	27.19	1.519
20-DEC-76	0.755	65.232	27.19	1.519
21-DEC-76	0.766	66.182	27.19	1.519
22-DEC-76	0.724	62.554	27.19	1.519
23-DEC-76	0.650	56.160	25.5	1.425
24-DEC-76	0.582	50.285	25.5	1.425
25-DEC-76	0.537	46.397	25.5	1.425
26-DEC-76	0.500	43.200	25.5	1.425
27-DEC-76	0.477	41.213	25.5	1.425
28-DEC-76	0.438	37.843	25.5	1.425
29-DEC-76	0.414	35.770	25.5	1.425
30-DEC-76	0.533	46.051	26.39	1.474
31-DEC-76	0.533	46.051	26.39	1.474

Average Abs 17.8993

22.514	4.55	27.064	30.651	4967.30
23.186	4.55	27.736	22.116	4989.42
23.186	4.55	27.736	16.155	5005.57
23.186	4.55	27.736	11.403	5016.97
23.186	4.55	27.736	8.206	5025.18
23.186	4.55	27.736	6.910	5032.09
23.186	4.55	27.736	5.873	5037.96
23.186	4.55	27.736	5.096	5043.06
24.866	4.55	29.416	4.107	5047.17
24.866	4.55	29.416	-0.127	5047.04
24.866	4.55	29.416	-2.028	5045.01
24.866	4.55	29.416	-3.324	5041.69
24.866	4.55	29.416	-4.965	5036.72
24.866	4.55	29.416	-5.829	5030.89
24.866	4.55	29.416	-6.348	5024.54
30.131	4.55	34.681	-12.131	5012.41
30.131	4.55	34.681	-12.563	4999.85
30.131	4.55	34.681	-12.995	4986.86
30.131	4.55	34.681	5.322	4992.18
30.131	4.55	34.681	7.741	4999.92
30.131	4.55	34.681	107.015	5106.94
30.131	4.55	34.681	158.337	5265.27
31.666	4.55	36.216	149.199	5404.00
31.666	4.55	36.216	109.282	5404.00
31.666	4.55	36.216	72.130	5404.00
31.666	4.55	36.216	61.071	5404.00
31.666	4.55	36.216	49.320	5404.00
31.666	4.55	36.216	55.714	5404.00
31.666	4.55	36.216	62.108	5404.00
30.870	4.55	35.420	63.421	5404.00
30.870	4.55	35.420	55.213	5404.00
30.870	4.55	35.420	43.377	5404.00
30.870	4.55	35.420	31.194	5404.00
30.870	4.55	35.420	21.777	5404.00
30.870	4.55	35.420	13.655	5404.00
30.870	4.55	35.420	7.953	5404.00
30.456	4.55	35.006	6.121	5404.00
30.456	4.55	35.006	20.981	5404.00
30.456	4.55	35.006	16.402	5404.00
30.456	4.55	35.006	22.450	5404.00
30.456	4.55	35.006	30.226	5404.00
30.456	4.55	35.006	31.177	5404.00
30.456	4.55	35.006	27.548	5404.00
28.563	4.55	33.113	23.047	5404.00
28.563	4.55	33.113	17.172	5404.00
28.563	4.55	33.113	13.284	5404.00
28.563	4.55	33.113	10.087	5404.00
28.563	4.55	33.113	8.100	5404.00
28.563	4.55	33.113	4.730	5404.00
28.563	4.55	33.113	2.657	5404.00
29.560	4.55	34.110	11.941	5404.00
29.560	4.55	34.110	11.941	5404.00