INTERACTIVE PREPROCESSOR PROGRAM FOR THE U.S.G.S. KONIKOW SOLUTE TRANSPORT MODEL

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ABSTRACT

Interactive programs have been developed to aid users in creating and editing input data sets for a modified version of the NRC version of the U.S.G.S. Solute Transport Model (Kent, et al, 1984).

A detailed description of the interactive programs, as well as program listings, is included in this report. A listing of the interactive creation of an input data set for the modifiedSolute Transport Model is also included. Data from the Babylon Landfill Site on Long Island was used to test the interactive programs. The input data sets created, along with selected output from the Solute Transport Model, are listed in Appendix VI. Potential users can apply the interactive programs to their individual needs by following the examples provided.

CONTENTS

INTERACTIVE PREPROCESSOR PROGRAM FOR THE U.S.G.S. SOLUTE TRANSPORT MODEL

1.0 INTRODUCTION

The purpose of this report is to describe an interactive preprocessor program that was developed to aid in the creation and modification of input data sets for use with the NRC version (Tracy, J.V., (1982) of the U.S.G.S. Solute Transport Model developed by (Konikow and Bredehoeft, (1978).

The interactive preprocessor program is one of a series of documented programs being prepared for the U.S. Environmental Protection Agency under a contract entitled "Mathematical Models for Subsurface Transport and Fate Predictions."

The project is providing a well-documented set of transport and fate models ranging from relatively simple analytical models to complex numerical models. These models will be available on the EPA computer network in a format which would enable users to access the code, enter the required data, run the model, and receive the model results without extensive technical system support.

Fairly complex numerical models are required for predicting the transport and fate of toxic chemicals in heterogeneous systems. The preparation of the input data file usually represents a significant, and often tedious, effort in the use of numerical models. However, computers can be used to efficiently manage data bases by developing computer codes which are interactive. The interactive code not only simplifies data entry but also enables the user to gain some insight into the effects of physical and chemical parameters on the movement and behavior of a tracer in contaminant plume.

The interactive computer code for the preprocessor is written in

PL/I for the IBM 3081D as well as for the Kaypro and IBM PC microcomputers using PC-DOS and CPM operating system. The program has been developed to assist the user in preparing the input data files for batch processing of the U.S.G.S. Solute Transport Model on the IBM 3081D. The preprocessor prompts the user for the required input data. An editor is included to facilitate the correction of errors or the modification of an input data set. The code also generates any job-control statements required to submit a job for batch processing on the IBM 3081D.

1.1 Objectives

The broad objective of this project is to develop and/or modify mathematical models in order to provide user friendly access to models which are capable of predicting the probable concentrations of chemical substances in ground-water systems resulting from the release of these substances onto the ground surface or into the subsurface.

More specifically, the objectives of this project report are to provide program documentation and a User's Manual for an interactive program to be utilized in creating and modifying input data files for use with the NRC version of the U.S.G.S. Solute Transport Model.

1.2 Approach

Each project report contains the following:

(1) Program Documentation and

(2) User's Manual

Documentation of each program is developed to include (a) the motivation for and limitations (assumptions) of the program, (b) a description of the methods used in the program, (c) listings of the source code, (d) one or more sets of test data, and (e) guidelines for further modifications which might be required to enable the use of the

model on a variety of computer systems. A master copy of all source codes are prepared on 5 1/4 inch disks or tapes in a format specified for the system to be utilized. This type of program documentation has been written for those who have some background in mathematics and/or computer systems and languages. These documents are intended to serve as reference manuals for individuals who may be responsbile for maintaining, modifying, or transferring computer codes; as well as users who are also interested in the details of the computer codes.

The User's Manual includes (a) practical implications of assumptions and restrictions which are incorporated in the program, (b) the type of computer resources which may be required (for example computer memory, execution time, and input and output devices), (c) input data requirements and formats, and (d) detailed, step-by-step examples of practical problems. The user's manual is written in layman terms for those who may not have a background or experience in numerical methods or computer programming.

The principal investigators assume that users will have some background in hydrogeology, soil science, or a similar field; and will have a basic understanding of the physical, chemical, and/or biological processes involved in a specific problem to be addressed. With this background, a user's manual is intended to introduce the user to the model or model adaptation and areas of application and to provide tutorials on data requirements, model access and execution, and the management and interpretation of model output. The program documentation and user's manual will serve as the basic reference materials for future workshops.

The preprocessor is designed for the U.S.G.S. Solute Transport

Model. The model is based on a ground-water flow equation which is coupled with the solute-transport equation in the model. The computer program uses an Alternating-Direction Implicit Procedure (ADIP) to solve a system of algebraic equations generated from a finite-difference approximation to the ground-water flow equation. The method of characteristics is used to solve the solute-transport equation. The method of characteristics uses a particle tracking procedure to represent convective transport and a two-step explicit procedure to solve a finite-difference equation that describes the effects of hydrodynamic dispersion, fluid sources and sinks, and divergence of velocity.

Radioactive decay and equilibrium adsorption were incorporated for the U.S. Nuclear Regulatory Commission (Tracy, (1982). Procedures for radioactive decay, linear isotherm, Langmuir isotherm, and the Freundlich isotherm have been added to the Solute Transport Model developed by Konikow and Bredehoeft (1978).

The U.S.G.S. Solute Transport Model was selected since it is well documented and maintained. The modifications by Tracy (1982) to include adsorption and first-order reactions were incorporated in the user interface. Additional modifications were made in the U.S.G.S. Transport Model. The modifications include options for selecting (1) only the potentiometric head calculations or the potentiometric head and solute transport calculations, (2) water-table or confined-aquifer conditions, (3) adjustment of transmissivities after each time step to accommodate unconfined flow, (4) calculation of the initial saturated thickness from the bottom elevation a dn potentiometric head in an unconfined system, and (5) incorporation of the SIP iterative technique which is an option for solving the fluid-flow equations in

the U.S.G.S. transport model. These modifications are described in another manual of the project series of programs and user manuals entitled "Modifications for the U.S.G.S. Konikow Solute Transport Model" (Kent et al, 1984).

2.0 INTERACTIVE PROGRAM DESCRIPTION

Interactive capabilities to the U.S.G.S. Solute Transport Model (Konikow and Bredehoeft, 1978) were developed to aid users in creating the input data set. This program serves as an interactive input and modification routine for the input data to the Solute Transport Model (NRC version). A controlling program has also been written to incorporate the input and modification routines into one program.

The interactive program consists of two routines; one is a preprocessor, the other an editor. The preprocessor creates a data set that contains the input to the Solute Transport Model. The editor is used to modify data sets created by the preprocessor. Both routines are initiated by the controlling program KONI. The editor and preprocessor, together, contain approximately 3600 lines of PL/1 code. Nearly 800 lines of this code comprise subroutines used by both programs. The source code for all routines is listed in Appendix I. These programs were developed and tested on an IBM 3081D computer and on the Kaypro 2 and IBM/PC microcomputers using PC-DOS and CPM operating systems. The technical aspects of the interactive program are described in detail in section 4 of this report.

3.0 USER'S GUIDE FOR THE INTERACTIVE PREPROCESSOR PROGRAM

3.1 General Description

Interactive capabilities to the U.S.G.S. Solute Transport Model (Konikow and Bredehoeft, 1978) were developed to aid users in creating the input data set. The input parameters defined in Appendix III are labeled in each prompt. Provisions have been made in this routine for all modifications to the Konikow Solute Transport Model, Version OSU 1.0. All input data is in lower case. Prompts are shown in upper case.

The preprocessor is written in PL/1; a source listing is in Appendix I. The source programs must be compiled and linked. The data set created by the preprocessor includes the Job Control Language (JCL) used at Oklahoma State University. This JCL may need to be altered, according to the requirements of the computer system being utilized. The preprocessor allocates the input data set as a standard fixed binary sequential data set with a logical record length of 80. The data set is the mass storage equivalent of a card deck. All input data is stored in this data set at the end of the preprocessor routine.

A controlling program, also written in PL/1, is used to initiate the preprocessor. Entering

```
Koni
```

begins execution of the controlling program. After execution has begun, the following menu is displayed:

```
CHOOSE ACTION:
     1)  CREATE NEW DATA
     2)  MODIFY EXISTING DATA
     3)  END PROGRAM
(ENTER CORRESPONDING NUMBER):
```

The options are described in the following sections, 3.2 through 3.4.

3.2 Preprocessor

The choice of option 1 on the menu in section 3.1 creates the data set where the JCL and input parameters are stored in their proper formats. The first prompt asks for the name of the data set.

```
ENTER THE RUNFILE DATA SET NAME (DON'T WORRY, IF THE DATA SET IS
NOT THERE, IT WILL BE CREATED):  longis23.cntl
```

3.2.1 Job Control Language

After the data set name is entered, prompts for the JCL begin. First, the jobname is requested.

```
ENTER THE JOBNAME:  longis
```

According to IBM convention, this is any name up to eight characters long and beginning with an alphabetic character. The jobname entered was "longis". After the jobname is entered the prompt for the simulation time is displayed:

```
ENTER THE TIME LIMIT FOR THE JOB,
     1)  5 SECONDS OR LESS
     2)  40 SECONDS OR LESS
     3)  5 MINUTES OR LESS
     4)  OVER 5 MINUTES
CHOOSE ONE OF THE ABOVE:  2
```

This is approximately how much Central Processing Unit (CPU) time is required to execute the Solute Transport Model. As a general rule, this model, after the source code has been compiled, will require one to four minutes executing time. For a more in depth discussion of choosing time limits, see section 3.5. Here, option 3 was selected.

For the output to be placed in a specific output window in the OSU computer room, the "room" needs to be designated. The prompt for this is:

```
ENTER THE "ROOM" FOR THE OUTPUT WINDOW.
SINGLE CHARACTER,
BETWEEN "A" AND "Z":  c
```

To have the results of the simulation put on disk, the output

data set needs to be allocated. The prompt for this is:

```
ENTER THE COMPLETE OUTPUT DATA SET NAME
(NO QUOTES): u11834c.longis23.outlist
```

The output data set name is u11834c.longis23.outlist. The data set that is to be used with graphics packages such as the Statistical Analysis System (SAS), is now allocated and can be accessed using independent SAS programs. Sample SAS programs, results, and descriptions are provided in Appendices VI and VIII. The formats used for this data set are indicated in Appendix VII. The prompt is:

```
ENTER THE COMPLETE GRAPHICS OUTPUT DATA SET NAME
(NO QUOTES): u11834c.longis23.graph
```

The graphics data set name is u11834c.longis23.graph.

After these are entered, the JCL is displayed:

```
THE FOLLOWING IS THE JCL
     1) //LONGIS JOB (?????,TSO-TR-KONI),KONIKOWRUN,
     2) //TIME=(0,40),CLASS=A,
     3) //MSGCLASS=X,NOTIFY=*
     4) /*PASSWORD ????
     5) /*JOBPARM ROOM=C
     6) //*
     7) //KONI EXEC PGM=KONIKOW,REGION=1500K
     8) //STEPLIB  DD  DISP=SHR,DSN=U11236C.KONI.LOAD
     9) //FT06F001  DD  DSN=U11834C.LONGIS23.OUTLIST,UNIT=STORAGE,
    10) //              SPACE=(TRK,(10,10)),DISP=(MOD,CATLG),
    11) //              DCB=(RECFM=VBA,LRECL=133,BLKSIZE=7448)
    12) //FT10F001  DD  DSN=U11834C.LONGIS23.GRAPH,UNIT=STORAGE,
    13) //              SPACE=(TRK,(10,10)),DISP=(MOD,CATLG),
    14) //              DCB=(RECFM=FB,LRECL=80,BLKSIZE=7440)
    15) //FT07F001  DD  SYSOUT=B
    16) //FT05F001  DD  *
DO YOU WISH TO CHANGE ANYTHING  (Y/N):  y
```

If the JCL is correct, then "no" is entered. If any error is present, then "yes" is entered ("y" and "n" are sufficient to represent "yes" and "no".) In this example, "yes" was entered. The prompt is:

```
ENTER THE NUMBER OF THE LINE YOU WISH TO CHANGE,
(ONLY ONE AT A TIME):  1
```

The jobname was entered incorrectly, so line number 1 was entered. The requested line is listed and changed as shown below.

```
//LONGIS JOB (?????,TSO-TR-KONI),KONIKOWRUN,
ENTER THE COMPLETE LINE . . .://U11834C job
(?????,tso-tr-koni),konikowrun,
```

After the change is entered, The JCL is displayed again.

```
 1) //U11834C JOB (?????,TSO-TR-KONI),KONIKOWRUN,
 2) //  TIME=(0,40),CLASS=A,
 3) //  MSGCLASS=X,NOTIFY=*
 4) /*PASSWORD ????
 5) /*JOBPARM ROOM=C
 6) //*
 7) //KONI EXEC PGM=KONIKOW,REGION=1500K
 8) //STEPLIB  DD  DISP=SHR,DSN=U11236C.KONI.LOAD
 9) //FT06F001 DD  DSN=U11834C.LONGIS23.OUTLIST,UNIT=STORAGE,
10) //              SPACE=(TRK,(10,10)),DISP=(MOD,CATLG),
11) //              DCB=(RECFM=VBA,LRECL=133,BLKSIZE=7448)
12) //FT10F001 DD  DSN=U11834C.LONGIS23.GRAPH,UNIT=STORAGE,
13) //              SPACE=(TRK,(10,10)),DISP=MOD,CATLG),
14) //              DCB=(RECFM=FB,LRECL=80,BLKSIZE=7440)
15) //FT07F001 DD  SYSOUT=B
16) //FT05F001 DD  *
    DO YOU WISH TO CHANGE ANYTHING  (Y/N):  n
```

If the JCL is correct, then "no" is entered and the program will proceed to the next prompt.

3.2.2 Verify and Exit

The next prompt is used within the preprocessor to allow the user to alter data immediately after the value is entered.

```
DO YOU WISH TO VERIFY ALL ENTRIES (Y/N):  n
```

If verification is desired, enter "yes" (here it is not desired). The following prompt would appear after each variable prompt.

```
VERIFY (Y/N):
```

If the value just entered needs to be changed, enter "n". Another prompt then appears, requesting the corrected data to be entered. If the data just entered does not need to be altered, enter "y". The next prompt is then displayed.

To stop the preprocessor before all of the data has been input, respond to any prompt with "exit". Control will be returned to the controlling program. No data entered or modified will be saved. If in

the preprocessor, the data set will not be created. If in the editor, the data set will not be updated.

3.2.3 Individual Variables

The following prompts are self explanatory and are listed below with the input data. If any questions should arise about a variable, refer to the description of the parameter in Appendix III.

```
ENTER THE TITLE, DESCRIPTIVE OF THE PROBLEM.
MAXIMUM OF 80 CHARACTERS.
VARIABLE "TITLE":  babylon,levelb,chloride

ENTER THE NUMBER OF NODES IN THE "X" DIRECTION.
MINIMUM OF 3, MAXIMUM OF 60.
VARIABLE "NX":  18
```

Note that in all references to the "X" direction the column number is to be used. Similarly, all references to the "Y" direction should use the row number.

```
ENTER THE NUMBER OF NODES IN THE "Y" DIRECTION.
MINIMUM OF 3, MAXIMUM OF 60.
VARIABLE "NY":  31

ENTER THE MAXIMUM NUMBER OF PARTICLES.
MAXIMUM OF 9850.
VARIABLE "NPMAX":  3620

ENTER THE NUMBER OF PARTICLES PER NODE.
OPTIONS = 4,5,8,9:
VARIABLE "NPTPND":  4

ENTER THE NUMBER OF OBSERVATION POINTS TO BE
SPECIFIED NEXT.  MAXIMUM OF 5.
VARIABLE "NUMOBS":  3

ENTER THE "X" COORDINATE OF OBSERVATION POINT.
VARIABLE "IXOBS(1)":  8

ENTER THE "Y" COORDINATE OF OBSERVATION POINT.
VARIABLE "IYOBS(1)":  4

ENTER THE "X" COORDINATE OF OBSERVATION POINT.
VARIABLE "IXOBS(2)":  10

ENTER THE "Y" COORDINATE OF OBSERVATION POINT.
VARIABLE "IYOBS(2)":  16
```

```
     ENTER THE "X" COORDINATE OF OBSERVATION POINT.
     VARIABLE "IXOBS(3)":  10
     ENTER THE "Y" COORDINATE OF OBSERVATION POINT.
     VARIABLE "IYOBS(3)":  26

     ENTER THE NUMBER OF NODE IDENTIFICATION CODES
     TO BE SPECIFIED.  MAXIMUM OF 10.
     VARIABLES "NCODES":  1

     ENTER NODE IDENTIFICATION CODE.
     VARIABLE "ICODE(1)":  2

     ENTER CORRESPONDING LEAKANCE (FT**2/SEC).
     MAXIMUM LENGTH OF 10, REAL NUMBER.
     NOTE:  FT**2/SEC = GPD/FT * 1.54723 E-6
     VARIABLE "FCTR1(1)":  1.0
```

Note: Any real number may be entered in scientific notation; for example, 9.E99.

```
     ENTER CONCENTRATION FOR ICODE (MG/L).
     MAXIMUM LENGTH OF 10, REAL NUMBER.
     VARIABLE "FCTR2(1)":  0

     ENTER OPTION TO RETAIN RECHARGE MATRIX VALUES:
          0)  RETAIN VALUES.
          1)  USE OF VALUE OF FCTR3.
     VARIABLE "OVERRD(1)":  0
```

If "1" is entered, the following prompt would appear:

```
     ENTER RECHARGE/DISCHARGE FOR ICODE (FT/SEC).
     NEGATIVE FOR RECHARGE, POSITIVE FOR DISCHARGE.
     MAXIMUM LENGTH OF 10, REAL NUMBER.
     NOTE:  FT/SEC = IN/YR * 26.7918 E-10
     ENTER VARIABLE "FCTR3(1)":
```

since the recharge/discharge is to be retained, prompting continues with the storage coefficient.

```
     ENTER THE STORAGE COEFFICIENT.
     0 FOR STEADY FLOW PROBLEMS.
     MAXIMUM LENGTH OF 5, REAL NUMBER.
     VARIABLE "S":  .0005
```

If the storage coefficient were zero, variables TIMX and TINIT would not be prompted but automatically set to zero. Prompting continues with the following:

```
     ENTER THE NUMBER OF PUMPING PERIODS.
     MAXIMUM OF 50.
     VARIABLE "NPMP":  3
```

```
ENTER THE MAXIMUM NUMBER OF TIME STEPS IN A
PUMPING PERIOD.  MAXIMUM OF 100.
VARIABLE "NTIM":  3

ENTER THE TIME STEP INTERVAL FOR PRINTING
HYDRAULIC AND CHEMICAL OUTPUT DATA.
VARIABLE "NPNT":  1

ENTER THE NUMBER OF ITERATION PARAMETERS FOR
ADIP.  USUALLY FROM 4 TO 7.
VARIABLE "NITP":  7

ENTER THE MAXIMUM ALLOWABLE NUMBER OF ITERATIONS
IN ADIP OR SIP.  USUALLY FROM 100 TO 200.
VARIABLE "ITMAX":  100

ENTER THE PARTICLE MOVEMENT INTERVAL (IMOV)
FOR PRINTING CHEMICAL OUTPUT DATA.
SPECIFY 0 TO PRINT ONLY AT THE END OF TIME STEPS.
VARIABLE "NPNTMV":  0

ENTER THE OPTION FOR PRINTING COMPUTED
VELOCITIES.
     0)  DO NOT PRINT.
     1)  PRINT FOR FIRST TIME STEP.
     2)  PRINT FOR ALL TIME STEPS.
CHOOSE ONE OF THE ABOVE.
VARIABLE "NPNTVL":  0

ENTER THE OPTION FOR PRINTING COMPUTED
DISPERSION EQUATION COEFFICIENTS.
     0)  DO NOT PRINT.
     1)  PRINT FOR FIRST TIME STEP.
     2)  PRINT FOR ALL TIME STEPS.
CHOOSE ONE OF THE ABOVE.
VARIABLE "NPNTD":  0

ENTER THE OPTION TO PRINT COMPUTED CHANGES IN
CONCENTRATION.
     0)  DO NOT PRINT.
     1)  PRINT.
CHOOSE ONE OF THE ABOVE.
VARIABLE "NPDELC":  1

ENTER THE OPTION TO PUNCH VELOCITY DATA.
     0)  DO NOT PUNCH.
     1)  PUNCH FOR FIRST TIME STEP.
     2)  PUNCH FOR ALL TIME STEPS.
CHOOSE ONE OF THE ABOVE.
VARIABLE "NPNCHV":  0

ENTER THE PUMPING PERIOD (YEARS).
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "PINT":  3.
```

Since the storage coefficient was not equal to zero, the variables TIMX and TINIT are prompted for here:

```
ENTER THE TIME INCREMENT MULTIPLIER FOR
TRANSIENT FLOW PROBLEMS.
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "TIMX":  1.

ENTER THE SIZE OF THE INITIAL TIME STEP
IN SECONDS.
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "TINIT":  3.1E7

ENTER THE NUMBER OF PUMPING OR INJECTION
WELLS TO BE SPECIFIED.
MAXIMUM OF 50.
VARIABLE "NREC":  8

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(1)":  8

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(1)":  3

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(1)":  -.0724

ENTER THE CONCENTRATION OF THE INJECTED
FLUID (MG/L).
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNREC(1)":  250.

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(2)":  9

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(2)":  3

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(2)":  -.0724
```

```
ENTER THE CONCENTRATION OF THE INJECTED
FLUID (MG/L).
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNRECH(2)":  220.

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(3)":  10

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(3)":  3

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(3)":  -.0724

ENTER THE CONCENTRATION OF THE INJECTED
FLUID (MG/L).
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNRECH(3)":  240.

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(4)":  11

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(4)":  3

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE: FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(4)":  -.0724

ENTER THE CONCENTRATION OF THE INJECTED
FLUID (MG/L).
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNRECH(4)":  240.

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(5)":  8

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(5)":  29
```

```
ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(5)":  .0724

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(6)":  9

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(6)":  29

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(6)":  .0724

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(7)":  10

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(7)":  29

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(7)":  .0724

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(8)":  11

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(8)":  29

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(8)":  .0724
```

The next prompt is used to change selected parameters for each subsequent pumping period.

```
DO YOU WISH TO MAKE ANY REVISIONS TO THE NEXT
PUMPING PERIOD.
VARIABLE "ICHK"  (YES OR NO):  y
```

```
ENTER THE MAXIMUM NUMBER OF TIME STEPS IN A
PUMPING PERIOD.  MAXIMUM OF 100.
VARIABLE "NTIM":  1

ENTER THE TIME STEP INTERVAL FOR PRINTING
HYDRAULIC AND CHEMICAL OUTPUT DATA.
VARIABLE "NPNT":  1

ENTER THE NUMBER OF ITERATION PARAMETERS FOR
ADIP USUALLY FROM 4 TO 7.
VARIABLE "NITP":  7

ENTER THE MAXIMUM ALLOWABLE NUMBER OF ITERATIONS
IN ADIP OR SIP.  USUALLY FROM 100 TO 200.
VARIABLE "ITMAX":  100

ENTER THE PARTICLE MOVEMENT INTERVAL (IMOV)
FOR PRINTING CHEMICAL OUTPUT DATA.
SPECIFY 0 TO PRINT ONLY AT THE END OF TIME STEPS.
VARIABLE "NPNTMV":  0

ENTER THE OPTION FOR PRINTING COMPUTED
VELOCITIES.
     0)  DO NOT PRINT.
     1)  PRINT FOR FIRST TIME STEP.
     2)  PRINT FOR ALL TIME STEPS.
CHOOSE ONE OF THE ABOVE.
VARIABLE "NPNTVL":  0

ENTER THE OPTION FOR PRINTING COMPUTED
DISPERSION EQUATION COEFFICIENTS.
     0)  DO NOT PRINT.
     1)  PRINT FOR FIRST TIME STEP.
     2)  PRINT FOR ALL TIME STEPS.
CHOOSE ONE OF THE ABOVE.
VARIABLE "NPNTD":  0

ENTER THE OPTION TO PRINT COMPUTED CHANGES IN
CONCENTRATION.
     0)  DO NOT PRINT.
     1)  PRINT.
CHOOSE ONE OF THE ABOVE.
VARIABLE "NPDELC":  1

ENTER THE OPTION TO PUNCH VELOCITY DATA.
     0)  DO NOT PUNCH.
     1)  PUNCH FOR FIRST TIME STEP.
     2)  PUNCH FOR ALL TIME STEPS.
CHOOSE ONE OF THE ABOVE.
VARIABLE "NPNCHV":  0

ENTER THE PUMPING PERIOD (YEARS).
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "PINT":  4
```

```
ENTER THE TIME INCREMENT MULTIPLIER FOR
TRANSIENT FLOW PROBLEMS.
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "TIMX":  1.

ENTER THE SIZE OF THE INITIAL TIME STEP
IN SECONDS.
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "TINIT":  1.2E8

ENTER THE NUMBER OF PUMPING OR INJECTION
WELLS TO BE SPECIFIED.
MAXIMUM OF 50.
VARIABLE "NREC":  8

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(1)":  8

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(1)":  3

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(1)":  0.0

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(2)":  9

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(2)":  3

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(2)":  0.0

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(3)":  10

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(3)":  3
```

```
ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(3)":  0.0

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(4)":  11

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(4)":  3

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(4)":  0.0

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(5)":  8

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(5)":  29

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(5)":  0.0

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(6)":  9

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(6)":  29

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(6)":  0.0

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(7)":  10

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(7)":  29
```

```
ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(7)":  0.0

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(8)":  11

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(8)":  29

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(8)":  0.0
```

(End of the prompts for the variables in second pumping period.)

```
DO YOU WISH TO MAKE ANY REVISIONS TO THE NEXT
PUMPING PERIOD.
VARIABLE "ICHK"  (YES OR NO):  y

ENTER THE MAXIMUM NUMBER OF TIME STEPS IN A
PUMPING PERIOD.  MAXIMUM OF 100.
VARIABLE "NTIM":  3

ENTER THE TIME STEP INTERVAL FOR PRINTING
HYDRAULIC AND CHEMICAL OUTPUT DATA.
VARIABLE "NPNT":  1

ENTER THE NUMBER OF ITERATION PARAMETERS FOR
ADIP USUALLY FROM 4 TO 7.
VARIABLE "NITP":  7

ENTER THE MAXIMUM ALLOWABLE NUMBER OF ITERATIONS
IN ADIP OR SIP.  USUALLY FROM 100 TO 200.
VARIABLE "ITMAX":  100

ENTER THE PARTICLE MOVEMENT INTERVAL (IMOV)
FOR PRINTING CHEMICAL OUTPUT DATA.
SPECIFY 0 TO PRINT ONLY AT THE END OF TIME STEPS.
VARIABLE "NPNTMV":  0

ENTER THE OPTION FOR PRINTING COMPUTED
VELOCITIES.
     0)  DO NOT PRINT.
     1)  PRINT FOR FIRST TIME STEP.
     2)  PRINT FOR ALL TIME STEPS.
CHOOSE ONE OF THE ABOVE.
VARIABLE "NPNTVL":  0
```

```
ENTER THE OPTION FOR PRINTING COMPUTED
DISPERSION EQUATION COEFFICIENTS.
     0)  DO NOT PRINT.
     1)  PRINT FOR FIRST TIME STEP.
     2)  PRINT FOR ALL TIME STEPS.
CHOOSE ONE OF THE ABOVE.
VARIABLE "NPNTD":  0

ENTER THE OPTION TO PRINT COMPUTED CHANGES IN
CONCENTRATION.
     0)  DO NOT PRINT.
     1)  PRINT.
CHOOSE ONE OF THE ABOVE.
VARIABLE "NPDELC":  1

ENTER THE OPTION TO PUNCH VELOCITY DATA.
     0)  DO NOT PUNCH.
     1)  PUNCH FOR FIRST TIME STEP.
     2)  PUNCH FOR ALL TIME STEPS.
CHOOSE ONE OF THE ABOVE.
VARIABLE "NPNCHV":  0

ENTER THE PUMPING PERIOD (YEARS).
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "PINT":  3.

ENTER THE TIME INCREMENT MULTIPLIER FOR
TRANSIENT FLOW PROBLEMS.
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "TIMX":  1.

ENTER THE SIZE OF THE INITIAL TIME STEP
IN SECONDS.
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "TINIT":  3.2E7

ENTER THE NUMBER OF PUMPING OR INJECTION
WELLS TO BE SPECIFIED.
MAXIMUM OF 50.
VARIABLE "NREC":  8

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(1)":  8

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(1)":  3

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(1)":  -.0724
```

```
ENTER THE CONCENTRATION OF THE INJECTED
FLUID (MG/L).
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNRECH(1)":  250.

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(2)":  9

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(2)":  3

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(2)":  -.0724

ENTER THE CONCENTRATION OF THE INJECTED
FLUID (MG/L).
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNRECH(2)":  220.

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(3)":  10

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(3)":  3

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(3)":  -.0724

ENTER THE CONCENTRATION OF THE INJECTED
FLUID (MG/L).
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNRECH(3)":  240.

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(4)":  11

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(4)":  3
```

```
ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(4)":  -.0724

ENTER THE CONCENTRATION OF THE INJECTED
FLUID (MG/L).
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNRECH(4)":  240.

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(5)":  8

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(5)":  29

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(5)":  .0724

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(6)":  9

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(6)":  29

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(6)":  .0724

ENTER THE X COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IX(7)":  10

ENTER THE Y COORDINATE OF THE PUMPING OR
INJECTION WELL.
VARIABLE "IY(7)":  29

ENTER THE RATE (FT**3/SEC).
POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
MAXIMUM LENGTH OF 8, REAL NUMBER.
NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
VARIABLE "REC(7)":  .0724
```

```
      ENTER THE X COORDINATE OF THE PUMPING OR
      INJECTION WELL.
      VARIABLE "IX(8)":  11

      ENTER THE Y COORDINATE OF THE PUMPING OR
      INJECTION WELL.
      VARIABLE "IY(8)":  29

      ENTER THE RATE (FT**3/SEC).
      POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.
      MAXIMUM LENGTH OF 8, REAL NUMBER.
      NOTE:  FT**3/SEC = GAL/MIN * 0.0022278
      VARIABLE "REC(8)":  .0724

(End of the prompts for the variables in third pumping period.)

      ENTER THE CONVERGENCE CRITERIA FOR THE FLOW
      EQUATION.  USUALLY LESS THAN 0.1.
      MAXIMUM LENGTH OF 5, REAL NUMBER.
      VARIABLE "TOL":  .01

      ENTER THE EFFECTIVE POROSITY.
      MAXIMUM LENGTH OF 5, REAL NUMBER.
      VARIABLE "POROS":  .25

      ENTER THE CHARACTERISTIC LENGTH (FEET).
      (LONGITUDINAL DISPERSIVITY).
      MAXIMUM LENGTH OF 5, REAL NUMBER.
      VARIABLE "BETA":  40

      ENTER THE NODE SIZE IN THE "X" DIRECTION (FEET).
      MAXIMUM LENGTH OF 5, REAL NUMBER.
      VARIABLE "XDEL":  500

      ENTER THE NODE SIZE IN THE "Y" DIRECTION (FEET).
      MAXIMUM LENGTH OF 5, REAL NUMBER.
      VARIABLE "YDEL":  500

      ENTER THE RATIO OF TRANSVERSE TO LONGITUDINAL
      DISPERSIVITY.
      MAXIMUM LENGTH OF 5, REAL NUMBER.
      VARIABLE "DLTRAT":  .2

      ENTER THE MAXIMUM CELL DISTANCE PER PARTICLE
      MOVE.  VALUE BETWEEN 0 AND 1.0.
      MAXIMUM LENGTH OF 5, REAL NUMBER.
      VARIABLE "CELDIS":  .5

      ENTER THE RATIO OF T(YY) TO T(XX).
      (USE 1.0 FOR HOMOGENEOUS AQUIFER.)
      MAXIMUM LENGTH OF 5, REAL NUMBER.
      VARIABLE "ANFCTR":  1
```

Decay and sorbtion data are requested next.

```
IS DECAY TO BE SIMULATED (Y/N)?
VARIABLE "NDECAY":  n
```

If decay was to be simulated, the following prompt would appear.

```
ENTER DECAY HALFLIFE (YEARS).
MAXIMUM LENGTH OF 10, REAL NUMBER.
VARIABLE "DCYTIM":

INDICATE WHICH SORBTION SIMULATION
IS TO BE USED:
     0)  NONE
     1)  LINEAR
     2)  LANGMUIR
     3)  FREUDLICH
VARIABLE "NSORB":  0
```

If retardation was to be simulated the following prompts would appear.

```
ENTER DENSITY OF AQUIFER (GM/CM**3).
MAXIMUM LENGTH OF 10, REAL NUMBER.
VARIABLE "DENROC":

ENTER VALUE OF "KD" (ML/G).
MAXIMUM LENGTH OF 10, REAL NUMBER.
VARIABLE "SORBQR":
```

If the Langmuir sorption simulation is requested, the next prompt would be:

```
ENTER THE SORPTION SATURATION VALUE FOR
THE LANGMUIR.
MAXIMUM LENGTH OF 10, REAL NUMBER.
VARIABLE "SORBST":
```

If the Freudlich sorbtion simulation is requested, the next prompt would be:

```
ENTER THE VALUE OF
ALPHA FOR THE FREUDLICH ISOTHERM.
MAXIMUM LENGTH OF 10, REAL NUMBER.
VARIABLE "SORBAL":
```

The next group of variables are flags for routines added at Oklahoma State University.

```
CHOOSE THE ITERATIVE PROCEDURE DESIRED TO SOLVE
A FINITE DIFFERENCE APPROXIMATION TO THE
GROUND-WATER FLOW EQUATION.
     0)  ADIP -- ALTERNATING DIRECTION IMPLICIT PROCEDURE
     1)  SIP --  STRONGLY IMPLICIT PROCEDURE
VARIABLE "ISOLV":  0

IS THIS SIMULATION HEAD ONLY OR TRANSPORT?
     0)  TRANSPORT
     1)  HEAD ONLY
VARIABLE "HEAD":  0

IS THE AQUIFER BEING MODELED CONFINED OR UNCONFINED?
     0)  CONFINED
     1)  UNCONFINED
VARIABLE "FCON":  1

DO YOU WISH TO ENTER THE TRANSMISSIVITY OR
PERMEABILITY FOR THE AREA?
     0)  TRANSMISSIVITY
     1)  PERMEABILITY
VARIABLE "TP":  0

DO YOU WISH TO ENTER THE BOTTOM ELEVATION
OR SATURATED THICKNESS FOR THE AREA?
     0)  SATURATED THICKNESS
     1)  BOTTOM
VARIABLE "BTM":  0
```

Note: BTM is automatically set to 0 if FCON = 0.

3.2.4 Matrix Editor

Some of the following input data may require a matrix. A matrix editor has been developed to input the matrices. The size of the matrix is controlled by the variables NX and NY. The variables involved are:

a. Transmissivity/Hydraulic Conductivity

b. Saturated Thickness/Bottom Elevation

c. Potentiometric Head

d. Recharge

e. Node Identification

f. Concentration

The matrix editor is invoked when a variable is indicated as not being

constant. Saturated thickness will be used in describing the matrix editor.

3.2.4.1 General Matrix Editor Commands

The matrix editor displays twelve rows of a matrix at one time. The number of columns displayed depends on the field size of each element of the matrix. The commands "shift" and "list" are used to view the columns and rows that are not initially displayed or to display changes to the matrix. For example, if the user wants to edit columns 12-20 on a matrix, enter after the "?COMMAND:", "shift 12". Column 12 will be the leftmost column. If the user wants to edit rows 13-24, the "list" command is used. Enter after the "?COMMAND:", "list 13". Row 13 will be the top row displayed. After all corrections for the matrix have been made, enter after the "?COMMAND:", "end". This will end the matrix editor and will proceed to the next matrix.

3.2.4.2 Altering Matrix Data

```
IS THE SATURATED THICKNESS FOR THE AREA CONSTANT?
(A MATRIX IS NOT REQUIRED IF THE SATURATED THICKNESS
FOR THE AREA IS CONSTANT). (YES OR NO): n
```

The matrix editor will be invoked by the above response (not constant).

```
ENTER THE SATURATED THICKNESS MULTIPLIER: 1.0
WHAT DO YOU WISH THE ENTIRE SATURATED THICKNESS
MATRIX INITIALLY SET TO: 50
```

The matrix is initialized to a common value before editing begins. After initialization, the matrix is displayed.

```
                                        C O L U M N S
ROWS   1   2   3   4   5   6   7   8   9   10  11
* 1   50  50  50  50  50  50  50  50  50  50  50
* 2   50  50  50  50  50  50  50  50  50  50  50
* 3   50  50  50  50  50  50  50  50  50  50  50
* 4   50  50  50  50  50  50  50  50  50  50  50
* 5   50  50  50  50  50  50  50  50  50  50  50
* 6   50  50  50  50  50  50  50  50  50  50  50
* 7   50  50  50  50  50  50  50  50  50  50  50
* 8   50  50  50  50  50  50  50  50  50  50  50
* 9   50  50  50  50  50  50  50  50  50  50  50
*10   50  50  50  50  50  50  50  50  50  50  50
*11   50  50  50  50  50  50  50  50  50  50  50

REMEMBER TO HIT "ENTER" AFTER YOU CHANGE EACH LINE.
COMMANDS ARE:  SHIFT,LIST,END
@COMMAND:
```

To change values in any row, all nodes displayed for the row that is to be changed must be entered. For example, to change row 1 from 50's to 0's, type:

```
* 1 0 0 0 0 0 0 0 0 0 0
```

then press the "enter" or "return" key. To change the first and eleventh nodes in row 5 to 0's, type:

```
* 5 0 50 50 50 50 50 50 50 50 50 0
```

then press "enter". To view these changes, enter "list 1". The matrix is then displayed as:

```
                                        C O L U M N S
ROWS   1   2   3   4   5   6   7   8   9   10  11
* 1    0   0   0   0   0   0   0   0   0   0   0
* 2   50  50  50  50  50  50  50  50  50  50  50
* 3   50  50  50  50  50  50  50  50  50  50  50
* 4   50   0   0   0   0   0   0   0   0   0  50
* 5    0  50  50  50  50  50  50  50  50  50   0
* 6   50  50  50  50  50  50  50  50  50  50  50
* 7   50  50  50  50  50  50  50  50  50  50  50
* 8   50  50  50  50  50  50  50  50  50  50  50
* 9   50  50  50  50  50  50  50  50  50  50  50
*10   50  50  50  50  50  50  50  50  50  50  50
*11   50  50  50  50  50  50  50  50  50  50  50

REMEMBER TO HIT "ENTER" AFTER YOU CHANGE EACH LINE.
COMMANDS ARE:  SHIFT,LIST,END
@COMMAND:
```

When all changes to the matrice are completed, enter "end". The program will then proceed to the next matrix prompt.

3.2.5 Matrices

The following are prompts for the matrix variables. In this case, transmissivity is to be entered. The prompts are:

```
IS THE TRANSMISSIVITY FOR THE AREA CONSTANT?
(A MATRIX IS NOT REQUIRED IF THE TRANSMISSIVITY
FOR THE AREA IS CONSTANT). (Y/N): y

ENTER THE TRANSMISSIVITY FOR THE AREA (FT**2/SEC).
NOTE: FT**2/SEC = GPD/FT * 1.54723 E-6
MAXIMUM LENGTH OF 10, REAL NUMBER: 0.1447
```

If hydraulic conductivity were to be entered, the prompts would be:

```
IS THE PERMEABILITY FOR THE AREA CONSTANT?
(A MATRIX IS NOT REQUIRED IF THE PERMEABILITY
FOR THE AREA IS CONSTANT). (Y/N):

ENTER THE PERMEABILITY FOR THE AREA (FT/SEC).
NOTE: FT/SEC = GPD/FT**2 * 1.54723 E-6
MAXIMUM LENGTH OF 10, REAL NUMBER:
```

The prompts that follow are:

```
IS THE SATURATED THICKNESS FOR THE AREA CONSTANT?
(A MATRIX IS NOT REQUIRED IF THE SATURATED THICKNESS
FOR THE AREA IS CONSTANT). (YES OR NO): y

ENTER THE SATURATED THICKNESS MULTIPLIER.
MAXIMUM LENGTH OF 10, REAL NUMBER: 1.0

WHAT DO YOU WISH THE ENTIRE SATURATED THICKNESS
MATRIX INITIALLY SET TO?
(MAXIMUM LENGTH OF 3): 25
```

After this prompt, the saturated thickness is displayed and edited as illustrated in section 3.2.4.

If the bottom elevation were to be entered, the prompts would be similar to those for the saturated thickness.

```
IS THE POTENTIOMETRIC HEAD FOR THE AREA CONSTANT?
(A MATRIX IS NOT REQUIRED IF THE POTENTIOMETRIC HEAD
FOR THE AREA IS CONSTANT): n
```

```
ENTER THE POTENTIOMETRIC HEAD MULTIPLIER.
MAXIMUM LENGTH OF 10, REAL NUMBER:  1.0

WHAT DO YOU WISH THE ENTIRE POTENTIOMETRIC HEAD
MATRIX INITIALLY SET TO?
(MAXIMUM LENGTH OF 4):  0
```

After this prompt, the potentiometric head matrix is displayed and edited. See section 3.2.4 for example of matrix editor.

```
IS THE RECHARGE FOR THE AREA CONSTANT?
(A MATRIX IS NOT REQUIRED IF THE RECHARGE
FOR THE AREA IS CONSTANT):  y

ENTER THE RECHARGE FOR THE AREA (FT/SEC).
NEGATIVE NUMBER; INCLUDES E-T.
NOTE:  FT/SEC = IN/YR * 26.7918 E-10
MAXIMUM LENGTH OF 10, REAL NUMBER:  0.0E00

IS THE NODE IDENTIFICATION FOR THE AREA CONSTANT?
(A MATRIX IS NOT REQUIRED OF THE NODE IDENTIFICATION
FOR THE AREA IS CONSTANT):  n

ENTER THE NODE IDENTIFICATION MULTIPLIER.
MAXIMUM LENGTH OF 10, REAL NUMBER:  1.0

WHAT DO YOU WISH THE ENTIRE NODE IDENTIFICATION
MATRIX INITIALLY SET TO, BETWEEN 0 & 9?
(MAXIMUM LENGTH OF 1):  0
```

After this prompt, the node identification matrix is displayed and edited. See section 3.2.4 for example of matrix editor.

```
IS THE CONCENTRATION FOR THE AREA CONSTANT?
(A MATRIX IS NOT REQUIRED IF THE CONCENTRATION
FOR THE AREA IS CONSTANT):  y

ENTER THE CONCENTRATION FOR THE AREA (MG/L).
MAXIMUM LENGTH OF 10, REAL NUMBER:  0.0
```

This is the last prompt. The program then automatically returns to the CLIST (or controlling program).

```
FILE CREATED:  BABKON.CNTL

CHOOSE ACTION:
     1)  CREATE NEW DATA
     2)  MODIFY EXISTING DATA
     3)  END PROGRAM
(ENTER CORRESPONDING NUMBER):
```

The file is now ready for execution and may be submitted as a batch job. Any necessary changes to the data set (BABKON.CNTL) can be made by using any edit feature available on the computer being used or option 2 of the controlling program (described in section 3.3). The data set created in this example is shown in Appendix V.

3.3 Editor

Option 2 on the menu in section 3.2 (immediately above) is used to modify an existing data set for use with the Solute Transport Model. Examples of some of the prompts for this modification routine follow.

3.3.1 Job Control Language

The JCL is displayed and edited as described in Section 3.2.1 beginning on page 2-4. The "DISP" parameter for both the outlist and graph data sets should be changed from "DISP=(MOD,CATLG)" to "DISP=OLD" if the data set names are not changed after the first batch run. This will replace the old output with the new on each subsequent batch run.

3.3.2 Individual Variables

Variables other than matrices are edited first. If any of these individual variables need to be changed, enter "y" to the following prompt:

```
DO YOU WISH TO CHANGE ANY OF THE SINGLE VARIABLES?
ANYTHING OTHER THAN MATRICES (Y/N):
```

otherwise, enter "n" and the program continues with the matrix data.

For single variables (eg. TITLE, NX, NY, POROS), the variable name and its value is displayed along with a prompt asking whether the value is to be changed. If a change is desired, a prompt asking for the [illegible] is displayed. If no change is desired, the next variable is displayed.

Here is an example changing NPMAX and not changing NPTPND.

```
NPMAX = 5000
MAXIMUM OF 9850.
CHANGE (Y/N):  y

ENTER NEW VALUE:  9850

NPTPND = 4
OPTIONS = 4,5,8,9:
CHANGE (Y/N):  n
```

3.3.2.1 Location Variables

Three groups of variables, indicating nodes or wells by coordinates, are displayed in tables. These variables are:

1. The coordinates for the individual observation points,
2. The ICODE's and corresponding FCTR's,
3. The coordinates, rates, etc. for individual pumping points.

These variables and the associated counters for them are modified as follows, using the observation points as an example.

```
NUMOBS = 2
MAXIMUM OF 5.
CHANGE (Y/N):
```

Suppose another observation point is desired, enter "y", the following prompt appears and "3" is entered as the new value to NUMOBS.

```
ENTER NEW VALUE:  3
```

The coordinates for the point are requested next.

```
ENTER THE "X" COORDINATE OF OBSERVATION POINT.
VARIABLE "IXOBS(3)":  5

ENTER THE "Y" COORDINATE OF OBSERVATION POINT.
VARIABLE "IYOBS(3)":  8
```

All of the observation points are now displayed. The new point is designated by "NEW" on the line preceeding its coordinates, as shown below.

```
WELL#       X       Y
  1         8       8
  2         4       3
 NEW
  3         5       8
ENTER WELL NUMBER (OR ZERO TO CONTINUE):
```

Now that all of the observation points are displayed, suppose well 1 should be moved to (8,7). Enter the well number "1"; the values are displayed and may be changed as follows.

```
IXOBS(1) = 8
CHANGE (Y/N):  n

IYOBS(1) = 8
CHANGE (Y/N):  y

ENTER NEW VALUE:  7
```

The wells are displayed again. To continue to the next variable, 0 (zero) is entered.

```
WELL#       X       Y
  1         8       7
  2         4       3
 NEW
  3         5       8
ENTER WELL NUMBER (OR 0 TO CONTINUE):  0
```

NCODES AND NREC are handled similarly. The table format for NCODES is:

```
ICODE#      ICODE      FCTR1      FCTR2      FCTR3      OVERRD
```

and the table format for NREC is:

```
WELL#       X       Y       REC       CNRECH
```

3.3.3 Matrices

The following prompt begins the editing of matrix data of the program.

```
DO YOU WISH TO CHANGE ANY OF THE MATRIX INPUT (Y/N):
```

If any matrix data, including multipliers, needs to be altered, enter "y" to the above prompt. Entering "n" will skip all the matrix data and end the editor program.

It should be noted that there are no checks against possible errors if the following flags were changed in the previous section, TP, FCON, and BTM.

The matrices are handled in the following manner. Suppose the Saturated Thickness is a constant of 50 ft., then the following prompt appears:

```
THE SATURATED THICKNESS FOR THE AREA IS CONSTANT.
CHANGE TO MATRIX (Y/N):
```

To keep it a constant, enter "n". The thickness is then displayed and changing the value or leaving it as is has the same format as for single variables. To change the saturated thickness from a constant to a matrix, enter "y". The following prompts appear:

```
ENTER THE SATURATED THICKNESS MULTIPLIER.
MAXIMUM LENGTH OF 10, REAL NUMBER:  0.1

WHAT DO YOU WISH THE ENTIRE SATURATED THICKNESSS
MATRIX INITIALLY SET TO?
(MAXIMUM LENGTH OF 3):  500
```

The responses set the multiplier to 0.1 and initializes the matrix to a common value of 500 before the matrix editor is invoked. The matrix editor is described in Section 3.2.4. After the editor is ended, prompting continues with the next matrix.

Suppose the NODEID is a matrix, then the following appears on the screen.

```
THE NODEID FOR THE AREA IS A MATRIX.
CHANGE TO CONSTANT (Y/N):
```

If the matrix is to be changed to a constant, enter "y"; the next prompt asks for the value as shown below. In this instance the matrix is being changed to a constant value of 0 (zero).

```
ENTER THE NODEID FOR THE AREA.
BETWEEN 0 & 9, MAXIMUM LENGTH OF 1:  0
```

Prompting now continues with the next matrix. If the matrix is to be kept (response to the initial NODEID prompt is "n"), the multiplier is displayed with the normal option to change as below:

```
NODEID MULTIPLIER = 1
CHANGE (Y/N):  n

DISPLAY THE MATRIX FOR POSSIBLE CHANGE (Y/N):
```

With a response of "y", the matrix editor is invoked.

When the modify program is completed, the message,

```
FILE MODIFIED:  filename
```

is displayed along with the controlling menu.

3.4 Exit Preprocessor

This option terminates the program, returning to operating system.

3.5 Error Checking

The preprocessor and editor do not perform any significant error detection; this is done in the Solute Transport Model. The checking of the initial data is performed in the subroutine PARLOD. Any warning or error messages are issued from PARLOD and the model run is stopped if any significant errors are detected. It is suggested that a time limit of five (5) seconds be used for the first model run to facilitate a quick check of data.

4.0 TECHNICAL INFORMATION

The preprocessor and editor programs are each composed of a main routine and ten subroutines. Of the ten routines, six are utility routines that are also used in the editor. The name and primary purpose of each routine are listed in the following tables. Table 1 lists the routines unique to the preprocessor, Table 2 lists the routines unique to the editor, and Table 3 lists the utility routines used by both programs.

The variable names used in both the preprocessor and editor correspond to the names used in the model. The definitions of selected variables for the interactive program are listed in Appendix II. All major variables are character data.

Table 1. Subroutines Unique to Interactive Preprocessor

Name	Purpose
CREATE	Controls execution.
GTJCL	Creates necessary job control information.
GTVAR	Input of most individual variables.
GTVAR2	Input of decay, sorption and flag variables.
GTMTRX	Input of matrix data.

Table 2. Subroutines Unique to Interactive Editor

Name	Purpose
UPDATE	Controls execution.
EDFILE	Reads data from input data set.
EDJCL	Modify job control information.
EDVAR	Modify individual variables.
EDMTRX	Modify matrix data.

Table 3. Utility Subroutines

Name	Purpose
DATATP	Determines data characteristics of a response.
DBLANK	Removes blanks from front and back of a string.
INPUT	Reads unbounded data from screen.
INPUTR	Reads bounded data from screen.
MTRXED	Interactive matrix editor.
SUBFIL	Writes data to input data set.

Array dimensions are set using the %REPLACE command which is described in section 4.4. The dimensions are limited by the amount of random access memory (RAM) available with the system in use. For a machine with 64K RAM, the largest dimensions are: matrices, 10X10; pumping periods, 10; number of injection/discharge wells, 10; and number of observation wells, 10. Larger RAM will, of course, allow for larger dimensions.

4.0.1 Program Flow of Control

A flow chart for the program KONI is provided in Figure 1. "A" and "B" within the flow chart represent the flow charts found in Figure 2 for the preprocessor and editor.

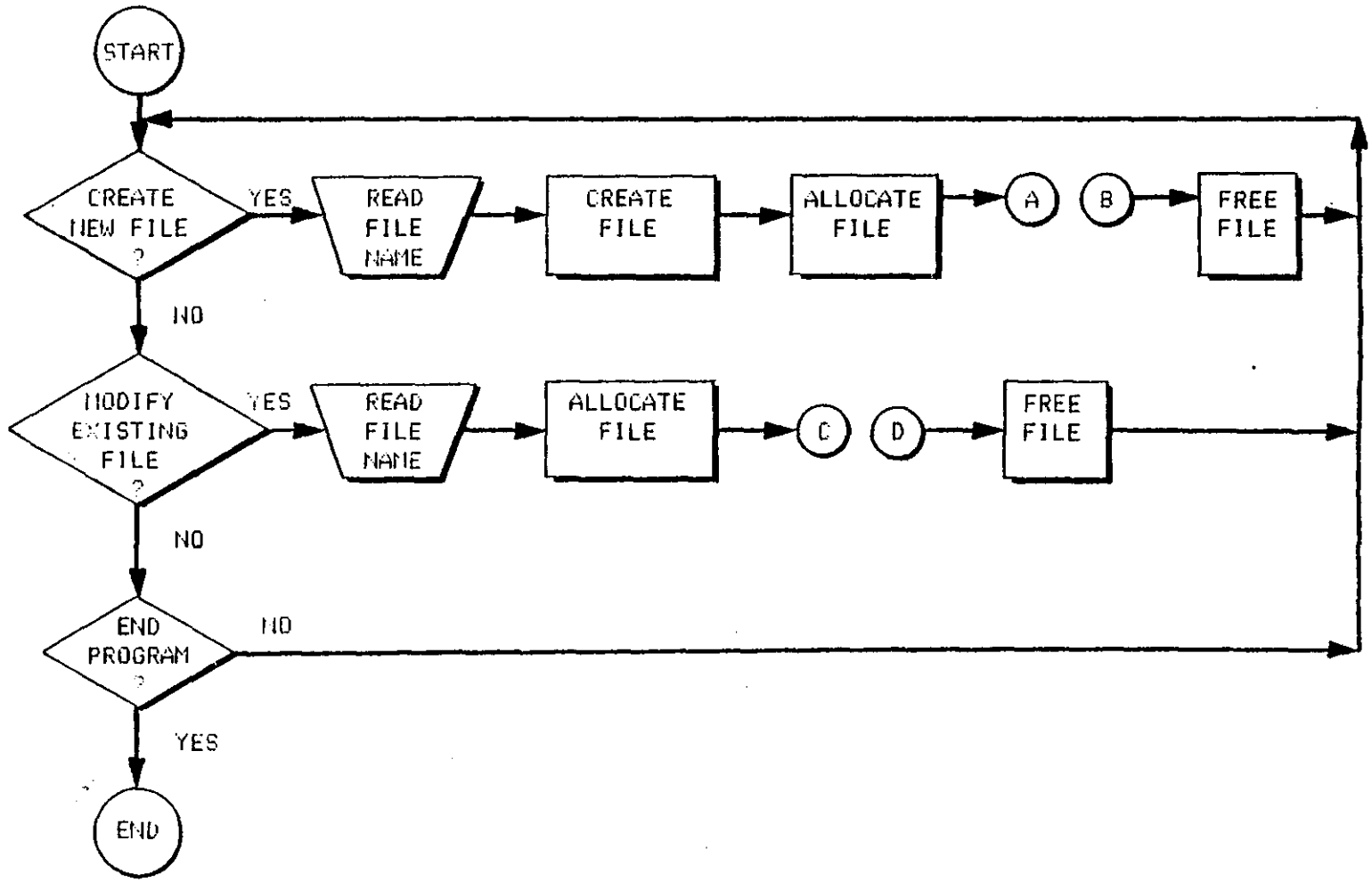


Figure 1. Simplified Flow Chart For The Controlling Program

The following sections provide detailed descriptions of each of the routines listed in Tables 1, 2, and 3 in section 2.0.

4.1 Preprocessor

4.1.1 CREATE

The main purpose of the CREATE routine is to control the overall execution of the preprocessor. All variables used in the Solute Transport Model are declared as character variables. Other variables relate to terminal input and output and the data set to be created. All global variables are declared as external in the file EXTVAR.

4.1.2 GTJCL

This routine, invoked by the CREATE routine, creates the job control language (JCL) necessary to execute the Solute Transport Model. The JCL that is provided by the user includes the jobname, time limit for execution, output window (or room), output data set name and graphics data set name. The jobname, a code containing up to eight alphanumeric characters and beginning with an alphabetic character, is used as an identifier by the computer during execution. The amount of time necessary for execution depends on the size and complexity of the system being modeled. When running only a head simulation, 40 seconds should be ample time. A full transport run of the model can take at least seven times longer than a head only run. The output window, or room, is unique to the system used at Oklahoma State University. This parameter specifies the destination of the output for ease of separation by the system operators. The output and graphics file names should be complete file names, such as U99999A.EXAMPLE1.OUTLIST and U99999A.EXAMPLE1.GRAPH. The dataset attributes are set in the code for the GTJCL routine but may be changed either in the source or when

running the preprocessor. The name and location of the compiled version of the Solute Transport Model is also included as part of the source code of this routine. In this case, the executable code is in the partitioned data set (PDS) U11236C.KONI.LOAD. A PDS is actually a directory to several data sets, called members, each having a unique name and each being individually accessible. The member name of this PDS that is the executable version of the Solute Transport Model is KONIKOW. The REGION parameter on line 5600 indicates the amount of core memory necessary to execute the model. This may need to be increased if the dimensions of the matrices are increased.

Utility routines called by GTJCL are INPUT, and INPUTR. These are described in section 4.3. The builtin subroutine SUBSTR is also used.

4.1.3 GTVAR and GTVAR2

These routines handle the input of the individual variable data. The only data that is not handled by these routines are the matrix data; this includes the matrix multipliers and the matrix/constant flags which are controlled by the GTMTRX routine described in section 4.1.4.

The GTVAR and GTVAR2 routines are very straightforward. A brief definition of each variable is displayed along with the variable name and any limits or recommended values. Variables that are real (may contain a decimal point), are explicitly indicated along with the maximum length of the number. All real numbers may be entered in the scientific notation, if desired. The real number must contain a decimal point and the exponent must be an integer.

The order of input for the variables follows closely the order in Appendix III except as indicated below for GTVAR. If NUMOBS is set to be greater than zero, the X and Y coordinates for each observation point are requested immediately after NUMOBS is initialized. NCODES and the

corresponding variables ICODE, FCTR1, FCTR1, OVERRD, and FCTR3 are input in a similar fashion, as are IX, IY, REC, and CNRECH, the variables corresponding to NREC. Similarly, if more than one pumping period is to be simulated, all variables specific to each pumping period are input; those being the variables indicated for data set 10 in Appendix III, page V-8.

No utility routines are called by GTVAR or GTVAR2. A routine available only to GTVAR is called. This subroutine is called PARMGT. PARMGT displays the description for each variable then calls INPUT or INPUTR) to read and decode the response. If the response is numeric, the length of the response is checked; if it is shorter than it should be, the value is right justified by forcing blanks into the left end of the field. This is done so that the values are written properly to the data set being created. If the data is too long to fit in the field specified, a message indicating the maximum length of the number is written to the screen along with a request for the corrected data to be entered. The length of a response is not checked if it is not numeric.

After the response has been accepted and if the VERIFY option was set in GTVAR, the verification request is displayed. The data is accepted if the response to the verification request is YES. Otherwise, the data is to be reentered. Once the data is accepted, it is returned by PARMGT.

4.1.4 GTMTRX

This routine, invoked by the CREATE routine, controls the input of the matrix data. This is a straightforward routine that requests the matrix data in the order indicated in Appendix III. The utility routine

called is MTRXED. MTRXED, the matrix editor, is invoked only when a matrix is to be entered. This routine is described in section 4.3.5. The local subroutine, PARMGT, functions just as the PARMGT described in section 4.1.3. PARMGT is local to each routine because it uses and reassigns variables declared locally in GTVAR, GTVAR2 and GTMTRX and, therefore, must have direct access to these variables.

4.2 Editor

4.2.1 UPDATE

The main purpose of the UPDATE routine is to control the overall execution of the modification routine. All variables used in the Solute Transport Model are declared as character variables. Other variables relate to terminal input and output and the data set to be created. All global variabales are declared as external in the file EXTVAR.

4.2.2 EDFILE

This routine, invoked by the UPDATE routine, reads the data off the input data file specified. All data is read as character data and placed in the variables defined in UPDATE. The utility routine DBLANK is called to determine if NREC, NCODES or NUMOBS are greater than zero or if NPMP>1.

4.2.3 EDJCL

Called by the UPDATE routine, EDJCL displays the current JCL for the Solute Transport Model and allows modifications to be made. After the first execution using a particular input data set, it is recommended that one of two items are changed. Either the DISP parameters for both output files should be changed from "(MOD,CATLG)" to "OLD" or the output data set names should be changed (or the files deleted) so that the files do not exist. If neither of these changes

are made, the model will run but the output will be catonated to the end of the output from the previous model run.

Utility routines called by EDJCL are INPUT and INPUTR. These routines are described in section 4.3.

4.2.4 EDVAR

The routine EDVAR, initiated by UPDATE, displays the current values for the individual variable data. Variable names and their current values are displayed in the same order as they are input in the preprocessor. Each value may be changed after it has been displayed. The variables related to NUMOBS, NCODES, and NREC are each displayed in tables immediately after the related variable indicated above. No utility routines are called by EDVAR. A local routine, PARMGT, is called and is described in section 4.1.3.

4.2.5 EDMTRX

This routine, invoked by the UPDATE routine, controls the modification of the matrix data. The matrix data is displayed in the order indicated in Appendix III. Data that is in matrix form may be changed to a constant and vice versa, or the form may stay the same (matrix or constant) and the values may be changed. The utility routines used by EDMTRX is MTRXED (described in 4.3.5). The local routine, PARMGT, functions as described in section 4.1.3.

4.3 Utility Routines

4.3.1 DATATP

This utility routine determines the data characteristic of the string received in STRING and returns it in TYPE. Two key local variables are a two-dimensional array called FSA and a translation string, TRANSSTR, which is used with the builtin function TRANSLATE.

Each character in STRING is mapped to the corresponding character in TRANSSTR. This mapping indicates the column in FSA to be used in determining the data type of string. The entries in FSA indicate the next level (row) to use. The process always begins with level one. Each column in FSA represents a specific character or characters. Each level (row) represents a "state" in the Finite State Automaton (FSA). A "state" is a degree of acceptance of a string that is being examined one character at a time. The 128 possible hexadecimal values are considered "character" except for the following which represent special characters to be recognized and are represented by specific columns of FSA: "0-9" are column 2, "." is column 3, "+" and "-" are column 4, "Y" is column 5, "E" is column 6, "S" is column 7, "N" is column 8, and "D" is column 9. The levels are defined as: "character" is 1,4,7,8,10,99; "real" is 3,5,6; "integer" is 2; and "answer" is 9,11,12,13. DATATP is called by MTRXED and INPUT.

4.3.2 DBLANK

This routine removes blank characters from the front and back of the character string received in the variable, LINE. DBLANK is a function subroutine that returns the modified string found in OUT_LINE. LINE is assigned to OUT_LINE and all manipulations are performed in OUT_LINE. Any lower case alphabetic characters are also converted to upper case using the builtin function TRANSLATE.

Routines that use this function are EDFILE, INPUT, MTRXED (including PEAL and WRTSCRN), and SUBFIL.

4.3.3 INPUT and INPUTR

The INPUT routine reads information from the screen and determines if it is the type of response specified. Two variables are passed to and from INPUT. INPUTR receives four variables - the two received by

INPUT and the upper and lower bounds for the data being input. INPUT calls INPUTR, passing the two variables it receives along with special values that indicate there is no limit on the data being read. INFO_TYPE contains the data type required of the response. The data read from the screen is placed in IN_LINE to be analyzed and saved if it is the correct type. The INFO_TYPE may be character, real integer, or answer. The string in IN_LINE is analyzed in DATATP, with the characteristics being returned in TEMP_TYPE. If TEMP_TYPE does not correspond to INFO_TYPE, then an error message is written and the user must respond with new data. This continues until the data is accepted or until EXIT is entered, which stops the program.

INPUT AND INPUTR call DBLANK and DATATP. INPUT and INPUTR are called by GTJCL, PARMGT (local to several routines), EDJCL, and MTRXED.

4.3.4 MTRXED

This routine is the interactive matrix editor called by GTMTRX and EDMTRX. The matrix editor is a line oriented editor. A maximum of twelve rows are displayed at a time. The number of columns depends on the field size of the matrix elements; the terminal is assumed to have an 80 column display. If the matrix is too large to be displayed at one time, the SHIFT and LIST commands may be used. These commands are described in section 3.2.4.1.

MTRXED calls the utility routines DBLANK, DATATP, INPUT and INPUTR. Two local routines are also called, PEAL and WRTSCRN. PEAL receives a string and returns the first nonblank character or characters of the string. This substring is then removed from the front of the string received and that new string is also returned.

PEAL uses the utility routine DBLANK and the builtin routines INDEX and SUBSTR.

WRTSCRN writes the matrix to the screen along with the command line. No routines are called by WRTSCRN.

4.3.5 SUBFIL

This routine writes the data for the Solute Transport Model to the data file specified. All data is written as character data with the length specified in Appendix III. SUBFIL calls the utility routine DBLANK. SUBFIL is called by CREATE and UPDATE.

4.4 Compilation and Linking

The routines described in sections 4.1 through 4.3 were compiled using Digital Research's PL/1-80 compiler and were linked using the LINK-80 linkage editor, also by Digital Research.

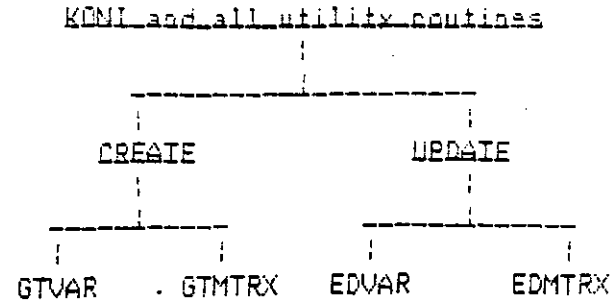
All external routines are compiled separately using PL/1-80. These routines are:

KONI (the controlling program),
CREATE, GTVAR, GTMTRX, UPDATE, EDVAR, EDMTRX, DATATYP,
DBLANK, INPUT, INPUTR, MTRXED, and SUBFIL.

GTJCL and GTVAR2 are compiled with CREATE by using the %INCLUDE statement. EDFILE and EDJCL are compiled with UPDATE in a similar fashion.

A file, EXTVAR, containing the external declarations of all global variables is included, using %INCLUDE, in several files. These files are: CREATE, GTVAR, GTMTRX, UPDATE, EDVAR, EDMTRX, INPUTR, MTRXED, and SUBFIL. EXTVAR also has a %REPLACE command used to more easily modify the dimensions of the different arrays. The variables used by %REPLACE are defined in Appendix II.

To maximize memory, a method of overlays is used for the linking step. The overlay levels are:



This overlay method will keep KONI and the utility routines in memory at all times. The root may be accessed by any other levels in the overlay tree. Only one member of each level (other than the root) may be in memory at one time.

The maximum value for each of the variables in the %REPLACE command is 10 for a microcomputer with 64K bytes of random access memory (RAM) (i.e. standard Kaypro 2). Machines with more RAM will be able to handle larger dimensions (eg. 20 x 20) without using overlays (i.e. IBM/PC with 512 K RAM).

5.0 MODEL PERFORMANCE

To demonstrate and compare the performance of the modified model (SIP option) with the original model (ADIP option) several example problems were run using data on the Babylon Landfill site at Long Island, New York. An error criteria of 0.01 was used in both SIP and ADIP runs for the test problems. Other values can be used to reflect the accuracy of the field data. Larger values (eg. 0.1) can be used to reduce the number of iterations which results in lower computer costs.

The SIP algorithm requires approximately the same number of iterations as the ADIP algorithm to converge to the desired solutions for the Babylon Landfill problem. The detailed discussion on the performance of the model for the cases of steady state and transient flow simulations are described in the following sections.

5.1 Test Problems

To demonstrate the capability of the modified U.S.G.S. Solute Transport Model (SIP option) in simulating contaminant transport in a water-table aquifer, the Babylon Landfill site of Long Island, New York is considered as the base test problem. The Babylon Landfill contamination plume started after the landfill began operation in late 1944 or early 1945 (Kimmel and Braid, 1980). The thickness of the aquifer varies from 71 to 79 feet. The flow field is introduced in several forms as described in the following sections and is controlled by constant head boundaries around the perimeter of the modeled area. To control the constant head boundaries, ICODE 2 is used in the NODEID matrix (see Figure 3). This problem was designed to demonstrate several options in terms of contaminant sources and pumping periods. All test

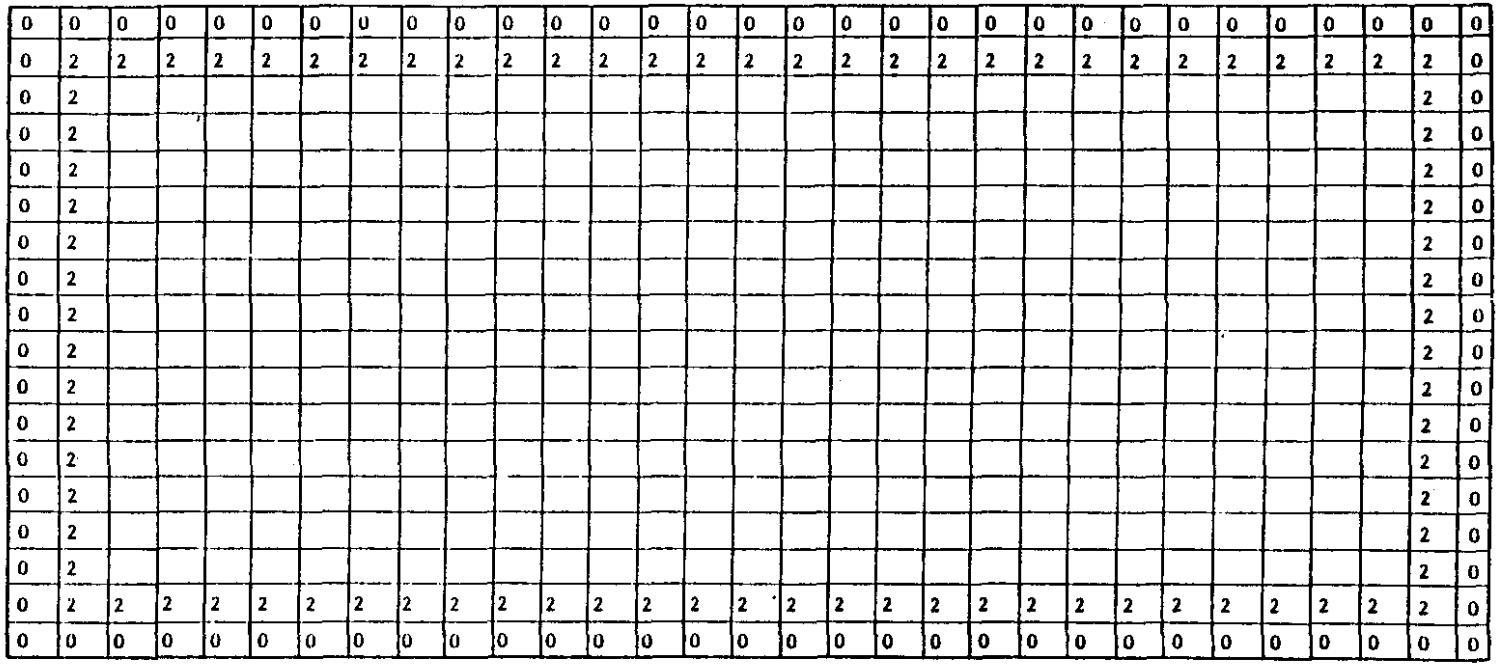


Figure 3. - Nodeid Matrix (Injection source)
For Test Problem 2

	NODEID CODES
ICODE#	1
ICODE	2
FCTR1	0
FCTR2	0
FCTR3	0
OVERRD	0

problems were run for both steady state and transient flow (three equal time steps) simulations. The CPU time and number of iterations for SIP and ADIP as well as the mass balance error resulting from each test problem are presented in Table 4 for steady state and Table 5 for transient flow. Input data and the selected output for some of the runs are presented in Appendix IV. The test problems represented are described briefly in the following sections.

5.1.1 Test Problem 1 (Patch Source)

This option uses the patch source form of representing contamination. The patch source nodes have different concentrations and are controlled by different ICODEs as shown in the NODEID matrix (see Figure 4). The flow field is influenced by four withdrawal wells. Three equal time steps were used for the transient case of this problem.

5.1.2 Test Problem 2 (Injection Source)

This option uses injection wells as the source of contamination. The flow field is influenced by four withdrawal wells and four injection wells. The NODEID matrix is shown in Figure 3. Similar to the patch source, three equal time steps were used during the simulation period of a transient run of this problem.

5.1.3 Test Problem 3 (Multiple Pumping Periods)

The test problems and options discussed so far, were run for a single pumping period during simulation time. This example is the same as test problem 2 except that it uses three equal pumping periods with respect to withdrawal and injection during the simulation period. These three pumping periods represent a wet season (3I), dry season (3II) and wet season (3III). During the dry season all the pumping wells (withdrawal and injection) had to be explicitly shut off by

Table 4. - Computational Efficiency For Steady-State Problems

	Iterations and CPU Time				Mass Balance Error (%)			
	SIP		ADIP		SIP		ADIP	
Test Problem	No. of Itera-tions	Total CPU Time (sec)	No. of Itera-tions	Total CPU Time (sec)	Hydraulic Mass balance error	Chemical Mass balance error	Hydraulic Mass balance error	Chemical Mass balance error
1	7	32.85	6	32.83	3.8871E-04	1.38000E+00	2.1256E-01	1.40000E+00
2	7	33.22	6	34.11	-1.6699E-03	1.34300E+01	-1.1341E-02	1.37700E+01
3 I	7	35.49	6	36.05	-1.68893E-03	-4.32622E+00	-1.4775E-02	-4.32358E+00
3 II	6		6		-1.52420E-03	-7.23842E+00	-5.22687E-03	-6.84206E+00
3 III	6		6		-1.52521E-03	02.00671E+00	-3.65350E-03	-6.71631E-01

Table 5. - Computational Efficiency For Transient Test Problems

			Iterations and CPU Time				Mass Balance Error (%)			
			SIP		ADIP		SIP		ADIP	
Test Problem	Pumping Period	Time Step	No. of Itera-tions	Total CPU Time (sec)	No. of Itera-tions	Total CPU Time (sec)	Hydraulic mass balance error	Chemical Mass balance error	Hydraulic Mass balance error	Chemical Mass balance error
1	1	1	7	34.23	6	34.09	8.59789E-03	2.50945E+01	2.09780E-01	1.53088E+01
		2	4		4		6.93298E-03	1.55487E+01	9.82131E-02	1.55901E+01
		3	1		1		1.64329E-03	1.46221E+01	6.69793E-02	1.46713E+01
2	1	1	7	36.00	6	35.48	-1.93815E-05	-6.13269E+00	-1.13171E-02	-6.30910E+00
		2	4		4		-1.45319E-03	-7.18126E+00	-5.70256E-03	-6.00699E+00
		3	1		1		-5.06498E-04	-6.56025E+00	-5.18300E-03	-5.32190E+00
3 I	1	1	7		6		-1.56583E-03	1.02009E+01	-1.11378E-02	1.00250E+01
		2	4		4		1.77254E-03	2.23117E-01	-5.45729E-03	2.20782E-01
		3	1		1		-8.18419E-04	-4.08735E+00	-5.23438E-03	-4.08299E+00
3 II	2	1	6		6		1.25724E-03	-4.06923E+00	-2.65767E-03	-3.93526E+00
3 III	3	1	7	38.34	6	38.53	9.67450E-04	7.83487E-01	-2.49618E-03	8.67862E-01
		2	4		4		3.86233E-04	3.80142E+00	-3.06180E-03	3.86488E+00
		3	1		1		4.94409E-04	2.03998E+00	-2.62001E-03	2.11740E+00

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0
0	2																												2	0
0	2																												2	0
0	2																												2	0
0	2																												2	0
0	2																												2	0
0	2																												2	0
0	2	5																											2	0
0	2	4																											2	0
0	2	1																											2	0
0	2	3																											2	0
0	2																												2	0
0	2																												2	0
0	2																												2	0
0	2																												2	0
0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 4. - Nodeid Matrix (Patch Source)

For Test Problem 1

	NODEID CODES				
ICODE#	1	2	3	4	5
ICODE	2	1	3	4	5
FCTR1	1.	0.0724	0.0724	0.0724	0.0724
FCTR2	0	240	400	350	320
FCTR3	0	0	0	0	0
OVERRD	-	-	-	-	-

setting each pumping or recharge rate to 0.0. The wells then had to be specified again for the second wet season. For transient flow simulation, three equal time steps were used during the wet seasons and only one time step was used during the dry season.

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APPENDIX I

PL/1 PROGRAM LISTING

APPENDIX I-A

PREPROCESSOR ROUTINES

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                    (CREATE   )

 CREATE: PROC OPTIONS(EXTERNAL);                                          00000010
 /* THE CREATE MAIN PROGRAM CONTROLS ALL OPERATIONS. */                   00000020
 %INCLUDE 'B:EXTVAR.PLI';                                                 00000030
   DCL SUBFIL                    ENTRY,                                   00000040
       GTVAR                     ENTRY,    /* OVERLAY */                  00000050
       GTMTRX                    ENTRY;    /* OVERLAY */                  00000060
   DCL INPUT                     ENTRY(CHAR(4), CHAR(80) VAR);            00000070
   OPEN FILE(SCREEN) STREAM OUTPUT TITLE('$CON');                         00000080
   OPEN FILE(CRT) INPUT TITLE('$CON');                                    00000090
   PUT FILE(SCREEN) EDIT(                                                 00000100
        'INTERACTIVE PREPROCESSOR FOR USGS SOLUTE TRANSPORT MODEL',       00000110
        'EPA PROJECT # CR-811142-01-0',                                   00000120
        'DOUGLAS C. KENT, CO-PRINCIPAL INVESTIGATOR, HYDROGEOLOGIST',     00000130
        'J. ALEXANDER AND L. LEMASTER, PROGRAMMERS',                      00000140
        'SCHOOL OF GEOLOGY, OKLAHOMA STATE UNIVERSITY',                   00000150
        '(405)624-6358, STILLWATER, OKLAHOMA',                            00000160
        'PL/I VERSION 1.0 (1984, MARCH)')(7(SKIP,A));                     00000170
   PUT FILE(SCREEN) EDIT('ENTER THE DATASET NAME TO BE CREATED',          00000180
        '(INCLUDE DRIVE IDENTIFIER):')(SKIP(3),A,SKIP,A);                 00000190
   CALL INPUT('CHAR',FILENM);                                             00000200
   CALL GTJCL;                                                            00000210
   CALL GTVAR;                                                            00000220
   CALL GTMTRX;                                                           00000230
   OPEN FILE(SYSUT4) STREAM OUTPUT TITLE(FILENM) LINESIZE(80);            00000240
   CALL SUBFIL;                                                           00000250
   PUT FILE(SCREEN) EDIT('FILE ',FILENM,' CREATED')(SKIP,A,A,A);          00000260
 %INCLUDE 'B:GTJCL.PLI';                                                  00000270
 %INCLUDE 'B:GTVAR2.PLI';                                                 00000280
 END;                                                                     00000290
```

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                    (GTJCL    )

 GTJCL: PROC OPTIONS(EXTERNAL);                                                  00000010
 /* THE GTJCL SUBROUTINE IS USED TO PROMPT THE USER FOR                         00000020
    THE CORRECT JCL TO RUN THE MODEL.                                          00000030
 */                                                                            00000040
   DCL ANSWER                        CHAR(80) VAR,                            00000050
       ANSWER1                       CHAR(80) VAR,                            00000060
       I                             FIXED BIN;                               00000070
   DCL INPUT                         ENTRY(CHAR(4), CHAR(80) VAR),            00000080
       DBLANK                 ENTRY(CHAR(80) VAR) RETURNS(CHAR(80) VAR),      00000090
       DATATP                 ENTRY(CHAR(80) VAR, CHAR(4)),                   00000100
       INPUTR                 ENTRY(CHAR(4), CHAR(80) VAR, FLOAT, FLOAT);     00000110
   DO I=1 TO 16;                                                               00000120
     JCL(I) = '//*';                                                           00000130
   END;                                                                        00000140
   PUT FILE(SCREEN) EDIT ('SET UP JCL FOR MODEL')(SKIP,A);                     00000150
   PUT FILE(SCREEN) EDIT                                                       00000160
     ('ENTER THE JOB NAME (MAXIMUM OF 8 CHARACTERS) :')(SKIP,A);               00000170
   CALL INPUT('CHAR',ANSWER);                                                  00000180
   JCL(1) = '//' || ANSWER || ' JOB (?????,TSO-TR-KONI),KONIKOWRUN,';          00000190
   PUT FILE(SCREEN) EDIT(                                                      00000200
      'ENTER THE TIME LIMIT FOR THE JOB,',                                     00000210
      '  1)   5 SECONDS OR LESS',                                              00000220
      '  2)  40 SECONDS OR LESS',                                              00000230
      '  3)   5 MINUTES OR LESS',                                              00000240
      '  4)  OVER 5 MINUTES',                                                  00000250
      'CHOOSE ONE OF THE ABOVE :') (6(SKIP,A));                                00000260
   CALL INPUTR('INT',ANSWER,1,4);                                              00000270
   IF ANSWER='1' THEN DO;                                                      00000280
     ANSWER = ',5';                                                            00000290
     ANSWER1 = 'F,';                                                           00000300
   END;                                                                        00000310
   ELSE IF ANSWER='2' THEN DO;                                                 00000320
     ANSWER = '0,40';                                                          00000330
     ANSWER1 = 'A,';                                                           00000340
   END;                                                                        00000350
   ELSE IF ANSWER='3' THEN DO;                                                 00000360
     ANSWER = '5,0';                                                           00000370
     ANSWER1 = 'K,';                                                           00000380
   END;                                                                        00000390
   ELSE IF ANSWER='4' THEN DO;                                                 00000400
     PUT FILE(SCREEN) EDIT                                                     00000410
       ('ENTER THE UPPER LIMIT FOR TIME (IN MINUTES):') (SKIP,A);              00000420
     CALL INPUT('INT',ANSWER);                                                 00000430
     ANSWER1 = 'L,';                                                           00000440
   END;                                                                        00000450
   ELSE SIGNAL ERROR;                                                          00000460
   JCL(2) =  '//  TIME=(' || ANSWER || '),CLASS=' || ANSWER1;                 00000470
   JCL(3) =  '//  MSGCLASS=X,NOTIFY=**';                                       00000480
   JCL(4) =  '/*PASSWORD ????';                                                00000490
   PUT FILE(SCREEN) EDIT                                                       00000500
     ('ENTER THE "ROOM" FOR THE OUTPUT WINDOW.',                               00000510
      'SINGLE CHARACTER, BETWEEN "A" AND "Z":') (2(SKIP,A));                   00000520
   CALL INPUT('CHAR',ANSWER);                                                  00000530
   JCL(5) =  '/*JOBPARM ROOM=' || ANSWER;                                      00000540
   JCL(7) =  '//KONI EXEC PGM=KONIKOW,REGION=1500K';                           00000550
   JCL(8) =  '//STEPLIB  DD DISP=SHR,DSN=U11236C.KONI.LOAD ';                  00000560
   PUT FILE(SCREEN) EDIT                                                       00000570
     ('ENTER THE COMPLETE OUTPUT DATA SET NAME',                               00000580
      '(NO QUOTES) :')                                                         00000590
     (2(SKIP,A));                                                            00000600
   CALL INPUT('CHAR',ANSWER);                                                  00000610
   IF LENGTH(ANSWER) > 44 THEN DO;                                             00000620
```

```
    PUT FILE(SCREEN) EDIT ('DATA SET NAME HAS BEEN TRUNCATED')          00000630
                          (SKIP(2),A);                                  00000640
    ANSWER = SUBSTR(ANSWER,1,44);                                       00000650
  END;                                                                  00000660
  JCL(9) =  '//FTO6FOO1 DD DSN=' || ANSWER || ',UNIT=STORAGE,';         00000670
  JCL(10) = '//             SPACE=(TRK,(10,10)),DISP=(MOD,CATLG),';     00000680
  JCL(11) = '//             DCB=(RECFM=VBA,LRECL=133,BLKSIZE=7448)';    00000690
  PUT FILE(SCREEN) EDIT                                                 00000700
    ('ENTER THE COMPLETE GRAPHICS OUTPUT DATA SET NAME',                00000710
     '(NO QUOTES) :')                                                   00000720
    (2(SKIP,A));                                                        00000730
  CALL INPUT('CHAR',ANSWER);                                            00000740
  IF LENGTH(ANSWER) > 44 THEN DO;                                       00000750
    PUT FILE(SCREEN) EDIT ('DATA SET NAME HAS BEEN TRUNCATED')          00000760
                          (SKIP(2),A);                                  00000770
    ANSWER = SUBSTR(ANSWER,1,44);                                       00000780
  END;                                                                  00000790
  JCL(12) =  '//FT1OFOO1 DD DSN=' || ANSWER || ',UNIT=STORAGE,';        00000800
  JCL(13) = '//             SPACE=(TRK,(10,10)),DISP=(MOD,CATLG),';     00000810
  JCL(14) = '//             DCB=(RECFM=VB,LRECL=255,BLKSIZE=7476)';     00000820
  JCL(15)=  '//FTO7FOO1 DD SYSOUT=B';                                   00000830
  JCL(16) = '//FTO5FOO1 DD * ';                                         00000840
  ANSWER = 'Y';                                                         00000850
  DO WHILE(ANSWER = 'Y');                                               00000860
    PUT FILE(SCREEN) EDIT                                               00000870
      ('THE FOLLOWING IS THE JCL') (SKIP,A);                            00000880
    DO I=1 TO 16 ;                                                      00000890
      PUT FILE(SCREEN) EDIT                                             00000900
        (' ',I,') ',JCL(I)) (SKIP,A,F(2),A,A(72));                      00000910
    END;                                                                00000920
    PUT FILE(SCREEN) EDIT                                               00000930
      ('DO YOU WISH TO CHANGE ANYTHING (Y/N) :') (SKIP,A);              00000940
    CALL INPUT('ANS',ANSWER);                                           00000950
    IF ANSWER = 'Y' THEN DO;                                            00000960
      PUT FILE(SCREEN) EDIT                                             00000970
        ('ENTER THE NUMBER OF THE LINE YOU WISH TO CHANGE.',            00000980
         '(ONLY ONE AT A TIME):') (A,SKIP,A);                           00000990
      CALL INPUTR('INT',ANSWER1,1,15);                                  00001000
      I=DBLANK(ANSWER1);                                                00001010
      PUT FILE(SCREEN) EDIT(JCL(I),'ENTER THE COMPLETE LINE . . .:')    00001020
        (SKIP,A(72),SKIP,A,SKIP,A);                                     00001030
      CALL INPUT('CHAR',JCL(I));                                        00001040
    END;                                                                00001050
  END;                                                                  00001060
END;                                                                    00001070
```

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                    (GTVAR    )

 GTVAR: PROC OPTIONS(EXTERNAL);                                          00000010
 /* THE GTVAR SUBROUTINE PROMPTS FOR THE NECESSARY INFORMATION          00000020
    TO RUN THE MODEL. (VARIABLES ETC.)                                   00000030
 */                                                                      00000040
 %INCLUDE 'B:EXTVAR.PLI';                                                00000050
   DCL CHARACTER                 CHAR(4) STATIC INIT('CHAR'),            00000060
       INTEGER                   CHAR(4) STATIC INIT('INT '),            00000070
       REAL                      CHAR(4) STATIC INIT('REAL'),            00000080
       NUMBER                    CHAR(4) STATIC INIT('NUM '),            00000090
       ANSWER                    CHAR(4) STATIC INIT('ANS '),            00000100
       TYPE                      CHAR(4) STATIC INIT(''),                00000110
       REPLY                     CHAR(80) VAR,                           00000120
       UPPER_RANGE               FLOAT STATIC INIT(0),                   00000130
       LOWER_RANGE               FLOAT STATIC INIT(0),                   00000140
       LEN                       FIXED BIN STATIC INIT(4),               00000150
       VAR_INFO(10)              CHAR(80) VAR,                           00000160
       NUMBER1                   FLOAT STATIC INIT(0),                   00000170
       NUMBER2                   FLOAT STATIC INIT(0),                   00000180
       COUNTER                   FIXED BIN,                              00000190
       COUNTER1                  FIXED BIN,                              00000200
       TEMPC                     CHAR(80) VAR,                           00000210
       TEMPN                     FLOAT STATIC INIT(0);                   00000220
   DCL GTVAR2                    ENTRY,                                  00000230
       DBLANK              ENTRY(CHAR(80) VAR) RETURNS(CHAR(80) VAR);    00000240
   DO COUNTER=1 TO 10;                                                   00000250
     VAR_INFO(COUNTER) = '';                                             00000260
   END;                                                                  00000270
   VAR_INFO(1) = 'DO YOU WISH TO VERIFY ALL ENTRIES (Y/N) :';            00000280
   TYPE = ANSWER;                                                        00000290
   LEN = 1;                                                              00000300
   TEMPC = PARMGT();                                                     00000310
   IF (TEMPC = 'N') THEN VERIFY=0;                                       00000320
   ELSE VERIFY=1;                                                        00000330
   VAR_INFO(1) = 'ENTER THE TITLE, DESCRIPTIVE OF THE PROBLEM.';         00000340
   VAR_INFO(2) = 'MAXIMUM OF 80 CHARACTERS. ';                           00000350
   VAR_INFO(3) = 'VARIABLE "TITLE" :';                                   00000360
   TYPE = CHARACTER;                                                     00000370
   LEN = 80;                                                             00000380
   TITLE = PARMGT();                                                     00000390
   LEN = 4;                                                              00000400
   TYPE = INTEGER;                                                       00000410
   VAR_INFO(1) = 'ENTER THE NUMBER OF NODES IN THE "X" DIRECTION.';      00000420
   VAR_INFO(2) = 'MINIMUM OF 3, MAXIMUM OF '||NX_LMT||'.';               00000430
   VAR_INFO(3) = 'VARIABLE "NX" :';                                      00000440
   LOWER_RANGE = 3;                                                      00000450
   UPPER_RANGE = NX_LMT;                                                 00000460
   NX = PARMGT();                                                        00000470
   VAR_INFO(1) = 'ENTER THE NUMBER OF NODES IN THE "Y" DIRECTION.';      00000480
   VAR_INFO(2) = 'MINIMUM OF 3, MAXIMUM OF '||NY_LMT||'.';               00000490
   VAR_INFO(3) = 'VARIABLE "NY" :';                                      00000500
   LOWER_RANGE = 3;                                                      00000510
   UPPER_RANGE = NY_LMT;                                                 00000520
   NY = PARMGT();                                                        00000530
   VAR_INFO(1) = 'ENTER THE MAXIMUM NUMBER OF PARTICLES.';               00000540
   VAR_INFO(2) = 'MAXIMUM OF 9850.';                                     00000550
   VAR_INFO(3) = 'VARIABLE "NPMAX" :';                                   00000560
   UPPER_RANGE = 9850;                                                   00000570
   NPMAX = PARMGT();                                                     00000580
   VAR_INFO(1) = 'ENTER THE NUMBER OF PARTICLES PER NODE.';              00000590
   VAR_INFO(2) = 'OPTIONS = 4,5,8,9:';                                   00000600
   VAR_INFO(3) = 'VARIABLE "NPTPND" :';                                  00000610
   NPTPND = PARMGT();                                                    00000620
```

```
VAR_INFO(1) = 'ENTER THE NUMBER OF OBSERVATION POINTS TO BE';          00000630
VAR_INFO(2) = 'SPECIFIED NEXT.  MAXIMUM OF '||OBS_LMT||'.';           00000640
VAR_INFO(3) = 'VARIABLE "NUMOBS" :';                                  00000650
UPPER_RANGE = OBS_LMT;                                                00000660
NUMOBS = PARMGT();                                                    00000670
COUNTER = 0;                                                          00000680
NUMBER1 = NUMOBS;                                                     00000690
DO WHILE(COUNTER < NUMBER1);                                          00000700
  COUNTER = COUNTER + 1;                                              00000710
  TEMPC = COUNTER;                                                    00000720
  TEMPC = DBLANK(TEMPC);                                              00000730
  VAR_INFO(1) = 'ENTER THE "X" COORDINATE OF OBSERVATION POINT.';     00000740
  VAR_INFO(2) = 'VARIABLE "IXOBS(' || TEMPC || ')" :' ;               00000750
  LEN = 2;                                                            00000760
  IXOBS(COUNTER) = PARMGT();                                          00000770
  VAR_INFO(1) = 'ENTER THE "Y" COORDINATE OF OBSERVATION POINT.';     00000780
  VAR_INFO(2) = 'VARIABLE "IYOBS(' || TEMPC || ')" :' ;               00000790
  IYOBS(COUNTER) = PARMGT();                                          00000800
END;                                                                  00000810
VAR_INFO(1) = 'ENTER THE NUMBER OF NODE IDENTIFICATION CODES';        00000820
VAR_INFO(2) = 'TO BE SPECIFIED.  MAXIMUM OF '||NC_LMT||'.';           00000830
VAR_INFO(3) = 'VARIABLE "NCODES" :';                                  00000840
LEN = 4;                                                              00000850
UPPER_RANGE = NC_LMT;                                                 00000860
TYPE = INTEGER;                                                       00000870
NCODES = PARMGT();                                                    00000880
NUMBER2 = NCODES;                                                     00000890
COUNTER1 = 1;                                                         00000900
DO WHILE(COUNTER1 <= NUMBER2);                                        00000910
  TEMPC = COUNTER1;                                                   00000920
  TEMPC = DBLANK(TEMPC);                                              00000930
  VAR_INFO(1) = 'ENTER NODE IDENTIFICATION CODE.';                    00000940
  VAR_INFO(2) = 'VARIABLE "ICODE(' || TEMPC || ')" :';                00000950
  LEN = 2;                                                            00000960
  TYPE = INTEGER;                                                     00000970
  ICODE(COUNTER1) = PARMGT();                                         00000980
  VAR_INFO(1) = 'ENTER CORRESPONDING LEAKANCE (FT**2/SEC).';          00000990
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                 00001000
  VAR_INFO(3) = 'NOTE:  FT**2/SEC = GPD/FT * 1.54723 E-6';            00001010
  VAR_INFO(4) = 'VARIABLE "FCTR1(' || TEMPC || ')" :';                00001020
  LEN = 10;                                                           00001030
  TYPE = REAL;                                                        00001040
  FCTR1(COUNTER1) = PARMGT();                                         00001050
  VAR_INFO(1) = 'ENTER CONCENTRATION FOR ICODE (MG/L).';              00001060
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                 00001070
  VAR_INFO(3) = 'VARIABLE "FCTR2(' || TEMPC || ')" :';                00001080
  FCTR2(COUNTER1) = PARMGT();                                         0000109C
  VAR_INFO(1) = 'ENTER OPTION TO RETAIN RECHARGE MATRIX VALUES :';    00001100
  VAR_INFO(2) = '  0) RETAIN VALUES.';                                00001110
  VAR_INFO(3) = '  1) USE VALUE OF FCTR3.';                           00001120
  VAR_INFO(4) = 'VARIABLE "OVERRD(' || TEMPC || ')" :';               00001130
  LEN = 2;                                                            00001140
  TYPE = INTEGER;                                                     00001150
  OVERRD(COUNTER1) = PARMGT();                                        00001160
  IF ( OVERRD(COUNTER1)=' 0' )                                        00001170
  THEN FCTR3(COUNTER1)='        0.';                                  00001180
  ELSE DO ;                                                           00001190
    VAR_INFO(1) = 'ENTER RECHARGE/DISCHARGE FOR ICODE (FT/SEC).';     00001200
    VAR_INFO(2) = 'NEGATIVE FOR RECHARGE, POSITIVE FOR DISCHARGE.';   00001210
    VAR_INFO(3) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';               00001220
    VAR_INFO(4) = 'NOTE:  FT/SEC = IN/YR * 26.7918 E-10';             00001230
    VAR_INFO(5) = 'ENTER VARIABLE "FCTR3(' || TEMPC || ')" :';        00001240
    LEN = 10;                                                         00001250
    TYPE = REAL;                                                      00001260
    FCTR3(COUNTER1) = PARMGT();                                       00001270
  END;                                                                00001280
```

```
  COUNTER1 = COUNTER1 + 1;                                                    00001290
END;                                                                          00001300
VAR_INFO(1) = 'ENTER THE STORAGE COEFFICIENT.';                               00001310
VAR_INFO(2) = 'O FOR STEADY FLOW PROBLEMS.';                                  00001320
VAR_INFO(3) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                            00001330
VAR_INFO(4) = 'VARIABLE "S" :';                                               00001340
LEN = 5;                                                                      00001350
TYPE = REAL;                                                                  00001360
S = PARMGT();                                                                 00001370
VAR_INFO(1) = 'ENTER THE NUMBER OF PUMPING PERIODS.';                         00001380
VAR_INFO(2) = 'MAXIMUM OF '||PMP_LMT||'.';                                    00001390
VAR_INFO(3) = 'VARIABLE "NPMP" :';                                            00001400
UPPER_RANGE = PMP_LMT;                                                        00001410
LEN = 4;                                                                      00001420
TYPE = INTEGER;                                                               00001430
NPMP = PARMGT() ;                                                             00001440
COUNTER1 = 1;                                                                 00001450
NUMBER2 = NPMP;                                                               00001460
DO WHILE(COUNTER1 = 1 | COUNTER1 <= NUMBER2 );                                00001470
  IF COUNTER1 > 1 THEN DO;                                                    00001480
    VAR_INFO(1) = 'DO YOU WISH TO MAKE ANY REVISIONS TO THE NEXT';            00001490
    VAR_INFO(2) = 'PUMPING PERIOD.';                                          00001500
    VAR_INFO(3) = 'VARIABLE "ICHK" (YES OR NO):';                             00001510
    LEN = 1;                                                                  00001520
    TYPE = ANSWER;                                                            00001530
    TEMPC = PARMGT();                                                         00001540
    IF TEMPC = 'N' THEN ICHK(COUNTER1 - 1) = '0';                             00001550
    ELSE ICHK(COUNTER1 - 1) = '1';                                            00001560
  END;                                                                        00001570
  IF COUNTER1 = 1  | ICHK(COUNTER1 - 1) = '1' THEN DO;                        00001580
    VAR_INFO(1) = 'ENTER THE MAXIMUM NUMBER OF TIME STEPS IN A ';             00001590
    VAR_INFO(2) = 'PUMPING PERIOD.  MAXIMUM OF 100.';                         00001600
    VAR_INFO(3) = 'VARIABLE "NTIM" :';                                        00001610
    UPPER_RANGE = 100;                                                        00001620
    LEN = 4;                                                                  00001630
    TYPE = INTEGER;                                                           00001640
    NTIM(COUNTER1) = PARMGT();                                                00001650
    VAR_INFO(1) = 'ENTER THE TIME STEP INTERVAL FOR PRINTING';                00001660
    VAR_INFO(2) = 'HYDRAULIC AND CHEMICAL OUTPUT DATA.';                      00001670
    VAR_INFO(3) = 'VARIABLE "NPNT" :';                                        00001680
    NPNT(COUNTER1) = PARMGT();                                                00001690
    VAR_INFO(1) = 'ENTER THE NUMBER OF ITERATION PARAMETERS FOR';             00001700
    VAR_INFO(2) = 'ADIP.  USUALLY FROM 4 TO 7.';                              00001710
    VAR_INFO(3) = 'VARIABLE "NITP" :';                                        00001720
    NITP(COUNTER1) = PARMGT();                                                00001730
    VAR_INFO(1) = 'ENTER THE MAXIMUM ALLOWABLE NUMBER OF ITERATIONS';         00001740
    VAR_INFO(2) = 'IN ADIP OR SIP. USUALLY FROM 100 TO 200.';                 00001750
    VAR_INFO(3) = 'VARIABLE "ITMAX" :' ;                                      00001760
    ITMAX(COUNTER1) = PARMGT();                                               00001770
    VAR_INFO(1) = 'ENTER THE PARTICLE MOVEMENT INTERVAL (IMOV)';              00001780
    VAR_INFO(2) = 'FOR PRINTING CHEMICAL OUTPUT DATA.';                       00001790
    VAR_INFO(3) ='SPECIFY 0 TO PRINT ONLY AT THE END OF TIME STEPS.';         00001800
    VAR_INFO(4) = 'VARIABLE "NPNTMV" :';                                      00001810
    NPNTMV(COUNTER1) = PARMGT();                                              00001820
    VAR_INFO(1) = 'ENTER THE OPTION FOR PRINTING COMPUTED';                   00001830
    VAR_INFO(2) = 'VELOCITIES.';                                              00001840
    VAR_INFO(3) = '  0) DO NOT PRINT.';                                       00001850
    VAR_INFO(4) = '  1) PRINT FOR FIRST TIME STEP.';                          00001860
    VAR_INFO(5) = '  2) PRINT FOR ALL TIME STEPS.';                           00001870
    VAR_INFO(6) = 'CHOOSE ONE OF THE ABOVE.';                                 00001880
    VAR_INFO(7) = 'VARIABLE "NPNTVL" :';                                      00001890
    UPPER_RANGE = 2;                                                          00001900
    NPNTVL(COUNTER1) = PARMGT();                                              00001910
    VAR_INFO(1) = 'ENTER THE OPTION FOR PRINTING COMPUTED';                   00001920
    VAR_INFO(2) = 'DISPERSION EQUATION COEFFICIENTS.';                        00001930
    VAR_INFO(3) = '  0) DO NOT PRINT.';                                       00001940
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VAR_INFO(4) = '  1) PRINT FOR FIRST TIME STEP.';                          00001950
VAR_INFO(5) = '  2) PRINT FOR ALL TIME STEPS.';                          00001960
VAR_INFO(6) = 'CHOOSE ONE OF THE ABOVE.';                                00001970
VAR_INFO(7) = 'VARIABLE "NPNTD" :';                                      00001980
UPPER_RANGE = 2;                                                         00001990
NPNTD(COUNTER1) = PARMGT();                                              00002000
VAR_INFO(1) = 'ENTER THE OPTION TO PRINT COMPUTED CHANGES IN';           00002010
VAR_INFO(2) = 'CONCENTRATION.';                                          00002020
VAR_INFO(3) = '  0) DO NOT PRINT.';                                      00002030
VAR_INFO(4) = '  1) PRINT.';                                             00002040
VAR_INFO(5) = 'CHOOSE ONE OF THE ABOVE.';                                00002050
VAR_INFO(6) = 'VARIABLE "NPDELC" :';                                     00002060
UPPER_RANGE = 1;                                                         00002070
NPDELC(COUNTER1) = PARMGT();                                             00002080
VAR_INFO(1) = 'ENTER THE OPTION TO PUNCH VELOCITY DATA.';                00002090
VAR_INFO(2) = '  0) DO NOT PUNCH.';                                      00002100
VAR_INFO(3) = '  1) PUNCH FOR FIRST TIME STEP.';                         00002110
VAR_INFO(4) = '  2) PUNCH FOR ALL TIME STEPS.';                          00002120
VAR_INFO(5) = 'CHOOSE ONE OF THE ABOVE.';                                00002130
VAR_INFO(6) = 'VARIABLE "NPNCHV" :';                                     00002140
UPPER_RANGE = 2;                                                         00002150
NPNCHV(COUNTER1) = PARMGT();                                             00002160
VAR_INFO(1) = 'ENTER THE PUMPING PERIOD (YEARS).';                       00002170
VAR_INFO(2) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                       00002180
VAR_INFO(3) = 'VARIABLE "PINT" :';                                       00002190
TYPE = REAL;                                                             00002200
LEN = 5;                                                                 00002210
PINT(COUNTER1) = PARMGT();                                               00002220
NUMBER1 = S;                                                             00002230
IF NUMBER1 ¬= 0 THEN DO;                                                 00002240
  VAR_INFO(1) = 'ENTER THE TIME INCREMENT MULTIPLIER FOR';                00002250
  VAR_INFO(2) = 'TRANSIENT FLOW PROBLEMS.';                              00002260
  VAR_INFO(3) = 'THIS IS DISREGARDED IF S=0 .';                          00002270
  VAR_INFO(3) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                     00002280
  VAR_INFO(4) = 'VARIABLE "TIMX" :';                                     00002290
  TIMX(COUNTER1) = PARMGT();                                             00002300
  VAR_INFO(1) = 'ENTER THE SIZE OF THE INITIAL TIME STEP';               00002310
  VAR_INFO(2) = 'IN SECONDS.';                                           00002320
  VAR_INFO(3) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                     00002330
  VAR_INFO(4) = 'VARIABLE "TINIT" :';                                    00002340
  TINIT(COUNTER1) = PARMGT();                                            00002350
END;                                                                     00002360
ELSE DO;                                                                 00002370
  TIMX(COUNTER1) = '    0';                                              00002380
  TINIT(COUNTER1) = '    0';                                             00002390
END;                                                                     00002400
VAR_INFO(1) = 'ENTER THE NUMBER OF PUMPING OR INJECTION';                00002410
VAR_INFO(2) = 'WELLS TO BE SPECIFIED.';                                  00002420
VAR_INFO(3) = 'MAXIMUM OF '||NR_LMT||'.';                                00002430
VAR_INFO(4) = 'VARIABLE "NREC" :';                                       00002440
UPPER_RANGE = NR_LMT;                                                    00002450
LEN = 4;                                                                 00002460
TYPE = INTEGER;                                                          00002470
NREC(COUNTER1) = PARMGT();                                               00002480
NUMBER1 = NREC(COUNTER1);                                                00002490
COUNTER = 0;                                                             00002500
DO WHILE(COUNTER < NUMBER1);                                             00002510
  COUNTER = COUNTER + 1;                                                 00002520
  TEMPC = COUNTER;                                                       00002530
  TEMPC = DBLANK(TEMPC);                                                 00002540
  VAR_INFO(1) = 'ENTER THE X COORDINATE OF THE PUMPING OR';              00002550
  VAR_INFO(2) = 'INJECTION WELL.';                                       00002560
  VAR_INFO(3) = 'VARIABLE "IX(' || TEMPC || ')" :';                      00002570
  LEN = 2;                                                               00002580
  TYPE = INTEGER;                                                        00002590
  IX(COUNTER1,COUNTER) = PARMGT();                                       00002600
```

```
      VAR_INFO(1) = 'ENTER THE Y COORDINATE OF THE PUMPING OR';          00002610
      VAR_INFO(2) = 'INJECTION WELL.';                                   00002620
      VAR_INFO(3) = 'VARIABLE "IY(' || TEMPC || ')" :';                  00002630
      IY(COUNTER1,COUNTER) = PARMGT();                                   00002640
      VAR_INFO(1) = 'ENTER THE RATE (FT**3/SEC).';                       00002650
      VAR_INFO(2) = 'POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.';     00002660
      VAR_INFO(3) = 'MAXIMUM LENGTH OF 8, REAL NUMBER.';                 00002670
      VAR_INFO(4) = 'NOTE:  FT**3/SEC = GAL/MIN * 0.0022278';            00002680
      VAR_INFO(5) = 'VARIABLE "REC(' || TEMPC || ')" :';                 00002690
      TYPE = REAL;                                                       00002700
      LEN = 8;                                                           00002710
      REC(COUNTER1,COUNTER) = PARMGT();                                  00002720
      TEMPN = REC(COUNTER1,COUNTER);                                     00002730
      IF TEMPN < 0 THEN DO;                                              00002740
        VAR_INFO(1) = 'ENTER THE CONCENTRATION OF THE INJECTED';         00002750
        VAR_INFO(2) = 'FLUID (MG/L).';                                   00002760
        VAR_INFO(3) = 'MAXIMUM LENGTH OF 8, REAL NUMBER.';               00002770
        VAR_INFO(4) = 'VARIABLE "CNRECH(' || TEMPC || ')" :';            00002780
        TYPE = REAL;                                                     00002790
        LEN = 8;                                                         00002800
        CNRECH(COUNTER1,COUNTER) = PARMGT();                             00002810
      END;                                                               00002820
      ELSE CNRECH(COUNTER1,COUNTER) = '     0.0';                        00002830
     END;                                                                00002840
   END;                                                                  00002850
   COUNTER1 = COUNTER1 + 1;                                              00002860
END;                                                                     00002870
VAR_INFO(1) = 'ENTER THE CONVERGENCE CRITERIA FOR THE FLOW';             00002880
VAR_INFO(2) = 'EQUATION.  USUALLY LESS THAN .01 .';                      00002890
VAR_INFO(3) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                       00002900
VAR_INFO(4) = 'VARIABLE "TOL" :';                                        00002910
LEN = 5;                                                                 00002920
TYPE = REAL;                                                             00002930
TOL = PARMGT();                                                          00002940
VAR_INFO(1) = 'ENTER THE EFFECTIVE POROSITY.';                           00002950
VAR_INFO(2) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                       00002960
VAR_INFO(3) = 'VARIABLE "POROS" :';                                      00002970
POROS = PARMGT();                                                        00002980
VAR_INFO(1) = 'ENTER THE CHARACTERISTIC LENGTH (FEET).';                 00002990
VAR_INFO(2) = '(LONGITUDINAL DISPERSIVITY).';                            00003000
VAR_INFO(3) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                       00003010
VAR_INFO(4) = 'VARIABLE "BETA" :';                                       00003020
BETA = PARMGT();                                                         00003030
VAR_INFO() = 'ENTER THE NODE SIZE IN THE "X" DIRECTION (FEET).';         00003040
VAR_INFO(2) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                       00003050
VAR_INFO(3) = 'VARIABLE "XDEL" :';                                       00003060
XDEL = PARMGT();                                                         00003070
VAR_INFO(1) = 'ENTER THE NODE SIZE IN THE "Y" DIRECTION (FEET).';        00003080
VAR_INFO(2) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                       00003090
VAR_INFO(3) = 'VARIABLE "YDEL" :';                                       00003100
YDEL = PARMGT();                                                         00003110
VAR_INFO(1) = 'ENTER THE RATIO OF TRANSVERSE TO LONGITUDINAL';           00003120
VAR_INFO(2) = 'DISPERSIVITY.';                                           00003130
VAR_INFO(3) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                       00003140
VAR_INFO(4) = 'VARIABLE "DLTRAT" :';                                     00003150
DLTRAT = PARMGT();                                                       00003160
VAR_INFO(1) = 'ENTER THE MAXIMUM CELL DISTANCE PER PARTICLE';            00003170
VAR_INFO(2) = 'MOVE. VALUE BETWEEN 0 AND 1.0 .';                         00003180
VAR_INFO(3) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                       00003190
VAR_INFO(4) = 'VARIABLE "CELDIS" :';                                     00003200
UPPER_RANGE = 1.;                                                        00003210
CELDIS = PARMGT();                                                       00003220
VAR_INFO(1) = 'ENTER THE RATIO OF T(YY) TO T(XX).';                      00003230
VAR_INFO(2) = '(USE 1.0 FOR HOMOGENEOUS AQUIFER.)';                      00003240
VAR_INFO(3) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                       00003250
VAR_INFO(4) = 'VARIABLE "ANFCTR" :';                                     00003260
```

```
  ANFCTR = PARMGT();                                              00003270
  CALL GTVAR2;                                                    00003280
%INCLUDE 'B:PARMGT.PLI';                                          00003290
END;                                                              00003300
```

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                    (GTVAR2  )

 GTVAR2: PROC OPTIONS(EXTERNAL);                                          00000010
 /* THE GTVAR SUBROUTINE PROMPTS FOR THE NECESSARY INFORMATION           00000020
    TO RUN THE MODEL. (VARIABLES ETC.)                                    00000030
 */                                                                       00000040
   DCL CHARACTER                 CHAR(4) STATIC INIT('CHAR'),            00000050
       INTEGER                   CHAR(4) STATIC INIT('INT '),            00000060
       REAL                      CHAR(4) STATIC INIT('REAL'),            00000070
       NUMBER                    CHAR(4) STATIC INIT('NUM '),            00000080
       ANSWER                    CHAR(4) STATIC INIT('ANS '),            00000090
       TYPE                      CHAR(4) STATIC INIT(''),                00000100
       REPLY                     CHAR(80) VAR,                           00000110
       UPPER_RANGE               FLOAT STATIC INIT(0),                   00000120
       LOWER_RANGE               FLOAT STATIC INIT(0),                   00000130
       LEN                       FIXED BIN STATIC INIT(4),               00000140
       VAR_INFO(10)              CHAR(80) VAR,                           00000150
       NUMBER1                   FLOAT STATIC INIT(0),                   00000160
       NUMBER2                   FLOAT STATIC INIT(0),                   00000170
       COUNTER                   FIXED BIN,                              00000180
       COUNTER1                  FIXED BIN,                              00000190
       TEMPC                     CHAR(80) VAR,                           00000200
       TEMPN                     FLOAT STATIC INIT(0);                   00000210
   DCL DBLANK              ENTRY(CHAR(80) VAR) RETURNS(CHAR(80) VAR);    00000220
   VAR_INFO(1) = 'IS DECAY TO BE SIMULATED (Y/N)?';                      00000230
   VAR_INFO(2) = 'VARIABLE "NDECAY" :';                                  00000240
   LEN=1;                                                                00000250
   TYPE=ANSWER;                                                          00000260
   REPLY=PARMGT();                                                       00000270
   IF REPLY='N' THEN DO;                                                 00000280
     NDECAY = '    0';                                                   00000290
     DCYTIM = '       0.';                                               00000300
   END;                                                                  00000310
   ELSE DO;                                                              00000320
     NDECAY = '    1';                                                   00000330
     VAR_INFO(1) = 'ENTER DECAY HALFLIFE (YEARS).';                      00000340
     VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                 00000350
     VAR_INFO(3) = 'VARIABLE "DCYTIM" :';                                00000360
     LEN = 10;                                                           00000370
     TYPE = REAL;                                                        0000C380
     DCYTIM = PARMGT();                                                  00000390
   END;                                                                  00000400
   VAR_INFO(1) = 'INDICATE WHICH SORBTION SIMULATION';                   00000410
   VAR_INFO(2) = 'IS TO BE USED :';                                      00000420
   VAR_INFO(3) = '  0) NONE ';                                           00000430
   VAR_INFO(4) = '  1) LINEAR ';                                         00000440
   VAR_INFO(5) = '  2) LANGMUIR ';                                       00000450
   VAR_INFO(6) = '  3) FREUDLICH ';                                      00000460
   VAR_INFO(7) = 'VARIABLE "NSORB" :';                                   00000470
   LEN = 5;                                                              00000480
   TYPE = INTEGER;                                                       00000490
   LOWER_RANGE = 0;                                                      00000500
   UPPER_RANGE = 3;                                                      00000510
   NSORB = PARMGT();                                                     00000520
   IF (NSORB = '    0') THEN DO;                                         00000530
     NSORB = '    0';                                                   00000540
     DENROC = '       0.';                                              00000550
     SORBOR = '       0.';                                              00000560
     SORBST = '       0.';                                              00000570
     SORBAL = '       0.';                                              00000580
   END;                                                                  00000590
   ELSE DO;                                                              00000600
     LEN =10;                                                            00000610
     TYPE = REAL;                                                        00000620
```

```
  VAR_INFO(1) = 'ENTER DENSITY OF AQUIFER (GM/CM**3).';                    00000630
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                      00000640
  VAR_INFO(3) = 'VARIABLE "DENROC" :';                                     00000650
  DENROC = PARMGT();                                                       00000660
  VAR_INFO(1) = 'ENTER VALUE OF "KD" (ML/G).';                             00000670
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                      00000680
  VAR_INFO(3) = 'VARIABLE "SORBQR" :';                                     00000690
  SORBQR = PARMGT();                                                       00000700
  IF (NSORB = '    2') THEN DO;                                            00000710
    VAR_INFO(1) = 'ENTER THE SORBTION SATURATION VALUE ';                  00000720
    VAR_INFO(2) = 'FOR THE LANGMUIR.';                                     00000730
    VAR_INFO(3) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                    00000740
    VAR_INFO(4) = 'VARIABLE "SORBST" :';                                   00000750
    SORBST = PARMGT();                                                     00000760
  END;                                                                     00000770
  IF (NSORB = '    3') THEN DO;                                            00000780
    VAR_INFO(1) = 'ENTER THE VALUE OF ALPHA FOR THE';                      00000790
    VAR_INFO(2) = 'FREUDLICH ISOTHERM.';                                   00000800
    VAR_INFO(3) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                    00000810
    VAR_INFO(4) = 'VARIABLE "SORBAL" :';                                   00000820
    SORBAL = PARMGT();                                                     00000830
  END;                                                                     00000840
END;                                                                       00000850
LEN=4;                                                                     00000860
TYPE=INTEGER;                                                              00000870
VAR_INFO(1) = 'CHOOSE THE ITERATIVE PROCEDURE DESIRED TO SOLVE';           00000880
VAR_INFO(2) = 'A FINITE DIFFERENCE APPROXIMATION TO THE';                  00000890
VAR_INFO(3) = 'GROUND-WATER FLOW EQUATION.';                               00000900
VAR_INFO(4) = '  0) ADIP--ALTERNATING DIRECTION IMPLICIT PROCEDURE';       00000910
VAR_INFO(5) = '  1) SIP --STRONGLY IMPLICIT PROCEDURE';                    00000920
VAR_INFO(6) = 'VARIABLE "ISOLV": ';                                        00000930
ISOLV=PARMGT();                                                            00000940
VAR_INFO(1) = 'IS THIS SIMULATION HEAD ONLY OR TRANSPORT ?';               00000950
VAR_INFO(2) = '  0) TRANSPORT';                                            00000960
VAR_INFO(3) = '  1) HEAD ONLY';                                            00000970
VAR_INFO(4) = 'VARIABLE "IHEAD": ';                                        00000980
IHEAD=PARMGT();                                                            00000990
VAR_INFO(1) = 'IS THE AQUIFER BEING MODELED CONFINED OR';                  00001000
VAR_INFO(2) = 'UNCONFINED ?  ';                                            00001010
VAR_INFO(3) = '  0) CONFINED ';                                            00001020
VAR_INFO(4) = '  1) UNCONFINED ';                                          00001030
VAR_INFO(5) = 'VARIABLE "FCON": ';                                         00001040
FCON=PARMGT();                                                             00001050
VAR_INFO(1) = 'DO YOU WISH TO ENTER THE TRANSMISSIVITY ';                  00001060
VAR_INFO(2) = 'OR PERMEABILITY FOR THE AREA ?';                            00001070
VAR_INFO(3) = '  0) TRANSMISSIVITY ';                                      00001080
VAR_INFO(4) = '  1) PERMEABILITY';                                         00001090
VAR_INFO(5) = 'VARIABLE "TP": ';                                           00001100
TP=PARMGT();                                                               00001110
IF (FCON = '    1') THEN DO;                                               00001120
  VAR_INFO(1) = 'DO YOU WISH TO ENTER THE BOTTOM ELEVATION ';              00001130
  VAR_INFO(2) = 'OR SATURATED THICKNESS FOR THE AREA ?';                   00001140
  VAR_INFO(3) = '  0) SATURATED THICKNESS ';                               00001150
  VAR_INFO(4) = '  1) BOTTOM ';                                            00001160
  VAR_INFO(5) = 'VARIABLE "BTM": ';                                        00001170
  BTM = PARMGT();                                                          00001180
END;                                                                       00001190
ELSE BTM = '    0';                                                        00001200
PARMGT: PROC                          RETURNS(CHAR(80) VAR);               00001210
  DCL VAR                             CHAR(80) VAR,                        00001220
      VAR1                            CHAR(80) VAR,                        00001230
      STR                             CHAR(100) STATIC INIT('    '),       00001240
      COUNTER                         FIXED BIN;                           00001250
  DCL INPUT                 ENTRY (CHAR(4),CHAR(80) VAR),                  00001260
      INPUTR                ENTRY (CHAR(4),CHAR(80) VAR,FLOAT,FLOAT);      00001270
  COUNTER = 1 ;                                                            00001280
```

```
    DO WHILE(VAR_INFO(COUNTER) ¬= ' ');                                    00001290
      PUT FILE(SCREEN) EDIT(VAR_INFO(COUNTER)) (SKIP,A);                   00001300
      VAR_INFO(COUNTER) = '';                                              00001310
      COUNTER = COUNTER + 1;                                               00001320
    END;                                                                   00001330
  REENTR:                                                                  00001340
    IF LOWER_RANGE = UPPER_RANGE THEN                                      00001350
      CALL INPUT(TYPE,VAR);                                                00001360
    ELSE CALL INPUTR(TYPE,VAR,LOWER_RANGE,UPPER_RANGE);                    00001370
    IF TYPE ¬= 'CHAR' & TYPE ¬= 'ANS ' THEN DO;                            00001380
      IF LENGTH(VAR) < LEN THEN                                            00001390
         VAR = SUBSTR(STR,1,                                               00001400
               (LEN-LENGTH(VAR))) || VAR ;                                 00001410
      IF LENGTH(VAR) > LEN THEN DO;                                        00001420
        PUT FILE(SCREEN) EDIT                                              00001430
         ('RESPONSE TOO LONG--LENGTH MUST BE <= ',LEN)(SKIP,A,F(4));       00001440
        PUT FILE(SCREEN) EDIT                                              00001450
         ('PLEASE REENTER :')(SKIP,A);                                     00001460
        GOTO REENTR;                                                       00001470
      END;                                                                 00001480
    END;                                                                   00001490
    IF (VERIFY=1) THEN DO;                                                 00001500
      PUT FILE(SCREEN) EDIT ('VERIFY (Y/N):') (SKIP,A);                    00001510
      CALL INPUT('ANS',VAR1);                                              00001520
      IF VAR1¬='Y' THEN DO;                                                00001530
        PUT FILE(SCREEN) EDIT ('THEN PLEASE REENTER :')(SKIP,A);           00001540
        GOTO REENTR;                                                       00001550
      END;                                                                 00001560
    END;                                                                   00001570
    UPPER_RANGE = 0;                                                       00001580
    LOWER_RANGE = 0;                                                       00001590
    RETURN(VAR);                                                           00001600
  END ;                                                                    00001610
END;                                                                       00001620
```

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**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                  (GTMTRX   )

 GTMTRX: PROC OPTIONS(EXTERNAL);                                          00000010
 /* THE GTMTRX SUBROUTINE IS USED TO PROMPT FOR THE                       00000020
    NECESSARY INFORMATION TO CREATE THE MATRICES.                         00000030
 */                                                                       00000040
 %INCLUDE 'B:EXTVAR.PLI';                                                 00000050
   DCL REPLY                        CHAR(80) VAR,                        00000060
       TEMP_NUM                     FIXED BIN,                           00000070
       TEMP_NUM1                    FIXED BIN,                           00000080
       I                            FIXED BIN,                           00000090
       J                            FIXED BIN,                           00000100
       CHARACTER                    CHAR(4) STATIC INIT('CHAR'),         00000110
       INTEGER                      CHAR(4) STATIC INIT('INT '),         00000120
       REAL                         CHAR(4) STATIC INIT('REAL'),         00000130
       NUMBER                       CHAR(4) STATIC INIT('NUM '),         00000140
       ANSWER                       CHAR(4) STATIC INIT('ANS '),         00000150
       TYPE                         CHAR(4) STATIC INIT(''),             00000160
       UPPER_RANGE                  FLOAT STATIC INIT(0),                00000170
       LOWER_RANGE                  FLOAT STATIC INIT(0),                00000180
       LEN                          FIXED BIN STATIC INIT(4),            00000190
       VAR_INFO(10)                 CHAR(80) VAR;                        00000200
   DCL MTRXED                       ENTRY((NX_LMT,NY_LMT) CHAR(4) VAR,   00000210
                                    FIXED BIN, FIXED BIN, FIXED BIN);    00000220
   DO I=1 TO 10;                                                         00000230
     VAR_INFO(I) = '';                                                   00000240
   END;                                                                  00000250
   TEMP_NUM = NY;                                                        00000260
   TEMP_NUM1 = NX;                                                       00000270
   IF (TP = 0) THEN DO;                                                  00000280
    VAR_INFO(1) = 'IS THE TRANSMISSIVITY FOR THE AREA CONSTANT ?';       00000290
    VAR_INFO(2) = '(A MATRIX IS NOT REQUIRED IF THE TRANSMISSIVITY';     00000300
    VAR_INFO(3) = 'FOR THE AREA IS CONSTANT). (Y/N):';                   00000310
   END;                                                                  00000320
   ELSE DO;                                                              00000330
    VAR_INFO(1) = 'IS THE PERMEABILITY FOR THE AREA CONSTANT ?';         00000340
    VAR_INFO(2) = '(A MATRIX IS NOT REQUIRED IF THE PERMEABILITY';       00000350
    VAR_INFO(3) = 'FOR THE AREA IS CONSTANT). (Y/N):';                   00000360
   END;                                                                  00000370
   TYPE = ANSWER;                                                        00000380
   REPLY = PARMGT();                                                     00000390
   IF REPLY = 'Y' THEN DO;                                               00000400
     INPT_VPRM = '0';                                                    00000410
     IF (TP = 0) THEN DO;                                                00000420
       VAR_INFO(1) =                                                     00000430
         'ENTER THE TRANSMISSIVITY FOR THE AREA (FT**2/SEC).';           00000440
       VAR_INFO(2) = 'NOTE:  FT**2/SEC = GPD/FT * 1.54723 E-6';          00000450
     END;                                                                00000460
     ELSE DO;                                                            00000470
       VAR_INFO(1) =                                                     00000480
         'ENTER THE PERMEABILITY FOR THE AREA (FT/SEC).';                00000490
       VAR_INFO(2) = 'NOTE:  FT/SEC = GPD/FT**2 * 1.54723 E-6';          00000500
     END;                                                                00000510
     VAR_INFO(3) = 'MAXIMUM LENGTH OF 10. REAL NUMBER:';                 00000520
     TYPE = REAL;                                                        00000530
     LEN = 10;                                                           00000540
     FACT_VPRM = PARMGT();                                               00000550
   END;                                                                  00000560
   ELSE DO;                                                              00000570
     INPT_VPRM = '1';                                                    00000580
     IF (TP = 0) THEN DO;                                                00000590
       VAR_INFO(1) = 'ENTER THE TRANSMISSIVITY MULTIPLIER.';             00000600
       VAR_INFO(2) = 'NOTE:  FT**2/SEC = GPD/FT * 1.54723 E-6';          00000610
     END;                                                                00000620
```

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  ELSE DO;                                                                  00000630
    VAR_INFO(1) = 'ENTER THE PERMEABILITY MULTIPLIER.';                     00000640
    VAR_INFO(2) = 'NOTE:  FT/SEC = GPD/FT**2 * 1.54723 E-6';                00000650
  END;                                                                      00000660
  VAR_INFO(3) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                       00000670
  TYPE = REAL;                                                              00000680
  LEN = 10;                                                                 00000690
  FACT_VPRM = PARMGT();                                                     00000700
  IF (TP = 0) THEN VAR_INFO(1) =                                            00000710
    'WHAT DO YOU WISH THE ENTIRE TRANSMISSIVITY MATRIX ';                   00000720
  ELSE VAR_INFO(1) =                                                        00000730
    'WHAT DO YOU WISH THE ENTIRE PERMEABILITY MATRIX ';                     00000740
  VAR_INFO(2) = 'INITIALLY SET TO?';                                        00000750
  VAR_INFO(3) = '(MAXIMUM LENGTH OF 4):';                                   00000760
  LEN = 4;                                                                  00000770
  REPLY = PARMGT();                                                         00000780
  DO I=1 TO TEMP_NUM1;                                                      00000790
    DO J=1 TO TEMP_NUM;                                                     00000800
      VPRM(J,I) = REPLY;                                                    00000810
    END;                                                                    00000820
  END;                                                                      00000830
  LEN = 10;                                                                 00000840
  CALL MTRXED(VPRM,TEMP_NUM1,TEMP_NUM,4);                                   00000850
END;                                                                        00000860
IF (BTM = 0) THEN DO;                                                       00000870
  VAR_INFO(1) = 'IS THE SATURATED THICKNESS FOR THE AREA CONSTANT ?';       00000880
  VAR_INFO(2) = '(A MATRIX IS NOT REQUIRED IF THE SATURATED THICKNESS       00000890
END;                                                                        00000900
ELSE DO;                                                                    00000910
  VAR_INFO(1) = 'IS THE BOTTOM ELEVATION FOR THE AREA CONSTANT ?';          00000920
  VAR_INFO(2) = '(A MATRIX IS NOT REQUIRED IF THE BOTTOM ELEVATION';        00000930
END;                                                                        00000940
VAR_INFO(3) = 'FOR THE AREA IS CONSTANT):';                                 00000950
TYPE = ANSWER;                                                              00000960
REPLY = PARMGT();                                                           00000970
IF REPLY = 'Y' THEN DO;                                                     00000980
  INPT_THCK = '0';                                                          00000990
  IF BTM = 0 THEN                                                           00001000
    VAR_INFO(1) =                                                           00001010
      'ENTER THE SATURATED THICKNESS FOR THE AREA (FEET).';                 00001020
  ELSE                                                                      00001030
    VAR_INFO(1) =                                                           00001040
      'ENTER THE BOTTOM ELEVATION FOR THE AREA (FEET).';                    00001050
  VAR_INFO(2) = ' MAXIMUM LENGTH OF 10, REAL NUMBER:';                      00001060
  TYPE = REAL;                                                              00001070
  LEN = 10;                                                                 00001080
  FACT_THCK = PARMGT();                                                     00001090
END;                                                                        00001100
ELSE DO;                                                                    00001110
  INPT_THCK = '1';                                                          00001120
  IF BTM = 0 THEN                                                           00001130
    VAR_INFO(1) = 'ENTER THE SATURATED THICKNESS MULTIPLIER.';              00001140
  ELSE                                                                      00001150
    VAR_INFO(1) = 'ENTER THE BOTTOM ELEVATION MULTIPLIER.';                 00001160
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                       00001170
  TYPE = REAL;                                                              00001180
  LEN = 10;                                                                 00001190
  FACT_THCK = PARMGT();                                                     00001200
  IF BTM = 0 THEN                                                           00001210
    VAR_INFO(1) = 'WHAT DO YOU WISH THE ENTIRE SATURATED THICKNESS ';       00001220
  ELSE                                                                      00001230
    VAR_INFO(1) = 'WHAT DO YOU WISH THE ENTIRE BOTTOM ELEVATION ';          00001240
  VAR_INFO(2) = 'MATRIX INITIALLY SET TO?';                                 00001250
  VAR_INFO(3) = '(MAXIMUM LENGTH OF 3):';                                   00001260
  TYPE = REAL;                                                              00001270
  LEN = 3;                                                                  00001280
```

```
  REPLY = PARMGT();                                                    00001290
  DO I=1 TO TEMP_NUM1;                                                 00001300
    DO J=1 TO TEMP_NUM;                                                00001310
      THCK(J,I) = REPLY;                                               00001320
    END;                                                               00001330
  END;                                                                 00001340
  CALL MTRXED(THCK,TEMP_NUM1,TEMP_NUM,3);                              00001350
END;                                                                   00001360
VAR_INFO(1) = 'IS THE POTENTIOMETRIC HEAD FOR THE AREA CONSTANT ?';    00001370
VAR_INFO(2) = '(A MATRIX IS NOT REQUIRED IF THE POTENTIOMETRIC';       00001380
VAR_INFO(3) = 'HEAD FOR THE AREA IS CONSTANT):';                       00001390
TYPE = ANSWER;                                                         00001400
REPLY = PARMGT();                                                      00001410
IF REPLY = 'Y' THEN DO;                                                00001420
  INPT_WT = 'O';                                                       00001430
  VAR_INFO(1) = 'ENTER THE POTENTIOMETRIC HEAD FOR THE AREA (FEET).';  00001440
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                  00001450
  TYPE = REAL;                                                         00001460
  LEN = 10;                                                            00001470
  FACT_WT = PARMGT();                                                  00001480
END;                                                                   00001490
ELSE DO;                                                               00001500
  INPT_WT = '1';                                                       00001510
  VAR_INFO(1) = 'ENTER THE POTENTIOMETRIC HEAD MULTIPLIER.';           00001520
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                  00001530
  TYPE = REAL;                                                         00001540
  LEN = 10;                                                            00001550
  FACT_WT = PARMGT();                                                  00001560
  VAR_INFO(1) = 'WHAT DO YOU WISH THE ENTIRE POTENTIOMETRIC HEAD';     00001570
  VAR_INFO(2) = 'MATRIX INITIALLY SET TO?';                            00001580
  VAR_INFO(3) = '(MAXIMUM LENGTH OF 4):';                              00001590
  TYPE = REAL;                                                         00001600
  LEN = 4;                                                             00001610
  REPLY = PARMGT();                                                    00001620
  DO I=1 TO TEMP_NUM1;                                                 00001630
    DO J=1 TO TEMP_NUM;                                                00001640
      WT(J,I) = REPLY;                                                 00001650
    END;                                                               00001660
  END;                                                                 00001670
  CALL MTRXED(WT,TEMP_NUM1,TEMP_NUM,4);                                00001680
END;                                                                   00001690
VAR_INFO(1) = 'IS THE RECHARGE FOR THE AREA CONSTANT ?';               00001700
VAR_INFO(2) = '(A MATRIX IS NOT REQUIRED IF THE RECHARGE';             00001710
VAR_INFO(3) = ' FOR THE AREA IS CONSTANT):';                           00001720
TYPE = ANSWER;                                                         00001730
REPLY = PARMGT();                                                      00001740
IF REPLY = 'Y' THEN DO;                                                00001750
  INPT_RECH = 'O';                                                     00001760
  VAR_INFO(1) = 'ENTER THE RECHARGE FOR THE AREA (FT/SEC).';           00001770
  VAR_INFO(2) = 'NEGATIVE NUMBER; INCLUDES E-T.';                      00001780
  VAR_INFO(3) = 'NOTE:  FT/SEC = IN/YR * 26.7918 E-10';                00001790
  VAR_INFO(4) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                  00001800
  TYPE = REAL;                                                         00001810
  LEN = 10;                                                            00001820
  FACT_RECH = PARMGT();                                                00001830
END;                                                                   00001840
ELSE DO;                                                               00001850
  INPT_RECH = '1';                                                     00001860
  VAR_INFO(1) = 'ENTER THE RECHARGE MULTIPLIER.';                      00001870
  VAR_INFO(2) = 'RECHARGE SHOULD BE NEGATIVE AND INCLUDE E-T.';        00001880
  VAR_INFO(3) = 'NOTE:  FT/SEC = IN/YR * 26.7918 E-10';                00001890
  VAR_INFO(4) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                  00001900
  TYPE = REAL;                                                         00001910
  LEN = 10;                                                            00001920
  FACT_RECH = PARMGT();                                                00001930
  VAR_INFO(1) = 'WHAT DO YOU WISH THE ENTIRE RECHARGE ';               00001940
```

```
  VAR_INFO(2) = 'MATRIX INITIALLY SET TO?';                                    00001950
  VAR_INFO(3) = '(MAXIMUM LENGTH OF 4):';                                      00001960
  TYPE = REAL;                                                                 00001970
  LEN = 4;                                                                     00001980
  REPLY = PARMGT();                                                            00001990
  DO I=1 TO TEMP_NUM1;                                                         00002000
    DO J=1 TO TEMP_NUM;                                                        00002010
      RECH(J,I) = REPLY;                                                       00002020
    END;                                                                       00002030
  END;                                                                         00002040
  CALL MTRXED(RECH,TEMP_NUM1,TEMP_NUM,4);                                      00002050
END;                                                                           00002060
VAR_INFO(1) = 'IS THE NODE IDENTIFICATION FOR THE AREA CONSTANT ?';            00002070
VAR_INFO(2) = '(A MATRIX IS NOT REQUIRED IF THE NODE IDENTIFICATION';          00002080
VAR_INFO(3) = 'FOR THE AREA IS CONSTANT):';                                    00002090
TYPE = ANSWER;                                                                 00002100
REPLY = PARMGT();                                                              00002110
IF REPLY = 'Y' THEN DO;                                                        00002120
  INPT_NODEID = '0';                                                           00002130
  VAR_INFO(1) = 'ENTER THE NODE IDENTIFICATION FOR THE AREA.';                 00002140
  VAR_INFO(2) = 'BETWEEN 0 & 9, MAXIMUM LENGTH OF 1:';                         00002150
  TYPE = REAL;                                                                 00002160
  FACT_NODEID = PARMGT();                                                      00002170
END;                                                                           00002180
ELSE DO;                                                                       00002190
  INPT_NODEID = '1';                                                           00002200
  VAR_INFO(1) = 'ENTER THE NODE IDENTIFICATION MULTIPLIER.';                   00002210
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                          00002220
  TYPE = REAL;                                                                 00002230
  FACT_NODEID = PARMGT();                                                      00002240
  LEN = 10;                                                                    00002250
  VAR_INFO(1) = 'WHAT DO YOU WISH THE ENTIRE NODE IDENTIFICATION ';            00002260
  VAR_INFO(2) = 'MATRIX INITIALLY SET TO, BETWEEN 0 & 9 ?';                    00002270
  VAR_INFO(3) = '(MAXIMUM LENGTH OF 1):';                                      00002280
  TYPE = INTEGER;                                                              00002290
  LEN = 1;                                                                     00002300
  REPLY = PARMGT();                                                            00002310
  DO I=1 TO TEMP_NUM1;                                                         00002320
    DO J=1 TO TEMP_NUM;                                                        00002330
      NODEID(J,I) = REPLY;                                                     00002340
    END;                                                                       00002350
  END;                                                                         00002360
  LEN = 10;                                                                    00002370
  CALL MTRXED(NODEID,TEMP_NUM1,TEMP_NUM,1);                                    00002380
END;                                                                           00002390
VAR_INFO(1) = 'IS THE CONCENTRATION FOR THE AREA CONSTANT ?';                  00002400
VAR_INFO(2) = '(A MATRIX IS NOT REQUIRED IF THE CONCENTRATION';                00002410
VAR_INFO(3) = 'FOR THE AREA IS CONSTANT):';                                    00002420
TYPE = ANSWER;                                                                 00002430
REPLY = PARMGT();                                                              00002440
IF REPLY = 'Y' THEN DO;                                                        00002450
  INPT_CONC = '0';                                                             00002460
  VAR_INFO(1) = 'ENTER THE CONCENTRATION FOR THE AREA (MG/L).';                00002470
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                          00002480
  TYPE = REAL;                                                                 00002490
  LEN = 10;                                                                    00002500
  FACT_CONC = PARMGT();                                                        00002510
END;                                                                           00002520
ELSE DO;                                                                       00002530
  INPT_CONC = '1';                                                             00002540
  VAR_INFO(1) = 'ENTER THE CONCENTRATION MULTIPLIER.';                         00002550
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                          00002560
  TYPE = REAL;                                                                 00002570
  LEN = 10;                                                                    00002580
  FACT_CONC = PARMGT();                                                        00002590
  VAR_INFO(1) = 'WHAT DO YOU WISH THE ENTIRE CONCENTRATION ';                  00002600
```

```
    VAR_INFO(2) = 'MATRIX INITIALLY SET TO?';                    00002610
    VAR_INFO(3) = '(MAXIMUM LENGTH OF 4):';                      00002620
    TYPE = REAL;                                                 00002630
    LEN = 4;                                                     00002640
    REPLY = PARMGT();                                            00002650
    DO I=1 TO TEMP_NUM1;                                         00002660
      DO J=1 TO TEMP_NUM;                                        00002670
        CONC(J,I) = REPLY;                                       00002680
      END;                                                       00002690
    END;                                                         00002700
    CALL MTRXED(CONC,TEMP_NUM1,TEMP_NUM,4);                      00002710
  END;                                                           00002720
%INCLUDE 'B:PARMGT.PLI';                                         00002730
END;                                                             00002740
```

APPENDIX I-B

EDITOR ROUTINES

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                  (UPDATE   )

 UPDATE: PROC OPTIONS(EXTERNAL);                                          00000010
 /* THE UPDATE CONTROLS ALL OPERATIONS. */                                00000020
 %INCLUDE 'B:EXTVAR.PLI';                                                 00000030
   DCL EDVAR                        ENTRY,                              00000040
       SUBFIL                       ENTRY,                              00000050
       EDMTRX                       ENTRY;                              00000060
   DCL INPUT                        ENTRY (CHAR(4),CHAR(80) VAR);       00000070
   OPEN FILE(SCREEN) STREAM OUTPUT TITLE('$CON');                        00000080
   OPEN FILE(CRT) INPUT TITLE('$CON');                                   00000090
   PUT FILE(SCREEN) EDIT(                                                00000100
       'INTERACTIVE MODIFIER FOR USGS SOLUTE TRANSPORT MODEL',           00000110
       'EPA PROJECT # CR-811142-01-0',                                   00000120
       'DOUGLAS C. KENT, CO-PRINCIPAL INVESTIGATOR, HYDROGEOLOGIST',     00000130
       'J. ALEXANDER AND L. LEMASTER, PROGRAMMERS',                      00000140
       'SCHOOL OF GEOLOGY, OKLAHOMA STATE UNIVERSITY',                   00000150
       '(405)624-6358, STILLWATER, OKLAHOMA',                            00000160
       'PL/I VERSION 1.0 (1984, MARCH)')(7(SKIP,A));                     00000170
   PUT FILE(SCREEN) EDIT('ENTER THE DATASET NAME TO BE MODIFIED',        00000180
       '(INCLUDE DRIVE IDENTIFIER):')(SKIP(3),A,SKIP,A);                 00000190
   CALL INPUT('CHAR',FILENM);                                            00000200
   OPEN FILE(SYSUT4) STREAM INPUT TITLE(FILENM) LINESIZE(80);            00000210
   CALL EDFILE;                                                          00000220
   CALL EDJCL;                                                           00000230
   CALL EDVAR;                                                           00000240
   CALL EDMTRX;                                                          00000250
   OPEN FILE(SYSUT4) STREAM OUTPUT TITLE(FILENM) LINESIZE(80);           00000260
   CALL SUBFIL;                                                          00000270
   PUT FILE(SCREEN) EDIT('FILE ',FILENM,' MODIFIED')(SKIP,A,A,A);        00000280
 %INCLUDE 'B:EDFILE.PLI';                                                00000290
 %INCLUDE 'B:EDJCL.PLI';                                                 00000300
 END;                                                                    00000310
```

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                    (EDFILE  )

 EDFILE: PROC;                                                          00000010
 /* THE EDFILE SUBROUTINE IS USED TO READ THE FILE TO BE                00000020
    EDITED. */                                                          00000030
   DCL COUNT                          FIXED BIN,                        00000040
       TEMP_NUM1                      FIXED BIN,                        00000050
       TEMP_NUM2                      FIXED BIN,                        00000060
       I                              FIXED BIN,                        00000070
       J                              FIXED BIN,                        00000080
       K                              FIXED BIN,                        00000090
       L                              FIXED BIN,                        00000100
       COUNT1                         FIXED BIN;                        00000110
   DCL DBLANK          ENTRY (CHAR(80) VAR) RETURNS(CHAR(80) VAR);      00000120
   DO I = 1 TO 16;                                                      00000130
     GET FILE(SYSUT4) EDIT(JCL(I)) (A(80));                             00000140
   END;                                                                 00000150
   GET FILE(SYSUT4) EDIT(TITLE) (COL(1),A(80));                         00000160
   GET FILE(SYSUT4) EDIT(NTIM(1),NPMP,NX,NY,NPMAX,NPNT(1),NITP(1),      00000170
                         NUMOBS,ITMAX(1),NREC(1),NPTPND,NCODES,         00000180
                         NPNTMV(1),NPNTVL(1),NPNTD(1),NPDELC(1),NPNCHV(1)) 00000190
                        (COL(1),17(A(4)));                              00000200
   GET FILE(SYSUT4) EDIT(PINT(1),TOL,POROS,BETA,S,TIMX(1),TINIT(1),     00000210
                         XDEL,YDEL,DLTRAT,CELDIS,ANFCTR)                00000220
                        (COL(1),12(A(5)));                              00000230
   GET FILE(SYSUT4) EDIT(NDECAY,NSORB,DCYTIM,DENROC,SORBOR,SORBST,      00000240
                         SORBAL)(COL(1),2(A(5)),5(A(10)));              00000250
   GET FILE(SYSUT4) EDIT(ISOLV,IHEAD,FCON,TP,BTM)(COL(1),5(A(4)));      00000260
   COUNT = 0;                                                           00000270
   TEMP_NUM1 = DBLANK(NUMOBS);                                          00000280
   DO WHILE(COUNT < TEMP_NUM1);                                         00000290
     COUNT = COUNT + 1;                                                 00000300
     GET FILE(SYSUT4) EDIT(IXOBS(COUNT),IYOBS(COUNT))                   00000310
                      (COL(1),2(A(2)));                                 00000320
   END;                                                                 00000330
   COUNT = 0;                                                           00000340
   TEMP_NUM1 = DBLANK(NREC(1));                                         00000350
   DO WHILE(COUNT < TEMP_NUM1);                                         00000360
     COUNT = COUNT + 1;                                                 00000370
     GET FILE(SYSUT4) EDIT(IX(1,COUNT),IY(1,COUNT),                     00000380
                           REC(1,COUNT),CNRECH(1,COUNT))                00000390
                      (COL(1),2(A(2)),2(A(8)));                         00000400
   END;                                                                 00000410
   GET FILE(SYSUT4) EDIT(INPT_VPRM,FACT_VPRM)                           00000420
                    (COL(1),A(1),A(10));                                00000430
   IF INPT_VPRM ¬= 0 THEN DO;                                           00000440
     I = DBLANK(NX);                                                    00000450
     J = DBLANK(NY);                                                    00000460
     DO K=1 TO J;                                                       00000470
       GET FILE(SYSUT4) EDIT(VPRM(K,1)) (COL(1),A(4));                  00000480
       DO L=2 TO I;                                                     00000490
         GET FILE(SYSUT4) EDIT(VPRM(K,L)) (A(4));                       00000500
       END;                                                             00000510
     END;                                                               00000520
   END;                                                                 00000530
   GET FILE(SYSUT4) EDIT(INPT_THCK,FACT_THCK)                           00000540
                    (COL(1),A(1),A(10));                                00000550
   IF INPT_THCK ¬= 0 THEN DO;                                           00000560
     I = DBLANK(NX);                                                    00000570
     J = DBLANK(NY);                                                    00000580
     DO K=1 TO J;                                                       00000590
       GET FILE(SYSUT4) EDIT(THCK(K,1)) (COL(1),A(3));                  00000600
       DO L=2 TO I;                                                     00000610
         GET FILE(SYSUT4) EDIT(THCK(K,L)) (A(3));                       00000620
```

```
      IF (MOD(L,26)=0) THEN GET FILE(SYSUT4) SKIP;                    00000630
    END;                                                              00000640
  END;                                                                00000650
END;                                                                  00000660
GET FILE(SYSUT4) EDIT(INPT_WT,FACT_WT)                                00000670
                 (COL(1),A(1),A(10));                                 00000680
IF INPT_WT ¬= 0 THEN DO;                                              00000690
  I = DBLANK(NX);                                                     00000700
  J = DBLANK(NY);                                                     00000710
  DO K=1 TO J;                                                        00000720
    GET FILE(SYSUT4) EDIT(WT(K,1)) (COL(1),A(4));                     00000730
    DO L=2 TO I;                                                      00000740
      GET FILE(SYSUT4) EDIT(WT(K,L)) (A(4));                          00000750
    END;                                                              00000760
  END;                                                                00000770
END;                                                                  00000780
GET FILE(SYSUT4) EDIT(INPT_RECH,FACT_RECH)                            00000790
                 (COL(1),A(1),A(10));                                 00000800
IF INPT_RECH ¬= 0 THEN DO;                                            00000810
  I = DBLANK(NX);                                                     00000820
  J = DBLANK(NY);                                                     00000830
  DO K=1 TO J;                                                        00000840
    GET FILE(SYSUT4) EDIT(RECH(K,1)) (COL(1),A(4));                   00000850
    DO L=2 TO I;                                                      00000860
      GET FILE(SYSUT4) EDIT(RECH(K,L)) (A(4));                        00000870
    END;                                                              00000880
  END;                                                                00000890
END;                                                                  00000900
GET FILE(SYSUT4) EDIT(INPT_NODEID,FACT_NODEID)                        00000910
                 (COL(1),A(1),A(10));                                 00000920
IF INPT_NODEID ¬= 0 THEN DO;                                          00000930
  I = DBLANK(NX);                                                     00000940
  J = DBLANK(NY);                                                     00000950
  DO K=1 TO J;                                                        00000960
    GET FILE(SYSUT4) EDIT(NODEID(K,1)) (COL(1),A(1));                 00000970
    DO L=2 TO I;                                                      00000980
      GET FILE(SYSUT4) EDIT(NODEID(K,L)) (A(1));                      00000990
    END;                                                              00001000
  END;                                                                00001010
END;                                                                  00001020
COUNT = 0;                                                            00001030
TEMP_NUM1 = DBLANK(NCODES);                                           00001040
DO WHILE(COUNT < TEMP_NUM1);                                          00001050
  COUNT = COUNT + 1;                                                  00001060
  GET FILE(SYSUT4) EDIT(ICODE(COUNT),FCTR1(COUNT),FCTR2(COUNT),       00001070
                    FCTR3(COUNT),OVERRD(COUNT))                       00001080
                   (COL(1),A(2),3(A(10)),A(2));                       00001090
END;                                                                  00001100
GET FILE(SYSUT4) EDIT(INPT_CONC,FACT_CONC)                            00001110
                 (COL(1),A(1),A(10));                                 00001120
IF INPT_CONC ¬= 0 THEN DO;                                            00001130
  I = DBLANK(NX);                                                     00001140
  J = DBLANK(NY);                                                     00001150
  DO K=1 TO J;                                                        00001160
    GET FILE(SYSUT4) EDIT(CONC(K,1)) (COL(1),A(4));                   00001170
    DO L=2 TO I;                                                      00001180
      GET FILE(SYSUT4) EDIT(CONC(K,L)) (A(4));                        00001190
    END;                                                              00001200
  END;                                                                00001210
END;                                                                  00001220
COUNT = 1 ;                                                           00001230
TEMP_NUM1 = DBLANK(NPMP);                                             00001240
DO WHILE(COUNT < TEMP_NUM1);                                          00001250
  COUNT = COUNT + 1;                                                  00001260
  GET FILE(SYSUT4) EDIT(ICHK(COUNT-1)) (COL(1),A(1));                 00001270
  IF ICHK(COUNT-1) = 1 THEN DO;                                       00001280
```

```
      GET FILE(SYSUT4) EDIT(NTIM(COUNT),NPNT(COUNT),NITP(COUNT),          00001290
                        ITMAX(COUNT),                                     00001300
                        NREC(COUNT),NPNTMV(COUNT),NPNTVL(COUNT),          00001310
                        NPNTD(COUNT),NPDELC(COUNT),NPNCHV(COUNT),         00001320
                        PINT(COUNT),TIMX(COUNT),TINIT(COUNT))             00001330
                       (COL(1),10(A(4)),3(A(5)));                         00001340
      COUNT1 = 0;                                                         00001350
      TEMP_NUM2 = DBLANK(NREC(COUNT));                                    00001360
      DO WHILE(COUNT1 < NREC(COUNT));                                     00001370
        COUNT1 = COUNT1 + 1;                                              00001380
        GET FILE(SYSUT4) EDIT(IX(COUNT,COUNT1),IY(COUNT,COUNT1),          00001390
                         REC(COUNT,COUNT1),CNRECH(COUNT,COUNT1))          00001400
                        (COL(1),2(A(2)),2(A(8)));                         00001410
      END;                                                                00001420
    END;                                                                  00001430
  END;                                                                    00001440
  CLOSE FILE(SYSUT4);                                                     00001450
END;                                                                      00001460
```

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                    (EDJCL    )

 EDJCL: PROC ;                                                          00000010
 /* THE EDJCL SUBROUTINE IS USED TO EDIT THE JCL FOR THE MODEL.         00000020
 */                                                                     00000030
   DCL ANSWER                          CHAR(80) VAR,                    00000040
       ANSWER1                         CHAR(80) VAR,                    00000050
       I                               FIXED BIN;                       00000060
   DCL INPUT                           ENTRY (CHAR(4),CHAR(80) VAR),    00000070
       INPUTR          ENTRY (CHAR(4),CHAR(80) VAR,FLOAT,FLOAT),       00000080
       DBLANK          ENTRY (CHAR(80) VAR) RETURNS(CHAR(80) VAR);     00000090
     PUT FILE(SCREEN) EDIT                                              00000100
       ('NOTE:  CHECK THE "DISP" ATTRIBUTE FOR THE OUTLIST AND ',       00000110
        'GRAPH FILES.') (SKIP,A,A,SKIP,A);                              00000120
     ANSWER = 'Y';                                                      00000130
     DO WHILE(ANSWER = 'Y');                                            00000140
     PUT FILE(SCREEN) EDIT                                              00000150
       ('THE FOLLOWING IS THE JCL') (SKIP,A);                           00000160
     DO I=1 TO 16 ;                                                     00000170
       PUT FILE(SCREEN) EDIT                                            00000180
         (' ',I,') ',JCL(I)) (SKIP,A,F(2),A,A(70));                     00000190
     END;                                                               00000200
     PUT FILE(SCREEN) EDIT                                              00000210
       ('DO YOU WISH TO CHANGE ANYTHING (Y/N) :') (SKIP,A);             00000220
     CALL INPUT('ANS',ANSWER);                                          00000230
     IF ANSWER = 'Y' THEN DO;                                           00000240
       PUT FILE(SCREEN) EDIT                                            00000250
         ('ENTER THE NUMBER OF THE LINE YOU WISH TO CHANGE.',           00000260
          '(ONLY ONE AT A TIME):') (A,SKIP,A);                          00000270
       CALL INPUTR('INT',ANSWER1,1,15);                                 00000280
       I=DBLANK(ANSWER1);                                               00000290
       PUT FILE(SCREEN) EDIT(JCL(I),'ENTER THE COMPLETE LINE . . .:')   00000300
         (SKIP,A(72),SKIP,A,SKIP,A);                                    00000310
       CALL INPUT('CHAR',JCL(I));                                       00000320
     END;                                                               00000330
   END;                                                                 00000340
 END;                                                                   00000350
```

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                  (EDVAR    )

 EDVAR: PROC OPTIONS(EXTERNAL);                                                 00000010
 /* THE EDVAR SUBROUTINE PROMPTS FOR THE CHANGES TO THE                       00000020
    SINGLE VARIABLES.                                                         00000030
 */                                                                           00000040
 %INCLUDE 'B:EXTVAR.PLI';                                                     00000050
   DCL CHARACTER                 CHAR(4) STATIC INIT('CHAR'),                 00000060
       INTEGER                   CHAR(4) STATIC INIT('INT '),                 00000070
       REAL                      CHAR(4) STATIC INIT('REAL'),                 00000080
       NUMBER                    CHAR(4) STATIC INIT('NUM '),                 00000090
       ANSWER                    CHAR(4) STATIC INIT('ANS '),                 00000100
       TYPE                      CHAR(4) STATIC INIT(''),                     00000110
       REPLY                     CHAR(80) VAR,                                00000120
       UPPER_RANGE               FLOAT STATIC INIT(0),                        00000130
       LOWER_RANGE               FLOAT STATIC INIT(0),                        00000140
       LEN                       FIXED BIN STATIC INIT(4),                    00000150
       VAR_INFO(10)              CHAR(80) VAR,                                00000160
       NUMBER1                   FLOAT STATIC INIT(0),                        00000170
       NUMBER2                   FLOAT STATIC INIT(0),                        00000180
       OLDNUM                    FIXED BIN,                                   00000190
       COUNTER                   FIXED BIN,                                   00000200
       COUNTER1                  FIXED BIN,                                   00000210
       OLDPMP                    FIXED BIN,                                   00000220
       PMP                       CHAR(80) VAR,                                00000230
       TEMPC                     CHAR(80) VAR,                                00000240
       TEMPCC                    CHAR(80) VAR,                                00000250
       TEMPN                     FLOAT STATIC INIT(0);                        00000260
   DCL DBLANK         ENTRY (CHAR(80) VAR) RETURNS(CHAR(80) VAR);             00000270
   DO COUNTER = 1 TO 10;                                                       00000280
     VAR_INFO(COUNTER) = '';                                                   00000290
   END;                                                                        00000300
   VERIFY=0;                                                                   00000310
   VAR_INFO(1) = 'DO YOU WISH TO CHANGE ANY OF THE SINGLE VARIABLES ?' ;       00000320
   VAR_INFO(2) = 'ANYTHING OTHER THAN MATRICES (Y/N):';                        00000330
   TYPE = ANSWER;                                                              00000340
   LEN = 1;                                                                    00000350
   TEMPC = PARMGT();                                                           00000360
   IF TEMPC = 'N' THEN GO TO NDVAR;                                            00000370
   VAR_INFO(1) = 'TITLE = ';                                                   00000380
   VAR_INFO(2) = TITLE ;                                                       00000390
   VAR_INFO(3) = 'CHANGE (Y/N):';                                              00000400
   TYPE = ANSWER;                                                              00000410
   LEN = 1;                                                                    00000420
   TEMPC = PARMGT();                                                           00000430
   IF TEMPC = 'Y' THEN DO;                                                     00000440
     VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                        00000450
     LEN = 80 ;                                                              00000460
     TYPE = CHARACTER;                                                       00000470
     TITLE = PARMGT();                                                       00000480
   END;                                                                        00000490
   VAR_INFO(1) = 'NX = ' || NX ;                                               00000500
   VAR_INFO(2) = 'MINIMUM OF 3, MAXIMUM OF '||NX_LMT||'.';                     00000510
   VAR_INFO(3) = 'CHANGE (Y/N):';                                              00000520
   TYPE = ANSWER;                                                              00000530
   LEN = 1;                                                                    00000540
   TEMPC = PARMGT();                                                           00000550
   IF TEMPC = 'Y' THEN DO;                                                     00000560
     VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                        00000570
     LOWER_RANGE = 3;                                                        00000580
     UPPER_RANGE = NX_LMT;                                                   00000590
     LEN = 4;                                                                00000600
     TYPE = INTEGER;                                                         00000610
     NX = PARMGT();                                                          00000620
```

```
END;                                                                    00000630
VAR_INFO(1) = 'NY = ' || NY ;                                           00000640
VAR_INFO(2) = 'MINIMUM OF 3, MAXIMUM OF '||NY_LMT||'.';                 00000650
VAR_INFO(3) = CHANGE (Y/N):';                                           00000660
TYPE = ANSWER;                                                          00000670
LEN = 1;                                                                00000680
TEMPC = PARMGT();                                                       00000690
IF TEMPC = 'Y' THEN DO;                                                 00000700
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00000710
  LOWER_RANGE = 3;                                                      00000720
  UPPER_RANGE = NY_LMT;                                                 00000730
  LEN = 4;                                                              00000740
  TYPE = INTEGER;                                                       00000750
  NY = PARMGT();                                                        00000760
END;                                                                    00000770
VAR_INFO(1) = 'NPMAX = ' || NPMAX ;                                     00000780
VAR_INFO(2) = 'MAXIMUM OF 9850.';                                       00000790
VAR_INFO(3) = 'CHANGE (Y/N):';                                          00000800
TYPE = ANSWER;                                                          00000810
LEN = 1;                                                                00000820
TEMPC = PARMGT();                                                       00000830
IF TEMPC = 'Y' THEN DO;                                                 00000840
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00000850
  LEN = 4;                                                              00000860
  TYPE = INTEGER;                                                       00000870
  UPPER_RANGE = 9850;                                                   00000880
  NPMAX = PARMGT();                                                     00000890
END;                                                                    00000900
VAR_INFO(1) = 'NPTPND = ' || NPTPND ;                                   00000910
VAR_INFO(2) = 'OPTIONS = 4,5,8,9:';                                     00000920
VAR_INFO(3) = 'CHANGE (Y/N):';                                          00000930
TYPE = ANSWER;                                                          00000940
LEN = 1;                                                                00000950
TEMPC = PARMGT();                                                       00000960
IF TEMPC = 'Y' THEN DO;                                                 00000970
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00000980
  LEN = 4;                                                              00000990
  TYPE = INTEGER;                                                       00001000
  NPTPND = PARMGT();                                                    00001010
END;                                                                    00001020
VAR_INFO(1) = 'NUMOBS = ' || NUMOBS ;                                   00001030
VAR_INFO(2) = 'MAXIMUM OF '||OBS_LMT||'.';                              00001040
VAR_INFO(3) = 'CHANGE (Y/N):';                                          00001050
TYPE = ANSWER;                                                          00001060
LEN = 1;                                                                00001070
TEMPC = PARMGT();                                                       00001080
OLDNUM = NUMOBS;                                                        00001090
IF TEMPC = 'Y' THEN DO;                                                 00001100
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00001110
  LEN = 4;                                                              00001120
  TYPE = INTEGER;                                                       00001130
  UPPER_RANGE = OBS_LMT;                                                00001140
  NUMOBS = PARMGT();                                                    00001150
END;                                                                    00001160
NUMBER1 = NUMOBS;                                                       00001170
IF NUMBER1 > OLDNUM THEN DO;                                            00001180
  COUNTER = OLDNUM;                                                     00001190
  DO WHILE(COUNTER < NUMBER1);                                          00001200
    COUNTER = COUNTER + 1;                                              00001210
    TEMPC = COUNTER;                                                    00001220
    TEMPC = DBLANK(TEMPC);                                              00001230
    VAR_INFO(1) = 'ENTER THE "X" COORDINATE OF OBSERVATION POINT.';     00001240
    VAR_INFO(2) = 'VARIABLE "IXOBS(' || TEMPC || ')" :' ;               00001250
    LEN = 2;                                                            00001260
    IXOBS(COUNTER) = PARMGT();                                          00001270
    VAR_INFO(1) = 'ENTER THE "Y" COORDINATE OF OBSERVATION POINT.';     00001280
```

```
    VAR_INFO(2) = 'VARIABLE "IYOBS(' || TEMPC || ')" :' ;                    00001290
    IYOBS(COUNTER) = PARMGT();                                               00001300
  END;                                                                       00001310
END;                                                                         00001320
DO WHILE((OLDNUM > -1) & (NUMBER1 > 0));                                     00001330
  COUNTER = 0;                                                               00001340
  PUT FILE(SCREEN) EDIT('OBSERVATION WELLS')(A);                             00001350
  PUT FILE(SCREEN) EDIT('  WELL#    X    Y ')(SKIP,A);                      00001360
  DO WHILE(COUNTER < NUMBER1);                                               00001370
    COUNTER = COUNTER + 1;                                                   00001380
    IF OLDNUM < COUNTER THEN PUT FILE(SCREEN) EDIT('NEW')(SKIP,A);           00001390
    PUT FILE(SCREEN) EDIT(COUNTER,IXOBS(COUNTER),IYOBS(COUNTER))             00001400
          (SKIP,X(4),F(3),X(2),A(2),X(2),A(2));                              00001410
  END;                                                                       00001420
  VAR_INFO(1) = 'ENTER WELL NUMBER (OR 0 TO CONTINUE):';                     00001430
  LEN = 2;                                                                   00001440
  TYPE = INTEGER;                                                            00001450
  TEMPCC = PARMGT();                                                         00001460
  COUNTER = TEMPCC;                                                          00001470
  IF COUNTER > 0 THEN DO;                                                    00001480
    VAR_INFO(1) = 'IXOBS(' || TEMPCC || ') = ' || IXOBS(COUNTER) ;           00001490
    VAR_INFO(2) = 'CHANGE (Y/N):';                                           00001500
    TYPE = ANSWER;                                                           00001510
    LEN = 1;                                                                 00001520
    TEMPC = PARMGT();                                                        00001530
    IF TEMPC = 'Y' THEN DO;                                                  00001540
      VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                     00001550
      LEN = 2;                                                               00001560
      TYPE = INTEGER;                                                        00001570
      IXOBS(COUNTER) = PARMGT();                                             00001580
    END;                                                                     00001590
    VAR_INFO(1) = 'IYOBS(' || TEMPCC || ') = ' || IYOBS(COUNTER) ;           00001600
    VAR_INFO(2) = 'CHANGE (Y/N):';                                           00001610
    TYPE = ANSWER;                                                           00001620
    LEN = 1;                                                                 00001630
    TEMPC = PARMGT();                                                        00001640
    IF TEMPC = 'Y' THEN DO;                                                  00001650
      VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                     00001660
      LEN = 2;                                                               00001670
      TYPE = INTEGER;                                                        00001680
      IYOBS(COUNTER) = PARMGT();                                             00001690
    END;                                                                     00001700
  END;                                                                       00001710
  ELSE OLDNUM = -1;                                                          00001720
END;                                                                         00001730
VAR_INFO(1) = 'NCODES = ' || NCODES ;                                        00001740
VAR_INFO(2) = 'MAXIMUM OF '||NC_LMT||'.';                                    00001750
VAR_INFO(3) = 'CHANGE (Y/N):';                                               00001760
TYPE = ANSWER;                                                               00001770
LEN = 1;                                                                     00001780
TEMPC = PARMGT();                                                            00001790
OLDNUM = NCODES;                                                             00001800
IF TEMPC = 'Y' THEN DO;                                                      00001810
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                         00001820
  LEN = 4;                                                                   00001830
  UPPER_RANGE = NC_LMT;                                                      00001840
  TYPE = INTEGER;                                                            00001850
  NCODES = PARMGT();                                                         00001860
END;                                                                         00001870
NUMBER2 = NCODES;                                                            00001880
IF NUMBER2 > OLDNUM THEN DO;                                                 00001890
  COUNTER1 = OLDNUM + 1;                                                     00001900
  DO WHILE(COUNTER1 <= NUMBER2);                                             00001910
    TEMPC = COUNTER1;                                                        00001920
    TEMPC = DBLANK(TEMPC);                                                   00001930
    VAR_INFO(1) = 'ENTER NODE IDENTIFICATION CODE.';                         00001940
```

```
    VAR_INFO(2) = 'VARIABLE "ICODE(' || TEMPC || ')" :';                    00001950
    LEN = 2;                                                                00001960
    TYPE = INTEGER;                                                         00001970
    ICODE(COUNTER1) = PARMGT();                                             00001980
    VAR_INFO(1) = 'ENTER CORRESPONDING LEAKANCE (FT**2/SEC).';              00001990
    VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                     00002000
    VAR_INFO(3) = 'NOTE:  FT**2/SEC = GPD/FT * 1.54723 E-6';                00002010
    VAR_INFO(4) = 'VARIABLE "FCTR1(' || TEMPC || ')" :';                    00002020
    LEN = 10;                                                               00002030
    TYPE = REAL;                                                            00002040
    FCTR1(COUNTER1) = PARMGT();                                             00002050
    VAR_INFO(1) = 'ENTER CONCENTRATION FOR ICODE (MG/L).';                  00002060
    VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                     00002070
    VAR_INFO(3) = 'VARIABLE "FCTR2(' || TEMPC || ')" :';                    00002080
    FCTR2(COUNTER1) = PARMGT();                                             00002090
    VAR_INFO(1) = 'ENTER OPTION TO RETAIN RECHARGE MATRIX VALUES :';        00002100
    VAR_INFO(2) = '  0) RETAIN VALUES.';                                    00002110
    VAR_INFO(3) = '  1) USE VALUE OF FCTR3.';                               00002120
    VAR_INFO(4) = 'VARIABLE "OVERRD(' || TEMPC || ')" :';                   00002130
    LEN = 2;                                                                00002140
    TYPE = INTEGER;                                                         00002150
    OVERRD(COUNTER1) = PARMGT();                                            00002160
    IF ( OVERRD(COUNTER1)=' 0' )                                            00002170
    THEN FCTR3(COUNTER1)='        0.';                                      00002180
    ELSE DO ;                                                               00002190
      VAR_INFO(1) = 'ENTER RECHARGE/DISCHARGE FOR ICODE (FT/SEC).';         00002200
      VAR_INFO(2) ='NEGATIVE FOR RECHARGE, POSITIVE FOR DISCHARGE.';        00002210
      VAR_INFO(3) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                   00002220
      VAR_INFO(4) = 'NOTE:  FT/SEC = IN/YR * 26.7918 E-10';                 00002230
      VAR_INFO(5) = 'ENTER VARIABLE "FCTR3(' || TEMPC || ')" :';            00002240
      LEN = 10;                                                             00002250
      TYPE = REAL;                                                          00002260
      FCTR3(COUNTER1) = PARMGT();                                           00002270
    END;                                                                    00002280
    COUNTER1 = COUNTER1 + 1;                                                00002290
  END;                                                                      00002300
END;                                                                        00002310
DO WHILE((OLDNUM > -1) & (NUMBER2 > 0));                                    00002320
  COUNTER1 = 1;                                                             00002330
  PUT FILE(SCREEN) EDIT('NODEID CODES')(X(18),A);                           00002340
  PUT FILE(SCREEN) EDIT                                                     00002350
  ('  ICODE#  ICODE      FCTR1      FCTR2      FCTR3   OVERRD')            00002360
  (SKIP,A);                                                                 00002370
  DO WHILE(COUNTER1 <= NUMBER2);                                            00002380
    IF OLDNUM < COUNTER1 THEN PUT FILE(SCREEN) EDIT('NEW')(SKIP,A);         00002390
    PUT FILE(SCREEN) EDIT(COUNTER1,ICODE(COUNTER1),FCTR1(COUNTER1),         00002400
     FCTR2(COUNTER1),FCTR3(COUNTER1),OVERRD(COUNTER1)) (SKIP,X(6),          00002410
     F(2),X(5),A(2),3(X(1),A(10)),X(7),A(2));                               00002420
    COUNTER1 = COUNTER1 + 1;                                                00002430
  END;                                                                      00002440
  VAR_INFO(1) = 'ENTER ICODE NUMBER (OR 0 TO CONTINUE):';                   00002450
  LEN = 2;                                                                  00002460
  TYPE = INTEGER;                                                           00002470
  TEMPCC = PARMGT();                                                        00002480
  COUNTER1 = TEMPCC;                                                        00002490
  IF COUNTER1 > 0 THEN DO;                                                  00002500
    VAR_INFO(1) = 'ICODE(' || TEMPCC || ') = ' || ICODE(COUNTER1) ;         00002510
    VAR_INFO(2) = 'CHANGE (Y/N):';                                          00002520
    TYPE = ANSWER;                                                          00002530
    LEN = 1;                                                                00002540
    TEMPC = PARMGT();                                                       00002550
    IF TEMPC = 'Y' THEN DO;                                                 00002560
      VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00002570
      LEN = 2;                                                              00002580
      TYPE = INTEGER;                                                       00002590
      ICODE(COUNTER1) = PARMGT();                                           00002600
```

```
    END;                                                                    00002610
    VAR_INFO(1) = 'FCTR1(' || TEMPCC || ') = ' || FCTR1(COUNTER1) ;         00002620
    VAR_INFO(2) = 'CHANGE (Y/N):';                                          00002630
    TYPE = ANSWER;                                                          00002640
    LEN = 1;                                                                00002650
    TEMPC = PARMGT();                                                       00002660
    IF TEMPC = 'Y' THEN DO;                                                 00002670
      VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00002680
      LEN = 10;                                                             00002690
      TYPE = REAL;                                                          00002700
      FCTR1(COUNTER1) = PARMGT();                                           00002710
    END;                                                                    00002720
    VAR_INFO(1) = 'FCTR2(' || TEMPCC || ') = ' || FCTR2(COUNTER1) ;         00002730
    VAR_INFO(2) = 'CHANGE (Y/N):';                                          00002740
    TYPE = ANSWER;                                                          00002750
    LEN = 1;                                                                00002760
    TEMPC = PARMGT();                                                       00002770
    IF TEMPC = 'Y' THEN DO;                                                 00002780
      VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00002790
      LEN = 10;                                                             00002800
      TYPE = REAL;                                                          00002810
      FCTR2(COUNTER1) = PARMGT();                                           00002820
    END;                                                                    00002830
    VAR_INFO(1) = 'OVERRD(' || TEMPCC || ') = ' || OVERRD(COUNTER1);        00002840
    VAR_INFO(2) = 'CHANGE (Y/N):';                                          00002850
    TYPE = ANSWER;                                                          00002860
    LEN = 1;                                                                00002870
    TEMPC = PARMGT();                                                       00002880
    IF TEMPC = 'Y' THEN DO;                                                 00002890
      VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00002900
      LEN = 2;                                                              00002910
      TYPE = INTEGER;                                                       00002920
      OVERRD(COUNTER1) = PARMGT();                                          00002930
    END;                                                                    00002940
    IF ( OVERRD(COUNTER1)=' 0' )                                            00002950
    THEN FCTR3(COUNTER1)='        0.';                                      00002960
    ELSE DO ;                                                               00002970
      VAR_INFO(1) = 'FCTR3(' || TEMPCC || ') = ' || FCTR3(COUNTER1);        00002980
      VAR_INFO(2) =                                                         00002990
      'NEGATIVE FOR RECHARGE, POSITIVE FOR DISCHARGE.';                     00003000
      VAR_INFO(3) = 'CHANGE (Y/N):';                                        00003010
      TYPE = ANSWER;                                                        00003020
      LEN = 1;                                                              00003030
      TEMPC = PARMGT();                                                     00003040
      IF TEMPC = 'Y' THEN DO;                                               00003050
        VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                  00003060
        LEN = 10;                                                           00003070
        TYPE = REAL;                                                        00003080
        FCTR3(COUNTER1) = PARMGT();                                         00003090
      END;                                                                  00003100
    END;                                                                    00003110
  END;                                                                      00003120
  ELSE OLDNUM = -1;                                                         00003130
END;                                                                        00003140
VAR_INFO(1) = 'S = ' || S ;                                                 00003150
VAR_INFO(2) = 'O FOR STEADY FLOW PROBLEMS.';                                00003160
VAR_INFO(3) = 'CHANGE (Y/N):';                                              00003170
TYPE = ANSWER;                                                              00003180
LEN = 1;                                                                    00003190
TEMPC = PARMGT();                                                           00003200
IF TEMPC = 'Y' THEN DO;                                                     00003210
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                        00003220
  LEN = 5;                                                                  00003230
  TYPE = REAL;                                                              00003240
  S = PARMGT();                                                             00003250
END;                                                                        00003260
```

```
VAR_INFO(1) = 'NPMP = ' || NPMP ;                                    00003270
VAR_INFO(2) = 'MAXIMUM OF '||PMP_LMT||'.';                          00003280
VAR_INFO(3) = 'CHANGE (Y/N):';                                       00003290
TYPE = ANSWER;                                                       00003300
LEN = 1;                                                             00003310
OLDPMP = NPMP;                                                       00003320
TEMPC = PARMGT();                                                    00003330
IF TEMPC = 'Y' THEN DO;                                              00003340
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                 00003350
  UPPER_RANGE = PMP_LMT;                                             00003360
  LEN = 4;                                                           00003370
  TYPE = INTEGER;                                                    00003380
  NPMP = PARMGT() ;                                                  00003390
END;                                                                 00003400
COUNTER1 = 1;                                                        00003410
NUMBER2 = NPMP;                                                      00003420
DO WHILE(COUNTER1 = 1 | COUNTER1 <= NUMBER2 );                       00003430
  PMP = COUNTER1;                                                    00003440
  PMP = DBLANK(PMP);                                                 00003450
  IF COUNTER1 > 1 THEN DO;                                           00003460
    VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                         00003470
    VAR_INFO(2) = 'ICHK = ' || ICHK(COUNTER1-1);                     00003480
    VAR_INFO(3) = 'CHANGE (Y/N):';                                   00003490
    LEN = 1;                                                         00003500
    TYPE = ANSWER;                                                   00003510
    TEMPC = PARMGT();                                                00003520
    TEMPCC = ICHK(COUNTER1-1);                                       00003530
    IF TEMPC = 'Y' THEN DO;                                          00003540
      VAR_INFO(1) = 'ENTER NEW VALUE:' ;                             00003550
      TYPE = INTEGER;                                                00003560
      ICHK(COUNTER1 - 1) = PARMGT();                                 00003570
    END;                                                             00003580
    IF TEMPCC = 'O' | OLDPMP < COUNTER1 THEN DO;                     00003590
      NTIM(COUNTER1)='   O';                                         00003600
      NPNT(COUNTER1)='   O';                                         00003610
      NITP(COUNTER1)='   O';                                         00003620
      ITMAX(COUNTER1)='   O';                                        00003630
      NREC(COUNTER1)='   O';                                         00003640
      NPNTMV(COUNTER1)='   O';                                       00003650
      NPNTVL(COUNTER1)='   O';                                       00003660
      NPNTD(COUNTER1)='   O';                                        00003670
      NPDELC(COUNTER1)='   O';                                       00003680
      NPNCHV(COUNTER1)='   O';                                       00003690
      PINT(COUNTER1)='   0.';                                       00003700
      TIMX(COUNTER1)='   0.';                                       00003710
      TINIT(COUNTER1)='   0.';                                       00003720
    END;                                                             00003730
  END;                                                               00003740
  IF COUNTER1 = 1  | ICHK(COUNTER1 - 1) = '1' THEN DO;               00003750
    VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                         00003760
    VAR_INFO(2) = 'NTIM = ' || NTIM(COUNTER1) ;                      00003770
    VAR_INFO(3) = 'CHANGE (Y/N):';                                   00003780
    LEN = 1;                                                         00003790
    TYPE = ANSWER;                                                   00003800
    TEMPC = PARMGT();                                                00003810
    IF TEMPC = 'Y' THEN DO;                                          00003820
      VAR_INFO(1) = 'ENTER NEW VALUE:' ;                             00003830
      UPPER_RANGE = 100;                                             00003840
      LEN = 4;                                                       00003850
      TYPE = INTEGER;                                                00003860
      NTIM(COUNTER1) = PARMGT();                                     00003870
    END;                                                             00003880
    VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                         00003890
    VAR_INFO(2) = 'NPNT = ' || NPNT(COUNTER1) ;                      00003900
    VAR_INFO(3) = 'CHANGE (Y/N):';                                   00003910
    LEN = 1;                                                         00003920
```

```
TYPE = ANSWER;                                                    00003930
TEMPC = PARMGT();                                                 00003940
IF TEMPC = 'Y' THEN DO;                                           00003950
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                              00003960
  LEN = 4;                                                        00003970
  TYPE = INTEGER;                                                 00003980
  NPNT(COUNTER1) = PARMGT();                                      00003990
END;                                                              00004000
VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                          00004010
VAR_INFO(2) = 'NITP = ' || NITP(COUNTER1) ;                       00004020
VAR_INFO(3) = 'CHANGE (Y/N):';                                    00004030
LEN = 1;                                                          00004040
TYPE = ANSWER;                                                    00004050
TEMPC = PARMGT();                                                 00004060
IF TEMPC = 'Y' THEN DO;                                           00004070
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                              00004080
  LEN = 4;                                                        00004090
  TYPE = INTEGER;                                                 00004100
  NITP(COUNTER1) = PARMGT();                                      00004110
END;                                                              00004120
VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                          00004130
VAR_INFO(2) = 'ITMAX = ' || ITMAX(COUNTER1) ;                     00004140
VAR_INFO(3) = 'CHANGE (Y/N):';                                    00004150
LEN = 1;                                                          00004160
TYPE = ANSWER;                                                    00004170
TEMPC = PARMGT();                                                 00004180
IF TEMPC = 'Y' THEN DO;                                           00004190
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                              00004200
  LEN = 4;                                                        00004210
  TYPE = INTEGER;                                                 00004220
  ITMAX(COUNTER1) = PARMGT();                                     00004230
END;                                                              00004240
VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                          00004250
VAR_INFO(2) = 'NPNTMV = ' || NPNTMV(COUNTER1) ;                   00004260
VAR_INFO(3) = 'CHANGE (Y/N):';                                    00004270
LEN = 1;                                                          00004280
TYPE = ANSWER;                                                    00004290
TEMPC = PARMGT();                                                 00004300
IF TEMPC = 'Y' THEN DO;                                           00004310
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                              00004320
  LEN = 4;                                                        00004330
  TYPE = INTEGER;                                                 00004340
  NPNTMV(COUNTER1) = PARMGT();                                    00004350
END;                                                              00004360
VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                          00004370
VAR_INFO(2) = 'NPNTVL = ' || NPNTVL(COUNTER1) ;                   00004380
VAR_INFO(3) = 'CHANGE (Y/N):';                                    00004390
LEN = 1;                                                          00004400
TYPE = ANSWER;                                                    00004410
TEMPC = PARMGT();                                                 00004420
IF TEMPC = 'Y' THEN DO;                                           00004430
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                              00004440
  LEN = 4;                                                        00004450
  TYPE = INTEGER;                                                 00004460
  UPPER_RANGE = 2;                                                00004470
  NPNTVL(COUNTER1) = PARMGT();                                    00004480
END;                                                              00004490
VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                          00004500
VAR_INFO(2) = 'NPNTD = ' || NPNTD(COUNTER1) ;                     00004510
VAR_INFO(3) = 'CHANGE (Y/N):';                                    00004520
LEN = 1;                                                          00004530
TYPE = ANSWER;                                                    00004540
TEMPC = PARMGT();                                                 00004550
IF TEMPC = 'Y' THEN DO;                                           00004560
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                              00004570
  LEN = 4;                                                        00004580
```

```
  TYPE = INTEGER;                                                    00004590
  UPPER_RANGE = 2;                                                   00004600
  NPNTD(COUNTER1) = PARMGT();                                        00004610
END;                                                                 00004620
VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                             00004630
VAR_INFO(2) = 'NPDELC = ' || NPDELC(COUNTER1) ;                      00004640
VAR_INFO(3) = 'CHANGE (Y/N):';                                       00004650
LEN = 1;                                                             00004660
TYPE = ANSWER;                                                       00004670
TEMPC = PARMGT();                                                    00004680
IF TEMPC = 'Y' THEN DO;                                              00004690
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                 00004700
  LEN = 4;                                                           00004710
  TYPE = INTEGER;                                                    00004720
  UPPER_RANGE = 1;                                                   00004730
  NPDELC(COUNTER1) = PARMGT();                                       00004740
END;                                                                 00004750
VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                             00004760
VAR_INFO(2) = 'NPNCHV = ' || NPNCHV(COUNTER1) ;                      00004770
VAR_INFO(3) = 'CHANGE (Y/N):';                                       00004780
LEN = 1;                                                             00004790
TYPE = ANSWER;                                                       00004800
TEMPC = PARMGT();                                                    00004810
IF TEMPC = 'Y' THEN DO;                                              00004820
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                 00004830
  LEN = 4;                                                           00004840
  TYPE = INTEGER;                                                    00004850
  UPPER_RANGE = 2;                                                   00004860
  NPNCHV(COUNTER1) = PARMGT();                                       00004870
END;                                                                 00004880
VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                             00004890
VAR_INFO(2) = 'PINT = ' || PINT(COUNTER1) ;                          00004900
VAR_INFO(3) = 'CHANGE (Y/N):';                                       00004910
LEN = 1;                                                             00004920
TYPE = ANSWER;                                                       00004930
TEMPC = PARMGT();                                                    00004940
IF TEMPC = 'Y' THEN DO;                                              00004950
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                 00004960
  TYPE = REAL;                                                       00004970
  LEN = 5;                                                           00004980
  PINT(COUNTER1) = PARMGT();                                         00004990
END;                                                                 00005000
NUMBER1 = S;                                                         00005010
IF NUMBER1 ¬= 0 THEN DO;                                             00005020
  VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                           00005030
  VAR_INFO(2) = 'TIMX = ' || TIMX(COUNTER1) ;                        00005040
  VAR_INFO(3) = 'NOTE: MUST BE NONZERO.' ;                           00005050
  VAR_INFO(4) = 'CHANGE (Y/N):';                                     00005060
  LEN = 1;                                                           00005070
  TYPE = ANSWER;                                                     00005080
  TEMPC = PARMGT();                                                  00005090
  IF TEMPC = 'Y' THEN DO;                                            00005100
    VAR_INFO(1) = 'ENTER NEW VALUE:' ;                               00005110
    TYPE = REAL;                                                     00005120
    LEN = 5;                                                         00005130
    TIMX(COUNTER1) = PARMGT();                                       00005140
  END;                                                               00005150
  VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                           00005160
  VAR_INFO(2) = 'TINIT = ' || TINIT(COUNTER1) ;                      00005170
  VAR_INFO(3) = 'NOTE: MUST BE NONZERO.' ;                           00005180
  VAR_INFO(4) = 'CHANGE (Y/N):';                                     00005190
  LEN = 1;                                                           00005200
  TYPE = ANSWER;                                                     00005210
  TEMPC = PARMGT();                                                  00005220
  IF TEMPC = 'Y' THEN DO;                                            00005230
    VAR_INFO(1) = 'ENTER NEW VALUE:' ;                               00005240
```

```
    TYPE = REAL;                                                          00005250
    LEN = 5;                                                              00005260
    TINIT(COUNTER1) = PARMGT();                                           00005270
  END;                                                                    00005280
END;                                                                      00005290
ELSE DO;                                                                  00005300
  TIMX(COUNTER1) = '   0';                                                00005310
  TINIT(COUNTER1) = '    0';                                             00005320
END;                                                                      00005330
VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                                  00005340
VAR_INFO(2) = 'NREC = ' || NREC(COUNTER1) ;                               00005350
VAR_INFO(3) = 'MAXIMUM OF '||NR_LMT||'.';                                 00005360
VAR_INFO(4) = 'CHANGE (Y/N):';                                            00005370
LEN = 1;                                                                  00005380
TYPE = ANSWER;                                                            00005390
TEMPC = PARMGT();                                                         00005400
OLDNUM = NREC(COUNTER1);                                                  00005410
IF TEMPC = 'Y' THEN DO;                                                   00005420
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                      00005430
  UPPER_RANGE = NR_LMT;                                                   00005440
  LEN = 4;                                                                00005450
  TYPE = INTEGER;                                                         00005460
  NREC(COUNTER1) = PARMGT();                                              00005470
END;                                                                      00005480
NUMBER1 = NREC(COUNTER1);                                                 00005490
IF NUMBER1 > OLDNUM THEN DO;                                              00005500
  COUNTER = OLDNUM;                                                       00005510
  DO WHILE(COUNTER < NUMBER1);                                            00005520
    COUNTER = COUNTER + 1;                                                00005530
    TEMPC = COUNTER;                                                      00005540
    TEMPC = DBLANK(TEMPC);                                                00005550
    VAR_INFO(1) = 'ENTER THE X COORDINATE OF THE PUMPING OR';             00005560
    VAR_INFO(2) = 'INJECTION WELL.';                                      00005570
    VAR_INFO(3) = 'VARIABLE "IX(' || TEMPC || ')" :';                     00005580
    LEN = 2;                                                              00005590
    TYPE = INTEGER;                                                       00005600
    IX(COUNTER1,COUNTER) = PARMGT();                                      00005610
    VAR_INFO(1) = 'ENTER THE Y COORDINATE OF THE PUMPING OR';             00005620
    VAR_INFO(2) = 'INJECTION WELL.';                                      00005630
    VAR_INFO(3) = 'VARIABLE "IY(' || TEMPC || ')" :';                     00005640
    IY(COUNTER1,COUNTER) = PARMGT();                                      00005650
    VAR_INFO(1) = 'ENTER THE RATE (FT**3/SEC).';                          00005660
    VAR_INFO(2) =                                                         00005670
          'POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.';                00005680
    VAR_INFO(3) = 'MAXIMUM LENGTH OF 8, REAL NUMBER.';                    00005690
    VAR_INFO(4) = 'NOTE:  FT**3/SEC = GAL/MIN * 0.0022278';               00005700
    VAR_INFO(5) = 'VARIABLE "REC(' || TEMPC || ')" :';                    00005710
    TYPE = REAL;                                                          00005720
    LEN = 8;                                                              00005730
    REC(COUNTER1,COUNTER) = PARMGT();                                     00005740
    TEMPN = REC(COUNTER1,COUNTER);                                        00005750
    IF TEMPN < 0 THEN DO;                                                 00005760
      VAR_INFO(1) = 'ENTER THE CONCENTRATION OF THE INJECTED';            00005770
      VAR_INFO(2) = 'FLUID (MG/L).';                                      00005780
      VAR_INFO(3) = 'MAXIMUM LENGTH OF 8, REAL NUMBER.';                  00005790
      VAR_INFO(4) = 'VARIABLE "CNRECH(' || TEMPC || ')" :';               00005800
      TYPE = REAL;                                                        00005810
      LEN = 8;                                                            00005820
      CNRECH(COUNTER1,COUNTER) = PARMGT();                                00005830
    END;                                                                  00005840
    ELSE CNRECH(COUNTER1,COUNTER) = '     0.0';                           00005850
  END;                                                                    00005860
END;                                                                      00005870
DO WHILE((OLDNUM > -1) & (NUMBER1 > 0));                                  00005880
  COUNTER = 0;                                                            00005890
  PUT FILE(SCREEN) EDIT('PUMPING/INJECTION WELLS')(X(7),A);               00005900
```

```
PUT FILE(SCREEN) EDIT                                                    00005910
(' WELL#     X      Y      REC      CNRECH')                             00005920
(SKIP,A);                                                                00005930
DO WHILE(COUNTER < NUMBER1);                                             00005940
  COUNTER = COUNTER + 1;                                                 00005950
  IF OLDNUM < COUNTER THEN PUT FILE(SCREEN)                              00005960
      EDIT('NEW')(SKIP,A);                                               00005970
  PUT FILE(SCREEN) EDIT(COUNTER,IX(COUNTER1,COUNTER),                    00005980
  IY(COUNTER1,COUNTER),REC(COUNTER1,COUNTER),                            00005990
  CNRECH(COUNTER1,COUNTER))(SKIP,X(4),F(2),X(1),2(X(4),A(2)),            00006000
                            A(10),X(1),A(10));                           00006010
END;                                                                     00006020
VAR_INFO(1) = 'ENTER WELL NUMBER (OR 0 TO CONTINUE):';                   00006030
LEN = 2;                                                                 00006040
TYPE = INTEGER;                                                          00006050
TEMPCC = PARMGT();                                                       00006060
COUNTER = TEMPCC;                                                        00006070
  IF COUNTER > 0 THEN DO;                                                00006080
  VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                               00006090
  VAR_INFO(2) =                                                          00006100
  'IX(' || TEMPCC || ') = ' || IX(COUNTER1,COUNTER) ;                    00006110
  VAR_INFO(3) = 'CHANGE (Y/N):';                                         00006120
  LEN = 1;                                                               00006130
  TYPE = ANSWER;                                                         00006140
  TEMPC = PARMGT();                                                      00006150
  IF TEMPC = 'Y' THEN DO;                                                00006160
    VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                   00006170
    LEN = 2;                                                             00006180
    TYPE = INTEGER;                                                      00006190
    IX(COUNTER1,COUNTER) = PARMGT();                                     00006200
  END;                                                                   00006210
  VAR_INFO(1) =                                                          00006220
  'IY(' || TEMPCC || ') = ' || IY(COUNTER1,COUNTER) ;                    00006230
  VAR_INFO(2) = 'CHANGE (Y/N):';                                         00006240
  LEN = 1;                                                               00006250
  TYPE = ANSWER;                                                         00006260
  TEMPC = PARMGT();                                                      00006270
  IF TEMPC = 'Y' THEN DO;                                                00006280
    VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                   00006290
    LEN = 2;                                                             00006300
    TYPE = INTEGER;                                                      00006310
    IY(COUNTER1,COUNTER) = PARMGT();                                     00006320
  END;                                                                   00006330
  VAR_INFO(1) =                                                          00006340
  'REC(' || TEMPCC || ') = ' || REC(COUNTER1,COUNTER) ;                  00006350
  VAR_INFO(2) = 'CHANGE (Y/N):';                                         00006360
  LEN = 1;                                                               00006370
  TYPE = ANSWER;                                                         00006380
  TEMPC = PARMGT();                                                      00006390
  IF TEMPC = 'Y' THEN DO;                                                00006400
    VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                   00006410
    TYPE = REAL;                                                         00006420
    LEN = 8;                                                             00006430
    REC(COUNTER1,COUNTER) = PARMGT();                                    00006440
  END;                                                                   00006450
  TEMPN = REC(COUNTER1,COUNTER);                                         00006460
  IF TEMPN < 0 THEN DO;                                                  00006470
    VAR_INFO(1) =                                                        00006480
    'CNRECH(' || TEMPCC || ') = ' || CNRECH(COUNTER1,COUNTER);           00006490
    VAR_INFO(2) = 'CHANGE (Y/N):';                                       00006500
    LEN = 1;                                                             00006510
    TYPE = ANSWER;                                                       00006520
    TEMPC = PARMGT();                                                    00006530
    IF TEMPC = 'Y' THEN DO;                                              00006540
      VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                 00006550
      TYPE = REAL;                                                       00006560
```

```
            LEN = 8;                                                    00006570
            CNRECH(COUNTER1,COUNTER) = PARMGT();                        00006580
          END;                                                          00006590
        END;                                                            00006600
        ELSE CNRECH(COUNTER1,COUNTER) = '      0.0';                    00006610
      END;                                                              00006620
      ELSE OLDNUM = -1;                                                 00006630
    END;                                                                00006640
  END;                                                                  00006650
  COUNTER1 = COUNTER1 + 1;                                              00006660
END;                                                                    00006670
VAR_INFO(1) = 'TOL = ' || TOL ;                                         00006680
VAR_INFO(2) = 'USUALLY LESS THAN .01 .';                                00006690
VAR_INFO(3) = 'CHANGE (Y/N):';                                          00006700
TYPE = ANSWER;                                                          00006710
LEN = 1;                                                                00006720
TEMPC = PARMGT();                                                       00006730
IF TEMPC = 'Y' THEN DO;                                                 00006740
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00006750
  LEN = 5;                                                              00006760
  TYPE = REAL;                                                          00006770
  TOL = PARMGT();                                                       00006780
END;                                                                    00006790
VAR_INFO(1) = 'POROS = ' || POROS ;                                     00006800
VAR_INFO(2) = 'CHANGE (Y/N):';                                          00006810
TYPE = ANSWER;                                                          00006820
LEN = 1;                                                                00006830
TEMPC = PARMGT();                                                       00006840
IF TEMPC = 'Y' THEN DO;                                                 00006850
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00006860
  LEN = 5;                                                              00006870
  TYPE = REAL;                                                          00006880
  POROS = PARMGT();                                                     00006890
END;                                                                    00006900
VAR_INFO(1) = 'BETA = ' || BETA ;                                       00006910
VAR_INFO(2) = 'CHANGE (Y/N):';                                          00006920
TYPE = ANSWER;                                                          00006930
LEN = 1;                                                                00006940
TEMPC = PARMGT();                                                       00006950
IF TEMPC = 'Y' THEN DO;                                                 00006960
  LEN = 5;                                                              00006970
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00006980
  TYPE = REAL;                                                          00006990
  BETA = PARMGT();                                                      00007000
END;                                                                    00007010
VAR_INFO(1) = 'XDEL = ' || XDEL ;                                       00007020
VAR_INFO(2) = 'CHANGE (Y/N):';                                          00007030
TYPE = ANSWER;                                                          00007040
LEN = 1;                                                                00007050
TEMPC = PARMGT();                                                       00007060
IF TEMPC = 'Y' THEN DO;                                                 00007070
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00007080
  LEN = 5;                                                              00007090
  TYPE = REAL;                                                          00007100
  XDEL = PARMGT();                                                      00007110
END;                                                                    00007120
VAR_INFO(1) = 'YDEL = ' || YDEL ;                                       00007130
VAR_INFO(2) = 'CHANGE (Y/N):';                                          00007140
TYPE = ANSWER;                                                          00007150
LEN = 1;                                                                00007160
TEMPC = PARMGT();                                                       00007170
IF TEMPC = 'Y' THEN DO;                                                 00007180
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00007190
  LEN = 5;                                                              00007200
  TYPE = REAL;                                                          00007210
  YDEL = PARMGT();                                                      00007220
```

```
END;                                                                    00007230
VAR_INFO(1) = 'DLTRAT = ' || DLTRAT ;                                   00007240
VAR_INFO(2) = 'CHANGE (Y/N):';                                          00007250
TYPE = ANSWER;                                                          00007260
LEN = 1;                                                                00007270
TEMPC = PARMGT();                                                       00007280
IF TEMPC = 'Y' THEN DO;                                                 00007290
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00007300
  LEN = 5;                                                              00007310
  TYPE = REAL;                                                          00007320
  DLTRAT = PARMGT();                                                    00007330
END;                                                                    00007340
VAR_INFO(1) = 'CELDIS = ' || CELDIS ;                                   00007350
VAR_INFO(2) = 'VALUE BETWEEN 0 AND 1.0 .';                              00007360
VAR_INFO(3) = 'CHANGE (Y/N):';                                          00007370
TYPE = ANSWER;                                                          00007380
LEN = 1;                                                                00007390
TEMPC = PARMGT();                                                       00007400
IF TEMPC = 'Y' THEN DO;                                                 00007410
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00007420
  LEN = 5;                                                              00007430
  TYPE = REAL;                                                          00007440
  UPPER_RANGE = 1.;                                                     00007450
  CELDIS = PARMGT();                                                    00007460
END;                                                                    00007470
VAR_INFO(1) = 'ANFCTR = ' || ANFCTR ;                                   00007480
VAR_INFO(2) = 'USE 1.0 FOR HOMOGENEOUS AQUIFER. ';                      00007490
VAR_INFO(3) = 'CHANGE (Y/N):';                                          00007500
TYPE = ANSWER;                                                          00007510
LEN = 1;                                                                00007520
TEMPC = PARMGT();                                                       00007530
IF TEMPC = 'Y' THEN DO;                                                 00007540
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00007550
  LEN = 5;                                                              00007560
  TYPE = REAL;                                                          00007570
  ANFCTR = PARMGT();                                                    00007580
END;                                                                    00007590
VAR_INFO(1) = 'NDECAY = ' || NDECAY ;                                   00007600
VAR_INFO(2) = 'CHANGE (Y/N):';                                          00007610
IF NDECAY = '    0' THEN DO;                                            00007620
  LEN=1;                                                                00007630
  TYPE=ANSWER;                                                          00007640
  TEMPC=PARMGT();                                                       00007650
  IF TEMPC='Y' THEN DO;                                                 00007660
    NDECAY = '    1';                                                   00007670
    VAR_INFO(1) = 'ENTER DECAY HALFLIFE (YEARS).';                      00007680
    VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                 00007690
    VAR_INFO(3) = 'VARIABLE "DCYTIM" :';                                00007700
    LEN = 10;                                                           00007710
    TYPE = REAL;                                                        00007720
    DCYTIM = PARMGT();                                                  00007730
  END;                                                                  00007740
END;                                                                    00007750
ELSE DO;                                                                00007760
  LEN=1;                                                                00007770
  TYPE=ANSWER;                                                          00007780
  TEMPC=PARMGT();                                                       00007790
  IF TEMPC='Y' THEN DO;                                                 00007800
    NDECAY = '    0';                                                   00007810
    DCYTIM = '        0.';                                            00007820
  END;                                                                  00007830
  ELSE DO;                                                              00007840
    VAR_INFO(1) = 'DCYTIM = ' || DCYTIM;                                00007850
    VAR_INFO(2) = 'CHANGE (Y/N):';                                      00007860
    LEN=1;                                                              00007870
    TYPE=ANSWER;                                                        00007880
```

```
    TEMPC=PARMGT();                                                    00007890
    IF TEMPC='Y' THEN DO;                                              00007900
      VAR_INFO(1) = 'ENTER NEW VALUE:';                                00007910
      LEN = 10;                                                        00007920
      TYPE = REAL;                                                     00007930
      DCYTIM = PARMGT();                                               00007940
    END;                                                               00007950
  END;                                                                 00007960
END;                                                                   00007970
VAR_INFO(1) = 'NSORB = ' || NSORB ;                                    00007980
VAR_INFO(2) = 'CHANGE (Y/N):';                                         00007990
LEN=1;                                                                 00008000
TYPE=ANSWER;                                                           00008010
TEMPC=PARMGT();                                                        00008020
IF TEMPC='Y' THEN DO;                                                  00008030
  VAR_INFO(1) = 'ENTER NEW VALUE:';                                    00008040
  LEN = 5;                                                             00008050
  TYPE = INTEGER;                                                      00008060
  LOWER_RANGE = 0;                                                     00008070
  UPPER_RANGE = 3;                                                     00008080
  NSORB = PARMGT();                                                    00008090
END;                                                                   00008100
IF (NSORB = '    0') THEN DO;                                          00008110
  NSORB = '    0';                                                     00008120
  DENROC = '        0.';                                             00008130
  SORBOR = '        0.';                                             00008140
  SORBST = '        0.';                                             00008150
  SORBAL = '        0.';                                             00008160
END;                                                                   00008170
ELSE DO;                                                               00008180
  VAR_INFO(1) = 'DENROC = ' || DENROC ;                                00008190
  VAR_INFO(2) = 'CHANGE (Y/N):';                                       00008200
  LEN=1;                                                               00008210
  TYPE=ANSWER;                                                         00008220
  TEMPC=PARMGT();                                                      00008230
  IF TEMPC='Y' THEN DO;                                                00008240
    VAR_INFO(1) = 'ENTER NEW VALUE:';                                  00008250
    LEN =10;                                                           00008260
    TYPE = REAL;                                                       00008270
    DENROC = PARMGT();                                                 00008280
  END;                                                                 00008290
  VAR_INFO(1) = 'SORBOR = ' || SORBOR ;                                00008300
  VAR_INFO(2) = 'CHANGE (Y/N):';                                       00008310
  LEN=1;                                                               00008320
  TYPE=ANSWER;                                                         00008330
  TEMPC=PARMGT();                                                      00008340
  IF TEMPC='Y' THEN DO;                                                00008350
    VAR_INFO(1) = 'ENTER NEW VALUE:';                                  00008360
    LEN =10;                                                           00008370
    TYPE = REAL;                                                       00008380
    SORBOR = PARMGT();                                                 00008390
  END;                                                                 00008400
  IF (NSORB = '    2') THEN DO;                                        00008410
    VAR_INFO(1) = 'SORBST = ' || SORBST ;                              00008420
    VAR_INFO(2) = 'CHANGE (Y/N):';                                     00008430
    LEN=1;                                                             00008440
    TYPE=ANSWER;                                                       00008450
    TEMPC=PARMGT();                                                    00008460
    IF TEMPC='Y' THEN DO;                                              00008470
      LEN =10;                                                         00008480
      VAR_INFO(1) = 'ENTER NEW VALUE:';                                00008490
      TYPE = REAL;                                                     00008500
      SORBST = PARMGT();                                               00008510
    END;                                                               00008520
  END;                                                                 00008530
  IF (NSORB = '    3') THEN DO;                                        00008540
```

```
    VAR_INFO(1) = 'SORBAL = ' || SORBAL ;                    00008550
    VAR_INFO(2) = 'CHANGE (Y/N):';                           00008560
    LEN=1;                                                   00008570
    TYPE=ANSWER;                                             00008580
    TEMPC=PARMGT();                                          00008590
    IF TEMPC='Y' THEN DO;                                    00008600
      LEN =10;                                               00008610
      VAR_INFO(1) = 'ENTER NEW VALUE:';                      00008620
      TYPE = REAL;                                           00008630
      SORBAL = PARMGT();                                     00008640
    END;                                                     00008650
  END;                                                       00008660
END;                                                         00008670
VAR_INFO(1) = 'ISOLV = ' || ISOLV ;                          00008680
VAR_INFO(2) = 'CHANGE (Y/N):';                               00008690
LEN=1;                                                       00008700
TYPE=ANSWER;                                                 00008710
TEMPC=PARMGT();                                              00008720
IF TEMPC='Y' THEN DO;                                        00008730
  LEN = 4;                                                   00008740
  VAR_INFO(1) = 'ENTER NEW VALUE:';                          00008750
  TYPE = INTEGER;                                            00008760
  ISOLV=PARMGT();                                            00008770
END;                                                         00008780
VAR_INFO(1) = 'IHEAD = ' || IHEAD ;                          00008790
VAR_INFO(2) = 'CHANGE (Y/N):';                               00008800
LEN=1;                                                       00008810
TYPE=ANSWER;                                                 00008820
TEMPC=PARMGT();                                              00008830
IF TEMPC='Y' THEN DO;                                        00008840
  VAR_INFO(1) = 'ENTER NEW VALUE:';                          00008850
  LEN = 4;                                                   00008860
  TYPE = INTEGER;                                            00008870
  IHEAD=PARMGT();                                            00008880
END;                                                         00008890
VAR_INFO(1) = 'FCON = ' || FCON ;                            00008900
VAR_INFO(2) = 'CHANGE (Y/N):';                               00008910
LEN=1;                                                       00008920
TYPE=ANSWER;                                                 00008930
TEMPC=PARMGT();                                              00008940
IF TEMPC='Y' THEN DO;                                        00008950
  VAR_INFO(1) = 'ENTER NEW VALUE:';                          00008960
  LEN = 4;                                                   00008970
  TYPE = INTEGER;                                            00008980
  FCON=PARMGT();                                             00008990
END;                                                         00009000
VAR_INFO(1) = 'TP = ' || TP ;                                00009010
VAR_INFO(2) = 'CHANGE (Y/N):';                               00009020
LEN=1;                                                       00009030
TYPE=ANSWER;                                                 00009040
TEMPC=PARMGT();                                              00009050
IF TEMPC='Y' THEN DO;                                        00009060
  LEN = 4;                                                   00009070
  VAR_INFO(1) = 'ENTER NEW VALUE:';                          00009080
  TYPE = INTEGER;                                            00009090
  TP=PARMGT();                                               00009100
END;                                                         00009110
IF (FCON = '   1') THEN DO;                                  00009120
  VAR_INFO(1) = 'BTM = ' || BTM ;                            00009130
  VAR_INFO(2) = 'CHANGE (Y/N):';                             00009140
  LEN=1;                                                     00009150
  TYPE=ANSWER;                                               00009160
  TEMPC=PARMGT();                                            00009170
  IF TEMPC='Y' THEN DO;                                      00009180
    LEN = 4;                                                 00009190
    VAR_INFO(1) = 'ENTER NEW VALUE:';                        00009200
```

```
      TYPE = INTEGER;
      BTM=PARMGT();                                              00009210
    END;                                                         00009220
  END;                                                           00009230
  ELSE BTM = '   O';                                             00009240
   %INCLUDE 'B:PARMGT.PLI';                                      00009250
NDVAR: END;                                                      00009260
                                                                 00009270
```

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                  (EDMTRX   )

 EDMTRX: PROC OPTIONS(EXTERNAL);                                                00000010
 /* THE EDMATRX SUBROUTINE IS USED TO PROMPT FOR THE                           00000020
    NECESSARY INFORMATION TO MODIFY THE MATRICES.                               00000030
 */                                                                             00000040
 %INCLUDE 'B:EXTVAR.PLI';                                                       00000050
   DCL REPLY                        CHAR(80) VAR,                             00000060
       TEMP_NUM                     FIXED BIN,                                00000070
       TEMP_NUM1                    FIXED BIN,                                00000080
       I                            FIXED BIN,                                00000090
       J                            FIXED BIN,                                00000100
       CHARACTER                    CHAR(4) STATIC INIT('CHAR'),              00000110
       INTEGER                      CHAR(4) STATIC INIT('INT '),              00000120
       REAL                         CHAR(4) STATIC INIT('REAL'),              00000130
       NUMBER                       CHAR(4) STATIC INIT('NUM '),              00000140
       ANSWER                       CHAR(4) STATIC INIT('ANS '),              00000150
       TYPE                         CHAR(4) STATIC INIT(''),                  00000160
       UPPER_RANGE                  FLOAT STATIC INIT(0),                     00000170
       LOWER_RANGE                  FLOAT STATIC INIT(0),                     00000180
       LEN                          FIXED BIN STATIC INIT(4),                 00000190
       VAR_INFO(10)                 CHAR(80) VAR;                             00000200
   DCL MTRXED                       ENTRY((NX_LMT,NY_LMT) CHAR(4) VAR,        00000210
                                    FIXED BIN, FIXED BIN, FIXED BIN);         00000220
   DO TEMP_NUM = 1 TO 10;                                                       00000230
     VAR_INFO(TEMP_NUM) = '';                                                   00000240
   END;                                                                         00000250
   TEMP_NUM = NY;                                                               00000260
   TEMP_NUM1 = NX;                                                              00000270
   VAR_INFO(1) = 'DO YOU WISH TO CHANGE ANY OF THE MATRIX INPUT (Y/N):';        00000280
   TYPE = ANSWER;                                                               00000290
   LEN = 1;                                                                     00000300
   REPLY = PARMGT();                                                            00000310
   IF REPLY = 'N' THEN GO TO NDMAT;                                             00000320
   IF (INPT_VPRM = 'O') THEN DO;                                                00000330
     IF (TP = '   O') THEN                                                     00000340
       VAR_INFO(1) = 'THE TRANSMISSIVITY FOR THE AREA IS CONSTANT.';            00000350
     ELSE                                                                       00000360
       VAR_INFO(1) = 'THE PERMEABILITY FOR THE AREA IS CONSTANT.';              00000370
     VAR_INFO(2) = 'CHANGE TO MATRIX (Y/N):';                                   00000380
     TYPE = ANSWER;                                                           00000390
     REPLY = PARMGT();                                                        00000400
     IF REPLY = 'N' THEN DO;                                                  00000410
       IF (TP = '   O')                                                       00000420
       THEN VAR_INFO(1) = 'TRANSMISSIVITY = ' || FACT_VPRM;                   00000430
       ELSE VAR_INFO(1) = 'PERMEABILITY = ' || FACT_VPRM;                     00000440
       VAR_INFO(2) = 'CHANGE (Y/N):';                                         00000450
       TYPE = ANSWER;                                                         00000460
       REPLY = PARMGT();                                                      00000470
       IF REPLY = 'Y' THEN DO;                                                00000480
         VAR_INFO(1) = 'ENTER NEW VALUE:';                                    00000490
         TYPE = REAL;                                                         00000500
         LEN = 10;                                                            00000510
         FACT_VPRM = PARMGT();                                                00000520
       END;                                                                   00000530
     END;                                                                     00000540
     ELSE DO;                                                                 00000550
       INPT_VPRM = '1';                                                       00000560
       IF (TP = '   O') THEN                                                 00000570
         VAR_INFO(1) = 'ENTER THE TRANSMISSIVITY MULTIPLIER.';                00000580
       ELSE                                                                   00000590
         VAR_INFO(1) = 'ENTER THE PERMEABILITY MULTIPLIER.';                  00000600
       VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                    00000610
       TYPE = REAL;                                                           00000620
```

```
    LEN = 10;                                                          00000630
    FACT_VPRM = PARMGT();                                              00000640
    IF (TP = '   0') THEN VAR_INFO(1) =                               00000650
      'WHAT DO YOU WISH THE ENTIRE TRANSMISSIVITY MATRIX ';            00000660
    ELSE VAR_INFO(1) =                                                 00000670
      'WHAT DO YOU WISH THE ENTIRE PERMEABILITY MATRIX ';              00000680
    VAR_INFO(2) = 'INITIALLY SET TO?';                                 00000690
    VAR_INFO(3) = '(MAXIMUM LENGTH OF 4):';                            00000700
    LEN = 4;                                                           00000710
    REPLY = PARMGT();                                                  00000720
    DO I = 1 TO NX;                                                    00000730
      DO J = 1 TO NY;                                                  00000740
        VPRM(J,I) = REPLY;                                             00000750
      END;                                                             00000760
    END;                                                               00000770
    CALL MTRXED(VPRM,TEMP_NUM1,TEMP_NUM,4);                            00000780
  END;                                                                 00000790
END;                                                                   00000800
ELSE DO;                                                               00000810
  IF (TP = '   0') THEN                                                00000820
    VAR_INFO(1) = 'THE TRANSMISSIVITY FOR THE AREA IS A MATRIX.';      00000830
  ELSE                                                                 00000840
    VAR_INFO(1) = 'THE PERMEABILITY FOR THE AREA IS A MATRIX.';        00000850
  VAR_INFO(2) = 'CHANGE TO CONSTANT (Y/N):';                           00000860
  TYPE = ANSWER;                                                       00000870
  REPLY = PARMGT();                                                    00000880
  IF REPLY = 'Y' THEN DO;                                              00000890
    INPT_VPRM = '0';                                                   00000900
    IF (TP = '   0') THEN VAR_INFO(1) =                                00000910
    'ENTER THE TRANSMISSIVITY FOR THE AREA (FT**2/SEC).';              00000920
    ELSE VAR_INFO(1) =                                                 00000930
    'ENTER THE PERMEABILITY FOR THE AREA (FT/SEC).';                   00000940
    VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                00000950
    TYPE = REAL;                                                       00000960
    LEN = 10;                                                          00000970
    FACT_VPRM = PARMGT();                                              00000980
  END;                                                                 00000990
  ELSE DO;                                                             00001000
    IF (TP = '   0')                                                   00001010
    THEN VAR_INFO(1) = 'TRANSMISSIVITY MULTIPLIER = ' || FACT_VPRM;    00001020
    ELSE VAR_INFO(1) = 'PERMEABILITY MULTIPLIER = ' || FACT_VPRM;      00001030
    VAR_INFO(2) = 'CHANGE (Y/N):';                                     00001040
    TYPE = ANSWER;                                                     00001050
    REPLY = PARMGT();                                                  00001060
    IF REPLY = 'Y' THEN DO;                                            00001070
      VAR_INFO(1) = 'ENTER NEW VALUE:';                                00001080
      TYPE = REAL;                                                     00001090
      LEN = 10;                                                        00001100
      FACT_VPRM = PARMGT();                                            00001110
    END;                                                               00001120
    VAR_INFO(1) = 'DISPLAY THE MATRIX FOR POSSIBLE CHANGE (Y/N):';     00001130
    TYPE = ANSWER;                                                     00001140
    REPLY = PARMGT();                                                  00001150
    IF REPLY = 'Y' THEN CALL MTRXED(VPRM,TEMP_NUM1,TEMP_NUM,4);        00001160
  END;                                                                 00001170
END;                                                                   00001180
IF (INPT_THCK = '0') THEN DO;                                          00001190
  IF (BTM = '   0') THEN                                               00001200
    VAR_INFO(1)='THE SATURATED THICKNESS FOR THE AREA IS CONSTANT.';   00001210
  ELSE                                                                 00001220
    VAR_INFO(1)='THE BOTTOM ELEVATION FOR THE AREA IS CONSTANT.';      00001230
  VAR_INFO(2) = 'CHANGE TO MATRIX (Y/N):';                             00001240
  TYPE = ANSWER;                                                       00001250
  REPLY = PARMGT();                                                    00001260
  IF REPLY = 'N' THEN DO;                                              00001270
    IF (BTM = '   0') THEN                                             00001280
```

```
      VAR_INFO(1) = 'SATURATED THICKNESS = ' || FACT_THCK;                    00001290
    ELSE                                                                      00001300
      VAR_INFO(1) = 'BOTTOM ELEVATION = ' || FACT_THCK;                       00001310
    VAR_INFO(2) = 'CHANGE (Y/N):';                                            00001320
    TYPE = ANSWER;                                                            00001330
    REPLY = PARMGT();                                                         00001340
    IF REPLY = 'Y' THEN DO;                                                   00001350
      VAR_INFO(1) = 'ENTER NEW VALUE:';                                       00001360
      TYPE = REAL;                                                            00001370
      LEN = 10;                                                               00001380
      FACT_THCK = PARMGT();                                                   00001390
    END;                                                                      00001400
  END;                                                                        00001410
  ELSE DO;                                                                    00001420
    INPT_THCK = '1';                                                          00001430
    IF (BTM = '   0') THEN                                                    00001440
      VAR_INFO(1) = 'ENTER THE SATURATED THICKNESS MULTIPLIER.';               00001450
    ELSE                                                                      00001460
      VAR_INFO(1) = 'ENTER THE BOTTOM ELEVATION MULTIPLIER.';                 00001470
    VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                       00001480
    TYPE = REAL;                                                              00001490
    LEN = 10;                                                                 00001500
    FACT_THCK = PARMGT();                                                     00001510
    IF (BTM = '   0') THEN                                                    00001520
      VAR_INFO(1)='WHAT DO YOU WISH THE ENTIRE SATURATED THICKNESS ';          00001530
    ELSE                                                                      00001540
      VAR_INFO(1)='WHAT DO YOU WISH THE ENTIRE BOTTOM ELEVATION ';            00001550
    VAR_INFO(2) = 'MATRIX INITIALLY SET TO?';                                 00001560
    VAR_INFO(3) = '(MAXIMUM LENGTH OF 3):';                                   00001570
    TYPE = REAL;                                                              00001580
    LEN = 3;                                                                  00001590
    REPLY = PARMGT();                                                         00001600
    DO I = 1 TO NX;                                                           00001610
      DO J = 1 TO NY;                                                         00001620
        THCK(J,I) = REPLY;                                                    00001630
      END;                                                                    00001640
    END;                                                                      00001650
    CALL MTRXED(THCK,TEMP_NUM1,TEMP_NUM,3);                                   00001660
  END;                                                                        00001670
END;                                                                          00001680
ELSE DO;                                                                      00001690
  IF (BTM = '   0') THEN                                                      00001700
    VAR_INFO(1)='THE SATURATED THICKNESS FOR THE AREA IS A MATRIX.';          00001710
  ELSE                                                                        00001720
    VAR_INFO(1)='THE BOTTOM ELEVATION FOR THE AREA IS A MATRIX.';             00001730
  VAR_INFO(2) = 'CHANGE TO CONSTANT (Y/N):';                                  00001740
  TYPE = ANSWER;                                                              00001750
  REPLY = PARMGT();                                                           00001760
  IF REPLY = 'Y' THEN DO                                                      00001770
    INPT_THCK = '0';                                                          00001780
    IF (BTM = '   0') THEN                                                    00001790
      VAR_INFO(1) =                                                           00001800
      'ENTER THE SATURATED THICKNESS FOR THE AREA (FEET).';                   00001810
    ELSE                                                                      00001820
      VAR_INFO(1) =                                                           00001830
      'ENTER THE BOTTOM ELEVATION FOR THE AREA (FEET).';                      00001840
    VAR_INFO(2) = ' MAXIMUM LENGTH OF 10, REAL NUMBER:';                      00001850
    TYPE = REAL;                                                              00001860
    LEN = 10;                                                                 00001870
    FACT_THCK = PARMGT();                                                     00001880
  END;                                                                        00001890
  ELSE DO;                                                                    00001900
    IF (BTM = '   0') THEN                                                    00001910
      VAR_INFO(1) = 'SATURATED THICKNESS MULTIPLIER = ' || FACT_THCK;         00001920
    ELSE                                                                      00001930
      VAR_INFO(1) = 'BOTTOM ELEVATION MULTIPLIER = ' || FACT_THCK;            00001940
```

```
    VAR_INFO(2) = 'CHANGE (Y/N):';                                          00001950
    TYPE = ANSWER;                                                          00001960
    REPLY = PARMGT();                                                       00001970
    IF REPLY = 'Y' THEN DO;                                                 00001980
      VAR_INFO(1) = 'ENTER NEW VALUE:';                                     00001990
      TYPE = REAL;                                                          00002000
      LEN = 10;                                                             00002010
      FACT_THCK = PARMGT();                                                 00002020
    END;                                                                    00002030
    VAR_INFO(1) = 'DISPLAY THE MATRIX FOR POSSIBLE CHANGE (Y/N):';          00002040
    TYPE = ANSWER;                                                          00002050
    REPLY = PARMGT();                                                       00002060
    IF REPLY = 'Y' THEN CALL MTRXED(THCK,TEMP_NUM1,TEMP_NUM,3);             00002070
  END;                                                                      00002080
END;                                                                        00002090
IF (INPT_WT = 'O') THEN DO;                                                 00002100
  VAR_INFO(1) = 'THE POTENTIOMETRIC HEAD FOR THE AREA IS CONSTANT.';        00002110
  VAR_INFO(2) = 'CHANGE TO MATRIX (Y/N):';                                  00002120
  TYPE = ANSWER;                                                            00002130
  REPLY = PARMGT();                                                         00002140
  IF REPLY = 'N' THEN DO;                                                   00002150
    VAR_INFO(1) = 'POTENTIOMETRIC HEAD = ' || FACT_WT;                      00002160
    VAR_INFO(2) = 'CHANGE (Y/N):';                                          00002170
    TYPE = ANSWER;                                                          00002180
    REPLY = PARMGT();                                                       00002190
    IF REPLY = 'Y' THEN DO;                                                 00002200
      VAR_INFO(1) = 'ENTER NEW VALUE:';                                     00002210
      TYPE = REAL;                                                          00002220
      LEN = 10;                                                             00002230
      FACT_WT = PARMGT();                                                   00002240
    END;                                                                    00002250
  END;                                                                      00002260
  ELSE DO;                                                                  00002270
    INPT_WT = '1';                                                          00002280
    VAR_INFO(1) = 'ENTER THE POTENTIOMETRIC HEAD MULTIPLIER.';              00002290
    VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                     00002300
    TYPE = REAL;                                                            00002310
    LEN = 10;                                                               00002320
    FACT_WT = PARMGT();                                                     00002330
    VAR_INFO(1) = 'WHAT DO YOU WISH THE ENTIRE POTENTIOMETRIC HEAD';        00002340
    VAR_INFO(2) = 'MATRIX INITIALLY SET TO?';                               00002350
    VAR_INFO(3) = '(MAXIMUM LENGTH OF 4):';                                 00002360
    TYPE = REAL;                                                            00002370
    LEN = 4;                                                                00002380
    REPLY = PARMGT();                                                       00002390
    DO I = 1 TO NX;                                                         00002400
      DO J = 1 TO NY;                                                       00002410
        WT(J,I) = REPLY;                                                    00002420
      END;                                                                  00002430
    END;                                                                    00002440
    CALL MTRXED(WT,TEMP_NUM1,TEMP_NUM,4);                                   00002450
  END;                                                                      00002460
END;                                                                        00002470
ELSE DO;                                                                    00002480
  VAR_INFO(1) = 'THE POTENTIOMETRIC HEAD FOR THE AREA IS A MATRIX.';        00002490
  VAR_INFO(2) = 'CHANGE TO CONSTANT (Y/N):';                                00002500
  TYPE = ANSWER;                                                            00002510
  REPLY = PARMGT();                                                         00002520
  IF REPLY = 'Y' THEN DO;                                                   00002530
    INPT_WT = 'O';                                                          00002540
    VAR_INFO(1) =                                                           00002550
      'ENTER THE POTENTIOMETRIC HEAD FOR THE AREA.';                        00002560
    VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                     00002570
    TYPE = REAL;                                                            00002580
    LEN = 10;                                                               00002590
    FACT_WT = PARMGT();                                                     00002600
```

```
    END;                                                                    00002610
    ELSE DO;                                                                00002620
      VAR_INFO(1) = 'POTENTIOMETRIC HEAD MULTIPLIER = ' || FACT_WT;         00002630
      VAR_INFO(2) = 'CHANGE (Y/N):';                                        00002640
      TYPE = ANSWER;                                                        00002650
      REPLY = PARMGT();                                                     00002660
      IF REPLY = 'Y' THEN DO;                                               00002670
        VAR_INFO(1) = 'ENTER NEW VALUE:';                                   00002680
        TYPE = REAL;                                                        00002690
        LEN = 10;                                                           00002700
        FACT_WT = PARMGT();                                                 00002710
      END;                                                                  00002720
      VAR_INFO(1) = 'DISPLAY THE MATRIX FOR POSSIBLE CHANGE (Y/N):';        00002730
      TYPE = ANSWER;                                                        00002740
      REPLY = PARMGT();                                                     00002750
      IF REPLY = 'Y' THEN CALL MTRXED(WT,TEMP_NUM1,TEMP_NUM,4);             00002760
    END;                                                                    00002770
  END;                                                                      00002780
  IF (INPT_RECH = 'O') THEN DO;                                             00002790
    VAR_INFO(1) = 'THE RECHARGE FOR THE AREA IS CONSTANT.';                 00002800
    VAR_INFO(2) = 'CHANGE TO MATRIX (Y/N):';                                00002810
    TYPE = ANSWER;                                                          00002820
    REPLY = PARMGT();                                                       00002830
    IF REPLY = 'N' THEN DO;                                                 00002840
      VAR_INFO(1) = 'RECHARGE = ' || FACT_RECH;                             00002850
      VAR_INFO(2) = 'CHANGE (Y/N):';                                        00002860
      TYPE = ANSWER;                                                        00002870
      REPLY = PARMGT();                                                     00002880
      IF REPLY = 'Y' THEN DO;                                               00002890
        VAR_INFO(1) = 'ENTER NEW VALUE:';                                   00002900
        TYPE = REAL;                                                        00002910
        LEN = 10;                                                           00002920
        FACT_RECH = PARMGT();                                               00002930
      END;                                                                  00002940
    END;                                                                    00002950
    ELSE DO;                                                                00002960
      INPT_RECH = '1';                                                      00002970
      VAR_INFO(1) = 'ENTER THE RECHARGE MULTIPLIER.';                       00002980
      VAR_INFO(2) = 'RECHARGE SHOULD BE NEGATIVE AND INCLUDE E-T.';         00002990
      VAR_INFO(3) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                   00003000
      TYPE = REAL;                                                          00003010
      LEN = 10;                                                             00003020
      FACT_RECH = PARMGT();                                                 00003030
      VAR_INFO(1) = 'WHAT DO YOU WISH THE ENTIRE RECHARGE ';                00003040
      VAR_INFO(2) = 'MATRIX INITIALLY SET TO?';                             00003050
      VAR_INFO(3) = '(MAXIMUM LENGTH OF 4):';                               00003060
      TYPE = REAL;                                                          00003070
      LEN = 4;                                                              00003080
      REPLY = PARMGT();                                                     00003090
      DO I = 1 TO NX;                                                       00003100
        DO J = 1 TO NY;                                                     00003110
          RECH(J,I) = REPLY;                                                00003120
        END;                                                                00003130
      END;                                                                  00003140
      CALL MTRXED(RECH,TEMP_NUM1,TEMP_NUM,4);                               00003150
    END;                                                                    00003160
  END;                                                                      00003170
  ELSE DO;                                                                  00003180
    VAR_INFO(1) = 'THE RECHARGE FOR THE AREA IS A MATRIX.';                 00003190
    VAR_INFO(2) = 'CHANGE TO CONSTANT (Y/N):';                              00003200
    TYPE = ANSWER;                                                          00003210
    REPLY = PARMGT();                                                       00003220
    IF REPLY = 'Y' THEN DO;                                                 00003230
      INPT_RECH = 'O';                                                      00003240
      VAR_INFO(1) =                                                         00003250
        'ENTER THE RECHARGE FOR THE AREA (FT/SEC).';                        00003260
```

```
    VAR_INFO(2) = 'NEGATIVE NUMBER; INCLUDES E-T.';                          00003270
    VAR_INFO(3) = ' MAXIMUM LENGTH OF 10, REAL NUMBER:';                     00003280
    TYPE = REAL;                                                             00003290
    LEN = 10;                                                                00003300
    FACT_RECH = PARMGT();                                                    00003310
  END;                                                                       00003320
  ELSE DO;                                                                   00003330
    VAR_INFO(1) = 'RECHARGE MULTIPLIER = ' || FACT_RECH;                     00003340
    VAR_INFO(2) = 'CHANGE (Y/N):';                                           00003350
    TYPE = ANSWER;                                                           00003360
    REPLY = PARMGT();                                                        00003370
    IF REPLY = 'Y' THEN DO;                                                  00003380
      VAR_INFO(1) = 'ENTER NEW VALUE:';                                      00003390
      TYPE = REAL;                                                           00003400
      LEN = 10;                                                              00003410
      FACT_RECH = PARMGT();                                                  00003420
    END;                                                                     00003430
    VAR_INFO(1) = 'DISPLAY THE MATRIX FOR POSSIBLE CHANGE (Y/N):';           00003440
    TYPE = ANSWER;                                                           00003450
    REPLY = PARMGT();                                                        00003460
    IF REPLY = 'Y' THEN CALL MTRXED(RECH,TEMP_NUM1,TEMP_NUM,4);              00003470
  END;                                                                       00003480
END;                                                                         00003490
IF (INPT_NODEID = '0') THEN DO;                                              00003500
  VAR_INFO(1) = 'THE NODEID FOR THE AREA IS CONSTANT.';                      00003510
  VAR_INFO(2) = 'CHANGE TO MATRIX (Y/N):';                                   00003520
  TYPE = ANSWER;                                                             00003530
  REPLY = PARMGT();                                                          00003540
  IF REPLY = 'N' THEN DO;                                                    00003550
    VAR_INFO(1) = 'NODEID = ' || FACT_NODEID;                                00003560
    VAR_INFO(2) = 'CHANGE (Y/N):';                                           00003570
    TYPE = ANSWER;                                                           00003580
    REPLY = PARMGT();                                                        00003590
    IF REPLY = 'Y' THEN DO;                                                  00003600
      VAR_INFO(1) = 'ENTER NEW VALUE:';                                      00003610
      TYPE = REAL;                                                           00003620
      LEN = 10;                                                              00003630
      FACT_NODEID = PARMGT();                                                00003640
    END;                                                                     00003650
  END;                                                                       00003660
  ELSE DO;                                                                   00003670
    INPT_NODEID = '1';                                                       00003680
    VAR_INFO(1) = 'ENTER THE NODEID MULTIPLIER.';                            00003690
    VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                      00003700
    TYPE = REAL;                                                             00003710
    LEN = 10;                                                                00003720
    FACT_NODEID = PARMGT();                                                  00003730
    VAR_INFO(1) = 'WHAT DO YOU WISH THE ENTIRE NODEID ';                     00003740
    VAR_INFO(2) = 'MATRIX INITIALLY SET TO?';                                00003750
    VAR_INFO(3) = '(MAXIMUM LENGTH OF 1):';                                  00003760
    TYPE = INTEGER;                                                          00003770
    LEN = 1;                                                                 00003780
    REPLY = PARMGT();                                                        00003790
    DO I = 1 TO NX;                                                          00003800
      DO J = 1 TO NY;                                                        00003810
        NODEID(J,I) = REPLY;                                                 00003820
      END;                                                                   00003830
    END;                                                                     00003840
    CALL MTRXED(NODEID,TEMP_NUM1,TEMP_NUM,1);                                00003850
  END;                                                                       00003860
END;                                                                         00003870
ELSE DO;                                                                     00003880
  VAR_INFO(1) = 'THE NODEID FOR THE AREA IS A MATRIX.';                      00003890
  VAR_INFO(2) = 'CHANGE TO CONSTANT (Y/N):';                                 00003900
  TYPE = ANSWER;                                                             00003910
  REPLY = PARMGT();                                                          00003920
```

```
  IF REPLY = 'Y' THEN DO;                                                    00003930
    INPT_NODEID = '0';                                                       00003940
    VAR_INFO(1) =                                                            00003950
      'ENTER THE NODEID FOR THE AREA.';                                      00003960
    VAR_INFO(2) = 'BETWEEN 0 & 9, MAXIMUM LENGTH OF 1:';                     00003970
    TYPE = INTEGER;                                                          00003980
    LEN = 1;                                                                 00003990
    FACT_NODEID = PARMGT();                                                  00004000
  END;                                                                       00004010
  ELSE DO;                                                                   00004020
    VAR_INFO(1) = 'NODEID MULTIPLIER = ' || FACT_NODEID;                     00004030
    VAR_INFO(2) = 'CHANGE (Y/N):';                                           00004040
    TYPE = ANSWER;                                                           00004050
    REPLY = PARMGT();                                                        00004060
    IF REPLY = 'Y' THEN DO;                                                  00004070
      VAR_INFO(1) = 'ENTER NEW VALUE:';                                      00004080
      TYPE = REAL;                                                           00004090
      LEN = 10;                                                              00004100
      FACT_NODEID = PARMGT();                                                00004110
    END;                                                                     00004120
    VAR_INFO(1) = 'DISPLAY THE MATRIX FOR POSSIBLE CHANGE (Y/N):';           00004130
    TYPE = ANSWER;                                                           00004140
    REPLY = PARMGT();                                                        00004150
    IF REPLY = 'Y' THEN CALL MTRXED(NODEID,TEMP_NUM1,TEMP_NUM,1);            00004160
  END;                                                                       00004170
END;                                                                         00004180
IF (INPT_CONC = '0') THEN DO;                                                00004190
  VAR_INFO(1) = 'THE CONCENTRATION FOR THE AREA IS CONSTANT.';               00004200
  VAR_INFO(2) = 'CHANGE TO MATRIX (Y/N):';                                   00004210
  TYPE = ANSWER;                                                             00004220
  REPLY = PARMGT();                                                          00004230
  IF REPLY = 'N' THEN DO;                                                    00004240
    VAR_INFO(1) = 'CONCENTRATION = ' || FACT_CONC;                           00004250
    VAR_INFO(2) = 'CHANGE (Y/N):';                                           00004260
    TYPE = ANSWER;                                                           00004270
    REPLY = PARMGT();                                                        00004280
    IF REPLY = 'Y' THEN DO;                                                  00004290
      VAR_INFO(1) = 'ENTER NEW VALUE:';                                      00004300
      TYPE = REAL;                                                           00004310
      LEN = 10;                                                              00004320
      FACT_CONC = PARMGT();                                                  00004330
    END;                                                                     00004340
  END;                                                                       00004350
  ELSE DO;                                                                   00004360
    INPT_CONC = '1';                                                         00004370
    VAR_INFO(1) = 'ENTER THE CONCENTRATION MULTIPLIER.';                     00004380
    VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                      00004390
    TYPE = REAL;                                                             00004400
    LEN = 10;                                                                00004410
    FACT_CONC = PARMGT();                                                    00004420
    VAR_INFO(1) = 'WHAT DO YOU WISH THE ENTIRE CONCENTRATION';               00004430
    VAR_INFO(2) = 'MATRIX INITIALLY SET TO?';                                00004440
    VAR_INFO(3) = '(MAXIMUM LENGTH OF 4):';                                  00004450
    TYPE = REAL;                                                             00004460
    LEN = 4;                                                                 00004470
    REPLY = PARMGT();                                                        00004480
    DO I = 1 TO NX;                                                          00004490
      DO J = 1 TO NY;                                                        00004500
        CONC(J,I) = REPLY;                                                   00004510
      END;                                                                   00004520
    END;                                                                     00004530
    CALL MTRXED(CONC,TEMP_NUM1,TEMP_NUM,4);                                  00004540
  END;                                                                       00004550
END;                                                                         00004560
ELSE DO;                                                                     00004570
  VAR_INFO(1) = 'THE CONCENTRATION FOR THE AREA IS A MATRIX.';               00004580
```

```
    VAR_INFO(2) = 'CHANGE TO CONSTANT (Y/N):';                                00004590
    TYPE = ANSWER;                                                            00004600
    REPLY = PARMGT();                                                         00004610
    IF REPLY = 'Y' THEN DO;                                                   00004620
      INPT_CONC = '0';                                                        00004630
      VAR_INFO(1) =                                                           00004640
        'ENTER THE CONCENTRATION FOR THE AREA.';                              00004650
      VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                     00004660
      TYPE = REAL;                                                            00004670
      LEN = 10;                                                               00004680
      FACT_CONC = PARMGT();                                                   00004690
    END;                                                                      00004700
    ELSE DO;                                                                  00004710
      VAR_INFO(1) = 'CONCENTRATION MULTIPLIER = ' || FACT_CONC;               00004720
      VAR_INFO(2) = 'CHANGE (Y/N):';                                          00004730
      TYPE = ANSWER;                                                          00004740
      REPLY = PARMGT();                                                       00004750
      IF REPLY = 'Y' THEN DO;                                                 00004760
        VAR_INFO(1) = 'ENTER NEW VALUE:';                                     00004770
        TYPE = REAL;                                                          00004780
        LEN = 10;                                                             00004790
        FACT_CONC = PARMGT();                                                 00004800
      END;                                                                    00004810
      VAR_INFO(1) = 'DISPLAY THE MATRIX FOR POSSIBLE CHANGE (Y/N):';          00004820
      TYPE = ANSWER;                                                          00004830
      REPLY = PARMGT();                                                       00004840
      IF REPLY = 'Y' THEN CALL MTRXED(CONC,TEMP_NUM1,TEMP_NUM,4);             00004850
    END;                                                                      00004860
  END;                                                                        00004870
%INCLUDE 'B:PARMGT.PLI';                                                      00004880
NDMAT: END;                                                                   00004890
```

APPENDIX I-C

UTILITY ROUTINES

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                    (KONI     )

 KONI: PROC OPTIONS(MAIN);                                                  00000010
   DCL CHOOSE                    CHAR(1),                                   00000020
       FLAG_ON                   BIT(1) STATIC INIT('1'B);                  00000030
   DCL CREATE                    ENTRY,                                     00000040
       UPDATE                    ENTRY;                                     00000050
   DO WHILE (FLAG_ON);                                                      00000060
     PUT EDIT('CHOOSE ACTION: ',                                            00000070
              '    1) CREATE NEW DATA',                                     00000080
              '    2) MODIFY EXISTING DATA',                                00000090
              '    3) END PROGRAM',                                         00000100
              '(ENTER CORRESPONDING NUMBER): ')                             00000110
         (SKIP(3),A,4(SKIP,A));                                             00000120
     GET EDIT(CHOOSE)(A);                                                   00000130
     IF CHOOSE = '1' THEN CALL CREATE;                                      00000140
     ELSE IF CHOOSE = '2' THEN CALL UPDATE;                                 00000150
     ELSE IF CHOOSE = '3' THEN FLAG_ON = '0'B;                              00000160
     ELSE PUT EDIT('IMPROPER RESPONSE--TRY AGAIN.')(SKIP(2),A);             00000170
   END;                                                                     00000180
 END; /* KONI */                                                           00000190
```

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                  (EXTVAR  )

 %REPLACE NX_LMT BY 13,                                                  00000010
          NY_LMT BY 13,                                                  00000020
          PMP_LMT BY 5,                                                  00000030
          NR_LMT BY 5,                                                   00000040
          NC_LMT BY 10,                                                  00000050
          OBS_LMT BY 5;                                                  00000060
   /* CARD 1 */                                                          00000070
   DCL TITLE                    CHAR(80) VAR EXTERNAL;                  00000080
   /* CARD 2 */                                                          00000090
   DCL NTIM(PMP_LMT)                 CHAR(4) EXTERNAL,                  00000100
       NPMP                     CHAR(4) EXTERNAL,                      00000110
       NX                       CHAR(4) EXTERNAL,                      00000120
       NY                       CHAR(4) EXTERNAL,                      00000130
       NPMAX                    CHAR(4) EXTERNAL,                      00000140
       NPNT(PMP_LMT)                CHAR(4) EXTERNAL,                  00000150
       NITP(PMP_LMT)                CHAR(4) EXTERNAL,                  00000160
       NUMOBS                   CHAR(4) EXTERNAL,                      00000170
       ITMAX(PMP_LMT)               CHAR(4) EXTERNAL,                  00000180
       NREC(NR_LMT)                CHAR(4) EXTERNAL,                   00000190
       NPTPND                   CHAR(4) EXTERNAL,                      00000200
       NCODES                   CHAR(4) EXTERNAL,                      00000210
       NPNTMV(PMP_LMT)              CHAR(4) EXTERNAL,                  00000220
       NPNTVL(PMP_LMT)              CHAR(4) EXTERNAL,                  00000230
       NPNTD(PMP_LMT)               CHAR(4) EXTERNAL,                  00000240
       NPOELC(PMP_LMT)              CHAR(4) EXTERNAL,                  00000250
       NPNCHV(PMP_LMT)              CHAR(4) EXTERNAL;                  00000260
   /* CARD 3 */                                                          00000270
   DCL PINT(PMP_LMT)                 CHAR(5) EXTERNAL,                  00000280
       TOL                      CHAR(5) EXTERNAL,                      00000290
       POROS                    CHAR(5) EXTERNAL,                      00000300
       BETA                     CHAR(5) EXTERNAL,                      00000310
       S                        CHAR(5) EXTERNAL,                      00000320
       TIMX(PMP_LMT)                CHAR(5) EXTERNAL,                  00000330
       TINIT(PMP_LMT)               CHAR(5) EXTERNAL,                  00000340
       XDEL                     CHAR(5) EXTERNAL,                      00000350
       YDEL                     CHAR(5) EXTERNAL,                      00000360
       DLTRAT                   CHAR(5) EXTERNAL,                      00000370
       CELDIS                   CHAR(5) EXTERNAL,                      00000380
       ANFCTR                   CHAR(5) EXTERNAL;                      00000390
   /* CARD 4 */                                                          00000400
   DCL NDECAY                   CHAR(5) EXTERNAL,                      00000410
       NSORB                    CHAR(5) EXTERNAL,                      00000420
       DCYTIM                   CHAR(10) EXTERNAL,                     00000430
       DENROC                   CHAR(10) EXTERNAL,                     00000440
       SORBOR                   CHAR(10) EXTERNAL,                     00000450
       SORBST                   CHAR(10) EXTERNAL,                     00000460
       SORBAL                   CHAR(10) EXTERNAL;                     00000470
   /* CARD 5 */                                                          00000480
   DCL ISOLV                    CHAR(4) EXTERNAL,                      00000490
       IHEAD                    CHAR(4) EXTERNAL,                      00000500
       FCON                     CHAR(4) EXTERNAL,                      00000510
       TP                       CHAR(4) EXTERNAL,                      00000520
       BTM                      CHAR(4) EXTERNAL;                      00000530
   /* END OF CARD 5 */                                                   00000540
   DCL IXOBS(OBS_LMT)                CHAR(2) EXTERNAL,                  00000550
       IYOBS(OBS_LMT)                CHAR(2) EXTERNAL,                  00000560
       IX(PMP_LMT,NR_LMT)               CHAR(2) EXTERNAL,               00000570
       IY(PMP_LMT,NR_LMT)               CHAR(2) EXTERNAL,               00000580
       REC(PMP_LMT,NR_LMT)              CHAR(8) EXTERNAL,               00000590
       CNRECH(PMP_LMT,NR_LMT)           CHAR(8) EXTERNAL,               00000600
       INPT_VPRM               CHAR(1) EXTERNAL,                       00000610
       FACT_VPRM                CHAR(10) EXTERNAL,                     00000620
```

```
     VPRM(NX_LMT,NY_LMT)              CHAR(4) VAR EXTERNAL,                00000630
     INPT_THCK                      CHAR(1) EXTERNAL,                      00000640
     FACT_THCK                       CHAR(10) EXTERNAL,                    00000650
     THCK(NX_LMT,NY_LMT)              CHAR(4) VAR EXTERNAL,                00000660
     INPT_RECH                      CHAR(1) EXTERNAL,                      00000670
     FACT_RECH                       CHAR(10) EXTERNAL,                    00000680
     RECH(NX_LMT,NY_LMT)              CHAR(4) VAR EXTERNAL,                00000690
     INPT_NODEID                    CHAR(1) EXTERNAL,                      00000700
     FACT_NODEID                     CHAR(10) EXTERNAL,                    00000710
     NODEID(NX_LMT,NY_LMT)            CHAR(4) VAR EXTERNAL,                00000720
     ICODE(NC_LMT)                   CHAR(2) EXTERNAL,                     00000730
     FCTR1(NC_LMT)                   CHAR(10) EXTERNAL,                    00000740
     FCTR2(NC_LMT)                   CHAR(10) EXTERNAL,                    00000750
     FCTR3(NC_LMT)                   CHAR(10) EXTERNAL,                    00000760
     OVERRD(NC_LMT)                  CHAR(2) EXTERNAL,                     00000770
     INPT_WT                        CHAR(1) EXTERNAL,                      00000780
     FACT_WT                         CHAR(10) EXTERNAL,                    00000790
     WT(NX_LMT,NY_LMT)                CHAR(4) VAR EXTERNAL,                00000800
     INPT_CONC                      CHAR(1) EXTERNAL,                      00000810
     FACT_CONC                       CHAR(10) EXTERNAL,                    00000820
     CONC(NX_LMT,NY_LMT)              CHAR(4) VAR EXTERNAL,                00000830
     ICHK(0:PMP_LMT)                 CHAR(1) EXTERNAL;                     00000840
DCL  JCL(16)                         CHAR(80) VAR EXTERNAL;                00000850
DCL  VERIFY                          FIXED BIN EXTERNAL;                   00000860
DCL  SCREEN                          FILE,                                 00000870
     CRT                             FILE,                                 00000880
     SYSUT4                          FILE,                /* RUN FILE */  00000890
     FILENM                          CHAR(80) VAR EXTERNAL;                00000900
```

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                    (PARMGT   )

   PARMGT: PROC                          RETURNS(CHAR(80) VAR);              00000010
     DCL VAR                             CHAR(80) VAR,                       00000020
         VAR1                            CHAR(80) VAR,                       00000030
         STR                             CHAR(100) STATIC INIT('    '),      00000040
         COUNTER                         FIXED BIN;                          00000050
     DCL INPUT                 ENTRY (CHAR(4),CHAR(80) VAR),                 00000060
         INPUTR                ENTRY (CHAR(4),CHAR(80) VAR,FLOAT,FLOAT);     00000070
     COUNTER = 1 ;                                                           00000080
     DO WHILE(VAR_INFO(COUNTER) ¬= ' ');                                     00000090
       PUT FILE(SCREEN) EDIT(VAR_INFO(COUNTER)) (SKIP,A);                    00000100
       VAR_INFO(COUNTER) = '';                                               00000110
       COUNTER = COUNTER + 1;                                                00000120
     END;                                                                    00000130
   REENTR:                                                                   00000140
     IF LOWER_RANGE = UPPER_RANGE THEN                                       00000150
       CALL INPUT(TYPE,VAR);                                                 00000160
     ELSE CALL INPUTR(TYPE,VAR,LOWER_RANGE,UPPER_RANGE);                     00000170
     IF TYPE ¬= 'CHAR' & TYPE ¬= 'ANS ' THEN DO;                             00000180
       IF LENGTH(VAR) < LEN THEN                                             00000190
          VAR = SUBSTR(STR,1,                                                00000200
                 (LEN-LENGTH(VAR))) || VAR ;                                 00000210
       IF LENGTH(VAR) > LEN THEN DO;                                         00000220
         PUT FILE(SCREEN) EDIT                                               00000230
          ('RESPONSE TOO LONG--LENGTH MUST BE <= ',LEN)(SKIP,A,F(4));        00000240
         PUT FILE(SCREEN) EDIT                                               00000250
          ('PLEASE REENTER :')(SKIP,A);                                      00000260
         GOTO REENTR;                                                        00000270
       END;                                                                  00000280
     END;                                                                    00000290
     IF (VERIFY=1) THEN DO;                                                  00000300
       PUT FILE(SCREEN) EDIT ('VERIFY (Y/N):') (SKIP,A);                     00000310
       CALL INPUT('ANS',VAR1);                                               00000320
       IF VAR1¬='Y' THEN DO;                                                 00000330
         PUT FILE(SCREEN) EDIT ('THEN PLEASE REENTER :')(SKIP,A);            00000340
         GOTO REENTR;                                                        00000350
       END;                                                                  00000360
     END;                                                                    00000370
     UPPER_RANGE = 0;                                                        00000380
     LOWER_RANGE = 0;                                                        00000390
     RETURN(VAR);                                                            00000400
   END ;                                                                     00000410
```

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                    (DATATP  )

 DATATP: PROC(STRING,TYPE) OPTIONS(EXTERNAL);                                  00000010
  /* THE DATATYP SUBROUTINE USES A FSA TO DETERMINE THE                       00000020
     TYPE OF DATA PASSED TO THE SUBROUTINE.                                   00000030
  */                                                                          00000040
   DCL STRING                          CHAR(80) VAR,                          00000050
       TYPE                            CHAR(4),                               00000060
       TEMPSTR                         CHAR(128) VAR,                         00000070
       TRANSSTR                        CHAR(128) VAR,                         00000080
       LEVEL                           FIXED BIN,                             00000090
       COL                             FIXED BIN,                             00000100
       I                               FIXED BIN,                             00000110
       J                               FIXED BIN,                             00000120
       F_S_A(13,9)                     FIXED BIN STATIC INIT(                 00000130
            /* 1   2   3   4   5   6   7   8   9 */                           00000140
            /*A-Z,0-9, . ,+/-, Y , E , S , N , O */                           00000150
    /* 1  */    99, 2 , 3 , 8 , 9 , 99, 99, 12, 99, /*99 = CHARACTER*/       00000160
    /* 2  */    99, 2 , 3 , 99, 99, 99, 99, 99, 99, /* 2 = INTEGER  */       00000170
    /* 3  */    99, 3 , 99, 99, 99, 4 , 99, 99, 99, /* 3 = REAL     */       00000180
    /* 4  */    99, 5 , 99, 7 , 99, 99, 99, 99, 99, /* 4 = CHARACTER*/       00000190
    /* 5  */    99, 6 , 99, 99, 99, 99, 99, 99, 99, /* 5 = REAL EXP */       00000200
    /* 6  */    99, 99, 99, 99, 99, 99, 99, 99, 99, /* 6 = REAL EXP */       00000210
    /* 7  */    99, 5 , 99, 99, 99, 99, 99, 99, 99, /* 7 = CHARACTER*/       00000220
    /* 8  */    99, 2 , 3 , 99, 99, 99, 99, 99, 99, /* 8 = CHARACTER*/       00000230
    /* 9  */    99, 99, 99, 99, 99, 10, 99, 99, 99, /* 9 = YES      */       00000240
    /* 10 */    99, 99, 99, 99, 99, 99, 11, 99, 99, /*10 = CHARACTER*/       00000250
    /* 11 */    99, 99, 99, 99, 99, 99, 99, 99, 99, /*11 = YES      */       00000260
    /* 12 */    99, 99, 99, 99, 99, 99, 99, 99, 13, /*12 = NO       */       00000270
    /* 13 */    99, 99, 99, 99, 99, 99, 99, 99, 99);/*13 = NO       */       00000280
   TRANSSTR = '1111111111'||'1111111111'||'1111111111'||'1111111111';         00000290
   TRANSSTR = TRANSSTR ||'1141431'||'2222222222'||'1111111111';               00000300
   TRANSSTR = TRANSSTR ||'6'||'11111111'||'89111'||'7111115';                 00000310
   TRANSSTR = TRANSSTR ||'1111111111'||'1111111111'||'1111111111';           00000320
   TRANSSTR = TRANSSTR ||'11111111';                                          00000330
   TEMPSTR  = TRANSLATE(STRING,TRANSSTR);                                     00000340
   LEVEL=1;                                                                   00000350
   J = LENGTH(TEMPSTR);                                                       00000360
   DO I=1 TO J;                                                               00000370
     COL = SUBSTR(TEMPSTR,I,1);                                               00000380
     LEVEL = F_S_A(LEVEL,COL);                                                00000390
     IF LEVEL = 99 THEN GO TO LV;                                             00000400
   END;                                                                       00000410
 LV:                                                                          00000420
   IF LEVEL=99 | LEVEL=1 | LEVEL=4 | LEVEL=7 | LEVEL=8 | LEVEL=10            00000430
     THEN TYPE = 'CHAR';                                                      00000440
   ELSE IF LEVEL=3 | LEVEL=5 | LEVEL=6 THEN TYPE = 'REAL';                    00000450
   ELSE IF LEVEL=2 THEN TYPE = 'INT ';                                        00000460
   ELSE IF LEVEL=9 | LEVEL=11 | LEVEL=12 | LEVEL=13 THEN TYPE = 'ANS ';      00000470
   ELSE SIGNAL ERROR;                                                         00000480
 END;                                                                         00000490
```

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                  (DBLANK   )

  DBLANK: PROC(LINE) RETURNS(CHAR(80) VAR) OPTIONS(EXTERNAL);          00000010
 /*                                                                    */00000020
 /*  THIS PROCEDURE REMOVES BLANKS FROM THE FRONT AND BACK OF A        */00000030
 /*  STRING AND CHANGES ANY LOWER CASE LETTERS TO UPPER CASE LETTERS.  */00000040
 /*                                                                    */00000050
    DCL LINE                        CHAR(80) VAR,                     00000060
        OUT_LINE                    CHAR(80) VAR,                     00000070
        LOWER_CASE                  CHAR(26) STATIC INIT              00000080
                                    ('ABCDEFGHIJKLMNOPQRSTUVWXYZ'),   00000090
        UPPER_CASE                  CHAR(26) STATIC INIT              00000100
                                    ('ABCDEFGHIJKLMNOPQRSTUVWXYZ'),   00000110
        TRANSLATE                   BUILTIN,                          00000120
        SUBSTR                      BUILTIN;                          00000130
    OUT_LINE = LINE;                                                  00000140
    IF OUT_LINE ¬= '' THEN DO WHILE (SUBSTR(OUT_LINE,1,1) = ' ');     00000150
      OUT_LINE = SUBSTR(OUT_LINE,2);                                  00000160
    END;                                                              00000170
    IF OUT_LINE ¬= '' THEN                                            00000180
      DO WHILE(SUBSTR(OUT_LINE,LENGTH(OUT_LINE)) = ' ');              00000190
      OUT_LINE = SUBSTR(OUT_LINE,1,(LENGTH(OUT_LINE)-1));             00000200
    END;                                                              00000210
    OUT_LINE = TRANSLATE(OUT_LINE,UPPER_CASE,LOWER_CASE);             00000220
    RETURN(OUT_LINE);                                                 00000230
  END;                                                                00000240
```

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                  (INPUT    )

 INPUT: PROC(INFO_TYPE,IN_LINE) OPTIONS(EXTERNAL);                      00000010
 /* THE INPUT SUBROUTINE CALLS INPUTR WHICH IS USED TO READ IN          00000020
    ALL INFORMATION FROM THE SCREEN AND DETERMINE THE DATA TYPE.        00000030
 */                                                                     00000040
   DCL INFO_TYPE                  CHAR(4),                             00000050
       IN_LINE                    CHAR(80) VAR,                        00000060
       UP_LIMIT                   FLOAT,                               00000070
       LOW_LIMIT                  FLOAT;                               00000080
   DCL INPUTR   ENTRY(CHAR(4), CHAR(80) VAR, FLOAT, FLOAT);            00000090
   UP_LIMIT = 1.0E+30;                                                  00000100
   LOW_LIMIT = -1.0E+30;                                                00000110
   CALL INPUTR(INFO_TYPE,IN_LINE,LOW_LIMIT,UP_LIMIT);                   00000120
 END;                                                                   00000130
```

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                    (INPUTR   )

 INPUTR: PROC(INFO_TYPE,IN_LINE,LOW_LIMIT,UP_LIMIT) OPTIONS(EXTERNAL);   00000010
 /* THE INPUT SUBROUTINE IS USED TO READ IN ALL INFORMATION              00000020
    FROM THE SCREEN AND DETERMINE THE DATA TYPE. (CALLS DATATP)          00000030
 */                                                                      00000040
 %INCLUDE 'B:EXTVAR.PLI';                                                00000050
   DCL INFO_TYPE                 CHAR(4),                                00000060
       IN_LINE                   CHAR(80) VAR,                           00000070
       UP_LIMIT                  FLOAT,                                  00000080
       LOW_LIMIT                 FLOAT,                                  00000090
       TEMP_NUM                  FLOAT,                                  00000100
       TEMP_TYPE                 CHAR(4),                                00000110
       COMPLETE                  BIT(1), /* TRUE */                      00000120
       DBLANK   ENTRY(CHAR(80) VAR) RETURNS(CHAR(80) VAR),               00000130
       DATATP   ENTRY(CHAR(80) VAR, CHAR(4));                            00000140
   COMPLETE = '1'B;                                                      00000150
   DO WHILE(COMPLETE);                                                   00000160
     GET FILE(CRT) EDIT(IN_LINE) (A);                                    00000170
     IN_LINE = DBLANK(IN_LINE);                                          00000180
     IF IN_LINE = 'EXIT' THEN STOP;                                      00000190
     CALL DATATP(IN_LINE,TEMP_TYPE);                                     00000200
     IF INFO_TYPE='CHAR' THEN COMPLETE = '0'B;                           00000210
     ELSE IF INFO_TYPE='NUM ' THEN DO;                                   00000220
       IF TEMP_TYPE = 'INT ' | TEMP_TYPE = 'REAL' THEN DO;               00000230
         TEMP_NUM = IN_LINE;                                             00000240
         IF LOW_LIMIT > TEMP_NUM | TEMP_NUM > UP_LIMIT THEN              00000250
           PUT FILE(SCREEN) EDIT(                                        00000260
             'INCORRECT RESPONSE, YOUR ANSWER MUST BE FROM',LOW_LIMIT,   00000270
             'TO ',UP_LIMIT,                                             00000280
             'REENTER :') (A,F(10,4),SKIP,A,F(10,4),SKIP,A);             00000290
         ELSE COMPLETE = '0'B;                                           00000300
       END;                                                              00000310
       ELSE                                                              00000320
         PUT FILE(SCREEN) EDIT(                                          00000330
           'INCORRECT RESPONSE, YOUR ANSWER MUST BE NUMERICAL.',         00000340
           'REENTER :') (2(SKIP,A));                                     00000350
     END;                                                                00000360
 TEMP_NUM = IN_LINE;                                                     00000370
         IF TEMP_TYPE = 'INT ' THEN PUT FILE(SCREEN) SKIP;               00000380
         IF LOW_LIMIT > TEMP_NUM | TEMP_NUM > UP_LIMIT THEN              00000390
           PUT FILE(SCREEN) EDIT(                                        00000400
             'INCORRECT RESPONSE, YOUR ANSWER MUST BE FROM',LOW_LIMIT,   00000410
             'TO ',UP_LIMIT,                                             00000420
             'REENTER :') (A,F(10,4),SKIP,A,F(10,4),SKIP,A);             00000430
         ELSE COMPLETE = '0'B;                                           00000440
       END;                                                              00000450
       ELSE                                                              00000460
                                                                         00000470
            'REENTER :') (2(SKIP,A));                                    00000480
     END;                                                                00000490
     ELSE IF INFO_TYPE='INT' THEN DO;                                    00000500
       IF TEMP_TYPE ¬= 'INT ' THEN                                       00000510
         PUT FILE(SCREEN) EDIT(                                          00000520
           'INCORRECT RESPONSE, YOUR ANSWER MUST BE AN INTEGER ',        00000530
           '(NO DECIMAL) REENTER :') (2(SKIP,A));                        00000540
       ELSE DO;                                                          00000550
         TEMP_NUM = IN_LINE;                                             00000560
  END;                                                                   00000570
 END;                                                                    00000580
```

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                    (MTRXED   )

 MTRXED: PROC(MATRIX,COL_SIZE,ROW_SIZE,FMT_SIZE) OPTIONS(EXTERNAL);      00000010
 /*                                                                      */00000020
 /*  MATRXED IS A LINE ORIENTED MATRIX EDITOR.                           */00000030
 /*                                                                      */00000040
 /*  PARAMETERS IN:                                                      */00000050
 /*    MATRIX -------- IS A TWO DIMENSIONAL CHARACTER ARRAY.             */00000060
 /*    COL_SIZE ------ IS THE NUMBER OF COLUMNS IN "MATRIX".             */00000070
 /*    ROW_SIZE ------ IS THE NUMBER OF ROWS IN "MATRIX".                */00000080
 /*    FMT_SIZE ------ IS THE LENGTH OF MATRIX, USED FOR RIGHT           */00000090
 /*                    JUSTIFICATION.                                    */00000100
 /*                                                                      */00000110
 /*  GLOBAL VARIABLES:                                                   */00000120
 /*    SCREEN -------- OUTPUT FILE TO THE SCREEN.                        */00000130
 /*    CRT ----------- INPUT FILE FROM THE SCREEN.                       */00000140
 /*                                                                      */00000150
 /*  INTERNAL VARIABLES:                                                 */00000160
 /*    START_COL ----- CURRENT POINTER ON START OF SHOWN MATRIX.         */00000170
 /*    END_COL    ----- CURRENT POINTER ON END OF SHOWN MATRIX.          */00000180
 /*    START_ROW ----- CURRENT POINTER ON START OF SHOWN MATRIX.         */00000190
 /*    END_ROW    ----- CURRENT POINTER ON END OF SHOWN MATRIX.          */00000200
 /*    CHAR_TYP   ----- PARAMETER THAT RETURNS THE TYPE OF VARABLE       */00000210
 /*                     PASSED TO "DATATYP" (EX: CHAR,INT,REAL)          */00000220
 /*    CURRENT_ROW --   CURRENT POINTER ON THE ROW CURRENTLY BEING       */00000230
 /*                     WORKED ON.                                       */00000240
 /*    NUMBER     ----- TEMPORARY VARIABLE.                              */00000250
 /*    ANSWER     ----- TEMPORARY VARIABLE.                              */00000260
 /*    I          ----- COUNTER                                          */00000270
 /*    J          ----- COUNTER                                          */00000280
 /*                                                                      */00000290
 %INCLUDE 'B:EXTVAR.PLI';                                                00000300
   DCL MATRIX(NX_LMT,NY_LMT)                CHAR(4) VAR,                 00000310
       COL_SIZE                          FIXED BIN,                     00000320
       ROW_SIZE                          FIXED BIN,                     00000330
       FMT_SIZE                          FIXED BIN,                     00000340
       START_COL                         FIXED BIN,                     00000350
       START_ROW                         FIXED BIN,                     00000360
       END_COL                           FIXED BIN,                     00000370
       END_ROW                           FIXED BIN,                     00000380
       CURRENT_ROW                       FIXED BIN,                     00000390
       I                                 FIXED BIN,                     00000400
       J                                 FIXED BIN,                     00000410
       NUMBER_OF_FIELDS                  FIXED BIN,                     00000420
       CHAR_TYP                          CHAR(4),                       00000430
       NUMBER                            CHAR(80) VAR,                  00000440
       ANSWER                            CHAR(80) VAR,                  00000450
       BAD_INFO                          CHAR(80) VAR,                  00000460
       TEMP                              CHAR(80) VAR,                  00000470
       BLANKS        CHAR(20) STATIC INIT('                    '),      00000480
       C_FLAG                            BIT(1);                        00000490
   DCL DBLANK    ENTRY (CHAR(80) VAR) RETURNS(CHAR(80) VAR),             00000500
       DATATP    ENTRY (CHAR(80) VAR,CHAR(4)),                         00000510
       INPUT     ENTRY (CHAR(4),CHAR(80) VAR);                         00000520
   START_COL=1;                                                         00000530
   START_ROW=1;                                                         00000540
   END_COL=0;                                                           00000550
   END_ROW=0;                                                           00000560
   CURRENT_ROW=1;                                                       00000570
   I=1;                                                                 00000580
   J=1;                                                                 00000590
   NUMBER_OF_FIELDS=0;                                                  00000600
   C_FLAG='0'B;                                                         00000610
 /*                                                                     */00000620
```

```
/*  CHECK FOR ERRORS ON THE THE PARAMETERS PASSED IN AND PRINT       */00000630
/*  ERROR MESSAGES AND RETURN.                                       */00000640
/*                                                                   */00000650
  IF COL_SIZE < 3    |  /* OR */                                      00000660
     ROW_SIZE < 3    |  /* OR */                                      00000670
     FMT_SIZE < 1   THEN DO;                                         00000680
     PUT FILE(SCREEN) EDIT                                           00000690
       ('****** ERROR  MATRIX TO BE EDITED HAS :',                   00000700
        '              NO COLUMNS, AND OR,',                         00000710
        '              NO ROWS, AND OR,',                            00000720
        '              NO LENGTH.',                                  00000730
        '"MATRXED" ENDING ON ERROR.') (SKIP(2),5(A,SKIP));           00000740
     RETURN;                                                         00000750
  END ;                                                              00000760
/*                                                                   */00000770
/*  THE FOLLOWING SETS UP FOR 80 COLUMN TERMINALS.                   */00000780
/*                                                                   */00000790
  NUMBER_OF_FIELDS = 72./FLOAT(FMT_SIZE + 1);                        00000800
/*                                                                   */00000810
/*  THE FOLLOWING CHECKS TO SEE IF THE DATA PASSED TO THE MATRIX     */00000820
/*  EDITOR IS OF THE CORRECT FORMAT IF NOT IT CORRECTS IT.           */00000830
/*                                                                   */00000840
  DO I=1 TO COL_SIZE;                                                00000850
    DO J=1 TO ROW_SIZE;                                              00000860
      NUMBER = MATRIX(J,I);                                          00000870
      NUMBER = DBLANK(NUMBER);                                       00000880
      IF LENGTH(NUMBER) < FMT_SIZE THEN                              00000890
         NUMBER = SUBSTR(BLANKS,1,                                   00000900
                  (FMT_SIZE-LENGTH(NUMBER))) || NUMBER ;             00000910
      IF LENGTH(NUMBER) > FMT_SIZE THEN                              00000920
        NUMBER = SUBSTR(NUMBER,1,FMT_SIZE);                          00000930
      MATRIX(J,I) = NUMBER;                                          00000940
    END;                                                             00000950
  END;                                                               00000960
/*                                                                   */00000970
/*  SET INITIAL CONDITIONS FOR END OF COLUMN AND END OF ROW.         */00000980
/*                                                                   */00000990
  IF COL_SIZE > NUMBER_OF_FIELDS THEN END_COL = NUMBER_OF_FIELDS;    00001000
  ELSE END_COL = COL_SIZE;                                           00001010
  IF ROW_SIZE > 12 THEN END_ROW = 12;                                00001020
  ELSE END_ROW = ROW_SIZE;                                           00001030
/*                                                                   */00001040
/*  WRITE THE INITIAL MATRIX TO THE SCREEN.                          */00001050
/*                                                                   */00001060
  CALL WRTSCRN;                                                      00001070
/*                                                                   */00001080
/*  ENTER LOOP TO READ FROM SCREEN AND INTERPRET COMMANDS.           */00001090
/*                                                                   */00001100
  DO WHILE('1'B);                                                    00001110
/*                                                                   */00001120
/*  READ THE UPDATED LINE OR COMMAND FROM THE SCREEN, REMOVE BLANKS  */00001130
/*  AND UPCASE LOWER CASE LETTERS.                                   */00001140
/*  REMOVE CARRIAGE RETURN, LINE FEED IF MICRO VERSION.              */00001150
/*                                                                   */00001160
    GET FILE(CRT) EDIT(ANSWER)(A);                                   00001170
    ANSWER = DBLANK(ANSWER);                                         00001180
/*                                                                   */00001190
/*  DETERMINE IF THE LINE THAT WAS ENTERED IS AN UPDATED ROW OR      */00001200
/*  A COMMAND.                                                       */00001210
/*                                                                 */  00001220
    IF SUBSTR(ANSWER,1,1) = '*' THEN DO;                             00001230
/*                                                                   */00001240
/*  "PEAL" OFF FIRST SET OF CHARACTERS AND DETERMINE IF THEY ARE     */00001250
/*  A NUMBER OR NOT.                                                 */00001260
/*                                                                   */00001270
      ANSWER = SUBSTR(ANSWER,2);                                     00001280
```

```
      TEMP = PEAL(ANSWER);                                                  00001290
      CALL DATATP(TEMP,CHAR_TYP);                                           00001300
      IF CHAR_TYP = 'INT ' THEN DO;                                         00001310
/*                                                                          */00001320
/*   SET CURRENT_ROW (I.E ROW) EQUAL TO TEMP, AND ENTER LOOP                */00001330
/*   TO RESET CURRENT MATRIX ROW TO NEW VALUES.                             */00001340
/*                                                                          */00001350
        CURRENT_ROW = TEMP;                                                 00001360
        DO I = START_COL TO END_COL;                                        00001370
          NUMBER = PEAL(ANSWER);                                            00001380
/*                                                                          */00001390
/*   CHECK TO SEE IF "NUMBER" IS A NUMBER, PAD WITH BLANKS ON LEFT          */00001400
/*   SIDE (IF NECESSARY) AND ENTER IT INTO THE "MATRIX".                    */00001410
/*   IF "NUMBER" IS A CHARACTER THEN LEAVE CURRENT VALUE OF                 */00001420
/*   MATRIX(CURRENT_ROW,I) ALONE AND CONTINUE WITH LINE.                    */00001430
/*                                                                          */00001440
          CALL DATATP(NUMBER,CHAR_TYP);                                     00001450
          IF CHAR_TYP = 'INT ' | /* OR */                                  00001460
             CHAR_TYP = 'REAL'   THEN DO;                                   00001470
             IF LENGTH(NUMBER) < FMT_SIZE THEN                              00001480
                NUMBER = SUBSTR(BLANKS,1,                                   00001490
                         (FMT_SIZE-LENGTH(NUMBER))) || NUMBER ;             00001500
             IF LENGTH(NUMBER) > FMT_SIZE THEN                              00001510
                NUMBER = SUBSTR(NUMBER,1,FMT_SIZE);                         00001520
             MATRIX(CURRENT_ROW,I) = NUMBER;                                00001530
          END;                                                              00001540
        END;                                                                00001550
      END;                                                                  00001560
      ELSE DO;                                                              00001570
        C_FLAG = '1'B;                                                      00001580
        BAD_INFO = 'INVALID ROW, OR COMMAND STARTING WITH "*".';            00001590
      END;                                                                  00001600
    END;                                                                    00001610
/*                                                                          */00001620
/*   IF IT IS NOT AN UPDATE ROW THEN CHECK TO SEE IF IT IS NULL             */00001630
/*   IF NOT THEN ASSUME IT IS A COMMAND.                                    */00001640
/*                                                                          */00001650
    ELSE DO;                                                                00001660
      IF SUBSTR(ANSWER,1,1) = '@' THEN                                      00001670
         ANSWER = DBLANK(SUBSTR(ANSWER,12));                                00001680
      IF ANSWER = '' THEN GO TO LV;                                         00001690
/*                                                                          */00001700
/*   "PEAL" OFF THE NEXT CHARACTER STRING AND DETERMINE IF IT IS            */00001710
/*   A COMMAND.                                                             */00001720
/*                                                                          */00001730
      C_FLAG = '1'B;                                                        00001740
      NUMBER=PEAL(ANSWER);                                                  00001750
      IF NUMBER='END' THEN RETURN;                                          00001760
/*                                                                          */00001770
/*   IF THE COMMAND IS SHIFT THEN "PEAL" OFF THE NEXT CHARACTER             */00001780
/*   STRING AND CHECK TO SEE IF IT IS A NUMBER, IF NOT THEN                 */00001790
/*   PROMPT FOR THE COLUMN NUMBER. THEN SET THE START COLUMN.               */00001800
/*                                                                          */00001810
      ELSE IF NUMBER='S'|NUMBER='SH'|NUMBER='SHI'|NUMBER='SHIF'|            00001820
              NUMBER='SHIFT' THEN DO;                                       00001830
        NUMBER = PEAL(ANSWER);                                              00001840
        CALL DATATP(NUMBER,CHAR_TYP);                                       00001850
        IF CHAR_TYP = 'CHAR' THEN DO;                                       00001860
          PUT FILE(SCREEN) EDIT                                             00001870
            ('ENTER THE COLUMN NUMBER :') (SKIP,A);                         00001880
          CALL INPUT('INT ',NUMBER);                                        00001890
        END;                                                                00001900
        START_COL = NUMBER;                                                 00001910
      END;                                                                  00001920
/*                                                                          */00001930
/*   IF THE LIST COMMAND IS FOUND THE SAME PROCEDURE IS USED AS             */00001940
```

```
/*  WITH THE SHIFT COMMAND.                                                 */00001950
/*                                                                          */00001960
      ELSE IF NUMBER='L'|NUMBER='LI'|NUMBER='LIS'|NUMBER='LIST'              00001970
      THEN DO;                                                              00001980
        NUMBER = PEAL(ANSWER);                                              00001990
        CALL DATATP(NUMBER,CHAR_TYP);                                       00002000
        IF CHAR_TYP = 'CHAR' THEN DO;                                       00002010
          PUT FILE(SCREEN) EDIT                                             00002020
            ('ENTER THE ROW NUMBER :') (SKIP,A);                            00002030
          CALL INPUT('INT ',NUMBER);                                        00002040
        END;                                                                00002050
        START_ROW = NUMBER;                                                 00002060
      END;                                                                  00002070
/*                                                                          */00002080
/*  IF NONE OF LIST, SHIFT, OR END ARE FOUND THEN AN ERROR                  */00002090
/*  MSG IS PRINTED WHEN THE MATRIX IS RESHOWN                               */00002100
/*                                                                          */00002110
      ELSE BAD_INFO = 'INVALID COMMAND.' ;                                  00002120
    END;                                                                    00002130
/*                                                                          */00002140
/*  CHECK TO SEE IF A COMMAND WAS ENTERED                                   */00002150
/*                                                                          */00002160
    LV: IF C_FLAG THEN DO;                                                  00002170
/*                                                                          */00002180
/*  SET START_COL,START_ROW,END_COL,END_ROW TO THERE VALID VALUES            */00002190
/*                                                                          */00002200
       IF START_COL < 1 THEN START_COL = 1;                                 00002210
       IF START_COL > COL_SIZE THEN START_COL = COL_SIZE ;                  00002220
       END_COL = START_COL + NUMBER_OF_FIELDS - 1;                          00002230
       IF END_COL > COL_SIZE THEN END_COL = COL_SIZE;                       00002240
       IF START_ROW < 1 THEN START_ROW = 1;                                 00002250
       IF START_ROW > ROW_SIZE THEN START_ROW = COL_SIZE ;                  00002260
       END_ROW = START_ROW + 11;                                            00002270
       IF END_ROW > ROW_SIZE THEN END_ROW = ROW_SIZE;                       00002280
/*                                                                          */00002290
/*  REWRITE THE MATRIX ON THE SCREEN AND RESET COMMAND FLAG                 */00002300
/*                                                                          */00002310
      CALL WRTSCRN;                                                         00002320
    END;                                                                    00002330
  END;                                                                      00002340
                                                                            00002350
  PEAL: PROC(STRING)              RETURNS(CHAR(80) VAR);                    00002360
/*                                                                          */00002370
/*  THIS PROC LOOKS FOR THE FIRST BLANK AND REMOVES ALL OF THE              */00002380
/*  STRING IN FRONT OF IT. IT THEN DEBLANKS THE SHORTTENED STRING.          */00002390
/*  IT THEN RETURNS THE SHORTTENED STRING AND THE "SKIN" IT                 */00002400
/*  REMOVED.                                                                */00002410
/*                                                                          */00002420
    DCL STRING                    CHAR(80) VAR,                           00002430
        SKIN                      CHAR(80) VAR;                           00002440
    DCL DBLANK  ENTRY (CHAR(80) VAR) RETURNS(CHAR(80) VAR);                 00002450
    STRING = DBLANK(STRING);                                                00002460
    IF INDEX(STRING,' ') = 0 THEN DO;                                       00002470
      SKIN = STRING;                                                        00002480
      STRING = '';                                                          00002490
      RETURN(SKIN);                                                         00002500
    END;                                                                    00002510
    SKIN = SUBSTR(STRING,1,INDEX(STRING,' ')-1);                            00002520
    SKIN = DBLANK(SKIN);                                                    00002530
    STRING = SUBSTR(STRING,INDEX(STRING,' ')+1);                            00002540
    STRING = DBLANK(STRING);                                                00002550
    RETURN(SKIN);                                                           00002560
  END;                                                                      00002570
                                                                            00002580
  WRTSCRN: PROC;                                                            00002590
/*                                                                          */00002600
```

```
/*  THE FOLLOWING PROCEDURE WRITES THE ARRARY TO THE SCREEN IN        */00002610
/*  THE CORRECT FORMAT FOR THAT TERMINAL IN WHICH THE USER IS         */00002620
/*  WORKING ON                                                        */00002630
/*                                                                    */00002640
/*                                                                    */00002650
    DCL I                       FIXED BIN,                            00002660
        SPACE                   FIXED BIN,                            00002670
        J                       FIXED BIN;                            00002680
    SPACE = FLOOR(FLOAT(FMT_SIZE)/2.);                                00002690
    PUT FILE(SCREEN) EDIT('C  O  L  U  M  N  S') (COL(29),A);         00002700
    IF FMT_SIZE=1 THEN DO;                                            00002710
      PUT FILE(SCREEN) EDIT                                           00002720
        (' ROWS',(I  DO I=START_COL TO END_COL))                      00002730
        (SKIP,A,40(F(2)));                                            00002740
      DO I=START_ROW TO END_ROW;                                      00002750
        PUT FILE(SCREEN) EDIT                                         00002760
          (' *',I,(MATRIX(I,J) DO J=START_COL TO END_COL))            00002770
          (SKIP,A,F(2),X(2),40(A(2)));                                00002780
      END;                                                            00002790
    END;                                                              00002800
    ELSE IF FMT_SIZE=3 THEN DO;                                       00002810
      PUT FILE(SCREEN) EDIT                                           00002820
        (' ROWS',(I  DO I=START_COL TO END_COL))                      00002830
        (SKIP,A,X(1),40(F(2),X(2)));                                  00002840
      DO I=START_ROW TO END_ROW;                                      00002850
        PUT FILE(SCREEN) EDIT                                         00002860
          (' *',I,(MATRIX(I,J) DO J=START_COL TO END_COL))            00002870
          (SKIP,A,F(2),X(2),40(A(4)));                                00002880
      END;                                                            00002890
    END;                                                              00002900
    ELSE /* FMT_SIZE=4 */ DO;                                        00002910
      PUT FILE(SCREEN) EDIT                                           00002920
        (' ROWS',(I  DO I=START_COL TO END_COL))                      00002930
        (SKIP,A,X(2),40(F(2),X(3)));                                  00002940
      DO I=START_ROW TO END_ROW;                                      00002950
        PUT FILE(SCREEN) EDIT                                         00002960
          (' *',I,(MATRIX(I,J) DO J=START_COL TO END_COL))            00002970
          (SKIP,A,F(2),X(2),40(A(5)));                                00002980
      END;                                                            00002990
    END;                                                              00003000
    PUT FILE(SCREEN) EDIT(                                            00003010
      'REMEMBER TO HIT ENTER AFTER YOU CHANGE EACH LINE.',            00003020
      'COMMANDS ARE: SHIFT,LIST,END')                                 00003030
      (2(SKIP,A));                                                    00003040
    PUT FILE(SCREEN) EDIT(BAD_INFO) (SKIP,A);                         00003050
    PUT FILE(SCREEN) EDIT('@ COMMAND :') (SKIP,A);                    00003060
    C_FLAG = '0'B;                                                    00003070
    BAD_INFO = '';                                                    00003080
  END;                                                                00003090
END;                                                                  00003100
```

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.K2.CNTL                                    (SUBFIL  )

 SUBFIL: PROC OPTIONS(EXTERNAL);                                          00000010
 /* THE SUBFILE SUBROUTINE IS USED TO WRITE THE DATA TO THE              00000020
    INPUT DATA SET BEING CREATED OR MODIFIED FOR USE WITH THE            00000030
    USGS SOLUTE TRANSPORT MODEL, VERSION OSU 1.0.                        00000040
 */                                                                      00000050
 %INCLUDE 'B:EXTVAR.PLI';                                                00000060
   DCL COUNT                          FIXED BIN,                         00000070
       TEMP_NUM1                      FIXED BIN,                         00000080
       TEMP_NUM2                      FIXED BIN,                         00000090
       I                              FIXED BIN,                         00000100
       J                              FIXED BIN,                         00000110
       K                              FIXED BIN,                         00000120
       L                              FIXED BIN,                         00000130
       COUNT1                         FIXED BIN;                         00000140
   DCL DBLANK ENTRY (CHAR(80) VAR) RETURNS(CHAR(80) VAR);                 00000150
   DO I=1 TO 16;                                                          00000160
     PUT FILE(SYSUT4) EDIT(JCL(I)) (COL(1),A(80));                        00000170
   END;                                                                   00000180
   PUT FILE(SYSUT4) EDIT(TITLE) (COL(1),A(80));                           00000190
   PUT FILE(SYSUT4) EDIT(NTIM(1),NPMP,NX,NY,NPMAX,NPNT(1),NITP(1),        00000200
                     NUMOBS,ITMAX(1),NREC(1),NPTPND,NCODES,               00000210
                     NPNTMV(1),NPNTVL(1),NPNTD(1),NPDELC(1),NPNCHV(1))    00000220
                    (COL(1),17(A(4)));                                    00000230
   PUT FILE(SYSUT4) EDIT(PINT(1),TOL,POROS,BETA,S,TIMX(1),TINIT(1),       00000240
                     XDEL,YDEL,DLTRAT,CELDIS,ANFCTR)                      00000250
                    (COL(1),12(A(5)));                                    00000260
   PUT FILE(SYSUT4) EDIT(NDECAY,NSORB,DCYTIM,DENROC,SORBQR,SORBST,        00000270
                     SORBAL)(COL(1),2(A(5)),5(A(10)));                    00000280
   PUT FILE(SYSUT4) EDIT(ISOLV,IHEAD,FCON,TP,BTM)(COL(1),5(A(4)));        00000290
   COUNT = 0;                                                             00000300
   TEMP_NUM1 = DBLANK(NUMOBS);                                            00000310
   DO WHILE(COUNT < TEMP_NUM1);                                           00000320
     COUNT = COUNT + 1;                                                   00000330
     PUT FILE(SYSUT4) EDIT(IXOBS(COUNT),IYOBS(COUNT))                     00000340
                      (COL(1),2(A(2)));                                   00000350
   END;                                                                   00000360
   COUNT = 0;                                                             00000370
   TEMP_NUM1 = DBLANK(NREC(1));                                           00000380
   DO WHILE(COUNT < TEMP_NUM1);                                           00000390
     COUNT = COUNT + 1;                                                   00000400
     PUT FILE(SYSUT4) EDIT(IX(1,COUNT),IY(1,COUNT),                       00000410
                       REC(1,COUNT),CNRECH(1,COUNT))                      00000420
                      (COL(1),2(A(2)),2(A(8)));                           00000430
   END;                                                                   00000440
   PUT FILE(SYSUT4) EDIT(INPT_VPRM,FACT_VPRM)                             00000450
                    (COL(1),A(1),A(10));                                  00000460
   IF INPT_VPRM ¬= 0 THEN DO;                                             00000470
     I = DBLANK(NX);                                                      00000480
     J = DBLANK(NY);                                                      00000490
     DO K=1 TO J;                                                         00000500
       PUT FILE(SYSUT4) EDIT(VPRM(K,1)) (COL(1),A(4));                    00000510
       DO L=2 TO I;                                                       00000520
         PUT FILE(SYSUT4) EDIT(VPRM(K,L)) (A(4));                         00000530
       END;                                                               00000540
     END;                                                                 00000550
   END;                                                                   00000560
   PUT FILE(SYSUT4) EDIT(INPT_THCK,FACT_THCK)                             00000570
                    (COL(1),A(1),A(10));                                  00000580
   IF INPT_THCK ¬= 0 THEN DO;                                             00000590
     I = DBLANK(NX);                                                      00000600
     J = DBLANK(NY);                                                      00000610
     DO K=1 TO J;                                                         00000620
```

```
    PUT FILE(SYSUT4) EDIT(THCK(K,1)) (COL(1),A(3));                    00000630
    DO L=2 TO I;                                                       00000640
      PUT FILE(SYSUT4) EDIT(THCK(K,L)) (A(3));                         00000650
      IF (MOD(L,26)=0) THEN PUT FILE(SYSUT4) SKIP;                     00000660
    END;                                                               00000670
  END;                                                                 00000680
END;                                                                   00000690
PUT FILE(SYSUT4) EDIT(INPT_WT,FACT_WT)                                 00000700
                 (COL(1),A(1),A(10));                                  00000710
IF INPT_WT ¬= 0 THEN DO;                                               00000720
  I = DBLANK(NX);                                                      00000730
  J = DBLANK(NY);                                                      00000740
  DO K=1 TO J;                                                         00000750
    PUT FILE(SYSUT4) EDIT(WT(K,1)) (COL(1),A(4));                      00000760
    DO L=2 TO I;                                                       00000770
      PUT FILE(SYSUT4) (WT(K,L)) (A(4));                               00000780
    END;                                                               00000790
  END;                                                                 00000800
END;                                                                   00000810
PUT FILE(SYSUT4) EDIT(INPT_RECH,FACT_RECH)                             00000820
                 (COL(1),A(1),A(10));                                  00000830
IF INPT_RECH ¬= 0 THEN DO;                                             00000840
  I = DBLANK(NX);                                                      00000850
  J = DBLANK(NY);                                                      00000860
  DO K=1 TO J;                                                         00000870
    PUT FILE(SYSUT4) EDIT(RECH(K,1)) (COL(1),A(4));                    00000880
    DO L=2 TO I;                                                       00000890
      PUT FILE(SYSUT4) EDIT(RECH(K,L)) (A(4));                         00000900
    END;                                                               00000910
  END;                                                                 00000920
END;                                                                   00000930
PUT FILE(SYSUT4) EDIT(INPT_NODEID,FACT_NODEID)                         00000940
                 (COL(1),A(1),A(10));                                  00000950
IF INPT_NODEID ¬= 0 THEN DO;                                           00000960
  I = DBLANK(NX);                                                      00000970
  J = DBLANK(NY);                                                      00000980
  DO K=1 TO J;                                                         00000990
    PUT FILE(SYSUT4) EDIT(NODEID(K,1)) (COL(1),A(1));                  00001000
    DO L=2 TO I;                                                       00001010
      PUT FILE(SYSUT4) EDIT(NODEID(K,L)) (A(1));                       00001020
    END;                                                               00001030
  END;                                                                 00001040
END;                                                                   00001050
COUNT = 0;                                                             00001060
TEMP_NUM1 = DBLANK(NCODES);                                            00001070
DO WHILE(COUNT < TEMP_NUM1);                                           00001080
  COUNT = COUNT + 1;                                                   00001090
  PUT FILE(SYSUT4) EDIT(ICODE(COUNT),FCTR1(COUNT),FCTR2(COUNT),        00001100
                    FCTR3(COUNT),OVERRD(COUNT))                        00001110
                   (COL(1),A(2),3(A(10)),A(2));                        00001120
END;                                                                   00001130
PUT FILE(SYSUT4) EDIT(INPT_CONC,FACT_CONC)                             00001140
                 (COL(1),A(1),A(10));                                  00001150
IF INPT_CONC ¬= 0 THEN DO;                                             00001160
  I = DBLANK(NX);                                                      00001170
  J = DBLANK(NY);                                                      00001180
  DO K=1 TO J;                                                         00001190
    PUT FILE(SYSUT4) EDIT(CONC(K,1)) (COL(1),A(4));                    00001200
    DO L=2 TO I;                                                       00001210
      PUT FILE(SYSUT4) EDIT(CONC(K,L)) (A(4));                         00001220
    END;                                                               00001230
  END;                                                                 00001240
END;                                                                   00001250
COUNT = 1 ;                                                            00001260
TEMP_NUM1 = DBLANK(NPMP);                                              00001270
DO WHILE(COUNT < TEMP_NUM1);                                           00001280
```

```
    COUNT = COUNT + 1;                                                    00001290
    PUT FILE(SYSUT4) EDIT(ICHK(COUNT-1)) (COL(1),A(1));                   00001300
    IF ICHK(COUNT-1) = 1 THEN DO;                                         00001310
      PUT FILE(SYSUT4) EDIT(NTIM(COUNT),NPNT(COUNT),NITP(COUNT),          00001320
                        ITMAX(COUNT),                                     00001330
                        NREC(COUNT),NPNTMV(COUNT),NPNTVL(COUNT),          00001340
                        NPNTD(COUNT),NPDELC(COUNT),NPNCHV(COUNT),         00001350
                        PINT(COUNT),TIMX(COUNT),TINIT(COUNT))             00001360
                       (COL(1),10(A(4)),3(A(5)));                         00001370
      COUNT1 = 0;                                                         00001380
      TEMP_NUM2 = DBLANK(NREC(COUNT));                                    00001390
      DO WHILE(COUNT1 < NREC(COUNT));                                     00001400
        COUNT1 = COUNT1 + 1;                                              00001410
        PUT FILE(SYSUT4) EDIT(IX(COUNT,COUNT1),IY(COUNT,COUNT1),          00001420
                         REC(COUNT,COUNT1),CNREC(COUNT,COUNT1))           00001430
                        (COL(1),2(A(2)),2(A(8)));                         00001440
      END;                                                                00001450
    END;                                                                  00001460
  END;                                                                    00001470
  CLOSE FILE(SYSUT4);                                                     00001480
END;                                                                      00001490
```

APPENDIX II

DEFINITION OF SELECTED PL/1 PROGRAM VARIABLES

ANSWER	Contains identifier, ANS; except in GTJCL and EDJCL, then receives the results from INPUT.
ANSWER1	Character variable that receives the results from INPUT.
C_FLAG	Indicates a MATRXED command was received.
CHARACTER	Character variable that contains identifier, CHAR.
COL	Represents the columns of F_S_A in DATATYP.
COL_SIZE	Number of columns in MATRIX array in MATRXED.
COMPLETE	Indicates when the data received is accepted in INPUT.
COUNT, COUNT1, COUNTER, COUNTER1	Used as incremental counters for multiple pumping periods, NUMOBS, NREC, NCODES, etc.
CRT	Identifier for terminal to provide input.
CURRENT_ROW	Pointer to row in MATRIX array being modified in MATRXED.
END_COL	Current pointer to last column of MATRIX to be displayed in MATRXED.
END_ROW	Current pointer to last row of MATRIX to be displayed in MATRXED.
FLAG	Indicates if entry to INPUT occurred at the external entry point, INPUTR.
FMT_SIZE	Length of each element of MATRIX array in MATRXED.
INFO_TYPE,TYPE, TEMP_TYPE,CHAR_TYP	Contains variable identification characteristics.
INTEGER	Character variable that contains the identifier, INT.
LEN	Contains maximum length for response in INPUT.
LEVEL	Represents rows of F_S_A in DATATYP routine.
LINE,STRING, OUT_LINE, IN_LINE	Used in utility routines to receive data passed to the routines.
LOWER_CASE	Contains lower case alphabetic characters.
LOWER_RANGE, LOW_LIMIT, LOW1_LIMIT	Contains minimum value for response in INPUT.

MATRIX	Two-dimensional character array used in MATRXED.
NC_LMT	Maximum number of NCODES. Set by %REPLACE statement in EXTVAR.
NR_LMT	Maximum number of recharges and injection wells. Set by %REPLACE statement in EXTVAR.
NUMBER	Character variable that contains the identifier, NUM; except in MATRXED, then a temporary character variable.
NUMBER_OF_FIELDS	Number of columns to display at a time in MATRXED.
NUMBER1, NUMBER2	Used to translate character data to numeric data.
NX_LMT	Maximum number of nodes in X direction. Set by %REPLACE statement in EXTVAR.
NY_LMT	Maximum number of nodes in Y direction. Set by %REPLACE statement in EXTVAR.
OBS_LMT	Maximum number of nodes in observation wells. Set by %REPLACE statement in EXTVAR.
OLDNUM	Used in EDVAR when number of pumping periods, NREC, NUMOBS, NCODES are changed.
PMP	Contains character value for pumping period being modified in EDVAR.
PMP_LMT	Maximum number of pumping periods. Set by %REPLACE statement in EXTVAR.
REAL	Character variable that contains the identifier, REAL.
REPLY	Receives value from PARMGT.
ROW_SIZE	Number of rows in MATRIX array in MATRXED.
SCREEN	Identifier for terminal to receive output.
SKIN	Substring returned to MATRXED by PEAL.
START_COL	Current pointer to first column of MATRIX to be displayed in MATRXED.
START_ROW	Current pointer to first row of MATRIX to be displayed in MATRXED.
STR	Contains blanks, used when forcing data to the proper format size.
SYSUT4	File identifier for input data set being developed.

TEMPC	Temporary storage for character data.
TEMPCC	Temporary that contains old character data when pumping periods, NREC, NUMOBS, NCODES are changed.
TEMPN	Temporary storage for numeric data.
TEMP_NUM	Contains integer value for NY in GTMATRX and EDMATRX; otherwise numeric value of data read by INPUT.
TEMP_NUM1	Contains integer value for NX in GTMATRX and EDMATRX; otherwise numeric value of data read by INPUT.
TEMP_NUM2	Integer counter.
TEMPSTR	Used in DATATYP routine to contain string returned from the builtin TRANSLATE routine.
TRANSSTR	Used in DATATYP routine as pattern for use in the builtin TRANSLATE routine.
UPPER_CASE	Contains upper case alphabetic characters.
UPPER_RANGE, UP_LIMIT,UP1_LIMIT	Contains maximum value for response in INPUT.
VAR,VAR1	Receives character data read by INPUT.
VAR_INFO	Character array that contains messages to display on screen.
VERIFY	Integer flag for Verify option.

APPENDIX III

DATA INPUT FORMATS

Card Image	Column	Format	Variable	Definition
1	1-80	10A8	TITLE	Description of problem
2	1- 4	I4	NTIM	Maximum number of time steps in a pumping period (limit=100)*.
	5- 8	I4	NPMP	Number of pumping periods. Note that if NPMP>1, then data set 10 must be completed. (limit=50)*.
	9-12	I4	NX	Number of nodes in x direction (limit=60)*.
	13-16	I4	NY	Number of nodes in y direction (limit=60)*.
	17-20	I4	NPMAX	Maximum number of particles (limit=9850)*.
	21-24	I4	NPNT	Time-step interval for printing hydraulic and chemical output data.
	25-28	I4	NITP	Number of iteration parameters (usually 4<=NITP<=7).
	29-32	I4	NUMOBS	Number of observation points to be specified in a following data set (limit=5)*.
	33-36	I4	ITMAX	Maximum allowable number of iterations in ADIP or SIP (usually 100 <=ITMAX<=200).
	37-40	I4	NREC	Number of pumping or injection wells to be specified in a following data set (limit=50)*.
	41-44	I4	NPTPND	Initial number of particles per node (options=4,5,8,9).
	45-48	I4	NCODES	Number of node identification codes to be specified in a following data set (limit=10)*.

Card Image	Column	Format	Variable	Definition
	49-52	I4	NPNTMV	Particle movement interval (IMOV) for printing chemical output data. (Specify 0 to print only at end of time steps).
	53-56	I4	NPNTVL	Option for printing computed velocities (0=do not print; 1=print for first time step; 2=print for all time steps).
	57-60	I4	NPNTD	Option for printing computed dispersion equation coefficients (option definition same as for NPNTVL).
	61-64	I4	NPDELC	Option for printing computed changes in concentration (0=do not print; 1=print).
	65-68	I4	NPNCHV	Option to punch velocity data (option definition same as for NPNTVL). When specified, program will punch on unit 7 the velocities at nodes.
3	1- 5	G5.0	PINT	Pumping period in years.
	6-10	G5.0	TOL	Convergence criteria in ADIP (usually TOL<=0.01).
	11-15	G5.0	POROS	Effective porosity.
	16-20	G5.0	BETA	Characteristic length, in feet (=longitudinal dispersivity).
	21-25	G5.0	S	Storage coefficient (set S=0 for steady flow problems).
	26-30	G5.0	TIMX	Time increment multiplier for transient flow problems. TIMX is disregarded if S≠0.
	31-35	G5.0	TINIT	Size of initial time step in seconds. TINIT is disregarded if S=0.

Card Image	Column	Format	Variable	Definition
	36-40	G5.0	XDEL	Width of finite-difference cell in x direction, in feet.
	41-45	G5.0	YDEL	Width in finite-difference cell in y direction, in feet.
	46-50	G5.0	DLTRAT	Ratio of transverse to longitudinal dispersivity.
	51-55	G5.0	CELDIS	Maximum cell distance per particle move (value between 0 and 1.0).
	56-60	G5.0	ANFCTR	Ratio of T(yy) to T(xx).
4	1- 5	I5	NDECAY	If NDECAY=1 decay will be simulated, if NDECAY=0 decay will not be simulated.
	6-10	I5	NSORB	If NSORB=1 sorption will be simulated using a linear solver, if NSORB=2 sorption will be simulated using the Langmuir solver, if NSORB=3 sorption will be simulated using the Freundlich solver, if NSORB=0 sorption will not be simulated.
	11-20	F10.0	DCYTIM	If NDECAY=1, DCYTIM=decay half life, in years. If NDECAY=0, DCYTIM=0.
	21-30	F10.0	DENROCK	If NSORB=1,2, or 3, DENROCK=density of aquifer in gm/cm3. If NSORB=0, DENROC=0.
	31-40	F10.0	SORBQR	If NSORB=1,2, OR 3, SORBQR is the value of Kd, in ml/g. If NSORB=0, SORBQR=0.
	41-50	F10.0	SORBST	If NSORB=2, SORBST is the sorbtion saturation value for the Langmuir solver. If NSORB=0, 1, or 3, SORBST=0.

Card Image	Column	Format	Variable	Definition
	51-60	F10.0	SORBAL	If NSORB=3, SORBAL is the value of alpha for the Freundlich isotherm, if NSORB=0,1, or 2, SORBAL=0.
5	1- 4	I4	ISOLV	ISOLV=0 for ADIP algorithm and ISOLV=1 for SIP algorithm.
	5- 8	I4	IHEAD	IHEAD=0 for solute transport simulation. IHEAD=1 for only head simulation.
	9-12	I4	FCON	FCON=0 for confined aquifer simulation. FCON=1 for unconfined aquifer simulation.
	13-16	I4	TP	TP=1 for hydraulic conductivity input. TP=0 for transmissivity input.
	17-20	I4	BTM	BTM=1 for bottom elevation input (unconfined aquifer simulation). BTM=0 for saturated thickness input. (BTM=0 if FCON=0.)

See footnotes at end of table.

Data set	Number of card images	Format	Variable	Definition
1	Value of NUMOBS (limit=5)*	2I2	IXOBS,IYOBS	x and y coordinates of observation points. This data set is eliminated if NUMOBS is specified as =0.
2	Value of NREC (limit=50)*	2I2, 2G8.2	IX,IY,REC, CNRECH	x and y coordinates of pumping (+) or injection (-) wells, rate in ft 3/s, and if an injection well, the concentration of injected water. This data set is eliminated if NREC=0.
3	a.1	I1, G10.0	INPT_UPRM, FACT_VPRM	Parameter card for transmissivity or hydraulic conductivity. If TP=0, array for temporary storage of transmissivity data, in ft 2/s. If TP=1, array for temporary storage of hydraulic conductivity data, in ft/s. For an anisotropic aquifer, read in values of T(xx) and the program will adjust for anisotrophy by multiplying T(yy) by ANFCTR.
	b.Value of NY times the ceiling of NX/20 (limit=180)*	20G4.1	VPRM	

Data set	Number of card images	Format	Variable	Definition
4	a.1	I1, G10.0	INPT_THCK, FACT_THCK	
	b.Value of NY times the ceiling of NX/26 (limit=180)*	26G3.0	THCK	Parameter card for THICK. Saturated thickness or bottom elevation of aquifer, in feet. If BTM=0, array for storage of saturated thickness. If BTM=1, array for temporary storage of bottom elevation.
5	a.1	I1, G10.0	INPT_WT, FACT_WT	
	b.Value of NY times the ceiling of NX/20 (limit=180)*	20G4.0	WT	Parameter card for WT. Initial water-table or potentiometric elevation, or constant head in stream or source bed.
6	a.1	I1, G10.0	INPT_RECH, FACT-RECH	
	b.Value of NY times the ceiling of NX/20 (limit=180)*	20G4.1	RECH	Parameter card for RECH. Diffuse recharge (-) or discharge (+), in ft/s.
7	a.1	I1, G10.0	INPT_NODEID FACT_NODEID	
	b.Value of NY (limit=60)*	60I1	NODEID	Parameter card for NODEID. Node identification matrix (used to define constant-head nodes or other boundary conditions and stresses).

Data set	Number of card images	Format	Variable	Definition
8	Value of NCODES (limit=10)*	I2, 3G10.2 I2	ICODE,FCTR1, FCTR2,FCTR3, OVERRD	Instructions for using NODEID array. When NODEID=ICODE, program sets leakance=FCTR1, CNRECH=FCTR2, and if OVERRD is nonzero, RECH=FCTR3. Set OVERRD=0 to preserve values of RECH specified in data set 5.
9	a.1 b.Value of NY times the ceiling of NX/20 (limit=180)*	I1, G10.0 20G4.0	INPT_CONC FACT_CONC CONC	Parameter card for CONC. Initial concentration in aquifer.
10				This data set allows time step parameters, print options, and pumpage data to be revised for each pumping period of the simulation. Data set 10 is only used if NPMP >1. The sequence of cards in data set 10 must be repeated (NPMP -1) times (that is, data set 10 is required for each pumping period after the first).

Data set	Number of card images	Format	Variable	Definition
	a.1	I1	ICHK	Parameter to check whether any revisions are desired. Set ICHK=1 if data are to be revised, and then complete data set 10b and c. Set ICHK=0 if data are not to be revised for the next pumping period, and skip rest of data set 10.
	b.1	10I4, 3G5.0	NTIM,NPNT, NITP,ITMAX, NREC,NPNTMV, NPNTVL,NPNTD, NPNDELC, NPNCHV,PINT, TIMX,TINIT	Thirteen parameters to be revised for next pumping period; the parameters were previously defined in the description of data cards 2 and 3. Only include this card if ICHK=1 in previous part a.
	c.Value of NREC ++ (limit=50)*	2I2, 2G8.2	IX,IY,REC, CNRECH	Revision of previously defined data set 2. Include part c only if ICHK=1 in previous part a and if NREC>0 in previous part b.

*These limits can be modified if necessary by changing the corresponding array dimensions in the COMMON statements of the program.

++Any wells set during one pumping period continue pumping and injecting during subsequent pumping periods unless the rates are explicitly reset in those subsequent periods.

The parameter card must be the first card of the indicated data sets. It is used to specify whether the parameter is constant and uniform, and can be defined by one value, or whether it varies in space and must be defined at each node. If INPT_var, the data set has a constant value, which is defined by FACT_var. If INPT_var,the data set is read from cards as described by part b. Then FACT_var is a multiplication factor for the values read in the data set.

APPENDIX IV

UNITS SUMMARY TABLE

VARIABLE	STANDARD	EXPECTED	CONVERSION
NTIM	-	(limit=100)+	-
NPMP	-	-	-
NX	-	(limit=60)+	-
NY	-	(limit=60)+	-
NPMAX	-	(limit=9850)+	-
NPNT	-	-	-
NITP	-	-	-
NUMOBS	-	(limit=5)+	-
ITMAX	-	-	-
NREC	-	-	-
NPTPND	-	-	-
NCODES	-	-	-
NPNTMV	-	-	-
NPNTVL	-	-	-
NPNTD	-	-	-
NPDELC	-	-	-
NPNCHV	-	-	-
PINT	yrs	yrs	-
TOL	-	-	-
POROS	-	-	-
BETA	-	-	-
S	percent	percent	-
TIMX	-	-	-
TINIT	sec	sec	-
XDEL	ft	ft	-
YDEL	ft	ft	-
DLTRAT	ratio	ratio	-
CELDIS	-	betw 0 & 1.0	-
ANFCTR	ratio	ratio	-
DCYTIM	yrs	yrs	-
DENROCK	gm/cm3	gm/cm3	-
SORBOR	ml/g	ml/g	-
SORBST	-	-	-
SORBAL	-	-	-
ISOLV	-	-	-
IHEAD	-	-	-
FCON	-	-	-
TP	-	-	-
IXOBS	-	-	-
IYOBS	-	-	-
IX	-	-	-
IY	-	-	-
REC	af/y	ft3/s	*.001400463
CNRECH	mg/l	mg/l	-
VPRM			
TRANS	gpd/ft	ft2/s	*1.54723 E-6
or PERM	gpd/ft2	ft/s	*1.54723 E-6
THCK	ft	ft	-
WT	ft	ft	-

VARIABLE	STANDARD	EXPECTED	CONVERSION
RECH	in/yr	ft/s	*26.7918 E-10
NODEID	-	-	-
FCTR1	gpd/ft	ft2/s	*1:54723 E-6
FCTR2	mg/l	mg/l	-
FCTR3	in/yr	ft/s	*26.7918 E-10
OVERRD	-	-	-
CONC	mg/l	mg/l	-

+These limits may be modified by changing the corresponding array dimensions in the COMMON statements of the program.

APPENDIX V

INPUT AND SELECTED OUTPUT FOR TEST PROBLEMS

APPENDIX V-A

INPUT AND SELECTED OUTPUT FOR TEST PROBLEM 1

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.LONGIS24.CNTL

//U11834C JOB (?????,TSO-TR-KONI),KONIKOWRUN,
//  TIME=(0,40),CLASS=A,
//  MSGCLASS=X,NOTIFY=*
/*PASSWORD ????
/*JOBPARM ROOM=C
//*
//KONI EXEC PGM=KONI60G,REGION=1500K
//STEPLIB  DD DISP=SHR,DSN=U11236C.KONI.LOAD
//FT06F001 DD DSN=U11834C.LONGIS24.OUTLIST,UNIT=STORAGE,
//         SPACE=(TRK,(50,50)),DISP=(MOD,CATLG),
//            DCB=(RECFM=VBA,LRECL=133,BLKSIZE=7448)
//FT10F001 DD DSN=U11834C.LONGIS24.GRAPH,UNIT=STORAGE,
//         SPACE=(TRK,(50,50)),DISP=(MOD,CATLG),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=7480)
//FT07F001 DD SYSOUT=B
//FT05F001 DD *
BABYLON,LEVELB,CHLORIDE                                                    0000000
   3    1   18  313620    1    7    3 100    4    4    5    0    0    0    1    0
   10   .01   .25    40.0005    1.1.1E8   500   500    .2    .5    1
    0    0          0          0.          0.          0.          0.
   0    0    1    0    0
 8 4
1016
1026
 829    .0724      0.0
 929    .0724      0.0
1029    .0724      0.0
1129    .0724      0.0
0     0.1447
0        25.
1         1.0
   0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0
   046.646.646.646.646.646.646.646.646.646.646.646.646.646.646.646.6    0
   045.945.945.945.945.945.945.945.945.945.945.945.945.945.945.945.9    0
   045.345.345.345.345.345.345.345.345.345.345.345.345.345.345.345.3    0
   044.544.544.544.544.544.544.544.544.544.544.544.544.544.544.544.5    0
   043.243.243.243.243.243.243.243.243.243.243.243.243.243.243.243.2    0
   041.841.841.841.841.841.841.841.841.841.841.841.841.841.841.841.8    0
   041.441.441.441.441.441.441.441.441.441.441.441.441.441.441.441.4    0
   040.540.540.540.540.540.540.540.540.540.540.540.540.540.540.540.5    0
   039.439.439.439.439.439.439.439.439.439.439.439.439.439.439.439.4    0
   038.738.738.738.738.738.738.738.738.738.738.738.738.738.738.738.7    0
   038.038.038.038.038.038.038.038.038.038.038.038.038.038.038.038.0    0
   036.736.736.736.736.736.736.736.736.736.736.736.736.736.736.736.7    0
   035.735.735.735.735.735.735.735.735.735.735.735.735.735.735.735.7    0
   034.934.934.934.934.934.934.934.934.934.934.934.934.934.934.934.9    0
   033.733.733.733.733.733.733.733.733.733.733.733.733.733.733.733.7    0
   032.832.832.832.832.832.832.832.832.832.832.832.832.832.832.832.8    0
   031.831.831.831.831.831.831.831.831.831.831.831.831.831.831.831.8    0
   030.730.730.730.730.730.730.730.730.730.730.730.730.730.730.730.7    0
   029.729.729.729.729.729.729.729.729.729.729.729.729.729.729.729.7    0
   028.628.628.628.628.628.628.628.628.628.628.628.628.628.628.628.6    0
   027.927.927.927.927.927.927.927.927.927.927.927.927.927.927.927.9    0
   027.327.327.327.327.327.327.327.327.327.327.327.327.327.327.327.3    0
   026.426.426.426.426.426.426.426.426.426.426.426.426.426.426.426.4    0
   025.425.425.425.425.425.425.425.425.425.425.425.425.425.425.425.4    0
   024.824.824.824.824.824.824.824.824.824.824.824.824.824.824.824.8    0
   023.823.823.823.823.823.823.823.823.823.823.823.823.823.823.823.8    0
   022.822.822.822.822.822.822.822.822.822.822.822.822.822.822.822.8    0
   022.322.322.322.322.322.322.322.322.322.322.322.322.322.322.322.3    0
   021.621.621.621.621.621.621.621.621.621.621.621.621.621.621.621.6    0
   0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0
```

```
0     0.0E00
1   .     1.
000000000000000000
022222222222222220
020000031450000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
020000000000000020
022222222222222220
000000000000000000
 2         1.     0          0. 0
 1      .0724  240.0          0. 0
 3      .0724  400.0          0. 0
 4      .0724  350.0          0. 0
 5      .0724  320.0          0. 0
0        0.0
```

```
U.S.G.S. METHOD-OF-CHARACTERISTICS MODEL FOR SOLUTE TRANSPORT IN GROUND WATER

BABYLON,LEVEL8,CHLORIDE                                              0000000

                    I N P U T     D A T A

                      GRID DESCRIPTORS

          NX     (NUMBER OF COLUMNS)   :      18
          NY     (NUMBER OF ROWS)      :      31
          XDEL   (X-DISTANCE IN FEET)  :   500.0
          YDEL   (Y-DISTANCE IN FEET)  :   500.0

                      TIME  PARAMETERS

          NTIM   (MAX. NO. OF TIME STEPS)         :        3
          NPMP   (NO. OF PUMPING PERIODS)         :        1
          PINT   (PUMPING PERIOD IN YEARS)        :     10.000
          TIMX   (TIME INCREMENT MULTIPLIER)      :      1.00
          TINIT  (INITIAL TIME STEP IN SEC.)      :  0.11E+09

            HYDROLOGIC AND CHEMICAL PARAMETERS

          S       (STORAGE COEFFICIENT)          :      0.000500
          POROS   (EFFECTIVE POROSITY)           :      0.25
          BETA    (CHARACTERISTIC LENGTH)        :     40.0
          DLTRAT  (RATIO OF TRANSVERSE TO
                   LONGITUDINAL DISPERSIVITY)    :      0.20
          ANFCTR  (RATIO OF T-YY TO T-XX)        :      1.000000

***NON-DECAYING SPECIES***

***NON-SORBING SPECIES***

***ADIP USED***

***UNCONFINED AQUIFER***

                    EXECUTION PARAMETERS

          NITP   (NO. OF ITERATION PARAMETERS) :     7
          TOL    (CONVERGENCE CRITERIA - ADIP) :     0.0100
          ITMAX  (MAX.NO.OF ITERATIONS - ADIP) :   100
          CELDIS (MAX.CELL DISTANCE PER MOVE
                  OF PARTICLES - M.O.C.)       :     0.500
          NPMAX  (MAX. NO. OF PARTICLES)       :  3820
          NPTPND (NO. PARTICLES PER NODE)      :     4

                      PROGRAM OPTIONS

          NPNT   (TIME STEP INTERVAL FOR
                  COMPLETE PRINTOUT)           :      1
          NPNTMV (MOVE INTERVAL FOR CHEM.
                  CONCENTRATION PRINTOUT)      :      0
          NPNTVL (PRINT OPTION-VELOCITY
                  0=NO; 1=FIRST TIME STEP;
                  2=ALL TIME STEPS)            :      0
          NPNTD  (PRINT OPTION-DISP.COEF
                  0=NO; 1=FIRST TIME STEP,
                  2=ALL TIME STEPS)            :      0
          NUMOBS (NO. OF OBSERVATION WELLS
                  FOR HYDROGRAPH PRINTOUT)     :      3
          NREC   (NO. OF PUMPING WELLS)        :      4

          NCODES (FOR NODE IDENT.)             :      5
          NPNCHV (PUNCH VELOCITIES)            :      0
          NPDELC (PRINT OPT.-CONC. CHANGE)     :      1
TIME INTERVALS (IN SECONDS)
   0.11000E+09 0.11000E+09 0.11000E+09 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

         LOCATION OF OBSERVATION WELLS

               NO.      X      Y

                1       6      4
                2      10     18
                3      10     28

         LOCATION  OF  PUMPING  WELLS

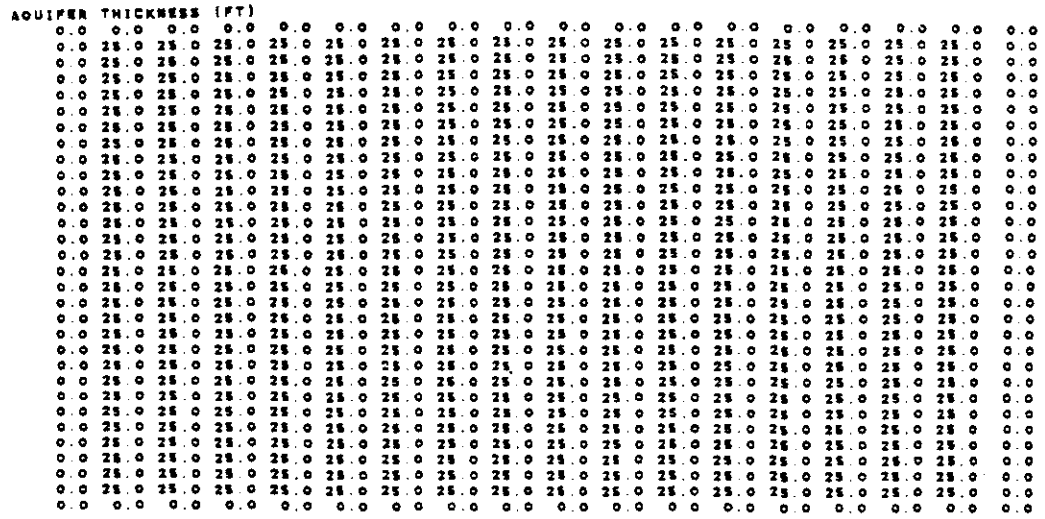
         X   Y    RATE(IN CFS)   CONC.

         8  29    0.724E-01       0.00
         9  29    0.724E-01       0.00
        10  29    0.724E-01       0.00
        11  29    0.724E-01       0.00

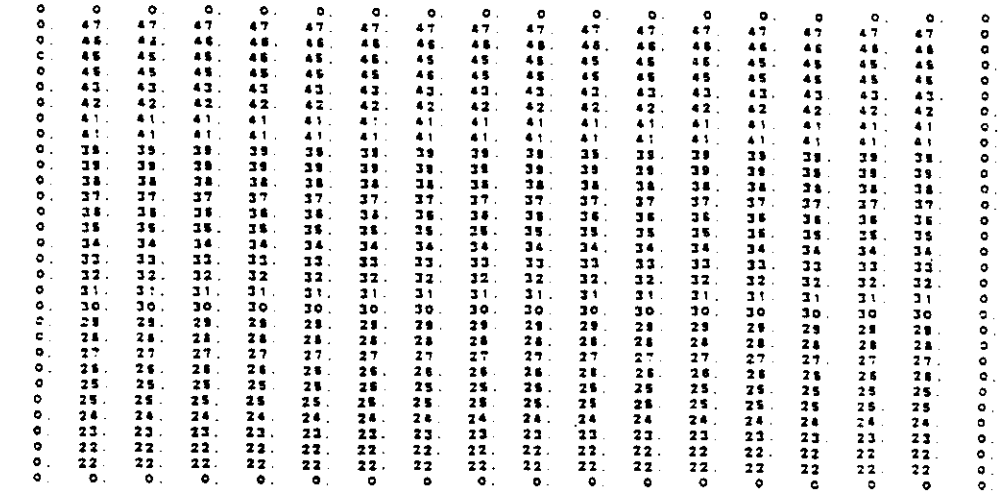
         AREA OF ONE CELL :   2.5000E+05

         X-Y SPACING
             500.00
             500.00
```

AQUIFER THICKNESS (FT)



WATER TABLE



TRANSMISSIVITY MAP (FT*FT/SEC)

0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		

PERMEABILTY MAP (FT/SEC)

0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		

NO. OF FINITE-DIFFERENCE CELLS IN AQUIFER = 484

AREA OF AQUIFER IN MODEL = 1.18000E+06 SQ. FT.

NZCRIT (MAX. NO. OF CELLS THAT CAN BE VOID OF
PARTICLES; IF EXCEEDED, PARTICLES ARE REGENERATED) = 5

DIFFUSE RECHARGE AND DISCHARGE (FT/SEC)

```
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
```

NODE IDENTIFICATION MAP

```
 0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
 0  2  2  2  2  2  2  2  2  2  2  2  2  2  2  2  2  0
 0  2  0  0  0  0  0  3  1  4  5  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  0  0  0  0  0  0  0  0  0  0  0  0  0  0  2  0
 0  2  2  2  2  2  2  2  2  2  2  2  2  2  2  2  2  0
 0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
```

NO. OF NODE IDENT. CODES SPECIFIED = 5

THE FOLLOWING ASSIGNMENTS HAVE BEEN MADE:

CODE NO.	LEAKANCE	SOURCE CONC.	RECHARGE
2	1.000E+00	0.000E+00	
1	7.240E-02	2.400E+02	
3	7.240E-02	4.000E+02	
4	7.240E-02	3.500E+02	
5	7.240E-02	3.200E+02	

VERTICAL PERMEABILITY/THICKNESS (FT/(FT*SEC))

0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.24E-02	7.24E-02	7.24E-02
7.24E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	0.00E+00		
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		

```
-EAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS =      0
       TIME(SECONDS) =  0.00000E+00
       TIME(DAYS)    =  0.00000E+00
       TIME(YEARS)   =  0.00000E+00

 0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000
 0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000
 0.0000000  46.8000000  46.8000000  46.8000000  46.8000000  46.8000000  46.8000000  46.8000000  46.8000000  46.8000000
46.8000000  46.8000000  46.8000000  46.8000000  46.8000000  46.8000000  46.8000000   0.0000000
 0.0000000  45.9000000  45.9000000  45.9000000  45.9000000  45.9000000  45.9000000  45.9000000  45.9000000  45.9000000
45.9000000  45.9000000  45.9000000  45.9000000  45.9000000  45.9000000  45.9000000   0.0000000
 0.0000000  45.3000000  45.3000000  45.3000000  45.3000000  45.3000000  45.3000000  45.3000000  45.3000000  45.3000000
45.3000000  45.3000000  45.3000000  45.3000000  45.3000000  45.3000000  45.3000000   0.0000000
 0.0000000  44.5000000  44.5000000  44.5000000  44.5000000  44.5000000  44.5000000  44.5000000  44.5000000  44.5000000
44.5000000  44.5000000  44.5000000  44.5000000  44.5000000  44.5000000  44.5000000   0.0000000
 0.0000000  43.2000000  43.2000000  43.2000000  43.2000000  43.2000000  43.2000000  43.2000000  43.2000000  43.2000000
43.2000000  43.2000000  43.2000000  43.2000000  43.2000000  43.2000000  43.2000000   0.0000000
 0.0000000  41.8000000  41.8000000  41.8000000  41.8000000  41.8000000  41.8000000  41.8000000  41.8000000  41.8000000
41.8000000  41.8000000  41.8000000  41.8000000  41.8000000  41.8000000  41.8000000   0.0000000
 0.0000000  41.4000000  41.4000000  41.4000000  41.4000000  41.4000000  41.4000000  41.4000000  41.4000000  41.4000000
41.4000000  41.4000000  41.4000000  41.4000000  41.4000000  41.4000000  41.4000000   0.0000000
 0.0000000  40.5000000  40.5000000  40.5000000  40.5000000  40.5000000  40.5000000  40.5000000  40.5000000  40.5000000
40.5000000  40.5000000  40.5000000  40.5000000  40.5000000  40.5000000  40.5000000   0.0000000
 0.0000000  39.4000000  39.4000000  39.4000000  39.4000000  39.4000000  39.4000000  39.4000000  39.4000000  39.4000000
39.4000000  39.4000000  39.4000000  39.4000000  39.4000000  39.4000000  39.4000000   0.0000000
 0.0000000  38.7000000  38.7000000  38.7000000  38.7000000  38.7000000  38.7000000  38.7000000  38.7000000  38.7000000
38.7000000  38.7000000  38.7000000  38.7000000  38.7000000  38.7000000  38.7000000   0.0000000
 0.0000000  38.0000000  38.0000000  38.0000000  38.0000000  38.0000000  38.0000000  38.0000000  38.0000000  38.0000000
38.0000000  38.0000000  38.0000000  38.0000000  38.0000000  38.0000000  38.0000000   0.0000000
 0.0000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000
35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000   0.0000000
 0.0000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000
35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000   0.0000000

 0.0000000  34.9000000  34.9000000  34.9000000  34.9000000  34.9000000  34.9000000  34.9000000  34.9000000  34.9000000
34.9000000  34.9000000  34.9000000  34.9000000  34.9000000  34.9000000  34.9000000   0.0000000
 0.0000000  33.7000000  33.7000000  33.7000000  33.7000000  33.7000000  33.7000000  33.7000000  33.7000000  33.7000000
33.7000000  33.7000000  33.7000000  33.7000000  33.7000000  33.7000000  33.7000000   0.0000000
 0.0000000  32.8000000  32.8000000  32.8000000  32.8000000  32.8000000  32.8000000  32.8000000  32.8000000  32.8000000
32.8000000  32.8000000  32.8000000  32.8000000  32.8000000  32.8000000  32.8000000   0.0000000
 0.0000000  31.8000000  31.8000000  31.8000000  31.8000000  31.8000000  31.8000000  31.8000000  31.8000000  31.8000000
31.8000000  31.8000000  31.8000000  31.8000000  31.8000000  31.8000000  31.8000000   0.0000000
 0.0000000  30.7000000  30.7000000  30.7000000  30.7000000  30.7000000  30.7000000  30.7000000  30.7000000  30.7000000
30.7000000  30.7000000  30.7000000  30.7000000  30.7000000  30.7000000  30.7000000   0.0000000
 0.0000000  29.7000000  29.7000000  29.7000000  29.7000000  29.7000000  29.7000000  29.7000000  29.7000000  29.7000000
29.7000000  29.7000000  29.7000000  29.7000000  29.7000000  29.7000000  29.7000000   0.0000000
 0.0000000  28.6000000  28.6000000  28.6000000  28.6000000  28.6000000  28.6000000  28.6000000  28.6000000  28.6000000
28.6000000  28.6000000  28.6000000  28.6000000  28.6000000  28.6000000  28.6000000   0.0000000
 0.0000000  27.9000000  27.9000000  27.9000000  27.9000000  27.9000000  27.9000000  27.9000000  27.9000000  27.9000000
27.9000000  27.9000000  27.9000000  27.9000000  27.9000000  27.9000000  27.9000000   0.0000000
 0.0000000  27.3000000  27.3000000  27.3000000  27.3000000  27.3000000  27.3000000  27.3000000  27.3000000  27.3000000
27.3000000  27.3000000  27.3000000  27.3000000  27.3000000  27.3000000  27.3000000   0.0000000
 0.0000000  26.4000000  26.4000000  26.4000000  26.4000000  26.4000000  26.4000000  26.4000000  26.4000000  26.4000000
26.4000000  26.4000000  26.4000000  26.4000000  26.4000000  26.4000000  26.4000000   0.0000000
 0.0000000  25.4000000  25.4000000  25.4000000  25.4000000  25.4000000  25.4000000  25.4000000  25.4000000  25.4000000
25.4000000  25.4000000  25.4000000  25.4000000  25.4000000  25.4000000  25.4000000   0.0000000
 0.0000000  24.8000000  24.8000000  24.8000000  24.8000000  24.8000000  24.8000000  24.8000000  24.8000000  24.8000000
24.8000000  24.8000000  24.8000000  24.8000000  24.8000000  24.8000000  24.8000000   0.0000000
 0.0000000  23.8000000  23.8000000  23.8000000  23.8000000  23.8000000  23.8000000  23.8000000  23.8000000  23.8000000
23.8000000  23.8000000  23.8000000  23.8000000  23.8000000  23.8000000  23.8000000   0.0000000
```

0.0000000	22.8000000	22.8000000	22.8000000	22.8000000	22.8000000	22.8000000	22.8000000	22.8000000	22.8000000
22.8000000	22.8000000	22.8000000	22.8000000	22.8000000	22.8000000	22.8000000	0.0000000		
0.0000000	22.3000000	22.3000000	22.3000000	22.3000000	22.3000000	22.3000000	22.3000000	22.3000000	22.3000000
22.3000000	22.3000000	22.3000000	22.3000000	22.3000000	22.3000000	22.3000000	0.0000000		
0.0000000	21.8000000	21.8000000	21.8000000	21.8000000	21.8000000	21.8000000	21.8000000	21.8000000	21.8000000
21.8000000	21.8000000	21.8000000	21.8000000	21.8000000	21.8000000	21.8000000	0.0000000		
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		

ITERATION PARAMETERS

2.568E-03	6.934E-03	1.875E-02	5.067E-02	1.368E-01	3.700E-01	1.000E+00	0.000E+00	0.000E+00	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

CONCENTRATION

```
NUMBER OF TIME STEPS :      0
      TIME(SECONDS) :  0.00000E+00
  CHEM.TIME(SECONDS) : 0.00000E+00
  CHEM.TIME(DAYS)    : 0.00000E+00
      TIME(YEARS)    : 0.00000E+00
  CHEM.TIME(YEARS)   : 0.00000E+00
 NO. MOVES COMPLETED :      0
```

0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

CONCENTRATION

NUMBER OF TIME STEPS = 0

```
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0

0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
```

N = 1
NUMBER OF ITERATIONS = 5

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 1
TIME(SECONDS) = 1.10000E+08
TIME(DAYS) = 1.27315E+03
TIME(YEARS) = 3.48568E+00

```
0.0000000  0.0000000  0.0000000  0.0000000  0.0000000  0.0000000  0.0000000  0.0000000  0.0000000  0.0000000
0.0000000  0.0000000  0.0000000  0.0000000  0.0000000  0.0000000  0.0000000  0.0000000
0.0000000  46.5999996 46.5999996 46.5999995 46.5999995 46.5999995 46.5999995 46.5999996 46.5999996 46.5999996
46.5999996 46.5999995 46.5999995 46.5999995 46.5999995 46.5999998 46.5999998 0.0000000
0.0000000  45.9000000 45.8445758 45.7972553 45.7717024 45.7684295 45.7980729 45.8899872 45.8999981 45.8999981
45.8899872 45.7980729 45.7684295 45.7717024 45.7972553 45.8445758 45.9000000 0.0000000
0.0000000  45.2999986 45.0815765 44.9725800 44.9217013 44.9054513 44.9170088 44.9502227 44.9801372 44.9801372
44.9502227 44.9170088 44.9054513 44.9217013 44.9725800 45.0815765 45.2999998 0.0000000
0.0000000  44.4999995 44.2098171 44.0888552 44.0374250 44.0171468 44.0183804 44.0259805 44.0312535 44.0312535
44.0259805 44.0183804 44.0171488 44.0374250 44.0888552 44.2098171 44.4999995 0.0000000
0.0000000  43.1999991 43.1885137 43.1404476 43.1208803 43.1093187 43.1054688 43.1068457 43.1083248 43.1083248
43.1068457 43.1054688 43.1093187 43.1208803 43.1404478 43.1885137 43.1999999 0.0000000
0.0000000  41.8000006 42.1138131 42.1857819 42.1950880 42.1916368 42.1883304 42.1870428 42.1869025 42.1869025
42.1870428 42.1883304 42.1916368 42.1950880 42.1857819 42.1138131 41.8000008 0.0000000
```

0.0000000	41.3999997	41.3072858	41.2919053	41.2858036	41.2792211	41.2734853	41.2693627	41.2676308	41.2676308
41.2693627	41.2734853	41.2792211	41.2858036	41.2919053	41.3072858	41.3999997	0.0000000		
0.0000000	40.4999994	40.4195878	40.3907527	40.3745287	40.3626257	40.3540856	40.3483409	40.3457416	40.3457416
40.3483409	40.3540856	40.3626257	40.3745287	40.3907527	40.4195878	40.4999994	0.0000000		
0.0000000	39.4000003	39.4605292	39.4770462	39.4592662	39.4433873	39.4320356	39.4250567	39.4218584	39.4218584
39.4250567	39.4320356	39.4433873	39.4592662	39.4770462	39.4605292	39.4000003	0.0000000		
0.0000000	38.7000000	38.6273551	38.5788548	38.5435194	38.5218458	38.5073757	38.4893369	38.4951673	38.4951673
38.4893369	38.5073757	38.5218458	38.5435194	38.5788548	38.6273551	38.7000000	0.0000000		
0.0000000	37.9999995	37.7526283	37.6598146	37.6187860	37.5827288	37.5776894	37.5898623	37.5862222	37.5862222
37.5898623	37.5776894	37.5827288	37.6187860	37.6598146	37.7526283	37.9999995	0.0000000		
0.0000000	36.7000002	36.7200352	36.6845280	36.6892088	36.6815604	36.8397883	36.8341108	36.8305886	36.8305886
36.8241108	36.8397883	36.6815604	36.6892088	36.6845280	36.7200352	36.7000002	0.0000000		
0.0000000	35.7000001	35.7353847	35.7282461	35.7158765	35.7058888	35.6989465	35.6861734	35.6938325	35.6938325
35.6861734	35.6989465	35.7058888	35.7158765	35.7282461	35.7353847	35.7000001	0.0000000		
0.0000000	34.8999997	34.7939430	34.7672924	34.7599809	34.7578359	34.7560099	34.7558080	34.7558285	34.7558285
34.7558080	34.7560099	34.7578359	34.7599809	34.7672924	34.7939430	34.8999997	0.0000000		
0.0000000	33.7000002	33.7700734	33.7885963	33.7974199	33.8047244	33.8101115	33.8153077	33.8188540	33.8188540
33.8153077	33.8101115	33.8047244	33.7974199	33.7885963	33.7700734	33.7000002	0.0000000		
0.0000000	32.7999999	32.8005773	32.8188315	32.8384031	32.8558047	32.8680094	32.8774115	32.8810700	32.8810700
32.8774115	32.8680094	32.8558047	32.8384031	32.8188315	32.8005773	32.7999999	0.0000000		
0.0000000	31.7999999	31.8128674	31.8471982	31.8814719	31.9084885	31.9294379	31.9433223	31.9492582	31.9492582
31.9433223	31.9294379	31.9084885	31.8814719	31.8471982	31.8128674	31.7999999	0.0000000		
0.0000000	30.7000001	30.8027926	30.8763289	30.9308183	30.9708708	30.9979538	31.0189084	31.0238820	31.0238820
31.0189084	30.9979538	30.9708708	30.9308183	30.8763289	30.8027926	30.7000001	0.0000000		
0.0000000	29.7000000	29.8238001	29.9239824	29.9958264	30.0452869	30.0777441	30.0981834	30.1073854	30.1073854
30.0981834	30.0777441	30.0452869	29.9958264	29.9239824	29.8238001	29.7000000	0.0000000		
0.0000000	28.6000004	28.8857206	29.0011310	29.0820102	29.1345804	29.1687921	29.1900052	29.1987477	29.1987477
29.1900052	29.1687921	29.1345804	29.0820102	29.0011310	28.8857206	28.6000004	0.0000000		
0.0000000	27.9000001	28.0384884	28.1322787	28.1974214	28.2432803	28.2742429	28.2934951	28.3024992	28.3024992
28.2934951	28.2742429	28.2432803	28.1974214	28.1322787	28.0384884	27.9000001	0.0000000		
0.0000000	27.2999998	27.2595781	27.2910845	27.3322207	27.3688847	27.3916909	27.4071107	27.4143950	27.4143950
27.4071107	27.3916909	27.3688847	27.3322207	27.2910845	27.2595781	27.2999998	0.0000000		
0.0000000	26.3999999	26.4088414	26.4400916	26.4730414	26.4998822	26.5179890	26.5285826	26.5333563	26.5333563
26.5285826	26.5179890	26.4998822	26.4730414	26.4400916	26.4088414	26.3999999	0.0000000		
0.0000000	25.4000003	25.5338830	25.5879394	25.6198733	25.6400868	25.6513231	25.6557100	25.6567990	25.6567990
25.6557100	25.6513231	25.6400868	25.6198733	25.5879394	25.5338830	25.4000003	0.0000000		
0.0000000	24.7999997	24.7411008	24.7589831	24.7795942	24.7924787	24.7938542	24.7878076	24.7822371	24.7822371
24.7878076	24.7938542	24.7924787	24.7795942	24.7589831	24.7411008	24.7999997	0.0000000		
0.0000000	23.8000000	23.8712487	23.9208428	23.9475172	23.9538222	23.9415013	23.9171378	23.9015801	23.9015801
23.9171378	23.9415013	23.9538222	23.9475172	23.9208428	23.8712487	23.8000000	0.0000000		
0.0000000	22.8000004	23.0233898	23.1068367	23.1359182	23.1327280	23.1018465	23.0389527	23.0054345	23.0054345
23.0389527	23.1018465	23.1327280	23.1359182	23.1068367	23.0233898	22.8000004	0.0000000		
0.0000000	22.2999999	22.3175833	22.3460182	22.3574584	22.3472789	22.2943202	22.1282447	22.0778147	22.0778147
22.1282447	22.2943202	22.3472789	22.3574584	22.3460182	22.3175833	22.2999999	0.0000000		
0.0000000	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	21.8000003	21.8000003	21.8000003
21.8000003	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	0.0000000		
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 1
TIME(SECONDS) = 1.100000E+08
TIME(DAYS) = 1.273158E+03
TIME(YEARS) = 3.485688E+00

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	0
0	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	0
0	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	0
0	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	0
0	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	0
0	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	0
0	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	0
0	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	0
0	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	0
0	39	39	39	39	39	39	38	38	38	38	38	38	38	38	39	39	39	0
0	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	0
0	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	0
0	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	0
0	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	0
0	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	0
0	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	0
0	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	0
0	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	0
0	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	0
0	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	0
0	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	0
0	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	0
0	26	26	26	26	26	27	27	27	27	27	27	26	26	26	26	26	26	0
0	25	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	25	0
0	25	25	25	25	26	26	25	25	26	26	25	26	25	25	25	25	25	0
0	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	0
0	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	0
0	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0
0	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DRAWDOWN

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AQUIFER THICKNESS

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	24.8	24.8	24.9	24.9	24.9	25.0	25.0	25.0	25.0	24.9	24.9	24.5	24.8	24.9	25.0	0.0
0.0	25.0	24.8	24.7	24.6	24.6	24.6	24.7	24.7	24.7	24.7	24.6	24.6	24.6	24.7	24.8	25.0	0.0
0.0	25.0	24.7	24.6	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.6	24.7	25.0	0.0
0.0	25.0	25.0	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	25.0	25.0	0.0
0.0	25.0	25.3	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.3	25.0	0.0
0.0	25.0	24.9	24.8	24.9	24.8	24.9	24.8	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.8	25.0	0.0
0.0	25.0	24.9	24.9	24.9	24.9	24.9	24.8	24.8	24.8	24.8	24.9	24.8	24.9	24.8	24.9	25.0	0.0
0.0	25.0	25.1	25.1	25.1	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.1	25.1	25.1	25.0	0.0
0.0	25.0	24.9	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.9	24.9	25.0	0.0
0.0	25.0	24.6	24.7	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.7	24.8	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	24.9	24.9	24.9	24.9	24.9	24.9	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	24.9	24.9	24.9	24.8	24.9	24.9	24.8	24.9	24.9	24.9	24.8	24.9	24.9	24.9	25.0	0.0
0.0	25.0	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.0	25.0	25.0	0.0
0.0	25.0	25.1	25.2	25.2	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.2	25.2	25.1	25.0	0.0
0.0	25.0	25.1	25.2	25.3	25.3	25.4	25.4	25.4	25.4	25.4	25.4	25.3	25.3	25.2	25.1	25.0	0.0
0.0	25.0	25.3	25.4	25.5	25.5	25.6	25.6	25.6	25.6	25.6	25.6	25.5	25.5	25.4	25.3	25.0	0.0
0.0	25.0	25.1	25.2	25.3	25.3	25.4	25.4	25.4	25.4	25.4	25.4	25.3	25.3	25.2	25.1	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.0	25.0	25.0	0.0
0.0	25.0	25.1	25.2	25.2	25.2	25.3	25.3	25.3	25.3	25.3	25.3	25.2	25.2	25.2	25.1	25.0	0.0
0.0	25.0	24.9	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	24.9	25.0	0.0
0.0	25.0	25.1	25.1	25.1	25.2	25.1	25.1	25.1	25.1	25.1	25.1	25.2	25.1	25.1	25.1	25.0	0.0
0.0	25.0	25.2	25.3	25.3	25.3	25.3	25.2	25.2	25.2	25.2	25.3	25.3	25.3	25.3	25.2	25.0	0.0
0.0	25.0	25.0	25.0	25.1	25.0	25.0	24.8	24.8	24.8	24.8	25.0	25.0	25.1	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TRANSMISSIVITY

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CUMULATIVE MASS BALANCE -- (IN FT**3)

RECHARGE	:	0.000000E+00
INJECTION	:	0.000000E+00
PUMPAGE	:	3.18580E+07
CUMULATIVE NET PUMPAGE	:	3.18580E+07
WATER RELEASE FROM STORAGE	:	-1.48403E+03
LEAKAGE INTO AQUIFER	:	-3.70514E+08
LEAKAGE OUT OF AQUIFER	:	3.37680E+08
CUMULATIVE NET LEAKAGE	:	-3.28339E+07
MASS BALANCE RESIDUAL	:	7.78448E+05
ERROR (AS PERCENT)	:	2.09780E-01

RATE MASS BALANCE -- (IN C.F.S.)

RECHARGE	:	0.000000E+00
LEAKAGE INTO AQUIFER	:	3.36831E+00
LEAKAGE OUT OF AQUIFER	:	-3.07184E+00
NET LEAKAGE (QNET)	:	2.95549E-01
INJECTION	:	0.000000E+00
PUMPAGE	:	2.88800E-01
NET WITHDRAWAL (TPUM)	:	2.88800E-01

CONCENTRATION

```
NUMBER OF TIME STEPS :        1
       DELTA T        :   1.10000E+08
       TIME(SECONDS)  :   1.10000E+08
  CHEM.TIME(SECONDS)  :   1.10000E+08
  CHEM.TIME(DAYS)     :   1.27314E+03
       TIME(YEARS)    :   3.48559E+00
  CHEM.TIME(YEARS)    :   3.48568E+00
 NO. MOVES COMPLETED  :      29
```

0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0233	5.1023	2.1282	3.0208
4.0901	0.0186	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0001	0.0047	0.5128	87.9050	39.2352	56.4801
70.4807	0.4106	0.0037	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0004	0.0291	2.4850	127.9512	86.3122	79.4719
102.9751	1.5793	0.0233	0.0003	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0013	0.0759	3.8667	118.2212	58.9264	78.0069
95.7736	3.1954	0.0807	0.0010	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0001	0.0034	0.1841	6.0785	120.4716	59.0805	78.3858
88.0008	4.9068	0.1322	0.0027	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0001	0.0074	0.2837	7.7491	110.7240	58.6300	77.9036
90.7226	8.2782	0.2289	0.0059	0.0001	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0003	0.0119	0.4022	9.5159	114.5116	81.0615	78.3259
97.4440	7.7222	0.3250	0.0086	0.0002	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0005	0.0177	0.5183	10.3346	105.4207	80.0001	75.9383
87.1162	8.4104	0.4195	0.0143	0.0004	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0006	0.0222	0.6123	11.2804	105.5286	88.8852	74.5013
87.5132	9.1766	0.4960	0.0180	0.0006	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0006	0.0183	0.5934	10.2329	86.4058	51.1294	63.1210
71.9006	8.3511	0.4809	0.0148	0.0005	0.0000	0 0000	0.0000		
0.0000	0.0000	0.0000	0.0003	0.0093	0.4118	7 4950	73.3474	41.3824	52.2727
60.7460	6.1068	0.3335	0.0075	0.0002	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0001	0.0041	0.1867	3.1843	23.8286	13.9171	17.1056
19.6837	2.5976	0.1512	0.0033	0.0001	0 0000	0 0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0014	0.3519	0.8341	5.8826	3.7816	4.5328
5.0133	0.7817	0.0420	0.0012	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0003	0.0098	0.1809	1.6131	0.9682	1.2012
1.3404	0.1475	0.0076	0.0002	0.0000	0.0000	0 0000	0.0000		
0.0000	0 0000	0.0000	0.0000	0.0001	0.0016	0.0295	0.2728	0.1596	0.1589
0 2263	0.0240	0.0013	0.0000	0 0000	0.0000	0 0000	0.0000		
0.0000	0 0000	0.0000	0.0000	0.0000	0 0002	0.0043	0 0352	0.0209	0 0257
0.0292	0.0035	0 0002	0.0000	0.0000	0 0000	0 0000	0 0000		
0 0000	0.0000	0.0000	0.0000	0.0000	0 0000	0 0005	0.0042	0 0025	0 0030
0.0025	0.0004	0.0000	0.0000	0.0000	0.0000	0 0000	0.0000		
0.0000	0 0000	0 0000	0.0000	0.0000	0 0000	0 0001	0 0004	0.0002	0 0003
0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0 0000	0 0000		
0.0000	0.0000	0.0000	0.0000	0 0000	0 0000	0 0000	0 0000	0.0000	0 0000
0.0000	0.0000	0.0000	0 0000	0.0000	0 0000	0 0000	0.0000		
0.0000	0 0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0 0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0 0000	0 0000		
0 0000	0 0000	0.0000	0.0000	0.0000	0.0000	0 0000	0.0000	0.0000	0.0000
0.0000	0 0000	0.0000	0.0000	0.0000	0.0000	0 0000	0.0000		
0.0000	0.0000	0 0000	0 0000	0.0000	0 0000	0 0000	0.0000	0 0000	0.0000
0.0000	0.0000	0 0000	0 0000	0.0000	0 0000	0 0000	0 0000		
0.0000	0.0000	0.0000	0 0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0.0000		
0.0000	0 0000	0.0000	0.0000	0 0000	0.0000	0 0000	0 0000	0.0000	0.0000
0.0000	0.0000	0.0000	0 0000	0 0000	0 0000	0 0000	0.0000		

0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	0.0000		
0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	0.0000		
0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	0.0000		
0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	0.0000		
0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

CONCENTRATION

NUMBER OF TIME STEPS : 1

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	5	2	3	4	0	0	0	0	0	0	0
0	0	0	0	0	0	1	88	39	58	70	0	0	0	0	0	0	0
0	0	0	0	0	0	2	128	68	79	103	2	0	0	0	0	0	0
0	0	0	0	0	0	4	118	57	76	96	3	0	0	0	0	0	0
0	0	0	0	0	0	6	120	59	79	94	5	0	0	0	0	0	0
0	0	0	0	0	0	8	111	60	78	91	6	0	0	0	0	0	0
0	0	0	0	0	0	10	119	61	76	97	8	0	0	0	0	0	0
0	0	0	0	0	1	10	105	60	75	87	8	0	0	0	0	0	0
0	0	0	0	0	1	11	106	60	75	88	9	0	0	0	0	0	0
0	0	0	0	0	1	10	88	51	63	72	8	0	0	0	0	0	0
0	0	0	0	0	0	7	73	41	52	61	6	0	0	0	0	0	0
0	0	0	0	0	0	3	24	14	17	20	3	0	0	0	0	0	0
0	0	0	0	0	0	1	5	4	5	5	1	0	0	0	0	0	0
0	0	0	0	0	0	0	2	1	1	1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CHEMICAL MASS BALANCE

```
      MASS IN BOUNDARIES       :  5.29878E+09
      MASS OUT BOUNDARIES      : -3.73727E+00
      MASS PUMPED IN           :  0.00000E+00
      MASS PUMPED OUT          : -7.44394E-11
      INFLOW MINUS OUTFLOW     :  5.29878E+09
      INITIAL MASS STORED      :  0.00000E+00
      PRESENT MASS STORED      :  5.33282E+09
      CHANGE MASS STORED       :  5.33282E+09
    COMPARE RESIDUAL WITH NET FLUX AND MASS ACCUMULATION:
      MASS BALANCE RESIDUAL    :  9.63931E+08
      ERROR (AS PERCENT)       :  1.53088E+01
```

N : 3
NUMBER OF ITERATIONS : 1

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS : 3
TIME(SECONDS) : 3.155788E+08
TIME(DAYS) : 3.652500E+03
TIME(YEARS) : 1.000000E+01

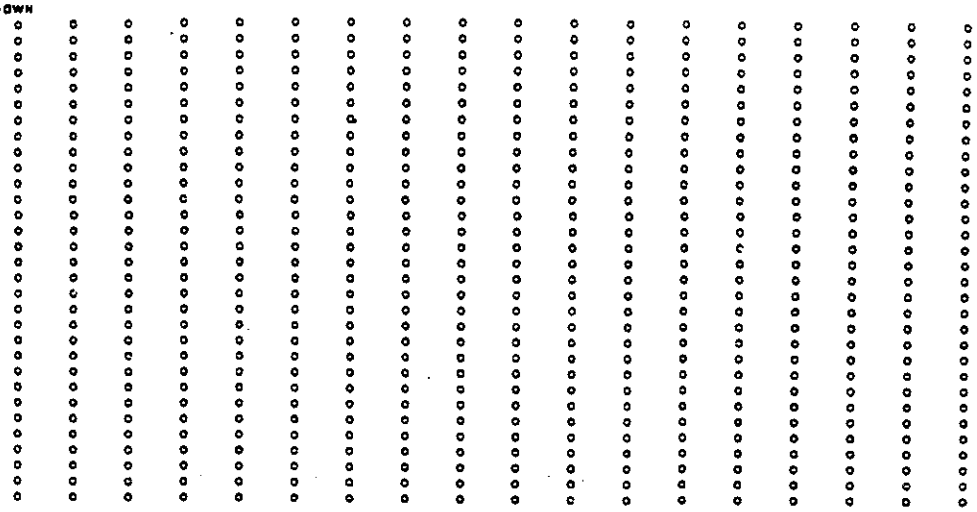
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		
0.0000000	46.5999998	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	46.5999996	46.5999996	46.5999996
46.5999996	46.5999995	46.5999995	46.5999995	46.5999995	46.5999996	46.5999998	0.0000000		
0.0000000	46.0000000	45.8463388	45.8000053	45.7750384	45.7718877	45.7685159	45.8999873	45.8999981	45.8999981
45.8999873	45.7685159	45.7718878	45.7750384	45.8000053	45.8463388	46.0000000	0.0000000		
0.0000000	45.2999998	45.0420702	44.8730398	44.9221181	44.8080847	44.8174638	44.8502820	44.8803242	44.8803242
44.8502820	44.8174638	44.8080847	44.8221181	44.8730398	45.0420702	45.2999998	0.0000000		
0.0000000	44.4999995	44.2053738	44.0825562	44.0281910	44.0072202	44.0053255	44.0159892	44.0214944	44.0214944
44.0159892	44.0053255	44.0072202	44.0281910	44.0825562	44.2053738	44.4999995	0.0000000		
0.0000000	43.1999999	43.1581830	43.1284582	43.1062164	43.0835293	43.0885020	43.0810276	43.0826716	43.0826716
43.0810276	43.0885020	43.0835293	43.1062164	43.1284582	43.1581830	43.1999999	0.0000000		
0.0000000	41.8000006	42.1115811	42.1818302	42.1803285	42.1858938	42.1831907	42.1818145	42.1814954	42.1814954
42.1818146	42.1831907	42.1858936	42.1803285	42.1818303	42.1115811	41.8000006	0.0000000		
0.0000000	41.3999997	41.3076161	41.2831044	41.2868667	41.2801854	41.2745150	41.2707834	41.2880543	41.2880543
41.2707834	41.2745150	41.2801854	41.2868867	41.2831044	41.3076162	41.3999997	0.0000000		
0.0000000	40.4999998	40.4192707	40.3903798	40.3741869	40.3623186	40.3537562	40.3481420	40.3464871	40.3464871
40.3481420	40.3537562	40.3623186	40.3741869	40.3903798	40.4192707	40.4999998	0.0000000		
0.0000000	39.4000002	39.4811447	39.4777541	39.4602505	39.4444003	39.4328898	39.4258388	39.4220222	39.4220222
39.4258388	39.4328898	39.4444003	39.4602506	39.4777541	39.4811447	39.4000003	0.0000000		
0.0000000	38.7000000	38.6282543	38.5780257	38.5442459	38.5217223	38.5070379	38.4981286	38.4938297	38.4938297
38.4981286	38.5070379	38.5217223	38.5442458	38.5780257	38.6282543	38.7000000	0.0000000		
0.0000000	37.8999995	37.7454776	37.6843212	37.6087423	37.5826316	37.5686566	37.5572888	37.5529486	37.5529486
37.5572888	37.5686566	37.5826316	37.6087423	37.6843212	37.7454776	37.9999965	0.0000000		
0.0000000	38.7000002	38.7147406	38.6845804	38.6557219	38.6351909	38.6218764	38.6138575	38.6102869	38.6102869
38.6138575	38.6218764	38.6351909	38.6557219	38.6845804	38.7147406	38.7000002	0.0000000		
0.0000000	35.7000001	35.7308419	35.7188278	35.7022051	35.6888820	35.6786388	35.6743482	35.67'8172	35.6716172
35.6743442	35.6786384	35.6888820	35.7022051	35 7'88278	35.73084'5	35 7000001	0.0000000		
0.0000000	34.8999987	34.7877881	34.7557850	34.7432268	34.7384810	34.7325252	34.7302853	34.7283204	34.7283204
34.7302883	34.7325252	34.7384810	34.7432268	34.7557860	34.7877881	34.8999987	0.0000000		
0.0000000	33.7000002	33.7636804	33.7760213	33.7788817	33.7825900	33.7852562	33.7872850	33.7883881	33.7883881
33.7872850	33.7852562	33.7825800	33.7788817	33.7760213	33.7636804	33 7000002	0.0000000		
0.0000000	32 7999999	32.7942485	32.8082505	32.8206827	32.83328'0	32.8429380	32.8482867	32.8525084	32.8525084
32.8482867	32.8429380	32.8332810	32.8206827	32.8082506	32.7942485	32.7999999	0.0000000		
0.0000000	31.7999999	31.8056456	31.8341573	31.8630883	31.8867303	31 9040269	31.9151147	31.9205821	31.9205821
31.9151147	31.9040269	31.8867303	31.8630883	31.8341573	31.8056456	31 7999999	0 0000000		
0 0000000	30.7000001	30.7968854	30.8645351	30.9144101	30.9505483	30.9755288	30.9910851	30 9986183	30.9986183
30.9910851	30.9755288	30.9505493	30.9164101	30.8645351	30.7968854	30 7000001	0 0000000		
0 0000000	28.7000000	28.8188998	29 9153452	29.9835654	30.0301978	30.0610639	30.0798790	30 0888512	30.0888512
30 0798790	30.0610639	30.0301978	29.9835654	29.9153453	28.8188998	29 7000000	0 0000000		
0.0000000	28.8000004	28.8550720	28.9990655	29.0786469	29 1300091	29 1834285	29 1838545	29.1932423	29.1932423
29 1838545	29.1834285	29.1300091	29.0786469	28.9990655	28.8550720	28 8000004	0 0000000		
0 0000000	27.9000001	28 0420638	28.1362853	28 2020778	28.2481142	28 2791665	28 2982120	28 3072785	28.3072785
28.2982120	28.2791665	28.2481142	28.2020780	28.1362894	28 0420638	27 9000001	0 0000000		
0 0000000	27.2999998	27.2822614	27 2852027	27.3375587	27.3730822	27 3945939	27 4144754	27 4220548	27 4220548
27 4144754	27.3945939	27.3730822	27.3375587	27.2952026	27.2822514	27.2999998	0.0000000		

0.0000000	26.3999999	26.4084148	26.4419069	26.4759707	26.5037168	26.5230781	26.5345237	26.5397478	26.5397478
26.5345237	26.5230781	26.5037168	26.4759707	26.4419069	26.4084141	26.3999999	0.0000000		
0.0000000	25.4000003	25.5351888	25.5804752	25.6237547	25.6488430	25.6581542	25.6635201	25.6651366	25.6651366
25.6635201	25.6581542	25.6488430	25.6237547	25.5804752	25.5351888	25.4000003	0.0000000		
0.0000000	24.7999997	24.7414232	24.7562031	24.7816395	24.7956947	24.7983865	24.7937563	24.7892672	24.7892672
24.7937563	24.7983865	24.7956947	24.7816395	24.7562031	24.7414232	24.7999997	0.0000000		
0.0000000	23.6000000	23.6704798	23.9197536	23.9473879	23.8548797	23.9440725	23.9212867	23.9065271	23.9065271
23.9212867	23.9440725	23.8548797	23.9473879	23.9197536	23.6704798	23.6000000	0.0000000		
0.0000000	22.6000004	23.0244117	23.1063885	23.1389884	23.1382108	23.1074010	23.0444029	23.0132898	23.0132898
23.0444029	23.1074010	23.1382108	23.1389884	23.1063885	23.0244117	22.6000004	0.0000000		
0.0000000	22.2999999	22.3190015	22.3477383	22.3607418	22.3608579	22.2885512	22.1323828	22.0821108	22.0821108
22.1323828	22.2885512	22.3608579	22.3607418	22.3477384	22.3190015	22.2999999	0.0000000		
0.0000000	21.6000004	21.6000004	21.6000004	21.6000004	21.6000004	21.6000004	21.6000003	21.6000003	21.6000003
21.6000003	21.6000004	21.6000004	21.6000004	21.6000004	21.6000004	21.6000004	0.0000000		
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		

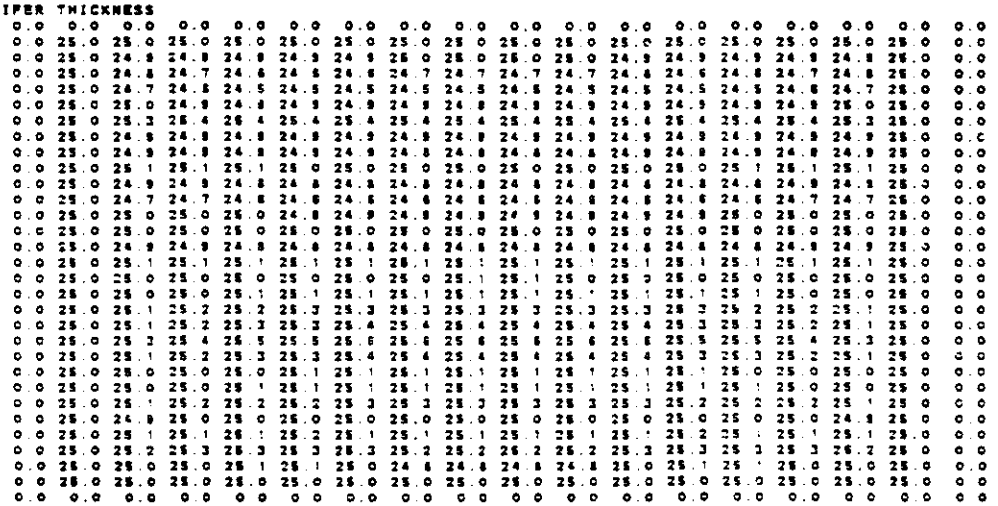
HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS : 3
TIME(SECONDS) : 3.155760E+08
TIME(DAYS) : 3.652500E+03
TIME(YEARS) : 1.000000E+01

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	0
0	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	0
0	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	0
0	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	0
0	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	0
0	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	0
0	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	0
0	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	0
0	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	0
0	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	0
0	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	0
0	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	0
0	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	0
0	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	0
0	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	0
0	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	0
0	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	0
0	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	0
0	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	0
0	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	0
0	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	0
0	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	0
0	26	26	26	26	27	27	27	27	27	27	27	27	26	26	26	26	0
0	25	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	0
0	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	0
0	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	0
0	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	0
0	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0
0	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DRAWDOWN



AQUIFER THICKNESS



TRANSMISSIVITY

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CUMULATIVE MASS BALANCE -- (IN FT**3)

```
RECHARGE                     :   0.00000E+00
INJECTION                    :   0.00000E+00
PUMPAGE                      :   9.13908E+07
CUMULATIVE  NET  PUMPAGE     :   9.13908E+07
WATER RELEASE FROM STORAGE   :  -1.22983E+03
LEAKAGE INTO AQUIFER         :  -1.08080E+09
LEAKAGE OUT OF AQUIFER       :   9.88498E+08
CUMULATIVE  NET  LEAKAGE     :  -9.21021E+07

     MASS BALANCE RESIDUAL   :   7.10144E+05
     ERROR  (AS PERCENT)     :   6.89793E-02
```

RATE MASS BALANCE -- (IN C.F.S.)

```
RECHARGE                     :   0.00000E+00
LEAKAGE INTO AQUIFER         :   3.35802E+00
LEAKAGE OUT OF AQUIFER       :  -3.06858E+00
NET LEAKAGE      (QNET)      :   2.89415E-01
INJECTION                    :   0.00000E+00
PUMPAGE                      :   2.89800E-01
NET WITHDRAWAL     (TPUM)    :   2.89800E-01
```

CONCENTRATION

```
NUMBER OF TIME STEPS :       3
       DELTA T       :   9.55780E+07
       TIME(SECONDS) :   3.15576E+08
  CHEM.TIME(SECONDS) :   3.15574E+08
  CHEM.TIME(DAYS)    :   3.65247E+03
       TIME(YEARS)   :   1.00000E+01
  CHEM.TIME(YEARS)   :   9.99992E+00
 NO. MOVES COMPLETED :      26
```

0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0004	0.0226	4.9818	2.1641	3.1014
3.9771	0.0181	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0035	0.4506	46.2553	43.7891	62.9750
68.1625	0.3610	0.0028	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0004	0.0291	2.8812	127.5345	55.9124	78.8304
102.7306	2.1533	0.0234	0.0003	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0011	0.0882	3.9246	117.2404	55.3894	76.1750
94.9164	3.1582	0.0548	0.0009	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0001	0.0038	0.1888	5.3824	118.9507	57.6544	78.0000
96.8089	5.1535	0.1278	0.0029	0.0000	0.0000	0.0000	0.0000		

0.0000	0.0000	0.0000	0.0001	0.0056	0.2382	7.3537	112.7079	58.2719	75.7540
82.1856	8.9518	0.1927	0.0047	0.0001	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0003	0.0128	0.4268	8.5299	110.0855	60.0684	77.2322
80.3959	7.7381	0.3451	0.0103	0.0002	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0005	0.0183	0.5359	10.5242	108.5675	60.7201	76.7160
80.5977	8.5880	0.4340	0.0148	0.0004	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0007	0.0249	0.6739	11.9068	105.0951	61.8878	76.5241
87.3322	9.7128	0.5483	0.0201	0.0005	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0006	0.0287	0.7424	12.4158	103.8322	60.8510	80.5536
91.1480	10.1468	0.6028	0.0233	0.0006	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0005	0.0248	0.7885	12.8254	106.7815	61.5817	79.5471
89.0035	10.5673	0.6388	0.0202	0.0007	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0011	0.0283	0.8146	12.3188	83.2673	64.3484	85.0809
70.5580	10.1188	0.6872	0.0241	0.0009	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0014	0.0337	0.8715	13.0877	102.4804	62.1824	76.5077
85.5192	10.7405	0.7181	0.0281	0.0012	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0001	0.0022	0.0447	0.9854	13.5852	100.7144	62.7871	75.5202
84.2217	11.2380	0.8212	0.0378	0.0018	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0002	0.0045	0.0826	1.2687	14.7048	99.4618	63.5333	75.5896
83.3770	12.2513	1.0673	0.0701	0.0038	0.0002	0.0000	0.0000		
0.0000	0.0000	0.0010	0.0080	0.1328	1.7447	17.0250	95.1369	65.2177	76.1475
80.3857	14.3228	1.4687	0.1115	0.0067	0.0007	0.0000	0.0000		
0.0000	0.0000	0.0005	0.0111	0.1889	2.2874	19.5719	93.4318	66.8327	75.7875
78.7479	16.4534	1.9073	0.1544	0.0081	0.0004	0.0000	0.0000		
0.0000	0.0001	0.0022	0.0184	0.2299	2.5408	20.9732	88.1550	68.1343	76.3060
76.8807	17.5073	2.1820	0.1886	0.0126	0.0018	0.0001	0.0000		
0.0000	0.0001	0.0011	0.0186	0.2881	2.9458	22.1855	90.5721	68.8356	78.0582
78.1478	18.5386	2.4302	0.2197	0.0152	0.0009	0.0001	0.0000		
0.0000	0.0001	0.0018	0.0230	0.3037	3.2132	22.8528	87.4737	69.4824	78.4886
75.7867	19.1287	2.8532	0.2490	0.0188	0.0015	0.0001	0.0000		
0.0000	0.0001	0.0075	0.0370	0.3515	3.4956	23.8562	85.0612	70.4078	78.9918
77.3480	20.0338	2.8698	0.2885	0.0303	0.0061	0.0002	0.0000		
0.0000	0.0003	0.0141	0.1588	0.4856	3.7913	27.1241	85.7543	70.8820	78.9749
74.8157	22.7533	3.1386	0.3990	0.1371	0.0116	0.0003	0.0000		
0.0000	0.0004	0.0147	0.1533	1.3002	4.7559	22.4227	84.9707	70.6935	78.1573
74.3348	18.5253	3.9382	1.0789	0.1282	0.0120	0.0004	0.0000		
0.0000	0.0005	0.0141	0.1535	1.3488	5.5910	25.1643	81.7870	69.8432	74.6128
71.7573	21.2368	4.7110	1.1204	0.1255	0.0116	0.0004	0.0000		
0.0000	0.0004	0.0123	0.1463	1.3085	5.8543	24.8882	79.1294	68.0223	72.4588
69.5383	21.0371	4.8805	1.0841	0.1206	0.0101	0.0003	0.0000		
0.0000	0.0005	0.0127	0.1330	1.1702	5.8155	23.4825	72.9421	62.9497	68.1852
64.3706	19.8825	4.6870	0.9717	0.1097	0.0106	0.0004	0.0000		
0.0000	0.0012	0.0123	0.1163	0.8602	4.7488	18.2105	63.5242	56.8588	60.5775
58.7838	15.4652	3.9410	0.7975	0.0959	0.0101	0.0010	0.0000		
0.0000	0.0007	0.0110	0.0904	0.6706	2.8030	18.2287	46.4515	42.9588	44.9853
42.0788	13.7256	2.3285	0.5586	0.0744	0.0080	0.0006	0.0000		
0.0000	0.0005	0.0060	0.0571	0.1691	1.3422	5.7007	29.3221	29.8612	31.7113
24.8722	5.8438	1.1135	0.1388	0.0488	0.0048	0.0005	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

CONCENTRATION

NUMBER OF TIME STEPS = 3

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	5	2	3	4	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	86	44	63	89	0	0	0	0	0	0	0	0
0	0	0	0	0	0	3	128	56	79	103	2	0	0	0	0	0	0	0
0	0	0	0	0	0	4	117	56	76	95	3	0	0	0	0	0	0	0
0	0	0	0	0	0	5	119	58	76	97	5	0	0	0	0	0	0	0
0	0	0	0	0	0	7	113	56	77	92	6	0	0	0	0	0	0	0
0	0	0	0	0	0	10	110	60	77	91	8	0	0	0	0	0	0	0
0	0	0	0	0	1	11	110	61	77	91	9	0	0	0	0	0	0	0
0	0	0	0	0	1	12	105	62	77	87	10	1	0	0	0	0	0	0
0	0	0	0	0	1	12	110	61	81	91	10	1	0	0	0	0	0	0
0	0	0	0	0	1	13	107	62	80	89	11	1	0	0	0	0	0	0
0	0	0	0	0	1	12	83	64	65	71	10	1	0	0	0	0	0	0
0	0	0	0	0	1	13	102	62	77	86	11	1	0	0	0	0	0	0
0	0	0	0	0	1	14	101	63	76	84	11	1	0	0	0	0	0	0
0	0	0	0	0	1	15	99	64	76	83	12	1	0	0	0	0	0	0
0	0	0	0	0	2	17	95	65	76	80	14	1	0	0	0	0	0	0
0	0	0	0	0	2	20	93	67	76	80	15	2	0	0	0	0	0	0
0	0	0	0	0	3	21	88	68	76	77	15	2	0	0	0	0	0	0
0	0	0	0	0	3	22	91	69	76	78	15	2	0	0	0	0	0	0
0	0	0	0	0	3	23	87	68	76	76	15	3	0	0	0	0	0	0
0	0	0	0	0	3	24	85	70	77	77	20	3	0	0	0	0	0	0
0	0	0	0	0	4	27	86	71	77	75	23	3	0	0	0	0	0	0
0	0	0	0	1	5	22	85	71	76	74	19	4	1	0	0	0	0	0
0	0	0	0	1	6	25	82	70	75	72	21	5	1	0	0	0	0	0
0	0	0	0	1	5	25	79	68	72	70	21	5	1	0	0	0	0	0
0	0	0	0	1	5	23	73	63	68	64	20	5	1	0	0	0	0	0
0	0	0	0	1	5	18	64	57	61	57	15	4	1	0	0	0	0	0
0	0	0	0	1	3	16	48	43	45	42	14	2	0	0	0	0	0	0
0	0	0	0	0	1	7	29	30	32	25	6	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CHEMICAL MASS BALANCE

MASS IN BOUNDARIES	= 1.77148E+10
MASS OUT BOUNDARIES	= -1.89938E+08
MASS PUMPED IN	= 0.00000E+00
MASS PUMPED OUT	= -2.37135E+08
INFLOW MINUS OUTFLOW	= 1.73076E+10
INITIAL MASS STORED	= 0.00000E+00
PRESENT MASS STORED	= 1.47088E+10
CHANGE MASS STORED	= 1.47088E+10

COMPARE RESIDUAL WITH NET FLUX AND MASS ACCUMULATION:

MASS BALANCE RESIDUAL	= 2.58902E+09
ERROR (AS PERCENT)	= 1.48713E+01

TIME VERSUS HEAD AND CONCENTRATION AT SELECTED OBSERVATION POINTS

PUMPING PERIOD NO. 1

TRANSIENT SOLUTION

OBS.WELL NO.	X	Y	N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
1	8	4				
			0	45.3	0.0	0.000
			1	45.0	128.0	3.486
			2	45.0	134.4	6.971
			3	45.0	127.5	10.000
OBS.WELL NO.	X	Y	N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
2	10	18				
			0	33.7	0.0	0.000
			1	33.8	0.2	3.486
			2	33.6	77.8	6.971
			3	33.8	76.0	10.000
OBS.WELL NO.	X	Y	N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
3	10	26				
			0	24.8	0.0	0.000
			1	24.8	0.0	3.486
			2	24.8	0.2	6.971
			3	24.8	72.5	10.000

MESSAGE SUMMARY: MESSAGE NUMBER - COUNT

204 511 OR OVER

APPENDIX V-B

INPUT AND SELECTED OUTPUT FOR TEST PROBLEM 2

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.LONGIS22.CNTL

//A11834E JOB (?????,TSO-TR-KONI),KONIKOWRUN,
//  TIME=(5,0),CLASS=K,  TYPRUN=HOLD,
//  MSGCLASS=X,NOTIFY=*
/*PASSWORD ????
/*JOBPARM ROOM=C,FORMS=9001
//*
//KONI EXEC PGM=KONI60G,REGION=1500K
//STEPLIB  DD DISP=SHR,DSN=U11236C.KONI.LOAD
//FT06F001 DD DSN=U11834C.LONGIS22.OUTLIST,UNIT=STORAGE,
//            SPACE=(TRK,(50,50)),DISP=(MOD,CATLG),
//            DCB=(RECFM=VBA,LRECL=133,BLKSIZE=7448)
//FT10F001 DD DSN=U11834C.LONGIS22.GRAPH,UNIT=STORAGE,
//            SPACE=(TRK,(50,50)),DISP=(MOD,CATLG),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=7440)
//FT07F001 DD SYSOUT=B
//FT05F001 DD *
BABYLON,LEVEL8,CHLORIDE                                                    0000000
   3   1  18  313620   1   7   3 100   8   4   1   0   0   0   1   0
  10  .01  .25   40.0005   1.1.1E8  500  500   .2   .5   1
   0   0        0.        0.        0.        0.
  0   0   1   0   0
 8 4
1016
1026
 8 3 -0.0724   400.0
 9 3 -0.0724   240.0
10 3 -0.0724   350.0
11 3 -0.0724   320.0
 829   .0724
 929   .0724
1029   .0724
1129   .0724
0    0.1447
0       25.
1        1.0
   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
   046.646.646.646.646.646.646.646.646.646.646.646.646.646.646.646.6   0
   045.945.945.945.945.945.945.945.945.945.945.945.945.945.945.945.9   0
   045.345.345.345.345.345.345.345.345.345.345.345.345.345.345.345.3   0
   044.544.544.544.544.544.544.544.544.544.544.544.544.544.544.544.5   0
   043.243.243.243.243.243.243.243.243.243.243.243.243.243.243.243.2   0
   041.841.841.841.841.841.841.841.841.841.841.841.841.841.841.841.8   0
   041.441.441.441.441.441.441.441.441.441.441.441.441.441.441.441.4   0
   040.540.540.540.540.540.540.540.540.540.540.540.540.540.540.540.5   0
   039.439.439.439.439.439.439.439.439.439.439.439.439.439.439.439.4   0
   038.738.738.738.738.738.738.738.738.738.738.738.738.738.738.738.7   0
   038.038.038.038.038.038.038.038.038.038.038.038.038.038.038.038.0   0
   036.736.736.736.736.736.736.736.736.736.736.736.736.736.736.736.7   0
   035.735.735.735.735.735.735.735.735.735.735.735.735.735.735.735.7   0
   034.934.934.934.934.934.934.934.934.934.934.934.934.934.934.934.9   0
   033.733.733.733.733.733.733.733.733.733.733.733.733.733.733.733.7   0
   032.832.832.832.832.832.832.832.832.832.832.832.832.832.832.832.8   0
   031.831.831.831.831.831.831.831.831.831.831.831.831.831.831.831.8   0
   030.730.730.730.730.730.730.730.730.730.730.730.730.730.730.730.7   0
   029.729.729.729.729.729.729.729.729.729.729.729.729.729.729.729.7   0
   028.628.628.628.628.628.628.628.628.628.628.628.628.628.628.628.6   0
   027.927.927.927.927.927.927.927.927.927.927.927.927.927.927.927.9   0
   027.327.327.327.327.327.327.327.327.327.327.327.327.327.327.327.3   0
   026.426.426.426.426.426.426.426.426.426.426.426.426.426.426.426.4   0
   025.425.425.425.425.425.425.425.425.425.425.425.425.425.425.425.4   0
   024.824.824.824.824.824.824.824.824.824.824.824.824.824.824.824.8   0
   023.823.823.823.823.823.823.823.823.823.823.823.823.823.823.823.8   0
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   022.822.822.822.822.822.822.822.822.822.822.822.822.822.822.8   0
   022.322.322.322.322.322.322.322.322.322.322.322.322.322.322.3   0
   021.621.621.621.621.621.621.621.621.621.621.621.621.621.621.6   0
   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
0          0
1          1.
000000000000000000
022222222222222220
020000000000000020
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020000000000000020
020000000000000020
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020000000000000020
020000000000000020
022222222222222220
000000000000000000
 2         1.0          0.          0. 0
0         0.0
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U.S.G.S. METHOD-OF-CHARACTERISTICS MODEL FOR SOLUTE TRANSPORT IN GROUND WATER

BABYLON,LEVEL3,CHLORIDE                                                0000000

                    I N P U T     D A T A

                      GRID DESCRIPTORS

          NX     (NUMBER OF COLUMNS)  :      15
          NY     (NUMBER OF ROWS)     :      31
          XDEL   (X-DISTANCE IN FEET) :   500.0
          YDEL   (Y-DISTANCE IN FEET) :   500.0

                      TIME  PARAMETERS

          NTIM    (MAX. NO. OF TIME STEPS)          :        3
          NPMP    (NO. OF PUMPING PERIODS)          :        1
          PINT    (PUMPING PERIOD IN YEARS)         :       10.000
          TIMX    (TIME INCREMENT MULTIPLIER)       :        1.00
          TINIT   (INITIAL TIME STEP IN SEC.)       :   0.11E+08

                HYDROLOGIC AND CHEMICAL PARAMETERS

          S        (STORAGE COEFFICIENT)         :       0.000500
          POROS    (EFFECTIVE POROSITY)          :       0.25
          BETA     (CHARACTERISTIC LENGTH)       :      40.0
          DLTRAT   (RATIO OF TRANSVERSE TO
                    LONGITUDINAL DISPERSIVITY)   :       0.20
          ANFCTR   (RATIO OF T-YY TO T-XX)       :       1.000000

 ***NON-DECAYING SPECIES***

 ***NON-SORBING SPECIES***

 ***ADIP USED***

 ***UNCONFINED AQUIFER***

                     EXECUTION PARAMETERS

          NITP   (NO. OF ITERATION PARAMETERS) :      7
          TOL    (CONVERGENCE CRITERIA - ADIP) :      0.0100
          ITMAX  (MAX.NO.OF ITERATIONS - ADIP) :    100
          CELDIS (MAX.CELL DISTANCE PER MOVE
                   OF PARTICLES - M.O.C.)      :      0.500
          NPMAX  (MAX. NO. OF PARTICLES)       :   3620
          NPTPND (NO. PARTICLES PER NODE)      :      4

                      PROGRAM OPTIONS

          NPNT    (TIME STEP INTERVAL FOR
                   COMPLETE PRINTOUT)         :      1
          NPNTMV  (MOVE INTERVAL FOR CHEM
                   CONCENTRATION PRINTOUT)    :      0
          NPNTVL  (PRINT OPTION-VELOCITY
                   0=NO; 1=FIRST TIME STEP;
                   2=ALL TIME STEPS)          :      0
          NPNTD   (PRINT OPTION-DISP.COEF.
                   0=NO; 1=FIRST TIME STEP;
                   2=ALL TIME STEPS)          :      0
          NUMOBS  (NO. OF OBSERVATION WELLS
                   FOR HYDROGRAPH PRINTOUT)   :      3
          NREC    (NO. OF PUMPING WELLS)      :      8

          NCODES  (FOR NODE IDENT )           :      1
          NPNCHV  (PUNCH VELOCITIES)          :      0
          NPDELC  (PRINT OPT.-CONC. CHANGE)   :      1
TIME INTERVALS (IN SECONDS)
   0.11000E+08 0.11000E+08 0.11000E+08 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

         LOCATION OF OBSERVATION WELLS

               NO.      X      Y

                1       8      4
                2      10     18
                3      10     28

         LOCATION  OF  PUMPING  WELLS

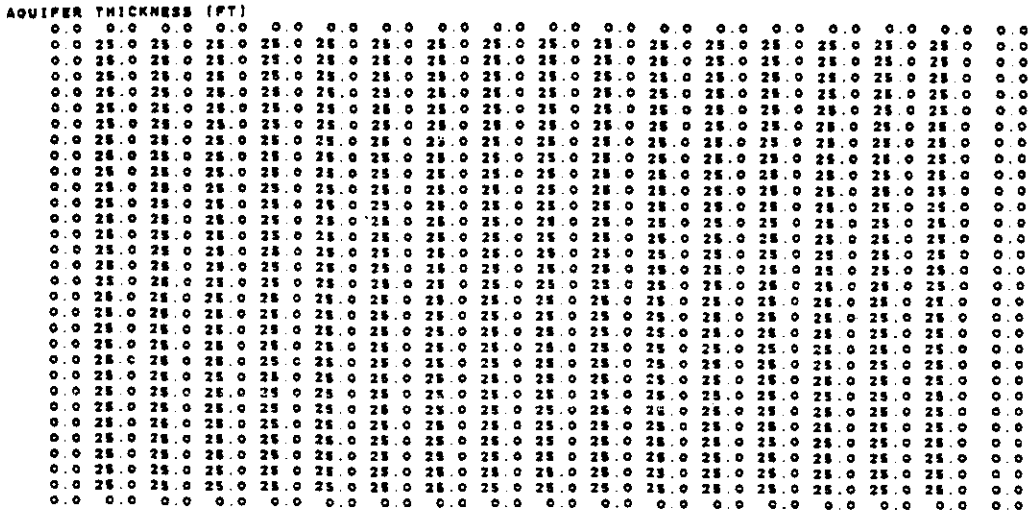
         X    Y    RATE(IN CFS)    CONC

         8    3    -.724E-01      400.00
         9    3    -.724E-01      240.00
        10    3    -.724E-01      350.00
        11    3    -.724E-01      320.00
         8   28    0.724E-01        0.00
         9   28    0.724E-01        0.00
        10   28    0.724E-01        0.00
        11   28    0.724E-01        0.00

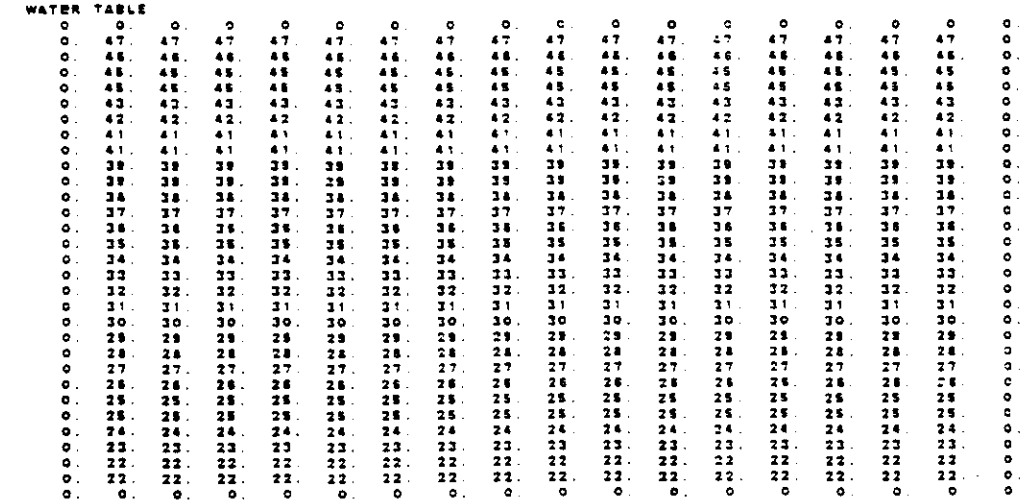
         AREA OF ONE CELL =    2.5000E+05

         X-Y SPACING:
              500.00
              500.00
```

AQUIFER THICKNESS (FT)



WATER TABLE



TRANSMISSIVITY MAP (FT*FT/SEC)

0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		

PERMEABILTY MAP (FT/SEC)

0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		

NO. OF FINITE-DIFFERENCE CELLS IN AQUIFER : 464

AREA OF AQUIFER IN MODEL : 1.16000E+06 SQ. FT.

NZCRIT (MAX. NO. OF CELLS THAT CAN BE VOID OF PARTICLES; IF EXCEEDED, PARTICLES ARE REGENERATED) : 9

```
DIFFUSE RECHARGE AND DISCHARGE (FT/SEC)
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00


NODE IDENTIFICATION MAP

    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
    0   2   2   2   2   2   2   2   2   2   2   2   2   2   2   2   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   0   0   0   0   0   0   0   0   0   0   0   0   0   0   2   0
    0   2   2   2   2   2   2   2   2   2   2   2   2   2   2   2   2   0
    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0

     NO. OF NODE IDENT. CODES SPECIFIED =  1

         THE FOLLOWING ASSIGNMENTS HAVE BEEN MADE
CODE NO        LEAKANCE       SOURCE CONC.       RECHARGE

     2         1.000E+00       0.000E+00
```

VERTICAL PERMEABILITY/THICKNESS (FT/(FT*SEC))

0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	-0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	0.00E+00		
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS : 0
TIME(SECONDS) : 0.00000E+00
TIME(DAYS) : 0.00000E+00
TIME(YEARS) : 0.00000E+00

0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		
0.0000000	46.6000000	46.6000000	46.6000000	46.6000000	46.6000000	46.6000000	46.6000000	46.6000000	46.6000000
46.6000000	46.6000000	46.6000000	46.6000000	46.6000000	46.6000000	46.6000000	0.0000000		
0.0000000	45.9000000	45.9000000	45.9000000	45.9000000	45.9000000	45.9000000	45.9000000	45.9000000	45.9000000
45.9000000	45.9000000	45.9000000	45.9000000	45.9000000	45.9000000	45.9000000	0.0000000		
0.0000000	45.3000000	45.3000000	45.3000000	45.3000000	45.3000000	45.3000000	45.3000000	45.3000000	45.3000000
45.3000000	45.3000000	45.3000000	45.3000000	45.3000000	45.3000000	45.3000000	0.0000000		
0.0000000	44.5000000	44.5000000	44.5000000	44.5000000	44.5000000	44.5000000	44.5000000	44.5000000	44.5000000
44.5000000	44.5000000	44.5000000	44.5000000	44.5000000	44.5000000	44.5000000	0.0000000		
0.0000000	43.2000000	43.2000000	43.2000000	43.2000000	43.2000000	43.2000000	43.2000000	43.2000000	43.2000000
43.2000000	43.2000000	43.2000000	43.2000000	43.2000000	43.2000000	43.2000000	0.0000000		
0.0000000	41.8000000	41.8000000	41.8000000	41.8000000	41.8000000	41.8000000	41.8000000	41.8000000	41.8000000
41.8000000	41.8000000	41.8000000	41.8000000	41.8000000	41.8000000	41.8000000	0.0000000		
0.0000000	41.4000000	41.4000000	41.4000000	41.4000000	41.4000000	41.4000000	41.4000000	41.4000000	41.4000000
41.4000000	41.4000000	41.4000000	41.4000000	41.4000000	41.4000000	41.4000000	0.0000000		
0.0000000	40.5000000	40.5000000	40.5000000	40.5000000	40.5000000	40.5000000	40.5000000	40.5000000	40.5000000
40.5000000	40.5000000	40.5000000	40.5000000	40.5000000	40.5000000	40.5000000	0.0000000		

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 0.0000000  39.4000000  39.4000000  39.4000000  39.4000000  39.4000000  39.4000000  39.4000000  39.4000000  39.4000000
39.4000000  39.4000000  39.4000000  39.4000000  39.4000000  39.4000000  39.4000000   0.0000000
 0.0000000  38.7000000  38.7000000  38.7000000  38.7000000  38.7000000  38.7000000  38.7000000  38.7000000  38.7000000
38.7000000  38.7000000  38.7000000  38.7000000  38.7000000  38.7000000  38.7000000   0.0000000
 0.0000000  38.0000000  38.0000000  38.0000000  38.0000000  38.0000000  38.0000000  38.0000000  38.0000000  38.0000000
38.0000000  38.0000000  38.0000000  38.0000000  38.0000000  38.0000000  38.0000000   0.0000000
 0.0000000  36.7000000  36.7000000  36.7000000  36.7000000  36.7000000  36.7000000  36.7000000  36.7000000  36.7000000
36.7000000  36.7000000  36.7000000  36.7000000  36.7000000  36.7000000  36.7000000   0.0000000
 0.0000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000
35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000  35.7000000   0.0000000

 0.0000000  34.8000000  34.8000000  34.8000000  34.8000000  34.8000000  34.8000000  34.8000000  34.8000000  34.8000000
34.8000000  34.8000000  34.8000000  34.8000000  34.8000000  34.8000000  34.8000000   0.0000000
 0.0000000  33.7000000  33.7000000  33.7000000  33.7000000  33.7000000  33.7000000  33.7000000  33.7000000  33.7000000
33.7000000  33.7000000  33.7000000  33.7000000  33.7000000  33.7000000  33.7000000   0.0000000
 0.0000000  32.8000000  32.8000000  32.8000000  32.8000000  32.8000000  32.8000000  32.8000000  32.8000000  32.8000000
32.8000000  32.8000000  32.8000000  32.8000000  32.8000000  32.8000000  32.8000000   0.0000000
 0.0000000  31.8000000  31.8000000  31.8000000  31.8000000  31.8000000  31.8000000  31.8000000  31.8000000  31.8000000
31.8000000  31.8000000  31.8000000  31.8000000  31.8000000  31.8000000  31.8000000   0.0000000
 0.0000000  30.7000000  30.7000000  30.7000000  30.7000000  30.7000000  30.7000000  30.7000000  30.7000000  30.7000000
30.7000000  30.7000000  30.7000000  30.7000000  30.7000000  30.7000000  30.7000000   0.0000000
 0.0000000  29.7000000  29.7000000  29.7000000  29.7000000  29.7000000  29.7000000  29.7000000  29.7000000  29.7000000
29.7000000  29.7000000  29.7000000  29.7000000  29.7000000  29.7000000  29.7000000   0.0000000
 0.0000000  28.8000000  28.8000000  28.8000000  28.8000000  28.8000000  28.8000000  28.8000000  28.8000000  28.8000000
28.8000000  28.8000000  28.8000000  28.8000000  28.8000000  28.8000000  28.8000000   0.0000000
 0.0000000  27.8000000  27.8000000  27.8000000  27.8000000  27.8000000  27.8000000  27.8000000  27.8000000  27.8000000
27.8000000  27.8000000  27.8000000  27.8000000  27.8000000  27.8000000  27.8000000   0.0000000
 0.0000000  27.3000000  27.3000000  27.3000000  27.3000000  27.3000000  27.3000000  27.3000000  27.3000000  27.3000000
27.3000000  27.3000000  27.3000000  27.3000000  27.3000000  27.3000000  27.3000000   0.0000000
 0.0000000  26.4000000  26.4000000  26.4000000  26.4000000  26.4000000  26.4000000  26.4000000  26.4000000  26.4000000
26.4000000  26.4000000  26.4000000  26.4000000  26.4000000  26.4000000  26.4000000   0.0000000
 0.0000000  25.4000000  25.4000000  25.4000000  25.4000000  25.4000000  25.4000000  25.4000000  25.4000000  25.4000000
25.4000000  25.4000000  25.4000000  25.4000000  25.4000000  25.4000000  25.4000000   0.0000000
 0.0000000  24.8000000  24.8000000  24.8000000  24.8000000  24.8000000  24.8000000  24.8000000  24.8000000  24.8000000
24.8000000  24.8000000  24.8000000  24.8000000  24.8000000  24.8000000  24.8000000   0.0000000
 0.0000000  23.8000000  23.8000000  23.8000000  23.8000000  23.8000000  23.8000000  23.8000000  23.8000000  23.8000000
23.8000000  23.8000000  23.8000000  23.8000000  23.8000000  23.8000000  23.8000000   0.0000000
 0.0000000  22.8000000  22.8000000  22.8000000  22.8000000  22.8000000  22.8000000  22.8000000  22.8000000  22.8000000
22.8000000  22.8000000  22.8000000  22.8000000  22.8000000  22.8000000  22.8000000   0.0000000
 0.0000000  22.3000000  22.3000000  22.3000000  22.3000000  22.3000000  22.3000000  22.3000000  22.3000000  22.3000000
22.3000000  22.3000000  22.3000000  22.3000000  22.3000000  22.3000000  22.3000000   0.0000000
 0.0000000  21.8000000  21.8000000  21.8000000  21.8000000  21.8000000  21.8000000  21.8000000  21.8000000  21.8000000
21.8000000  21.8000000  21.8000000  21.8000000  21.8000000  21.8000000  21.8000000   0.0000000
 0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000
 0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000
```

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ITERATION PARAMETERS
  2.368E-03 8.838E-03 1.878E-02 5.067E-02 1.388E-01 3.700E-01 1.000E+00 0.000E+00 0.000E+00 0.000E+00
  0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
  0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
  0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
  0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
```

CONCENTRATION

NUMBER OF TIME STEPS : 0
TIME(SECONDS) : 0.000000E+00
CHEM.TIME(SECONDS) : 0.000000E+00
CHEM.TIME(DAYS) : 0.000000E+00
TIME(YEARS) : 0.000000E+00
CHEM.TIME(YEARS) : 0.000000E+00
NO. MOVES COMPLETED : 0

0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 1
TIME(SECONDS) = 1.10000E+08
TIME(DAYS) = 1.273158E+03
TIME(YEARS) = 3.485689E+00

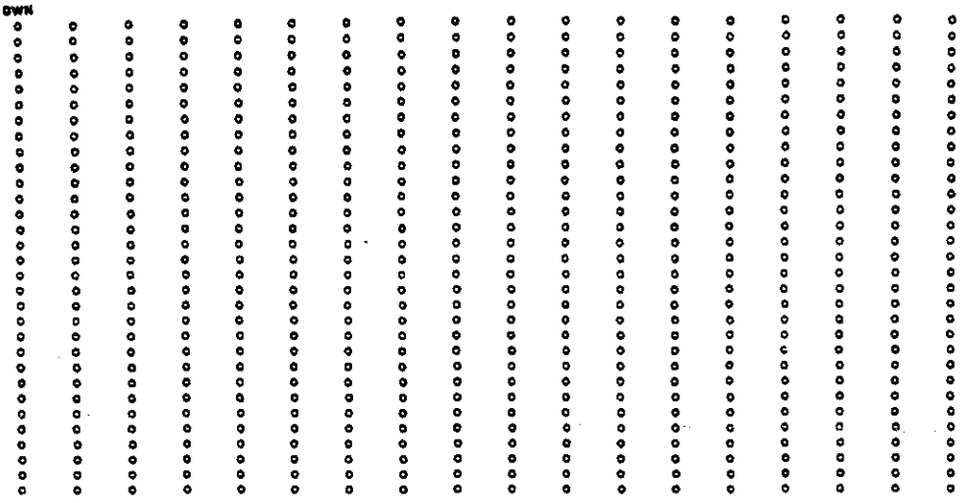
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		
0.0000000	46.5999998	46.5999998	46.5999998	46.5999998	46.5999998	46.5999998	46.5999997	46.5999997	46.5999997
46.5999997	46.5999998	46.5999998	46.5999998	46.5999998	46.5999998	46.5999998	0.0000000		
0.0000000	46.9000000	46.8477570	46.8042758	46.7843100	46.7812271	46.8430658	46.9068999	46.9593821	46.9593821
46.9068999	46.8430658	46.7812271	46.7843100	46.8042758	46.8477570	46.9000000	0.0000000		
0.0000000	46.2999998	46.0868368	44.9842578	44.9421051	44.9383516	44.9706013	46.0361536	46.0884205	46.0884205
46.0361536	44.9706013	44.9383516	44.9421051	44.9842578	46.0868368	46.2999998	0.0000000		
0.0000000	44.4999995	44.2163205	44.1041586	44.0806171	44.0823823	44.0868347	44.0935181	44.1105720	44.1105720
44.0935181	44.0868347	44.0823823	44.0806171	44.1041586	44.2163205	44.4999995	0.0000000		
0.0000000	43.1999999	43.1738801	43.1552787	43.1443013	43.1425183	43.1487272	43.1612324	43.1694118	43.1694118
43.1612324	43.1487272	43.1425183	43.1443013	43.1552787	43.1738801	43.1999999	0.0000000		
0.0000000	41.8000008	42.1205805	42.1999802	42.2159456	42.2215134	42.2261425	42.2316919	42.2355115	42.2355115
42.2316919	42.2261425	42.2215134	42.2159456	42.1999802	42.1205805	41.8000008	0.0000000		
0.0000000	41.3999997	41.3137085	41.3048412	41.3053733	41.3053545	41.3054383	41.3053077	41.3070551	41.3070551
41.3053077	41.3054383	41.3053545	41.3053733	41.3048412	41.3137085	41.3999997	0.0000000		
0.0000000	40.4999998	40.4253144	40.4021697	40.3815940	40.3850273	40.3809440	40.3789057	40.3780803	40.3780803
40.3789057	40.3809440	40.3850273	40.3815940	40.4021697	40.4253144	40.4999998	0.0000000		
0.0000000	39.4000003	39.4855328	39.4669944	39.4738854	39.4623036	39.4545953	39.4502415	39.4482981	39.4482981
39.4502415	39.4545953	39.4623036	39.4738854	39.4669944	39.4855328	39.4000003	0.0000000		
0.0000000	38.7000000	38.5318853	38.5854432	38.5558911	38.5374419	38.5262800	38.5199851	38.5171842	38.5171842
38.5199851	38.5262800	38.5374419	38.5558911	38.5854432	38.5318853	38.7000000	0.0000000		
0.0000000	37.9999998	37.7562025	37.6670097	37.6271434	37.6058132	37.5834723	37.5865181	37.5834288	37.5834288
37.5865181	37.5834723	37.6058132	37.6271434	37.6670097	37.7562025	37.9999998	0.0000000		
0.0000000	36.7000002	36.7231413	36.7005787	36.6774575	36.6523272	36.6529884	36.6478243	36.6468072	36.6468072
36.6478243	36.6529884	36.6523272	36.6778575	36.7005787	36.7231413	36.7000002	0.0000000		
0.0000000	35.7000001	35.7379623	35.7333081	35.7228488	35.7148123	35.7088298	35.7073138	35.7062589	35.7062589
35.7073138	35.7088298	35.7148123	35.7228488	35.7333081	35.7379623	35.7000001	0.0000000		
0.0000000	34.8999997	34.7961184	34.7715025	34.7659082	34.7648770	34.7661203	34.7658564	34.7660672	34.7660672
34.7658564	34.7661203	34.7648770	34.7659062	34.7715025	34.7961184	34.8999997	0.0000000		
0.0000000	33.7000032	33.7715777	33.7820805	33.8022582	33.8108474	33.8176396	33.8228852	33.8252743	33.8252743
33.8228852	33.8176396	33.8108474	33.8022582	33.7820805	33.7715777	33.7000032	0.0000000		
0.0000000	32.7999999	32.8020653	32.8214012	32.8474088	32.8804481	32.8742034	32.8834064	32.8879780	32.8879780
32.8834064	32.8742034	32.8804481	32.8474088	32.8214012	32.8020653	32.7999999	0.0000000		
0.0000000	31.8000000	31.8138678	31.8495515	31.8847532	31.9134496	31.9345097	31.9482195	31.9549073	31.9549073
31.9482195	31.9345097	31.9134496	31.8847532	31.8495515	31.8138678	31.8000000	0.0000000		
0.0000000	30.7000001	30.8037674	30.8782455	30.9234979	30.9739107	31.0020855	31.0139174	31.0284695	31.0284695
31.0139174	31.0020855	30.9739107	30.9234979	30.8782455	30.8037674	30.7000001	0.0000000		
0.0000000	29.7000000	29.8244061	29.9256388	29.9880075	30.0479159	30.0810901	30.1014561	30.1111073	30.1111073
30.1014561	30.0810901	30.0479158	29.9880075	29.9256388	29.8244061	29.7000000	0.0000000		
0.0000000	28.8000004	28.8883893	29.0023860	29.0637783	29.1367433	29.1714837	29.1827065	29.2027720	29.2027720
29.1827065	29.1714837	29.1367433	29.0637783	29.0023860	28.8883893	28.8000004	0.0000000		
0.0000000	27.9000001	28.0399840	28.1332833	28.1868481	28.2450405	28.2763310	28.2957118	28.3049282	28.3049282
28.2957118	28.2763310	28.2450406	28.1868481	28.1332833	28.0399840	27.9000001	0.0000000		
0.0000000	27.2999998	27.2603671	27.2918813	27.3333809	27.3883087	27.3933887	27.4089194	27.4163294	27.4163294
27.4089194	27.3933887	27.3883087	27.3333809	27.2918813	27.2603671	27.2999998	0.0000000		
0.0000000	26.3999999	26.4089805	26.4407158	26.4739429	26.5008019	26.5193135	26.5300437	26.5348784	26.5348784
26.5300437	26.5193135	26.5008019	26.4739429	26.4407158	26.4089805	26.3999999	0.0000000		
0.0000000	25.4000003	25.5339374	25.5884182	25.6203734	25.6409626	25.6523372	25.6568692	25.6578750	25.6578750
25.6568692	25.6523372	25.6409626	25.6203734	25.5884182	25.5339374	25.4000003	0.0000000		

0.0000000	24.7889887	24.7412825	24.7573413	24.7801218	24.7831600	24.7944082	24.7884891	24.7831182	24.7831182
24.7884891	24.7944082	24.7831600	24.7801218	24.7573413	24.7412825	24.7889887	0.0000000		
0.0000000	23.8000000	23.8713771	23.9207885	23.9478545	23.9544160	23.9420340	23.9177884	23.9021883	23.9021883
23.9177884	23.9420340	23.9544160	23.9478545	23.9207885	23.8713771	23.8000000	0.0000000		
0.0000000	22.8000004	23.0234518	23.1067892	23.1381612	23.1340485	23.1018863	23.0373781	23.0058377	23.0058377
23.0373781	23.1018863	23.1340485	23.1381612	23.1067892	23.0234518	22.8000004	0.0000000		
0.0000000	22.2888888	22.3178232	22.3480954	22.3575774	22.3474385	22.2944855	22.1284537	22.0780117	22.0780117
22.1284537	22.2944855	22.3474385	22.3575774	22.3480954	22.3178232	22.2888888	0.0000000		
0.0000000	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	21.8000003	21.8000003	21.8000003
21.8000003	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	0.0000000		
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		

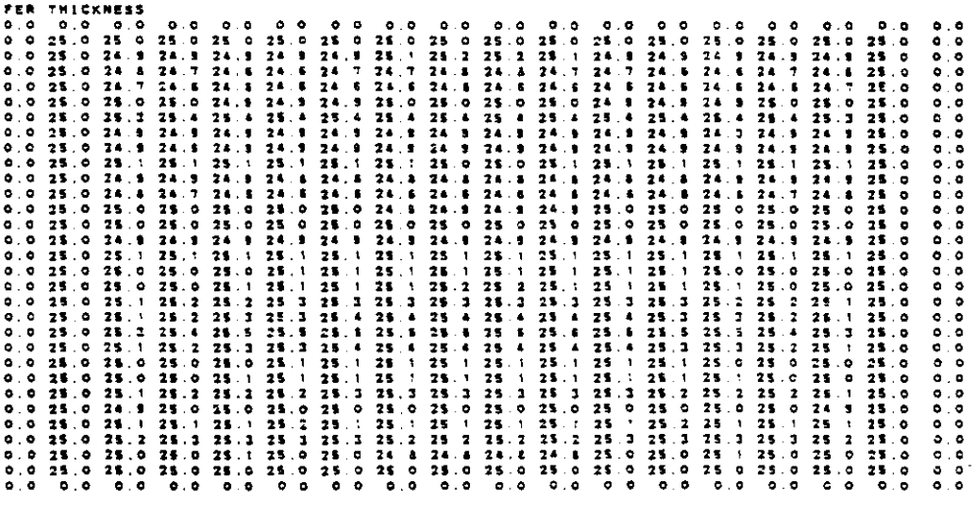
HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 1
TIME(SECONDS) = 1.100000E+08
TIME(DAYS) = 1.273150E+03
TIME(YEARS) = 3.485850E+00

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	0
0	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	0
0	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	0
0	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	0
0	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	0
0	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	0
0	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	0
0	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	0
0	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	0
0	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	0
0	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	0
0	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	0
0	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	0
0	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	0
0	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	0
0	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	0
0	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	0
0	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	0
0	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	0
0	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	0
0	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	0
0	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	0
0	26	26	26	26	27	27	27	27	27	27	27	27	26	26	26	26	0
0	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	0
0	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	0
0	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	0
0	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	0
0	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0
0	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DRAWDOWN



AQUIFER THICKNESS



```
TRANSMISSIVITY
   0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.14 0.14 0.15 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.15 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

  CUMULATIVE MASS BALANCE -- (IN FT**3)

   RECHARGE                       :  0.00000E+00
   INJECTION                      : -3.15580E+07
   PUMPAGE                        :  3.15580E+07
   CUMULATIVE  NET  PUMPAGE       :  0.00000E+00
   WATER RELEASE FROM STORAGE     : -2.08448E+03
   LEAKAGE INTO AQUIFER           : -3.38714E+08
   LEAKAGE OUT OF AQUIFER         :  3.38755E+08
   CUMULATIVE  NET  LEAKAGE       :  4.04480E+04

        MASS BALANCE RESIDUAL     : -4.24960E+04
        ERROR  (AS PERCENT)       : -1.14871E-02

  RATE MASS BALANCE -- (IN C.F.S.)

   RECHARGE                       :  0.00000E+00
   LEAKAGE INTO AQUIFER           :  3.07922E+00
   LEAKAGE OUT OF AQUIFER         : -3.07955E+00
   NET LEAKAGE      (QNET)        : -3.96013E-04
   INJECTION                      : -2.86800E-01
   PUMPAGE                        :  2.86800E-01
   NET WITHDRAWAL     (TPUM)      :  0.00000E+00


 CONCENTRATION

NUMBER OF TIME STEPS :        1
        DELTA T      :   1.10000E+08
        TIME(SECONDS) :  1.10000E+08
  CHEM.TIME(SECONDS) :   1.10000E+08
  CHEM.TIME(DAYS)    :   1.27314E+03
        TIME(YEARS)  :   3.48568E+00
  CHEM.TIME(YEARS)   :   3.48568E+00
 NO. MOVES COMPLETED :       29

    0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0000     0.0000    -0.0001     0.0898    11.8479     7.9048    11.2240

    9.2952     0.0720    -0.0001     0.0000     0.0000     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0000     0.0002     0.0085     3.0896   192.4952   129.0206   184.9978

  154.8857     2.4687     0.0078     0.0002     0.0000     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0001     0.0084     0.5670    40.3986   185.7570   124.7480   178.1830

  150.2038    32.5588     0.4568     0.0052     0.0001     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0005     0.0302     1.8201    84.8731   181.0548   115.6284   159.8013

  147.5259    88.5987     1.4898     0.0244     0.0004     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0011     0.0853     2.7778    75.8842   170.9780   123.4220   187.8880

  140.3858    81.2510     2.2441     0.0527     0.0009     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0024     0.1189     4.4038    84.7881   180.9272   129.2911   172.8962

  149.2718    88.5184     2.5572     0.0880     0.0019     0.0000     0.0000     0.0000
```

0.0000	0.0000	0.0001	0.0044	0.1758	4.8972	81.3493	189.8708	122.3022	159.9453
141.5119	88.5209	3.9687	0.1420	0.0035	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0001	0.0068	0.2525	6.3920	76.5231	187.3347	125.2730	182.8505
140.2199	63.8442	5.1885	0.2039	0.0065	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0002	0.0083	0.2774	8.1289	78.8397	150.7488	108.4530	138.0172
128.8058	83.7277	4.9818	0.2240	0.0087	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0001	0.0077	0.2591	5.7068	58.9828	126.4948	108.1434	134.8080
108.8883	48.8365	4.6133	0.2083	0.0082	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0001	0.0032	0.1218	3.3885	41.1057	92.0348	69.7864	88.3283
77.7827	33.3748	2.7385	0.0884	0.0028	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0009	0.0482	1.2508	14.0100	28.8589	28.8523	37.7611
24.6782	11.3919	1.0120	0.0390	0.0008	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0002	0.0119	0.2788	3.2242	10.8213	8.1238	11.5188
8.9628	2.8277	0.2243	0.0093	0.0002	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0019	0.0478	0.8457	2.5625	2.0271	2.5519
2.1688	0.5272	0.0385	0.0015	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0003	0.0073	0.1018	0.4431	0.3671	0.4603
0.3778	0.0831	0.0059	0.0002	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0132	0.0659	0.0580	0.0708
0.0582	0.0108	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0015	0.0081	0.0068	0.0088
0.0089	0.0012	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0004	0.0007	0.0008
0.0007	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001
0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	0.0000		
0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	0.0000		
0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	0.0000		
0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	0.0000		
0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

CONCENTRATION

NUMBER OF TIME STEPS = 1

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	12	8	11	9	0	0	0	0	0	0	0
0	0	0	0	0	0	3	192	128	185	158	2	0	0	0	0	0	0
0	0	0	0	0	1	40	186	125	178	150	33	0	0	0	0	0	0
0	0	0	0	0	2	85	181	118	180	148	59	1	0	0	0	0	0
0	0	0	0	0	3	78	171	123	188	140	81	2	0	0	0	0	0
0	0	0	0	0	4	85	181	128	173	149	59	4	0	0	0	0	0
0	0	0	0	0	5	81	170	122	180	142	88	4	0	0	0	0	0
0	0	0	0	0	8	79	167	128	163	140	64	5	0	0	0	0	0
0	0	0	0	0	6	79	151	108	138	127	64	5	0	0	0	0	0
0	0	0	0	0	8	80	126	106	135	107	49	5	0	0	0	0	0
0	0	0	0	0	3	41	92	70	68	78	33	3	0	0	0	0	0
0	0	0	0	0	1	14	29	30	38	25	11	1	0	0	0	0	0
0	0	0	0	0	0	3	11	9	12	9	3	0	0	0	0	0	0
0	0	0	0	0	0	1	3	2	3	2	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

N = 3
NUMBER OF ITERATIONS = 1

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 3
TIME(SECONDS) = 3.15576E+08
TIME(DAYS) = 3.65250E+03
TIME(YEARS) = 1.00000E+01

0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		
0.0000000	46.5999996	46.5999996	46.5999995	46.5999995	46.5999998	46.5999996	46.5999997	46.5999997	46.5999997
46.5999997	46.5999996	46.5999996	46.5999995	46.5999995	46.5999996	46.5999996	0.0000000		
0.0000000	45.9000000	45.8480547	45.8062385	45.7868302	45.7941012	45.8459835	46.0120817	46.0621988	46.0621986
46.0120817	45.8459835	45.7941012	45.7868302	45.8062385	45.8480547	45.9000000	0.0000000		
0.0000000	45.2999998	45.0868845	44.9838812	44.9411887	44.9384823	44.9708880	45.0388718	45.0698300	45.0698300
45.0388718	44.9708880	44.9384823	44.9411887	44.9838812	45.0868845	45.2999998	0.0000000		
0.0000000	44.4999995	44.2114520	44.0956040	44.0500302	44.0407804	44.0554477	44.0830788	44.1008448	44.1008448
44.0830788	44.0554477	44.0407804	44.0500302	44.0956040	44.2114520	44.4999995	0.0000000		
0.0000000	43.1999999	43.1858818	43.1420253	43.1279273	43.1247851	43.1318171	43.1439453	43.1524297	43.1524297
43.1439453	43.1318171	43.1247851	43.1279273	43.1420253	43.1858818	43.1999999	0.0000000		
0.0000000	41.8000008	42.1179188	42.1945885	42.2103986	42.2144271	42.2187800	42.2242893	42.2280794	42.2280794
42.2242893	42.2187800	42.2144271	42.2103986	42.1945885	42.1179188	41.8000008	0.0000000		

0.0000000	41.3999997	41.3136060	41.3048062	41.3046525	41.3041160	41.3041435	41.3051933	41.3061373	41.3061373
41.3051933	41.3041435	41.3041160	41.3046525	41.3048062	41.3136060	41.3999997	0.0000000		
0.0000000	40.4999998	40.4243827	40.4006384	40.3895257	40.3825673	40.3783233	40.3761838	40.3753582	40.3753582
40.3761838	40.3783233	40.3825673	40.3895257	40.4006384	40.4243827	40.4999998	0.0000000		
0.0000000	39.4000003	39.4855405	39.4855741	39.4733147	39.4814070	39.4832548	39.4464721	39.4453141	39.4453141
39.4464721	39.4832548	39.4814070	39.4733147	39.4855741	39.4855405	39.4000003	0.0000000		
0.0000000	38.7000000	38.6320898	38.5855054	38.5552457	38.5358084	38.5238302	38.5189495	38.5136026	38.5136026
38.5189495	38.5238302	38.5358084	38.5552457	38.5855054	38.6320898	38.7000000	0.0000000		
0.0000000	37.9999995	37.7526544	37.6606011	37.6178324	37.5944078	37.5805747	37.5727548	37.5682402	37.5682402
37.5727548	37.5805747	37.5944078	37.6178324	37.6606011	37.7526544	37.9999995	0.0000000		
0.0000000	36.7000002	36.7174053	36.6888081	36.6633883	36.6449456	36.6333865	36.6286886	36.6236847	36.6236847
36.6286886	36.6333865	36.6449456	36.6633883	36.6888081	36.7174053	36.7000002	0.0000000		
0.0000000	35.7000001	35.7328854	35.7232971	35.7088552	35.6989578	35.6893069	35.6848488	35.6828280	35.6828280
35.6848488	35.6893069	35.6989578	35.7088552	35.7232971	35.7328854	35.7000001	0.0000000		
0.0000000	34.8999987	34.7886021	34.7692908	34.7484853	34.7431681	34.7402277	34.7389293	34.7383852	34.7383852
34.7389293	34.7402277	34.7431681	34.7484853	34.7692908	34.7886021	34.8999987	0.0000000		
0.0000000	33.7000002	33.7652133	33.7790234	33.7840392	33.7861006	33.7917197	33.7944121	33.7958310	33.7958310
33.7944121	33.7917197	33.7861006	33.7840392	33.7790234	33.7652133	33.7000002	0.0000000		
0.0000000	32.7999998	32.7956152	32.8087325	32.8242723	32.8378255	32.8482227	32.8551807	32.8588548	32.8588548
32.8551807	32.8482227	32.8378255	32.8242723	32.8087325	32.7956152	32.7999998	0.0000000		
0.0000000	31.7999998	31.8068941	31.8352056	31.8680468	31.8904713	31.9083753	31.9189678	31.9256384	31.9256384
31.9189678	31.9083753	31.8904713	31.8680468	31.8352056	31.8068942	31.7999998	0.0000000		
0.0000000	30.7000001	30.7875511	30.8552235	30.9188448	30.9538238	30.9790958	30.9850855	31.0027753	31.0027753
30.9850855	30.9790958	30.9538240	30.9188448	30.8552235	30.7875611	30.7000001	0.0000000		
0.0000000	29.7000000	29.8197127	29.9187338	29.9855853	30.0327199	30.0839930	30.0831841	30.0822646	30.0822646
30.0831841	30.0839930	30.0327199	29.9855853	29.9187339	29.8197127	29.7000000	0.0000000		
0.0000000	28.8000004	28.8556574	29.0002042	29.0802851	29.1320728	29.1658268	29.1883385	29.1980398	29.1980398
29.1883385	29.1658268	29.1320728	29.0802851	29.0002042	28.8556578	28.8000004	0.0000000		
0.0000000	27.9000001	28.0425408	28.1372178	28.2034138	28.2497967	28.2811227	28.3003997	28.3095836	28.3095836
28.3003997	28.2811227	28.2497957	28.2034136	28.1372178	28.0425408	27.9000001	0.0000000		
0.0000000	27.2999998	27.2826361	27.2959530	27.3386396	27.3744411	27.4001769	27.4162458	27.4238052	27.4238052
27.4162458	27.4001768	27.3744411	27.3386396	27.2959530	27.2826361	27.2999998	0.0000000		
0.0000000	26.3999998	26.4087213	26.4425065	26.4758339	26.5048026	26.5243443	26.5358396	26.5412295	26.5412295
26.5358396	26.5243443	26.5048026	26.4758339	26.4425065	26.4087213	26.3999998	0.0000000		
0.0000000	25.4000003	25.5354104	25.5909485	25.6244332	25.6464982	25.6591503	25.6646343	25.6663034	25.6663034
25.6646343	25.6591503	25.6464982	25.6244332	25.5909486	25.5354104	25.4000003	0.0000000		
0.0000000	24.7999997	24.7418075	24.7585629	24.7821578	24.7983480	24.7991474	24.7948080	24.7901595	24.7901595
24.7948080	24.7991474	24.7983480	24.7821578	24.7585629	24.7418075	24.7999997	0.0000000		
0.0000000	23.8000000	23.8706130	23.9200142	23.9477632	23.9554516	23.9446241	23.9218850	23.9071753	23.9071753
23.9218850	23.9446241	23.9554516	23.9477632	23.9200143	23.8706130	23.8000000	0.0000000		
0.0000000	22.8000004	23.0244991	23.1085391	23.1382020	23.1385197	23.1077624	22.0448087	23.0137154	23.0137154
23.0448087	23.1077624	23.1385197	23.1382020	23.1085391	23.0244991	22.8000004	0.0000000		
0.0000000	22.2999999	22.3190450	22.3478213	22.3808643	22.3811120	22.2987318	22.1325856	22.0823241	22.0823241
22.1325856	22.2987318	22.3811120	22.3808643	22.3478213	22.3190450	22.2999999	0.0000000		
0.0000000	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	21.8000003	21.8000003	21.8000003
21.8000003	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	0.0000000		
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		

```
HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS =      3
       TIME(SECONDS)  =  3.15576E+08
       TIME(DAYS)     =  3.65250E+03
       TIME(YEARS)    =  1.00000E+01

  0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
  0  47  47  47  47  47  47  47  47  47  47  47  47  47  47  47  47  47   0
  0  46  46  46  46  46  46  46  46  46  46  46  46  46  46  46  46  46   0
  0  45  45  45  45  45  45  45  45  45  45  45  45  45  45  45  45  45   0
  0  44  44  44  44  44  44  44  44  44  44  44  44  44  44  44  44  44   0
  0  43  43  43  43  43  43  43  43  43  43  43  43  43  43  43  43  43   0
  0  42  42  42  42  42  42  42  42  42  42  42  42  42  42  42  42  42   0
  0  41  41  41  41  41  41  41  41  41  41  41  41  41  41  41  41  41   0
  0  40  40  40  40  40  40  40  40  40  40  40  40  40  40  40  40  40   0
  0  39  39  39  39  39  39  39  39  39  39  39  39  39  39  39  39  39   0
  0  38  38  38  38  38  38  38  38  38  38  38  38  38  38  38  38  38   0
  0  37  37  37  37  37  37  37  37  37  37  37  37  37  37  37  37  37   0
  0  36  36  36  36  36  36  36  36  36  36  36  36  36  36  36  36  36   0
  0  35  35  35  35  35  35  35  35  35  35  35  35  35  35  35  35  35   0
  0  34  34  34  34  34  34  34  34  34  34  34  34  34  34  34  34  34   0
  0  33  33  33  33  33  33  33  33  33  33  33  33  33  33  33  33  33   0
  0  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32   0
  0  31  31  31  31  31  31  31  31  31  31  31  31  31  31  31  31  31   0
  0  30  30  30  30  30  30  30  30  30  30  30  30  30  30  30  30  30   0
  0  29  29  29  29  29  29  29  29  29  29  29  29  29  29  29  29  29   0
  0  28  28  28  28  28  28  28  28  28  28  28  28  28  28  28  28  28   0
  0  27  27  27  27  27  27  27  27  27  27  27  27  27  27  27  27  27   0
  0  26  26  26  26  27  27  27  27  27  27  27  27  26  26  26  26  26   0
  0  25  26  26  26  26  26  26  26  26  26  26  26  26  26  26  26  25   0
  0  25  25  25  25  25  25  25  25  25  25  25  25  25  25  25  25  25   0
  0  24  24  24  24  24  24  24  24  24  24  24  24  24  24  24  24  24   0
  0  23  23  23  23  23  23  23  23  23  23  23  23  23  23  23  23  23   0
  0  22  22  22  22  22  22  22  22  22  22  22  22  22  22  22  22  22   0
  0  22  22  22  22  22  22  22  22  22  22  22  22  22  22  22  22  22   0
  0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0

DRAWDOWN
  0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
```

AQUIFER THICKNESS

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	24.9	24.9	24.9	24.9	24.9	25.1	25.2	25.2	25.1	24.9	24.9	24.9	24.9	24.9	25.0	0.0
0.0	25.0	24.8	24.7	24.8	24.8	24.7	24.7	24.8	24.8	24.7	24.7	24.6	24.6	24.7	24.8	25.0	0.0
0.0	25.0	24.7	24.8	24.6	24.5	24.6	24.6	24.6	24.6	24.6	24.6	24.5	24.6	24.6	24.7	25.0	0.0
0.0	25.0	25.0	24.9	24.9	24.9	24.9	24.9	25.0	25.0	24.9	24.9	24.9	24.9	24.9	25.0	25.0	0.0
0.0	25.0	25.3	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.3	25.0	0.0
0.0	25.0	24.9	24.9	24.8	24.9	24.9	24.5	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	25.0	0.0
0.0	25.0	24.8	24.9	24.9	24.9	24.9	24.9	24.9	24.3	24.8	24.9	24.9	24.9	24.9	24.9	25.0	0.0
0.0	25.0	25.1	25.1	25.1	25.1	25.1	25.0	25.0	25.0	25.0	25.1	25.1	25.1	25.1	25.1	25.0	0.0
0.0	25.0	24.9	24.9	24.9	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.9	24.9	24.9	25.0	0.0
0.0	25.0	24.8	24.7	24.6	24.5	24.6	24.6	24.6	24.5	24.6	24.5	24.6	24.6	24.7	24.8	25.0	0.0
0.0	25.0	25.0	25.0	25.0	24.9	24.8	24.9	24.9	24.9	24.9	24.9	24.9	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	24.9	24.9	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.9	24.9	25.0	0.0
0.0	25.0	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.1	25.1	25.1	25.1	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.0	25.0	25.0	0.0
0.0	25.0	25.1	25.2	25.2	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.2	25.2	25.1	25.0	0.0
0.0	25.0	25.1	25.2	25.3	25.3	25.4	25.4	25.4	25.4	25.4	25.4	25.3	25.3	25.2	25.1	25.0	0.0
0.0	25.0	25.3	25.4	25.5	25.5	25.6	25.6	25.6	25.6	25.5	25.5	25.5	25.5	25.4	25.3	25.0	0.0
0.0	25.0	25.1	25.2	25.3	25.3	25.4	25.4	25.4	25.4	25.4	25.4	25.3	25.3	25.2	25.1	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.1	25.2	25.2	25.2	25.3	25.3	25.3	25.3	25.3	25.3	25.2	25.2	25.2	25.1	25.0	0.0
0.0	25.0	24.9	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	24.9	25.0	0.0
0.0	25.0	25.1	25.1	25.1	25.2	25.1	25.1	25.1	25.1	25.1	25.1	25.2	25.1	25.1	25.1	25.0	0.0
0.0	25.0	25.2	25.3	25.3	25.3	25.3	25.2	25.2	25.2	25.2	25.3	25.3	25.3	25.3	25.2	25.0	0.0
0.0	25.0	25.0	25.0	25.1	25.1	25.0	24.8	24.8	24.8	24.8	25.0	25.1	25.1	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TRANSMISSIVITY

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CUMULATIVE MASS BALANCE -- (IN FT**3)

RECHARGE	:	0.00000E+00
INJECTION	:	-9.13806E+07
PUMPAGE	:	9.13806E+07
CUMULATIVE NET PUMPAGE	:	0.00000E+00
WATER RELEASE FROM STORAGE	:	-1.80028E+03
LEAKAGE INTO AQUIFER	:	-9.70743E+08
LEAKAGE OUT OF AQUIFER	:	9.70797E+08
CUMULATIVE NET LEAKAGE	:	5.42720E+04
MASS BALANCE RESIDUAL	:	-5.60540E+04
ERROR (AS PERCENT)	:	-5.27830E-03

RATE MASS BALANCE -- (IN C.F.S.)

RECHARGE	:	0.00000E+00
LEAKAGE INTO AQUIFER	:	3.07355E+00
LEAKAGE OUT OF AQUIFER	:	-3.07368E+00
NET LEAKAGE (QNET)	:	-1.52408E-04
INJECTION	:	-2.89800E-01
PUMPAGE	:	2.89800E-01
NET WITHDRAWAL (TPUM)	:	0.00000E+00

CONCENTRATION

NUMBER OF TIME STEPS	3
DELTA T	8.657808E+07
TIME(SECONDS)	3.155788E+08
CHEM.TIME(SECONDS)	3.15574E+08
CHEM.TIME(DAYS)	3.65247E+03
TIME(YEARS)	1.000000E+01
CHEM.TIME(YEARS)	9.999992E+00
NO. MOVES COMPLETED	25

0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	-0.0000	-0.0017	-0.1524	12.1573	8.4231	8.3333
8.8369	-0.1217	-0.0014	-0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	-0.0000	-0.0073	-0.4865	208.9339	111.3810	162.2826
167.7889	-0.3890	-0.0068	-0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	-0.0068	3.0285	167.8251	96.3702	140.3870
134.0275	2.4182	-0.0534	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0003	-0.0833	32.2262	190.8475	88.9273	143.7979
152.8435	25.7811	-0.0858	0.0003	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0021	0.0027	86.1835	184.3383	116.4587	167.7821
156.8822	52.9614	0.0071	0.0012	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	-0.0000	0.0002	0.0084	0.3854	74.5705	186.8493	114.5788	163.9897
148.3847	59.7428	0.3182	0.0082	0.0002	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0017	0.0845	2.5512	81.8037	178.4827	116.8832	160.2518
145.3828	65.8089	2.1782	0.0558	0.0014	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0002	0.0072	0.2352	5.5208	82.4809	174.2215	120.3331	154.1307
146.2707	68.5628	4.5682	0.2011	0.0063	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0003	0.0131	0.3835	7.8560	85.4540	174.8007	120.2809	148.3577
145.9458	68.4415	6.1837	0.3084	0.0105	0.0003	0.0000	0.0000		
0.0000	0.0000	0.0005	0.0178	0.4878	8.4872	85.7287	168.9980	121.6188	145.3813
144.8550	70.1778	6.8831	0.3759	0.0141	0.0004	0.0000	0.0000		
0.0000	0.0000	0.0006	0.0210	0.5377	9.2551	84.1869	168.1835	120.5128	143.8138
141.8881	67.8334	7.4332	0.4311	0.0168	0.0005	0.0000	0.0000		
0.0000	0.0000	0.0006	0.0222	0.5825	9.6081	85.8519	168.5870	120.2248	143.1541
140.9965	69.2725	7.7107	0.4505	0.0176	0.0005	0.0000	0.0000		
0.0000	0.0000	0.0006	0.0213	0.5415	9.7376	84.8581	168.5558	134.5226	166.8527
144.9472	68.4527	7.8087	0.4337	0.0171	0.0006	0.0000	0.0000		
0.0000	0.0000	0.0006	0.0214	0.5128	9.5034	83.3038	166.4080	128.8700	160.8445
141.2558	67.1662	7.6258	0.4112	0.0172	0.0005	0.0000	0.0000		
0.0000	0.0000	0.0006	0.0242	0.5341	9.0278	78.6910	162.3280	125.7192	154.8435
136.4109	61.0226	7.2594	0.4294	0.0185	0.0006	0.0000	0.0000		
0.0000	0.0000	0.0012	0.0298	0.5652	8.5856	72.1024	150.4471	128.3580	155.3024
135.9444	56.4635	8.5305	0.4566	0.0240	0.0010	0.0000	0.0000		
0.0000	0.0001	0.0026	0.0417	0.6643	8.3251	62.9376	138.2485	133.8227	158.2330
137.8406	51.5137	8.7875	0.5401	0.0340	0.0021	0.0001	0.0000		
0.0000	0.0001	0.0025	0.0648	0.8298	9.8453	53.3510	126.5784	134.9161	158.1305
136.3391	52.1654	8.0384	0.7586	0.0531	0.0020	0.0001	0.0000		
0.0000	0.0002	0.0063	0.0957	1.3495	12.7107	72.1008	156.4730	137.6006	156.9569
137.6983	58.4832	10.4009	1.1058	0.0787	0.0052	0.0001	0.0000		
0.0000	0.0005	0.0100	0.1344	1.7895	15.4495	79.5693	165.5271	136.0441	153.0304
137.5254	65.7128	12.5851	1.4520	0.1107	0.0053	0.0007	0.0000		
0.0000	0.0014	0.0287	0.1853	2.1841	17.4110	82.5060	152.8040	138.9732	156.8522
135.4870	68.3553	14.2753	1.7719	0.1518	0.0242	0.0008	0.0000		
0.0000	0.0026	0.0396	0.2412	2.5395	18.8112	82.8829	148.5429	137.8537	153.7836
132.2970	68.6700	15.8137	2.0724	0.1957	0.0322	0.0021	0.0000		
0.0000	0.0036	0.0550	0.3868	2.8223	19.7178	82.6847	145.0148	137.2201	151.6888
129.8102	68.5118	16.1519	2.3001	0.2002	0.0447	0.0028	0.0000		

0.0000	0.0045	0.1294	0.5888	3.5756	20.3535	80.5125	141.9559	134.3228	148.6110
127.9868	67.3388	16.5771	2.9170	0.5681	0.1051	0.0037	0.0000		
0.0000	0.0043	0.1615	1.2102	5.3683	24.3049	81.0280	135.5845	129.2588	141.5886
123.0578	66.7816	19.6744	4.3938	0.9871	0.1313	0.0034	0.0000		
0.0000	0.0049	0.1178	1.0781	5.4878	26.1045	72.9846	124.3830	123.5742	130.3087
112.3067	62.1388	21.3722	5.3426	0.8816	0.0958	0.0040	0.0000		
0.0000	0.0052	0.0841	0.8088	5.0131	21.0899	69.9216	104.3337	102.4342	110.2844
93.4387	51.0858	17.4730	4.1345	0.6830	0.0767	0.0043	0.0000		
0.0000	0.0050	0.0708	0.5829	3.4323	14.4840	43.5800	69.3384	68.8354	75.4846
60.8677	35.2184	11.8004	2.8008	0.4501	0.0575	0.0041	0.0000		
0.0000	0.0028	0.0352	0.2578	1.5835	6.5988	20.9238	34.2516	33.2747	81.0316
47.4882	18.9328	5.3361	1.2782	0.2162	0.0284	0.0023	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

CONCENTRATION

NUMBER OF TIME STEPS : 3

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	12	5	9	10	0	0	0	0	0	0	0
0	0	0	0	0	0	0	210	111	162	168	0	0	0	0	0	0	0
0	0	0	0	0	0	3	168	98	140	134	2	0	0	0	0	0	0
0	0	0	0	0	0	32	191	99	144	153	26	0	0	0	0	0	0
0	0	0	0	0	0	66	194	116	164	157	53	0	0	0	0	0	0
0	0	0	0	0	0	75	187	115	164	149	60	0	0	0	0	0	0
0	0	0	0	0	3	82	178	117	160	145	66	2	0	0	0	0	0
0	0	0	0	0	5	82	174	126	164	146	67	5	0	0	0	0	0
0	0	0	0	0	6	85	175	130	165	147	68	6	0	0	0	0	0
0	0	0	0	0	3	86	170	132	165	145	70	7	0	0	0	0	0
0	0	0	0	1	9	84	168	131	164	142	68	7	0	0	0	0	0
0	0	0	0	1	10	86	167	130	163	141	69	8	0	0	0	0	0
0	0	0	0	1	10	85	169	135	167	146	68	8	0	0	0	0	0
0	0	0	0	1	10	83	166	130	161	141	67	8	0	0	0	0	0
0	0	0	0	1	9	75	162	126	156	136	61	7	0	0	0	0	0
0	0	0	0	1	8	72	160	128	155	137	58	7	0	0	0	0	0
0	0	0	0	1	8	63	158	134	159	138	52	7	1	0	0	0	0
0	0	0	0	1	10	63	157	135	158	138	52	8	1	0	0	0	0
0	0	0	0	1	13	72	156	137	159	138	59	10	1	0	0	0	0
0	0	0	0	2	15	80	158	139	159	138	66	13	1	0	0	0	0
0	0	0	0	2	17	83	153	139	157	135	66	14	2	0	0	0	0
0	0	0	0	3	19	83	149	136	154	132	69	15	2	0	0	0	0
0	0	0	0	3	20	83	145	137	152	130	69	16	2	0	0	0	0
0	0	0	1	4	20	81	142	134	148	128	67	17	3	1	0	0	0
0	0	0	1	5	24	81	138	129	142	123	67	20	4	1	0	0	0
0	0	0	1	6	26	73	124	124	130	112	62	21	5	1	0	0	0
0	0	0	1	5	21	60	104	102	110	93	51	17	4	1	0	0	0
0	0	0	1	3	14	48	89	88	75	61	36	12	3	0	0	0	0
0	0	0	0	2	7	21	54	53	61	47	17	5	1	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CHEMICAL MASS BALANCE

MASS IN BOUNDARIES	=	0.00000E+00
MASS OUT BOUNDARIES	=	-3.12291E+08
MASS PUMPED IN	=	2.88302E+10
MASS PUMPED OUT	=	-3.91414E+08
INFLOW MINUS OUTFLOW	=	2.82285E+10
INITIAL MASS STORED	=	0.00000E+00
PRESENT MASS STORED	=	3.08193E+10
CHANGE MASS STORED	=	3.08193E+10

COMPARE RESIDUAL WITH NET FLUX AND MASS ACCUMULATION:

MASS BALANCE RESIDUAL	=	-1.58286E+09
ERROR (AS PERCENT)	=	-5.32182E+00

BABYLON,LEVELS,CHLORIDE 0000000

TIME VERSUS HEAD AND CONCENTRATION AT SELECTED OBSERVATION POINTS

PUMPING PERIOD NO. 1

TRANSIENT SOLUTION

OBS.WELL NO.	X	Y	N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
1	8	4				
			0	45.3	0.0	0.000
			1	45.0	185.8	3.486
			2	45.0	201.1	6.971
			3	46.0	187.6	10.000
OBS.WELL NO.	X	Y	N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
2	10	16				
			0	33.7	0.0	0.000
			1	33.8	0.5	3.486
			2	33.8	167.1	6.971
			3	33.8	154.8	10.000
OBS.WELL NO.	X	Y	N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
3	10	26				
			0	24.8	0.0	0.000
			1	24.8	0.0	3.486
			2	24.8	0.5	6.971
			3	24.8	141.6	10.000

MESSAGE SUMMARY. MESSAGE NUMBER - COUNT

208 511 OR OVER

APPENDIX V-C

INPUT AND SELECTED OUTPUT FOR TEST PROBLEM 3

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.LONGIS23.CNTL

//U11834C JOB (?????,TSO-TR-KONI),KONIKOWRUN,
//   TIME=(5,00),CLASS=K, TYPRUN=HOLD,
//   MSGCLASS=X,NOTIFY=*
/*PASSWORD ????
/*JOBPARM ROOM=C
//*
//KONI EXEC PGM=KONI60G,REGION=1500K
//STEPLIB   DD DISP=SHR,DSN=U11236C.KONI.LOAD
//FT06F001 DD DSN=U11834C.LONGIS23.OUTLIST,UNIT=STORAGE,
//              SPACE=(TRK,(50,50)),DISP=OLD,
//              DCB=(RECFM=VBA,LRECL=133,BLKSIZE=7448)
//FT10F001 DD DSN=U11834C.LONGIS23.GRAPH,UNIT=STORAGE,
//              SPACE=(TRK,(50,50)),DISP=OLD,
//              DCB=(RECFM=FB,LRECL=80,BLKSIZE=7440)
//FT07F001 DD SYSOUT=5
//FT05F001 DD *
BABYLON.LEVELB.CHLORIDE                                                              00000000
   3    3   18   313620    1     7    3 100     8     4     1     0     0     0     1     0
3.       .01   .25     40.0005     1.3.1E7   500   500     .2     .5     1
   0      0          0.          0.          0.          0.          0.
  0    0    1    0    0
 8 4
1016
1026
 8 3   -.0724     250.
 9 3   -.0724     220.
10 3   -.0724     240.
11 3   -.0724     240.
 829    .0724      0.0
 929    .0724      0.0
1029    .0724      0.0
1129    .0724      0.0
0     0.1447
1       1.0
   0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
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 0 25 25 25 25 25 25 25 25 25 25 25 25 25 25 25 25  0
 0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
1       1.0
   0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0     0
   046.646.646.646.646.646.646.646.646.646.646.646.646.646.646.646.6   0
   045.945.945.945.945.945.945.945.945.945.945.945.945.945.945.945.9   0
   045.345.345.345.345.345.345.345.345.345.345.345.345.345.345.345.3   0
   044.544.544.544.544.544.544.544.544.544.544.544.544.544.544.544.5   0
   043.243.243.243.243.243.243.243.243.243.243.243.243.243.243.243.2   0
   041.841.841.841.841.841.841.841.841.841.841.841.841.841.841.841.8   0
   041.441.441.441.441.441.441.441.441.441.441.441.441.441.441.441.4   0
   040.540.540.540.540.540.540.540.540.540.540.540.540.540.540.540.5   0
   039.439.439.439.439.439.439.439.439.439.439.439.439.439.439.439.4   0
   038.738.738.738.738.738.738.738.738.738.738.738.738.738.738.738.7   0
   038.038.038.038.038.038.038.038.038.038.038.038.038.038.038.038.0   0
   036.736.736.736.736.736.736.736.736.736.736.736.736.736.736.736.7   0
   035.735.735.735.735.735.735.735.735.735.735.735.735.735.735.735.7   0
   034.934.934.934.934.934.934.934.934.934.934.934.934.934.934.934.9   0
   033.733.733.733.733.733.733.733.733.733.733.733.733.733.733.733.7   0
   032.832.832.832.832.832.832.832.832.832.832.832.832.832.832.832.8   0
   031.831.831.831.831.831.831.831.831.831.831.831.831.831.831.831.8   0
   030.730.730.730.730.730.730.730.730.730.730.730.730.730.730.730.7   0
   029.729.729.729.729.729.729.729.729.729.729.729.729.729.729.729.7   0
   028.628.628.628.628.628.628.628.628.628.628.628.628.628.628.628.6   0
   027.927.927.927.927.927.927.927.927.927.927.927.927.927.927.927.9   0
   027.327.327.327.327.327.327.327.327.327.327.327.327.327.327.327.3   0
   026.426.426.426.426.426.426.426.426.426.426.426.426.426.426.426.4   0
   025.425.425.425.425.425.425.425.425.425.425.425.425.425.425.425.4   0
   024.824.824.824.824.824.824.824.824.824.824.824.824.824.824.824.8   0
   023.823.823.823.823.823.823.823.823.823.823.823.823.823.823.823.8   0
   022.822.822.822.822.822.822.822.822.822.822.822.822.822.822.822.8   0
   022.322.322.322.322.322.322.322.322.322.322.322.322.322.322.322.3   0
   021.621.621.621.621.621.621.621.621.621.621.621.621.621.621.621.6   0
   0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0     0
0     0.0E00
1          1.
000000000000000000
022222222222222220
020000000000000020
020000000000000020
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```

```
022222222222222220
000000000000000000
 2        1.0          0.          0. 0
0        0.0
1
    1    1    7 100    8    0    0    0    1    0    4    1.1.2E8
 8 3       0.0       0.0
 9 3       0.0       0.0
10 3       0.0       0.0
11 3       0.0       0.0
 829       0.0       0.0
 929       0.0       0.0
1029       0.0       0.0
1129       0.0       0.0
1
    3    1    7 100    8    0    0    0    1    0    3.   1.3.2E7
 8 3   -.0724      250.
 9 3   -.0724      220.
10 3   -.0724      240.
11 3   -.0724      240.
 829    .0724       0.0
 929    .0724       0.0
1029    .0724       0.0
1129    .0724       0.0
```

```
U.S.G.S. METHOD-OF-CHARACTERISTICS MODEL FOR SOLUTE TRANSPORT IN GROUND WATER

BABYLON,LEVEL8,CHLORIDE                                                   00000000

                    I N P U T     D A T A

                      GRID DESCRIPTORS

          NX     (NUMBER OF COLUMNS)  =     18
          NY     (NUMBER OF ROWS)     =     31
          XDEL   (X-DISTANCE IN FEET) =    500.0
          YDEL   (Y-DISTANCE IN FEET) =    500.0

                      TIME  PARAMETERS

          NTIM   (MAX. NO. OF TIME STEPS)         =        3
          NPMP   (NO. OF PUMPING PERIODS)         =        3
          PINT   (PUMPING PERIOD IN YEARS)        =        3.000
          TIMX   (TIME INCREMENT MULTIPLIER)      =        1.00
          TINIT  (INITIAL TIME STEP IN SEC.)      =   0.31E+08

            HYDROLOGIC AND CHEMICAL PARAMETERS

          S        (STORAGE COEFFICIENT)          =        0.000500
          POROS    (EFFECTIVE POROSITY)           =        0.25
          BETA     (CHARACTERISTIC LENGTH)        =       40.0
          DLTRAT   (RATIO OF TRANSVERSE TO
                   LONGITUDINAL DISPERSIVITY)     =        0.20
          ANFCTR   (RATIO OF T-YY TO T-XX)        =        1.000000

 ***NON-DECAYING SPECIES***

 ***NON-SORBING SPECIES***

 ***ADIP USED***

 ***UNCONFINED AQUIFER***

                      EXECUTION PARAMETERS

          NITP   (NO. OF ITERATION PARAMETERS) =      7
          TOL    (CONVERGENCE CRITERIA - ADIP) =      0.0100
          ITMAX  (MAX.NO.OF ITERATIONS - ADIP) =   100
          CELDIS (MAX.CELL DISTANCE PER MOVE
                      OF PARTICLES - M.O.C.)   =      0.500
          NPMAX  (MAX. NO. OF PARTICLES)       =   3820
          NPTPND (NO. PARTICLES PER NODE)      =      4

                      PROGRAM OPTIONS

          NPNT   (TIME STEP INTERVAL FOR
                 COMPLETE PRINTOUT)            =      1
          NPNTMV (MOVE INTERVAL FOR CHEM
                 CONCENTRATION PRINTOUT)       =      0
          NPNTVL (PRINT OPTION-VELOCITY
                 0=NO, 1=FIRST TIME STEP,
                 2=ALL TIME STEPS)             =      0
          NPNTD  (PRINT OPTION-DISP.COEF.
                 0=NO; 1=FIRST TIME STEP;
                 2=ALL TIME STEPS)             =      0
          NUMOBS (NO. OF OBSERVATION WELLS
                 FOR HYDROGRAPH PRINTOUT)      =      3
          NREC   (NO. OF PUMPING WELLS)        =      8

          NCODES (FOR NODE IDENT.)             =      1
          NPNCHV (PUNCH VELOCITIES)            =      0
          NPDELC (PRINT OPT -CONC. CHANGE)     =      1
TIME INTERVALS (IN SECONDS)
   0.31000E+08 0.31000E+08 0.31000E+08 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
   0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

          LOCATION OF OBSERVATION WELLS

                NO       X      Y

                 1       8      4
                 2      10     18
                 3      10     28

          LOCATION  OF  PUMPING  WELLS

          X    Y    RATE(IN CFS)    CONC

          8    3    -.724E-01      250.00
          9    3    -.724E-01      220.00
         10    3    -.724E-01      240.00
         11    3    -.724E-01      240.00
          8   29    0.724E-01        0.00
          9   29    0.724E-01        0.00
         10   29    0.724E-01        0.00
         11   29    0.724E-01        0.00

          AREA OF ONE CELL =    2.5000E+05

          X-Y SPACING:
               500.00
               500.00
```

AQUIFER THICKNESS (FT)

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WATER TABLE

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	47.	47.	47.	47.	47.	47.	47.	47.	47.	47.	47.	47.	47.	47.	47.	47.	47.	47.	0.
0.	46.	46.	46.	46.	46.	46.	46.	46.	46.	46.	46.	46.	46.	46.	46.	46.	46.	46.	0.
0.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	0.
0.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	45.	0.
0.	43.	43.	43.	43.	43.	43.	43.	43.	43.	43.	43.	43.	43.	43.	43.	43.	43.	43.	0.
0.	42.	42.	42.	42.	42.	42.	42.	42.	42.	42.	42.	42.	42.	42.	42.	42.	42.	42.	0.
0.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	0.
0.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	41.	0.
0.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	0.
0.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	39.	0.
0.	38.	38.	38.	38.	38.	38.	38.	38.	38.	38.	38.	38.	38.	38.	38.	38.	38.	38.	0.
0.	37.	37.	37.	37.	37.	37.	37.	37.	37.	37.	37.	37.	37.	37.	37.	37.	37.	37.	0.
0.	36.	36.	36.	36.	36.	36.	36.	36.	36.	36.	36.	36.	36.	36.	36.	36.	36.	36.	0.
0.	35.	35.	35.	35.	35.	35.	35.	35.	35.	35.	35.	35.	35.	35.	35.	35.	35.	35.	0.
0.	34.	34.	34.	34.	34.	34.	34.	34.	34.	34.	34.	34.	34.	34.	34.	34.	34.	34.	0.
0.	33.	33.	33.	33.	33.	33.	33.	33.	33.	33.	33.	33.	33.	33.	33.	33.	33.	33.	0.
0.	32.	32.	32.	32.	32.	32.	32.	32.	32.	32.	32.	32.	32.	32.	32.	32.	32.	32.	0.
0.	31.	31.	31.	31.	31.	31.	31.	31.	31.	31.	31.	31.	31.	31.	31.	31.	31.	31.	0.
0.	30.	30.	30.	30.	30.	30.	30.	30.	30.	30.	30.	30.	30.	30.	30.	30.	30.	30.	0.
0.	29.	29.	29.	29.	29.	29.	29.	29.	29.	29.	29.	29.	29.	29.	29.	29.	29.	29.	0.
0.	28.	28.	28.	28.	28.	28.	28.	28.	28.	28.	28.	28.	28.	28.	28.	28.	28.	28.	0.
0.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	27.	0.
0.	26.	26.	26.	26.	26.	26.	26.	26.	26.	26.	26.	26.	26.	26.	26.	26.	26.	26.	0.
0.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	0.
0.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	25.	0.
0.	24.	24.	24.	24.	24.	24.	24.	24.	24.	24.	24.	24.	24.	24.	24.	24.	24.	24.	0.
0.	23.	23.	23.	23.	23.	23.	23.	23.	23.	23.	23.	23.	23.	23.	23.	23.	23.	23.	0.
0.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	0.
0.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TRANSMISSIVITY MAP (FT*FT/SEC)

0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01
1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	0.00E+00		
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		

PERMEABILTY MAP (FT/SEC)

0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03
5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	5.79E-03	0.00E+00		
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		

NO. OF FINITE-DIFFERENCE CELLS IN AQUIFER = 484

AREA OF AQUIFER IN MODEL = 1.18000E+06 SQ. FT.

NZCRIT (MAX. NO. OF CELLS THAT CAN BE VOID OF PARTICLES; IF EXCEEDED, PARTICLES ARE REGENERATED) = 5

DIFFUSE RECHARGE AND DISCHARGE (FT/SEC)

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 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
 0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
```

NODE IDENTIFICATION MAP

```
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0
0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
```

NO. OF NODE IDENT. CODES SPECIFIED = 1

THE FOLLOWING ASSIGNMENTS HAVE BEEN MADE

CODE NO.	LEAKANCE	SOURCE CONC	RECHARGE
2	1.000E+00	0.000E+00	

VERTICAL PERMEABILITY/THICKNESS (FT/(FT*SEC))

0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00		
0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	0.00E+00		
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 0
TIME(SECONDS) = 0.00000E+00
TIME(DAYS) = 0.00000E+00
TIME(YEARS) = 0.00000E+00

0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		
0.0000000	46.6000000	46.6000000	46.6000000	46.6000000	46.6000000	46.6000000	46.6000000	46.6000000	46.6000000
46.6000000	46.6000000	46.6000000	46.6000000	46.6000000	46.6000000	46.6000000	0.0000000		
0.0000000	45.9000000	45.9000000	45.9000000	45.9000000	45.9000000	45.9000000	45.9000000	45.9000000	45.9000000
45.9000000	45.9000000	45.9000000	45.9000000	45.9000000	45.9000000	45.9000000	0.0000000		
0.0000000	45.3000000	45.3000000	45.3000000	45.3000000	45.3000000	45.3000000	45.3000000	45.3000000	45.3000000
45.3000000	45.3000000	45.3000000	45.3000000	45.3000000	45.3000000	45.3000000	0.0000000		
0.0000000	44.5000000	44.5000000	44.5000000	44.5000000	44.5000000	44.5000000	44.5000000	44.5000000	44.5000000
44.5000000	44.5000000	44.5000000	44.5000000	44.5000000	44.5000000	44.5000000	0.0000000		
0.0000000	43.2000000	43.2000000	43.2000000	43.2000000	43.2000000	43.2000000	43.2000000	43.2000000	43.2000000
43.2000000	43.2000000	43.2000000	43.2000000	43.2000000	43.2000000	43.2000000	0.0000000		
0.0000000	41.8000000	41.8000000	41.8000000	41.8000000	41.8000000	41.8000000	41.8000000	41.8000000	41.8000000
41.8000000	41.8000000	41.8000000	41.8000000	41.8000000	41.8000000	41.8000000	0.0000000		
0.0000000	41.4000000	41.4000000	41.4000000	41.4000000	41.4000000	41.4000000	41.4000000	41.4000000	41.4000000
41.4000000	41.4000000	41.4000000	41.4000000	41.4000000	41.4000000	41.4000000	0.0000000		
0.0000000	40.5000000	40.5000000	40.5000000	40.5000000	40.5000000	40.5000000	40.5000000	40.5000000	40.5000000
40.5000000	40.5000000	40.5000000	40.5000000	40.5000000	40.5000000	40.5000000	0.0000000		

0.0000000	39.4000000	39.4000000	39.4000000	39.4000000	39.4000000	39.4000000	39.4000000	39.4000000	39.4000000
39.4000000	39.4000000	39.4000000	39.4000000	39.4000000	39.4000000	39.4000000	0.0000000		
0.0000000	38.7000000	38.7000000	38.7000000	38.7000000	38.7000000	38.7000000	38.7000000	38.7000000	38.7000000
38.7000000	38.7000000	38.7000000	38.7000000	38.7000000	38.7000000	38.7000000	0.0000000		
0.0000000	38.0000000	38.0000000	38.0000000	38.0000000	38.0000000	38.0000000	38.0000000	38.0000000	38.0000000
38.0000000	38.0000000	38.0000000	38.0000000	38.0000000	38.0000000	38.0000000	0.0000000		
0.0000000	36.7000000	36.7000000	36.7000000	36.7000000	36.7000000	36.7000000	36.7000000	36.7000000	36.7000000
36.7000000	36.7000000	36.7000000	36.7000000	36.7000000	36.7000000	36.7000000	0.0000000		
0.0000000	35.7000000	35.7000000	35.7000000	35.7000000	35.7000000	35.7000000	35.7000000	35.7000000	35.7000000
35.7000000	35.7000000	35.7000000	35.7000000	35.7000000	35.7000000	35.7000000	0.0000000		
0.0000000	34.8000000	34.8000000	34.8000000	34.8000000	34.8000000	34.8000000	34.8000000	34.8000000	34.8000000
34.8000000	34.8000000	34.8000000	34.8000000	34.8000000	34.8000000	34.8000000	0.0000000		
0.0000000	33.7000000	33.7000000	33.7000000	33.7000000	33.7000000	33.7000000	33.7000000	33.7000000	33.7000000
33.7000000	33.7000000	33.7000000	33.7000000	33.7000000	33.7000000	33.7000000	0.0000000		
0.0000000	32.8000000	32.8000000	32.8000000	32.8000000	32.8000000	32.8000000	32.8000000	32.8000000	32.8000000
32.8000000	32.8000000	32.8000000	32.8000000	32.8000000	32.8000000	32.8000000	0.0000000		
0.0000000	31.8000000	31.8000000	31.8000000	31.8000000	31.8000000	31.8000000	31.8000000	31.8000000	31.8000000
31.8000000	31.8000000	31.8000000	31.8000000	31.8000000	31.8000000	31.8000000	0.0000000		
0.0000000	30.7000000	30.7000000	30.7000000	30.7000000	30.7000000	30.7000000	30.7000000	30.7000000	30.7000000
30.7000000	30.7000000	30.7000000	30.7000000	30.7000000	30.7000000	30.7000000	0.0000000		
0.0000000	29.7000000	29.7000000	29.7000000	29.7000000	29.7000000	29.7000000	29.7000000	29.7000000	29.7000000
29.7000000	29.7000000	29.7000000	29.7000000	29.7000000	29.7000000	29.7000000	0.0000000		
0.0000000	28.8000000	28.8000000	28.8000000	28.8000000	28.8000000	28.8000000	28.8000000	28.8000000	28.8000000
28.8000000	28.8000000	28.8000000	28.8000000	28.8000000	28.8000000	28.8000000	0.0000000		
0.0000000	27.8000000	27.8000000	27.8000000	27.8000000	27.8000000	27.8000000	27.8000000	27.8000000	27.8000000
27.8000000	27.8000000	27.8000000	27.8000000	27.8000000	27.8000000	27.8000000	0.0000000		
0.0000000	27.3000000	27.3000000	27.3000000	27.3000000	27.3000000	27.3000000	27.3000000	27.3000000	27.3000000
27.3000000	27.3000000	27.3000000	27.3000000	27.3000000	27.3000000	27.3000000	0.0000000		
0.0000000	26.4000000	26.4000000	26.4000000	26.4000000	26.4000000	26.4000000	26.4000000	26.4000000	26.4000000
26.4000000	26.4000000	26.4000000	26.4000000	26.4000000	26.4000000	26.4000000	0.0000000		
0.0000000	25.4000000	25.4000000	25.4000000	25.4000000	25.4000000	25.4000000	25.4000000	25.4000000	25.4000000
25.4000000	25.4000000	25.4000000	25.4000000	25.4000000	25.4000000	25.4000000	0.0000000		
0.0000000	24.8000000	24.8000000	24.8000000	24.8000000	24.8000000	24.8000000	24.8000000	24.8000000	24.8000000
24.8000000	24.8000000	24.8000000	24.8000000	24.8000000	24.8000000	24.8000000	0.0000000		
0.0000000	23.8000000	23.8000000	23.8000000	23.8000000	23.8000000	23.8000000	23.8000000	23.8000000	23.8000000
23.8000000	23.8000000	23.8000000	23.8000000	23.8000000	23.8000000	23.8000000	0.0000000		
0.0000000	22.8000000	22.8000000	22.8000000	22.8000000	22.8000000	22.8000000	22.8000000	22.8000000	22.8000000
22.8000000	22.8000000	22.8000000	22.8000000	22.8000000	22.8000000	22.8000000	0.0000000		
0.0000000	22.3000000	22.3000000	22.3000000	22.3000000	22.3000000	22.3000000	22.3000000	22.3000000	22.3000000
22.3000000	22.3000000	22.3000000	22.3000000	22.3000000	22.3000000	22.3000000	0.0000000		
0.0000000	21.8000000	21.8000000	21.8000000	21.8000000	21.8000000	21.8000000	21.8000000	21.8000000	21.8000000
21.8000000	21.8000000	21.8000000	21.8000000	21.8000000	21.8000000	21.8000000	0.0000000		
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		

ITERATION PARAMETERS

2.566E-03	6.938E-03	1.875E-02	5.067E-02	1.369E-01	3.700E-01	1.000E+00	0.000E+00	0.000E+00	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

CONCENTRATION

```
NUMBER OF TIME STEPS =        0
       TIME(SECONDS) =  0.00000E+00
  CHEM.TIME(SECONDS) =  0.00000E+00
   CHEM TIME(DAYS)   =  0.00000E+00
       TIME(YEARS)   =  0.00000E+00
   CHEM.TIME(YEARS)  =  0.00000E+00
 NO. MOVES COMPLETED =        0
```

0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 1
TIME(SECONDS) = 3.10000E+07
TIME(DAYS) = 3.58788E+02
TIME(YEARS) = 9.82331E-01

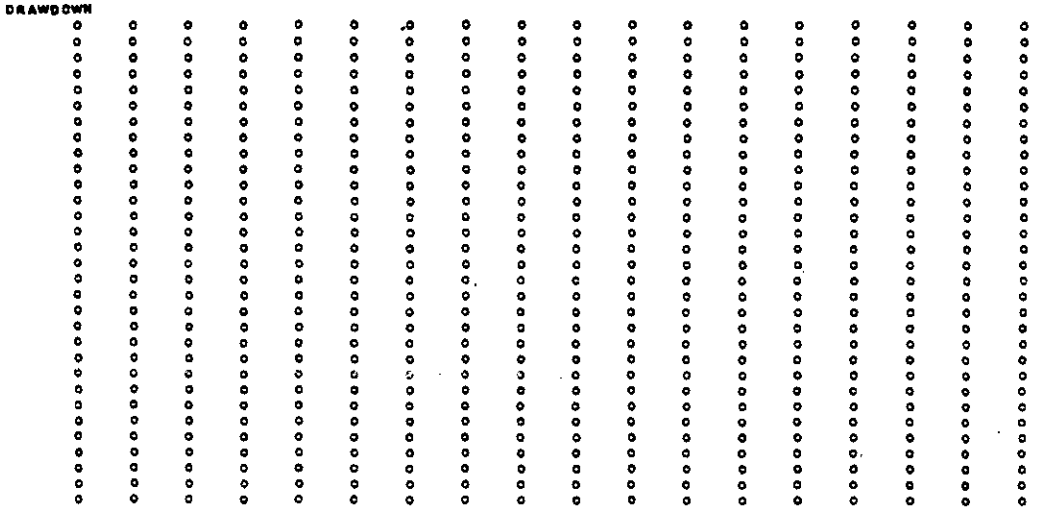
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		
0.0000000	46.5999998	46.5999998	46.5999998	46.5999998	46.5999998	46.5999998	46.5999997	46.5999997	46.5999997
46.5999997	46.5999998	46.5999998	46.5999998	46.5999998	46.5999998	46.5999998	0.0000000		
0.0000000	46.9000000	45.8477605	45.8042823	45.7843183	45.7812361	45.8430753	46.0089073	46.0583946	46.0583946
46.0089073	45.8430753	45.7812381	45.7843183	45.8042823	45.8477605	46.9000000	0.0000000		
0.0000000	45.2999998	46.0884435	44.9842694	44.9421200	44.9393779	44.9706177	45.0382069	45.0884353	45.0884353
45.0382069	44.9706177	44.9393779	44.9421200	44.9842694	46.0884435	45.2999998	0.0000000		
0.0000000	44.4999995	44.2183277	44.1041722	44.0808331	44.0824102	44.0888531	44.0835343	44.1105898	44.1105898
44.0835343	44.0888531	44.0824102	44.0808331	44.1041722	44.2183277	44.4999995	0.0000000		
0.0000000	43.1999999	43.1736841	43.1582862	43.1443115	43.1425302	43.1487400	43.1612464	43.1694249	43.1694249
43.1612464	43.1487400	43.1425302	43.1443115	43.1582862	43.1736841	43.1999999	0.0000000		
0.0000000	41.8000008	42.1205816	42.1999832	42.2188508	42.2215208	42.2261507	42.2317007	42.2355205	42.2355205
42.2317007	42.2261507	42.2215208	42.2188508	42.1999832	42.1205816	41.8000008	0.0000000		
0.0000000	41.3999997	41.3137080	41.3048461	41.3053802	41.3053630	41.3054460	41.3063182	41.3070660	41.3070660
41.3063182	41.3054460	41.3053630	41.3053802	41.3048461	41.3137080	41.3999997	0.0000000		
0.0000000	40.4999998	40.4253176	40.4021961	40.3916028	40.3880381	40.3809563	40.3788168	40.3780738	40.3780738
40.3788168	40.3809563	40.3880381	40.3916028	40.4021961	40.4253176	40.4999998	0.0000000		
0.0000000	39.4000003	38.4855380	39.4869707	39.4738945	39.4623150	38.4546063	39.4502554	39.4483125	38.4483125
39.4502554	39.4546063	38.4623150	39.4738945	39.4869707	38.4855380	39.4000003	0.0000000		
0.0000000	38.7000000	38.8318895	38.5854510	38.5889018	38.5374647	38.5262842	38.5200001	38.5171986	38.5171986
38.5200001	38.5262842	38.5374547	38.5889018	38.5854510	38.8318895	38.7000000	0.0000000		
0.0000000	37.9999995	37.7562068	37.6670174	37.6271533	37.6058244	37.5834445	37.5885288	37.5834419	37.5834419
37.5885288	37.5934445	37.6058244	37.6271533	37.6670174	37.7562068	37.9999995	0.0000000		
0.0000000	38.7000002	38.7231428	38.7005824	38.6778611	38.6623313	38.6529907	38.6478288	38.6458114	38.6458114
38.6478288	38.6529907	38.6623313	38.6778611	38.7005824	38.7231428	38.7000002	0.0000000		
0.0000000	35.7000001	35.7378610	35.7333067	35.7228454	35.7148078	35.7088240	35.7073071	35.7062488	35.7062488
35.7073071	35.7088240	35.7148078	35.7228454	35.7333057	35.7378610	35.7000001	0.0000000		
0.0000000	34.8999997	34.7951150	34.7714955	34.7658956	34.7648833	34.7851040	34.7856383	34.7880483	34.7880483
34.7856383	34.7851040	34.7648833	34.7658956	34.7714955	34.7951150	34.8999997	0.0000000		
0.0000000	33.7000002	33.7718708	33.7920670	33.8022798	33.8106230	33.8176112	33.8226340	33.8262417	33.8262417
33.8226340	33.8176112	33.8106230	33.8022798	33.7920670	33.7718708	33.7000002	0.0000000		
0.0000000	32.7999999	32.8020954	32.8213814	32.8423617	32.8604128	32.8741624	32.8833615	32.8879311	32.8879311
32.8833615	32.8741624	32.8604128	32.8423617	32.8213814	32.8020954	32.7999999	0.0000000		
0.0000000	31.8000000	31.8138745	31.8485259	31.8847185	31.9134038	31.9344564	31.9481813	31.9548456	31.9548456
31.9481813	31.9344564	31.9134038	31.8847185	31.8485259	31.8138745	31.8000000	0.0000000		
0.0000000	30.7000001	30.8037705	30.8782136	30.9334525	30.9738542	31.0020204	31.0188465	31.0284157	31.0284157
31.0188465	31.0020204	30.9738542	30.9334525	30.8782136	30.8037705	30.7000001	0.0000000		
0.0000000	28.7000000	28.8243868	29.9255018	29.9879551	30.0478510	30.0810156	30.1013742	30.1110233	30.1110233
30.1013742	30.0810156	30.0478510	29.9879551	29.9255018	28.8243868	28.7000000	0.0000000		
0.0000000	28.8000004	28.8883486	29.0023486	29.0837228	29.1386750	29.1714055	28.1926237	28.2028839	28.2028839
28.1926237	28.1714055	29.1386750	29.0837228	29.0023486	28.8883486	28.8000004	0.0000000		
0.0000000	27.8000001	28.0399648	28.1332486	28.1987948	28.2448787	28.2763188	28.2956308	28.3048440	28.3048440
28.2956308	28.2763188	28.2448787	28.1987948	28.1332486	28.0399648	27.8000001	0.0000000		
0.0000000	27.2999998	27.2803708	27.2918294	27.3333150	27.3682511	27.3933222	27.4088470	27.4162540	27.4162540
27.4088470	27.3933222	27.3682511	27.3333150	27.2918294	27.2803708	27.2999998	0.0000000		
0.0000000	26.3999998	26.4089455	26.4408873	26.4738020	26.5007507	26.5192544	26.5299794	26.5348115	26.5348115
26.5299794	26.5192544	26.5007507	26.4738020	26.4408873	26.4089455	26.3999998	0.0000000		
0.0000000	25.4000003	25.5339241	25.5883835	25.6203370	25.6409176	25.6522856	25.6568134	25.6578171	25.6578171
25.6568134	25.6522856	25.6409176	25.6203370	25.5883835	25.5339241	25.4000003	0.0000000		

0.0000000	24.7999997	24.7412715	24.7573196	24.7800812	24.7531222	24.7943863	24.7884531	24.7830717	24.7830717
24.7884531	24.7943863	24.7931222	24.7800812	24.7573196	24.7412715	24.7999997	0.0000000		
0.0000000	23.8000000	23.8713872	23.9207781	23.9478885	23.9543846	23.9419992	23.9177498	23.9021510	23.9021510
23.9177498	23.9419992	23.9543846	23.9478885	23.9207781	23.8713872	23.8000000	0.0000000		
0.0000000	22.8000004	23.0234435	23.1067840	23.1361410	23.1340228	23.1018810	23.0373806	23.0058120	23.0058120
23.0373806	23.1018810	23.1340229	23.1361410	23.1067840	23.0234435	22.8000004	0.0000000		
0.0000000	22.2999999	22.3178185	22.3460875	22.3575868	22.3474242	22.2944726	22.1284416	22.0780000	22.0780000
22.1284416	22.2944726	22.3474242	22.3575868	22.3460875	22.3178188	22.2999999	0.0000000		
0.0000000	21.6000004	21.6000004	21.6000004	21.6000004	21.6000004	21.6000004	21.6000003	21.6000003	21.6000003
21.6000003	21.6000004	21.6000004	21.6000004	21.6000004	21.6000004	21.6000004	0.0000000		
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		

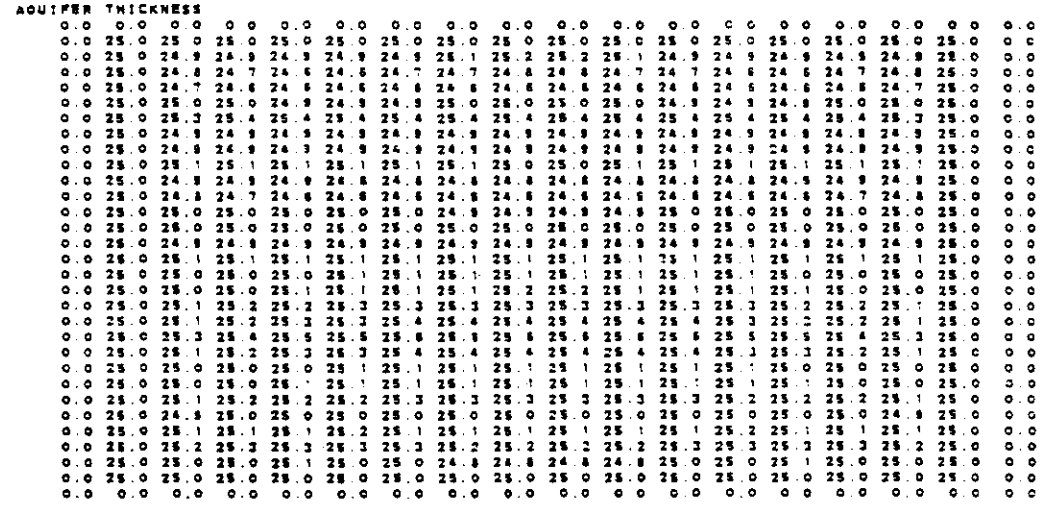
HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 1
TIME(SECONDS) = 3.10000E+07
TIME(DAYS) = 3.58788E+02
TIME(YEARS) = 9.82331E-01

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	0
0	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	0
0	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	0
0	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	0
0	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	0
0	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	0
0	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	0
0	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	0
0	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	0
0	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	0
0	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	0
0	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	0
0	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	0
0	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	0
0	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	0
0	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	0
0	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	0
0	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	0
0	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	0
0	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	0
0	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	0
0	26	26	26	26	27	27	27	27	27	27	27	27	26	26	26	26	0
0	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	0
0	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	0
0	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	0
0	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	0
0	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0
0	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DRAWDOWN



AQUIFER THICKNESS



```
TRANSMISSIVITY
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
 0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.14 0.14 0.14 0.00
 0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
 0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
 0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
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 0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
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 0.00 0.14 0.14 0.14 0.15 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.15 0.14 0.14 0.14 0.00
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 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

 CUMULATIVE MASS BALANCE -- (IN FT**3)

  RECHARGE                     =  0.00000E+00
  INJECTION                    = -8.97780E+06
  PUMPAGE                      =  8.97780E+06
  CUMULATIVE  NET  PUMPAGE     =  0.00000E+00
  WATER RELEASE FROM STORAGE   = -2.06385E+03
  LEAKAGE INTO AQUIFER         = -9.54561E+07
  LEAKAGE OUT OF AQUIFER       =  9.54856E+07
  CUMULATIVE  NET  LEAKAGE     =  9.55200E+03

      MASS BALANCE RESIDUAL    = -1.16320E+04
      ERROR  (AS PERCENT)      = -1.11378E-02

 RATE MASS BALANCE -- (IN C.F.S.)

  RECHARGE                     =  0.00000E+00
  LEAKAGE INTO AQUIFER         =  3.07922E+00
  LEAKAGE OUT OF AQUIFER       = -3.07954E+00
  NET LEAKAGE      (QNET)      = -2.41058E-04
  INJECTION                    = -2.89600E-01
  PUMPAGE                      =  2.89600E-01
  NET WITHDRAWAL    (TPUM)     =  0.00000E+00

CONCENTRATION

NUMBER OF TIME STEPS =        1
       DELTA T       =  3.10000E+07
       TIME(SECONDS) =  3.10000E+07
  CHEM TIME(SECONDS) =  3.09999E+07
  CHEM TIME(DAYS)    =  3.58795E+02
       TIME(YEARS)   =  9.82331E-01
  CHEM TIME(YEARS)   =  9.82329E-01
 NO. MOVES COMPLETED =        9

   0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
   0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
   0.0000    0.0000    0.0000    0.0000    0.0000   -0.0002   -0.0245    4.6369    4.4151    4.8023
   4.4454   -0.0235   -0.0002    0.0000    0.0000    0.0000    0.0000    0.0000
   0.0000    0.0000    0.0000    0.0000    0.0000   -0.0056    1.5823  103.7530   91.1858   99.1863
  98.7010    1.5207   -0.0054    0.0000    0.0000    0.0000    0.0000    0.0000
   0.0000    0.0000    0.0000    0.0000    0.0003    0.1510   31.8814   95.8457   92.9082  100.4892
  92.2252   30.8634    0.1452    0.0003    0.0000    0.0000    0.0000    0.0000
   0.0000    0.0000    0.0000    0.0000    0.0004    0.1716   16.7136   65.9331   63.6868   66.9265
  63.5437   16.0881    0.1851    0.0004    0.0000    0.0000    0.0000    0.0000
   0.0000    0.0000    0.0000    0.0000    0.0001    0.0461    1.3456   17.5792   16.1194   17.4346
  16.9588    1.2950    0.0434    0.0001    0.0000    0.0000    0.0000    0.0000
   0.0000    0.0000    0.0000    0.0000    0.0000    0.0015    0.0833    1.5158    1.6971    1.8368
   1.5585    0.0802    0.0016    0.0000    0.0000    0.0000    0.0000    0.0000
   0.0000    0.0000    0.0000    0.0000    0.0000    0.0001    0.0055    0.1173    0.1182    0.1280
   0.1133    0.0053    0.0001    0.0000    0.0000    0.0000    0.0000    0.0000
   0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0004    0.0068    0.0065    0.0075
   0.0064    0.0003    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
```

0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.0004	0.0004
0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	-0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	-0.0000	-0.0000	0.0000	0.0000		
0.0000	0.0000	-0.0000	-0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	-0.0000	-0.0000	-0.0000	0.0000	0.0000		
0.0000	0.0000	-0.0000	-0.0000	-0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	-0.0000	-0.0000	-0.0000	-0.0000	0.0000	0.0000		
0.0000	0.0000	-0.0000	-0.0000	0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	-0.0000	0.0000	-0.0000	-0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	-0.0000	0.0000	0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	-0.0000	0.0000	0.0000	-0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

CONCENTRATION

NUMBER OF TIME STEPS = 1

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	5	4	5	4	0	0	0	0	0	0	0
0	0	0	0	0	0	2	104	91	98	100	2	0	0	0	0	0	0
0	0	0	0	0	0	32	96	93	100	92	31	0	0	0	0	0	0
0	0	0	0	0	0	17	96	94	98	94	18	0	0	0	0	0	0
0	0	0	0	0	0	1	18	16	17	17	1	0	0	0	0	0	0
0	0	0	0	0	0	0	2	2	2	2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0

BABYLON.LEVELS.CHLORIDE   00000000

TIME VERSUS HEAD AND CONCENTRATION AT SELECTED OBSERVATION POINTS

PUMPING PERIOD NO. 1

TRANSIENT SOLUTION

OBS.WELL NO.	X	Y	N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
1	8	4				
			0	45.3	0.0	0.000
			1	45.0	95.8	0.982
			2	45.0	109.1	1.965
			3	45.0	108.3	2.947

OBS.WELL NO.	X	Y	N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
2	10	16				
			0	33.7	0.0	0.000
			1	33.8	0.0	0.982
			2	33.8	0.0	1.965
			3	33.8	0.0	2.947

OBS.WELL NO	X	Y	N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
3	10	26				
			0	24.8	0.0	0.000
			1	24.8	0.0	0.982
			2	24.8	0.0	1.965
			3	24.8	0.0	2.947

START PUMPING PERIOD NO 2

THE FOLLOWING TIME STEP, PUMPAGE, AND PRINT PARAMETERS HAVE BEEN REDEFINED:

```
NTIM   :    1
NPNT   :    1
NITP   :    7
ITMAX  :  100
NREC   :    8
NPNTMV :    0
NPNTVL :    0
NPNTD  :    0
NPDELC :    1
NPNCHV :    0
PINT   :      4.000
TIMX   :      1.000
TINIT  : **********
```

TIME INTERVALS (IN SECONDS)

```
0.12000E+08 0.12000E+08 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
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0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
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0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
```

LOCATION OF PUMPING WELLS

X	Y	RATE(IN CFS)	CONC.
8	3	0.000E+00	0.00
9	3	0.000E+00	0.00
10	3	0.000E+00	0.00
11	3	0.000E+00	0.00
8	29	0.000E+00	0.00
9	29	0.000E+00	0.00
10	29	0.000E+00	0.00
11	29	0.000E+00	0.00

N = 1
NUMBER OF ITERATIONS = 8

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 1
TIME(SECONDS) = 2.13000E+06
TIME(DAYS) = 2.46528E+03
TIME(YEARS) = 6.74858E+00

0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0 0000000	0.0000000	0 0000000		
0 0000000	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995
46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	0.0000000	
0.0000000	45.9000000	45.8425185	45.7910140	45.7578887	45.7385823	45.7289886	45.7218221	45.7183524	45.7183524
45.7218221	45.7289886	45.7385823	45.7578887	45.7910140	45.8425185	45.9000000	0.0000000		
0.0000000	45.2999998	45.0780821	44.9586055	44.8981128	44.8817243	44.8435000	44.8333879	44.8299481	44 8299481
44.8333879	44.8435000	44.8817243	44.8981128	44.9586056	45.0780821	45.2999998	0.0000000		
0.0000000	44.4999995	44.1975197	44.0857815	43.9999980	43.9838130	43.9431840	43.9323251	43.9273339	43.9273339
43.9323251	43.9431840	43.9838130	43.9999980	44.0857815	44.1975197	44.4999995	0.0000000		
0.0000000	43.1999999	43.1503415	43.1118480	43.0795749	43.0562393	43.0382931	43.0282409	43.0232423	43.0232423
43.0282409	43.0382931	43.0562393	43.0795749	43.1118480	43.1503415	43 1999999	0.0000000		
0.0000000	41.8000008	42.1048084	42.1582468	42.1871306	42.1948227	42.1424153	42.1338230	42.1291386	42 1291386
42.1338230	42.1424153	42.1948227	42.1871306	42.1582468	42.1048085	41.8000008	0.0000000		
0.0000000	41.3999997	41.3018053	41.2810804	41.2676446	41.2641251	41.2423809	41.2338286	41.2298867	41.2298867
41.2338288	41.2423809	41.2641251	41.2676446	41.2810906	41 3018053	41 3999997	0.0000000		
0.0000000	40.4999995	40.4139929	40.3801153	40.3588955	40.3422026	40.3282933	40.3204099	40.3159865	40.3159865
40.3204099	40.3282933	40.3422026	40.3588955	40.3801153	40.4139929	40.4999995	0.0000000		
0.0000000	39.6000003	39.4773219	39.4597504	39.4487013	39.4294228	39.4148242	39.4051878	39.4004884	39.4004884
39.4051878	39.4148242	39.4294228	39.4487013	39.4597504	39.4773219	39.6000003	0.0000000		
0.0000000	38.7000000	38.6258147	38.5726229	38.5380911	38.5110917	38.4843345	38.4639855	38 4780139	38.4780139
38.4639856	38.4843349	38.5110917	38.5380911	38.5726229	38.6258147	38.7000000	0.0000000		
0.0000000	37.9999995	37.7474038	37.5509529	37.5034858	37.5757737	37.5586088	37.5454674	37.5436782	37.5436782
37.5454674	37.5586088	37.5757736	37.5034858	37.5509528	37.7474038	37.9999995	0.0000000		
0.0000000	38.7000002	38.7137007	38.6824014	38.6531125	38.6318877	38.6178823	38.6088139	38.6058449	38.6058449
38.6088138	38.6178823	38.6318877	38.6531125	38.6824014	38.7137007	38.7000002	0.0000000		
0.0000000	35.7000001	35.7308182	35.7188545	35.7020718	35.6888830	35.6795450	35.6740733	35.6714902	35.6714902
35.6740733	35.6795450	35.6888830	35.7020718	35.7188545	35.7308182	35 7000001	0.0000000		
0.0000000	34.8999997	34.7883272	34.7575803	34.7454287	34.7381633	34.7356945	34.7338180	34.7331613	34.7331613
34.7338180	34.7356945	34.7381633	34.7454287	34.7575803	34.7883272	34.8999997	0.0000000		
0.0000000	33.7000002	33.7884635	33.7788550	33.7643164	33.7585258	33.7521181	33.7847642	33.7861632	33 7861632
33.7847642	33.7521181	33.7585258	33.7643164	33.7788550	33.7884635	33 7000002	0.0000000		
0.0000000	32.7999998	32.7867965	32.8113181	32.8277878	32.8422282	32.8534181	32.8609338	32.8647183	32.8647183
32.8609336	32.8534181	32.8422282	32.8277878	32.8113181	32.7867966	32.7999999	0.0000000		
0.0000000	31 7999999	31.8092373	31.8409302	31.8728173	31.8992252	31.9186845	31.9313368	31.9375974	31.9375974
31.9313369	31.9186845	31.8992252	31.8728173	31.8409302	31.8092373	31.7999999	0.0000000		
0.0000000	30 7000001	30.6012351	30.8732483	30.9273246	30.9670941	30 9948628	31.0125859	31.0211792	31.0211792
31.0125859	30.9948628	30.9670941	30.9273246	30.8732453	30.8012352	30.7000001	0.0000000		
0.0000000	29.7000000	29 8344483	29.9287347	30.0000781	30.0513088	30 0860729	30.1077027	30.1181504	30.1181504
30.1077027	30.0860729	30.0513088	30.0000781	29.9287347	29.8244484	29 7000000	0.0000000		
0 0000000	28.5000004	28.5724589	29.0131720	29 0894684	29.1568898	29 1953080	29.2151826	29.2306906	29.2306906
29.2191826	29.1953080	29.1568889	29.0894884	29 0131720	28.5724589	28 5000004	0 0000000		
0.0000000	27.500000	28.0511740	28.1540025	28 2280582	28.2817552	28.3193832	28 3433999	28.3550774	28.3550774
28.3433999	28.3193832	28.2817552	28.2280582	28.1540025	28.0511740	27 9000001	0 0000000		
0 0000000	27.2999998	27.2728117	27.3165469	27 3892787	27.4147322	27 4490441	27 4718047	27.4830177	27.4830177
27.4718047	27.4490441	27.4147322	27.3892787	27 3165469	27.2728117	27.2999998	0 0000000		
0.0000000	26 6000000	26.6215096	26 6658081	26 5138320	26.5845281	26.5858808	26.5870417	26.5175680	26.5175680
26.5870417	26.5858808	26 5845281	26.5138320	26.6658082	26.6215096	26 6000000	0 0000000		
0.0000000	25.4000003	25.5493601	25.5188449	25.5577788	25 7084606	25 7358828	25 7552417	25 7650879	25.7650879
25 7552417	25.7358828	25.7084606	25 5577786	25.5188449	25.5493601	25.4000003	0 0000000		
0.0000000	24.7999997	24.7559863	24 7891172	24.8305956	24.8580437	24.8830335	24.9107884	24 9199603	24.9199603
24.9107884	24.8830335	24.8580437	24.8305956	24.7891172	24.7559863	24.7999997	0 0000000		

0.0000000	23.8000000	23.8844573	23.9500207	23.9881036	24.0327948	24.0573518	24.0731559	24.0811365	24.0811365
24.0731559	24.0573518	24.0327948	23.9881036	23.9500207	23.8844573	23.8000000	0.0000000		
0.0000000	22.8000004	23.0363401	23.1339075	23.1848263	23.2156758	23.2350334	23.2484276	23.2538255	23.2538255
23.2484277	23.2350334	23.2156758	23.1848263	23.1339075	23.0363401	22.8000004	0.0000000		
0.0000000	22.2999999	22.3258862	22.3838441	22.3902578	22.4070308	22.4180776	22.4238533	22.4272111	22.4272111
22.4238533	22.4180776	22.4070308	22.3902578	22.3838441	22.3258862	22.2999999	0.0000000		
0.0000000	21.8000004	21.8000004	21.8000004	21.8000005	21.8000005	21.8000005	21.8000005	21.8000005	21.8000005
21.8000005	21.8000005	21.8000005	21.8000005	21.8000004	21.8000004	21.8000004	0.0000000		
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS : 1
TIME(SECONDS) : 2.13000E+06
TIME(DAYS) : 2.46528E+03
TIME(YEARS) : 6.74858E+00

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	0
0	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	0
0	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	0
0	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	0
0	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	0
0	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	0
0	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	0
0	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	0
0	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	0
0	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	0
0	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	0
0	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	0
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0	26	26	26	27	27	27	27	27	27	27	27	27	27	26	26	26	0
0	25	26	26	26	26	26	26	26	26	26	26	26	26	26	26	25	0
0	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	0
0	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	0
0	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	0
0	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0
0	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0
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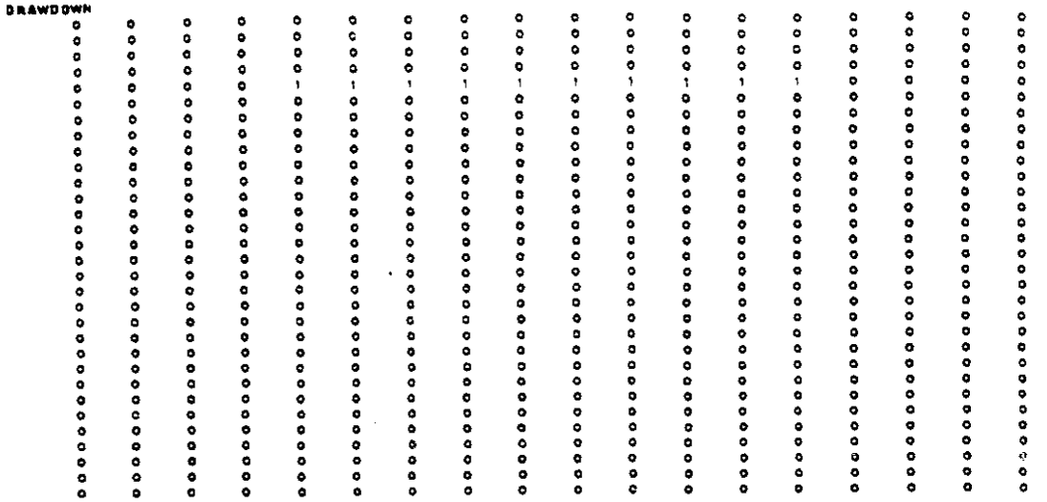
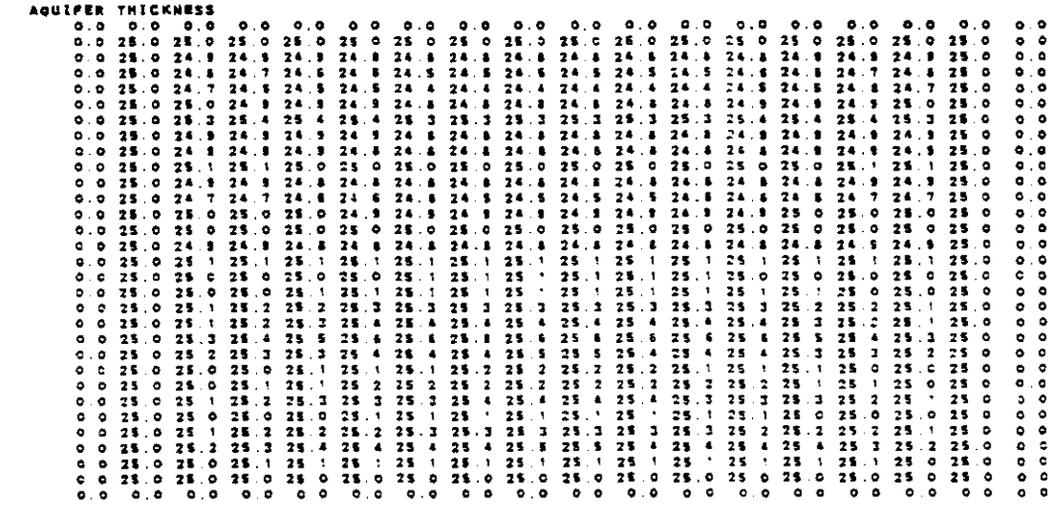
DRAWDOWN



AQUIFER THICKNESS



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TRANSMISSIVITY
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    0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
    0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
    0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
    0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
    0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
    0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
    0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
    0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
    0.00 0.14 0.15 0.15 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.15 0.15 0.14 0.00
    0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
    0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
    0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
    0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
    0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
    0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
    0.00 0.14 0.14 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.14 0.14 0.00
    0.00 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.00
    0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
    0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
    0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
    0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
    0.00 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.00
    0.00 0.14 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.14 0.00
    0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
    0.00 0.14 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.14 0.00
    0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
    0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
    0.00 0.14 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.14 0.00
    0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
    0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

  CUMULATIVE MASS BALANCE -- (IN FT**3)

    RECHARGE                       :  0.00000E+00
    INJECTION                      : -2.69328E+07
    PUMPAGE                        :  2.69328E+07
    CUMULATIVE  NET  PUMPAGE       :  0.00000E+00
    WATER RELEASE FROM STORAGE     : -1.80546E+03
    LEAKAGE INTO AQUIFER           : -6.86883E+04
    LEAKAGE OUT OF AQUIFER         :  6.86880E+04
    CUMULATIVE  NET  LEAKAGE       :  1.71520E+04

         MASS BALANCE RESIDUAL     : -1.86440E+04
         ERROR  (AS PERCENT)       : -2.65767E-03

  RATE MASS BALANCE -- (IN C.F.S.)

    RECHARGE                       :  0.00000E+00
    LEAKAGE INTO AQUIFER           :  3.33187E+00
    LEAKAGE OUT OF AQUIFER         : -3.33167E+00
    NET LEAKAGE      (QNET)        : -3.24249E-05
    INJECTION                      :  0.00000E+00
    PUMPAGE                        :  0.00000E+00
    NET WITHDRAWAL     (TPUM)      :  0.00000E+00

CONCENTRATION

NUMBER OF TIME STEPS :      1
       DELTA T       :  1.20000E+08
       TIME(SECONDS) :  2.13000E+08
  CHEM.TIME(SECONDS) :  2.13000E+08
  CHEM.TIME(DAYS)    :  2.46528E+03
       TIME(YEARS)   :  6.74956E+00
  CHEM.TIME(YEARS)   :  6.74958E+00
 NO. MOVES COMPLETED :     32

    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000

    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000

    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0004    0.0004    0.0004

    0.0004    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000

    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0013    0.0013    0.0014

    0.0013    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000

    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0001    0.0029    0.0028    0.0030

    0.0027    0.0001    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000

    0.0003    0.0000    0.0000    0.0000    0.0000    0.0000    0.0005    0.0111    0.0110    0.0119

    0.0107    0.0005    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000

    0.0000    0.0000    0.0000    0.0000    0.0000    0.0002    0.0018    0.0288    0.0303    0.0327

    0.0288    0.0017    0.0002    0.0000    0.0000    0.0000    0.0000    0.0000

    0.0000    0.0000    0.0000    0.0000    0.0000    0.0005    0.0078    0.1087    0.1050    0.1167

    0.1048    0.0073    0.0005    0.0000    0.0000    0.0000    0.0000    0.0000

    0.0000    0.0000    0.0000    0.0000    0.0003    0.0038    0.0501    0.4818    0.5102    0.5419

    0.4781    0.0463    0.0037    0.0002    0.0000    0.0000    0.0000    0.0000

    0.0000    0.0000    0.0000    0.0001    0.0017    0.0214    0.2324    1.5849    1.6692    1.5924

    1.5523    0.2244    0.0207    0.0016    0.0001    0.0000    0.0000    0.0000
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0.0000	0.0000	0.0000	0.0005	0.0075	0.0922	0.8813	5.8873	5.6524	5.8459
5.4955	0.8595	0.0648	0.0073	0.0005	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0001	0.0021	0.0277	0.3145	2.8881	18.1334	18.0272	18.0844
15.5856	2.5002	0.3034	0.0287	0.0020	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0002	0.0058	0.0818	0.8106	7.4580	42.3585	43.1100	46.6447
40.9070	7.2201	0.6785	0.0789	0.0056	0.0002	0.0000	0.0000		
0.0000	0.0000	0.0004	0.0089	0.1871	1.8330	14.0410	83.6824	74.8875	74.9516
53.8972	13.5919	1.7682	0.1810	0.0095	0.0003	0.0000	0.0000		
0.0000	0.0000	0.0005	0.0188	0.2982	3.0444	20.5619	87.2113	93.8488	98.5436
85.3342	18.8964	2.9364	0.2872	0.0182	0.0005	0.0000	0.0000		
0.0000	0.0000	0.0012	0.0251	0.5125	5.1585	32.4196	87.7588	107.1160	112.2827
95.5470	31.3851	5.0025	0.4936	0.0242	0.0011	0.0000	0.0000		
0.0000	0.0000	0.0017	0.0330	0.6721	6.7981	38.4340	100.8672	110.0105	114.8827
98.8084	36.1184	6.5535	0.6473	0.0318	0.0016	0.0000	0.0000		
0.0000	0.0001	0.0024	0.0507	0.7563	7.4488	40.9185	88.2508	107.0590	111.5894
95.8945	39.5508	7.1809	0.7288	0.0488	0.0023	0.0001	0.0000		
0.0000	0.0001	0.0028	0.0530	0.7718	7.8245	38.2830	82.6165	103.8977	107.4381
91.4232	36.3780	7.6381	0.7433	0.0511	0.0027	0.0001	0.0000		
0.0000	0.0001	0.0025	0.0508	0.7309	7.0404	38.4382	85.8203	83.8809	97.4385
83.9550	37.1606	6.7885	0.7040	0.0488	0.0025	0.0001	0.0000		
0.0000	0.0001	0.0024	0.0427	0.5939	5.8993	31.4886	73.0483	78.3679	82.0687
71.4301	30.4848	5.6883	0.5722	0.0411	0.0023	0.0001	0.0000		
0.0000	0.0003	0.0064	0.0341	0.4018	3.8332	13.2571	46.1786	52.5300	53.7140
46.5552	12.8475	3.5962	0.3872	0.0329	0.0062	0.0003	0.0000		
0.0000	0.0002	0.0052	0.0778	0.2588	1.8277	7.8547	18.7181	20.3337	21.5444
19.2483	7.8081	1.7830	0.2476	0.0750	0.0051	0.0002	0.0000		
0.0000	0.0001	0.0021	0.0188	0.2251	0.7015	2.5244	7.0083	7.8182	7.9244
6.8848	2.8310	0.5768	0.2172	0.0178	0.0020	0.0001	0.0000		
0.0000	0.0000	0.0005	0.0085	0.0753	0.1899	0.8406	2.1120	2.3117	2.4026
2.0720	0.8142	0.1832	0.0727	0.0082	0.0004	0.0000	0.0000		
0.0000	0.0000	0.0002	0.0021	0.0219	0.0486	0.2518	0.5805	0.6046	0.6272
0.5500	0.2435	0.0479	0.0212	0.0020	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0006	0.0051	0.0117	0.0625	0.1315	0.1427	0.1477
0.1291	0.0605	0.0113	0.0059	0.0006	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0001	0.0013	0.0024	0.0119	0.0251	0.0285	0.0296
0.0256	0.0115	0.0023	0.0013	0.0001	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0001	0.0003	0.0019	0.0047	0.0051	0.0053
0.0045	0.0018	0.0003	0.0001	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0006	0.0006	0.0006
0.0005	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

CONCENTRATION

NUMBER OF TIME STEPS : 1

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	2	2	2	2	0	0	0	0	0	0	0
0	0	0	0	0	0	1	6	6	6	5	1	0	0	0	0	0	0
0	0	0	0	0	0	3	18	18	19	18	3	0	0	0	0	0	0
0	0	0	0	0	1	7	42	43	47	41	7	1	0	0	0	0	0
0	0	0	0	0	2	14	64	75	75	64	14	2	0	0	0	0	0
0	0	0	0	0	3	21	87	94	88	65	20	3	0	0	0	0	0
0	0	0	0	1	5	32	98	107	112	96	31	5	0	0	0	0	0
0	0	0	0	1	7	39	101	110	115	89	38	7	1	0	0	0	0
0	0	0	0	1	7	41	98	107	112	98	40	7	1	0	0	0	0
0	0	0	0	1	8	36	93	104	107	91	37	6	1	0	0	0	0
0	0	0	0	1	7	38	85	94	97	84	37	7	1	0	0	0	0
0	0	0	0	1	6	31	73	78	82	71	30	6	1	0	0	0	0
0	0	0	0	0	4	13	46	53	54	46	13	4	0	0	0	0	0
0	0	0	0	0	2	8	20	20	22	19	7	2	0	0	0	0	0
0	0	0	0	0	1	3	7	8	8	7	3	1	0	0	0	0	0
0	0	0	0	0	0	1	2	2	2	2	1	0	0	0	0	0	0
0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CHEMICAL MASS BALANCE

```
MASS IN BOUNDARIES       :  0.00000E+00
MASS OUT BOUNDARIES      : -1.63558E+03
MASS PUMPED IN           :  6.39641E+09
MASS PUMPED OUT          : -3.23828E-13
INFLOW MINUS OUTFLOW     :  6.39641E+09
INITIAL MASS STORED      :  0.00000E+00
PRESENT MASS STORED      :  6.64812E+09
CHANGE MASS STORED       :  6.64812E+09
COMPARE RESIDUAL WITH NET FLUX AND MASS ACCUMULATION:
MASS BALANCE RESIDUAL    : -2.51715E+08
ERROR  (AS PERCENT)      : -3.93528E+00
```

TIME VERSUS HEAD AND CONCENTRATION AT SELECTED OBSERVATION POINTS

PUMPING PERIOD NO. 2

TRANSIENT SOLUTION

OBS.WELL NO.	X	Y
1	8	4

N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
0	45.3	0.0	0.000
1	44.6	0.0	6.750

OBS.WELL NO.	X	Y
2	10	16

N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
0	33.7	0.0	0.000
1	33.8	114.7	6.750

OBS.WELL NO.	X	Y
3	10	26

N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
0	24.8	0.0	0.000
1	24.9	0.1	6.750

START PUMPING PERIOD NO. 3

THE FOLLOWING TIME STEP, PUMPAGE, AND PRINT PARAMETERS HAVE BEEN REDEFINED:

```
NTIM   =   3
NPNT   =   1
NITP   =   7
ITMAX  = 100
NREC   =   8
NPNTMV =   0
NPNTVL =   0
NPNTD  =   0
NPDELC =   1
NPNCHV =   0
PINT   =      3.000
TIMX   =      1.000
TINIT  = **********
```

TIME INTERVALS (IN SECONDS)

```
0.32000E+08 0.32000E+08 0.32000E+08 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
```

LOCATION OF PUMPING WELLS

X	Y	RATE(IN CFS)	CONC.
8	3	-.724E-01	250.00
9	3	-.724E-01	220.00
10	3	-.724E-01	240.00
11	3	-.724E-01	240.00
8	25	0.724E-01	0.00
9	25	0.724E-01	0.00
10	25	0.724E-01	0.00
11	25	0.724E-01	0.00

N = 1
NUMBER OF ITERATIONS = 6

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 1
TIME(SECONDS) = 2.450000E+08
TIME(DAYS) = 2.835555E+03
TIME(YEARS) = 7.762555E+00

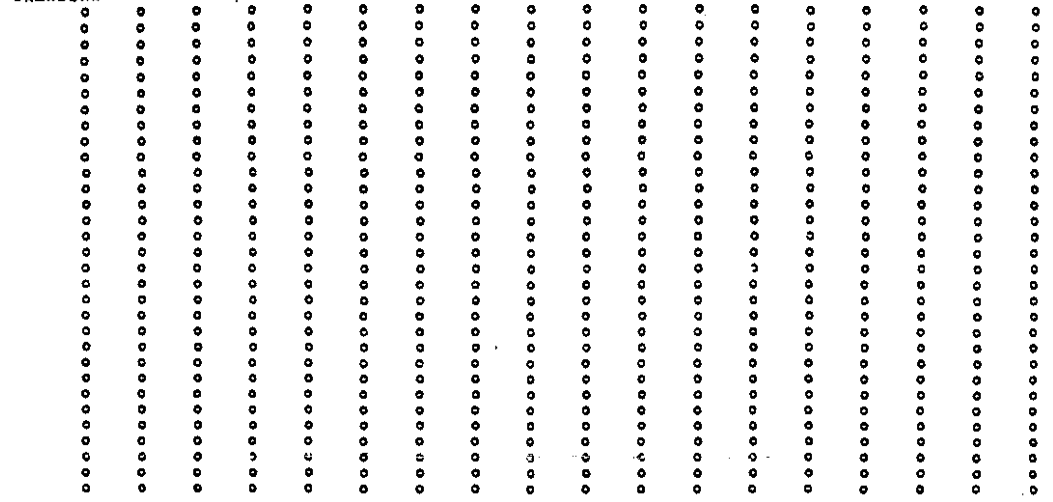
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		
0.0000000	46.5999998	46.5999998	46.5999998	46.5999998	46.5999998	46.5999998	46.5999998	46.5999997	46.5999997
46.5999997	46.5999998	46.5999998	46.5999998	46.5999998	46.5999998	46.5999998	0.0000000		
0.0000000	45.9000000	45.8494048	45.8065370	45.7870265	45.7942177	45.8463883	46.0134386	46.0842459	46.0842459
46.0134386	45.8463883	45.7942177	45.7870265	45.8065370	45.8494048	45.9000000	0.0000000		
0.0000000	45.2999998	45.0871431	44.9635133	44.9405984	44.9373521	44.9567012	45.0344845	45.0668831	45.0668831
45.0344845	44.9567012	44.9373521	44.9405984	44.9635133	45.0871431	45.2999998	0.0000000		
0.0000000	44.4999995	44.2109836	44.0945428	44.0481504	44.0379021	44.0514341	44.0778323	44.0947890	44.0947890
44.0778323	44.0514341	44.0379021	44.0481504	44.0945428	44.2109836	44.4999995	0.0000000		
0.0000000	43.1999998	43.1839078	43.1398815	43.1248841	43.1206495	43.1263781	43.1371810	43.1450814	43.1450814
43.1371810	43.1263781	43.1206495	43.1248841	43.1398815	43.1839078	43.1998999	0.0000000		
0.0000000	41.8000008	42.1172836	42.1917318	42.2087710	42.2098890	42.2126235	42.2188877	42.2200559	42.2200559
42.2188877	42.2126235	42.2098890	42.2087710	42.1917318	42.1172836	41.8000008	0.0000000		
0.0000000	41.3999997	41.3123280	41.3028011	41.3007342	41.2988838	41.2978078	41.2978750	41.2983580	41.2983580
41.2978750	41.2978078	41.2988838	41.3007342	41.3028011	41.3123280	41.3999997	0.0000000		
0.0000000	40.4999998	40.4228343	40.3876454	40.3855048	40.3773544	40.3719884	40.3890534	40.3877492	40.3877492
40.3890534	40.3719884	40.3773544	40.3855048	40.3876454	40.4228343	40.4999998	0.0000000		
0.0000000	39.4000003	39.4843248	39.4838948	39.4894018	39.4864134	39.4872061	39.4418473	39.4380503	39.4380503
39.4418473	39.4872061	39.4864134	39.4894018	39.4838948	39.4843248	39.4000003	0.0000000		
0.0000000	38.7000000	38.6311256	38.5831263	38.5515550	38.5310892	38.5181286	38.5105385	38.5070578	38.5070578
38.5105385	38.5181286	38.5310892	38.5515550	38.5831263	38.6311256	38.7000000	0.0000000		
0.0000000	37.9999995	37.7511469	37.6583537	37.6142886	37.5886404	37.5750611	37.5687034	37.5629292	37.5629292
37.5687034	37.5750611	37.5886404	37.6142886	37.6583537	37.7511469	37.9999995	0.0000000		
0.0000000	36.7000002	36.7180390	36.6888845	36.6597922	36.6405200	36.6280894	36.6207807	36.6174269	36.6174269
36.6207807	36.6280894	36.6405200	36.6597922	36.6888845	36.7180390	36.7000002	0.0000000		
0.0000000	35.7000001	35.7318856	35.7208955	35.7050436	35.6924761	35.6840510	35.6790167	35.6767366	35.6767366
35.6790167	35.6840510	35.6924761	35.7050436	35.7208955	35.7318856	35.7000001	0.0000000		
0.0000000	34.8999997	34.7881425	34.7572583	34.7449221	34.7385257	34.7349552	34.7331374	34.7323714	34.7323714
34.7331374	34.7349552	34.7385257	34.7449221	34.7572583	34.7881425	34.8999997	0.0000000		
0.0000000	33.7000002	33.7841083	33.7762743	33.7804541	33.7838263	33.7863953	33.7884701	33.7895762	33.7895762
33.7884701	33.7863953	33.7838263	33.7804541	33.7762743	33.7841083	33.7000002	0.0000000		
0.0000000	32.7999999	32.7942330	32.8063093	32.8205276	32.8330200	32.8426283	32.8490730	32.8522653	32.8522653
32.8490730	32.8426283	32.8330200	32.8205277	32.8063093	32.7942330	32.7999999	0.0000000		
0.0000000	31.7999999	31.8054287	31.8334684	31.8620871	31.8854764	31.9025346	31.9135708	31.9188207	31.9188207
31.9135708	31.9025344	31.8854764	31.8620871	31.8334684	31.8054287	31.7999999	0.0000000		
0.0000000	30.7000001	30.7861012	30.8631488	30.9128614	30.9484082	30.9729596	30.9883240	30.9956522	30.9956522
30.9883240	30.9729596	30.9484082	30.9128614	30.8831488	30.7861012	30.7000001	0.0000000		
0.0000000	29.7000000	29.6178561	29.5137632	29.5811583	30.0271143	30.0574919	30.0780608	30.0844258	30.0844258
30.0780608	30.0574919	30.0271143	29.9811883	29.5137632	29.6178561	29.7000000	0.0000000		
0.0000000	28.6000004	28.6843118	28.9870689	29.0756618	29.1264594	29.1581767	29.1789448	29.1882539	29.1882539
29.1789448	29.1581767	29.1264594	29.0756618	28.9870689	28.6843120	28.6000004	0.0000000		
0.0000000	27.9000001	28.0413500	28.1344772	28.1881591	28.2441911	28.2744303	28.2923095	28.3016795	28.3016795
28.2923095	28.2744303	28.2441911	28.1881591	28.1344772	28.0413501	27.9000001	0.0000000		
0.0000000	27.2999998	27.2812320	27.2933577	27.3345684	27.3690026	27.3936268	27.4088225	27.4160581	27.4160581
27.4088225	27.3936268	27.3690026	27.3345684	27.2933577	27.2812320	27.2999998	0.0000000		
0.0000000	26.3999998	26.4082087	26.4399356	26.4729981	26.4996892	26.5180783	26.5287037	26.5334786	26.5334786
26.5287037	26.5180783	26.4996892	26.4729981	26.4399356	26.4082087	26.3999999	0.0000000		
0.0000000	25.4000003	25.5345820	25.5885321	25.6211013	25.6420303	25.6533728	25.6577748	25.6587902	25.6587902
25.6577748	25.6533728	25.6420303	25.6211013	25.5885321	25.5345820	25.4000003	0.0000000		

0.0000000	24.7885887	24.7405874	24.7570865	24.7784330	24.7824399	24.7940630	24.7885490	24.7834217	24.7834217
24.7885480	24.7940630	24.7824399	24.7784330	24.7570865	24.7405974	24.7885887	0.0000000		
0.0000000	23.8000000	23.8898235	23.9187485	23.9458790	23.9527132	23.9407894	23.9189548	23.9018238	23.9018240
23.9189548	23.9407894	23.9527132	23.9458790	23.9187485	23.8898238	23.8000000	0.0000000		
0.0000000	22.8000004	23.0248838	23.1078289	23.1383276	23.1370878	23.1058367	23.0417826	23.0105335	23.0105335
23.0417826	23.1058357	23.1370878	23.1383276	23.1078289	23.0248838	22.8000004	0.0000000		
0.0000000	22.2989889	22.3189225	22.3480597	22.3808828	22.3811811	22.2990810	22.1344281	22.0845788	22.0845788
22.1344281	22.2990810	22.3811811	22.3808828	22.3480587	22.3188225	22.2989898	0.0000000		
0.0000000	21.6000004	21.6000004	21.6000004	21.6000004	21.6000004	21.6000004	21.6000003	21.6000003	21.6000003
21.6000003	21.6000004	21.6000004	21.6000004	21.6000004	21.6000004	21.6000004	0.0000000		
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		

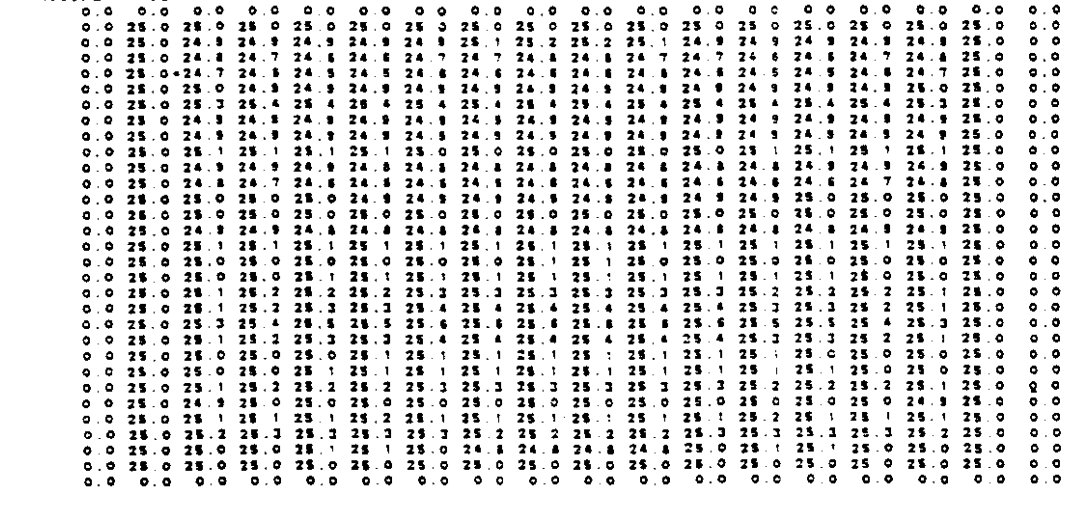
HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 1
TIME(SECONDS) = 2.450000E+08
TIME(DAYS) = 2.835648E+03
TIME(YEARS) = 7.763358E+00

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	0
0	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	0
0	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	0
0	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	0
0	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	0
0	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	0
0	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	0
0	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	0
0	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	0
0	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	0
0	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	0
0	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	0
0	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	0
0	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	0
0	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	0
0	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	0
0	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	0
0	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	0
0	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	0
0	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	0
0	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	0
0	26	26	26	26	26	27	27	27	27	27	27	26	26	26	26	26	0
0	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	0
0	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	0
0	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	0
0	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	0
0	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0
0	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DRAWDOWN



AQUIFER THICKNESS



TRANSMISSIVITY

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.00
0.00	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.00
0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CUMULATIVE MASS BALANCE -- (IN FT**3)

RECHARGE	:	0.00000E+00
INJECTION	:	-3.82000E+07
PUMPAGE	:	3.82000E+07
CUMULATIVE NET PUMPAGE	:	0.00000E+00
WATER RELEASE FROM STORAGE	:	-1.81808E+03
LEAKAGE INTO AQUIFER	:	-7.84244E+08
LEAKAGE OUT OF AQUIFER	:	7.84263E+08
CUMULATIVE NET LEAKAGE	:	1.88840E+04
MASS BALANCE RESIDUAL	:	-2.04800E+04
ERROR (AS PERCENT)	:	-2.49818E-03

RATE MASS BALANCE -- (IN C.F.S.)

RECHARGE	:	0.00000E+00
LEAKAGE INTO AQUIFER	:	3.07458E+00
LEAKAGE OUT OF AQUIFER	:	-3.07480E+00
NET LEAKAGE (QNET)	:	-3.03984E-05
INJECTION	:	-2.88800E-01
PUMPAGE	:	2.88800E-01
NET WITHDRAWAL (TPUM)	:	0.00000E+00

CONCENTRATION

NUMBER OF TIME STEPS	:	1
DELTA T	:	3.20000E+07
TIME(SECONDS)	:	2.45000E+08
CHEM.TIME(SECONDS)	:	2.45000E+08
CHEM.TIME(DAYS)	:	2.83555E+03
TIME(YEARS)	:	7.76358E+00
CHEM.TIME(YEARS)	:	7.76358E+00
NO. MOVES COMPLETED	:	9

0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	-0.0002	-0.0300	4.9874	4.5571	4.8870
4.7822	-0.0289	-0.0002	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	-0.0031	1.5631	118.3431	114.9488	125.0413
114.8758	1.5020	-0.0030	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0002	0.1198	23.7484	102.0508	92.7715	100.6887
98.1712	22.8289	0.1150	0.0002	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0002	0.0784	15.9830	53.9886	67.5260	73.0829
52.0632	16.3348	0.0735	0.0002	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0001	0.0088	0.9083	7.8247	9.8470	10.8845
7.3808	0.5851	0.0083	0.0001	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0013	0.0712	1.3202	1.3244	1.4341
1.2735	0.0885	0.0013	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.0107	0.1906	0.2120	0.2290
0.1839	0.0103	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000		

0.0000	0.0000	0.0000	0.0000	0.0001	0.0011	0.0127	0.1007	0.1081	0.1146
0.0884	0.0123	0.0011	0.0001	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0004	0.0059	0.0376	0.2609	0.2687	0.2833
0.2810	0.0383	0.0057	0.0004	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0001	0.0016	0.0183	0.1289	0.7117	0.8146	0.8539
0.6879	0.1237	0.0186	0.0019	0.0001	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0004	0.0048	0.0895	0.4732	2.2485	2.7171	2.8880
2.2133	0.4880	0.0874	0.0047	0.0004	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0001	0.0014	0.0157	0.1989	1.5086	6.9436	7.1805	7.4427
5.7816	1.4803	0.1919	0.0161	0.0014	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0003	0.0042	0.0882	0.5586	4.1125	18.2883	20.8848	21.9825
17.7782	3.8828	0.5387	0.0661	0.0041	0.0003	0.0000	0.0000		
0.0000	0.0000	0.0008	0.0119	0.1479	1.3925	9.4479	41.5009	44.2832	47.2936
40.2785	9.1531	1.3449	0.1427	0.0115	0.0007	0.0000	0.0000		
0.0000	0.0000	0.0011	0.0213	0.3216	2.9402	18.8171	69.1203	76.2007	81.5516
67.7237	18.2370	2.8394	0.3102	0.0205	0.0011	0.0000	0.0000		
0.0000	0.0001	0.0021	0.0420	0.5822	4.6923	27.9889	88.6793	98.5588	102.7783
87.2788	27.1389	4.7226	0.5418	0.0404	0.0019	0.0001	0.0000		
0.0000	0.0002	0.0055	0.0880	0.8244	7.0487	38.2853	98.5134	107.8714	111.1819
96.0872	35.1291	6.7883	0.7943	0.0665	0.0053	0.0002	0.0000		
0.0000	0.0004	0.0058	0.0713	1.0342	8.2258	40.5482	96.7274	107.5741	111.8488
95.2691	39.2458	7.9339	0.9884	0.0686	0.0066	0.0004	0.0000		
0.0000	0.0006	0.0054	0.0816	1.0242	8.9447	41.2184	93.0843	104.4147	107.8223
91.7784	39.9280	8.2431	0.9689	0.0788	0.0052	0.0008	0.0000		
0.0000	0.0006	0.0081	0.0800	0.9780	8.6358	38.8037	87.5180	97.2006	100.8804
85.0282	37.3219	8.3288	0.9385	0.0887	0.0068	0.0006	0.0000		
0.0000	0.0007	0.0342	0.2174	1.0084	7.8116	33.3837	78.7304	88.7978	88.4068
76.1234	32.3389	7.5384	0.9899	0.2095	0.0329	0.0007	0.0000		
0.0000	0.0005	0.0203	0.2088	1.2893	5.9919	24.9873	60.8381	69.9819	71.2359
59.7852	24.2249	5.7834	1.2645	0.2015	0.0198	0.0006	0.0000		
0.0000	0.0004	0.0115	0.1277	0.9488	4.5305	13.4889	40.8857	44.1226	47.4710
39.5757	13.0832	4.3724	0.9139	0.1231	0.0115	0.0004	0.0000		
0.0000	0.0003	0.0054	0.0804	0.4837	2.0257	6.8444	17.1507	18.3899	19.2865
16.7982	8.6353	1.9546	0.4887	0.0582	0.0062	0.0003	0.0000		
0.0000	0.0002	0.0019	0.0208	0.1894	0.8019	2.2880	5.5306	6.0365	6.3020
5.4345	2.1880	0.5808	0.1834	0.0201	0.0018	0.0002	0.0000		
0.0000	0.0001	0.0007	0.0077	0.0805	0.1688	0.7253	1.7243	1.8826	1.9880
1.6955	0.7030	0.1630	0.0584	0.0074	0.0006	0.0001	0.0000		
0.0000	0.0000	0.0002	0.0020	0.0143	0.0483	0.1886	0.4688	0.5141	0.5327
0.4607	0.1828	0.0438	0.0177	0.0019	0.0002	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0004	0.0039	0.0068	0.0346	0.0818	0.0830	0.0963
0.0802	0.0336	0.0065	0.0038	0.0004	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0001	0.0002	0.0009	0.0043	0.0291	0.0280	0.0289
0.0288	0.0042	0.0008	0.0002	0.0001	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

CONCENTRATION

NUMBER OF TIME STEPS = 1

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	5	5	5	5	0	0	0	0	0	0	0	0
0	0	0	0	0	0	2	119	116	125	115	2	0	0	0	0	0	0	0
0	0	0	0	0	0	24	102	93	101	98	23	0	0	0	0	0	0	0
0	0	0	0	0	0	17	54	86	73	52	16	0	0	0	0	0	0	0
0	0	0	0	0	0	1	8	10	11	7	1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	2	3	3	2	0	0	0	0	0	0	0	0
0	0	0	0	0	0	2	7	7	7	7	1	0	0	0	0	0	0	0
0	0	0	0	0	1	4	18	21	22	18	4	1	0	0	0	0	0	0
0	0	0	0	0	1	9	42	44	47	40	9	1	0	0	0	0	0	0
0	0	0	0	0	3	19	89	78	82	66	18	3	0	0	0	0	0	0
0	0	0	0	1	5	28	88	100	103	87	27	5	1	0	0	0	0	0
0	0	0	0	1	7	36	97	108	111	95	35	7	1	0	0	0	0	0
0	0	0	0	1	8	41	97	108	112	95	39	8	1	0	0	0	0	0
0	0	0	0	1	9	41	93	104	108	92	40	8	1	0	0	0	0	0
0	0	0	0	1	8	39	88	97	101	85	37	8	1	0	0	0	0	0
0	0	0	0	1	8	33	77	87	88	78	32	8	1	0	0	0	0	0
0	0	0	0	1	6	25	81	70	71	80	24	6	1	0	0	0	0	0
0	0	0	0	1	5	13	41	44	47	40	13	4	1	0	0	0	0	0
0	0	0	0	0	2	7	17	18	19	17	7	2	0	0	0	0	0	0
0	0	0	0	0	1	2	6	6	5	5	2	1	0	0	0	0	0	0
0	0	0	0	0	0	1	2	2	2	2	1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

N = 3
NUMBER OF ITERATIONS = 1

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 3
TIME(SECONDS) = 3.080000E+08
TIME(DAYS) = 3.576389E+03
TIME(YEARS) = 9.791625E+00

0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		
0.0000000	46.5999996	46.5999996	46.5999995	46.5999995	46.5999995	46.5999995	46.5999996	46.5999997	46.5999997
46.5999997	46.5999996	46.5999995	46.5999995	46.5999995	46.5999996	46.5999995	0.0000000		
0.0000000	45.8000000	45.8483684	45.8065488	45.7871048	45.7842726	45.8480511	46.0124418	46.0625242	46.0625242
46.0124417	45.8480511	45.7842726	45.7871048	45.8065488	45.8483684	45.8000000	0.0000000		
0.0000000	45.2999998	45.0874449	44.9841383	44.9415614	44.9388277	44.9710978	45.0373185	45.0703417	45.0703417
45.0373185	44.9710978	44.9388277	44.9415614	44.9841383	45.0874449	45.2999998	0.0000000		
0.0000000	44.4999995	44.2115238	44.0867825	44.0502597	44.0411081	44.0568857	44.0835408	44.1011400	44.1011400
44.0835408	44.0568857	44.0411081	44.0502597	44.0867825	44.2115238	44.4999995	0.0000000		
0.0000000	43.1999999	43.1648117	43.1418815	43.1278385	43.1249397	43.1320857	43.1442300	43.1527215	43.1527215
43.1442300	43.1320857	43.1249397	43.1278385	43.1418815	43.1648117	43.1999999	0.0000000		
0.0000000	41.8000008	42.1184543	42.1941383	42.2104680	42.2147007	42.2188594	42.2243747	42.2281226	42.2281226
42.2243747	42.2188594	42.2147007	42.2104680	42.1941383	42.1184543	41.8000008	0.0000000		
0.0000000	41.3999997	41.3138885	41.3054925	41.3047723	41.3040414	41.3041915	41.3054072	41.3064414	41.3064414
41.3054072	41.3041915	41.3040414	41.3047723	41.3054925	41.3138885	41.3999997	0.0000000		
0.0000000	40.4999998	40.4242815	40.4008441	40.3897085	40.3828385	40.3786138	40.3755044	40.3756918	40.3756918
40.3785044	40.3786138	40.3828385	40.3897085	40.4008841	40.4242815	40.4999998	0.0000000		
0.0000000	39.4000003	39.4857797	39.4885750	39.4736386	39.4618886	39.4537344	39.4489278	39.4467549	39.4467548
39.4489278	39.4537344	39.4618886	39.4736386	39.4885750	39.4857797	39.4000003	0.0000000		
0.0000000	38.7000000	38.8328555	38.5859787	38.5557415	38.5384486	38.5244585	38.5178046	38.5144911	38.5144911
38.5178046	38.5244585	38.5384486	38.5557415	38.5859787	38.8328555	38.7000000	0.0000000		
0.0000000	37.9999995	37.7525524	37.6811541	37.6183706	37.5948820	37.5812288	37.5735491	37.5700987	37.5700987
37.5735491	37.5812288	37.5948820	37.6183706	37.6811541	37.7525524	37.9999995	0.0000000		
0.0000000	36.7000002	36.7174306	36.6897296	36.6837995	36.6458320	36.6340789	36.6273863	36.6243473	36.6243473
36.6273863	36.6340788	36.6458320	36.6837995	36.6897296	36.7174306	36.7000002	0.0000000		
0.0000000	35.7000001	35.7332339	35.7235861	35.7068591	35.6974585	35.6888850	35.6854443	35.6834469	35.6834469
35.6854449	35.6888850	35.6974585	35.7068591	35.7235861	35.7332339	35.7000001	0.0000000		
0.0000000	34.6999997	34.7894818	34.7888060	34.7687851	34.7434027	34.7408886	34.7394119	34.7385288	34.7385288
34.7394118	34.7408836	34.7434027	34.7687851	34.7888060	34.7894818	34.6999997	0.0000000		
0.0000000	33.7000002	33.7854483	33.7788882	33.7642523	33.7884374	33.7820123	33.7946485	33.7980387	33.7980387
33.7946485	33.7820123	33.7884374	33.7642523	33.7788882	33.7854483	33.7000002	0.0000000		
0.0000000	32.7999999	32.7955704	32.8089262	32.8243097	32.8378072	32.8462257	32.8552142	32.8587051	32.8587051
32.8552142	32.8462257	32.8378072	32.8243097	32.8089262	32.7955704	32.7999999	0.0000000		
0.0000000	31.7999999	31.8067885	31.8360918	31.8558865	31.8902801	31.9081632	31.9197414	31.9254039	31.9254039
31.9197414	31.9081632	31.8902801	31.8558865	31.8360918	31.8067885	31.7999999	0.0000000		
0.0000000	30.7000001	30.7874430	30.8557825	30.8184435	30.8532633	30.8788850	30.8965877	31.0022431	31.0022431
30.8965877	30.8788850	30.8532633	30.8184435	30.8557825	30.7874430	30.7000001	0.0000000		
0.0000000	29.7000000	29.8181951	29.8184252	29.8850261	30.0320442	30.0833067	30.0824736	30.0818805	30.0818806
30.0824736	30.0833067	30.0320442	29.8850261	29.8184252	29.8181951	29.7000000	0.0000000		
0.0000000	28.8000004	28.8856385	28.8897039	28.0797524	29.1314894	29.1651152	29.1855468	29.1952108	29.1952105
29.1855468	29.1651152	29.1314894	29.0797524	28.8897039	28.8856385	28.8000004	0.0000000		
0.0000000	27.8000001	28.0426553	28.1370531	28.2030478	28.2482507	28.2804700	28.2986583	28.3088439	28.3088439
28.2986583	28.2804700	28.2482507	28.2030478	28.1370931	28.0426553	27.8000001	0.0000000		
0.0000000	27.2999998	27.2824910	27.2958904	27.3383702	27.3740180	27.3998805	27.4157198	27.4233652	27.4233652
27.4157198	27.3998805	27.3740180	27.3383702	27.2958904	27.2824910	27.2999998	0.0000000		
0.0000000	26.3999999	26.4083705	26.4422954	26.4785793	26.5044982	26.5239921	26.5355388	26.5407370	26.5407370
26.5355388	26.5239921	26.5044982	26.4785793	26.4422955	26.4083705	26.3999999	0.0000000		
0.0000000	25.4000003	25.5356707	25.5905868	25.6242818	25.6483858	25.6582258	25.6642904	25.6659018	25.6659018
25.6642904	25.6582258	25.6483858	25.6242818	25.5905868	25.5356707	25.4000003	0.0000000		

0.0000000	24.7999987	24.7813828	24.7587228	24.7819819	24.7980671	24.7988954	24.7943716	24.7899414	24.7899414
24.7943716	24.7988854	24.7980671	24.7819819	24.7587228	24.7413928	24.7999997	0.0000000		
0.0000000	23.8000000	23.8703028	23.8197835	23.8475876	23.8583106	23.8444861	23.8218488	23.8069325	23.8069325
23.8218488	23.8444861	23.8583106	23.8475876	23.8197835	23.8703028	23.8000000	0.0000000		
0.0000000	22.8000004	23.0247804	23.1082768	23.1381157	23.1384877	23.1078414	23.0446729	23.0135408	23.0135408
23.0446729	23.1078414	23.1384877	23.1381157	23.1082768	23.0247804	22.8000004	0.0000000		
0.0000000	22.2999999	22.3190131	22.3481804	22.3808439	22.3808479	22.2885258	22.1328708	22.0824647	22.0824647
22.1328708	22.2885258	22.3808479	22.3808439	22.3481804	22.3190131	22.2999999	0.0000000		
0.0000000	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	21.8000003	21.8000003	21.8000003
21.8000003	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	21.8000004	0.0000000		
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 3
TIME(SECONDS) = 3.09000E+08
TIME(DAYS) = 3.57639E+03
TIME(YEARS) = 9.79152E+00

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	0
0	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	0
0	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	0
0	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	0
0	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	0
0	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	0
0	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	0
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0	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0
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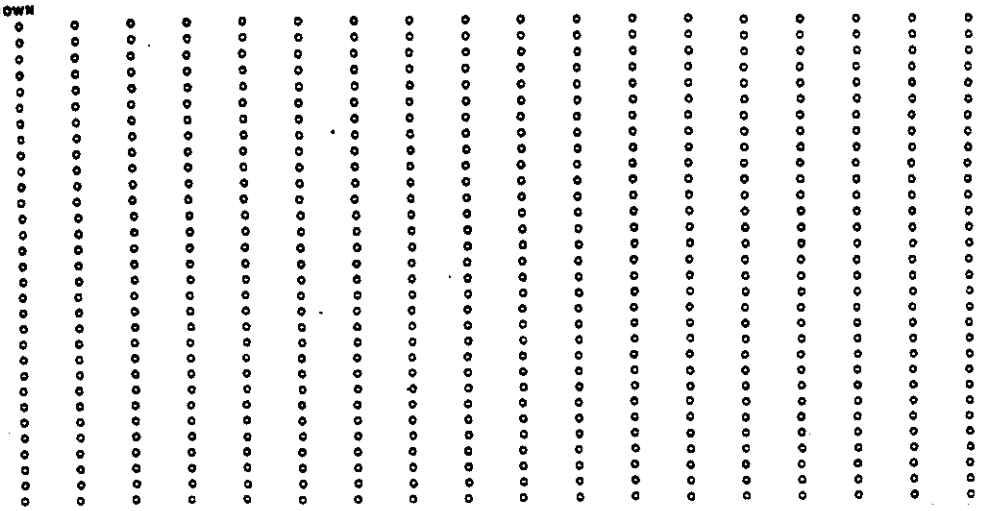
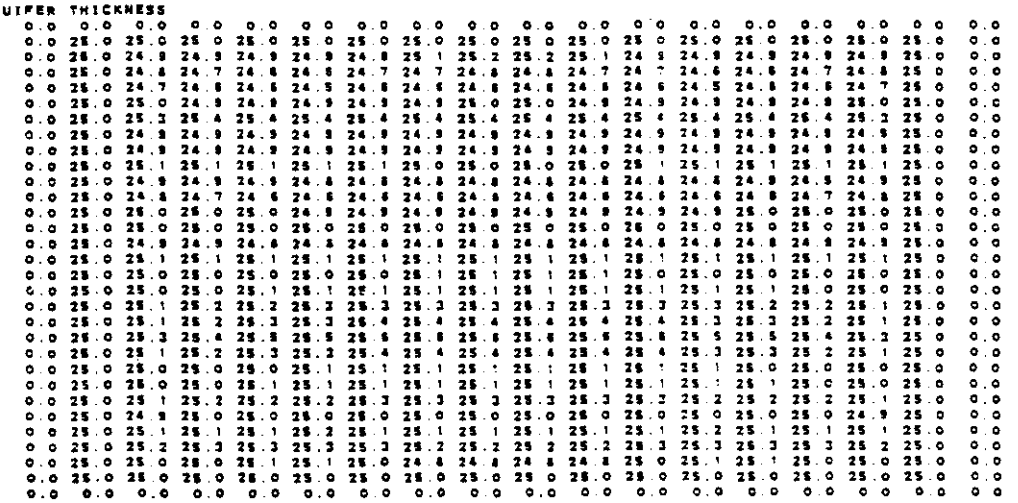
DRAWDOWN



AQUIFER THICKNESS



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TRANSMISSIVITY
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   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
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   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
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   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.14 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.14 0.00
   0.00 0.14 0.14 0.14 0.15 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.15 0.14 0.14 0.14 0.00
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   0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

  CUMULATIVE MASS BALANCE -- (IN FT**3)

   RECHARGE                       :  0.00000E+00
   INJECTION                      : -5.47343E+07
   PUMPAGE                        :  5.47343E+07
   CUMULATIVE  NET  PUMPAGE       :  0.00000E+00
   WATER RELEASE FROM STORAGE     : -1.80201E+03
   LEAKAGE INTO AQUIFER           : -9.80974E+06
   LEAKAGE OUT OF AQUIFER         :  9.80998E+06
   CUMULATIVE  NET  LEAKAGE       :  2.53440E+04

       MASS BALANCE RESIDUAL      : -2.71380E+04
       ERROR  (AS PERCENT)        : -2.82001E-03

  RATE MASS BALANCE -- (IN C.F.S.)

   RECHARGE                       :  0.00000E+00
   LEAKAGE INTO AQUIFER           :  3.07425E+00
   LEAKAGE OUT OF AQUIFER         : -3.07423E+00
   NET LEAKAGE      (QNET)        : -2.36419E-07
   INJECTION                      : -2.89600E-01
   PUMPAGE                        :  2.89600E-01
   NET WITHDRAWAL    (TPUM)       :  0.00000E+00


CONCENTRATION

NUMBER OF TIME STEPS :       3
        DELTA T      :  3.20000E+07
       TIME(SECONDS) :  3.09000E+08
  CHEM.TIME(SECONDS) :  3.08998E+08
  CHEM.TIME(DAYS)    :  3.57638E+03
       TIME(YEARS)   :  9.79162E+00
  CHEM.TIME(YEARS)   :  9.79158E+00
 NO. MOVES COMPLETED :       9

    0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0000     0.0000    -0.0006    -0.0595     7.3814     7.1304     7.7639

    7.0713    -0.0871    -0.0006     0.0000     0.0000     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0000     0.0001    -0.0119     0.7201   128.8475   119.0110   128.7886

  123.6722     0.6928    -0.0114     0.0001     0.0000     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0000     0.0005    -0.0162     2.0015   106.5514   106.8223   115.6046

  102.3158     1.9285    -0.0158     0.0004     0.0000     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0001     0.0050     0.3485    44.9137   104.1160    88.8865    97.4294

  100.0988    43.1827     0.3362     0.0068     0.0001     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0305     0.0311     1.3158    35.7588    96.5934    89.3219   106.8988

   93.2869    35.3779     1.2662     0.0299     0.0005     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0009     0.0525     1.9415    45.7340   100.8466    99.8895   106.9661

   97.5632    44.0081     1.8880     0.0505     0.0009     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0017     0.0728     2.2198    35.7865    95.1012    96.7236   103.2814

   92.1258    24.4523     2.1380     0.0700     0.0016     0.0000     0.0000     0.0000
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0.0000	0.0000	0.0000	0.0023	0.0958	2.5157	35.9880	81.9227	91.2788	97.1970
75.5470	34.6558	2.4209	0.0521	0.0022	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0018	0.0852	2.4384	30.8254	81.7410	83.5057	86.7870
78.4082	28.8770	2.3464	0.0820	0.0018	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0010	0.0412	1.1750	18.4777	55.2582	81.7466	85.7472
53.7817	18.7725	1.1315	0.0396	0.0009	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0001	0.0087	0.3383	4.8700	15.2782	18.2125	20.4615
15.8568	4.5027	0.3240	0.0084	0.0001	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0018	0.0589	0.8539	2.8285	3.5406	3.7700
2.7879	0.8236	0.0548	0.0017	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0005	0.0087	0.2048	0.8469	1.1273	1.1986
0.8265	0.1974	0.0094	0.0005	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0001	0.0012	0.0120	0.1015	0.4180	0.5073	0.5289
0.4101	0.0985	0.0115	0.0011	0.0001	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0004	0.0048	0.0323	0.2448	0.8835	1.1217	1.1874
0.8818	0.2381	0.0313	0.0046	0.0004	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0001	0.0013	0.0107	0.0839	0.6294	2.3288	2.8830	2.7427
2.2775	0.8118	0.0905	0.0104	0.0013	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0003	0.0050	0.0502	0.3084	1.7281	5.1871	7.4818	7.7973
5.0754	1.5758	0.2585	0.0455	0.0049	0.0003	0.0000	0.0000		
0.0000	0.0001	0.0008	0.0278	0.1025	0.7811	4.1478	14.2427	17.0830	17.7625
14.0453	4.0314	0.7366	0.0981	0.0280	0.0006	0.0001	0.0000		
0.0000	0.0002	0.0036	0.0190	0.2208	1.5828	8.2765	28.0498	33.1870	33.6834
27.7757	8.7288	1.6286	0.2131	0.0182	0.0034	0.0002	0.0000		
0.0000	0.0003	0.0085	0.0412	0.4340	3.2288	15.2522	51.5807	60.0454	61.6349
50.8375	15.8142	3.1258	0.5190	0.0386	0.0084	0.0003	0.0000		
0.0000	0.0007	0.0187	0.0799	0.7510	5.2574	25.3708	73.8488	84.9739	87.8500
72.5706	24.6816	5.0861	0.7248	0.0770	0.0181	0.0006	0.0000		
0.0000	0.0013	0.0367	0.1388	1.1042	7.5956	34.0692	86.2840	99.8527	103.2164
84.8966	33.1107	7.3436	1.0692	0.1319	0.0353	0.0013	0.0000		
0.0000	0.0023	0.0642	0.1906	1.4807	8.3985	39.4873	91.4238	105.2492	108.2185
90.0701	38.3646	9.0823	1.4090	0.1837	0.0611	0.0023	0.0000		
0.0000	0.0029	0.0796	0.2380	1.8582	10.4471	42.0801	90.8858	103.8963	106.8130
89.0511	40.8434	10.0932	1.8305	0.2732	0.0787	0.0028	0.0000		
0.0000	0.0022	0.0617	0.2028	3.4437	14.8871	33.8565	83.9580	96.4747	98.6977
82.8631	36.4838	14.1751	3.3280	0.5814	0.0595	0.0021	0.0000		
0.0000	0.0024	0.0632	0.4717	2.5553	12.7891	33.0420	71.7419	83.4032	84.5800
71.2112	32.1174	12.3438	2.4691	0.4850	0.0509	0.0024	0.0000		
0.0000	0.0038	0.0923	0.3219	2.0444	8.2000	28.3802	58.9773	67.1411	68.1771
56.3500	25.6101	7.9228	1.8738	0.3104	0.0505	0.0038	0.0000		
0.0000	0.0019	0.0532	0.2206	1.1303	4.7427	14.4532	30.8538	34.5173	35.5816
30.3346	14.0888	4.5821	1.0911	0.2129	0.0513	0.0019	0.0000		
0.0000	0.0016	0.0258	0.0743	0.5019	1.4288	6.1361	23.5260	23.8458	24.4547
23.3068	5.8802	1.3804	0.4845	0.0715	0.0250	0.0016	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

CONCENTRATION

NUMBER OF TIME STEPS = 3

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	7	7	8	7	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	129	119	130	124	1	0	0	0	0	0	0	0
0	0	0	0	0	0	2	107	107	116	102	2	0	0	0	0	0	0	0
0	0	0	0	0	0	46	104	90	97	100	43	0	0	0	0	0	0	0
0	0	0	0	0	1	37	87	89	107	83	35	1	0	0	0	0	0	0
0	0	0	0	0	2	46	101	100	107	98	44	2	0	0	0	0	0	0
0	0	0	0	0	2	38	95	97	103	92	34	2	0	0	0	0	0	0
0	0	0	0	0	3	35	82	91	97	80	35	2	0	0	0	0	0	0
0	0	0	0	0	2	31	82	84	89	79	30	2	0	0	0	0	0	0
0	0	0	0	0	1	19	55	82	85	54	19	1	0	0	0	0	0	0
0	0	0	0	0	0	5	16	19	20	16	5	0	0	0	0	0	0	0
0	0	0	0	0	0	1	3	4	4	3	1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	2	3	3	2	1	0	0	0	0	0	0	0
0	0	0	0	0	0	2	5	7	8	8	2	0	0	0	0	0	0	0
0	0	0	0	0	1	4	14	17	18	14	4	1	0	0	0	0	0	0
0	0	0	0	0	2	9	28	33	34	28	9	2	0	0	0	0	0	0
0	0	0	0	0	3	16	52	60	62	51	16	3	0	0	0	0	0	0
0	0	0	0	1	5	25	74	85	88	73	25	5	1	0	0	0	0	0
0	0	0	0	1	8	34	86	100	103	85	33	7	1	0	0	0	0	0
0	0	0	0	1	9	35	91	105	108	90	38	9	1	0	0	0	0	0
0	0	0	1	2	10	42	91	104	107	88	41	10	2	1	0	0	0	0
0	0	0	1	3	15	40	84	98	99	83	38	14	3	1	0	0	0	0
0	0	0	0	3	13	33	72	83	86	71	32	12	2	0	0	0	0	0
0	0	0	0	2	8	26	57	67	68	56	25	8	2	0	0	0	0	0
0	0	0	0	1	5	14	31	35	37	30	14	5	1	0	0	0	0	0
0	0	0	0	1	1	8	24	24	24	23	8	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CHEMICAL MASS BALANCE

MASS IN BOUNDARIES	=	0.000000E+00
MASS OUT BOUNDARIES	=	-1.312148E+08
MASS PUMPED IN	=	1.298818E+10
MASS PUMPED OUT	=	-1.594858E+08
INFLOW MINUS OUTFLOW	=	1.270684E+10
INITIAL MASS STORED	=	0.000000E+00
PRESENT MASS STORED	=	1.243318E+10
CHANGE MASS STORED	=	1.243318E+10

COMPARE RESIDUAL WITH NET FLUX AND MASS ACCUMULATION.

MASS BALANCE RESIDUAL	=	2.752438E+08
ERROR (AS PERCENT)	=	2.117408E+00

BABYLON.LEVELS.CHLORIDE 00000000

TIME VERSUS HEAD AND CONCENTRATION AT SELECTED OBSERVATION POINTS

PUMPING PERIOD NO. 3

TRANSIENT SOLUTION

OBS.WELL NO.	X	Y	N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
1	8.	4				
			0	45.3	0.0	0.000
			1	45.0	102.1	7.764
			2	45.0	107.7	8.778
			3	45.0	106.5	9.792
OBS.WELL NO.	X	Y	N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
2	10	18				
			0	33.7	0.0	0.000
			1	33.6	81.6	7.764
			2	33.6	8.7	8.778
			3	32.8	1.2	9.792
OBS.WELL NO.	X	Y	N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
3	10	28				
			0	24.3	0.0	0.000
			1	24.8	6.3	7.764
			2	24.8	58.6	8.778
			3	24.8	88.7	9.792

MESSAGE SUMMARY MESSAGE NUMBER - COUNT

208 811 OR OVER

APPENDIX VI

GRAPHICS FILE USAGE

GRAPHICS FILE USAGE

The graphics output dataset which is defined in the preprocessor was designed for easy use with graphics packages such as SAS and SAS/GRAPH. The modified Konikow Model uses the formats described in Appendix VII when writing the output data to the graphics file. Information can be displayed in the form of plots, and 2 dimensional and 3 dimensional contours.

To utilize SAS and SAS/GRAPH routines, the information in the graphics data set must be read by SAS and placed in a SAS data set. A program that performs this function is listed on page VI-3. The "DSN=" in row 7 should be the full name of the graphics data set. The "DSN=" in the next row needs to be the full name of the SAS data set. This program reads all data from the graphics data set and places it in the SAS data set in a format useable by SAS and SAS/GRAPH. Example SAS/GRAPH routines and the resulting plots are shown in Appendix VIII.

```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.KONI.CNTL                                (SAS      )

//L11236C JOB (?,LLM-SA-KONI),'KONI SAS',                                    00000100
//  TIME=(0,40),CLASS=A,                                                     00000200
//  MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=**                                      00000300
/*PASSWORD ?                                                                00000400
/*JOBPARM ROOM=L                                                           00000500
//KONI EXEC SAS                                                            00000600
//KONI DD DSN=U11834C.LONGIS23.GRAPH,DISP=OLD                              00000700
//LIB  DD DSN=U11834C.LONGIS23.SAS,DISP=OLD,                               00000800
//        UNIT=STORAGE,SPACE=(TRK,(50,50))                                 00000900
//SYSIN DD *                                                               00001000
  DATA LIB.ALL;                                                            00001100
    INFILE KONI;                                                           00001200
    LIST;                                                                  00001300
    INPUT (INT N) (@2 2*4.) ;                                              00001400
    INPUT @1 TITLE $80;                                                    00001500
    INPUT (NX NY NTIM NPMP ISOLV IHEAD FCON TP BTM                         00001600
           XDEL YDEL PINT) (@2 9*4. 3*11.) ;                               00001700
    INPUT (TOL NUMOBS NREC NCODES) (@2 9. 3*4.) ;                          00001800
    OUTPUT;                                                                00001900
    IF NUMOBS > 0 THEN                                                     00002000
    DO NOBS = 1 TO NUMOBS;                                                 00002100
      INPUT (INT N IXOBS IYOBS) (@2 4*4.);                                 00002200
      OUTPUT;                                                              00002300
    END;                                                                   00002400
    IF NREC > 0 THEN                                                       00002500
    DO WELLS = 1 TO NREC;                                                  00002600
      INPUT (INT N IX IY REC CNRECH) (@2 4*4. 2*9.);                       00002700
      OUTPUT;                                                              00002800
    END;                                                                   00002900
    IF NCODES > 0 THEN                                                     00003000
    DO CODE = 1 TO NCODES;                                                 00003100
      INPUT (INT N ICODE FCTR1 FCTR2 FCTR3) (@2 3*4. 3*10.);               00003200
      OUTPUT;                                                              00003300
    END;                                                                   00003400
    II=NX * NY;                                                            00003500
    DO III = 1 TO II;                                                      00003600
      INPUT (INT N I J) (@2 4*4.) /                                        00003700
            (BOT WT THCK TRANS PERM RECH NODEID VPRM) (@1 8*10.);           00003800
      OUTPUT;                                                              00003900
    END;                                                                   00004000
    PUMP: DO;                                                              00004100
      INPUT (INT N) (@2 2*4.);                                             00004200
      OUTPUT;                                                              00004300
      IF INT > -1 THEN DO;                                                 00004400
        INPUT (INT N) (@2 2*4.)                                            00004500
              (SUMT TIMD TIMY) (3*12.);                                    00004600
        OUTPUT;                                                            00004700
        II=NX * NY;                                                        00004800
        DO III = 1 TO II;                                                  00004900
          INPUT (INT N I J) (@2 4*4.)                                      00005000
                (WT DD THCK TRANS CONC) (5*10.);                           00005100
          OUTPUT;                                                          00005200
        END;                                                               00005300
        PUMPPER = INT;                                                     00005400
        TIMESTEP = N;                                                      00005500
        GO TO PUMP;                                                        00005600
      END;                                                                 00005700
      ELSE DO;                                                             00005800
        IF NUMOBS > 0 & IHEAD = 0 THEN                                     00005900
        DO IJ = 1 TO NUMOBS;                                               00006000
          DO III = 1 TO TIMESTEP;                                          00006100
            INPUT (INT N NOBS TIM) (@2 4*4.)                               00006200
```

```
            (TMWL TMCN TMYR) (3*7.);                                    00006300
        OUTPUT;                                                         00006400
      END;                                                              00006500
    END;                                                                00006600
    IF PUMPPER < NPMP THEN DO;                                          00006700
      PUT 'PUMP=' PUMPPER;                                              00006800
      INPUT (INT N NTIM NREC PINT) (@2 4*4. 11.);                       00006900
      OUTPUT;                                                           00007000
      IF NREC > 0 THEN                                                  00007100
      DO WELLS = 1 TO NREC;                                             00007200
        INPUT (INT N IX IY) (@2 4*4.)                                   00007300
              (REC CNRECH) (2*9.);                                      00007400
        OUTPUT;                                                         00007500
      END;                                                              00007600
      GO TO PUMP;                                                       00007700
    END;                                                                00007800
  END;                                                                  00007900
END;                                                                    00008000
STOP;                                                                   00008100
DROP II III IJ PUMPPER TIMESTEP;                                        00008200
RUN;                                                                    00008300
```

APPENDIX VII

OUTPUT FORMATS FOR GRAPHICS FILE

OUTPUT FORMATS FOR GRAPHICS FILE

Card Image	Column	Format	Variable	Definition
1	2-5	I 4	INT	Pumping period.
	6-9	I 4	N	Time step. 0 for initial input.
2	1-80	10A8	TITLE	Description of Problem
3	2-5	I 4	NX	Number of columns.
	6-9	I 4	NY	Number of rows.
	10-13	I 4	NTIM	Maximum number of time steps.
	14-17	I 4	NPMP	Number of pumping periods.
	18-21	I 4	ISOLV	ADIP (ISOLV=0) or SIP (ISOLV=1) algorithm.
	22-25	I 4	IHEAD	Solute transport (IHEAD=0) or head only (IHEAD=1) simulation.
	26-29	I 4	FCON	Confined (FCON=0) or unconfined (FCON=1) aquifer.
	30-33	I 4	TP	Transmissivity (TP=0) or hydraulic conductivity (TP=1) input.
	34-37	I 4	BTM	Saturated thickness (BTM=0) or bottom elevation (BTM=1) input.
	38-48	F11.3	XDEL	Width of node in X direction in feet.
	49-59	F11.3	YDEL	Width of node in Y direction in feet.
	60-70	F11.3	PINT	Length of pumping period (years).

Card Image	Column	Format	Variable	Definition
4	2-10	F9.4	TOL	Convergence criteria.
	11-14	I 4	NUMOBS	Number of observation wells.
	15-18	I 4	NREC	Number of pumping/injection wells.
	19-22	I 4	NCODES	Number of node identification codes.

Data Set	Number of Card Images	Format	Variable	Definition
1	Value of NUMOBS	X1,4I4	INT,N, IXOBS,IYOBS	Pumping period, time step, X and Y coordinates of observation points. This data set is eliminated if NUMOBS=0.
2	Value of NREC	X1,4I4, 2E9.3	INT,N,IX, IY,REC,CNRECH	Pumping period, time step, X and Y coordinates of pumping (+) or injection (-) wells, rate in ft 3/s and if an injection well, the concentration of injected water. This data set is eliminated if NREC=0.
3	Value of NCODES	X1,3I4, 3E10.3	FCTR1,FCTR2 INT,N,ICODE	Instructions for using NODEID array. This data set is eliminated if NCODES=0.
4+	2*NX*NY	a. X1,4I4	INT,N,I,J	Pumping period, time step, X and Y coordinates.
		b. 3F10.4, 3E10.2, I10, E10.2	BOT,WT,THCK, TRANS,PERM, RECH,NODEID VPRM	Initial matrix data.

APPENDIX VIII

SAMPLE SAS/GRAPH ROUTINES AND RESULTS

INTRODUCTION

The following SAS routines were designed to utilize the SAS data sets created from the computer simulation runs of the modified Konikow model. These programs use SAS Macro language commands as described in the 1982 edition of the SAS User's Guide. Individual routines are described under MACROS.SAS. The MACCALLS.SAS file includes combinations of commands stored in MACROS.SAS in order to produce specific types of graphics.

Example Problem Three (page 5-3) is used in the following descriptions of the SAS macros.

MACCALLS.SAS

Selected Macro routines are contained in the file MACROS.SAS. These routines execute SAS graphics routines that aid in interpreting the results from the modified Konikow simulation runs. These routines are described under MACROS.SAS, beginning on page VIII-3.

The Macro routines are called in the file MACCALLS.SAS. This is the routine that is executed under SAS. The option "MACRO" must be used when executing MACCALLS.SAS. Macro variables must be assigned values according to the graphics desired. The graphics device must be specified in the first line of the data set; in the example it is "TEK4010". The data set containing the macros (MACROS.SAS) must be allocated prior to execution with the file name indicated on the second line, "MACROS" in this example. The SAS data set must also be allocated before execution; in this example the file name is "LIB.ALL".

Several macros have been formed that execute other macros. This has been done so that all initialization and processing for individual plots or graphs may be performed by one macro call. The macros which are included in MACCALLS.SAS are described below. Listings of the

sample input and their results are shown beginning on page VIII-9.

1. PLOTWLS selects the well locations for the observation and recharge wells from the data set and plots and them (see Example 1, pages VIII-9, 10).
2. G3DWLS selects the well locations for the observation and recharge wells from the data set, places them in a grid and plots the grid using G3D (see Example 2, pages VIII-9, 10).
3. CONT2 executes all macros necessary for a contour plot with color (see Example 3, pages VIII-11, 12 and Example 9, pages VIII-19, 21).
4. PLOT2 executes all macros necessary for a shaded contour plot of the data indicated (see Example 6, pages VIII-16, 18).
5. PLOT3 executes all macros necessary for a shaded contour plot after the range has already been set in a prior execution of RNGSORT (see Examples 7 and 8, pages VIII-16, 17, 18).
6. CONT3 executes all macros necessary for a contour plot with color after the range has already been set in a prior execution of RNGSORT (see Examples 10 and 11, pages VIII-19, 20, 21).
7. G3D1 executes all macros necessary for a 3 dimensional contour plot (see Examples 12, 13, 14, pages VIII-22, 23, 24).

MACROS.SAS

The SAS macro routines contained in this file are described below. A source listing of this file follows on page VIII-5.

1. CONTCOLR performs a standard GCONTOUR plot on the data in "PROCFL". Allows for color specification for the contour lines using "CCOLORS".

2. CONTUN performs a standard GCONTOUR plot on the data in "PROCFL". This does NOT allow for color specification.
3. FNDWLS selects the well locations for the observation and recharge/discharge wells from the file, "DATAFL". The recharge is set to -1, the discharge to +1, and the recharge for observation wells is set to 0.
4. G3DPLOT performs the G3D plot procedure on the data in "PROCFL".
5. MERGEFL performs a SAS merge on the file or files in "DATAFL". The resulting data is placed in the file named in "PROCFL". The data is merged by the variable or variables in "BYVAR".
6. PCKVAR stores the data indicated in "LVAR" and the appropriate X and Y coordinates.
7. PER selects the data for the time step and pumping period indicated from the file "SETFL" and places it on the file "DATAFL".
8. PLOT1 performs the GPLOT procedure on data in "PROCFL" (see Examples 4 and 5, pages VIII-14, 15).
9. REVAXIS negates all values for the variable indicated in "AXIS".
10. RNGSORT finds the maximum and minimum values for the variable indicated in "LVAR" in the file "SETFL". The number of contour levels is indicated in "LVLS". "LOW", "HI", and "INTER" are global variables that are assigned values in RNGSORT and are used in the LEVELS parameter when contouring. The "LOW" and "HI" represent the lower and upper limits of coutouring and "INTER" represents the coutour interval.

11. SETMIN deletes all values of the variable in "LVAR" that are less than the minimum valid value indicated in "MINVAL".

12. SETWLS places the wells found in FNDWLS on a grid with the dimensions of the model area. This sets them up for plotting with G3DPLOT.

13. SHDSET uses the range found in RNGSORT to set up the data necessary for generating a shaded contour plot of the data.

14. SORTFL performs a SAS sort on the data in "DATAFL". The data is sorted by the variable or variables specified in "BYVAR".

SOURCE LISTING for MACROS.SAS

The 14 macros described above are listed below.

```
%MACRO CONTCOLR;
  PROC GCONTOUR DATA=&PROCFL;
    PLOT &VERT * &HORIZ = &LVAR/LEVELS = &LOW TO &HI BY &INTER
     CLEVELS = %CCOLORS ;
  RUN;
%MEND CONTCOLR;

%MACRO CONTUN;
  PROC GCONTOUR DATA=&PROCFL;
    PLOT &VERT * &HORIZ = &LVAR/LEVELS = &LOW TO &HI BY &INTER;
  RUN;
%MEND CONTUN;

%MACRO FNDWLS;
  DATA &PROCFL;
  SET &DATAFL;
    CALL SYMPUT ('NNX',NX);
    CALL SYMPUT ('NNY',NY);
    IF REC=. THEN DO;
      IX=IXOBS;
      IY=IYOBS;
      REC=0;
    END;
    IF REC<0 THEN REC=-1;
    IF REC>0 THEN REC=1;
    IF NOBS>0 & NOBS<=NUMOBS THEN OUTPUT;
    IF WELLS>0 & WELLS <=NREC THEN OUTPUT;
    KEEP IX IY REC;
  PROC SORT DATA=&PROCFL;
    BY IX IY;
%MEND FNDWLS;
```

```
%MACRO G3DPLT;
   PROC G3D DATA=&PROCFL;
     PLOT &HORIZ*&VERT=&LVAR;
%MEND G3DPLT;

%MACRO MERGEFL;
  DATA &PROCFL;
  MERGE &DATAFL;
    BY &BYVAR;
%MEND MERGEFL;

%MACRO PCKVAR;
  DATA &PROCFL;
  SET &DATAFL;
    KEEP &VERT &HORIZ &LVAR NX NY;
    OUTPUT;
  RUN;
%MEND PCKVAR;

%MACRO PER;
  DATA &DATAFL;
  SET &SETFL;
    IF N=&TIMESTEP & INT=&PUMPPER THEN DO;
      TIME=&TIMECT;
      OUTPUT;
    END;
  RUN;
%MEND PER;

%MACRO PLOT1;
  PROC GPLOT DATA=&PROCFL;
    PLOT &VERT * &HORIZ = &LVAR/
    %SETAX ;
    %SYMS
  RUN;
%MEND PLOT1;

%MACRO REVAXIS;
  DATA &PROCFL;
  SET &PROCFL;
    &AXIS = -&AXIS;
    OUTPUT;
  RUN;
%MEND REVAXIS;
```

```
%MACRO RNGSORT;
  %GLOBAL LOW HI INTER;
  DATA BGLTL;
  SET &SETFL END=EOF;
    RETAIN BG DIFF 0.0;
    RETAIN LTL 99999.9;
    BG=MAX(BG,&LVAR);
    LTL=MIN(LTL,&LVAR);
    IF EOF THEN DO;
      DIFF=BG-LTL;
      DIFFL=DIFF/&LVLS;
      LT=LTL + (DIFFL/2);
      B =BG - (DIFFL/2);
      CALL SYMPUT('LOW',LT);
      CALL SYMPUT('HI',B);
      CALL SYMPUT('INTER',DIFFL);
      KEEP BG LTL DIFF DIFFL;
      OUTPUT;
    END;
  RUN;
%MEND RNGSORT;

%MACRO SETMIN;
  DATA &DATAFL;
  SET &SETFL;
    IF (&LVAR > &MINVAL) THEN OUTPUT;
%MEND SETMIN;

%MACRO SETWLS;
   %FNDWLS;
   DATA TMP1;
   SET &DATAFL;
     KEEP IX IY;
     IX=I;
     IY=J;
     IF (((I>1 | I<&NNX) & (J>1 | J<&NNY)) & (BOT~=.)) THEN OUTPUT;
   PROC SORT DATA=TMP1;
     BY IX IY;
   DATA &PROCFL;
     MERGE &PROCFL TMP1;
     BY IX IY;
       IF REC=. THEN RECH=0;
       ELSE IF REC=0 THEN RECH=2;
       ELSE IF REC<0 THEN RECH=3;
       ELSE               RECH=1;
       IY=-IY;
       OUTPUT;
%MEND SETWLS;
```

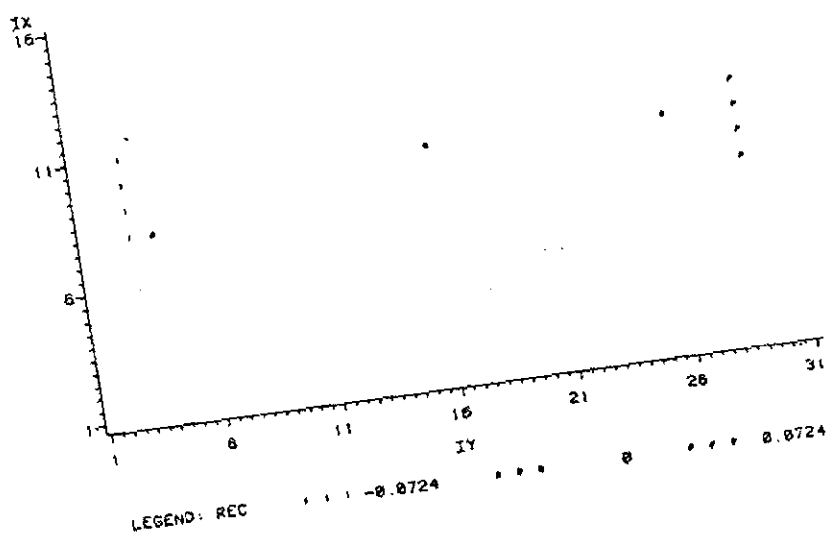
```
%MACRO SHDSET;
  %LOCAL CT;
  DATA RNG;
    INT=&PUMPPER;
    VAL1=&LOW;
    %DO CT=2 %TO &LVLS;
      VAL&CT=VAL1+(&INTER*&CT);
    %END;
    OUTPUT;
  DATA &DATAFL;
  MERGE RNG &DATAFL;
    BY INT;
  DATA &PROCFL;
  SET &DATAFL;
    KEEP &LVAR N INT I J NX NY;
    %IFELSE
    OUTPUT;
%MEND SHDSET;
%MACRO IFELSE;
  IF &LVAR<=VAL1 THEN &LVAR=VAL1;
  %DO X=2 %TO (&LVLS-1);
  ELSE IF &LVAR<=
 VAL&X THEN &LVAR=VAL&X;
  %END;
  ELSE &LVAR=VAL&LVLS;
%MEND IFELSE;

%MACRO SORTFL;
  PROC SORT DATA=&DATAFL;
    BY &BYVAR;
%MEND SORTFL;
```

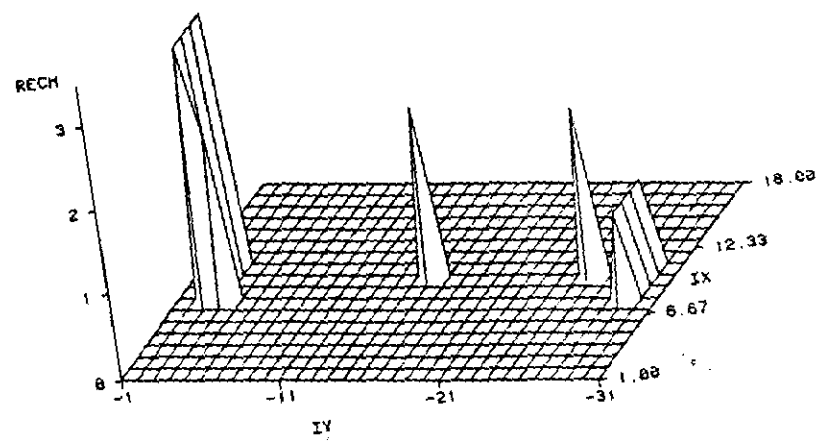
```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.MACS.CNTL                          (WELLS    )

GOPTIONS DEVICE=TEK4010;                                                    00000010
 %INCLUDE MACROS;                                                           00000020
 /*------------------------------------------- EXAMPLE 1 ---------*/ 00000030
 /*--------------------- PLOT WELL LOCATIONS ----------------------*/ 00000040
 /*  PLTWLS PULLS THE WELL LOCATIONS FOR THE OBSERVATION AND        */ 00000050
 /*  RECHARGE WELLS FROM THE DATA SET AND PLOTS THEM.               */ 00000060
 %MACRO PLTWLS;                                                             00000070
   %PER                                                                     00000080
   %FNDWLS                                                                  00000090
   %PLOT1                                                                   00000100
 %MEND PLTWLS;                                                              00000110
 %LET DATAFL=INIT  ;     /* INTERMEDIATE FILE */                            00000120
 %LET SETFL=LIB.ALL;     /* SOURCE FILE */                                  00000130
 %LET PROCFL=WELLS ;     /* CONTAINS DATA TO BE PLOTTED */                  00000140
 %LET TIMESTEP=0   ;     /* TIME STEP TO BE PLOTTED */                      00000150
 %LET PUMPPER=0    ;     /* PUMP PERIOD TO BE PLOTTED */                    00000160
 %LET TIMECT=0     ;     /* TIME ELAPSED IN SIMULATION */                   00000170
 %LET VERT=IX      ;     /* VERTICAL AXIS FOR PLOT */                       00000180
 %LET HORIZ=IY     ;     /* HORIZONTAL AXIS FOR PLOT */                     00000190
 %LET LVAR=REC     ;     /* VAR TO BE PLOTTED */                            00000200
 %MACRO SETAX;                                                              00000210
   VAXIS= 1 TO &NNX BY 5                                                    00000220
   HAXIS=1 TO &NNY BY 5                                                     00000230
 %MEND SETAX;                                                               00000240
 %MACRO SYMS;                                                               00000250
   SYMBOL1 V=I I=NONE C=RED;                                                00000260
   SYMBOL2 V=O I=NONE C=BLUE;                                               00000270
   SYMBOL3 V=P I=NONE C=GREEN;                                              00000280
 %MEND SYMS;                                                                00000290
  TITLE .H=1 BABYLON LANDFILL SITE;                                         00000300
  TITLE2 GPLOT WELL LOCATIONS;                                              00000310
 %PLTWLS                                                                    00000320
 /*------------------------------------------- EXAMPLE 2 ---------*/ 00000330
 /*--------------------- GRAPH WELL LOCATIONS ----------------------*/ 00000340
 /*  G3DWLS PULLS THE WELL LOCATIONS FOR THE OBERVATION AND RECHARGE */ 00000350
 /*  WELLS FROM THE DATA SET, PLACES THEM IN A GRID AND PLOTS THE    */ 00000360
 /*  GRID USING G3D.                                                 */ 00000370
 %MACRO G3DWLS;                                                             00000380
   %PER                                                                     00000390
   %SETWLS                                                                  00000400
   %G3DPLT                                                                  00000410
 %MEND G3DWLS;                                                              00000420
 %LET DATAFL=INIT  ;     /* INTERMEDIATE FILE */                            00000430
 %LET SETFL=LIB.ALL;     /* SOURCE FILE */                                  00000440
 %LET PROCFL=WELLS ;     /* CONTAINS DATA TO BE PLOTTED */                  00000450
 %LET TIMESTEP=0   ;     /* TIME STEP TO BE PLOTTED */                      00000460
 %LET PUMPPER=0    ;     /* PUMP PERIOD TO BE PLOTTED */                    00000470
 %LET TIMECT=0     ;     /* TIME ELAPSED IN SIMULATION */                   00000480
 %LET VERT=IX      ;     /* VERTICAL AXIS FOR PLOT */                       00000490
 %LET HORIZ=IY     ;     /* HORIZONTAL AXIS FOR PLOT */                     00000500
 %LET LVAR=RECH    ;     /* VAR TO BE PLOTTED */                            00000510
  TITLE2 G3D WELL LOCATIONS;                                                00000520
 %G3DWLS                                                                    00000530
```

Example 1



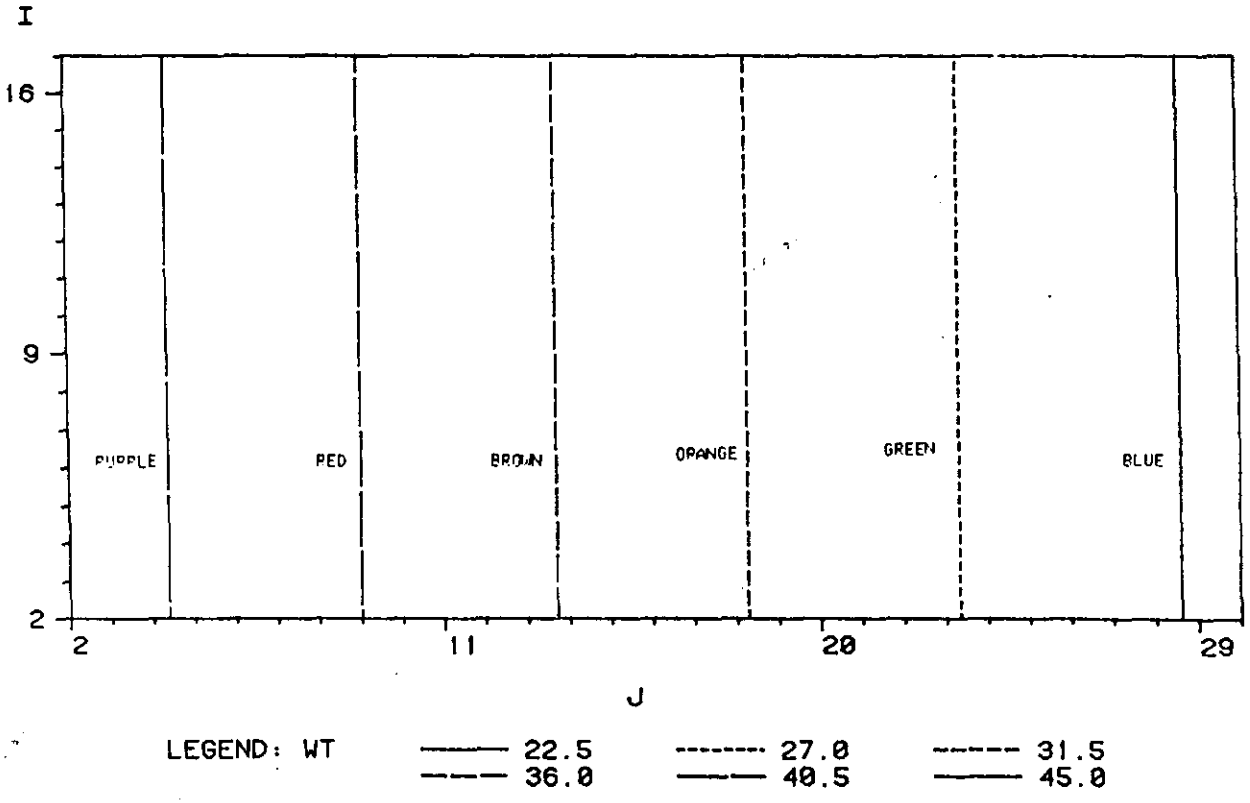
Example 2



```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.MACS.CNTL                          (HYDRO    )

GOPTIONS DEVICE=TEK4010;                                                    00000010
 %INCLUDE MACROS;                                                           00000020
 /*-------------------- SORT BY TIME STEP AND PUMP. PER -------------*/     00000030
 /*  PER PULLS THE DATA FOR THE TIME STEP AND PUMPING PERIOD         */     00000040
 /*  INDICATED FROM THE FILE "SETFL" AND PLACES IT ON THE FILE       */     00000050
 /*  "DATAFL".                                                       */     00000060
 %LET DATAFL=INIT  ;    /* CONTAINS DATA TO BE PLOTTED */                   00000070
 %LET SETFL=LIB.ALL ;   /* INTERMEDIATE FILE */                             00000080
 %LET PUMPPER=0    ;    /* PUMP PERIOD TO BE PLOTTED */                     00000090
 %LET TIMESTEP=0   ;    /* TIME STEP DATA TO BE PLOTTED */                  00000100
 %LET TIMECT=0     ;    /* TIME ELAPSED IN SIMULATION */                    00000110
 %PER                                                                       00000120
 /*------------------------------------------- EXAMPLE 3 ---------*/       00000130
 /*-------------------- GCONT WITH COLOR ---------------------------*/     00000140
 /*  CONT2 EXECUTES ALL MACROS NECESSARY FOR A CONTOUR PLOT          */     00000150
 /*  WITH COLOR.*/                                                          00000160
 %MACRO CONT2;                                                              00000170
   %SETMIN                                                                  00000180
   %RNGSORT                                                                 00000190
   %PCKVAR                                                                  00000200
   %CONTCOLR                                                                00000210
 %MEND CONT2;                                                               00000220
 %LET SETFL=INIT   ;    /* SOURCE FILE OF DATA */                           00000230
 %LET DATAFL=INIT  ;    /* CONTAINS DATA TO BE PLOTTED */                   00000240
 %LET PROCFL=HEAD  ;    /* CONTAINS DATA TO BE PLOTTED */                   00000250
 %LET MINVAL=0.0   ;    /* MINIMUM VALID VALUE FOR LVAR */                  00000260
 %LET VERT=I       ;    /* VERTICAL AXIS FOR PLOT */                        00000270
 %LET HORIZ=J      ;    /* HORIZONTAL AXIS FOR PLOT */                      00000280
 %LET LVAR=WT      ;    /* VAR TO BE PLOTTED */                             00000290
 %LET LVLS=6       ;    /* # OF LEVELS TO BE CONTOURED */                   00000300
 %MACRO CCOLORS;                                                            00000310
   'BLUE' 'GREEN' 'ORANGE'                                                  00000320
   'BROWN' 'RED' 'PURPLE'                                                   00000330
 %MEND CCOLORS;                                                             00000340
  TITLE .H=1 BABYLON LANDFILL SITE;                                         00000350
  TITLE2 GCONTOUR WATER TABLE;                                              00000360
 %CONT2                                                                     00000370
```

BABYLON LANDFILL SITE
GCONTOUR WATER TABLE

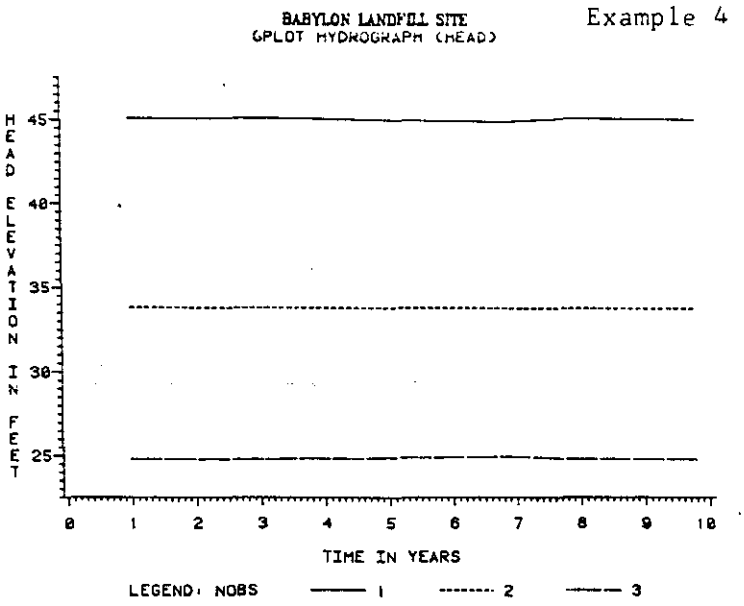


```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.MACS.CNTL                          (OBS      )

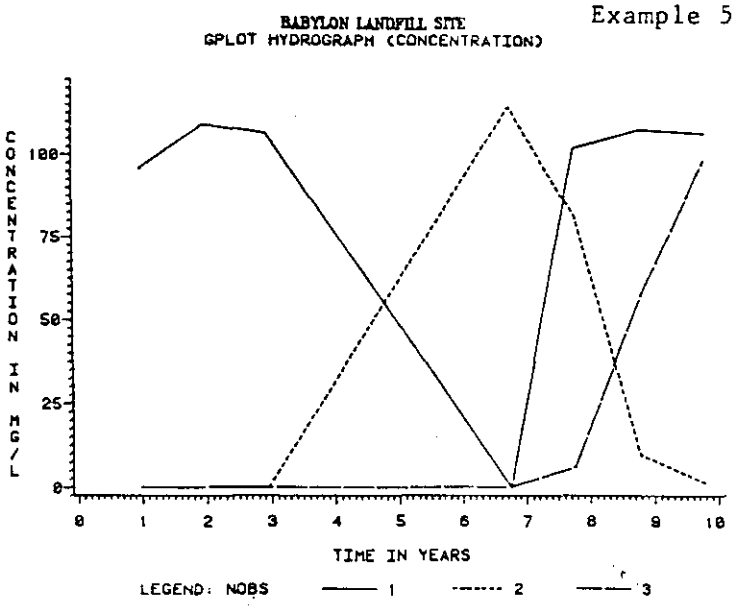
GOPTIONS DEVICE=TEK4010;                                                    00000010
 %INCLUDE MACROS;                                                           00000020
 /*-------------------- PULL TIME STEP AND PUMP. PER ----------------*/     00000030
 /*  PER PULLS THE DATA FOR THE TIME STEP AND PUMPING PERIOD         */     00000040
 /*  INDICATED FROM THE FILE "SETFL" AND PLACES IT ON THE FILE       */     00000050
 /*  "DATAFL".                                                       */     00000060
 %LET DATAFL=IN1    ;    /* CONTAINS DATA TO BE PLOTTED */               00000070
 %LET SETFL=LIB.ALL ;    /* INTERMEDIATE FILE */                         00000080
 %LET PUMPPER=1     ;    /* PUMP PERIOD TO BE PLOTTED */                 00000090
 %LET TIMESTEP=4    ;    /* TIME STEP DATA TO BE PLOTTED */              00000100
 %LET TIMECT=3      ;    /* TIME ELAPSED IN SIMULATION */                00000110
 %PER                                                                       00000120
 /*-------------------- SORT BY VARIABLE ----------------------------*/     00000130
 /*  SORTFL SORTS THE FILE IN "DATAFL" BY THE VARIABLE IN "BYVAR".   */     00000140
 %LET DATAFL=IN1    ;    /* CONTAINS DATA TO BE SORTED*/                 00000150
 %LET BYVAR=TMYR    ;    /* CONTAINS VARIABLE TO SORT ON */              00000160
 %SORTFL                                                                    00000170
 /*-------------------- PULL TIME STEP AND PUMP. PER ----------------*/     00000180
 /*  PER PULLS THE DATA FOR THE TIME STEP AND PUMPING PERIOD         */     00000190
 /*  INDICATED FROM THE FILE "SETFL" AND PLACES IT ON THE FILE       */     00000200
 /*  "DATAFL".                                                       */     00000210
 %LET DATAFL=IN2    ;    /* CONTAINS DATA TO BE PLOTTED */               00000220
 %LET SETFL=LIB.ALL ;    /* INTERMEDIATE FILE */                         00000230
 %LET PUMPPER=2     ;    /* PUMP PERIOD TO BE PLOTTED */                 00000240
 %LET TIMESTEP=2    ;    /* TIME STEP DATA TO BE PLOTTED */              00000250
 %LET TIMECT=7      ;    /* TIME ELAPSED IN SIMULATION */                00000260
 %PER                                                                       00000270
 /*-------------------- SORT BY VARIABLE ----------------------------*/     00000280
 /*  SORTFL SORTS THE FILE IN "DATAFL" BY THE VARIABLE IN "BYVAR".   */     00000290
 %LET DATAFL=IN2    ;    /* CONTAINS DATA TO BE SORTED*/                 00000300
 %LET BYVAR=TMYR    ;    /* CONTAINS VARIABLE TO SORT ON */              00000310
 %SORTFL                                                                    00000320
 /*-------------------- SORT BY TIME STEP AND PUMP. PER -------------*/     00000330
 /*  PER PULLS THE DATA FOR THE TIME STEP AND PUMPING PERIOD         */     00000340
 /*  INDICATED FROM THE FILE "SETFL" AND PLACES IT ON THE FILE       */     00000350
 /*  "DATAFL".                                                       */     00000360
 %LET DATAFL=IN3    ;    /* CONTAINS DATA TO BE PLOTTED */               00000370
 %LET SETFL=LIB.ALL ;    /* INTERMEDIATE FILE */                         00000380
 %LET PUMPPER=3     ;    /* PUMP PERIOD TO BE PLOTTED */                 00000390
 %LET TIMESTEP=4    ;    /* TIME STEP DATA TO BE PLOTTED */              00000400
 %LET TIMECT=10     ;    /* TIME ELAPSED IN SIMULATION */                00000410
 %PER                                                                       00000420
 /*-------------------- SORT BY VARIABLE ----------------------------*/     00000430
 /*  SORTFL SORTS THE FILE IN "DATAFL" BY THE VARIABLE IN "BYVAR".   */     00000440
 %LET DATAFL=IN3    ;    /* CONTAINS DATA TO BE SORTED*/                 00000450
 %LET BYVAR=TMYR    ;    /* CONTAINS VARIABLE TO SORT ON */              00000460
 %SORTFL                                                                    00000470
 /*-------------------- MERGE FILES ---------------------------------*/     00000480
 /*  MERGEFL MERGES THE FILES INDICATED IN "DATAFL" INTO THE FILE    */     00000490
 /*  IN "PROCFL". SORTING BY THE VARIABLE IN "BYVAR".                */     00000500
 %LET PROCFL=HYDRO ;     /* CONTAINS DATA TO BE PLOTTED */              00000510
 %LET DATAFL=IN1 IN2 IN3; /* SOURCE FILE OF DATA */                      00000520
 %LET BYVAR=TMYR    ;    /* VAR TO SORT BY */                           00000530
 %MERGEFL                                                                   00000540
 /*-------------------- SET CONTOUR RANGE ---------------------------*/     00000550
 /*  PCKVAR KEEPS THE DATA INDICATED IN "LVAR" AND THE APPROPRIATE X */     00000560
 /*  AND Y COORDINATES.                                              */     00000570
 %LET PROCFL=HYDRO ;     /* CONTAINS DATA TO BE PLOTTED */              00000580
 %LET SETFL=HYDRO  ;     /* SOURCE FILE OF DATA */                      00000590
 %LET VERT=TMWL TMCN;    /* VERTICAL AXIS FOR PLOT */                   00000600
 %LET HORIZ=TMYR    ;    /* HORIZONTAL AXIS FOR PLOT */                 00000610
 %LET LVAR=NOBS     ;    /* VAR TO BE PLOTTED */                        00000620
```

```
%PCKVAR                                                                  00000630
/*------------------------------------------- EXAMPLE 4 ---------*/ 00000640
/*--------------------- GPLOT WITH LINES OR SYMBOLS -----------------*/ 00000650
/*  PLOT1 PERFORMS THE GPLOT PROCEDURE ON DATA IN "PROCFL".          */ 00000660
%LET PROCFL=HYDRO ;     /* CONTAINS DATA TO BE PLOTTED */              00000670
%LET VERT=TMWL    ;     /* VERTICAL AXIS FOR PLOT */                   00000680
%LET HORIZ=TMYR   ;     /* HORIZONTAL AXIS FOR PLOT */                 00000690
%LET LVAR=NOBS    ;     /* VAR TO BE PLOTTED */                        00000700
%MACRO SETAX;                                                          00000710
%MEND SETAX;                                                           00000720
%MACRO SYMS;                                                           00000730
 SYMBOL1 L=1 I=JOIN V=NONE C=RED;                                      00000740
 SYMBOL2 L=2 I=JOIN V=NONE C=BLUE;                                     00000750
 SYMBOL3 L=5 I=JOIN V=NONE C=GREEN;                                    00000760
%MEND SYMS;                                                            00000770
 TITLE2 GPLOT HYDROGRAPH (HEAD.);                                      00000780
%PLOT1                                                                 00000790
/*------------------------------------------- EXAMPLE 5 ---------*/ 00000800
/*--------------------- GPLOT WITH LINES OR SYMBOLS -----------------*/ 00000810
/*  PLOT1 PERFORMS THE GPLOT PROCEDURE ON DATA IN "PROCFL".          */ 00000820
%LET PROCFL=HYDRO ;     /* CONTAINS DATA TO BE PLOTTED */              00000830
%LET VERT=TMCN    ;     /* VERTICAL AXIS FOR PLOT */                   00000840
%LET HORIZ=TMYR   ;     /* HORIZONTAL AXIS FOR PLOT */                 00000850
%LET LVAR=NOBS    ;     /* VAR TO BE PLOTTED */                        00000860
%MACRO SETAX;                                                          00000870
%MEND SETAX;                                                           00000880
%MACRO SYMS;                                                           00000890
 SYMBOL1 L=1 I=JOIN V=NONE C=RED;                                      00000900
 SYMBOL2 L=2 I=JOIN V=NONE C=BLUE;                                     00000910
 SYMBOL3 L=5 I=JOIN V=NONE C=GREEN;                                    00000920
%MEND SYMS;                                                            00000930
 TITLE2 GPLOT HYDROGRAPH (CONCENTRATION);                              00000940
%PLOT1                                                                 00000950
```

Example 4



Example 5



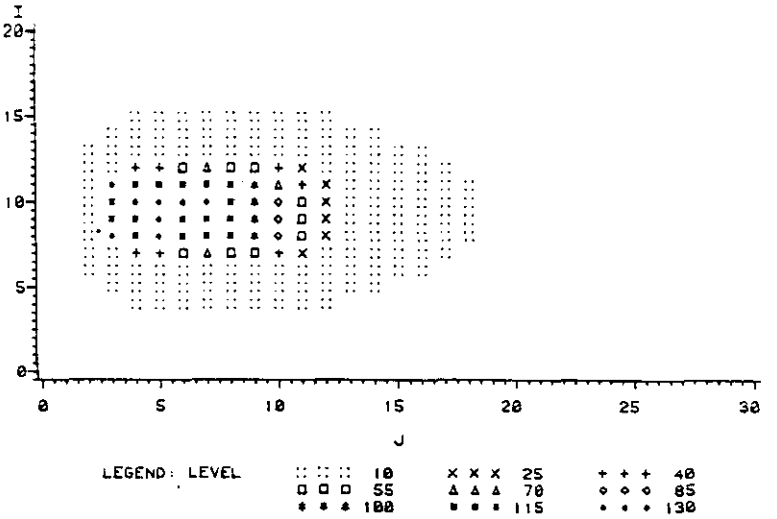
```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.MACS.CNTL                                (SHADE    )

GOPTIONS DEVICE=TEK4010;                                                    00000010
 %INCLUDE MACROS;                                                           00000020
 /*-------------------- SORT OUT MINIMUM VALID VALUE FOR VAR ---------*/    00000030
 /*  SETMIN SORTS OUT THE MINIMUM VALID VALUE FOR THE VARIABLE       */    00000040
 /*  INDICATED IN LVAR.                                              */    00000050
 %LET SETFL=LIB.ALL;     /* SOURCE FILE OF DATA */                          00000060
 %LET DATAFL=SHD    ;    /* INTERMEDIATE FILE */                            00000070
 %LET LVAR=CONC     ;    /* VAR TO BE PLOTTED */                            00000080
 %LET MINVAL=0.0    ;    /* MINIMUM VALUE FOR LVAR */                       00000090
 %SETMIN                                                                    00000100
 /*------------------------------------------- EXAMPLE 6 ---------*/        00000110
 /*-------------------- FIND RANGE, SET LEVELS, PLOT (LINES,SYMBOLS)-*/    00000120
 /*  PLOT2 EXECUTES ALL MACROS NECESSARY FOR A SHADED CONTOUR PLOT   */    00000130
 /*  OF THE DATA INDICATED.                                          */    00000140
 %MACRO PLOT2;                                                              00000150
   %RNGSORT                                                                 00000160
   %PER                                                                     00000170
   %SHDSET                                                                  00000180
   %PLOT1                                                                   00000190
 %MEND PLOT2;                                                               00000200
 %LET SETFL=SHD     ;    /* SOURCE FILE OF DATA */                          00000210
 %LET DATAFL=PLUMES;     /* INTERMEDIATE FILE */                            00000220
 %LET PROCFL=PLUME1;     /* CONTAINS DATA TO BE PLOTTED */                  00000230
 %LET LVAR=CONC     ;    /* VAR TO BE PLOTTED */                            00000240
 %LET PUMPPER=1     ;    /* PUMP PERIOD TO BE PLOTTED */                    00000250
 %LET TIMESTEP=3    ;    /* TIME STEP DATA TO BE PLOTTED */                 00000260
 %LET TIMECT=3      ;    /* TIME ELAPSED IN SIMULATION */                   00000270
 %LET VERT=I        ;    /* VERTICAL AXIS FOR PLOT */                       00000280
 %LET HORIZ=J       ;    /* HORIZONTAL AXIS FOR PLOT */                     00000290
 %LET LVLS=9        ;    /* # OF LEVELS TO BE PLOTTED */                    00000300
 %MACRO SETAX;                                                              00000310
   VAXIS= 0 TO 20 BY 5                                                      00000320
   HAXIS= 0 TO 30 BY 5                                                      00000330
 %MEND SETAX;                                                               00000340
 %MACRO SYMS ;           /* # OF SYMBOLS = # OF LVLS (ABOVE) */             00000350
   SYMBOL1 V=PAW       I=NONE C=BLUE;                                       00000360
   SYMBOL2 V=X         I=NONE C=BLUE;                                       00000370
   SYMBOL3 V=PLUS      I=NONE C=GREEN;                                      00000380
   SYMBOL4 V=SQUARE    I=NONE C=GREEN;                                      00000390
   SYMBOL5 V=TRIANGLE  I=NONE C=ORANGE;                                     00000400
   SYMBOL6 V=DIAMOND   I=NONE C=ORANGE;                                     00000410
   SYMBOL7 V=STAR      I=NONE C=BROWN;                                      00000420
   SYMBOL8 V=_         I=NONE C=RED;                                        00000430
   SYMBOL9 V=%         I=NONE C=PURPLE;                                     00000440
 %MEND SYMS;                                                                00000450
   TITLE .H=1 BABYLON LANDFILL SITE;                                        00000460
   TITLE2 GPLOT CONCENTRATION;                                              00000470
   TITLE3 END OF PUMPING PERIOD 1;                                          00000480
 %PLOT2                                                                     00000490
 /*------------------------------------------- EXAMPLE 7 ---------*/        00000500
 /*-------------------- PLOT (LINES, SYMBOLS) AFTER RANGE ----------*/     00000510
 /*  .PLOT3 EXECUTES ALL MACROS NECESSARY FOR A SHADED CONTOUR PLOT  */    00000520
 /*  OF THE DATA INDICATED AFTER THE THE RANGE HAS ALREADY BEEN SET. */    00000530
 %MACRO PLOT3;                                                              00000540
   %PER                                                                     00000550
   %SHDSET                                                                  00000560
   %PLOT1                                                                   00000570
 %MEND PLOT3;                                                               00000580
 %LET SETFL=SHD     ;    /* SOURCE FILE OF DATA */                          00000590
 %LET DATAFL=PLUMES;     /* INTERMEDIATE FILE */                            00000600
 %LET PROCFL=PLUME2;     /* CONTAINS DATA TO BE PLOTTED */                  00000610
 %LET LVAR=CONC     ;    /* VAR TO BE PLOTTED */                            00000620
```

```
%LET PUMPPER=2     ;     /* PUMP PERIOD TO BE PLOTTED */                    00000630
%LET TIMESTEP=1    ;     /* TIME STEP DATA TO BE PLOTTED */                 00000640
%LET TIMECT=7      ;     /* TIME ELAPSED IN SIMULATION */                   00000650
%LET VERT=I        ;     /* VERTICAL AXIS FOR PLOT */                       00000660
%LET HORIZ=J       ;     /* HORIZONTAL AXIS FOR PLOT */                     00000670
%LET LVLS=9        ;     /* # OF LEVELS TO BE PLOTTED */                    00000680
%MACRO SETAX;                                                               00000690
  VAXIS= 0 TO 20 BY 5                                                       00000700
  HAXIS= 0 TO 30 BY 5                                                       00000710
%MEND SETAX;                                                                00000720
%MACRO SYMS ;           /* # OF SYMBOLS = # OF LVLS (ABOVE) */              00000730
  SYMBOL1 V=PAW       I=NONE C=BLUE;                                        00000740
  SYMBOL2 V=X         I=NONE C=BLUE;                                        00000750
  SYMBOL3 V=PLUS      I=NONE C=GREEN;                                       00000760
  SYMBOL4 V=SQUARE    I=NONE C=GREEN;                                       00000770
  SYMBOL5 V=TRIANGLE  I=NONE C=ORANGE;                                      00000780
  SYMBOL6 V=DIAMOND   I=NONE C=ORANGE;                                      00000790
  SYMBOL7 V=STAR      I=NONE C=BROWN;                                       00000800
  SYMBOL8 V=_         I=NONE C=RED;                                         00000810
  SYMBOL9 V=%         I=NONE C=PURPLE;                                      00000820
%MEND SYMS;                                                                 00000830
  TITLE3 END OF PUMPING PERIOD 2;                                           00000840
%PLOT3                                                                      00000850
/*------------------------------------------- EXAMPLE 8 ----------*/        00000860
/*--------------------- PLOT (LINES, SYMBOLS) AFTER RANGE ----------*/      00000870
/*  PLOT3 EXECUTES ALL MACROS NECESSARY FOR A SHADED CONTOUR PLOT   */      00000880
/*  OF THE DATA INDICATED AFTER THE THE RANGE HAS ALREADY BEEN SET. */      00000890
%MACRO PLOT3;                                                               00000900
  %PER                                                                      00000910
  %SHDSET                                                                   00000920
  %PLOT1                                                                    00000930
%MEND PLOT3;                                                                00000940
%LET SETFL=SHD     ;     /* SOURCE FILE OF DATA */                          00000950
%LET DATAFL=PLUMES;      /* INTERMEDIATE FILE */                            00000960
%LET PROCFL=PLUME3;      /* CONTAINS DATA TO BE PLOTTED */                  00000970
%LET LVAR=CONC     ;     /* VAR TO BE PLOTTED */                            00000980
%LET PUMPPER=3     ;     /* PUMP PERIOD TO BE PLOTTED */                    00000990
%LET TIMESTEP=3    ;     /* TIME STEP DATA TO BE PLOTTED */                 00001000
%LET TIMECT=10     ;     /* TIME ELAPSED IN SIMULATION */                   00001010
%LET VERT=I        ;     /* VERTICAL AXIS FOR PLOT */                       00001020
%LET HORIZ=J       ;     /* HORIZONTAL AXIS FOR PLOT */                     00001030
%LET LVLS=9        ;     /* # OF LEVELS TO BE PLOTTED */                    00001040
%MACRO SETAX;                                                               00001050
  VAXIS= 0 TO 20 BY 5                                                       00001060
  HAXIS= 0 TO 30 BY 5                                                       00001070
%MEND SETAX;                                                                00001080
%MACRO SYMS ;           /* # OF SYMBOLS = # OF LVLS (ABOVE) */              00001090
  SYMBOL1 V=PAW       I=NONE C=BLUE;                                        00001100
  SYMBOL2 V=X         I=NONE C=BLUE;                                        00001110
  SYMBOL3 V=PLUS      I=NONE C=GREEN;                                       00001120
  SYMBOL4 V=SQUARE    I=NONE C=GREEN;                                       00001130
  SYMBOL5 V=TRIANGLE  I=NONE C=ORANGE;                                      00001140
  SYMBOL6 V=DIAMOND   I=NONE C=ORANGE;                                      00001150
  SYMBOL7 V=STAR      I=NONE C=BROWN;                                       00001160
  SYMBOL8 V=_         I=NONE C=RED;                                         00001170
  SYMBOL9 V=%         I=NONE C=PURPLE;                                      00001180
%MEND SYMS ;                                                                00001190
  TITLE3 END OF PUMPING PERIOD 3;                                           00001200
%PLOT3                                                                      00001210
```

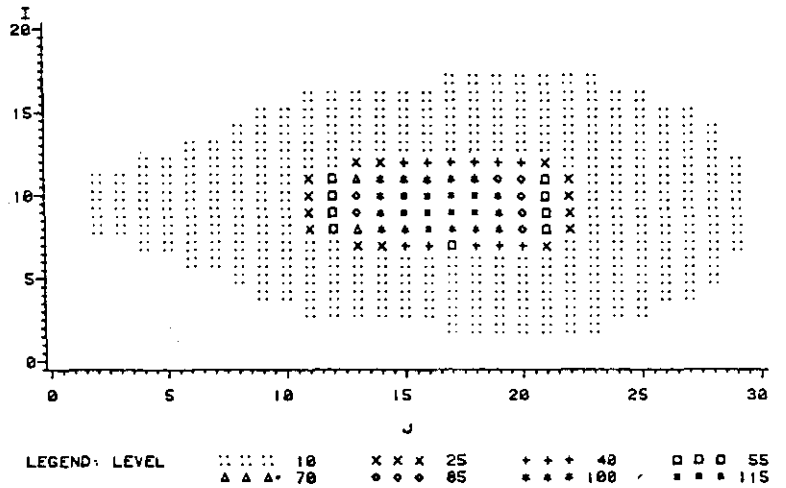
BABYLON LANDFILL SITE
GPLOT CONCENTRATION
END OF PUMPING PERIOD 1

Example 6



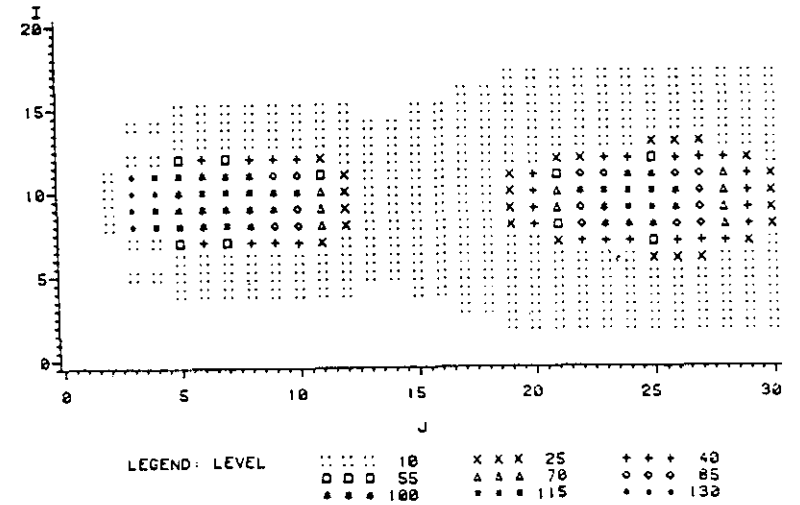
BABYLON LANDFILL SITE
GPLOT CONCENTRATION
END OF PUMPING PERIOD 2

Example 7



BABYLON LANDFILL SITE
GPLOT CONCENTRATION
END OF PUMPING PERIOD 3

Example 8



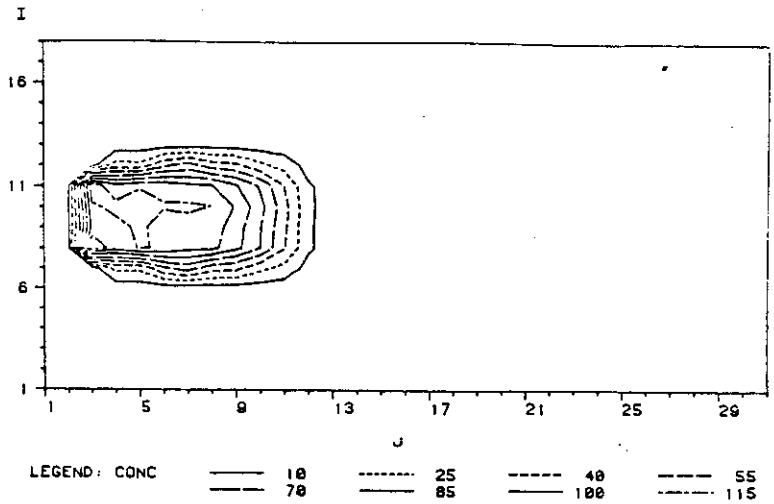
```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.MACS.CNTL                          (GCONT    )

GOPTIONS DEVICE=TEK4010;                                                    00000010
 %INCLUDE MACROS;                                                           00000020
 /*------------------------------------------- EXAMPLE 9 ----------*/ 00000030
 /*-------------------- GCONT WITH COLOR ----------------------------*/ 00000040
 /*  CONT2 EXECUTES ALL MACROS NECESSARY FOR A CONTOUR PLOT          */ 00000050
 /*  WITH COLOR.*/                                                          00000060
 %MACRO CONT2;                                                              00000070
   %RNGSORT                                                                 00000080
   %PER                                                                     00000090
   %PCKVAR                                                                  00000100
   %CONTCOLR                                                                00000110
 %MEND CONT2;                                                               00000120
 %LET SETFL=LIB.ALL;     /* SOURCE FILE OF DATA */                          00000130
 %LET DATAFL=PLUMES;     /* INTERMEDIATE FILE */                            00000140
 %LET PROCFL=PLUME1;     /* CONTAINS DATA TO BE PLOTTED */                  00000150
 %LET PUMPPER=1     ;    /* PUMP PERIOD TO BE PLOTTED */                    00000160
 %LET TIMESTEP=3    ;    /* TIME STEP DATA TO BE PLOTTED */                 00000170
 %LET TIMECT=3      ;    /* TIME ELAPSED IN SIMULATION */                   00000180
 %LET VERT=I        ;    /* VERTICAL AXIS FOR PLOT */                       00000190
 %LET HORIZ=J       ;    /* HORIZONTAL AXIS FOR PLOT */                     00000200
 %LET LVAR=CONC     ;    /* VAR TO BE PLOTTED */                            00000210
 %LET LVLS=8        ;    /* # OF LEVELS TO BE CONTOURED */                  00000220
 %MACRO CCOLORS;                                                            00000230
   'BLUE' 'BLUE' 'GREEN' 'GREEN'                                            00000240
   'ORANGE' 'ORANGE' 'BROWN' 'RED' 'PURPLE'                                 00000250
 %MEND CCOLORS;                                                             00000260
  TITLE .H=1 BABYLON LANDFILL SITE;                                         00000270
  TITLE2 GCONTOUR CONCENTRATION;                                            00000280
  TITLE3 END OF PUMPING PERIOD 1;                                           00000290
 %CONT2                                                                     00000300
 /*------------------------------------------- EXAMPLE 10 --------*/ 00000310
 /*-------------------- GCONT WITH COLOR ----------------------------*/ 00000320
 /*  CONT3 EXECUTES ALL MACROS NECESSARY, AFTER THE RANGE HAS BEEN   */ 00000330
 /*  FOUND, FOR A COLOR CONTOUR PLOT.                                */ 00000340
 %MACRO CONT3;                                                              00000350
   %PER                                                                     00000360
   %PCKVAR                                                                  00000370
   %CONTCOLR                                                                00000380
 %MEND CONT3;                                                               00000390
 %LET SETFL=LIB.ALL;     /* SOURCE FILE OF DATA */                          00000400
 %LET DATAFL=PLUMES;     /* INTERMEDIATE FILE */                            00000410
 %LET PROCFL=PLUME2;     /* CONTAINS DATA TO BE PLOTTED */                  00000420
 %LET PUMPPER=2     ;    /* PUMP PERIOD TO BE PLOTTED */                    00000430
 %LET TIMESTEP=1    ;    /* TIME STEP DATA TO BE PLOTTED */                 00000440
 %LET TIMECT=7      ;    /* TIME ELAPSED IN SIMULATION */                   00000450
 %LET VERT=I        ;    /* VERTICAL AXIS FOR PLOT */                       00000460
 %LET HORIZ=J       ;    /* HORIZONTAL AXIS FOR PLOT */                     00000470
 %LET LVAR=CONC     ;    /* VAR TO BE PLOTTED */                            00000480
 %LET LVLS=8        ;    /* # OF LEVELS TO BE CONTOURED */                  00000490
 %MACRO CCOLORS;                                                            00000500
   'BLUE' 'BLUE' 'GREEN' 'GREEN'                                            00000510
   'ORANGE' 'ORANGE' 'BROWN' 'RED' 'PURPLE'                                 00000520
 %MEND CCOLORS;                                                             00000530
  TITLE3 END OF PUMPING PERIOD 2;                                           00000540
 %CONT3                                                                     00000550
 /*------------------------------------------- EXAMPLE 11 --------*/ 00000560
 /*-------------------- GCONT WITH COLOR ----------------------------*/ 00000570
 /*  CONT3 EXECUTES ALL MACROS NECESSARY, AFTER THE RANGE HAS BEEN   */ 00000580
 /*  FOUND, FOR A COLOR CONTOUR PLOT.                                */ 00000590
 %MACRO CONT3;                                                              00000600
   %PER                                                                     00000610
   %PCKVAR                                                                  00000620
```

```
  %CONTCOLR                                                          00000630
%MEND CONT3;                                                         00000640
%LET SETFL=LIB.ALL;     /* SOURCE FILE OF DATA */                    00000650
%LET DATAFL=PLUMES;     /* INTERMEDIATE FILE */                      00000660
%LET PROCFL=PLUME3;     /* CONTAINS DATA TO BE PLOTTED */           00000670
%LET PUMPPER=3    ;     /* PUMP PERIOD TO BE PLOTTED */             00000680
%LET TIMESTEP=3   ;     /* TIME STEP DATA TO BE PLOTTED */          00000690
%LET TIMECT=10    ;     /* TIME ELAPSED IN SIMULATION */            00000700
%LET VERT=I       ;     /* VERTICAL AXIS FOR PLOT */                00000710
%LET HORIZ=J      ;     /* HORIZONTAL AXIS FOR PLOT */              00000720
%LET LVAR=CONC    ;     /* VAR TO BE PLOTTED */                     00000730
%LET LVLS=8       ;     /* # OF LEVELS TO BE CONTOURED */           00000740
%MACRO CCOLORS;                                                      00000750
  'BLUE' 'BLUE' 'GREEN' 'GREEN'                                      00000760
  'ORANGE' 'ORANGE' 'BROWN' 'RED' 'PURPLE'                           00000770
%MEND CCOLORS;                                                       00000780
 TITLE3 END OF PUMPING PERIOD 3;                                     00000790
%CONT3                                                               00000800
```

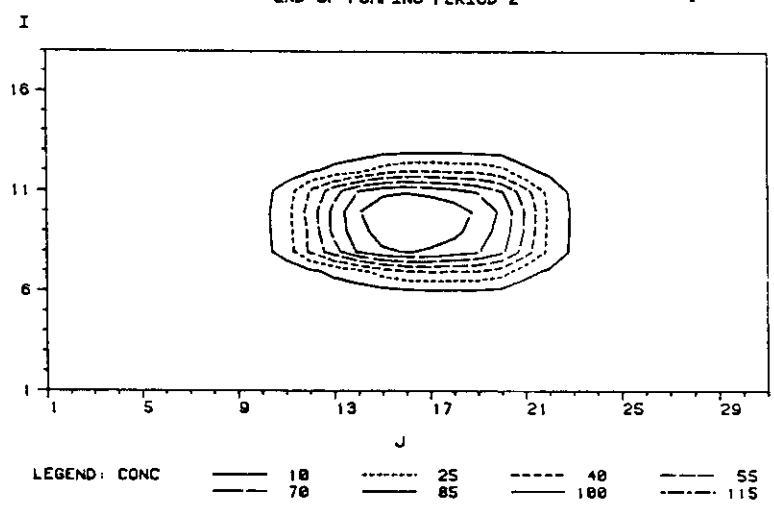
BABYLON LANDFILL SITE
GCONTOUR CONCENTRATION
END OF PUMPING PERIOD 1

Example 9



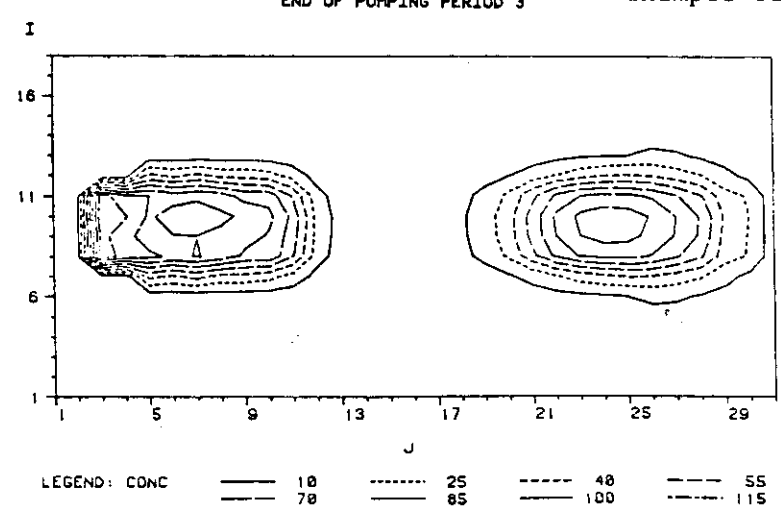
BABYLON LANDFILL SITE
GCONTOUR CONCENTRATION
END OF PUMPING PERIOD 2

Example 10



BABYLON LANDFILL SITE
GCONTOUR CONCENTRATION
END OF PUMPING PERIOD 3

Example 11

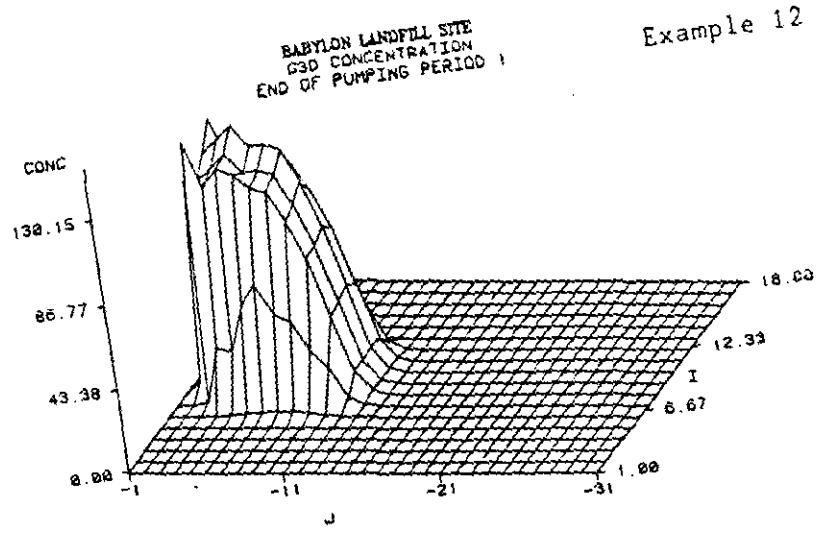


```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.MACS.CNTL                          (G3D      )

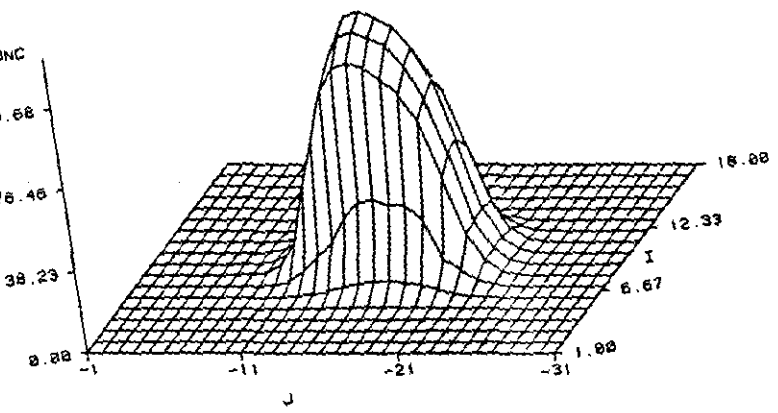
GOPTIONS DEVICE=TEK4010;                                                    00000010
 %INCLUDE MACROS;                                                           00000020
 /*------------------------------------------ EXAMPLE 12 ---------*/ 00000030
 /*--------------------- G3D CONTOUR ---------------------------------*/ 00000040
 /*  G3D1 EXECUTES ALL MACROS NECESSARY FOR A 3 DIMENSIONAL PLOT.    */ 00000050
 %MACRO G3D1;                                                               00000060
   %PER                                                                     00000070
   %PCKVAR                                                                  00000080
   %REVAXIS                                                                 00000090
   %G3DPLT                                                                  00000100
 %MEND G3D1;                                                                00000110
 %LET SETFL=LIB.ALL;     /* SOURCE FILE OF DATA */                          00000120
 %LET DATAFL=PLUMES;     /* INTERMEDIATE FILE */                            00000130
 %LET PROCFL=PLUME1;     /* CONTAINS DATA TO BE PLOTTED */                  00000140
 %LET PUMPPER=1     ;    /* PUMP PERIOD TO BE PLOTTED */                    00000150
 %LET TIMESTEP=3    ;    /* TIME STEP DATA TO BE PLOTTED */                 00000160
 %LET TIMECT=3      ;    /* TIME ELAPSED IN SIMULATION */                   00000170
 %LET VERT=I        ;    /* VERTICAL AXIS FOR PLOT */                       00000180
 %LET HORIZ=J       ;    /* HORIZONTAL AXIS FOR PLOT */                     00000190
 %LET LVAR=CONC     ;    /* VAR TO BE PLOTTED */                            00000200
 %LET AXIS=J        ;    /* AXIS TO BE REVERSED */                          00000210
  TITLE .H=1 BABYLON LANDFILL SITE;                                         00000220
  TITLE2 G3D CONCENTRATION;                                                 00000230
  TITLE3 END OF PUMPING PERIOD 1;                                           00000240
 %G3D1                                                                      00000250
 /*------------------------------------------ EXAMPLE 13 ---------*/ 00000260
 /*--------------------- G3D CONTOUR ---------------------------------*/ 00000270
 /*  G3D1 EXECUTES ALL MACROS NECESSARY FOR A 3 DIMENSIONAL PLOT.    */ 00000280
 %MACRO G3D1;                                                               00000290
   %PER                                                                     00000300
   %PCKVAR                                                                  00000310
   %REVAXIS                                                                 00000320
   %G3DPLT                                                                  00000330
 %MEND G3D1;                                                                00000340
 %LET SETFL=LIB.ALL;     /* SOURCE FILE OF DATA */                          00000350
 %LET DATAFL=PLUMES;     /* INTERMEDIATE FILE */                            00000360
 %LET PROCFL=PLUME2;     /* CONTAINS DATA TO BE PLOTTED */                  00000370
 %LET PUMPPER=2     ;    /* PUMP PERIOD TO BE PLOTTED */                    00000380
 %LET TIMESTEP=1    ;    /* TIME STEP DATA TO BE PLOTTED */                 00000390
 %LET TIMECT=7      ;    /* TIME ELAPSED IN SIMULATION */                   00000400
 %LET VERT=I        ;    /* VERTICAL AXIS FOR PLOT */                       00000410
 %LET HORIZ=J       ;    /* HORIZONTAL AXIS FOR PLOT */                     00000420
 %LET LVAR=CONC     ;    /* VAR TO BE PLOTTED */                            00000430
 %LET AXIS=J        ;    /* AXIS TO BE REVERSED */                          00000440
  TITLE3 END OF PUMPING PERIOD 2;                                           00000450
 %G3D1                                                                      00000460
 /*------------------------------------------ EXAMPLE 14 ---------*/ 00000470
 /*--------------------- G3D CONTOUR ---------------------------------*/ 00000480
 /*  G3D1 EXECUTES ALL MACROS NECESSARY FOR A 3 DIMENSIONAL PLOT.    */ 00000490
 %MACRO G3D1;                                                               00000500
   %PER                                                                     00000510
   %PCKVAR                                                                  00000520
   %REVAXIS                                                                 00000530
   %G3DPLT                                                                  00000540
 %MEND G3D1;                                                                00000550
 %LET SETFL=LIB.ALL;     /* SOURCE FILE OF DATA */                          00000560
 %LET DATAFL=PLUMES;     /* INTERMEDIATE FILE */                            00000570
 %LET PROCFL=PLUME3;     /* CONTAINS DATA TO BE PLOTTED */                  00000580
 %LET PUMPPER=3     ;    /* PUMP PERIOD TO BE PLOTTED */                    00000590
 %LET TIMESTEP=3    ;    /* TIME STEP DATA TO BE PLOTTED */                 00000600
 %LET TIMECT=10     ;    /* TIME ELAPSED IN SIMULATION */                   00000610
 %LET VERT=I        ;    /* VERTICAL AXIS FOR PLOT */                       00000620
```

```
%LET HORIZ=J       ;     /* HORIZONTAL AXIS FOR PLOT */                    00000630
%LET LVAR=CONC     ;     /* VAR TO BE PLOTTED */                           00000640
%LET AXIS=J        ;     /* AXIS TO BE REVERSED */                         00000650
 TITLE3 END OF PUMPING PERIOD 3;                                           00000660
%G3D1                                                                      00000670
```

Example 12



Example 13



Example 14