



Techniques of Water-Resources Investigations of the United States Geological Survey

Chapter A3

A MODULAR FINITE-ELEMENT MODEL (MODFE) FOR AREAL AND AXISYMMETRIC GROUND-WATER-FLOW PROBLEMS, PART 1: MODEL DESCRIPTION AND USER'S MANUAL

By Lynn J. Torak

Book 6
MODELING TECHNIQUES

Examples of Model Output

Output is listed from simulations corresponding to the four examples of input that were given in the previous section. A description of the simulation is

given in the first three lines of output for each example. Note that output for the fourth example problem has been edited so that the computed hydraulic head and water-balance summary for the first and last (44th) time steps follow the output of initial conditions.

*** EXAMPLE 1. -- TWO-ELEMENT, FOUR-NODE PROBLEM SOLVED WITH LMFE1.
 *** CONTAINS THREE STRESS PERIODS WITH CHANGES TO SPECIFIED HEADS
 *** AND AREALLY DISTRIBUTED STRESSES ON EACH STRESS PERIOD.

NO. OF ELEMENTS (NELS)..... = 2
 NO. OF NODES (NNDS)..... = 4
 MAX. NO. OF TIME STEPS PER STRESS PERIOD (MXSTPS).. = 1
 NO. OF STRESS PERIODS (NPER)..... = 3
 NO. OF ZONES (NZNS)..... = 1
 NO. OF POINT FLOWS (NWELS)..... = 0
 NO. OF CAUCHY-TYPE BOUNDARY ELEMENT SIDES (NQBND).. = 1
 NO. OF CAUCHY-TYPE BOUNDARY ZONES (NBCZ)..... = 1
 NO. OF SPECIFIED HEADS (NHDS)..... = 2
 MAXIMUM CONDENSED BAND WIDTH (MBWC)..... = 4
 MAXIMUM MATRIX BAND WIDTH (MBW)..... = 2

DIMENSION OF G MUST BE AT LEAST 87

SCALE CHANGE FOR NODAL COORDINATES:
 ** 1 MAP UNIT = 1000 FIELD UNITS (FT); TIME IN SECONDS **

NODAL COORDINATES					
NODE	X COORD	Y COORD	NODE	X COORD	Y COORD
1	1.0000	1.0000	3	2.0000	2.0000
2	2.0000	1.0000	4	1.0000	2.0000

INITIAL HEADS					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	100.00	3	100.00		
2	100.00	4	100.00		

SOURCE BED HEADS					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	0.00000	3	0.00000		
2	0.00000	4	0.00000		

CAUCHY-TYPE BOUNDARY DATA BY BOUNDARY ZONE

ZONE	1	CONTAINS	1	BOUNDARY SIDES		
SIDE	BOUNDARY	BOUNDARY	ALPHA	SPECIFIED	EXTERNAL	EXTERNAL
NO.	NODE A	NODE B		FLOW	HEAD A	HEAD B
1	1	4	0.00000	0.20000E-02	0.00000	0.00000

SPECIFIED HEADS	
BOUNDARY	HEAD
NODE 2	90.000
NODE 3	90.000

PARAMETERS BY ZONE						
ZONE	X TRANS.	Y TRANS.	ROTATION	AQUITARD	STORAGE	RECHARGE
			ANGLE	HYD. COND.	COEFFICIENT	RATE
1	0.10000E-02	0.10000E-02	0.00000	0.00000	0.10000E-02	0.00000

ELEMENT DATA					
ELEMENT	NODE 1	NODE 2	NODE 3	NODE 4	ZONE
1	1	2	3	0	1
2	1	3	4	0	1

MATRIX BAND WIDTH (IBND) = 2

STRESS PERIOD 1: TIME STEP SIZES					
NO.	DELTA T	NO.	DELTA T	NO.	DELTA T
1	5000.0				

OUTPUT FOR TIME STEP NO. 1 AT 5000.0 TIME UNITS

COMPUTED VALUES OF HYDRAULIC HEAD					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	114.95	3	90.000		
2	90.000	4	129.46		

SUMMARY OF FLOW AT CAUCHY-TYPE BOUNDARIES BY ZONE

ZONE 1		
VOLUMETRIC RECHARGE RATE.....	=	2.0000
VOLUMETRIC DISCHARGE RATE.....	=	0.00000
TOTAL RECHARGE VOLUME.....	=	10000.
TOTAL DISCHARGE VOLUME.....	=	0.00000
NET VOLUMETRIC FLOW RATE, POSITIVE FOR RECHARGE.....	=	2.0000
NET VOLUME, POSITIVE FOR ACCUMULATION.....	=	10000.

VOLUMETRIC FLOW RATES BY BOUNDARY SIDE FOR ZONE 1

BOUNDARY SIDE	NODE		VOLUMETRIC FLOW RATES	
	K	L	NODE K	NODE L
1	1	4	1.0000	1.0000

WATER BALANCE SUMMARY

VOLUMETRIC RATES FOR TIME STEP NO. 1

ACCUMULATION OF WATER IN STORAGE..... = 0.97853
 RECHARGE FROM POINT SOURCES..... = 0.00000
 DISCHARGE FROM POINT SINKS..... = 0.00000
 RECHARGE FROM DISTRIBUTED SOURCES..... = 0.00000
 DISCHARGE FROM DISTRIBUTED SINKS..... = 0.00000
 RECHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 2.0000
 DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.00000
 DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = -1.0215
 DISCHARGE FROM NONLINEAR POINT SINKS..... = 0.00000
 RECHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 DISCHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.00000
 DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.00000
 FLOW IMBALANCE..... = 0.23842E-06

TOTAL VOLUMES SINCE BEGINNING OF SIMULATION

ACCUMULATION OF WATER IN STORAGE..... = 4892.7
 RECHARGE FROM POINT SOURCES..... = 0.00000
 DISCHARGE FROM POINT SINKS..... = 0.00000
 RECHARGE FROM DISTRIBUTED SOURCES..... = 0.00000
 DISCHARGE FROM DISTRIBUTED SINKS..... = 0.00000
 RECHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 10000.
 DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.00000
 DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = -5107.3
 DISCHARGE FROM NONLINEAR POINT SINKS..... = 0.00000
 RECHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 DISCHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.00000
 DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.00000
 FLOW IMBALANCE..... = 0.11921E-02

		STRESS PERIOD		2: TIME STEP SIZES			
NO.	DELTA T	NO.	DELTA T	NO.	DELTA T	NO.	DELTA T
1	2000.0						

CHANGES IN VALUES OF DISTRIBUTED FLOWS
BEGINNING ON TIME STEP NO. 1 AT 5000.0 TIME UNITS

ZONE	BEG. EL.	NO. ELS.	OLD UNIT DISCHARGE	NEW UNIT DISCHARGE
1	1	2	0.00000	0.10000E-05

BEGINNING ON	CHANGES IN VALUES OF SPECIFIED HEAD	1 AT	5000.0	TIME UNITS
TIME STEP NO.	NODE	HEAD		
	2	110.00		
	3	110.00		

OUTPUT FOR TIME STEP NO. 1 AT 7000.0 TIME UNITS

COMPUTED VALUES OF HYDRAULIC HEAD					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	122.95	3	110.00		
2	110.00	4	143.14		

SUMMARY OF FLOW AT CAUCHY-TYPE BOUNDARIES BY ZONE

ZONE	1	
VOLUMETRIC RECHARGE RATE.....	=	2.0000
VOLUMETRIC DISCHARGE RATE.....	=	0.00000
TOTAL RECHARGE VOLUME.....	=	4000.0
TOTAL DISCHARGE VOLUME.....	=	0.00000
NET VOLUMETRIC FLOW RATE, POSITIVE FOR RECHARGE.....	=	2.0000
NET VOLUME, POSITIVE FOR ACCUMULATION.....	=	4000.0

VOLUMETRIC FLOW RATES BY BOUNDARY SIDE FOR ZONE 1

BOUNDARY SIDE	NODE		VOLUMETRIC FLOW RATES	
	K	L	NODE K	NODE L
1	1	4	1.0000	1.0000

WATER BALANCE SUMMARY

VOLUMETRIC RATES FOR TIME STEP NO. 1

ACCUMULATION OF WATER IN STORAGE.....	=	7.4739
RECHARGE FROM POINT SOURCES.....	=	0.00000
DISCHARGE FROM POINT SINKS.....	=	0.00000
RECHARGE FROM DISTRIBUTED SOURCES.....	=	1.0000
DISCHARGE FROM DISTRIBUTED SINKS.....	=	0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	=	0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	=	0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	=	2.0000
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	=	0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	=	4.4739
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	=	0.00000
DISCHARGE FROM NONLINEAR POINT SINKS.....	=	0.00000
RECHARGE FROM NONLINEAR STEADY LEAKAGE.....	=	0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE.....	=	0.00000
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	=	0.00000
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	=	0.00000
FLOW IMBALANCE.....	=	0.00000

TOTAL VOLUMES SINCE BEGINNING OF SIMULATION

ACCUMULATION OF WATER IN STORAGE.....	=	19840.
RECHARGE FROM POINT SOURCES.....	=	0.00000
DISCHARGE FROM POINT SINKS.....	=	0.00000
RECHARGE FROM DISTRIBUTED SOURCES.....	=	2000.0
DISCHARGE FROM DISTRIBUTED SINKS.....	=	0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	=	0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	=	0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	=	14000.
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	=	0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	=	8947.8
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	=	-5107.3
DISCHARGE FROM NONLINEAR POINT SINKS.....	=	0.00000
RECHARGE FROM NONLINEAR STEADY LEAKAGE.....	=	0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE.....	=	0.00000
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	=	0.00000
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	=	0.00000
FLOW IMBALANCE.....	=	0.11921E-02

		STRESS PERIOD	3:	TIME STEP SIZES		
NO.	DELTA T	NO.	DELTA T	NO.	DELTA T	
1	3000.0					

CHANGES IN VALUES OF DISTRIBUTED FLOWS
BEGINNING ON TIME STEP NO. 1 AT 7000.0 TIME UNITS

ZONE	BEG. EL.	NO. ELS.	OLD UNIT DISCHARGE	NEW UNIT DISCHARGE
1	1	2	0.10000E-05	0.00000

CHANGES IN VALUES OF SPECIFIED HEAD
BEGINNING ON TIME STEP NO. 1 AT 7000.0 TIME UNITS
NODE HEAD
2 100.00
3 100.00

OUTPUT FOR TIME STEP NO. 1 AT 10000. TIME UNITS

COMPUTED VALUES OF HYDRAULIC HEAD					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	131.95	3	100.00		
2	100.00	4	160.45		

SUMMARY OF FLOW AT CAUCHY-TYPE BOUNDARIES BY ZONE

ZONE	1	
VOLUMETRIC RECHARGE RATE.....	=	2.0000
VOLUMETRIC DISCHARGE RATE.....	=	0.00000
TOTAL RECHARGE VOLUME.....	=	6000.0
TOTAL DISCHARGE VOLUME.....	=	0.00000
NET VOLUMETRIC FLOW RATE, POSITIVE FOR RECHARGE.....	=	2.0000
NET VOLUME, POSITIVE FOR ACCUMULATION.....	=	6000.0

VOLUMETRIC FLOW RATES BY BOUNDARY SIDE FOR ZONE 1

BOUNDARY SIDE	NODE		VOLUMETRIC FLOW RATES	
	K	L	NODE K	NODE L
1	1	4	1.0000	1.0000

WATER BALANCE SUMMARY

VOLUMETRIC RATES FOR TIME STEP NO. 1

ACCUMULATION OF WATER IN STORAGE.....	=	0.29485
RECHARGE FROM POINT SOURCES.....	=	0.00000
DISCHARGE FROM POINT SINKS.....	=	0.00000
RECHARGE FROM DISTRIBUTED SOURCES.....	=	-.11921E-06
DISCHARGE FROM DISTRIBUTED SINKS.....	=	0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	=	0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	=	0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	=	2.0000
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	=	0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	=	0.00000
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	=	-1.7051
DISCHARGE FROM NONLINEAR POINT SINKS.....	=	0.00000
RECHARGE FROM NONLINEAR STEADY LEAKAGE.....	=	0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE.....	=	0.00000
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	=	0.00000
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	=	0.00000
FLOW IMBALANCE.....	=	0.23842E-06

TOTAL VOLUMES SINCE BEGINNING OF SIMULATION

ACCUMULATION OF WATER IN STORAGE.....	=	20725.
RECHARGE FROM POINT SOURCES.....	=	0.00000
DISCHARGE FROM POINT SINKS.....	=	0.00000
RECHARGE FROM DISTRIBUTED SOURCES.....	=	2000.0
DISCHARGE FROM DISTRIBUTED SINKS.....	=	0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	=	0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	=	0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	=	20000.
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	=	0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	=	8947.8
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	=	-10223.
DISCHARGE FROM NONLINEAR POINT SINKS.....	=	0.00000
RECHARGE FROM NONLINEAR STEADY LEAKAGE.....	=	0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE.....	=	0.00000
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	=	0.00000
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	=	0.00000
FLOW IMBALANCE.....	=	0.19073E-02

*** EXAMPLE 2. -- TWO-ELEMENT, FOUR-NODE PROBLEM SIMULATING WATER-TABLE CONDI-
 TIONS. THREE STRESS PERIODS SHOW CHANGES TO CONTROLLING HEADS AT NONLIN-
 EAR CAUCHY-TYPE BOUNDARIES AND TIME-STEP SIZES. SOLUTION BY MICCG METHOD.

NO. OF ELEMENTS (NELS)..... = 1
 NO. OF NODES (NNDS)..... = 4
 MAX. NO. OF TIME STEPS PER STRESS PERIOD (MXSTPS).. = 3
 NO. OF STRESS PERIODS (NPER)..... = 3
 NO. OF ZONES (NZNS)..... = 1
 NO. OF POINT FLOWS (NWELS)..... = 1
 NO. OF CAUCHY-TYPE BOUNDARY ELEMENT SIDES (NQBND).. = 0
 NO. OF CAUCHY-TYPE BOUNDARY ZONES (NBCZ)..... = 0
 NO. OF SPECIFIED HEADS (NHDS)..... = 2
 MAXIMUM CONDENSED BAND WIDTH (MBWC)..... = 4
 MAXIMUM NO. OF ITERATIONS FOR MICCG (NIT)..... = 10
 CLOSURE TOLERANCE FOR MICCG (TOL)..... = 0.10000E-04

DIMENSION OF G MUST BE AT LEAST 71

WATER-TABLE AQUIFER:
 NOW G MUST BE DIMENSIONED TO AT LEAST 85

NO. OF NONLINEAR CAUCHY-TYPE BOUNDARIES (NBNC)..... = 1
 NO. OF NONLINEAR CAUCHY-TYPE BOUNDARY ZONES (NLCZ). = 1
 NO. OF NONLINEAR POINT SINKS (NPNB)..... = 0

NONLINEAR CAUCHY-TYPE BOUNDARIES AND (OR) NONLINEAR POINT SINKS:
 NOW G MUST BE DIMENSIONED TO AT LEAST 94

SCALE CHANGE FOR NODAL COORDINATES:
 ** 1 MAP UNIT = 1000 FIELD UNITS (FT); TIME IN SECONDS ** 4: TITLE

NODAL COORDINATES					
NODE	X COORD	Y COORD	NODE	X COORD	Y COORD
1	1.0000	1.0000	3	2.0000	2.0000
2	2.0000	1.0000	4	1.0000	2.0000

INITIAL HEADS					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	100.00	3	100.00		
2	100.00	4	100.00		

SOURCE BED HEADS					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	0.00000	3	0.00000		
2	0.00000	4	0.00000		

POINT FLOWS	
NODE	DISCHARGE
1	-.50000

SPECIFIED HEADS BOUNDARY	
NODE	HEAD
2	100.00
3	100.00

PARAMETERS BY ZONE						
ZONE	X TRANS.	Y TRANS.	ROTATION ANGLE	AQUITARD HYD. COND.	STORAGE COEFFICIENT	RECHARGE RATE
1	0.10000E-04	0.10000E-04	0.00000	0.00000	0.10000	0.00000

ELEMENT DATA					
ELEMENT	NODE 1	NODE 2	NODE 3	NODE 4	ZONE
1	1	2	3	4	1

INITIAL AQUIFER THICKNESS					
NODE	THICKNESS	NODE	THICKNESS	NODE	THICKNESS
1	100.00	3	100.00		
2	100.00	4	100.00		

ELEVATION OF AQUIFER TOP					
NODE	ELEVATION	NODE	ELEVATION	NODE	ELEVATION
1	101.00	3	101.00		
2	101.00	4	101.00		

ZONE	NO. ELS.	SPECIFIC YIELD
1	1	0.10000

NONLINEAR CAUCHY-TYPE BOUNDARY DATA BY BOUNDARY ZONE

ZONE SIDE NO.	1 CONTAINS LEAKAGE COEFFICIENT	1 BOUNDARY SIDES NODE	EXTERNAL HEAD	CONTROLLING ELEVATION
1	0.20000E-03	1	102.00	60.000
		4	102.00	60.000

NO.	DELTA T	STRESS PERIOD NO.	1: TIME STEP SIZES DELTA T	NO.	DELTA T
1	600.00	2	600.00	3	600.00

SOLUTION CONVERGED IN 2 ITERATIONS

SOLUTION CONVERGED IN 1 ITERATIONS

SUMMARY OF FLOW AT NONLINEAR CAUCHY-TYPE BOUNDARIES BY ZONE

ZONE	1	
VOLUMETRIC RECHARGE RATE.....		= 0.39988
VOLUMETRIC DISCHARGE RATE.....		= 0.00000
TOTAL RECHARGE VOLUME.....		= 239.93
TOTAL DISCHARGE VOLUME.....		= 0.00000
NET VOLUMETRIC FLOW RATE, POSITIVE FOR RECHARGE.....		= 0.39988
NET VOLUME, POSITIVE FOR ACCUMULATION.....		= 239.93

VOLUMETRIC FLOW RATES BY BOUNDARY SIDE FOR ZONE 1

BOUNDARY SIDE	NODE K	NODE L	VOLUMETRIC FLOW RATES	
			NODE K	NODE L
1	1	4	0.20036	0.19952

OUTPUT FOR TIME STEP NO. 1 AT 600.00 TIME UNITS

COMPUTED VALUES OF HYDRAULIC HEAD					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	99.995	3	100.00		
2	100.00	4	100.01		

WATER BALANCE SUMMARY

VOLUMETRIC RATES FOR TIME STEP NO. 1

```

ACCUMULATION OF WATER IN STORAGE..... = -.10012
RECHARGE FROM POINT SOURCES.....       = 0.00000
DISCHARGE FROM POINT SINKS.....         = -.50000
RECHARGE FROM DISTRIBUTED SOURCES.....  = 0.00000
DISCHARGE FROM DISTRIBUTED SINKS.....    = 0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.18005E-05
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = -.23957E-05
DISCHARGE FROM NONLINEAR POINT SINKS..... = 0.00000
RECHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.39988
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.00000
FLOW IMBALANCE.....                     = -.85242E-09
    
```

TOTAL VOLUMES SINCE BEGINNING OF SIMULATION

```

ACCUMULATION OF WATER IN STORAGE..... = -60.072
RECHARGE FROM POINT SOURCES.....       = 0.00000
DISCHARGE FROM POINT SINKS.....         = -300.00
RECHARGE FROM DISTRIBUTED SOURCES.....  = 0.00000
DISCHARGE FROM DISTRIBUTED SINKS.....    = 0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.10803E-02
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = -.14374E-02
DISCHARGE FROM NONLINEAR POINT SINKS..... = 0.00000
RECHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 239.93
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.00000
FLOW IMBALANCE.....                     = -.51145E-06
    
```

SOLUTION CONVERGED IN 2 ITERATIONS

SOLUTION CONVERGED IN 1 ITERATIONS

SUMMARY OF FLOW AT NONLINEAR CAUCHY-TYPE BOUNDARIES BY ZONE

ZONE 1

```

VOLUMETRIC RECHARGE RATE..... = 0.39970
VOLUMETRIC DISCHARGE RATE..... = 0.00000
TOTAL RECHARGE VOLUME.....     = 239.82
TOTAL DISCHARGE VOLUME.....    = 0.00000
NET VOLUMETRIC FLOW RATE, POSITIVE FOR RECHARGE..... = 0.39970
NET VOLUME, POSITIVE FOR ACCUMULATION..... = 239.82
    
```

VOLUMETRIC FLOW RATES BY BOUNDARY SIDE FOR ZONE 1

BOUNDARY SIDE	NODE K	NODE L	VOLUMETRIC FLOW RATES	
			NODE K	NODE L
1	1	4	0.20090	0.19880

OUTPUT FOR TIME STEP NO. 2 AT 1200.0 TIME UNITS

COMPUTED VALUES OF HYDRAULIC HEAD					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	99.989	3	100.00		
2	100.00	4	100.01		

WATER BALANCE SUMMARY

VOLUMETRIC RATES FOR TIME STEP NO. 2

ACCUMULATION OF WATER IN STORAGE.....	=	-.10030
RECHARGE FROM POINT SOURCES.....	=	0.00000
DISCHARGE FROM POINT SINKS.....	=	-.50000
RECHARGE FROM DISTRIBUTED SOURCES.....	=	0.00000
DISCHARGE FROM DISTRIBUTED SINKS.....	=	0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	=	0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	=	0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	=	0.00000
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	=	0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	=	0.44935E-05
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	=	-.59818E-05
DISCHARGE FROM NONLINEAR POINT SINKS.....	=	0.00000
RECHARGE FROM NONLINEAR STEADY LEAKAGE.....	=	0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE.....	=	0.00000
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	=	0.39970
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	=	0.00000
FLOW IMBALANCE.....	=	-.61418E-07

TOTAL VOLUMES SINCE BEGINNING OF SIMULATION

ACCUMULATION OF WATER IN STORAGE.....	=	-120.25
RECHARGE FROM POINT SOURCES.....	=	0.00000
DISCHARGE FROM POINT SINKS.....	=	-600.00
RECHARGE FROM DISTRIBUTED SOURCES.....	=	0.00000
DISCHARGE FROM DISTRIBUTED SINKS.....	=	0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	=	0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	=	0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	=	0.00000
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	=	0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	=	0.37764E-02
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	=	-.50265E-02
DISCHARGE FROM NONLINEAR POINT SINKS.....	=	0.00000
RECHARGE FROM NONLINEAR STEADY LEAKAGE.....	=	0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE.....	=	0.00000
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	=	479.75
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	=	0.00000
FLOW IMBALANCE.....	=	-.37362E-04

SOLUTION CONVERGED IN 2 ITERATIONS

SOLUTION CONVERGED IN 1 ITERATIONS

SUMMARY OF FLOW AT NONLINEAR CAUCHY-TYPE BOUNDARIES BY ZONE

ZONE 1

VOLUMETRIC RECHARGE RATE.....	=	0.39953
VOLUMETRIC DISCHARGE RATE.....	=	0.00000
TOTAL RECHARGE VOLUME.....	=	239.72
TOTAL DISCHARGE VOLUME.....	=	0.00000
NET VOLUMETRIC FLOW RATE, POSITIVE FOR RECHARGE.....	=	0.39953
NET VOLUME, POSITIVE FOR ACCUMULATION.....	=	239.72

VOLUMETRIC FLOW RATES BY BOUNDARY SIDE FOR ZONE 1

BOUNDARY SIDE	NODE K	NODE L	VOLUMETRIC FLOW RATES	
			NODE K	NODE L
1	1	4	0.20144	0.19809

OUTPUT FOR TIME STEP NO. 3 AT 1800.0 TIME UNITS

COMPUTED VALUES OF HYDRAULIC HEAD					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	99.984	3	100.00		
2	100.00	4	100.02		

WATER BALANCE SUMMARY

VOLUMETRIC RATES FOR TIME STEP NO. 3

ACCUMULATION OF WATER IN STORAGE..... = -.10048
 RECHARGE FROM POINT SOURCES..... = 0.00000
 DISCHARGE FROM POINT SINKS..... = -.50000
 RECHARGE FROM DISTRIBUTED SOURCES..... = 0.00000
 DISCHARGE FROM DISTRIBUTED SINKS..... = 0.00000
 RECHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.71864E-05
 DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = -.95529E-05
 DISCHARGE FROM NONLINEAR POINT SINKS..... = 0.00000
 RECHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 DISCHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.39953
 DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.00000
 FLOW IMBALANCE..... = -.17635E-07

TOTAL VOLUMES SINCE BEGINNING OF SIMULATION

ACCUMULATION OF WATER IN STORAGE..... = -180.54
 RECHARGE FROM POINT SOURCES..... = 0.00000
 DISCHARGE FROM POINT SINKS..... = -900.00
 RECHARGE FROM DISTRIBUTED SOURCES..... = 0.00000
 DISCHARGE FROM DISTRIBUTED SINKS..... = 0.00000
 RECHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.80882E-02
 DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = -.10758E-01
 DISCHARGE FROM NONLINEAR POINT SINKS..... = 0.00000
 RECHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 DISCHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 719.47
 DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.00000
 FLOW IMBALANCE..... = -.47943E-04

STRESS PERIOD		2: TIME STEP SIZES			
NO.	DELTA T	NO.	DELTA T	NO.	DELTA T
1	200.00	2	300.00	3	500.00

CHANGES IN VALUES OF EXTERNAL HEAD
 FOR NONLINEAR CAUCHY-TYPE BOUNDARIES
 BEGINNING ON TIME STEP NO. 1 AT 1800.0 TIME UNITS

SIDE NO.	NODE	EXTERNAL HEAD
1	1	85.000
	4	85.000

SOLUTION CONVERGED IN 2 ITERATIONS

SOLUTION CONVERGED IN 1 ITERATIONS

SUMMARY OF FLOW AT NONLINEAR CAUCHY-TYPE BOUNDARIES BY ZONE

ZONE 1

VOLUMETRIC RECHARGE RATE.....	= 0.00000
VOLUMETRIC DISCHARGE RATE.....	= -2.9985
TOTAL RECHARGE VOLUME.....	= 0.00000
TOTAL DISCHARGE VOLUME.....	= -599.71
NET VOLUMETRIC FLOW RATE, POSITIVE FOR RECHARGE.....	= -2.9985
NET VOLUME, POSITIVE FOR ACCUMULATION.....	= -599.71

VOLUMETRIC FLOW RATES BY BOUNDARY SIDE FOR ZONE 1

BOUNDARY SIDE	NODE K	NODE L	VOLUMETRIC FLOW RATES	
			NODE K	NODE L
1	1	4	-1.4976	-1.5009

OUTPUT FOR TIME STEP NO. 1 AT 2000.0 TIME UNITS

COMPUTED VALUES OF HYDRAULIC HEAD					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	99.972	3	100.00		
2	100.00	4	100.00		

WATER BALANCE SUMMARY

VOLUMETRIC RATES FOR TIME STEP NO. 1

ACCUMULATION OF WATER IN STORAGE.....	= -3.4985
RECHARGE FROM POINT SOURCES.....	= 0.00000
DISCHARGE FROM POINT SINKS.....	= -.50000
RECHARGE FROM DISTRIBUTED SOURCES.....	= 0.00000
DISCHARGE FROM DISTRIBUTED SINKS.....	= 0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 0.00000
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= 0.12076E-04
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= -.47381E-05
DISCHARGE FROM NONLINEAR POINT SINKS.....	= 0.00000
RECHARGE FROM NONLINEAR STEADY LEAKAGE.....	= 0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE.....	= 0.00000
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= 0.00000
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= -2.9985
FLOW IMBALANCE.....	= 0.29166E-06

TOTAL VOLUMES SINCE BEGINNING OF SIMULATION

ACCUMULATION OF WATER IN STORAGE.....	= -880.24
RECHARGE FROM POINT SOURCES.....	= 0.00000
DISCHARGE FROM POINT SINKS.....	= -1000.0
RECHARGE FROM DISTRIBUTED SOURCES.....	= 0.00000
DISCHARGE FROM DISTRIBUTED SINKS.....	= 0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 0.00000
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= 0.10503E-01
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= -.11706E-01
DISCHARGE FROM NONLINEAR POINT SINKS.....	= 0.00000
RECHARGE FROM NONLINEAR STEADY LEAKAGE.....	= 0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE.....	= 0.00000
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= 719.47
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= -599.71
FLOW IMBALANCE.....	= 0.10389E-04

SOLUTION CONVERGED IN 2 ITERATIONS

SOLUTION CONVERGED IN 1 ITERATIONS

SUMMARY OF FLOW AT NONLINEAR CAUCHY-TYPE BOUNDARIES BY ZONE

ZONE 1

VOLUMETRIC RECHARGE RATE.....	= 0.00000
VOLUMETRIC DISCHARGE RATE.....	= -2.9945
TOTAL RECHARGE VOLUME.....	= 0.00000
TOTAL DISCHARGE VOLUME.....	= -898.36
NET VOLUMETRIC FLOW RATE, POSITIVE FOR RECHARGE.....	= -2.9945
NET VOLUME, POSITIVE FOR ACCUMULATION.....	= -898.36

VOLUMETRIC FLOW RATES BY BOUNDARY SIDE FOR ZONE 1

BOUNDARY SIDE	NODE K	NODE L	VOLUMETRIC FLOW RATES	
			NODE K	NODE L
1	1	4	-1.4960	-1.4985

OUTPUT FOR TIME STEP NO. 2 AT 2300.0 TIME UNITS

COMPUTED VALUES OF HYDRAULIC HEAD					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	99.954	3	100.00		
2	100.00	4	99.977		

WATER BALANCE SUMMARY

VOLUMETRIC RATES FOR TIME STEP NO. 2

ACCUMULATION OF WATER IN STORAGE..... = -3.4945
 RECHARGE FROM POINT SOURCES..... = 0.00000
 DISCHARGE FROM POINT SINKS..... = -.50000
 RECHARGE FROM DISTRIBUTED SOURCES..... = 0.00000
 DISCHARGE FROM DISTRIBUTED SINKS..... = 0.00000
 RECHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.27316E-04
 DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.00000
 DISCHARGE FROM NONLINEAR POINT SINKS..... = 0.00000
 DISCHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 DISCHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.00000
 DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = -2.9945
 FLOW IMBALANCE..... = 0.34039E-06

TOTAL VOLUMES SINCE BEGINNING OF SIMULATION

ACCUMULATION OF WATER IN STORAGE..... = -1928.6
 RECHARGE FROM POINT SOURCES..... = 0.00000
 DISCHARGE FROM POINT SINKS..... = -1150.0
 RECHARGE FROM DISTRIBUTED SOURCES..... = 0.00000
 DISCHARGE FROM DISTRIBUTED SINKS..... = 0.00000
 RECHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.18698E-01
 DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = -.11706E-01
 DISCHARGE FROM NONLINEAR POINT SINKS..... = 0.00000
 RECHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 DISCHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 719.47
 DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = -1498.1
 FLOW IMBALANCE..... = 0.11251E-03

SOLUTION CONVERGED IN 2 ITERATIONS

SOLUTION CONVERGED IN 1 ITERATIONS

SUMMARY OF FLOW AT NONLINEAR CAUCHY-TYPE BOUNDARIES BY ZONE

ZONE 1
 VOLUMETRIC RECHARGE RATE..... = 0.00000
 VOLUMETRIC DISCHARGE RATE..... = -2.9881
 TOTAL RECHARGE VOLUME..... = 0.00000
 TOTAL DISCHARGE VOLUME..... = -1494.0
 NET VOLUMETRIC FLOW RATE, POSITIVE FOR RECHARGE..... = -2.9881
 NET VOLUME, POSITIVE FOR ACCUMULATION..... = -1494.0

VOLUMETRIC FLOW RATES BY BOUNDARY SIDE FOR ZONE 1

BOUNDARY SIDE	NODE K	NODE L	VOLUMETRIC FLOW RATES	
			NODE K	NODE L
1	1	4	-1.4934	-1.4947

OUTPUT FOR TIME STEP NO. 3 AT 2800.0 TIME UNITS

COMPUTED VALUES OF HYDRAULIC HEAD					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	99.924	3	100.00		
2	100.00	4	99.932		

WATER BALANCE SUMMARY

VOLUMETRIC RATES FOR TIME STEP NO. 3

ACCUMULATION OF WATER IN STORAGE..... = -3.4880
 RECHARGE FROM POINT SOURCES..... = 0.00000
 DISCHARGE FROM POINT SINKS..... = -.50000
 RECHARGE FROM DISTRIBUTED SOURCES..... = 0.00000
 DISCHARGE FROM DISTRIBUTED SINKS..... = 0.00000
 RECHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.59697E-04
 DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.00000
 DISCHARGE FROM NONLINEAR POINT SINKS..... = 0.00000
 RECHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 DISCHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.00000
 DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = -2.9881
 FLOW IMBALANCE..... = -.92194E-07

TOTAL VOLUMES SINCE BEGINNING OF SIMULATION

ACCUMULATION OF WATER IN STORAGE..... = -3672.6
 RECHARGE FROM POINT SOURCES..... = 0.00000
 DISCHARGE FROM POINT SINKS..... = -1400.0
 RECHARGE FROM DISTRIBUTED SOURCES..... = 0.00000
 DISCHARGE FROM DISTRIBUTED SINKS..... = 0.00000
 RECHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.48547E-01
 DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = -.11706E-01
 DISCHARGE FROM NONLINEAR POINT SINKS..... = 0.00000
 RECHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 DISCHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 719.47
 DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = -2992.1
 FLOW IMBALANCE..... = 0.66410E-04

		STRESS PERIOD	3:	TIME STEP SIZES		
NO.	DELTA T	NO.	DELTA T	NO.	DELTA T	
1	200.00					

CHANGES IN VALUES OF EXTERNAL HEAD
 FOR NONLINEAR CAUCHY-TYPE BOUNDARIES
 BEGINNING ON TIME STEP NO. 1 AT 2800.0 TIME UNITS

SIDE	NO.	NODE	EXTERNAL HEAD
	1	1	80.000
		4	80.000

SOLUTION CONVERGED IN 2 ITERATIONS

SOLUTION CONVERGED IN 1 ITERATIONS

SUMMARY OF FLOW AT NONLINEAR CAUCHY-TYPE BOUNDARIES BY ZONE

ZONE 1

VOLUMETRIC RECHARGE RATE.....	= 0.00000
VOLUMETRIC DISCHARGE RATE.....	= -3.9830
TOTAL RECHARGE VOLUME.....	= 0.00000
TOTAL DISCHARGE VOLUME.....	= -796.60
NET VOLUMETRIC FLOW RATE, POSITIVE FOR RECHARGE.....	= -3.9830
NET VOLUME, POSITIVE FOR ACCUMULATION.....	= -796.60

VOLUMETRIC FLOW RATES BY BOUNDARY SIDE FOR ZONE 1

BOUNDARY SIDE	NODE K	NODE L	VOLUMETRIC FLOW RATES	
			NODE K	NODE L
1	1	4	-1.9914	-1.9916

OUTPUT FOR TIME STEP NO. 1 AT 3000.0 TIME UNITS

COMPUTED VALUES OF HYDRAULIC HEAD					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	99.909	3	100.00		
2	100.00	4	99.908		

WATER BALANCE SUMMARY

VOLUMETRIC RATES FOR TIME STEP NO. 1

ACCUMULATION OF WATER IN STORAGE.....	= -4.4829
RECHARGE FROM POINT SOURCES.....	= 0.00000
DISCHARGE FROM POINT SINKS.....	= -.50000
RECHARGE FROM DISTRIBUTED SOURCES.....	= 0.00000
DISCHARGE FROM DISTRIBUTED SINKS.....	= 0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 0.00000
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= 0.85085E-04
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= 0.00000
DISCHARGE FROM NONLINEAR POINT SINKS.....	= 0.00000
RECHARGE FROM NONLINEAR STEADY LEAKAGE.....	= 0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE.....	= 0.00000
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= 0.00000
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= -3.9830
FLOW IMBALANCE.....	= -.20780E-06

TOTAL VOLUMES SINCE BEGINNING OF SIMULATION

ACCUMULATION OF WATER IN STORAGE.....	= -4569.2
RECHARGE FROM POINT SOURCES.....	= 0.00000
DISCHARGE FROM POINT SINKS.....	= -1500.0
RECHARGE FROM DISTRIBUTED SOURCES.....	= 0.00000
DISCHARGE FROM DISTRIBUTED SINKS.....	= 0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 0.00000
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= 0.65564E-01
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= -.11706E-01
DISCHARGE FROM NONLINEAR POINT SINKS.....	= 0.00000
RECHARGE FROM NONLINEAR STEADY LEAKAGE.....	= 0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE.....	= 0.00000
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= 719.47
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= -3788.7
FLOW IMBALANCE.....	= 0.24849E-04

*** EXAMPLE 3. -- TWO-ELEMENT, FOUR-NODE MESH SIMULATING STEADY-STATE,
 *** NONLINEAR FLOW; WATER-TABLE CONDITIONS AND POINT AND AREALLY DISTRI-
 *** BUTED LEAKAGE FUNCTIONS. SOLVED BY COMBINING NONLINEAR SSCG MODELS.

NO. OF ELEMENTS (NELS)..... = 2
 NO. OF NODES (NNDS)..... = 4
 MAX. NO. OF TIME STEPS PER STRESS PERIOD (MXSTPS).. = 1
 NO. OF STRESS PERIODS (NPER)..... = 1
 NO. OF ZONES (NZNS)..... = 1
 NO. OF POINT FLOWS (NWELS)..... = 0
 NO. OF CAUCHY-TYPE BOUNDARY ELEMENT SIDES (NQBND).. = 0
 NO. OF CAUCHY-TYPE BOUNDARY ZONES (NBCZ)..... = 0
 NO. OF SPECIFIED HEADS (NHDS)..... = 2
 MAXIMUM CONDENSED BAND WIDTH (MBWC)..... = 4
 MAXIMUM NO. OF ITERATIONS FOR MICCG (NIT)..... = 10
 CLOSURE TOLERANCE FOR MICCG (TOL)..... = 0.10000

DIMENSION OF G MUST BE AT LEAST 75

MAX. NO. OF WATER-TABLE ITERATIONS (NITSW) = 10
 CLOSURE TOL. FOR WATER-TABLE ITERATIONS (TOLSW) ... = 0.10000E-03
 MAXIMUM ALLOWABLE DISPLACEMENT (DSMX) = 10.000

STEADY-STATE FLOW IN A WATER-TABLE AQUIFER:
 NOW G MUST BE DIMENSIONED TO AT LEAST 83

NO. OF NONLINEAR CAUCHY-TYPE BOUNDARIES (NBNC)..... = 0
 NO. OF NONLINEAR CAUCHY-TYPE BOUNDARY ZONES (NLCZ). = 0
 NO. OF NONLINEAR POINT SINKS (NPNB)..... = 1

NONLINEAR CAUCHY-TYPE BOUNDARIES AND (OR) NONLINEAR POINT SINKS:
 NOW G MUST BE DIMENSIONED TO AT LEAST 86

NO. OF NONLINEAR STEADY-LEAKAGE ZONES (NVNZ)..... = 1

NONLINEAR STEADY LEAKAGE:
 NOW G MUST BE DIMENSIONED TO AT LEAST 94

** STEADY-STATE FLOW **

SCALE CHANGE FOR NODAL COORDINATES:
 ** 1 MAP UNIT = 1000 FIELD UNITS (FT); TIME UNITS IN SECONDS** 4: TITLE

NODAL COORDINATES					
NODE	X COORD	Y COORD	NODE	X COORD	Y COORD
1	1.0000	1.0000	3	2.0000	2.0000
2	2.0000	1.0000	4	1.0000	2.0000

INITIAL HEADS					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	100.00	3	100.00		
2	100.00	4	100.00		

SOURCE BED HEADS					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	100.00	3	100.00		
2	100.00	4	100.00		

SPECIFIED HEADS	
NODE	BOUNDARY HEAD
2	100.00
3	100.00

PARAMETERS BY ZONE

ZONE	X TRANS.	Y TRANS.	ROTATION ANGLE	AQUITARD HYD. COND.	STORAGE COEFFICIENT	RECHARGE RATE
1	0.10000E-04	0.10000E-04	0.00000	0.00000	0.00000	0.00000

ELEMENT	ELEMENT DATA				ZONE
	NODE 1	NODE 2	NODE 3	NODE 4	
1	1	2	3	0	1
2	1	3	4	0	1

NODE	THICKNESS	INITIAL NODE	AQUIFER THICKNESS	NODE	THICKNESS
1	100.00	3	100.00		
2	100.00	4	100.00		

NODE	ELEVATION	ELEVATION OF AQUIFER TOP NODE	ELEVATION	NODE	ELEVATION
1	101.00	3	101.00		
2	101.00	4	101.00		

POINT NO.	NONLINEAR POINT SINK DATA		
	NODE NO.	LEAKAGE COEFFICIENT	CONTROLLING ELEVATION
1	4	0.10000E-01	89.000

PARAMETERS FOR NONLINEAR STEADY LEAKAGE BY ZONE			
ZONE	FIRST EL. NO.	NO. OF ELEMENTS	COEFFICIENT VALUE
1	1	2	-.22018E-07

NODE	CONTROL VALUE	ELEVATION FOR NONLINEAR LEAKAGE NODE	STEADY LEAKAGE VALUE
1	90.000	3	90.000
2	90.000	4	90.000

SOLUTION CONVERGED IN 2 ITERATIONS

SOLUTION CONVERGED IN 2 ITERATIONS

SOLUTION CONVERGED IN 2 ITERATIONS

SOLUTION CONVERGED IN 1 ITERATIONS

SOLUTION CONVERGED IN 1 ITERATIONS

SUMMARY OF CLOSURE INFORMATION

NO. OF ITERATIONS TO CLOSE (ITER) = 5
MAXIMUM ABSOLUTE DISPLACEMENT (DSPA) = 0.58929E-05

OUTPUT FOR TIME STEP NO. 1 AT 1.0000 TIME UNITS

COMPUTED VALUES OF HYDRAULIC HEAD					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	90.551	3	100.00		
2	100.00	4	89.541		

SATURATED THICKNESS					
NODE	THICKNESS	NODE	THICKNESS	NODE	THICKNESS
1	90.551	3	100.00		
2	100.00	4	89.541		

WATER BALANCE SUMMARY

VOLUMETRIC RATES FOR TIME STEP NO. 1

ACCUMULATION OF WATER IN STORAGE.....	= 0.00000
RECHARGE FROM POINT SOURCES.....	= 0.00000
DISCHARGE FROM POINT SINKS.....	= 0.00000
RECHARGE FROM DISTRIBUTED SOURCES.....	= 0.00000
DISCHARGE FROM DISTRIBUTED SINKS.....	= 0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 0.00000
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= 0.11955
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= 0.00000
DISCHARGE FROM NONLINEAR POINT SINKS.....	= -.54108E-02
RECHARGE FROM NONLINEAR STEADY LEAKAGE.....	= 0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE.....	= -.11414
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= 0.00000
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= 0.00000
FLOW IMBALANCE.....	= -.89407E-07

TOTAL VOLUMES SINCE BEGINNING OF SIMULATION

ACCUMULATION OF WATER IN STORAGE.....	= 0.00000
RECHARGE FROM POINT SOURCES.....	= 0.00000
DISCHARGE FROM POINT SINKS.....	= 0.00000
RECHARGE FROM DISTRIBUTED SOURCES.....	= 0.00000
DISCHARGE FROM DISTRIBUTED SINKS.....	= 0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 0.00000
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= 0.11955
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= 0.00000
DISCHARGE FROM NONLINEAR POINT SINKS.....	= -.54108E-02
RECHARGE FROM NONLINEAR STEADY LEAKAGE.....	= 0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE.....	= -.11414
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= 0.00000
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= 0.00000
FLOW IMBALANCE.....	= -.89407E-07

MOENCH AND PRICKETT TEST PROBLEM
STORAGE CONVERSION

NO. OF ELEMENTS (NELS)..... = 34
 NO. OF NODES (NNDS)..... = 52
 MAX. NO. OF TIME STEPS PER STRESS PERIOD (MXSTPS).. = 44
 NO. OF STRESS PERIODS (NPER)..... = 1
 NO. OF ZONES (NZNS)..... = 1
 NO. OF POINT FLOWS (NWELS)..... = 1
 NO. OF CAUCHY-TYPE BOUNDARY ELEMENT SIDES (NOBND).. = 2
 NO. OF CAUCHY-TYPE BOUNDARY ZONES (NBCZ)..... = 1
 NO. OF SPECIFIED HEADS (NHDS)..... = 0
 MAXIMUM CONDENSED BAND WIDTH (MBWC)..... = 5
 MAXIMUM NO. OF ITERATIONS FOR MICCG (NIT)..... = 20
 CLOSURE TOLERANCE FOR MICCG (TOL)..... = 0.10000E-03

DIMENSION OF G MUST BE AT LEAST 1260

WATER-TABLE AQUIFER:
NOW G MUST BE DIMENSIONED TO AT LEAST 1468

NO. OF NONLINEAR CAUCHY-TYPE BOUNDARIES (NBNC)..... = 0
 NO. OF NONLINEAR CAUCHY-TYPE BOUNDARY ZONES (NLCZ). = 0
 NO. OF NONLINEAR POINT SINKS (NPNB)..... = 0

NONLINEAR CAUCHY-TYPE BOUNDARIES AND (OR) NONLINEAR POINT SINKS:
NOW G MUST BE DIMENSIONED TO AT LEAST 1468

NODAL COORDINATES					
NODE	X COORD	Y COORD	NODE	X COORD	Y COORD
1	0.00000	0.00000	27	2000.0	0.00000
2	122.60	-24.386	28	1961.5	390.18
3	125.00	0.00000	29	2774.0	-551.79
4	122.60	24.386	30	2828.4	0.00000
5	173.38	-34.488	31	2774.0	551.79
6	176.78	0.00000	32	3923.1	-780.36
7	173.38	34.488	33	4000.0	0.00000
8	245.20	-48.773	34	3923.1	780.36
9	250.00	0.00000	35	5548.2	-1103.6
10	245.20	48.773	36	5656.9	0.00000
11	346.76	-68.974	37	5548.2	1103.6
12	353.55	0.00000	38	7846.3	-1560.7
13	346.76	68.974	39	8000.0	0.00000
14	490.39	-97.545	40	7846.3	1560.7
15	500.00	0.00000	41	11096.	-2207.2
16	490.39	97.545	42	11314.	0.00000
17	693.52	-137.95	43	11096.	2207.2
18	707.11	0.00000	44	15693.	-3121.5
19	693.52	137.95	45	16000.	0.00000
20	980.79	-195.09	46	15693.	3121.5
21	1000.0	0.00000	47	22193.	-4414.4
22	980.79	195.09	48	22627.	0.00000
23	1387.0	-275.90	49	22193.	4414.4
24	1414.2	0.00000	50	31385.	-6242.9
25	1387.0	275.90	51	32000.	0.00000
26	1961.6	-390.18	52	31385.	6242.9

INITIAL HEADS					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	0.00000	19	0.00000	37	0.00000
2	0.00000	20	0.00000	38	0.00000
3	0.00000	21	0.00000	39	0.00000
4	0.00000	22	0.00000	40	0.00000
5	0.00000	23	0.00000	41	0.00000

6	0.00000	24	0.00000	42	0.00000
7	0.00000	25	0.00000	43	0.00000
8	0.00000	26	0.00000	44	0.00000
9	0.00000	27	0.00000	45	0.00000
10	0.00000	28	0.00000	46	0.00000
11	0.00000	29	0.00000	47	0.00000
12	0.00000	30	0.00000	48	0.00000
13	0.00000	31	0.00000	49	0.00000
14	0.00000	32	0.00000	50	0.00000
15	0.00000	33	0.00000	51	0.00000
16	0.00000	34	0.00000	52	0.00000
17	0.00000	35	0.00000		
18	0.00000	36	0.00000		

SOURCE BED HEADS		SOURCE BED HEADS		SOURCE BED HEADS	
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	0.00000	19	0.00000	37	0.00000
2	0.00000	20	0.00000	38	0.00000
3	0.00000	21	0.00000	39	0.00000
4	0.00000	22	0.00000	40	0.00000
5	0.00000	23	0.00000	41	0.00000
6	0.00000	24	0.00000	42	0.00000
7	0.00000	25	0.00000	43	0.00000
8	0.00000	26	0.00000	44	0.00000
9	0.00000	27	0.00000	45	0.00000
10	0.00000	28	0.00000	46	0.00000
11	0.00000	29	0.00000	47	0.00000
12	0.00000	30	0.00000	48	0.00000
13	0.00000	31	0.00000	49	0.00000
14	0.00000	32	0.00000	50	0.00000
15	0.00000	33	0.00000	51	0.00000
16	0.00000	34	0.00000	52	0.00000
17	0.00000	35	0.00000		
18	0.00000	36	0.00000		

POINT FLOWS

NODE	DISCHARGE
1	-2099.4

CAUCHY-TYPE BOUNDARY DATA BY BOUNDARY ZONE

SIDE NO.	ZONE BOUNDARY	CONTAINS BOUNDARY		BOUNDARY SIDES SPECIFIED		EXTERNAL HEAD A	EXTERNAL HEAD B
		BOUNDARY	BOUNDARY	ALPHA	FLOW		
1	50	51		0.45580E-01	0.00000	0.00000	0.00000
2	51	52		0.45580E-01	0.00000	0.00000	0.00000

PARAMETERS BY ZONE

ZONE	X TRANS.	Y TRANS.	ROTATION	AQUITARD	STORAGE	RECHARGE
			ANGLE	HYD. COND.	COEFFICIENT	RATE
1	26.730	26.730	0.00000	0.00000	0.10000E-03	0.00000

ELEMENT DATA

ELEMENT	NODE 1	NODE 2	NODE 3	NODE 4	ZONE
1	1	2	3	0	1
2	1	3	4	0	1
3	5	6	3	2	1
4	3	6	7	4	1
5	8	9	6	5	1
6	6	9	10	7	1
7	11	12	9	8	1
8	9	12	13	10	1
9	14	15	12	11	1
10	12	15	16	13	1
11	17	18	15	14	1
12	15	18	19	16	1

13	20	21	18	17	1
14	18	21	22	19	1
15	23	24	21	20	1
16	21	24	25	22	1
17	26	27	24	23	1
18	24	27	28	25	1
19	29	30	27	26	1
20	27	30	31	28	1
21	32	33	30	29	1
22	30	33	34	31	1
23	35	36	33	32	1
24	33	36	37	34	1
25	38	39	36	35	1
26	36	39	40	37	1
27	41	42	39	38	1
28	39	42	43	40	1
29	44	45	42	41	1
30	42	45	46	43	1
31	47	48	45	44	1
32	45	48	49	46	1
33	50	51	48	47	1
34	48	51	52	49	1

		INITIAL AQUIFER THICKNESS			
NODE	THICKNESS	NODE	THICKNESS	NODE	THICKNESS
1	100.00	19	100.00	37	100.00
2	100.00	20	100.00	38	100.00
3	100.00	21	100.00	39	100.00
4	100.00	22	100.00	40	100.00
5	100.00	23	100.00	41	100.00
6	100.00	24	100.00	42	100.00
7	100.00	25	100.00	43	100.00
8	100.00	26	100.00	44	100.00
9	100.00	27	100.00	45	100.00
10	100.00	28	100.00	46	100.00
11	100.00	29	100.00	47	100.00
12	100.00	30	100.00	48	100.00
13	100.00	31	100.00	49	100.00
14	100.00	32	100.00	50	100.00
15	100.00	33	100.00	51	100.00
16	100.00	34	100.00	52	100.00
17	100.00	35	100.00		
18	100.00	36	100.00		

		ELEVATION OF AQUIFER TOP			
NODE	ELEVATION	NODE	ELEVATION	NODE	ELEVATION
1	-2.0000	19	-2.0000	37	-2.0000
2	-2.0000	20	-2.0000	38	-2.0000
3	-2.0000	21	-2.0000	39	-2.0000
4	-2.0000	22	-2.0000	40	-2.0000
5	-2.0000	23	-2.0000	41	-2.0000
6	-2.0000	24	-2.0000	42	-2.0000
7	-2.0000	25	-2.0000	43	-2.0000
8	-2.0000	26	-2.0000	44	-2.0000
9	-2.0000	27	-2.0000	45	-2.0000
10	-2.0000	28	-2.0000	46	-2.0000
11	-2.0000	29	-2.0000	47	-2.0000
12	-2.0000	30	-2.0000	48	-2.0000
13	-2.0000	31	-2.0000	49	-2.0000
14	-2.0000	32	-2.0000	50	-2.0000
15	-2.0000	33	-2.0000	51	-2.0000
16	-2.0000	34	-2.0000	52	-2.0000
17	-2.0000	35	-2.0000		
18	-2.0000	36	-2.0000		

ZONE NO. SPECIFIC

1 ELS. YIELD
 34 0.10000

		STRESS PERIOD		1: TIME STEP SIZES	
NO.	DELTA T	NO.	DELTA T	NO.	DELTA T
1	0.50000E-04	16	0.30000E-02	31	0.40000
2	0.50000E-04	17	0.40000E-02	32	0.60000
3	0.50000E-04	18	0.60000E-02	33	0.70000
4	0.50000E-04	19	0.70000E-02	34	1.1000
5	0.70000E-04	20	0.11000E-01	35	1.4000
6	0.11000E-03	21	0.14000E-01	36	1.8000
7	0.14000E-03	22	0.18000E-01	37	3.0000
8	0.18000E-03	23	0.30000E-01	38	4.0000
9	0.30000E-03	24	0.40000E-01	39	6.0000
10	0.40000E-03	25	0.60000E-01	40	7.0000
11	0.60000E-03	26	0.70000E-01	41	11.000
12	0.70000E-03	27	0.11000	42	14.000
13	0.11000E-02	28	0.14000	43	18.000
14	0.14000E-02	29	0.18000	44	30.000
15	0.18000E-02	30	0.30000		

SOLUTION CONVERGED IN 3 ITERATIONS

SOLUTION CONVERGED IN 1 ITERATIONS

SUMMARY OF FLOW AT CAUCHY-TYPE BOUNDARIES BY ZONE

ZONE 1
 VOLUMETRIC RECHARGE RATE..... = 0.00000
 VOLUMETRIC DISCHARGE RATE..... = 0.00000
 TOTAL RECHARGE VOLUME..... = 0.00000
 TOTAL DISCHARGE VOLUME..... = 0.00000
 NET VOLUMETRIC FLOW RATE, POSITIVE FOR RECHARGE..... = 0.00000
 NET VOLUME, POSITIVE FOR ACCUMULATION..... = 0.00000

VOLUMETRIC FLOW RATES BY BOUNDARY SIDE FOR ZONE 1

BOUNDARY SIDE	NODE K	NODE L	VOLUMETRIC FLOW RATES	
			NODE K	NODE L
1	50	51	0.00000	0.00000
2	51	52	0.00000	0.00000

OUTPUT FOR TIME STEP NO. 1 AT 0.50000E-04 TIME UNITS

COMPUTED VALUES OF HYDRAULIC HEAD					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	-.88604	19	-.14875E-07	37	-.16577E-24
2	-.35296E-01	20	-.12188E-09	38	-.22262E-28
3	-.33935E-01	21	-.48501E-10	39	-.13388E-29
4	-.35296E-01	22	-.12189E-09	40	-.22261E-28
5	-.57912E-02	23	-.51023E-12	41	-.14955E-32
6	-.52763E-02	24	-.15344E-12	42	-.64049E-34
7	-.57912E-02	25	-.51029E-12	43	-.14954E-32
8	-.56739E-03	26	-.10814E-14	44	-.50003E-37
9	-.47791E-03	27	-.24065E-15	45	0.00000
10	-.56739E-03	28	-.10817E-14	46	-.48803E-37
11	-.31360E-04	29	-.11540E-17	47	0.00000
12	-.23442E-04	30	-.18734E-18	48	0.00000
13	-.31360E-04	31	-.11539E-17	49	0.00000
14	-.94000E-06	32	-.61793E-21	50	0.00000
15	-.59464E-06	33	-.72477E-22	51	0.00000
16	-.94003E-06	34	-.61791E-21	52	0.00000
17	-.14874E-07	35	-.16578E-24		
18	-.76070E-08	36	-.13955E-25		

WATER BALANCE SUMMARY

VOLUMETRIC RATES FOR TIME STEP NO. 1

ACCUMULATION OF WATER IN STORAGE..... = -2099.4
 RECHARGE FROM POINT SOURCES..... = 0.00000
 DISCHARGE FROM POINT SINKS..... = -2099.4
 RECHARGE FROM DISTRIBUTED SOURCES..... = 0.00000
 DISCHARGE FROM DISTRIBUTED SINKS..... = 0.00000
 RECHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.00000
 DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.00000
 DISCHARGE FROM NONLINEAR POINT SINKS..... = 0.00000
 RECHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 DISCHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.00000
 DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.00000
 FLOW IMBALANCE..... = 0.00000

TOTAL VOLUMES SINCE BEGINNING OF SIMULATION

ACCUMULATION OF WATER IN STORAGE..... = -.10497
 RECHARGE FROM POINT SOURCES..... = 0.00000
 DISCHARGE FROM POINT SINKS..... = -.10497
 RECHARGE FROM DISTRIBUTED SOURCES..... = 0.00000
 DISCHARGE FROM DISTRIBUTED SINKS..... = 0.00000
 RECHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE..... = 0.00000
 RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES..... = 0.00000
 RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.00000
 DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES..... = 0.00000
 DISCHARGE FROM NONLINEAR POINT SINKS..... = 0.00000
 RECHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 DISCHARGE FROM NONLINEAR STEADY LEAKAGE..... = 0.00000
 RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.00000
 DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES..... = 0.00000
 FLOW IMBALANCE..... = 0.00000

SOLUTION CONVERGED IN 7 ITERATIONS

SOLUTION CONVERGED IN 5 ITERATIONS

SUMMARY OF FLOW AT CAUCHY-TYPE BOUNDARIES BY ZONE

ZONE 1
 VOLUMETRIC RECHARGE RATE..... = 502.60
 VOLUMETRIC DISCHARGE RATE..... = 0.00000
 TOTAL RECHARGE VOLUME..... = 15078.
 TOTAL DISCHARGE VOLUME..... = 0.00000
 NET VOLUMETRIC FLOW RATE, POSITIVE FOR RECHARGE..... = 502.60
 NET VOLUME, POSITIVE FOR ACCUMULATION..... = 15078.

VOLUMETRIC FLOW RATES BY BOUNDARY SIDE FOR ZONE 1

BOUNDARY SIDE	NODE		VOLUMETRIC FLOW RATES	
	K	L	NODE K	NODE L
1	50	51	125.63	125.68
2	51	52	125.68	125.63

OUTPUT FOR TIME STEP NO. 44 AT 100.00 TIME UNITS

COMPUTED VALUES OF HYDRAULIC HEAD					
NODE	HEAD	NODE	HEAD	NODE	HEAD
1	-12.166	19	-4.3208	37	-1.8042
2	-7.8350	20	-3.6728	38	-1.6194
3	-7.8350	21	-3.6716	39	-1.6193
4	-7.8350	22	-3.6728	40	-1.6194
5	-7.1132	23	-3.0745	41	-1.4358
6	-7.1131	24	-3.0722	42	-1.4357
7	-7.1132	25	-3.0745	43	-1.4358
8	-6.3984	26	-2.5599	44	-1.2544
9	-6.3983	27	-2.5564	45	-1.2543
10	-6.3984	28	-2.5600	46	-1.2544
11	-5.6923	29	-2.1788	47	-1.0765
12	-5.6921	30	-2.1739	48	-1.0764
13	-5.6923	31	-2.1788	49	-1.0765
14	-4.9978	32	-1.9901	50	-.90430
15	-4.9974	33	-1.9898	51	-.90458
16	-4.9978	34	-1.9901	52	-.90430
17	-4.3208	35	-1.8042		
18	-4.3201	36	-1.8042		

WATER BALANCE SUMMARY

VOLUMETRIC RATES FOR TIME STEP NO. 44

ACCUMULATION OF WATER IN STORAGE.....	= -1596.8
RECHARGE FROM POINT SOURCES.....	= 0.00000
DISCHARGE FROM POINT SINKS.....	= -2099.4
RECHARGE FROM DISTRIBUTED SOURCES.....	= 0.00000
DISCHARGE FROM DISTRIBUTED SINKS.....	= 0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 502.60
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= 0.00000
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= 0.00000
DISCHARGE FROM NONLINEAR POINT SINKS.....	= 0.00000
RECHARGE FROM NONLINEAR STEADY LEAKAGE.....	= 0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE.....	= 0.00000
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= 0.00000
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= 0.00000
FLOW IMBALANCE.....	= 0.24414E-03

TOTAL VOLUMES SINCE BEGINNING OF SIMULATION

ACCUMULATION OF WATER IN STORAGE.....	= -.17353E+06
RECHARGE FROM POINT SOURCES.....	= 0.00000
DISCHARGE FROM POINT SINKS.....	= -.20994E+06
RECHARGE FROM DISTRIBUTED SOURCES.....	= 0.00000
DISCHARGE FROM DISTRIBUTED SINKS.....	= 0.00000
RECHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
DISCHARGE FROM STEADY OR TRANSIENT LEAKAGE.....	= 0.00000
RECHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 36418.
DISCHARGE ACROSS CAUCHY-TYPE BOUNDARIES.....	= 0.00000
RECHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= 0.00000
DISCHARGE ACROSS SPECIFIED-HEAD BOUNDARIES.....	= 0.00000
DISCHARGE FROM NONLINEAR POINT SINKS.....	= 0.00000
RECHARGE FROM NONLINEAR STEADY LEAKAGE.....	= 0.00000
DISCHARGE FROM NONLINEAR STEADY LEAKAGE.....	= 0.00000
RECHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= 0.00000
DISCHARGE FROM NONLINEAR CAUCHY-TYPE BOUNDARIES.....	= 0.00000
FLOW IMBALANCE.....	= -.37894E-02