Technical Memorandum
WRE # 347

Water Budget Analysis For The Everglades Nutrient Removal Project

(August 19, 1994 to August 19, 1996)

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Produced by

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EXECUTIVE SUMMARY

The Everglades Nutrient Removal Project (ENR) is a 1,544 hectare (ha) or 3,815 acre (ac) constructed wetland designed and operated for the demonstration of phosphorus (P) reduction from agricultural runoff/drainage. The ENR is located in south Florida (26° 38′ N, 80° 25′ W) at the eastern edge of the Everglades Agricultural Area. The Everglades Agricultural Area is a 240,000 ha (593,000 ac) highly productive irrigation drainage basin with a major production of sugarcane. Ecological changes in the Everglades have been partially attributed to increase in phosphorus (P) concentrations in the inflow waters. Local, state and federal initiatives have been taken to reduce P load from agricultural runoff/drainage. Agricultural runoff/drainage from the agricultural area flows to the south and southeast through four primary canals (Miami, North New River, Hillsboro, West Palm Beach).

A minimum of 25% of the P load in agricultural drainage/runoff is required to be removed at the farm level through the application of various agricultural Best Management Practices. Further removal of P is to be achieved through constructed wetland treatment systems known as Stormwater Treatment Areas (STAs) to an initial outflow total P concentration of 0.05 milligrams per liter (mg L^{-1}). The ENR is a field scale prototype for the large scale STAs. It is built on farm land that is owned by the State of Florida and was previously leased (until 1988) to Knight's Farm for sugarcane and corn production. Construction of the ENR started in August 1992 and was completed in October 1993. Full operation started in August 1994. This report summarizes a two-year water budget analysis covering the period from August 19, 1994 to August 19, 1996.

The total inflow through the inflow pump was 39,000 hectare-meters (ha-m) or 316,115 ace-feet (ac-ft) and the total outflow through the outflow pump was 38,802 ha-m (314,560 ac-ft). Seepage inflow from the L-7 levee through the roadside culverts was a total of 1,198 ha-m (9,715 ac-ft). Total flow into the seepage canal through culverts G258 and G259 was 892 ha-m (7,231 ac-ft) and the seepage recirculation pump had a total flow of 7,143 ha-m (57,908 ac-ft). Total areal rainfall for the two-year study period was 328.7 centimeters (cm) or 129.4 inches (in) and the total areal evapotranspiration was 262.2 cm (103.2 in). The remainders in the water balance, the sum of the errors and unknowns, was 7% of the inflow or the outflow pumping or 6% of the sum of all outflows. The ENR is a new system with a relatively short period of hydrologic record. Longer periods of record are more favorable to characterize the operation and water balance of hydrologic systems.

TABLE OF CONTENTS

INTRODUCTION 1
Background 1
Site Description 1
Vegetation Cover and Monitoring 4

SYSTEM HYDRAULICS AND OPERATION 4
System Hydraulics 4
Operation 6

HYDROLOGY AND HYDROLOGIC MONITORING 6
Rainfall 6
Evapotranspiration 11
Flows 11
Water Levels 14

WATER BUDGET COMPUTATIONS 14
Water Balance Model 14
Discussion 20

SUMMARY 23

REFERENCES 24

APPENDIX 25

Tables:

Table 1. Site characteristics of the Everglades Nutrient Removal Project. . 3

Table 2. Recommended water surface elevations and depths in the preliminary operation plan and observed stages. 7

Table 3. Rainfall stations in the ENR and database retrieval keys. 8

Table 4. Everglades Nutrient Removal Project monthly flows and area weighted rainfall and ET. 10

Table 5. ENR Flow control structures and stage recorders database retrieval keys used in the water budget analysis. 19

Table 6. Summary of the two-year water budget of the ENR 22

Figures:

Figure 1. Location of the Everglades Nutrient Removal Project 2

Figure 2. ENR structures and monitoring network 5

Figure 3. Daily distribution of areal rainfall and evapotranspiration in the ENR. 9

Figure 4a. Daily pumping rates of the inflow and outflow pumps 12

Figure 4b. Daily pumping rates of the seepage pump, flows through culverts G258 and G259, and seepage flow through L-7 levee roadside seepage collection culverts. 13

Figure 5a. Daily mean water levels in the eastern cells of the ENR and the Buffer Cell. 15

Figure 5b. Daily mean water levels in the western cells of the ENR and the Buffer Cell. 16

Figure 6. Schematic hydrologic model for the ENR. 17

Figure 7. Distribution of daily remainders (errors and unknowns) from the ENR water balance. 21

ACKNOWLEDGEMENTS

Appreciation is extended to the Data Management Division of the Water Resources Evaluation Department for Instrumentation of the ENR hydrologic monitoring network, maintenance of the network, data collection, data processing and timely input to the database.

INTRODUCTION

Background

The Everglades Nutrient Removal (ENR) Project is a 1,544 hectare (ha) or 3,815 acre (ac) constructed wetland designed and operated for the demonstration of phosphorus reduction from agricultural runoff/drainage. The project is located in south Florida (26° 38′ N, 80° 25′ W) at the eastern edge of the Everglades Agricultural Area (Figure 1). The Everglades Agricultural Area is a 240,000 ha (593,000 ac) highly productive irrigation drainage basin with a major production of sugarcane. Ecological changes in the Everglades has been partially attributed to increase in phosphorus concentrations in the inflow waters. Local, state and federal initiatives have been taken to reduce P load from agricultural runoff/drainage. Agricultural runoff/drainage from the agricultural area flows to the south and southeast through four primary canals shown in Figure 1 (Miami, North New River, Hillsboro, West Palm Beach).

A minimum of 25% of the P load in agricultural drainage/runoff is required to be removed at the farm level through the application of various agricultural Best Management Practices (Whalen and Whalen, 1994). Further removal of P is to be achieved through constructed wetland treatment systems known as Stormwater Treatment Areas (STAs). The ENR is a field scale prototype for the large scale STAs. It is built on farm land that was owned by the State of Florida and was previously leased (until 1988) to Knight's Farm for sugarcane and corn production. Originally, the land was part of the Everglades which consisted of wetland prairies, sloughs and stands of custard apple (Davis, 1943). Construction of the ENR started in August 1992 and was completed in October 1993.

Site Description

The ENR Project area is primarily covered by Okeechobee muck soils with very small topographic relief and average ground elevation of 3 meters (m) or 9.84 feet (ft) NGVD; a 1 to 2 m of peat overlies on several meters of carbonate rock (Jammal and Associates, Inc., 1991). To the east, the L-7 levee separates the ENR Project from the Loxahatchee Wildlife Refuge (Water Conservation Area 1 (WCA1)). The northern and western sides of the ENR are encompassed with a seepage canal that separates the ENR levee from agricultural fields. The narrow southern ENR levee runs along the Knight's Farm which currently is not under cultivation. A 12 km (7.5 mile) levee surrounds the ENR and internal levees separate the five interior cells. The Project consists of two parallel treatment trains of two cells each and a buffer (distribution cell). As shown in Figure 2, the upper two cells, Cell 1 and 2, are treatment cells. The lower two cells, Cell 3 and 4, are polishing cells. The eastern treatment train carries water from the Buffer Cell to Cell 1, then to Cell 3 and finally to the outflow pump. The western treatment train carries water from the Buffer Cell to Cell 2, then to Cell 4 and finally to the outflow pump. Average ground elevation and area for each cell is shown in Table 1.

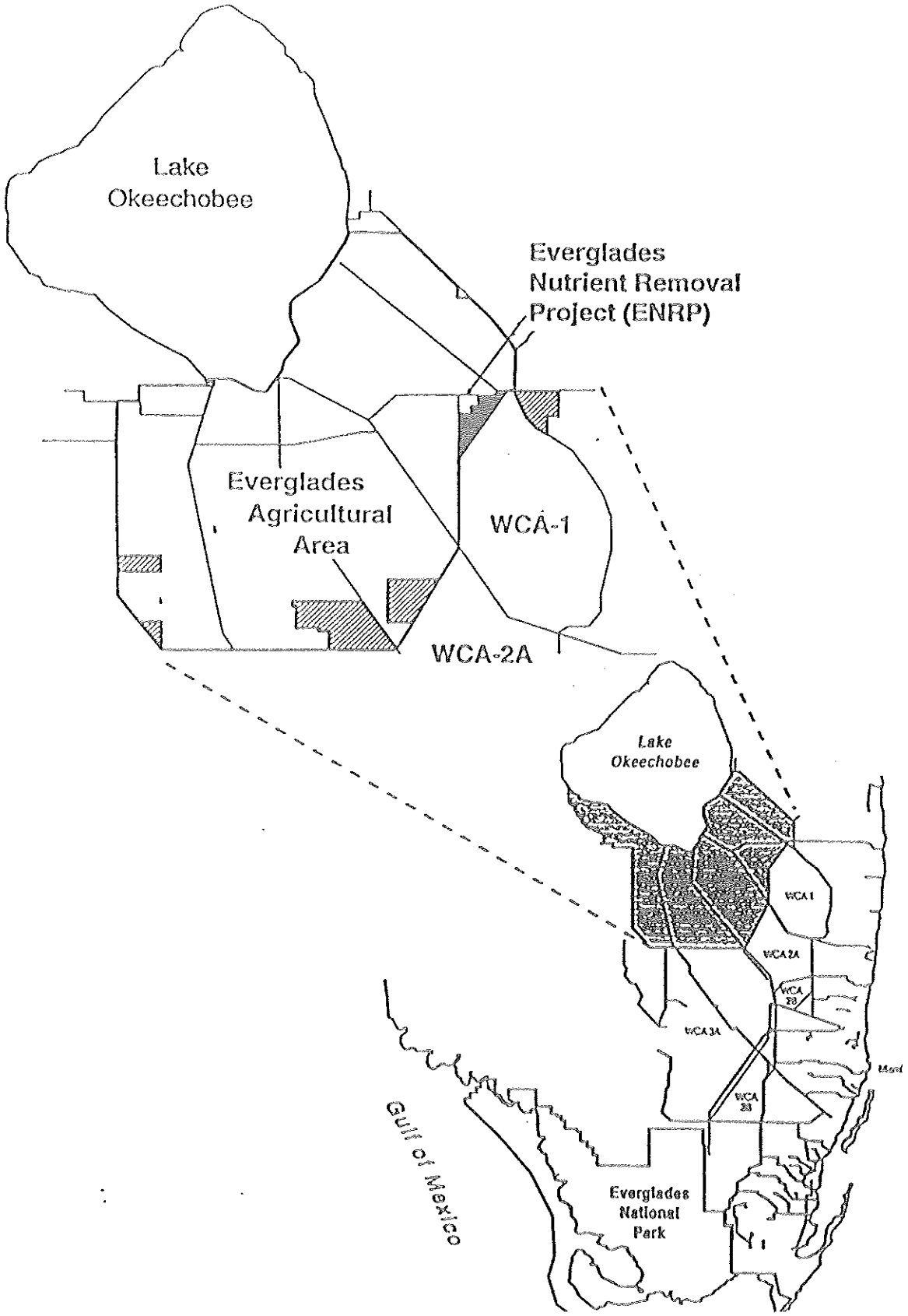

Figure 1. Location of the Everglades Nutrient Removal Project

Table 1. Site characteristics of the Everglades Nutrient Removal Project.

Cell	Area	Average Ground Elev.	Land Cover*		
	ha (ac)	m (ft) NGVD	cattails (%)	mixed veg. (%)	open water (%)
Buffer#	55 (136)	3.10 (10.17)	43.8	8.7	47.5
Cell 1	525 (1297)	3.13 (10.25)	40.4	20.6	39.1
Cell 2	414 (1023)	2.94 (9.65)	77.6	6.1	16.3
Cell 3	404 (998)	3.10 (10.18)	19.0	47.6	33.4
Cell 4	146 (361)	3.00 (9.83)	1.0	18.2	80.8
Total	1544 (3815)	3.05 (10.03)	41.2	23.1	35.7

* average land cover (1994 to 1996)
# based on November 24, 1995 observations

Vegetation Cover and Monitoring

As part of the ENR monitoring plan, temporal and spatial changes of vegetation have been documented through quarterly aerial photography prior to 1995 and semiannually since 1995. Average vegetation cover estimated from four areal photographs (May 15, 1994; October 18, 1994; May 18, 1995; and November 24, 1995), are shown in Table 1. The dominant cover is cattails (41.2%), followed by open water/ submerged vegetation (35.7%) and mixed vegetation (23.1%).

SYSTEM HYDRAULICS AND OPERATION

System Hydraulics

West Palm Beach canal water that would otherwise be pumped into the Loxahatchee Wildlife Refuge or WCA 1 via the S5-A Pump Station is partially diverted to the ENR through five culverts and a 3.4 km (2.1 mile) supply canal. Inflow into the constructed wetland, outflow from the constructed wetland, and seepage recycling are performed with lift pumps. The inflow pump station (G250) has six identical pumps with a total capacity of 16.98 cubic meters per second ($m^3 s^{-1}$) or 600 cubic feet per second (cfs). The inflow pumps lift water from the delivery canal into the Buffer Cell. The outflow pump station (G251) has six identical pumps with a total capacity of 12.74 $m^3 s^{-1}$ (450 cfs). The outflow pumps lift treated effluent from the ENR into the Loxahatchee Wildlife Refuge. Seepage from the seepage canal is pumped into the Buffer Cell by three identical pumps (G250S) with a total capacity of 5.66 $m^3 s^{-1}$ (200 cfs). Pump discharge is computed as a function of head and tail water stages and pump rotations per minute (rpm). Water surface elevation is monitored by automated stage recorders, and staff gages supplement stage readings for operation.

Inter-cell flows are regulated with risers through 16.7 m (55 ft) long and 1.83 m (6 ft) diameter culverts. In the eastern treatment train, water flows from the Buffer Cell into Cell 1 through ten culverts (G252A-J) and from Cell 1 to Cell 3 through ten culverts (G253A-J). Water from Cell 3 is directed to the outflow pump through collection canals. In the western treatment train, water flows from the Buffer Cell into Cell 2 through five culverts (G255A-E) and from Cell 2 to Cell 4 through five culverts (G254A-E). Outflow from Cell 4 moves through five culverts (G256A-E) into a discharge canal that leads to the outflow pump. Water can be recirculated from Cell 2 and Cell 4 via the seepage canal by being released through culverts (G258 and G259, respectively) in the western levee. Water can be transferred from Cell 1 to Cell 4 through culvert G257 when necessary. Flow through culverts is being monitored with Ultrasonic Velocity Meters (UVMs). Currently, the UVMs are in the process of being calibrated. ENR structure locations and monitoring network are shown in Figure 2.

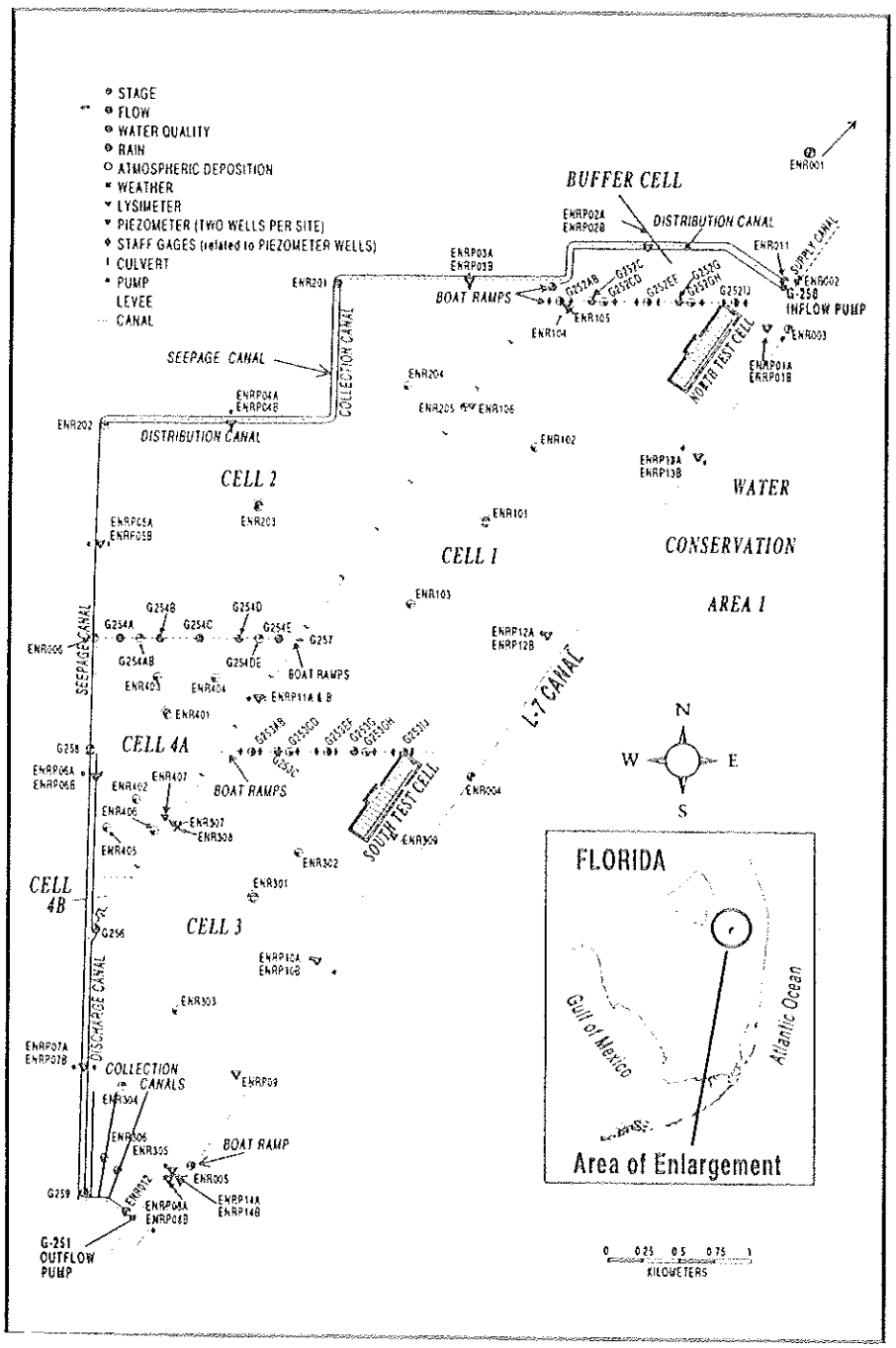

Figure 2. ENR structures and monitoring network

Operation

A preliminary operation plan was developed for the ENR by Guardo and Kosier in 1993. The early start-up and late start-up water depths and stages which were recommended in this plan are presented for each cell in Table 2. The seepage pump started operation in December 1993. Pumping was mainly to recirculate water from the seepage canal and reroute water from cell to cell. The inflow and outflow pumps started operating on August 19, 1994, marking the beginning of full scale operation of the ENR. Inflow and outflow regulations have been a result of many conditions, such as the stage in each Cell, S-5A pump station status, seepage and system capacity tests run in the ENR, construction operations, pump maintenance and others. Detailed information on ENR operations is available in the periodic summary of ENR observations produced by project site managers (ENR Site Observations, Memorandums, SFWMD).

HYDROLOGY AND HYDROLOGIC MONITORING

Rainfall

South Florida has a subtropical climate with relatively high rainfall frequency of occurrence and magnitude. On the average, 34% of the annual rainfall occurs in the dry season (November to May), with the remaining 66% occurring in the wet season (June to October). Mean annual rainfall for the area is 133 centimeters (cm) or 52 inches (in) as reported in Abtew and Khanal (1994). Frontal rainfalls occur in the dry season and have relatively lower spatial variation. Rainfall during the wet season is associated with daily convective and tropical systems which have high spatial variations.

Based on the high variation of summer rainfall observations in the area, a ten-gage rainfall network was established as a pilot network to evaluate the optimum gage density needed for the project area. Network analysis of the first wet season daily rainfall showed that five gages were sufficient for the area (Abtew et al., 1995). As a result, three gages were removed. However, the network could not be reduced to five because three of the gages are associated with the three lysimeters, and four gages (one at the middle of each cell) are part of the monitoring network required by the operating permit. Table 3 lists all the rainfall gaging stations and the corresponding database keys, while Figure 2 shows the gage locations. Areal rainfall on the project site was computed as a Thiessen-weighted average of the previous ten- (and later seven-) gage network. The daily distribution of areal rainfall for the two years of study (August 19, 1994 to August 19, 1996) is depicted by Figure 3. Monthly summary of areal rainfall is shown in Table 4.

Table 2. Recommended water surface elevations and depths in the preliminary operation plan and observed stages.

	Early Start-up Plan		Later Start-up Plan		Observed Stages		
Cell	Target Stage m (ft) NGVD	Target Depth cm (in)	Target Stage m (ft) NGVD	Target Depth cm (in)	Min. m (ft) NGVD	Max. m (ft) NGVD	Mean m (ft) NGVD
Buffer	3.78 (12.40)	67 (26.4)	3.78 (12.4)	67(26.4)	3.30(10.93)	4.18(13.71)	3.78(12.41)
Cell 1	3.63 (11.91)	49 (19.3)	3.66 (12.00)	52 (20.5)	3.35(10.99)	4.06(13.30)	3.69(12.11)
Cell 2	3.54 (11.61)	58 (22.8)	3.63 (11.91)	67 (26.4)	3.33(10.93)	3.94(12.93)	3.66(12.02)
Cell 3	3.51 (11.51)	40 (15.8)	3.57 (11.71)	46 (18.1)	3.31(10.86)	3.81(12.50)	3.53(11.60)
Cell 4	3.29 (10.79)	30 (11.8)	3.57 (11.71)	58 (22.8)	3.31(10.87)	3.85(12.60)	3.58(11.73)

Table 3. Rainfall stations in the ENR and database retrieval keys.

Stations	Period of Record used for analysis	DBKEY	Remark
ENR101	19940414 to 19960819	15851	
ENR105	19940414 to 19960819	15861	
ENR106	19950524 to 19960819	DU515	replaced ENR205
ENR201	19940414 to 19950822	15865	discontinued
ENR203	19940414 to 19960819	15874	
ENR205	19940414 to 19950523	15875	
ENR301	19940414 to 19960819	15877	
ENR308	19940414 to 19960819	15888	
ENR401	19940414 to 19960819	15862	
G256	19940414 to 19950822	15912	discontinued
G254E	19940414 to 19950822	15906	discontinued

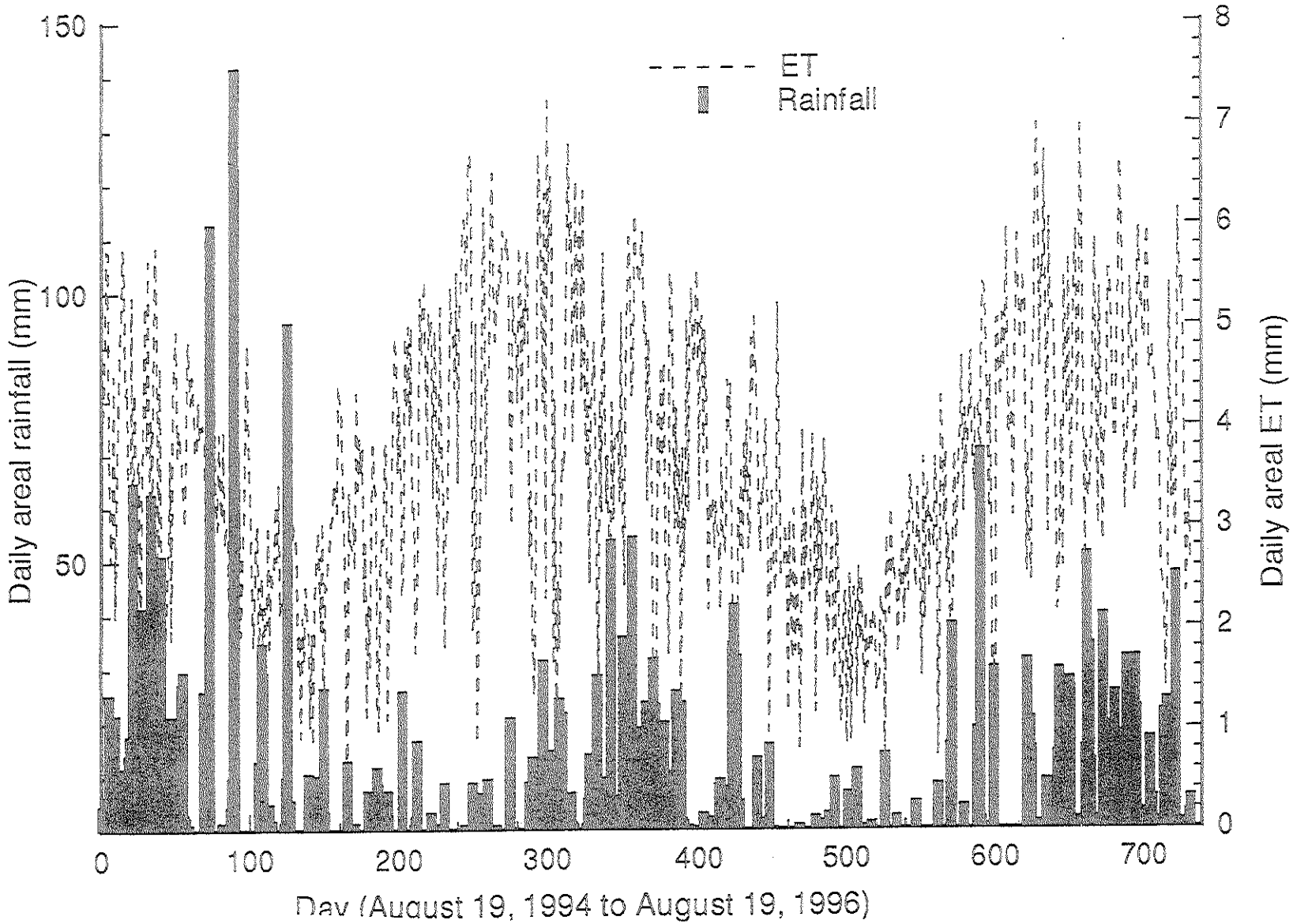

Figure 3. Daily distribution of areal rainfall and evapotranspiration in the ENR.

Table 4. Everglades Nutrient Removal Project monthly flows and area weighted rainfall and ET.

Year	Month	Inflow G-250 ha-m #	Outflow G-251 ha-m	Rainfall cm (in)	ET cm (in)	Seepage pumping G-250_s ha-m	Recycle G-258 + G259 ha-m	Seepage L-7 culverts ha-m
1994	Aug*	756.78	736.53	6.50 (2.56)	5.28(2.08)	83.00	0	10.53
1994	Sept	1599.42	1808.02	33.92(13.36)	11.19(4.41)	827.34	490.25	39.00
1994	Oct	1799.97	1864.78	26.07 (10.26)	11.49(4.52)	456.18	141.25	74.84
1994	Nov	1890.30	2172.46	23.0(9.05)	8.26(3.25)	286.04	6.36	135.75
1994	Dec	1909.05	2075.65	19.75(7.78)	7.23(2.85)	233.08	5.92	105.00
1995	Jan	769.00	998.70	6.64(2.61)	7.80(3.07)	236.65	0	61.00
1995	Feb	441.66	375.38	4.54(1.79)	7.79(3.07)	221.50	0	50.14
1995	Mar	992.45	651.15	5.11(2.01)	12.70(5.00)	284.11	41.14	40.35
1995	Apr	1244.47	1077.81	3.47(1.37)	12.72(5.01)	504.52	202.99	8.89
1995	May	379.69	398.84	4.21(1.66)	15.91(6.26)	190.47	0	6.55
1995	June	762.94	546.43	19.25(7.58)	12.75(5.02)	273.00	6.60	10.94
1995	July	1330.61	1222.67	14.93(5.88)	12.84(5.06)	273.50	5.15	21.52
1995	Aug	1851.62	2039.92	29.25(11.52)	12.09(4.76)	284.65	0	57.75
1995	Sept	2058.62	1840.16	8.07(3.18)	11.78(4.84)	243.70	0	84.78
1995	Oct	2085.06	2264.46	20.31(7.99)	9.94(3.91)	267.55	0	139.15
1995	Nov	2383.21	2053.21	2.10(0.83)	8.08(3.18)	223.85	0	69.83
1995	Dec	2790.49	2562.94	2.30(0.91)	6.94(2.73)	299.08	0	56.45
1996	Jan	2755.57	2672.83	4.2(1.65)	6.14(2.42)	291.13	0	56.89
1996	Feb	2140.49	2219.23	0.82(0.32)	7.98(3.14)	345.72	0	44.80
1996	Mar	1480.16	1382.53	17.23(6.78)	10.55(4.19)	239.42	0	29.66
1996	Apr	2515.40	2065.04	6.49(2.55)	13.01(5.12)	171.22	0	15.83
1996	May	1242.45	1440.36	21.11(8.31)	14.00(5.51)	226.17	0	20.37
1996	June	1206.17	1231.60	23.23(9.14)	13.52(5.32)	224.32	0	35.82
1996	July	1904.36	2038.62	15.16(5.97)	14.37(5.66)	273.66	0	17.54
1996	Aug$	703.80	1079.84	11.03(4.34)	6.95(2.74)	183.27	0	5.00

ha-m = 8.1068 ac-ft
* 13 days
$ 19 days

Evapotranspiration

Evapotranspiration is measured by three lysimeters installed in Cells 1, 3, and 4. The lysimeters in Cells 1 and 3 are vegetated with cattails and mixed marsh, respectively. The lysimeter in Cell 4 is open water (Figure 2). Two weather stations are located close to the lysimeters for the purpose of estimating ET from weather data. Based on initial observations, the Penman-Monteith model for cattails and mixed-marsh vegetation, and the Penman-Combination equation for shallow open water conditions were calibrated (Abtew and Obeysekera, 1995; Abtew, 1996). Missing daily ET data were filled with respective model-estimated values. For the water budget analysis of the ENR, areal daily ET was computed based on percent type of land cover (Table 1) and the area of each cell (Guardo, 1995). Distribution of daily areal ET from the ENR, for the two years of study (August 19, 1994 to August 19, 1996), is presented in Figure 3, while the monthly summary of areal ET is shown in Table 4.

Flows

Database keys for the flow structures and daily stage gages are listed in Table 5. For the period of study, the inflow pump (G250) and the outflow pump (G251) were in operation 85% and 97.5% of the time, respectively. The seepage return pump (G250S) operated every day of the two-year period. The daily pumping rates of the inflow and outflow pumps are shown in Figure 4a. Flow through culverts G258 and G259 into the seepage canal occurred on 3 days and 133 days, respectively. Figure 4b shows the daily flows through culverts G258 and G259, and seepage recycling pumps (G250S), along with the estimated seepage from L-7 levee flowing through the roadside culverts. The L-7 seepage through the roadside culverts was estimated using a regression equation developed from 42 data points. A relationship was developed between the seepage from L-7 through the roadside culverts and the stage rise in WCA 1 above 4.57 m (15 ft) NGVD, and the difference in stages between WCA 1 and the eastern cells of the ENR (Guardo, 1996). The regression fit had a coefficient of determination (R^2) of 0.93 and a standard error of 0.30 $m^3 s^{-1}$. The equation is given as follows:

$$L\text{-}7\,seepage = 0.217\,\Delta WCA^{1.311} * \Delta h^{2.025} \qquad (1)$$

where L-7 seepage is in $m^3 s^{-1}$; ΔWCA is the rise in stage in WCA 1 above 4.57 m (15 ft) NGVD and Δh is the difference in stage between WCA 1 and the eastern cells of the ENR. Monthly flow data for the 2-year time period are presented in Table 4.

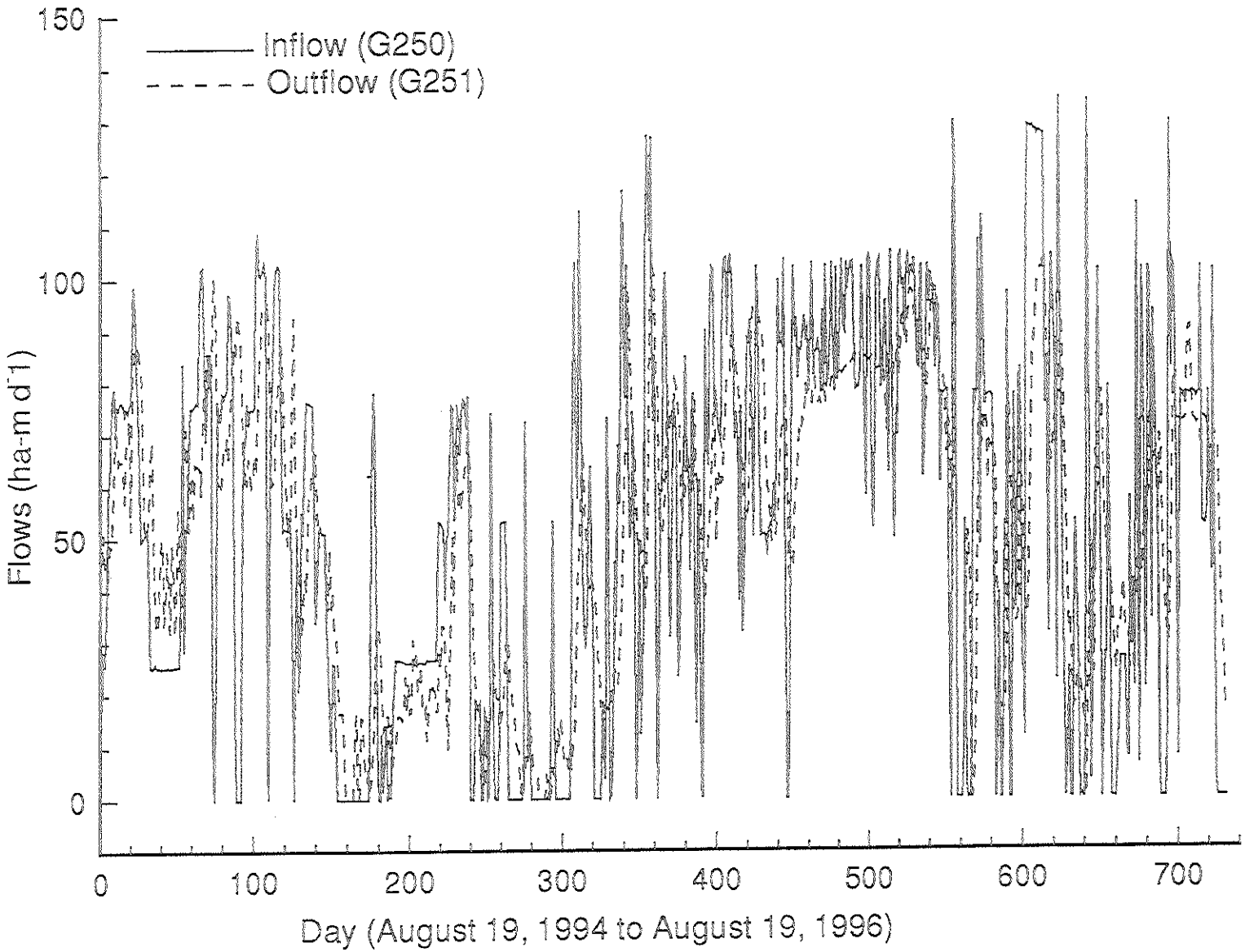

Figure 4a. Daily pumping rates of the inflow and outflow pumps

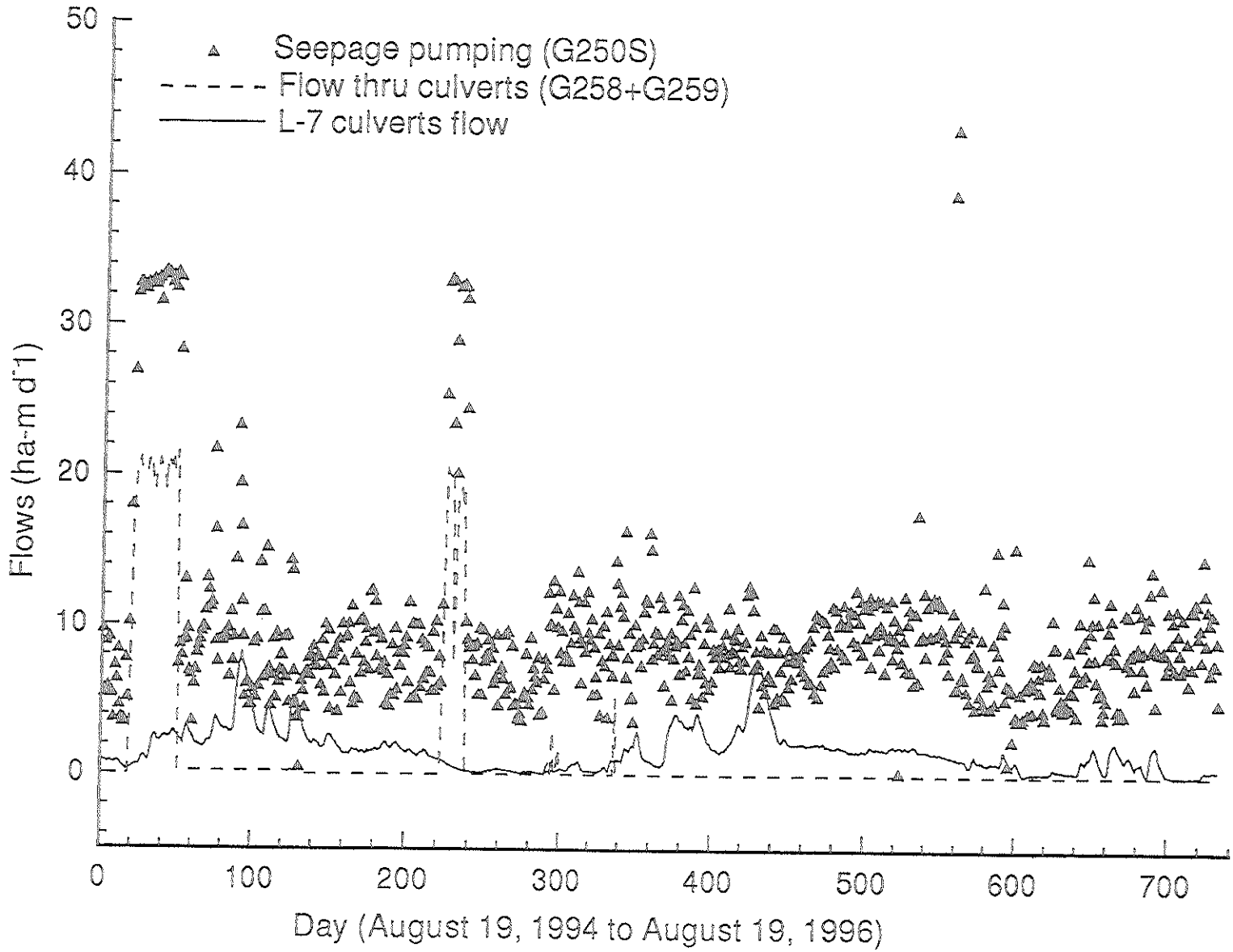

Figure 4b. Daily pumping rates of the seepage pump, flows through culverts G258 and G259, and seepage flow through L-7 levee roadside seepage collection culverts.

Water Levels

Daily water levels in each cell of the ENR are dependent on rainfall, evapotranspiration, seepage and daily operational decisions. Water levels have been regulated based on water depth, operation status of the S-5A pump station, pump maintenance, and other activities in ENR such as seepage studies and construction operations. The minimum, maximum, and mean of the daily average stage observations for the study period are shown in Table 2. The mean observed stages in each cell are the same as those recommended for the later start-up phase in the preliminary operation plan. Average daily water level observations in the eastern treatment train of the ENR are shown in Figure 5a, while those in the western treatment train are shown in Figure 5b.

WATER BUDGET COMPUTATIONS

Water Balance Model

The schematic hydrologic model for the ENR is depicted in Figure 6. The influent pumped through the G250 pump station accounts for about 86% of the known inflow to the system. The known inflows to the system are the G250 pump station inflows, rainfall, and seepage through the roadside L-7 levee culverts (L-7a). Rainfall accounts for 11% and L-7 seepage through the roadside culverts accounts for 3%. Outflow pumping (G251) accounts for 85% of the known outflows, with evapotranspiration constituting 9% of the total outflows. The unknowns in the system are subsurface inflows and outflows. The schematic model (Figure 6) and the following set of water balance equations represent the hydrologic system of the ENR for water budget analysis purposes.

$$INFLOW - OUTFLOW = \Delta S + \epsilon_T \qquad (2)$$

where INFLOW is the amount of water that enters the system from external sources; and OUTFLOW is water that leaves the system boundary and is not recirculated. ΔS is the change in storage in the system during the time interval of interest. Sum of all errors is represented by ϵ_T. Because all inflow and outflow can not be entirely quantified, the following equation is introduced to represent the remainders, errors and unknowns:

$$REMAINDERS = \epsilon_T + UNKNOWNS \qquad (3)$$

Figure 6 shows the possible inflows and outflows to and from the ENR system. The seepage canal which encompasses the northern and western sides of the ENR was designed and is operated to capture seepage from the ENR to the neighboring farms.

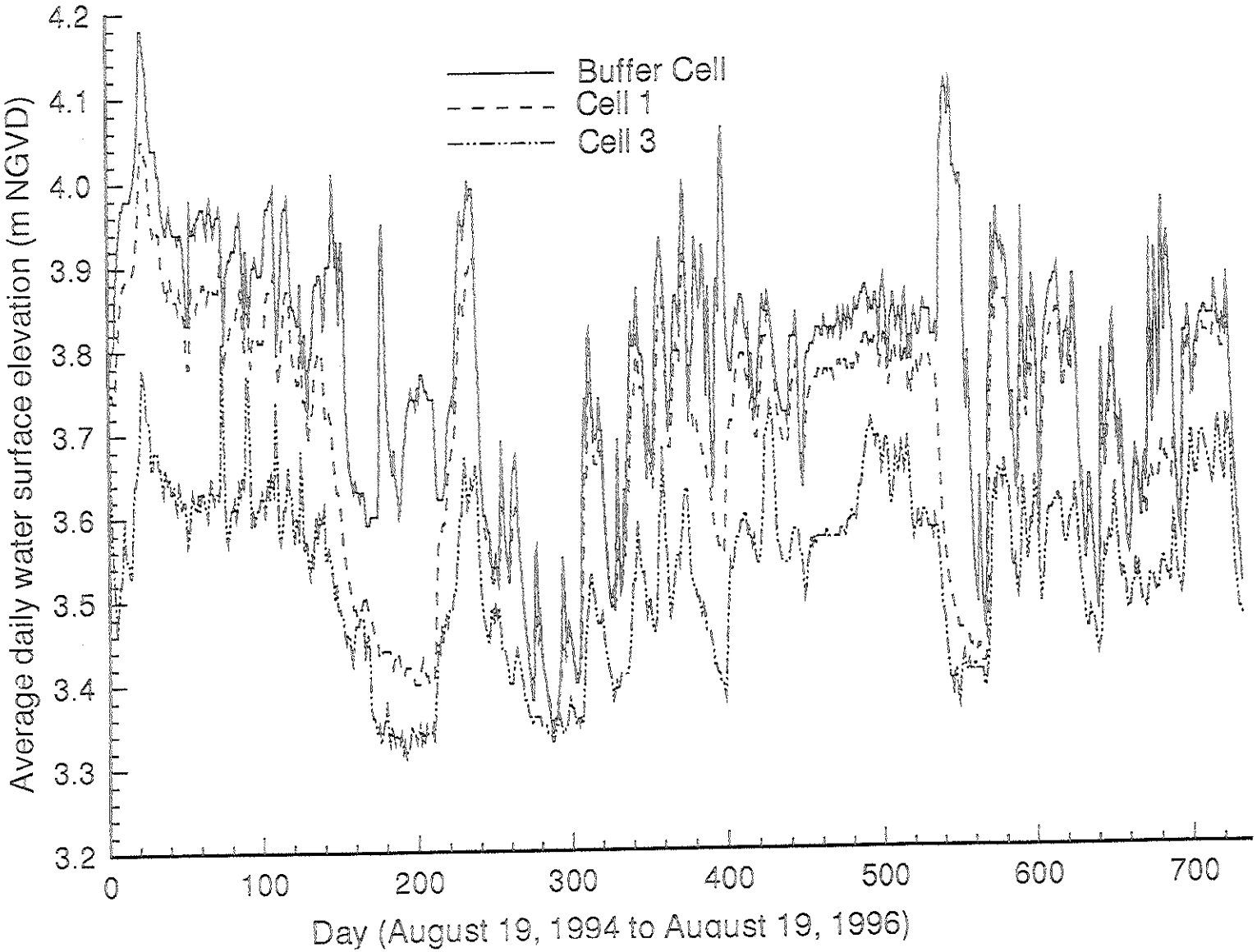

Figure 5a. Daily mean water levels in the eastern cells of the ENR and the Buffer Cell.

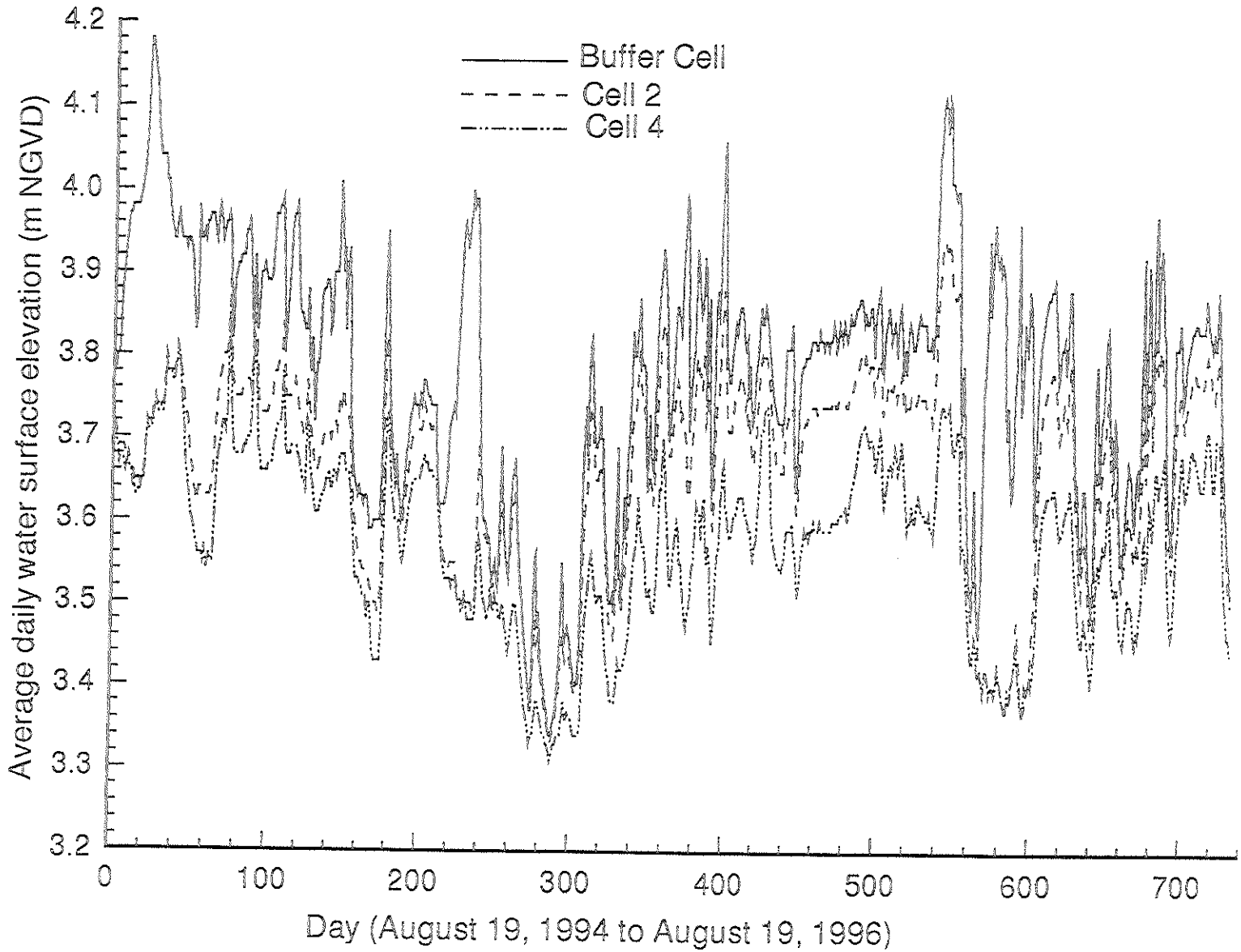

Figure 5b. Daily mean water levels in the western cells of the ENR and the Buffer Cell.

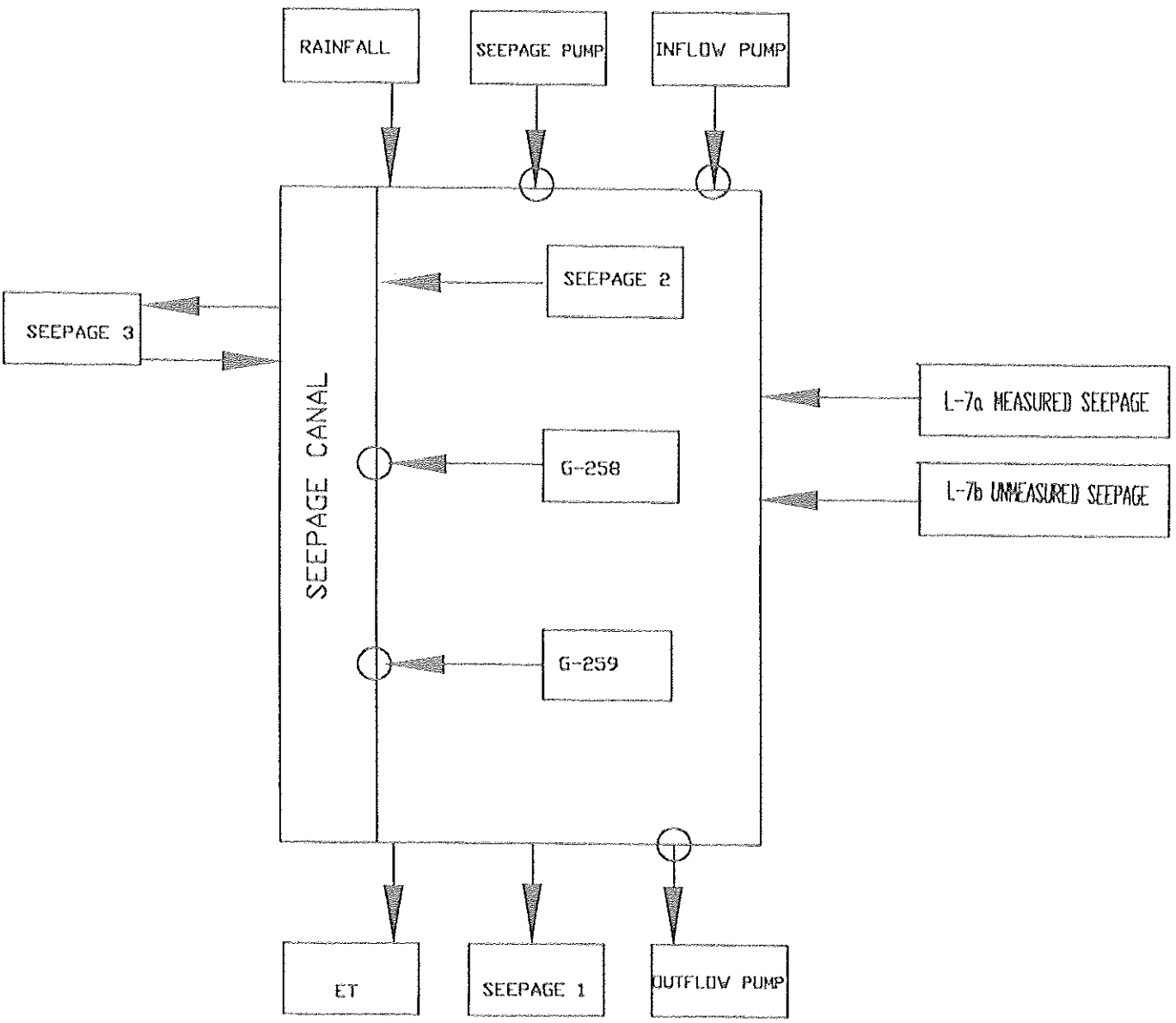

Figure 6. Schematic hydrologic model for the ENR.

When opened, and/or through leakage, G258 and G259 culverts release water into the seepage canal. Seepage through the western and northern ENR levees is represented in the model by SEEPAGE 2, regardless of the magnitude. SEEPAGE 3 represents the two seepage possibilities into or out of the seepage canal from or to the surrounding farms, regardless of the magnitude. SEEPAGE 1 represents the possible seepage loss through the southern ENR levee into the Knight's Farm. The unmeasured seepage flow from WCA 1 into the ENR is represented by L-7b.

In computing the water balance for the ENR, the objectives are to identify quantifiable variables from unquantifiable variables, making reasonable assumptions to reduce the quantity of unknowns as much as possible. Since the purpose of the seepage canal is to recirculate seepage and recycled water, it is assumed that the seepage return pump flows (G250S) are recirculated in the system as designed. This scenario is described or represented in the following equation:

$$S_P = SEEPAGE\ 2 + G258 + G259 + \epsilon_R \qquad (4)$$

where S_P is seepage return pump flows (G250S); SEEPAGE 2 is seepage from ENR to the seepage canal; G258 and G259 are flows through the respective culverts from ENR to the seepage canal; and ϵ_R is error in assumption and all other errors including measurement errors and calibration errors. The error term also includes the net effect of unknown variable SEEPAGE 3 which is the net subsurface flow of water from the seepage canal to the adjacent farms (west and north) or from the farms to the seepage canal. Also, SEEPAGE 1 (seepage through the southern levee of the ENR) and L-7b (subsurface seepage from WCA 1 that is not captured by the roadside culverts) are also unknowns. Equation 2 is expanded as follows.

$$\Delta S = G250+R+L7a+L7b-G251-ET-SEEPAGE\ 1+\epsilon_R+\epsilon_I+\epsilon_O \qquad (5)$$

where ΔS is change in storage in the system; G250 is inflow pump flows; R is rainfall; L7a is seepage flows from WCA 1 through the roadside culverts; L7b is unknown seepage subsurface flow from WCA 1 into the ENR; ET is evapotranspiration losses; SEEPAGE 1 is seepage loss through the southern levee of the ENR; ϵ_R represents errors in accounting for the recirculation water in the system; ϵ_I represents errors in inflow terms; and ϵ_O represents errors in outflow terms. The total error in the system is expressed as follows.

$$\epsilon_T = \epsilon_R + \epsilon_I + \epsilon_O \qquad (6)$$

Daily change in storage for the ENR was computed as a sum of storage changes in each of the five cells (Buffer Cell, Cell 1, Cell 2, Cell 3 and Cell 4). Change in storage volume in each cell was computed from the area of the cell and change in stage. Change in stage was computed as the difference between the beginning-of-day and end-of-day average instantaneous stage readings at two or three locations in each cell (Table 5).

Table 5. ENR Flow control structures and stage recorders database retrieval keys used in the water budget analysis.

Station	Description	Location	DBKEY	Remark
G250_P	PUMP	Feeder Canal/Buffer Cell	15847	inflow
G250S_P	Pump	Seepage Canal/Buffer Cell	15846	seepage return
G251_P	Pump	Cell 4/WCA 1	15848	outflow
G258_C	Culvert	Cell 3/Seepage Canal	15940	recycle
G259_C	Culvert	Cell 4/Seepage Canal	15939	recycle
G252EF_H	stage	Buffer Cell/Cell 1	15891	head water
G255_H	stage	Buffer Cell/Cell 2	15908	head water
G252EF_T	stage	Buffer Cell/Cell 1	15892	tail water
ENR101	stage	Cell 1	15850	center of cell
G253EF_H	stage	Cell 1/Cell 3	15897	head water
G255_T	stage	Buffer Cell/Cell 2	15909	head water
ENR203	stage	Cell 2	15873	center
G254C_H	stage	Cell 2/Cell 4	15903	head water
G253EF_T	stage	Cell 1/Cell 3	15898	tail water
ENR301	stage	Cell 3	15876	center
ENR012	stage	Cell 3	15849	upstream of G251_P
G254C_T	stage	Cell 2/Cell 4	15904	tail water
ENR401	stage	Cell 4	15727	center of cell
G256_H	stage	Cell 4B/Discharge Canal	15910	head water

The remainders in the computation of daily water balances are the sum of all errors and unknowns in the system. Daily remainders were computed for the two-year study period based on the following equation:

$$REMAINDERS = \epsilon_T - SEEPAGE\ 1 + L7b \qquad (7)$$

where ϵ_T is the sum of all errors, SEEPAGE 1 is seepage from the ENR through the southern levee, and L-7b is seepage from WCA 1 into the ENR that is unaccounted for in the water budget.

Discussion

The total inflow through the inflow pump was 39,000 ha-m (316,115 ac-ft) and was almost equivalent to total outflow through the outflow pump which was 38,802 ha-m (314,560 ac-ft). Seepage inflow from the L-7 levee through the roadside culverts was a total of 1,198 ha-m (9,712 ac-ft). Total flow into the seepage canal through culverts G258 and G259 was 892 ha-m (7,231 ac-ft) and the seepage recirculation pump had a total flow of 7,143 ha-m (57,907 ac-ft). Total areal rainfall for the two-year study period was 328.7 cm (129.4 in) and the total areal evapotranspiration was 262.2 cm (103.2 in).

For the two-year study period, the mean daily remainders (errors and unknowns) was -3.8 hectare-meters per day (ha-m d^{-1}) or -30.8 acre-feet per day (ac-ft d^{-1}) with the total remainders being -2,781 ha-m (-22,545 ac-ft). The standard variation of the remainders is 12.03 ha-m d^{-1} (97 ac-ft d^{-1}) which signifies high variation. Figure 7 depicts the daily remainders distribution. The negative remainder indicates that there is an over all inflow to the system that is not accounted for in the water balance computation. The remainder is 7 % of the inflow or the outflow pumping, or 6% of the sum of all outflows. Summary of the two-year water budget is shown in Table 6. Details of the water balance terms and calculations are shown in the Appendix.

The mean hydraulic loading rate for the two-year period, based on the G250 pump inflow, was 3.45 centimeters per day (cm d^{-1}) or 1.34 inches per day (in d^{-1}). The mean hydraulic retention time was computed as the ratio of the mean-estimated volume of the ENR and the total inflow pumping. The mean-estimated volume was computed from the area-weighted (by cell) mean depth of 57.5 cm (22.6 in) and total area of 1544 ha (3,815 ac). The estimated mean hydraulic retention time was 17 days.

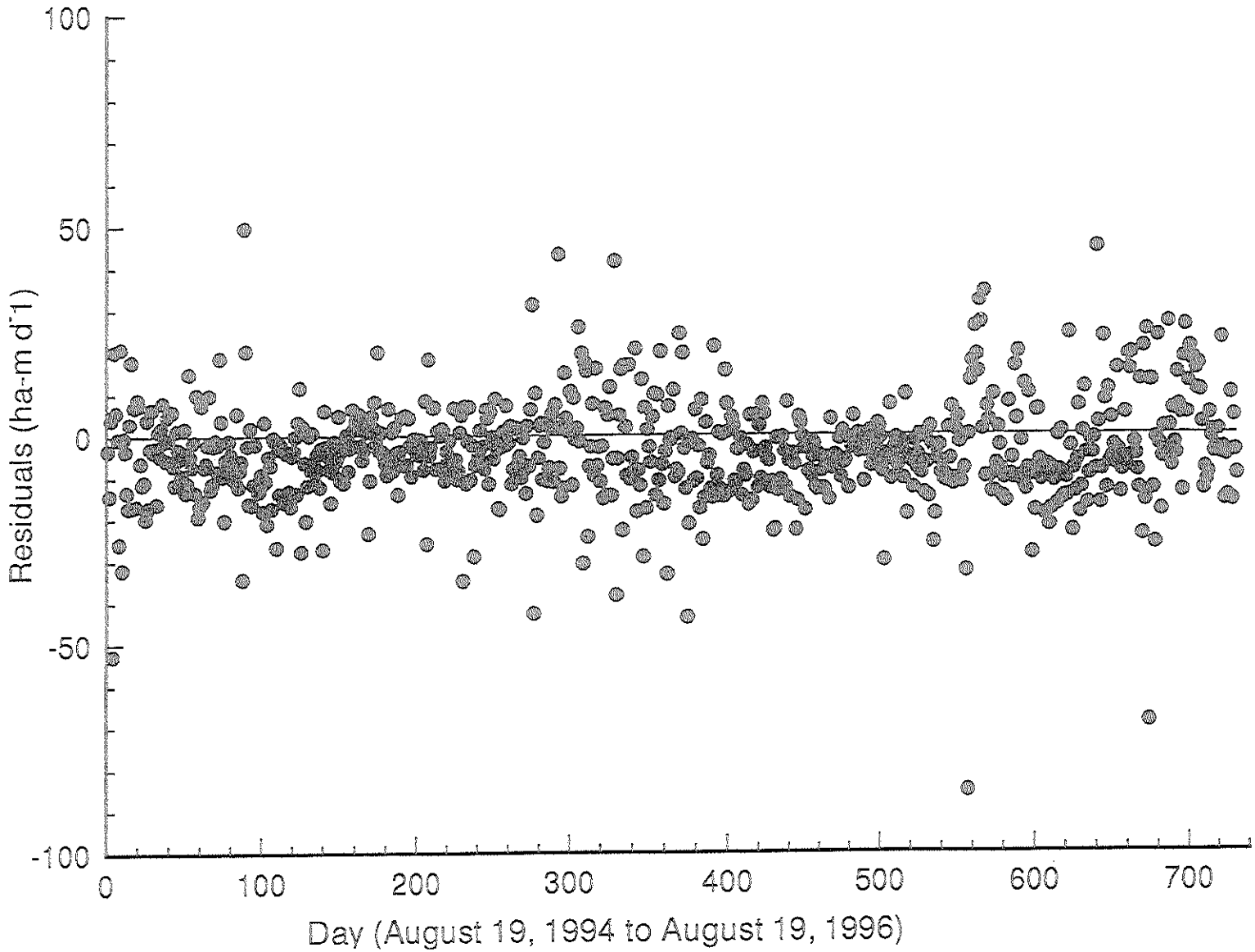

Figure 7. Distribution of daily remainders (errors and unknowns) from the ENR water balance.

Table 6. Summary of the two-year water budget of the ENR

INFLOWS	ha-m#	Percent of Total	OUTFLOWS	ha-m	Percent of Total
Inflow Pump	39,000	86%	Outflow Pump	38,802	85%
Rain	5,068	11%	ET	4,050	9%
L-7 Culverts (L7a)	1,198	3%	Remainders	2,781	6%
Total	45,266	100%	Total	45,633	100%
Change in Storage	-363				

ha-m = 8.106 ac-ft

SUMMARY

The ENR is a new system with a relatively short period of hydrologic record. Longer periods of record are more favorable for characterizing the operation and water balance of hydrologic systems. In the ENR, all hydrologic parameters, with the exception of seepage through the system, are well monitored. Since the direction of seepage is not in one direction, the remainders (errors and unknowns) could not be allocated to one variable. Seepage studies and monitoring will refine the water budget for the ENR in the future. Groundwater modeling efforts will help in identifying and quantifying subsurface sources and sinks in the system. Improvement in stage-volume relationships will also increase the accuracy of water balance analysis.

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APPENDIX

Appendix 1. FNR water balance terms with calculated remainders
ha-m = 8.1068 ac-ft

Date	change in storage ha-m	Inflow pump G-250 ha-m	Seepage pump G-250_S ha-m	Outflow pump G-251 ha-m	Culvert G-258 ha-m	Culvert G-259 ha-m	seepage L-7a ha-m	Rain ha-m	ET ha-m	Remainders ha-m
19940819	-30.276	17.527	9.621	45.759	0.000	0.000	0.912	7.471	6.299	-4.129
19940820	-42.480	27.772	5.349	51.039	0.000	0.000	0.899	0.148	6.789	-13.471
19940821	-19.128	26.389	8.789	43.069	0.000	0.000	0.876	1.402	8.876	4.150
19940822	56.601	38.995	5.797	43.718	0.000	0.000	0.759	10.014	8.857	-53.795
19940823	66.884	58.189	9.058	42.925	0.000	0.000	0.784	39.427	5.479	16.889
19940824	21.427	61.553	5.278	48.871	0.000	0.000	0.860	2.404	4.102	9.583
19940825	19.468	72.561	5.415	48.656	0.000	0.000	0.811	0.189	4.674	-0.765
19940826	-10.466	76.684	3.663	55.519	0.000	0.000	0.735	0.357	6.984	-25.740
19940827	66.679	79.119	7.199	61.646	0.000	0.000	0.740	33.712	3.278	18.032
19940828	-34.829	70.844	6.315	74.812	0.000	0.000	0.785	2.956	5.016	-29.584
19940829	3.861	75.564	8.261	68.282	0.000	0.000	0.865	2.267	6.137	-0.416
19940830	1.125	75.108	4.554	64.563	0.000	0.000	0.843	0.000	7.242	-3.023
19940831	9.132	76.454	3.714	65.194	0.000	0.000	0.660	0.000	7.739	-13.313
19940901	-14.118	76.427	3.401	65.018	0.000	0.000	0.532	0.000	8.910	-17.149
19940902	16.462	75.943	3.592	63.099	0.000	0.000	0.428	10.066	8.301	1.425
19940903	46.094	74.132	7.666	57.195	0.000	0.000	0.334	18.547	6.682	16.957
19940904	-14.275	75.143	5.060	68.199	0.000	0.000	0.270	0.000	6.839	-14.650
19940905	27.682	74.489	10.125	69.402	0.000	0.000	0.272	22.131	4.609	4.801
19940906	11.558	75.757	17.906	73.198	0.000	7.960	0.331	27.704	2.476	-16.561
19940907	36.181	76.513	26.862	51.807	0.000	16.746	0.420	10.599	8.184	8.642
19940908	113.282	89.144	32.017	73.371	0.000	18.444	0.475	100.358	3.056	-0.268
19940909	9.943	98.809	32.695	87.061	0.000	20.583	0.557	1.238	6.770	3.171
19940910	-8.567	94.292	32.675	86.349	0.000	20.798	0.616	0.000	5.657	-11.469
19940911	-19.398	81.602	32.382	85.138	0.000	21.016	0.599	0.098	5.546	-11.013
19940912	-36.451	74.874	32.457	88.138	0.000	20.184	0.627	1.226	5.704	-19.337
19940913	34.808	58.639	32.267	83.638	0.000	20.128	0.812	64.337	2.681	-2.661
19940914	-46.109	49.708	32.643	82.853	0.000	20.010	1.100	1.375	5.059	-10.381
19940915	-23.466	50.021	32.555	66.694	0.000	20.013	1.211	1.260	6.772	-2.492
19940916	-2.378	50.674	32.599	52.693	0.000	20.600	1.142	0.062	8.083	6.520
19940917	3.366	51.254	32.727	50.344	0.000	21.146	1.005	12.728	5.793	-5.484
19940918	11.550	52.022	32.829	50.295	0.000	20.896	0.934	20.124	8.743	-2.493
19940919	-17.167	40.977	32.543	56.530	0.000	20.167	1.222	18.779	5.129	-16.487
19940920	46.879	25.484	32.763	65.260	0.000	19.457	1.780	97.142	6.303	-5.964
19940921	-41.622	25.217	32.964	69.258	0.000	18.988	2.386	0.096	4.585	4.522
19940922	-25.262	25.261	32.922	47.892	0.000	20.294	2.628	0.000	7.533	2.275
19940923	8.095	26.049	31.491	38.039	0.000	20.280	2.537	20.393	8.935	6.089
19940924	-11.257	25.484	33.192	32.250	0.000	20.945	2.250	0.075	7.822	1.005
19940925	-4.084	25.286	33.387	32.524	0.000	20.654	2.237	11.907	3.423	7.568
19940926	-13.759	25.374	33.446	41.278	0.000	20.311	2.253	0.470	7.148	6.570
19940927	45.631	25.107	33.174	49.585	0.000	20.042	2.436	79.239	3.427	-8.139
19940928	-24.099	25.286	33.299	49.987	0.000	18.961	2.510	0.547	3.495	1.040
19940929	-1.653	25.225	33.147	33.539	0.000	20.532	2.556	0.000	2.520	6.625
19940930	-12.059	25.225	32.631	37.385	0.000	21.099	2.539	3.253	2.624	-3.067
19941001	-17.532	25.337	33.130	47.655	0.000	20.571	2.474	20.628	3.383	-14.933
19941002	-11.658	25.318	33.040	40.637	0.000	20.532	2.502	2.561	4.073	2.672
19941003	-4.942	25.232	32.325	32.059	0.000	21.393	2.603	3.794	5.686	1.174
19941004	-2.735	25.393	33.311	48.964	0.000	20.238	2.769	33.274	2.932	-12.275
19941005	-29.856	25.327	33.167	44.753	0.000	20.385	2.894	0.109	6.717	-6.717
19941006	-15.014	25.464	33.003	31.743	0.000	21.510	2.726	0.000	7.200	-4.261
19941007	-16.276	25.408	28.264	38.012	0.000	11.498	2.567	0.218	7.666	1.209
19941008	-46.524	25.467	7.370	56.324	0.000	0.213	2.489	0.316	5.745	-12.727
19941009	-37.652	25.560	8.669	47.765	0.000	0.210	2.382	0.163	6.160	-11.832
19941010	31.437	45.387	7.923	32.541	0.000	0.218	2.190	8.555	5.900	13.745
19941011	72.457	83.876	8.899	44.589	0.000	0.220	2.081	42.531	5.518	-5.925
19941012	-2.940	28.528	12.976	66.559	0.000	0.210	2.625	45.867	5.101	-8.300
19941013	-14.131	51.421	9.002	71.198	0.000	0.215	3.122	4.850	4.658	2.334
19941014	-19.453	53.106	9.692	61.734	0.000	0.210	3.261	3.984	5.904	-12.167
19941015	13.426	66.716	6.881	51.489	0.000	0.208	3.061	0.032	7.486	2.593
19941016	1.580	75.221	6.665	58.930	0.000	0.213	2.739	1.976	7.002	-12.424
19941017	-8.272	75.118	3.489	62.730	0.000	0.208	2.635	0.000	6.538	-16.758
19941018	16.578	75.429	6.036	53.380	0.000	0.213	2.426	0.000	6.968	-0.928
19941019	0.777	76.038	6.942	64.362	0.000	0.213	2.147	0.000	6.472	-6.575
19941020	-1.120	76.440	8.099	64.098	0.000	0.210	2.013	0.047	5.753	-9.769
19941021	-1.259	76.151	8.586	63.939	0.000	0.208	1.992	0.000	5.759	-9.705
19941022	18.644	94.845	9.014	63.650	0.000	0.208	1.952	0.000	6.571	-7.932
19941023	50.730	101.970	9.535	58.548	0.000	0.213	1.866	0.000	5.987	11.430
19941024	15.781	102.315	9.783	73.281	0.000	0.218	1.828	0.000	6.190	-8.891
19941025	-10.218	84.269	9.770	80.403	0.000	0.210	1.873	0.103	6.228	-9.831
19941026	21.720	68.940	10.945	78.588	0.000	0.210	1.949	40.261	5.978	-4.864
19941027	-4.830	77.149	13.069	85.897	0.000	0.213	2.191	2.439	4.615	3.903
19941028	-4.606	85.809	12.293	79.995	0.000	0.215	2.244	0.012	4.236	-8.441
19941029	16.149	85.857	11.172	79.476	0.000	0.213	2.269	16.188	5.666	-3.024
19941030	164.663	76.836	11.515	81.015	0.000	0.220	2.270	174.272	5.280	-2.420
19941031	-60.382	10.039	21.667	100.468	0.000	0.233	2.701	0.280	3.983	31.048
19941101	-103.982	0.000	16.330	98.050	0.000	0.230	3.339	0.102	3.138	-6.235
19941102	-88.747	22.447	8.887	88.642	0.000	0.215	3.815	0.030	6.653	-19.745
19941103	0.146	75.896	7.512	61.367	0.000	0.210	3.728	0.000	5.214	-12.898
19941104	3.235	73.053	8.948	60.396	0.000	0.206	3.479	0.000	4.603	-8.299
19941105	9.015	72.911	8.904	58.937	0.000	0.213	3.295	0.000	6.087	-2.166
19941106	8.675	77.908	8.936	62.818	0.000	0.215	3.099	0.000	5.177	-4.336
19941107	0.023	77.169	9.269	67.599	0.000	0.213	3.075	2.405	4.766	-10.261
19941108	-0.916	78.211	9.071	66.623	0.000	0.215	2.997	0.096	6.163	-9.434
19941109	-2.320	79.273	9.124	69.894	0.000	0.213	3.046	0.000	4.340	10.405
19941110	35.233	97.226	9.724	64.364	0.000	0.210	2.964	0.000	4.648	4.056
19941111	7.313	95.018	6.528	74.793	0.000	0.213	2.852	0.166	4.473	-11.457
19941112	0.793	87.485	10.832	78.649	0.000	0.208	2.854	0.000	3.060	-7.837
19941113	-2.936	76.457	7.556	79.229	0.000	0.210	2.861	6.812	3.261	-6.575
19941114	-80.007	23.957	9.154	88.439	0.000	0.208	3.099	15.339	2.568	-31.396
19941115	165.884	0.000	14.356	86.697	0.000	0.213	4.232	219.054	0.737	30.032
19941116	55.906	0.000	23.240	93.504	0.000	0.228	5.995	109.388	0.739	34.766
19941117	-75.997	0.000	19.428	90.020	0.000	0.223	6.843	0.275	1.419	8.324
19941118	-100.212	0.000	16.555	89.875	0.000	0.215	7.572	0.028	4.342	-13.595
19941119	-17.314	54.643	11.532	72.500	0.000	0.206	8.029	0.300	5.266	-2.519
19941120	-7.911	67.477	9.178	60.212	0.000	0.213	7.477	0.121	2.977	-19.796
19941121	-4.172	68.431	5.146	63.501	0.000	0.206	7.307	0.181	4.051	-12.540
19941122	14.720	76.146	6.024	60.393	0.000	0.208	6.965	0.012	4.766	-3.244

19941123	5.139	72.079	6.144	65.544	0.000	0.206	6.465	0.047	6.307	-11.880
19941124	-2.161	74.896	4.583	62.522	0.000	0.206	5.853	0.000	7.467	-12.921
19941125	0.919	75.025	4.674	60.148	0.000	0.210	5.274	0.000	5.778	-13.454
19941126	4.457	74.886	5.687	61.081	0.000	0.210	4.829	0.000	4.992	-9.185
19941127	-7.317	75.507	8.770	66.444	0.000	0.213	4.244	0.687	3.890	-17.421
19941128	44.017	105.682	5.109	64.634	0.000	0.208	3.813	0.000	2.824	1.979
19941129	23.645	107.473	8.990	72.600	0.000	0.208	3.332	0.000	3.367	-11.193
19941130	-3.201	101.043	5.868	82.985	0.000	0.213	3.015	0.012	4.482	-19.804
19941201	8.189	100.634	14.135	86.937	0.000	0.201	2.834	0.615	4.645	4.312
19941202	18.914	101.451	10.793	95.202	0.000	0.210	2.723	20.203	2.255	8.007
19941203	6.858	102.944	6.403	94.270	0.000	0.206	2.667	1.523	3.708	-16.015
19941204	53.510	100.588	10.822	93.854	0.000	0.206	2.614	54.017	3.901	-5.953
19941205	-34.864	11.740	15.124	96.540	0.000	0.225	3.501	45.553	2.296	3.179
19941206	-106.724	0.247	6.626	91.798	0.000	0.220	4.289	0.416	3.429	16.449
19941207	17.679	59.319	7.052	71.225	0.000	0.203	4.529	0.062	3.088	-7.276
19941208	-2.387	75.370	4.568	60.413	0.000	0.201	4.265	0.752	4.623	-17.739
19941209	28.977	83.976	6.543	60.807	0.000	0.201	3.967	7.922	2.798	3.284
19941210	32.473	99.036	9.026	63.545	0.000	0.210	3.524	0.054	4.013	-2.582
19941211	10.474	101.936	5.077	77.152	0.000	0.198	3.248	3.135	3.789	-16.904
19941212	20.088	102.591	9.411	78.267	0.000	0.208	2.930	0.000	3.887	3.279
19941213	1.699	101.818	6.134	82.266	0.000	0.213	2.657	0.109	5.013	-15.607
19941214	-32.185	69.432	6.956	87.563	0.000	0.203	2.523	0.000	4.127	-12.450
19941215	-46.499	51.584	7.935	80.254	0.000	0.208	2.376	0.000	5.301	-14.904
19941216	-22.207	51.956	6.819	67.954	0.000	0.225	2.330	0.000	3.310	-5.230
19941217	-14.016	51.790	9.122	60.378	0.000	0.245	2.280	0.000	3.545	-4.162
19941218	0.475	51.604	6.470	48.952	0.000	0.213	2.166	0.000	3.622	0.721
19941219	-20.153	51.558	9.225	54.898	0.000	0.213	2.110	0.000	6.084	-12.839
19941220	13.647	51.465	4.757	51.044	0.000	0.181	2.196	15.660	4.974	0.344
19941221	102.365	32.340	14.250	78.745	0.000	0.225	2.920	146.005	0.871	0.716
19941222	-97.271	0.000	13.605	92.809	0.000	0.267	4.347	0.000	1.327	-7.482
19941223	-22.722	31.144	6.841	64.044	0.000	0.196	5.248	8.894	3.056	0.907
19941224	-3.038	50.726	4.571	45.325	0.000	0.203	5.243	0.000	4.333	-9.348
19941225	-43.976	20.793	3.820	45.580	0.000	0.203	5.122	0.000	4.634	-19.678
19941226	26.618	28.454	3.700	45.333	0.000	0.208	4.994	0.000	4.507	-10.227
19941227	20.472	55.145	0.414	31.087	0.000	0.210	4.503	0.000	4.160	-3.928
19941228	9.214	50.802	6.195	35.362	0.000	0.215	3.843	0.000	2.536	-7.533
19941229	24.358	66.006	5.545	42.267	0.000	0.002	3.371	0.000	3.051	0.299
19941230	30.051	76.371	4.397	39.575	0.000	0.000	2.984	0.000	1.422	-8.307
19941231	33.281	76.227	6.773	52.208	0.000	0.000	2.696	0.000	3.257	-10.177
19950101	12.561	76.305	6.934	59.397	0.000	0.000	2.512	0.030	2.616	-4.274
19950102	7.295	75.918	7.744	59.280	0.000	0.000	2.294	0.000	3.728	-7.910
19950103	-1.348	75.801	6.585	64.399	0.000	0.000	2.188	0.047	3.231	-11.754
19950104	5.061	58.201	7.876	64.607	0.000	0.000	2.068	16.564	2.980	-4.185
19950105	-54.770	33.864	8.508	66.721	0.000	0.000	2.042	0.574	1.594	-22.936
19950106	-11.979	40.740	7.434	56.855	0.000	0.000	2.260	0.030	3.028	4.873
19950107	13.701	51.443	7.147	48.501	0.000	0.000	2.190	16.165	1.292	-6.303
19950108	-0.218	52.284	7.864	48.898	0.000	0.000	2.079	0.118	3.558	-2.243
19950109	-7.376	51.017	7.757	48.952	0.000	0.000	2.047	0.000	4.110	-7.378
19950110	-16.914	51.017	5.914	49.062	0.000	0.000	1.810	0.000	4.606	-16.073
19950111	-11.114	50.961	8.931	48.886	0.000	0.000	1.781	0.000	4.064	-10.906
19950112	-10.753	36.123	5.434	45.264	0.000	0.000	1.798	0.954	3.069	-1.295
19950113	-15.525	25.858	9.973	36.436	0.000	0.000	1.899	0.134	4.778	-2.203
19950114	2.069	17.050	7.177	48.223	0.000	0.000	2.276	41.181	0.000	10.215
19950115	-11.241	9.553	9.614	36.549	0.000	0.000	2.635	5.666	3.768	11.222
19950116	-26.500	25.856	4.316	39.514	0.000	0.000	2.642	0.078	3.715	-11.847
19950117	-13.153	25.645	7.908	32.223	0.000	0.000	2.603	0.041	4.160	-5.060
19950118	-33.142	11.368	8.126	32.342	0.000	0.000	2.420	0.086	4.280	-10.393
19950119	-26.042	0.000	6.609	25.714	0.000	0.000	2.230	0.000	4.714	2.156
19950120	-19.111	0.000	8.378	16.421	0.000	0.000	2.117	0.000	4.783	-0.024
19950121	-28.314	0.000	4.145	16.489	0.000	0.000	1.941	0.000	5.315	-8.450
19950122	-22.249	0.000	8.978	16.499	0.000	0.000	1.801	0.000	5.012	-2.540
19950123	-16.192	0.000	5.417	10.678	0.000	0.000	1.731	0.000	4.859	-2.386
19950124	-3.377	0.000	10.008	0.000	0.000	0.000	1.499	0.047	6.680	1.757
19950125	-1.670	0.000	7.507	0.000	0.000	0.000	1.410	0.000	6.569	3.489
19950126	-0.802	0.000	9.110	0.000	0.000	0.000	1.412	0.000	6.290	4.077
19950127	-1.820	0.000	9.293	0.000	0.000	0.000	1.419	0.214	5.090	1.636
19950128	2.371	0.000	10.027	0.000	0.000	0.000	1.398	0.071	4.249	5.151
19950129	-4.165	0.000	6.063	0.000	0.000	0.000	1.373	0.030	2.847	-2.721
19950130	7.519	0.000	11.212	10.556	0.000	0.000	1.486	20.462	0.329	-3.544
19950131	-24.128	0.000	4.674	16.240	0.000	0.000	1.684	0.028	5.170	-4.431
19950201	-2.603	0.000	5.114	0.000	0.000	0.000	1.629	0.223	4.380	-0.075
19950202	1.822	0.000	8.001	0.000	0.000	0.000	1.600	0.000	4.317	4.539
19950203	-34.921	0.000	4.984	15.601	0.000	0.000	1.652	0.060	4.743	-16.289
19950204	-33.445	0.000	10.157	15.508	0.000	0.000	1.544	2.457	3.961	-17.977
19950205	-8.577	0.000	6.726	7.840	0.000	0.000	1.460	0.000	6.698	4.501
19950206	-7.665	0.000	10.355	4.901	0.000	0.000	1.549	0.263	5.216	0.641
19950207	2.616	0.000	7.431	3.264	0.000	0.000	1.547	0.278	6.008	10.064
19950208	-14.694	0.000	8.784	8.258	0.000	0.000	1.423	0.071	5.472	-2.458
19950209	46.929	36.052	9.670	2.733	0.000	0.000	1.433	0.083	5.857	17.951
19950210	44.999	69.111	6.956	4.326	0.000	0.000	1.592	0.297	3.469	-18.206
19950211	65.902	78.145	12.146	13.030	0.000	0.000	1.516	0.320	4.390	3.341
19950212	33.743	60.364	12.229	26.595	0.000	0.000	1.581	0.000	1.745	0.139
19950213	-3.397	15.031	9.381	33.422	0.000	0.000	1.585	11.681	3.446	5.173
19950214	-26.474	0.203	11.547	32.910	0.000	0.000	1.669	4.594	2.438	2.408
19950215	-44.718	0.000	7.810	29.519	0.000	0.000	1.749	0.020	4.885	-12.083
19950216	-6.673	12.491	9.531	19.254	0.000	0.000	1.621	0.041	5.897	4.325
19950217	-20.660	1.483	6.998	12.785	0.000	0.000	1.648	0.237	5.265	-5.978
19950218	-9.869	7.142	9.022	16.213	0.000	0.000	1.674	0.578	5.181	2.130
19950219	2.448	14.074	6.868	16.000	0.000	0.000	1.846	18.512	1.984	-14.000
19950220	5.017	0.000	7.446	15.976	0.000	0.000	2.037	13.417	1.521	7.060
19950221	12.228	2.298	4.644	9.809	0.000	0.000	2.147	0.110	3.901	-3.072
19950222	-31.269	0.306	6.675	14.402	0.000	0.000	2.077	0.274	4.539	14.984
19950223	2.132	16.250	4.519	6.438	0.000	0.000	1.883	0.154	4.374	5.344
19950224	11.166	22.484	5.310	9.085	0.000	0.000	1.783	0.000	5.848	1.832
19950225	4.435	26.570	8.615	9.946	0.000	0.000	1.790	0.000	5.947	-8.032
19950226	14.790	26.565	5.234	15.834	0.000	0.000	1.905	11.718	1.694	-7.871
19950227	20.236	26.629	9.721	15.829	0.000	0.000	2.057	4.692	3.841	6.527
19950228	3.282	26.463	5.650	15.900	0.000	0.000	2.117	0.068	3.278	-6.189
19950301	12.795	26.370	8.099	15.073	0.000	0.000	2.022	0.020	5.518	4.974
19950302	3.056	26.240	7.226	16.257	0.000	0.000	1.868	0.166	6.653	-2.308
19950303	-11.617	26.140	8.246	23.380	0.000	0.000	1.783	0.041	7.410	-8.792
19950304	3.108	26.047	8.660	16.274	0.000	0.000	1.679	0.030	7.284	-1.089
19950305	3.338	25.924	8.581	22.230	0.000	0.000	1.602	0.000	5.464	-3.171
19950306	3.141	26.027	9.129	16.409	0.000	0.000	1.495	0.030	6.507	1.496

19950307	2.732	26.027	6.125	16.511	0.000	0.000	1.454	0.000	5.643	-2.595
19950308	25.511	25.805	11.466	30.556	0.000	0.000	1.610	40.302	3.723	-7.926
19950309	0.394	25.704	4.999	25.868	0.000	0.000	1.630	0.000	3.849	2.777
19950310	-12.715	25.790	10.030	28.557	0.000	0.000	1.543	0.000	7.597	-3.894
19950311	-8.793	25.888	5.146	20.796	0.000	0.000	1.425	0.000	6.469	-8.841
19950312	7.789	26.071	9.986	20.461	0.000	0.000	1.335	0.067	7.715	8.491
19950313	-31.389	25.978	5.006	25.949	0.000	0.000	1.250	0.000	6.223	-26.445
19950314	22.523	26.076	9.964	16.482	0.000	0.000	1.256	0.000	7.741	19.413
19950315	-0.023	25.883	5.784	16.541	0.000	0.000	1.404	0.234	4.874	-6.129
19950316	4.310	25.949	8.975	17.461	0.000	0.000	1.448	1.926	5.007	-2.545
19950317	28.535	26.624	6.345	11.246	0.000	0.000	1.499	4.198	2.721	10.181
19950318	40.731	26.433	8.696	16.577	0.000	0.000	1.650	26.137	3.296	6.384
19950319	-3.961	26.585	6.775	21.339	0.000	0.000	1.597	0.355	4.837	-6.322
19950320	2.761	26.588	8.434	22.536	0.000	0.000	1.407	0.000	8.147	-0.073
19950321	-9.435	26.512	6.778	20.857	0.000	0.000	1.230	0.000	7.287	-9.033
19950322	-1.938	26.585	5.540	20.784	0.000	0.000	1.192	0.000	8.155	-0.777
19950323	4.256	26.583	9.509	16.761	0.000	0.000	1.144	0.000	8.284	1.574
19950324	19.488	42.008	5.581	16.815	0.000	0.000	1.114	0.000	6.824	0.004
19950325	8.542	53.106	10.211	29.051	0.000	0.000	1.056	0.000	5.703	-10.866
19950326	17.406	52.881	5.880	24.955	0.000	0.000	1.022	0.000	7.926	-3.617
19950327	6.704	52.377	7.859	33.084	0.000	0.000	1.016	0.060	7.576	-6.090
19950328	15.092	51.447	6.137	33.084	0.000	0.000	0.972	5.285	7.800	-1.728
19950329	-2.704	38.252	11.331	28.981	0.000	6.266	0.950	0.049	5.098	7.876
19950330	18.340	49.468	25.364	16.727	0.000	14.466	0.910	0.012	7.668	-7.656
19950331	41.198	51.080	32.886	9.550	0.000	20.404	0.813	0.000	7.165	6.019
19950401	29.272	64.315	33.067	26.384	0.000	20.162	0.728	1.018	3.583	-6.822
19950402	24.541	75.617	32.883	39.005	0.000	19.944	0.654	2.052	4.910	-9.867
19950403	9.182	75.099	32.829	50.322	0.000	19.538	0.637	0.000	8.008	-8.225
19950404	7.186	53.527	23.380	35.908	0.000	19.922	0.561	0.000	5.813	-5.182
19950405	15.286	67.266	28.922	60.141	0.000	7.416	0.501	0.000	5.131	12.791
19950406	-15.763	74.585	20.081	68.027	0.000	11.720	0.484	13.915	2.765	-33.955
19950407	16.004	72.784	32.492	55.876	0.000	18.684	0.425	0.403	4.652	2.920
19950408	-5.640	66.185	32.472	58.022	0.000	18.831	0.405	0.000	4.799	-9.409
19950409	9.934	74.639	32.653	55.309	0.000	19.105	0.340	0.000	6.320	-3.416
19950410	15.277	76.704	32.533	60.288	0.000	18.420	0.305	0.035	8.326	6.847
19950411	-2.771	75.860	31.711	63.388	0.000	19.083	0.277	0.663	7.733	-8.450
19950412	-10.122	71.521	24.385	64.631	0.000	10.162	0.253	0.000	7.531	-9.735
19950413	-31.335	77.479	10.147	73.119	0.000	0.000	0.240	0.000	6.779	-29.157
19950414	-22.590	55.218	8.990	66.246	0.000	0.000	0.217	0.000	8.531	3.248
19950415	-66.066	0.000	8.464	61.024	0.000	0.000	0.215	0.000	5.311	0.055
19950416	-53.515	0.000	8.466	40.809	0.000	0.000	0.204	0.000	7.854	-5.056
19950417	-36.297	0.000	7.627	27.600	0.000	0.000	0.166	0.000	8.304	-0.558
19950418	-18.974	18.447	8.547	22.308	0.000	0.000	0.131	0.012	9.152	-6.104
19950419	-13.419	17.524	6.580	17.593	0.000	0.000	0.145	0.000	9.351	-4.145
19950420	-14.409	17.035	8.743	17.546	0.000	0.000	0.157	1.738	8.958	-6.035
19950421	2.783	18.280	5.324	6.651	0.000	0.000	0.143	0.000	8.267	-0.723
19950422	-1.246	0.000	9.743	0.000	0.000	0.000	0.121	0.000	10.344	8.977
19950423	-28.111	0.000	5.300	11.742	0.000	0.000	0.130	0.000	10.339	-6.160
19950424	4.137	16.915	9.587	1.808	0.000	0.000	0.124	0.000	10.088	-1.006
19950425	20.531	15.736	7.536	6.479	0.000	0.000	0.156	13.926	3.078	0.271
19950426	16.598	0.000	8.026	15.183	0.000	0.000	0.186	4.878	3.284	-3.196
19950427	0.913	0.656	8.938	0.000	0.000	0.000	0.167	1.176	7.772	6.686
19950428	64.227	74.159	8.953	22.345	0.000	0.000	0.294	9.644	1.325	3.801
19950429	12.776	67.154	7.752	22.594	0.000	0.000	0.269	0.813	3.303	-29.562
19950430	-21.511	17.769	8.410	27.461	0.000	0.000	0.257	3.297	4.827	-10.546
19950501	-31.737	0.157	6.073	23.277	0.000	0.000	0.296	0.285	7.055	-2.142
19950502	-17.310	0.000	6.411	19.350	0.000	0.000	0.326	11.125	9.542	0.131
19950503	-27.377	0.000	9.276	19.085	0.000	0.000	0.354	0.193	8.650	-0.189
19950504	-1.205	11.177	4.549	13.230	0.000	0.000	0.348	1.426	5.131	4.205
19950505	42.180	52.876	6.942	15.002	0.000	0.000	0.357	14.899	6.973	-3.978
19950506	25.530	53.077	7.113	16.984	0.000	0.000	0.347	0.212	7.092	-4.031
19950507	27.267	53.141	6.342	20.583	0.000	0.000	0.311	0.254	9.265	3.409
19950508	7.649	53.131	9.266	28.929	0.000	0.000	0.295	0.000	10.063	-6.784
19950509	-20.166	27.958	5.324	27.958	0.000	0.000	0.296	0.143	8.166	-12.439
19950510	-37.826	0.000	9.504	30.385	0.000	0.000	0.273	0.000	7.489	-0.224
19950511	-32.643	0.000	5.704	22.479	0.000	0.000	0.255	1.619	8.170	-3.867
19950512	-32.486	0.000	5.789	20.903	0.000	0.000	0.231	0.047	8.024	-3.838
19950513	-31.069	0.000	8.557	17.304	0.000	0.000	0.210	0.000	8.657	-5.317
19950514	-34.920	0.000	4.556	16.658	0.000	0.000	0.187	0.056	8.401	-10.105
19950515	-23.712	0.000	4.683	10.867	0.000	0.000	0.163	0.000	9.181	-3.828
19950516	-24.253	0.000	4.691	9.526	0.000	0.000	0.139	0.055	8.968	5.954
19950517	-30.606	0.000	3.673	9.222	0.000	0.000	0.127	0.000	8.896	-12.616
19950518	-12.821	0.000	4.010	1.116	0.000	0.000	0.111	0.000	9.074	-2.741
19950519	-17.066	0.000	3.528	4.578	0.000	0.000	0.084	0.000	8.427	-4.145
19950520	27.078	2.043	5.067	7.101	0.000	0.000	0.131	32.709	6.256	5.551
19950521	88.482	72.415	5.437	5.021	0.000	0.000	0.165	0.000	4.652	25.576
19950522	-27.901	29.967	8.026	10.544	0.000	0.000	0.170	0.000	8.172	-39.322
19950523	0.882	7.172	5.143	8.319	0.000	0.000	0.158	0.613	7.596	8.855
19950524	-15.567	16.575	4.612	8.522	0.000	0.000	0.166	0.787	7.598	-16.973
19950525	-18.961	0.000	9.119	11.960	0.000	0.000	0.177	0.450	6.552	-1.076
19950526	-17.939	0.000	5.660	5.777	0.000	0.000	0.176	0.000	8.839	-3.500
19950527	-8.256	0.000	7.081	5.398	0.000	0.000	0.171	0.000	8.761	5.732
19950528	-20.469	0.000	6.518	4.722	0.000	0.000	0.161	0.108	5.796	-10.221
19950529	-13.234	0.000	6.117	4.042	0.000	0.000	0.145	0.000	8.023	-1.313
19950530	-6.081	0.000	7.781	0.000	0.000	0.000	0.123	0.000	7.428	1.223
19950531	-18.673	0.000	3.935	0.000	0.000	0.000	0.096	0.000	8.711	-10.058
19950601	-16.302	0.000	4.008	0.000	0.000	0.000	0.072	0.000	8.876	-7.498
19950602	9.668	0.000	4.121	0.000	0.000	0.009	0.062	13.985	4.199	-0.180
19950603	11.983	0.000	6.379	0.000	0.000	0.000	0.074	12.502	5.190	4.597
19950604	6.016	0.000	7.673	4.740	0.000	0.000	0.103	21.053	2.949	-7.451
19950605	2.701	0.000	7.081	0.000	0.000	0.426	0.152	3.303	2.043	1.289
19950606	21.071	0.000	12.134	3.377	0.000	0.705	0.197	21.344	3.545	6.451
19950607	52.626	21.444	10.013	1.603	0.000	0.000	0.209	0.097	6.588	39.066
19950608	30.408	53.258	9.888	5.951	0.000	0.000	0.230	0.000	10.375	-6.755
19950609	-14.910	13.580	12.912	3.166	0.000	2.961	0.254	0.473	9.809	-16.242
19950610	24.049	0.000	5.660	7.578	0.000	0.000	0.238	0.049	8.645	-8.113
19950611	45.885	0.000	11.077	13.512	0.000	0.000	0.222	49.055	6.563	16.683
19950612	-20.257	0.000	9.834	11.160	0.717	0.000	0.236	0.560	9.760	-0.133
19950613	8.166	0.000	12.239	14.077	1.794	0.000	0.297	21.339	3.544	4.151
19950614	-22.595	0.000	8.094	11.928	0.000	0.000	0.371	0.000	11.160	0.123
19950615	-6.034	0.147	9.562	7.333	0.000	0.000	0.362	0.000	8.704	9.494
19950616	-26.513	0.000	7.563	8.630	0.000	0.000	0.336	0.000	10.072	-8.147
19950617	4.966	0.000	7.656	7.360	0.000	0.000	0.324	3.648	9.017	7.439
19950618	10.460	0.000	7.994	4.882	0.000	0.000	0.265	23.138	2.494	-5.568

19950619	6.609	0.000	10.776	9.435	0.000	0.000	0.284	0.159	6.590	8.972
19950620	47.637	22.430	7.536	5.545	0.000	0.000	0.379	12.226	0.492	18.639
19950621	83.826	80.477	8.787	10.585	0.000	0.000	0.537	16.957	3.807	0.247
19950622	133.424	103.056	11.958	12.398	0.000	0.000	0.583	38.031	2.747	6.899
19950623	17.250	65.803	9.898	27.263	0.000	0.000	0.725	4.941	4.578	-22.379
19950624	68.586	57.638	9.665	41.376	0.000	0.000	0.713	34.014	5.689	23.286
19950625	75.818	112.873	13.548	47.266	0.000	0.000	0.722	4.911	5.464	10.041
19950626	-0.276	86.528	11.532	60.381	0.000	0.000	0.828	0.103	6.156	-21.197
19950627	-29.744	49.742	9.063	67.479	0.000	0.000	0.864	0.000	9.030	-3.842
19950628	-36.558	32.453	6.083	62.108	0.000	0.000	0.626	3.879	10.538	-0.870
19950629	-22.564	29.976	8.748	52.169	0.000	0.000	0.393	0.479	8.901	7.659
19950630	-21.324	33.539	11.537	45.125	0.000	0.000	0.283	10.999	9.313	-11.707
19950701	24.446	57.763	8.221	41.540	0.000	0.000	0.256	0.000	5.905	13.873
19950702	9.002	63.753	12.195	40.053	0.000	0.000	0.218	1.903	8.105	-8.716
19950703	-8.864	41.990	9.482	42.274	0.000	0.000	0.216	0.076	9.966	1.094
19950704	-25.391	35.071	8.975	40.806	0.000	0.000	0.209	0.047	7.413	-12.499
19950705	-48.176	0.093	10.375	39.730	0.000	0.000	0.210	0.000	8.940	0.190
19950706	-57.720	0.000	5.290	35.756	0.000	0.000	0.228	0.000	9.546	-12.646
19950707	-31.869	0.000	8.466	26.835	0.000	0.000	0.208	0.000	6.688	1.445
19950708	-44.518	0.000	6.509	25.330	0.000	0.000	0.191	0.000	9.786	-9.594
19950709	-24.286	0.000	5.351	17.400	0.000	0.000	0.178	0.000	6.776	-0.288
19950710	9.127	16.871	9.425	19.526	0.000	0.000	0.220	1.963	5.536	15.135
19950711	-24.552	7.908	3.905	15.332	0.000	0.000	0.275	9.217	7.483	-19.138
19950712	-0.496	3.881	7.624	17.390	0.000	0.000	0.299	22.006	3.750	-5.541
19950713	93.834	73.188	9.898	17.133	0.000	0.000	0.359	0.671	6.412	43.160
19950714	-15.299	53.982	7.262	16.878	0.000	0.000	0.532	0.000	6.798	-46.138
19950715	-24.113	0.000	10.889	20.402	0.000	0.000	0.539	0.000	7.505	3.255
19950716	-17.897	0.609	3.741	17.121	0.000	0.000	0.344	2.339	6.089	2.020
19950717	50.790	14.593	8.706	23.568	0.000	0.000	0.266	44.766	3.424	18.157
19950718	-4.425	45.443	7.943	24.657	0.000	0.000	0.745	2.013	2.212	-25.757
19950719	29.212	34.831	6.604	23.752	0.000	0.000	1.001	5.098	6.606	18.640
19950720	39.825	67.907	7.908	21.701	0.000	0.000	0.949	2.479	4.869	4.940
19950721	31.151	56.512	14.248	27.733	5.148	0.000	0.985	14.726	8.834	-4.506
19950722	82.422	92.449	12.770	32.807	0.000	0.000	1.038	15.430	7.038	13.351
19950723	58.935	116.680	8.667	40.745	0.000	0.000	0.984	0.481	4.990	-13.474
19950724	16.941	80.553	11.238	57.516	0.000	0.000	0.992	0.000	5.721	-1.368
19950725	3.815	76.885	12.205	65.456	0.000	0.000	0.935	0.000	4.135	-4.414
19950726	115.353	102.513	10.602	76.966	0.000	0.000	0.922	83.429	4.172	9.626
19950727	-40.581	65.478	16.245	97.321	0.000	0.000	1.350	1.942	6.541	-5.488
19950728	-39.936	50.014	6.492	87.025	0.000	0.000	1.815	7.284	4.751	-7.273
19950729	-29.420	53.065	7.801	77.196	0.000	0.000	1.790	10.106	6.110	-11.074
19950730	10.782	71.602	9.455	66.557	0.000	0.000	1.631	4.083	6.042	6.064
19950731	-48.246	46.972	5.050	66.168	0.000	0.000	1.637	0.393	6.064	-25.017
19950801	-52.087	0.000	5.153	57.357	0.000	0.000	1.936	2.682	5.011	5.662
19950802	-44.555	13.590	3.472	50.246	0.000	0.000	1.971	6.825	7.900	-8.794
19950803	41.364	49.466	10.025	45.717	0.000	0.000	1.912	55.758	4.870	15.185
19950804	-15.906	12.249	8.584	49.585	0.000	0.000	2.652	16.592	3.719	5.905
19950805	-28.640	26.531	8.841	45.876	0.000	0.000	2.865	0.000	6.841	-5.319
19950806	-10.875	32.071	8.716	39.358	0.000	0.000	2.578	0.000	8.026	1.859
19950807	68.285	104.608	7.255	37.704	0.000	0.000	1.968	0.000	9.071	8.484
19950808	60.663	127.170	9.110	41.631	0.000	0.000	1.526	0.108	8.553	-17.957
19950809	137.211	122.303	10.891	60.276	0.000	0.000	1.213	84.322	6.635	-3.716
19950810	14.467	107.148	11.696	94.647	0.000	0.000	1.111	0.385	6.943	7.415
19950811	60.549	126.879	11.549	97.517	0.000	0.000	1.004	29.826	9.438	9.795
19950812	-34.551	72.390	16.120	101.865	0.000	0.000	0.982	0.012	8.751	2.682
19950813	-32.593	85.238	15.053	100.773	0.000	0.000	0.949	0.000	8.622	9.385
19950814	-63.056	39.727	7.732	81.316	0.000	0.000	0.886	0.000	8.345	-14.009
19950815	-105.200	0.000	8.779	80.651	0.000	0.000	0.835	0.000	8.844	-16.540
19950816	-37.328	27.625	9.535	53.559	0.000	0.000	0.706	1.318	9.163	-4.254
19950817	2.873	58.972	8.031	48.700	0.000	0.000	0.668	2.854	7.601	-3.320
19950818	32.811	58.876	9.401	49.918	0.000	0.000	0.686	37.082	8.082	-5.833
19950819	56.735	94.617	11.884	54.107	0.000	0.000	0.619	8.056	5.027	12.577
19950820	37.020	101.040	8.288	61.866	0.000	0.000	0.603	16.971	7.516	-12.212
19950821	3.372	84.460	11.209	74.125	0.000	0.000	0.694	3.967	6.525	-5.100
19950822	-32.015	53.439	5.973	76.244	0.000	0.000	0.774	0.890	6.210	-4.664
19950823	31.031	30.904	8.554	70.281	0.000	0.000	1.064	49.485	1.486	21.346
19950824	17.874	50.459	8.982	74.078	0.000	0.000	2.060	36.516	1.037	3.954
19950825	47.381	76.192	7.984	73.464	0.000	0.000	2.829	28.165	2.502	16.161
19950826	8.639	74.467	9.469	80.384	0.000	0.000	3.325	0.000	6.453	0.405
19950827	-13.874	67.773	5.009	79.065	0.000	0.000	3.479	13.832	5.340	-14.554
19950828	-89.676	23.345	7.779	75.206	0.000	0.000	3.753	17.604	7.116	-52.056
19950829	-51.523	29.416	8.628	72.021	0.000	0.000	3.995	6.806	5.660	-14.060
19950830	12.385	50.398	8.970	57.222	0.000	0.000	4.086	31.425	7.161	-9.140
19950831	-5.265	50.263	12.012	55.164	0.000	0.000	4.023	0.186	3.915	-0.658
19950901	10.139	66.307	6.756	56.378	0.000	0.000	3.715	5.138	3.972	-4.671
19950902	38.002	85.016	10.416	59.436	0.000	0.000	3.675	16.981	2.680	-5.554
19950903	-8.585	64.670	11.397	68.649	0.000	0.000	3.673	0.039	8.523	0.205
19950904	-8.522	62.101	8.845	64.090	0.000	0.000	3.465	0.000	8.464	-1.534
19950905	-34.732	43.649	6.993	63.178	0.000	0.000	3.300	6.118	7.089	-17.532
19950906	20.956	73.865	11.030	58.189	0.000	0.000	3.278	0.392	4.598	6.206
19950907	15.501	77.824	7.930	68.871	0.000	0.000	3.172	40.316	6.463	-30.477
19950908	-44.492	40.928	9.420	77.643	0.000	0.000	3.255	0.118	4.367	-6.782
19950909	-40.946	14.307	5.114	62.326	0.000	0.000	3.330	0.000	5.749	9.492
19950910	20.539	59.911	12.538	59.483	0.000	0.000	3.116	37.021	1.744	-18.282
19950911	-17.432	48.976	9.942	61.203	0.000	0.000	3.419	3.569	5.837	-6.356
19950912	-51.718	2.601	4.776	57.021	0.000	0.000	3.955	2.784	4.020	-0.017
19950913	-62.254	0.157	6.800	46.444	0.000	0.000	4.154	0.000	4.895	-15.226
19950914	14.432	41.726	7.409	38.146	0.000	0.000	4.086	0.000	7.808	14.575
19950915	27.680	90.154	6.788	38.895	0.000	0.000	3.670	1.490	4.865	-23.875
19950916	5.648	68.813	5.271	46.135	0.000	0.000	3.377	0.000	7.637	-12.769
19950917	17.275	63.865	8.821	50.180	0.000	0.000	3.114	0.667	8.283	8.091
19950918	20.776	93.235	6.222	54.496	0.000	0.000	2.716	0.000	7.294	-13.385
19950919	28.829	102.107	10.480	61.653	0.000	0.000	2.384	0.000	7.139	-6.870
19950920	12.547	101.610	5.733	74.140	0.000	0.000	2.221	0.000	8.341	-8.803
19950921	16.746	74.810	9.959	75.740	0.000	0.000	2.160	0.000	8.595	24.111
19950922	29.213	76.843	6.291	48.834	0.000	0.000	1.960	1.177	5.002	3.069
19950923	11.111	71.849	8.420	58.389	0.000	0.000	1.827	0.196	7.721	3.350
19950924	-13.222	69.703	7.938	63.043	0.000	0.000	1.785	0.000	7.866	-13.801
19950925	8.385	68.260	8.128	60.413	0.000	0.000	1.782	5.020	5.766	-0.499
19950926	31.083	96.379	8.454	60.856	0.000	0.000	1.675	0.000	7.636	1.521
19950927	21.171	103.279	7.235	67.029	0.000	0.000	1.584	0.157	6.547	-10.273
19950928	14.662	103.786	8.035	75.402	0.000	0.000	1.554	0.275	3.368	-12.182
19950929	4.921	88.945	8.703	82.106	0.000	0.000	1.675	3.020	5.024	-1.589
19950930	14.318	103.137	7.872	81.918	0.000	0.000	1.706	0.000	4.687	-3.925

19951001	16.429	104.118	9.460	82.028	0.000	0.000	1.713	1.177	5.073	-3.478
19951002	0.826	100.145	8.124	91.101	0.000	0.000	1.854	3.883	4.306	-9.648
19951003	-12.413	87.348	11.189	89.193	0.000	0.000	1.973	2.079	5.012	-9.608
19951004	-26.267	69.033	7.304	82.106	0.000	0.000	2.096	1.177	4.539	-11.927
19951005	4.406	74.132	8.393	83.137	0.000	0.000	2.179	13.530	4.531	2.232
19951006	-18.427	69.740	9.146	79.995	0.000	0.000	2.369	14.864	3.342	-22.062
19951007	-18.977	37.931	8.221	76.038	0.000	0.000	2.594	12.785	5.677	9.428
19951008	-9.806	75.341	9.039	68.580	0.000	0.000	2.853	3.608	4.350	-18.679
19951009	-33.520	31.897	9.824	63.295	0.000	0.000	3.219	2.392	4.279	-3.454
19951010	-20.364	42.387	7.644	58.715	0.000	0.000	3.462	0.235	4.915	-2.818
19951011	16.008	68.690	7.138	53.104	0.000	0.000	3.423	0.078	6.879	3.799
19951012	18.242	88.424	8.606	52.683	0.000	0.000	3.158	0.000	6.156	-14.502
19951013	33.939	87.756	7.686	56.786	0.000	0.000	3.054	8.549	6.827	-1.807
19951014	61.401	92.082	8.953	74.392	0.000	0.000	3.217	54.120	3.452	10.176
19951015	56.446	77.440	12.092	88.752	0.000	0.000	3.602	64.905	2.355	1.605
19951016	8.606	50.217	12.648	95.016	0.000	0.000	4.318	37.923	0.755	11.918
19951017	36.410	77.029	12.457	93.871	0.000	0.000	5.317	50.316	0.857	-1.524
19951018	8.001	102.347	12.227	93.144	0.000	0.000	5.812	3.451	4.906	-5.560
19951019	3.983	92.721	11.084	92.660	0.000	0.000	6.509	8.785	4.294	-7.078
19951020	29.803	68.610	7.140	92.258	0.000	0.000	7.110	0.235	5.491	-8.009
19951021	-45.143	50.417	8.302	90.981	0.000	0.000	7.553	0.000	3.841	-8.292
19951022	-57.540	50.591	7.492	89.043	0.000	0.000	7.732	0.000	5.973	-20.846
19951023	-51.316	50.564	4.554	80.807	0.000	0.000	7.757	0.000	5.145	-23.685
19951024	-20.584	50.498	9.384	66.354	0.000	0.000	7.457	0.588	6.251	-6.523
19951025	-22.670	47.922	6.044	59.625	0.000	0.000	6.853	0.510	4.308	-14.022
19951026	-14.375	51.589	8.415	59.011	0.000	0.000	6.495	0.000	4.361	-9.088
19951027	-15.953	52.575	5.513	52.460	0.000	0.000	6.015	0.039	7.522	-14.600
19951028	0.925	52.115	8.302	49.006	0.000	0.000	5.604	0.118	6.623	-1.283
19951029	4.657	60.229	6.651	48.656	0.000	0.000	5.069	0.000	7.843	-4.142
19951030	-10.610	52.886	8.226	49.881	0.000	0.000	4.636	0.000	7.179	-11.072
19951031	41.812	68.480	6.323	51.922	0.000	0.000	4.150	21.217	6.404	6.292
19951101	34.832	99.707	9.873	55.470	0.000	0.000	3.822	0.628	4.927	-8.928
19951102	9.179	87.463	4.793	63.229	0.000	0.000	3.537	0.000	4.248	-14.343
19951103	14.744	87.494	9.805	70.088	0.000	0.000	3.245	3.490	5.232	-4.166
19951104	8.401	86.937	5.182	71.531	0.000	0.000	2.847	0.078	4.987	-4.942
19951105	19.130	103.675	8.241	74.524	0.000	0.000	2.489	0.000	5.788	-6.723
19951106	-64.275	39.208	7.008	77.817	0.000	0.000	2.281	0.000	6.272	-21.676
19951107	-79.570	0.000	5.187	67.973	0.000	0.000	2.248	0.000	4.711	-9.134
19951108	-21.873	0.000	9.301	44.016	0.000	0.000	2.384	25.021	1.482	-3.780
19951109	-2.666	32.169	5.023	42.282	0.000	0.000	2.531	0.000	3.546	8.463
19951110	27.179	81.434	7.695	43.414	0.000	0.000	2.469	0.000	5.178	-8.131
19951111	51.587	102.217	5.943	44.259	0.000	0.000	2.289	1.020	4.127	-5.554
19951112	15.652	88.610	8.415	57.853	0.000	0.000	2.155	0.000	3.590	-13.669
19951113	25.532	92.317	6.484	60.320	0.000	0.000	2.069	0.000	3.979	-4.555
19951114	0.262	80.797	7.828	65.803	0.000	0.000	2.099	0.000	8.062	-8.769
19951115	4.086	86.278	7.947	71.424	0.000	0.000	2.093	0.000	6.534	-6.327
19951116	3.465	86.124	7.957	70.457	0.000	0.000	2.086	0.000	3.891	-10.398
19951117	8.420	89.060	7.556	72.826	0.000	0.000	2.090	0.000	3.907	-5.998
19951118	14.869	92.736	7.664	72.331	0.000	0.000	2.094	0.000	3.956	3.674
19951119	-2.880	88.439	8.009	79.579	0.000	0.000	2.117	0.000	4.677	-9.180
19951120	-3.114	90.051	7.049	77.137	0.000	0.000	2.107	0.118	4.117	14.136
19951121	-4.370	78.103	8.542	76.971	0.000	0.000	2.113	0.392	1.779	-6.229
19951122	7.012	89.839	6.702	76.339	0.000	0.000	2.120	0.000	4.725	-3.883
19951123	16.923	102.912	8.723	75.598	0.000	0.000	1.989	0.000	3.308	-9.072
19951124	-11.322	81.323	6.200	80.142	0.000	0.000	2.047	0.000	2.576	-11.975
19951125	-10.186	85.789	9.100	80.587	0.000	0.000	2.039	0.000	4.902	-12.525
19951126	0.594	86.026	6.139	76.875	0.000	0.000	2.068	0.000	2.722	-7.903
19951127	4.974	87.666	9.969	75.975	0.000	0.000	2.088	0.000	3.829	-4.977
19951128	-8.413	85.155	5.547	76.824	0.000	0.000	2.079	0.000	3.274	-15.550
19951129	7.981	78.003	10.766	75.759	0.000	0.000	2.122	1.608	1.253	3.261
19951130	7.995	93.903	5.219	75.940	0.000	0.000	2.114	0.000	3.151	-8.930
19951201	-6.679	79.175	10.575	80.303	0.000	0.000	2.162	0.000	5.243	-2.470
19951202	15.035	102.467	6.083	76.046	0.000	0.000	2.062	0.000	3.386	-10.062
19951203	-7.691	79.515	10.433	80.357	0.000	0.000	2.110	0.237	4.960	-4.236
19951204	-5.758	80.873	7.003	80.709	0.000	0.000	2.145	0.441	3.085	-5.422
19951205	7.301	89.249	10.289	78.422	0.000	0.000	2.129	0.135	3.626	-2.164
19951206	9.966	102.905	7.223	80.766	0.000	0.000	1.927	0.000	3.434	-10.667
19951207	1.625	85.559	9.474	80.893	0.000	0.000	1.965	0.000	4.736	-0.270
19951208	-12.046	78.248	8.579	81.189	0.000	0.000	1.937	0.360	4.991	-6.411
19951209	13.135	101.960	7.644	80.998	0.000	0.000	1.883	0.000	3.434	-6.276
19951210	-1.460	80.425	11.282	81.632	0.000	0.000	1.876	4.105	1.413	-4.821
19951211	-12.171	82.596	7.321	82.312	0.000	0.000	1.853	0.000	4.705	-9.603
19951212	11.869	96.088	11.084	81.864	0.000	0.000	1.841	0.000	3.232	-0.965
19951213	13.944	103.492	8.498	81.634	0.000	0.000	1.819	3.041	3.991	-8.783
19951214	12.765	90.568	10.044	82.089	0.000	0.000	1.936	1.996	3.081	3.435
19951215	3.434	89.816	10.336	82.647	0.000	0.000	1.951	0.056	4.331	-1.412
19951216	15.194	102.922	8.143	82.926	0.000	0.000	1.872	0.000	4.387	-2.286
19951217	12.070	99.122	11.375	83.227	0.000	0.000	1.881	0.000	3.841	-1.866
19951218	14.151	101.344	7.862	82.422	0.000	0.000	1.796	0.000	2.676	3.892
19951219	18.743	102.914	10.030	83.890	0.000	0.000	1.804	5.218	2.764	-4.539
19951220	14.150	103.115	10.321	84.436	0.000	0.000	1.687	0.244	3.529	-2.932
19951221	-9.316	88.887	10.996	85.229	0.000	0.000	1.606	0.000	4.201	10.379
19951222	-2.080	78.549	10.896	85.182	0.000	0.000	1.613	4.514	2.434	0.861
19951223	2.418	78.791	8.995	85.454	0.000	0.000	1.610	15.192	1.932	-5.789
19951224	8.329	79.043	10.830	85.327	0.000	0.000	1.608	0.000	4.454	0.800
19951225	-4.874	82.004	12.344	85.175	0.000	0.000	1.567	0.000	4.536	1.266
19951226	5.974	102.215	8.716	84.766	0.000	0.000	1.636	0.000	3.182	-9.928
19951227	0.464	91.287	10.282	85.023	0.000	0.000	1.572	0.000	1.410	-5.962
19951228	-18.545	71.869	11.664	85.182	0.000	0.000	1.572	0.000	1.351	5.453
19951229	-27.874	58.042	8.151	84.761	0.000	0.000	1.695	0.000	2.706	-0.143
19951230	16.751	103.392	11.180	84.115	0.000	0.000	1.680	0.000	3.536	0.670
19951231	19.045	104.326	11.476	84.123	0.000	0.000	1.655	0.000	1.497	-1.317
19960101	26.475	103.022	9.264	84.622	0.000	0.000	1.592	11.312	2.574	-2.256
19960102	-31.702	60.202	11.175	84.947	0.000	0.000	1.662	0.197	3.891	-4.924
19960103	-48.942	51.883	11.943	84.693	0.000	0.000	1.796	8.300	1.373	-24.854
19960104	-20.360	68.561	7.348	83.579	0.000	0.000	1.938	0.000	3.326	-3.952
19960105	4.707	99.464	11.464	82.574	0.000	0.000	1.921	0.000	3.694	-10.411
19960106	10.742	102.518	9.450	82.552	0.000	0.000	1.819	0.000	3.490	-7.553
19960107	41.336	103.590	9.699	82.542	0.000	0.000	1.794	17.709	2.016	2.800
19960108	13.052	78.943	11.738	84.132	0.000	0.000	1.789	0.000	4.013	-5.638
19960109	-7.808	80.790	8.500	84.069	0.000	0.000	1.806	0.000	2.826	-3.509
19960110	1.580	92.006	10.054	83.521	0.000	0.000	1.833	0.044	3.869	-4.913
19960111	14.514	95.694	11.642	77.284	0.000	0.000	1.759	0.000	2.868	-2.787
19960112	0.270	78.302	9.531	70.650	0.000	0.000	1.833	1.555	1.592	9.717

19960113	-18.945	62.446	6.908	84.671	0.000	0.000	1.749	0.000	3.333	4.864
19960114	14.620	105.100	11.339	84.005	0.000	0.000	1.734	0.000	2.454	-5.755
19960115	14.099	105.070	9.156	84.179	0.000	0.000	1.675	0.000	2.607	-5.860
19960116	-20.738	68.827	9.452	77.144	0.000	0.000	1.741	0.000	3.164	10.999
19960117	-14.100	49.911	11.728	84.389	0.000	0.000	1.870	2.363	2.811	18.956
19960118	-34.875	73.626	7.837	83.305	0.000	0.000	1.931	0.000	3.347	-23.779
19960119	-19.584	69.625	10.455	89.210	0.000	0.000	2.009	0.112	3.213	1.094
19960120	7.346	104.121	9.100	81.106	0.000	0.000	1.925	0.248	2.136	-15.706
19960121	12.607	104.811	8.611	86.163	0.000	0.000	1.856	0.063	2.354	-5.605
19960122	-6.119	98.782	9.849	92.638	0.000	0.000	1.916	0.000	2.241	-11.938
19960123	-0.323	99.398	0.115	93.230	0.000	0.000	1.944	0.000	3.571	4.864
19960124	-4.249	89.415	7.607	87.837	0.000	0.000	1.966	0.000	3.321	-4.471
19960125	8.914	102.618	9.066	86.773	0.000	0.000	1.838	0.000	3.306	5.465
19960126	30.092	104.072	11.994	93.404	0.000	0.000	1.827	22.326	0.926	-3.803
19960127	-5.471	99.787	7.045	97.451	0.000	0.000	1.938	0.000	4.516	-5.230
19960128	4.223	101.887	10.167	97.766	0.000	0.000	1.839	0.000	3.761	-6.421
19960129	-10.766	101.023	11.128	97.314	0.000	0.000	1.823	0.000	3.266	13.032
19960130	4.196	103.644	6.947	93.196	0.000	0.000	1.822	0.650	4.914	-3.810
19960131	-4.217	96.692	10.857	94.052	0.000	0.000	1.948	0.000	4.022	-4.783
19960201	-25.115	83.359	6.117	92.361	0.000	0.000	1.968	0.000	4.140	-13.942
19960202	2.630	82.865	10.818	83.396	0.000	0.000	2.014	0.000	3.682	-0.431
19960203	10.027	100.583	17.407	86.358	0.000	0.000	1.908	4.113	3.656	-4.563
19960204	-6.772	102.428	6.259	88.383	0.000	0.000	1.772	0.000	2.642	-19.947
19960205	-47.523	61.739	9.144	85.750	0.000	0.000	1.638	0.000	3.930	-21.220
19960206	-17.985	69.456	9.195	79.212	0.000	0.000	1.638	0.000	3.685	-6.183
19960207	2.084	90.455	9.362	74.078	0.000	0.000	1.642	0.000	4.520	-11.415
19960208	14.088	102.518	12.207	82.361	0.000	0.000	1.661	0.000	3.138	-4.592
19960209	-0.022	95.217	8.006	87.326	0.000	0.000	1.648	0.000	3.925	-5.635
19960210	-1.036	100.964	11.324	93.638	0.000	0.000	1.635	0.000	4.661	-5.335
19960211	-10.943	98.517	9.242	98.532	0.000	0.000	1.633	0.000	3.628	-8.933
19960212	-16.073	94.972	9.367	98.407	0.000	0.000	1.589	0.000	5.383	-8.844
19960213	-27.191	82.581	11.437	98.023	0.000	0.000	1.555	0.000	5.225	-8.079
19960214	1.065	95.870	11.894	87.311	0.000	0.000	1.525	0.000	4.747	-4.272
19960215	-4.244	94.466	9.337	92.065	0.000	0.000	1.516	0.000	4.314	-3.847
19960216	-7.999	60.589	11.637	83.349	0.000	0.000	1.583	8.319	3.641	8.500
19960217	-18.574	77.780	11.821	83.107	0.000	0.000	1.475	0.000	5.199	-9.523
19960218	-21.239	77.504	9.572	82.300	0.000	0.000	1.506	0.000	4.682	-13.267
19960219	-2.298	77.905	9.866	77.039	0.000	0.000	1.535	0.000	3.649	-1.049
19960220	13.801	78.473	11.329	66.664	0.000	0.000	1.488	0.232	2.352	2.625
19960221	5.179	78.343	7.935	67.271	0.000	0.000	1.427	0.000	5.686	-1.634
19960222	-47.510	30.732	9.132	72.483	0.000	0.000	1.401	0.000	3.210	-3.951
19960223	-58.571	0.000	8.432	60.356	0.000	0.000	1.405	0.000	5.016	5.396
19960224	-8.479	51.098	6.888	39.270	0.000	0.000	1.352	0.000	5.323	-16.337
19960225	11.576	129.969	38.785	75.515	0.000	0.000	1.302	0.000	3.709	-40.471
19960226	40.114	122.311	43.072	81.331	0.000	0.000	1.298	0.000	4.762	-77.630
19960227	-34.312	0.000	10.937	33.754	0.000	0.000	1.268	0.000	4.678	2.852
19960228	-27.232	0.000	9.364	33.781	0.000	0.000	1.238	0.000	4.273	9.583
19960229	-21.026	0.000	5.841	33.953	0.000	0.000	1.183	0.000	5.680	17.424
19960301	-22.156	0.000	9.780	33.867	0.000	0.000	1.193	0.000	5.094	15.611
19960302	10.416	8.447	5.777	33.911	0.000	0.000	1.119	13.452	1.130	22.439
19960303	31.981	53.160	10.115	33.933	0.000	0.000	1.088	0.000	3.391	15.057
19960304	-29.975	2.381	6.675	42.313	0.000	0.000	1.127	0.000	6.619	15.449
19960305	-17.767	0.000	6.489	50.978	0.000	0.000	1.119	0.000	6.058	38.149
19960306	-22.141	0.000	9.088	45.763	0.000	0.000	1.069	0.000	4.644	27.198
19960307	-14.107	0.000	5.628	6.685	0.000	0.000	1.055	0.336	5.801	-3.013
19960308	74.042	42.737	9.337	0.000	0.000	0.000	0.851	0.140	3.707	34.021
19960309	62.349	78.020	4.965	4.130	0.000	0.000	0.668	0.000	4.520	-7.689
19960310	83.642	76.219	8.028	17.128	0.000	0.000	0.646	25.112	3.444	2.236
19960311	96.359	78.559	9.765	44.540	0.000	0.000	0.774	59.357	0.264	2.475
19960312	23.984	107.258	8.246	73.425	0.000	0.000	1.162	0.044	4.604	-6.451
19960313	-43.443	48.408	4.505	76.533	0.000	0.000	1.330	0.000	5.774	-10.874
19960314	45.608	111.767	7.529	68.010	0.000	0.000	1.135	0.000	4.386	5.102
19960315	9.785	97.783	7.431	68.942	0.000	0.000	0.987	0.000	4.995	-15.048
19960316	-12.621	77.235	5.359	81.270	0.000	0.000	0.976	0.000	5.830	-3.733
19960317	-3.356	76.851	9.156	73.587	0.000	0.000	0.976	0.000	6.166	1.431
19960318	6.596	77.210	4.879	60.481	0.000	0.000	0.978	0.000	7.218	-3.893
19960319	3.533	77.455	12.645	68.118	0.000	0.000	0.880	7.191	4.850	-9.026
19960320	-4.240	77.479	4.568	67.403	0.000	0.000	0.874	0.000	6.425	8.765
19960321	-8.267	77.019	6.147	67.411	0.000	0.000	0.820	0.000	5.516	13.180
19960322	-48.504	40.583	6.844	67.362	0.000	0.000	0.817	0.000	5.978	-16.565
19960323	-74.681	0.000	4.522	60.665	0.000	0.000	0.881	0.000	6.488	-8.409
19960324	-27.414	13.125	6.496	39.827	0.000	0.000	0.934	0.000	7.330	5.685
19960325	-2.518	39.098	8.885	23.842	0.000	0.000	0.909	0.000	5.843	-12.840
19960326	-26.235	0.000	4.850	17.006	0.000	0.000	0.887	0.044	5.146	-5.014
19960327	-30.229	0.000	14.989	16.964	0.000	0.000	0.907	0.000	6.483	-7.690
19960328	37.487	17.490	8.177	16.910	0.000	0.000	0.901	29.461	6.400	12.945
19960329	51.706	52.624	7.208	17.006	0.000	0.000	0.810	17.621	6.456	4.112
19960330	141.017	52.284	9.626	30.206	0.000	0.000	0.773	109.529	5.039	13.676
19960331	21.918	97.106	11.720	74.406	0.000	0.000	1.020	3.694	7.335	1.839
19960401	-84.837	0.000	10.128	75.500	0.000	0.000	1.683	0.044	8.334	-2.730
19960402	-75.078	0.000	5.094	56.625	0.000	0.000	1.658	0.000	8.299	-11.813
19960403	15.930	50.574	6.061	38.142	0.000	0.000	1.296	0.000	7.686	9.888
19960404	25.531	77.563	0.702	33.358	0.000	0.000	1.042	0.188	6.552	-13.353
19960405	-14.860	36.275	5.963	33.700	0.000	0.000	0.866	0.000	4.837	-13.463
19960406	31.767	56.207	5.672	33.928	0.000	0.000	0.814	1.592	6.927	14.010
19960407	33.003	81.035	2.312	37.180	0.000	0.000	0.680	1.408	2.313	-10.627
19960408	6.386	77.183	15.254	82.596	0.000	0.000	0.780	46.826	2.751	33.056
19960409	-37.907	25.861	3.959	63.094	0.000	0.000	0.998	0.733	0.959	-1.446
19960410	-54.940	23.304	3.702	50.466	0.000	0.000	1.003	0.000	7.785	-20.996
19960411	34.453	11.804	3.798	39.017	0.000	0.000	0.822	0.042	7.803	-0.300
19960412	64.776	97.605	5.510	34.535	0.000	0.000	0.559	0.000	6.850	7.997
19960413	73.876	129.037	3.668	35.496	0.000	0.000	0.315	0.000	6.568	13.412
19960414	61.164	128.834	3.881	53.239	0.000	0.000	0.160	0.000	7.876	6.716
19960415	43.658	128.638	5.846	70.839	0.000	0.000	0.099	0.000	6.995	-7.246
19960416	18.880	128.902	5.958	84.920	0.000	0.000	0.078	0.000	7.715	-17.465
19960417	20.591	128.115	4.160	88.652	0.000	0.000	0.149	0.000	9.224	-9.797
19960418	21.422	128.151	5.907	94.297	0.000	0.000	0.185	0.000	5.995	6.623
19960419	1.192	127.285	6.411	98.980	0.000	0.000	0.204	0.000	6.567	20.751
19960420	3.379	127.941	4.245	101.319	0.000	0.000	0.212	0.000	6.308	-17.147
19960421	11.404	127.792	7.624	101.818	0.000	0.000	0.217	0.000	4.787	-9.999
19960422	7.035	127.483	5.934	101.684	0.000	0.000	0.232	0.000	6.718	-12.280
19960423	6.714	127.403	7.473	104.507	0.000	0.000	0.224	0.000	8.101	-8.304
19960424	-52.151	75.661	6.641	104.617	0.000	0.000	0.201	0.000	9.089	14.308
19960425	14.499	84.553	5.684	88.701	0.000	0.000	0.221	0.000	8.102	-2.471

19960426	-63.099	31.596	7.556	82.376	0.000	0.000	0.240	0.000	7.425	-5.134
19960427	11.846	90.822	4.316	67.868	0.000	0.000	0.217	0.000	7.916	-3.409
19960428	15.112	104.427	3.861	64.394	0.000	0.000	0.220	0.116	8.341	-16.917
19960429	2.364	94.629	6.859	69.818	0.000	0.000	0.224	0.044	8.176	-14.539
19960430	44.433	86.961	7.047	73.498	0.000	0.000	0.228	49.164	3.912	-14.510
19960501	-72.841	22.433	7.343	83.085	0.000	0.000	0.212	0.000	5.760	-6.641
19960502	59.284	88.992	6.900	75.524	0.000	0.000	0.275	32.432	4.314	17.423
19960503	69.593	134.310	10.482	80.406	0.000	0.000	0.344	24.071	3.793	-4.933
19960504	-29.057	88.852	8.588	92.838	0.000	0.000	0.526	0.088	6.758	-18.927
19960505	-49.635	50.664	8.655	89.508	0.000	0.000	0.523	0.000	7.641	-3.674
19960506	-72.488	25.141	4.656	73.511	0.000	0.000	0.429	0.000	9.875	-14.672
19960507	-74.079	0.110	4.534	59.786	0.000	0.000	0.424	0.088	10.783	-4.131
19960508	-38.951	9.885	6.019	44.589	0.000	0.000	0.417	0.088	9.888	5.135
19960509	-33.771	24.620	5.151	31.589	0.000	0.000	0.394	2.548	7.060	-22.684
19960510	-49.121	0.027	4.338	33.010	0.000	0.000	0.385	0.000	8.624	-7.898
19960511	-33.729	0.000	4.426	21.089	0.000	0.000	0.365	0.044	8.404	-4.645
19960512	18.659	34.131	4.901	17.519	0.000	0.000	0.334	0.000	10.376	12.089
19960513	32.496	53.170	4.546	17.960	0.000	0.000	0.332	14.612	7.428	-10.230
19960514	3.271	41.322	8.405	23.690	0.000	0.000	0.332	2.443	4.523	12.613
19960515	-21.103	23.111	5.660	25.900	0.000	0.000	0.336	0.072	9.345	-9.377
19960516	-33.230	0.000	4.488	24.745	0.000	0.000	0.316	0.000	7.955	-0.846
19960517	-29.651	0.719	5.616	20.571	0.000	0.000	0.314	0.000	7.975	-2.138
19960518	-26.453	0.000	7.177	16.626	0.000	0.000	0.291	0.000	7.828	-2.289
19960519	-28.635	0.000	4.028	13.184	0.000	0.000	0.288	0.000	6.665	9.075
19960520	98.983	41.198	6.447	0.000	0.000	0.000	0.274	22.533	3.334	38.313
19960521	154.567	133.818	10.348	20.495	0.000	0.000	0.323	46.342	3.498	1.923
19960522	38.857	91.855	8.706	39.588	0.000	0.000	0.765	7.433	4.766	-16.843
19960523	-49.337	3.367	6.545	50.567	0.000	0.000	1.183	0.187	6.211	2.704
19960524	8.375	24.072	9.085	49.407	0.000	0.000	1.094	11.865	4.000	24.752
19960525	47.461	53.618	6.863	23.661	0.000	0.000	0.930	34.283	8.433	-9.275
19960526	15.404	43.158	14.571	66.444	0.000	0.000	1.092	37.569	7.236	7.265
19960527	25.710	81.776	7.823	58.110	0.000	0.000	1.260	4.275	6.347	2.856
19960528	62.854	101.640	9.626	64.903	0.000	0.000	1.266	43.633	8.772	-10.010
19960529	12.861	54.594	10.284	77.822	0.000	0.000	1.462	41.096	6.223	-0.246
19960530	-71.337	0.000	12.122	78.010	0.000	0.000	1.874	0.200	4.849	9.449
19960531	-55.845	15.980	7.842	66.315	0.000	0.000	2.009	0.000	7.407	-0.113
19960601	-44.991	27.424	6.352	52.470	0.000	0.000	1.759	3.659	8.665	-16.698
19960602	-8.573	27.366	10.301	48.824	0.000	0.000	1.418	0.000	9.172	20.639
19960603	19.820	79.036	5.461	42.521	0.000	0.000	1.087	0.248	6.048	-11.982
19960604	-13.642	51.210	5.775	44.063	0.000	0.000	0.812	0.000	7.295	-14.306
19960605	-53.953	0.103	3.878	41.048	0.000	0.000	0.571	0.000	10.754	-2.824
19960606	-50.984	0.000	4.424	34.853	0.000	0.000	0.393	0.000	9.606	-6.918
19960607	-32.328	0.000	5.070	27.537	0.000	0.000	0.280	0.580	7.487	1.836
19960608	-9.404	0.000	8.009	23.475	0.000	0.000	0.254	24.073	4.176	-6.079
19960609	63.766	8.677	9.753	31.244	0.000	0.000	0.424	79.320	5.909	12.499
19960610	8.049	15.721	11.674	33.441	0.000	0.000	1.345	11.438	5.100	18.087
19960611	60.077	26.575	10.468	32.966	0.000	0.000	1.841	53.538	5.046	16.136
19960612	1.450	26.570	7.967	38.029	0.000	0.000	2.027	20.276	5.688	-3.707
19960613	-14.829	26.573	8.659	41.286	0.000	0.000	2.233	1.143	6.182	2.690
19960614	-18.472	26.578	7.715	32.746	0.000	0.000	2.252	0.000	7.809	-6.748
19960615	-37.069	9.416	4.395	32.905	0.000	0.000	1.983	0.159	9.050	-6.671
19960616	-38.470	7.480	3.986	32.932	0.000	0.000	1.748	3.499	6.748	-11.516
19960617	42.270	57.437	4.409	24.072	0.000	0.000	1.540	3.694	4.603	8.274
19960618	28.646	28.826	4.223	23.152	0.000	0.000	1.379	0.460	8.270	-27.889
19960619	39.083	41.479	4.059	24.148	0.000	0.000	1.163	3.529	6.632	23.691
19960620	25.148	20.984	10.857	36.094	0.000	0.000	1.055	62.024	4.355	-18.467
19960621	71.824	83.342	7.546	38.034	0.000	0.000	1.133	10.844	5.926	26.466
19960622	-13.779	114.057	10.734	44.376	0.000	0.000	1.364	3.808	6.224	-82.409
19960623	-29.446	6.357	8.062	65.385	0.000	0.000	1.416	0.087	6.523	34.602
19960624	23.321	66.351	7.238	45.514	0.000	0.000	1.291	0.000	8.556	9.748
19960625	25.981	101.740	8.283	42.619	0.000	0.000	1.112	0.088	8.560	-25.779
19960626	-3.063	81.634	5.872	53.907	0.000	0.000	0.781	0.244	7.885	-23.930
19960627	-3.256	20.727	11.476	58.788	0.000	0.000	0.587	30.660	6.796	10.354
19960628	50.906	49.404	8.633	50.936	0.000	0.000	0.797	39.858	5.993	17.775
19960629	31.366	101.901	8.214	59.632	0.000	0.000	0.887	4.613	5.907	-10.496
19960630	4.254	99.323	10.849	74.690	0.000	0.000	0.891	0.794	7.725	-14.338
19960701	-43.712	34.065	7.257	74.744	0.000	0.000	0.977	0.063	8.369	4.297
19960702	15.559	93.680	8.332	64.646	0.000	0.000	0.617	0.000	10.234	-3.858
19960703	-3.120	78.522	10.142	64.935	0.000	0.000	0.381	0.000	9.713	-7.375
19960704	-17.299	61.891	6.323	66.919	0.000	0.000	0.178	0.000	8.184	-4.265
19960705	56.808	58.252	10.666	49.764	0.000	0.000	0.061	28.201	4.828	24.886
19960706	13.321	7.541	12.305	69.449	0.000	0.000	0.594	49.829	5.458	3.622
19960707	-64.692	0.000	13.717	66.858	0.000	0.000	1.484	0.319	5.947	6.311
19960708	-57.136	0.000	8.500	51.719	0.000	0.000	1.831	0.000	6.555	-0.693
19960709	-46.918	0.000	8.811	40.701	0.000	0.000	2.008	4.037	8.416	-3.846
19960710	33.864	0.000	4.747	35.073	0.000	0.000	2.096	14.368	7.470	-7.785
19960711	6.671	13.406	8.361	32.183	0.000	0.000	1.911	0.475	7.318	17.039
19960712	93.567	79.430	8.322	29.367	0.000	0.000	1.291	49.883	5.103	-2.567
19960713	120.968	129.881	12.636	40.287	0.000	0.000	0.978	35.471	5.765	0.690
19960714	6.476	82.581	8.256	55.118	0.000	0.000	0.835	0.000	8.531	-13.291
19960715	38.145	102.792	8.420	80.927	0.000	0.000	0.579	0.084	9.204	24.821
19960716	40.930	101.534	8.177	76.802	0.000	0.000	0.378	5.895	8.051	17.975
19960717	-8.767	61.443	7.059	71.587	0.000	0.000	0.222	0.000	8.250	9.405
19960718	49.427	7.695	11.052	72.400	0.000	0.000	0.162	1.890	7.451	20.675
19960719	4.722	63.493	7.637	72.197	0.000	0.000	0.139	0.000	7.529	20.816
19960720	10.539	77.790	8.946	72.021	0.000	0.000	0.107	0.000	8.942	13.605
19960721	12.292	77.570	10.399	72.114	0.000	0.000	0.088	0.000	9.224	15.972
19960722	38.579	76.484	7.201	72.121	0.000	0.000	0.089	26.571	7.001	14.557
19960723	18.467	77.533	11.133	72.747	0.000	0.000	0.087	3.806	7.341	17.130
19960724	8.423	77.499	9.535	85.182	0.000	0.000	0.088	9.793	7.378	13.602
19960725	-2.551	77.367	8.246	90.421	0.000	0.000	0.084	0.028	7.049	17.439
19960726	-10.096	77.364	7.037	90.546	0.000	0.000	0.062	0.000	6.866	9.890
19960727	-5.060	77.614	10.602	79.723	0.000	0.000	0.047	0.000	5.908	2.910
19960728	14.260	77.678	7.348	72.544	0.000	0.000	0.035	0.000	6.180	-13.249
19960729	-8.562	77.465	7.314	72.260	0.000	0.000	0.040	0.266	5.814	-8.258
19960730	-7.728	76.555	9.012	71.495	0.000	0.000	0.047	3.093	3.973	-11.954
19960731	7.391	77.413	6.169	71.901	0.000	0.000	0.041	0.042	3.800	9.187
19960801	35.968	77.582	11.082	71.932	0.000	0.000	0.036	34.321	3.322	-0.717
19960802	33.139	101.892	7.294	66.701	0.000	0.000	0.041	0.000	2.128	0.035
19960803	13.145	52.453	11.074	72.772	0.000	0.000	0.047	37.657	3.243	0.996
19960804	-21.429	52.199	11.647	72.782	0.000	0.000	0.063	0.091	4.880	3.879
19960805	31.180	52.172	11.520	72.268	0.000	0.000	0.076	0.000	8.340	-2.820
19960806	-24.803	55.764	9.352	71.891	0.000	0.000	0.070	0.000	5.036	3.710
19960807	2.846	77.891	9.905	67.433	0.000	0.000	0.060	0.859	6.379	-2.153

19960808	-21.440	53.645	7.769	66.704	0.000	0.000	0.062	3.145	4.796	-6.792
19960809	73.062	43.072	14.480	54.704	0.000	0.009	0.231	73.568	4.450	15.345
19960810	30.397	101.478	12.205	70.198	0.000	0.000	0.359	0.000	6.469	5.227
19960811	59.036	32.147	8.882	69.782	0.000	0.000	0.455	2.965	9.475	-15.346
19960812	-71.269	3.570	11.145	68.490	0.000	0.000	0.402	0.000	8.675	1.924
19960813	87.214	0.000	10.265	67.347	0.000	0.000	0.386	0.000	8.096	-12.158
19960814	-71.415	0.000	6.937	54.393	0.000	0.000	0.412	0.000	8.452	-8.981
19960815	-37.619	0.000	10.813	38.183	0.000	0.000	0.447	1.626	6.360	4.851
19960816	49.360	0.000	7.558	34.114	0.000	0.000	0.486	0.991	3.603	13.120
19960817	-29.555	0.000	7.483	25.880	0.000	0.000	0.454	0.000	4.474	0.345
19960818	-20.993	0.000	9.024	17.219	0.000	0.000	0.422	5.299	5.170	4.325
19960819	20.563	0.000	4.852	17.111	0.000	0.000	0.492	9.836	3.987	9.793