MODIFIED N.R.C. VERSION OF THE U.S.G.S. SOLUTE TRANSPORT MODEL, VOLUME 2: INTERACTIVE PREPROCESSOR PROGRAM

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PREFACE

An interactive program (preprocessor) has been developed in this study to aid users in creating and editing input data sets for a modified version of the N.R.C. version of the U.S.G.S. Solute Transport Model which is described in Volume 1 of this report (Kent, et al, 1986).

A detailed description of the preprocessor, as well as source code listings, is included in this report. A sample listing of the interactive creation of an input data set for the modified N.R.C. version of the U.S.G.S. Solute Transport Model is also included. Data from the Babylon Landfill Site on Long Island was used in the examples shown in the report. The input data sets created, along with selected output from the modified model, are listed in Appendix VI. Potential users should be able apply the preprocessor with a minimum degree of effort to their individual needs by following the examples provided.

The final report represents the completion of the contract with the Environmental Protection Agency entitled, "Mathematical Models for Transport and Transformation of Chemical Substances in Subsurface Environments", cooperative agreement number CR811142-01-0. The principal investigators are Dr. Douglas C. Kent and Dr. Jan Wagner. Ms. Lorraine LeMaster is the principal programmer. The cooperation and assistance of Chi-Chung Chang, for his help and suggestions during testing of the preprocessor, is gratefully acknowledged. Appreciation is also extended to James Alexander and George Duckwitz for their work during the early stages of this project, to the project officer, Carl G. Enfield, and to the entire staff of the Robert S. Kerr Environmental Research Center.

The methods described herein can be used with the modified N.R.C. version of the U.S.G.S. Solute Transport Model to estimate or predict the

concentrations in a contaminant plume. The value or accuracy of the prediction can be no better than the estimate of the hydrgeological and chemical parameters that are used in the model simulation. Because these parameters can range within wide limits, so also can the prediction. This preprocessor was developed to allow the user to spend a minimum amount of time adjusting these parameters, especially during the predictive phase. The results of these preedictive techniques must not be allowed to take precedence over sound field investigation, data collection, and interpretation at the study sites.

The information contained in this manual is believed to be correct at the time of publication. However, the authors assume no liability resulting from the use of the methods described in this publication.

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MODIFIED N.R.C. VERSION OF THE U.S.G.S. SOLUTE TRANSPORT MODEL, VOLUME 2: INTERACTIVE PREPROCESSOR

1.0 INTRODUCTION

The purpose of this report is to describe an interactive program (preprocessor) that was developed to aid in the creation and modification of input data sets for use with a modified version (Kent, et al, 1986) of the N.R.C. version (Tracy, 1982) of the U.S.G.S. Solute Transport Model developed by Konikov and Bredehoeft (1978).

The preprocessor described in this manual is intended as a companion to the manual titled "Modified N.R.C. Version of the U.S.G.S. Solute Transport Model, Volume 1: Modifications" (Kent, et al, 1986). Both manuals have been 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, the use of interactive computer codes can efficiently manage data. 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 a contaminant plume.

The interactive computer code for the preprocessor is written in PL/I and has been tested on an IBM 3081D computer as well as Kaypro-2 and IBM-PC microcomputers. The Kaypro-2 uses the CPM operating system and the IBM-PC uses PC-DOS. The program has been developed to assist the user in preparing the input data files for batch processing of the modified N.R.C. version of the U.S.G.S. Solute Transport Model (Kent, et al, 1986) 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 job control statements required to submit a job for batch processing on an IBM 3081D, IBM-PC (or other MS-DOS micro-computer), and DEC/VAX.

The modified N.R.C. version of the U.S.G.S. Solute Transport Model has also been tested on an IBM-PC microcomputer with 512K of random access memory. Some minor changes have been made to the preprocessor to facilitate the execution of the model on the IBM-PC. The prompts to set execution for the IBM-PC are described in Appendix IX. Appendix X contains the information specific to setting up for execution on a DEC/VAX.

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 modified N.R.C. version of the U.S.G.S. Solute Transport Model (Kent, et al, 1986).

The project report contains the following:

(1) Program Documentation and

(2) User's Manual

Documentation of the 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 5.25 inch disks or magnetic 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.

1.2 History

The preprocessor is designed for the modified N.R.C. version of the U.S.G.S. Solute Transport Model (Kent, et al, 1986). 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 U.S.G.S. Solute Transport Model developed by Konikow and Bredehoeft (1978).

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 program adaptation and areas of application and to provide tutorials on data requirements, model access and execution, and the management and interpretation of model output.

1.3 Applications

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 to the N.R.C. version of 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 and 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 a companion manual entitled "Modified N.R.C. Version of the U.S.G.S. Solute Transport Model, Volume 1: Modifications" (Kent, et al, 1986).

The preprocessor, along with the model described above, will enable various groups within federal and state regulatory agencies, as well as the private sector, to apply an easily accessable, flexible version of the N.R.C. version of this model to the analysis of various study sites. This model can evaluate sites such as those involving landfill or groundwater pollution related to conservative and non-conservative elements (eg. brine pollution and hazardous elements). The effects of pumping and injection wells, recharge, constant head, nonhomogeneities in the aquifer, dispersive coefficients, and no-flow boundaries in the vicinity of the site can also be simulated.

2.0 USER'S GUIDE FOR THE INTERACTIVE PREPROCESSOR

2.1 General Description

Interactive capabilities to the modified N.R.C. version of the U.S.G.S. Solute Transport Model (Kent, et al, 1986) 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 described in the companion manual, "Modified N.R.C. Version of the U.S.G.S. Solute Transport Model, Volume 1: Modifications" (Kent, et al,1986). All data input by the modeler is shown 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 on the IBM 3081D computer. Versions of this preprocessor have been developed with the JCL necessary for the model to execute on a microcomputer with an MS-DOS operating system and on a DEC/VAX. The JCL for MS-DOS is described in Appendix IX. Appendix X describes the JCL for the DEC/VAX. 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. The modeler enters

```
koni
```

to begin execution of the controlling program. An introductory screen is displayed followed by the opening menu.

```
                MODIFIED N.R.C. VERSION
          OF THE U.S.G.S. SOLUTE TRANSPORT MODEL,
            VOLUME 2:  INTERACTIVE PREPROCESSOR
                          BY
          D.C. KENT, L. LEMASTER, AND J. WAGNER
                          FOR
           U.S. ENVIRONMENTAL PROTECTION AGENCY

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

Option 1 is described in section 2.2, Option 2 in section 2.3, and Option 3 in section 2.4, of this report.

2.2 Preprocessor

The choice of Option 1 on the menu in section 2.1 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
```

2.2.1 Job Control Language

After the data set name is entered, prompts for the JCL begin. First, the jobname is requested. Note, prompts for the JCL necessary to execute the model on a microcomputer (under MS-DOS) are described in Appendix IX. JCL for the DEC/VAX is described in Appendix X.

```
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
```

During calibration (hydraulic simulation only), 40 seconds (Option 2) should provide sufficient CPU time for execution. As a general rule, this model, will require up to five minutes execution time (Option 3) for a solute transport simulation. For a discussion on error checking using the model (not the preprocessor), see section 2.5. Here, Option 3 was selected since tahe simulation will include solute transport.

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 nov 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 "n" is entered. If any error is present, then "y" is entered ("y" and "n" are sufficient to represent "yes" and "no".)

In this example, "y" 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,
```

Note that the correction is entered as one line. The line may wrap around on the terminal screen, if necessary. 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 "n" is entered and the program will proceed to the next prompt.

2.2.2 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 "y" (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.

2.2.3 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.
("X" REFERS TO COLUMNS.)
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. When executed on a microcomputer, the maximum number of columns and rows is 20. The maximum number of particlesto be used in the chemical transport (NPMAX) is 3200.

```
ENTER THE NUMBER OF NODES IN THE "Y" DIRECTION.
("Y" REFERS TO ROWS.)
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":

NOTE:  OBSERVATION WELLS SHOULD NOT BE PLACED IN THE
       FIRST OR LAST ROWS OR COLUMNS.

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

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

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

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

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

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

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

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

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

To represent a constant head boundary, set FCTR1 > 0.09 (here, set to 1.0).

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

```
ENTER CONCENTRATION (MG/L) FOR ICODE 1.
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 (FT/SEC) FOR ICODE 1.
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
PUMPING PERIOD 1.  MAXIMUM OF 100.
VARIABLE "NTIM":  3

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

PUMPING PERIOD 1:
ENTER THE NUMBER OF ITERATION PARAMETERS FOR
ADIP.  USUALLY FROM 4 TO 7.
VARIABLE "NITP":  7
```

It should be noted that NITP is ignored if the SIP algorithm is used. The number of SIP iteration parameters is set to 10 in the model.

```
PUMPING PERIOD 1:
ENTER THE MAXIMUM ALLOWABLE NUMBER OF ITERATIONS
IN ADIP OR SIP.  USUALLY FROM 100 TO 200.
VARIABLE "ITMAX":  100

PUMPING PERIOD 1:
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

PUMPING PERIOD 1:
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
```

```
PUMPING PERIOD 1:
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

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

PUMPING PERIOD 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

PUMPING PERIOD 1:
ENTER THE LENGTH OF 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:

```
PUMPING PERIOD 1:
ENTER THE TIME INCREMENT MULTIPLIER FOR
TRANSIENT FLOW PROBLEMS.
THIS IS DISREGARDED IF S=0.
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "TIMX":  1.

PUMPING PERIOD 1:
ENTER THE SIZE OF THE INITIAL TIME STEP
IN SECONDS.
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "TINIT":  3.1E7

PUMPING PERIOD 1:
ENTER THE NUMBER OF PUMPING OR INJECTION
WELLS TO BE SPECIFIED.
MAXIMUM OF 50.
VARIABLE "NREC":  8
```

```
NOTE:  PUMPING/INJECTION WELLS SHOULD NOT BE PLACED IN THE
       FIRST OR LAST ROWS OR COLUMNS.

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

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

ENTER THE RATE (FT**3/SEC) FOR WELL 1.
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) FOR WELL 1.
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNRECH(1)":  250.

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

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

ENTER THE RATE (FT**3/SEC) FOR WELL 2.
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) FOR WELL 2.
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNRECH(2)":  220.

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

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

ENTER THE RATE (FT**3/SEC) FOR WELL 3.
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) FOR WELL 3.
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNRECH(3)":  240.
```

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

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

ENTER THE RATE (FT**3/SEC) FOR WELL 4.
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) FOR WELL 4.
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNRECH(4)":  240.

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

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

ENTER THE RATE (FT**3/SEC) FOR WELL 5.
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 PUMPING OR INJECTION WELL 6.
VARIABLE "IX(6)":  9

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

ENTER THE RATE (FT**3/SEC) FOR WELL 6.
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 PUMPING OR INJECTION WELL 7.
VARIABLE "IX(7)":  10

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

ENTER THE RATE (FT**3/SEC) FOR WELL 7.
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 PUMPING OR INJECTION WELL 8.
VARIABLE "IX(8)":  11

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

ENTER THE RATE (FT**3/SEC) FOR WELL 8.
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 PUMPING PERIOD 2.
VARIABLE "ICHK"  (Y/N):  y

ENTER THE MAXIMUM NUMBER OF TIME STEPS IN
PUMPING PERIOD 2.  MAXIMUM OF 100.
VARIABLE "NTIM":  1

PUMPING PERIOD 2:
ENTER THE TIME STEP INTERVAL FOR PRINTING
HYDRAULIC AND CHEMICAL OUTPUT DATA.
VARIABLE "NPNT":  1

PUMPING PERIOD 2:
ENTER THE NUMBER OF ITERATION PARAMETERS FOR
ADIP.  USUALLY FROM 4 TO 7.
VARIABLE "NITP":  7

PUMPING PERIOD 2:
ENTER THE MAXIMUM ALLOWABLE NUMBER OF ITERATIONS
IN ADIP OR SIP.  USUALLY FROM 100 TO 200.
VARIABLE "ITMAX":  100

PUMPING PERIOD 2:
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

PUMPING PERIOD 2:
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
```

```
PUMPING PERIOD 2:
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

PUMPING PERIOD 2:
ENTER THE OPTION TO PRINT COMPUTED CHANGES IN
CONCENTRATION.
     0)  DO NOT PRINT.
     1)  PRINT.
CHOOSE ONE OF THE ABOVE.
VARIABLE "NPDELC":  1

PUMPING PERIOD 2:
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

PUMPING PERIOD 2:
ENTER THE LENGTH OF THE PUMPING PERIOD (YEARS).
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "PINT":  4

PUMPING PERIOD 2:
ENTER THE TIME INCREMENT MULTIPLIER FOR
TRANSIENT FLOW PROBLEMS.
THIS IS DISREGARDED IF S=0.
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "TIMX":  1.

PUMPING PERIOD 2:
ENTER THE SIZE OF THE INITIAL TIME STEP
IN SECONDS.
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "TINIT":  1.2E8

PUMPING PERIOD 2:
ENTER THE NUMBER OF PUMPING OR INJECTION
WELLS TO BE SPECIFIED.
MAXIMUM OF 50.
VARIABLE "NREC":  8

NOTE:  PUMPING/INJECTION WELLS SHOULD NOT BE PLACED IN THE
       FIRST OR LAST ROWS OR COLUMNS.

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

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

ENTER THE RATE (FT**3/SEC) FOR WELL 1.
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 PUMPING OR INJECTION WELL 2.
VARIABLE "IX(2)":  9

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

ENTER THE RATE (FT**3/SEC) FOR WELL 2.
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 PUMPING OR INJECTION WELL 3.
VARIABLE "IX(3)":  10

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

ENTER THE RATE (FT**3/SEC) FOR WELL 3.
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 PUMPING OR INJECTION WELL 4.
VARIABLE "IX(4)":  11

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

ENTER THE RATE (FT**3/SEC) FOR WELL 4.
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 PUMPING OR INJECTION WELL 5.
VARIABLE "IX(5)":  8

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

```
ENTER THE RATE (FT**3/SEC) FOR WELL 5.
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 PUMPING OR INJECTION WELL 6.
VARIABLE "IX(6)":  9

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

ENTER THE RATE (FT**3/SEC) FOR WELL 6.
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 PUMPING OR INJECTION WELL 7.
VARIABLE "IX(7)":  10

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

ENTER THE RATE (FT**3/SEC) FOR WELL 7.
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 PUMPING OR INJECTION WELL 8.
VARIABLE "IX(8)":  11

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

ENTER THE RATE (FT**3/SEC) FOR WELL 8.
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 PUMPING PERIOD 3.
VARIABLE "ICHK"  (YES OR NO):  y

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

```
PUMPING PERIOD 3:
ENTER THE TIME STEP INTERVAL FOR PRINTING
HYDRAULIC AND CHEMICAL OUTPUT DATA.
VARIABLE "NPNT":  1

PUMPING PERIOD 3:
ENTER THE NUMBER OF ITERATION PARAMETERS FOR
ADIP.  USUALLY FROM 4 TO 7.
VARIABLE "NITP":  7

PUMPING PERIOD 3:
ENTER THE MAXIMUM ALLOWABLE NUMBER OF ITERATIONS
IN ADIP OR SIP.  USUALLY FROM 100 TO 200.
VARIABLE "ITMAX":  100

PUMPING PERIOD 3:
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

PUMPING PERIOD 3:
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

PUMPING PERIOD 3:
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

PUMPING PERIOD 3:
ENTER THE OPTION TO PRINT COMPUTED CHANGES IN
CONCENTRATION.
     0)  DO NOT PRINT.
     1)  PRINT.
CHOOSE ONE OF THE ABOVE.
VARIABLE "NPDELC":  1

PUMPING PERIOD 3:
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
```

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

PUMPING PERIOD 3:
ENTER THE TIME INCREMENT MULTIPLIER FOR
TRANSIENT FLOW PROBLEMS.
THIS IS DISREGARDED IF S=0.
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "TIMX":  1.

PUMPING PERIOD 3:
ENTER THE SIZE OF THE INITIAL TIME STEP
IN SECONDS.
MAXIMUM LENGTH OF 5, REAL NUMBER.
VARIABLE "TINIT":  3.2E7

PUMPING PERIOD 3:
ENTER THE NUMBER OF PUMPING OR INJECTION
WELLS TO BE SPECIFIED.
MAXIMUM OF 50.
VARIABLE "NREC":  8

NOTE:  PUMPING/INJECTION WELLS SHOULD NOT BE PLACED IN THE
       FIRST OR LAST ROWS OR COLUMNS.

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

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

ENTER THE RATE (FT**3/SEC) FOR WELL 1.
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) FOR WELL 1.
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNRECH(1)":  250.

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

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

```
ENTER THE RATE (FT**3/SEC) FOR WELL 2.
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) FOR WELL 2.
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNRECH(2)":  220.

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

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

ENTER THE RATE (FT**3/SEC) FOR WELL 3.
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) FOR WELL 3.
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNRECH(3)":  240.

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

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

ENTER THE RATE (FT**3/SEC) FOR WELL 4.
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) FOR WELL 4.
MAXIMUM LENGTH OF 8, REAL NUMBER.
VARIABLE "CNRECH(4)":  240.

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

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

```
ENTER THE RATE (FT**3/SEC) FOR WELL 5.
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 PUMPING OR INJECTION WELL 6.
VARIABLE "IX(6)":  9

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

ENTER THE RATE (FT**3/SEC) FOR WELL 6.
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 PUMPING OR INJECTION WELL 7.
VARIABLE "IX(7)":  10

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

ENTER THE RATE (FT**3/SEC) FOR WELL 7.
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 PUMPING OR INJECTION WELL 8.
VARIABLE "IX(8)":  11

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

ENTER THE RATE (FT**3/SEC) FOR WELL 8.
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
```

Longitudinal dispersivity is the dispersivity in the major direction of flow; whereas transverse dispersivity is orthogonal to the major direction of flow.

```
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 TRANSMISSIVITY TENSORS
(T(YY) TO T(XX)).
(USE 1.0 FOR ISOTROPIC AQUIFER.  IF ANISOTROPIC,
MAJOR DIRECTION OF FLOW SHOULD BE ALONG COLUMNS.)
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 THE PARTICLE DENSITY OF THE 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 Freundlich 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 to the model for this project. These modifications are described in the companion manual entitled "Modified N.R.C. Version of the U.S.G.S. Solute Transport Model, Volume 1: Modifications" (Kent, et al, 1986).

```
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 SOLUTE 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.

2.2.4 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 (number of columns) and NY (number of rows). 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. The model requires a no-flow boundary (artificial) surrounding the area being studied. To represent this, the modeler must set the first and last rows and columns of each matrix to 0 (zero). If a variable is indicated as constant, the model will set the no-flow boundary from previous matrices. If an irregular boundary is to be represented, the first matrix (Transmissivity/Hydraulic Conductivity) must be entered as variable.

2.2.4.1 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. A brief explanation of the editor commands may be reviewed during execution of the editor by entering "help" after the "@COMMAND:" prompt.

2.2.4.2 Altering Matrix Data

Saturated thickness will be used in describing the matrix editor.

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

						COLUMNS					
ROWS	1	2	3	4	5	6	7	8	9	10	11	12
* 1	50	50	50	50	50	50	50	50	50	50	50	50
* 2	50	50	50	50	50	50	50	50	50	50	50	50
* 3	50	50	50	50	50	50	50	50	50	50	50	50
* 4	50	50	50	50	50	50	50	50	50	50	50	50
* 5	50	50	50	50	50	50	50	50	50	50	50	50
* 6	50	50	50	50	50	50	50	50	50	50	50	50
* 7	50	50	50	50	50	50	50	50	50	50	50	50
* 8	50	50	50	50	50	50	50	50	50	50	50	50
* 9	50	50	50	50	50	50	50	50	50	50	50	50
*10	50	50	50	50	50	50	50	50	50	50	50	50
*11	50	50	50	50	50	50	50	50	50	50	50	50
*12	50	50	50	50	50	50	50	50	50	50	50	50

REMEMBER TO HIT "ENTER" AFTER YOU CHANGE EACH LINE.
COMMANDS ARE: SHIFT,LIST,HELP,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 (as required by the model), type:

* 1 0 0 0 0 0 0 0 0 0 0 0 0

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

* 5 0 50 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  12
 * 1    0   0   0   0   0   0   0   0   0   0   0   0
 * 2   50  50  50  50  50  50  50  50  50  50  50  50
 * 3   50  50  50  50  50  50  50  50  50  50  50  50
 * 4   50  50  50  50  50  50  50  50  50  50  50  50
 * 5    0  50  50  50  50  50  50  50  50  50  50   0
 * 6   50  50  50  50  50  50  50  50  50  50  50  50
 * 7   50  50  50  50  50  50  50  50  50  50  50  50
 * 8   50  50  50  50  50  50  50  50  50  50  50  50
 * 9   50  50  50  50  50  50  50  50  50  50  50  50
 *10   50  50  50  50  50  50  50  50  50  50  50  50
 *11   50  50  50  50  50  50  50  50  50  50  50  50
 *12   50  50  50  50  50  50  50  50  50  50  50  50

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

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

2.2.5 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) (Y/N):  n
```

```
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 2.2.4.

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) (Y/N):  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 2.2.4 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/N):  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:  0.0

IS THE NODE IDENTIFICATION FOR THE AREA CONSTANT?
(A MATRIX IS NOT REQUIRED OF THE NODE IDENTIFICATION
FOR THE AREA IS CONSTANT) (Y/N):  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 2.2.4 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/N):  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 2.3). The data set created in this example is shown in Appendix V.

2.3 Editor

Option 2 on the menu in section 2.2 (immediately above) is used to modify an existing data set for use with the modified N.R.C. version of the U.S.G.S. Solute Transport Model (Kent, et al, 1986). Examples of some of the prompts for this modification routine follow.

2.3.1 Job Control Language

The JCL is displayed and edited as described in Section 2.2.1 beginning on page 2-4 for an IBM 3081D, in Appendix IX for an IBM-PC (or similar micro-computer), or in Appendix X for a DEC/VAX. 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.

2.3.2 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 new value is displayed. If no change is desired, the next variable is displayed.

Here is an example changing NPMAX and not changing NPTPND.

```
NPMAX = 1000
MAXIMUM OF 3200.
CHANGE (Y/N):  y

ENTER NEW VALUE:  3200

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

2.3.2.1 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 new observation point are requested next.

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

ENTER THE "Y" COORDINATE OF OBSERVATION POINT 3.
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
```

2.3.3 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 uses the same format as single variables. To change the saturated thickness from a constant to a matrix, enter "y". The following prompts then 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 2.2.4. 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.

2.4 Exit Preprocessor

This option terminates the program, returning to operating system.

2.5 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 data for the initial pumping period is performed as the data is read by the model (in 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.

It is recommended that an analytical model be employed prior to using the numerical model. This will provide an opportunity to perform simple sensitivity analyses on various hydrogeological parameters. In this way, a conceptual model is systematically quantitized using reasonable parametric values.

3.0 INTERACTIVE PREPROCESSOR DESCRIPTION

Interactive capabilities to the modified N.R.C. version of the U.S.G.S. Solute Transport Model (Kent, et al, 1986) 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 necessary to execute the modified model. A controlling program has also been written to incorporate the input and modification routines into one program.

The interactive program consists of two routines; a preprocessor and an editor. The preprocessor creates a data set that contains the input to the modified N.R.C. version of the U.S.G.S. 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.

3.1 Technical Information

The preprocessor is composed of 31 routines; of these, 13 are utility routines. 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. Sections 3.2 through 3.4 provide detailed descriptions of each of the routines listed in Tables 1, 2, and 3.

The variable names used in both the preprocessor and editor correspond to the names used in the model. The definitions of selected variables for

Table 1. Subroutines Unique to Interactive Preprocessor

Name	Purpose
CREATE	Controls data entry for IBM 3081.
CREATEM	Controls data entry for microcomputers.
CREATED	Controls data entry for DEC/VAX.
GTJCL	Creates job control information for IBM 3081.
GTJCLM	Creates JCL information for microcomputers.
GTJCLD	Creates job control information for DEC/VAX.
GTVAR	Input of individual variables.
GTMTRX	Input of matrix data.

Table 2. Subroutines Unique to Interactive Editor

Name	Purpose
UPDATE	Controls data editing for IBM 3081.
UPDATEM	Controls data editing for microcomputers.
UPDATED	Controls data editing for DEC/VAX.
EDFILE	Reads data from input data set (for IBM 3081).
EDFILEM	Reads data from input data set (for others).
EDJCL	Modify job control information for IBM 3081.
EDJCLM	Modify JCL information for microcomputers.
EDJCLD	Modify job control information for DEC/VAX.
EDVAR	Modify individual variables.
EDMTRX	Modify matrix data.

Table 3. Utility Subroutines

Name	Purpose
DATATP	Determines data characteristics of a response for ASCII machines.
EBCDIC	Determines data characteristics of a response for EBCDIC machines.
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 for IBM 3081.
SUBFILM	Writes data to input data set for other machines.
EXTVAR	Contains all external variable declarations.
PARMGT	Displays definition of each variable then reads response.
KONI	Controls execution for IBM 3081.
KONIM	Controls execution for microcomputers.
KONID	Controls execution for DEC/VAX.

the interactive program are listed in Appendix II. All major variables are character data.

Array dimensions are set using the %REPLACE command which is described in Section 3.5. 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.

3.1.1 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.

3.2 Preprocessor

3.2.1 CREATE

The main purpose of the CREATE routine is to control the overall execution of the preprocessor. All variables used in the modified N.R.C. version of the U.S.G.S. 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. The version of this routine that controls the execution of the preprocessor when creating data to be executed on a micro-computer is called CREATEM.

3.2.2 GTJCL

This routine, invoked by the CREATE routine, creates the job control language (JCL) necessary to execute the modified N.R.C. version of the

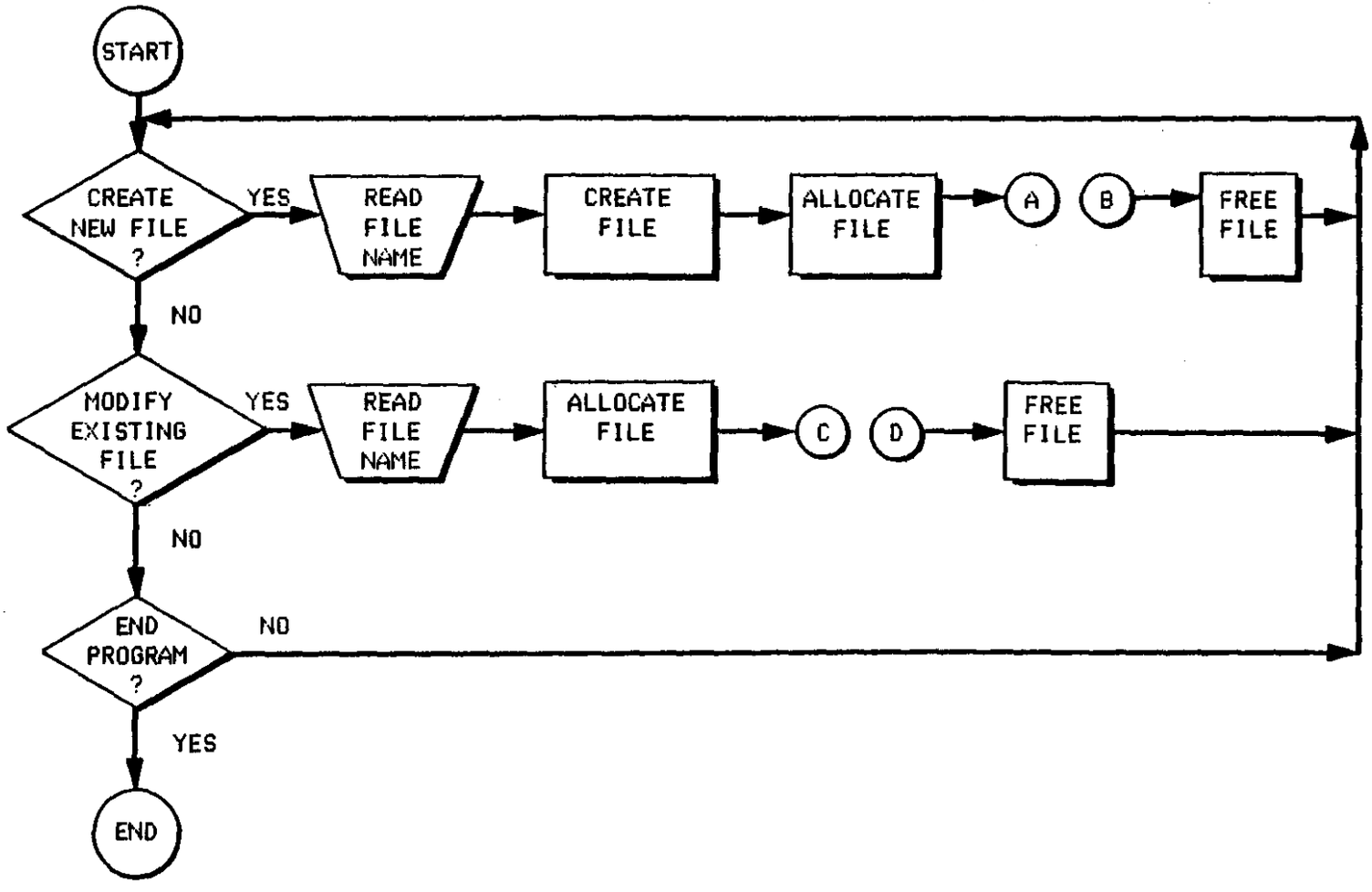


Figure 1. Simplified Flow Chart For The Controlling Program

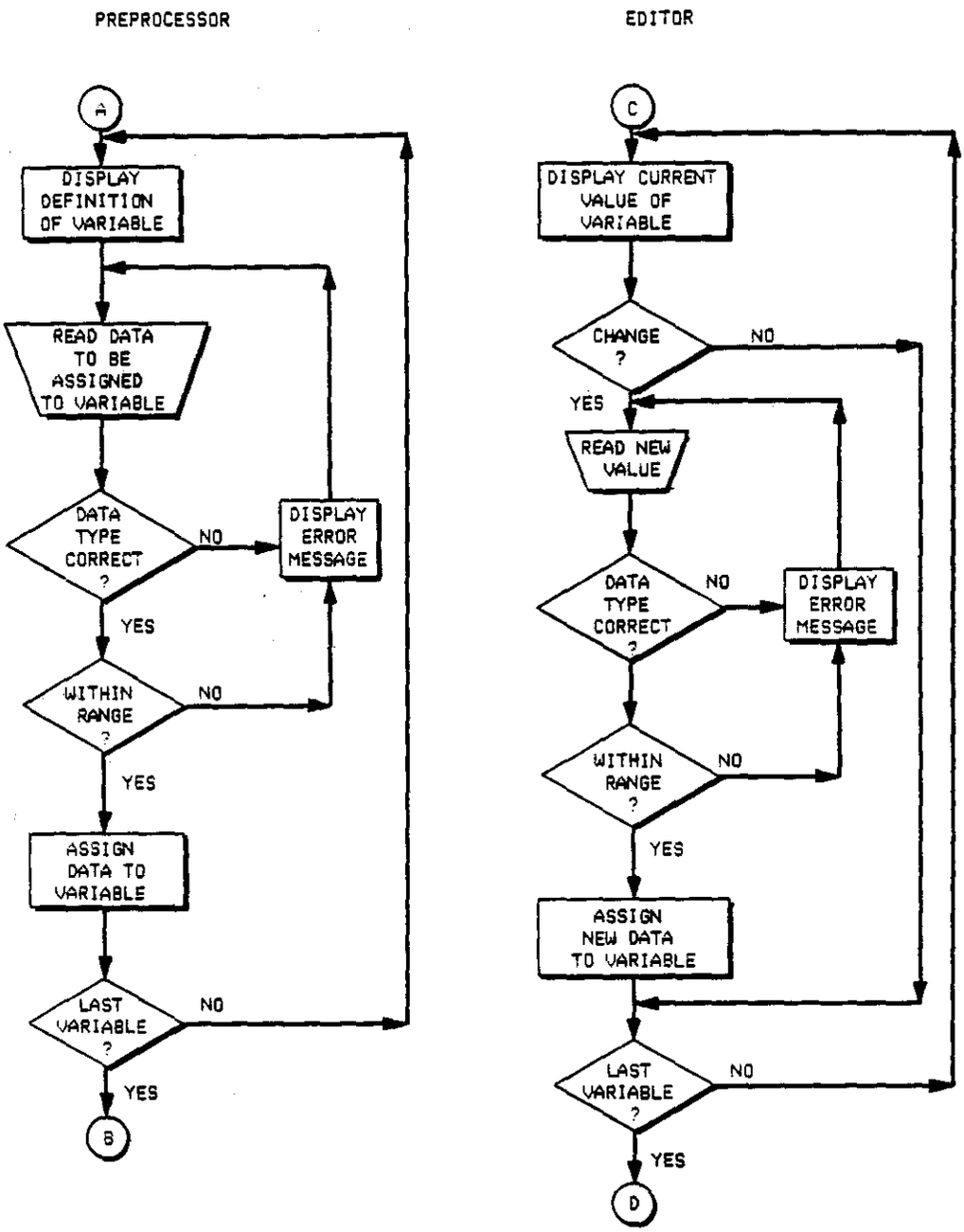


Figure 2. Simplified Flow Charts For The Preprocessor and Editor

U.S.G.S. Solute Transport Model on an IBM 3081D computer. This routine may need to be modified for other computer systems. A version of this routine that generates the JCL needed to execute the model on a microcomputer with the MS-DOS operating system is described in Appendix IX and is called GTJCLM. Appendix X describes the JCL needed for a DEC/VAX (routine name is GTJCLD).

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 modified N.R.C. version of the U.S.G.S. 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 modified N.R.C. version of the U.S.G.S. 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 3.4.3. The builtin subroutine SUBSTR is also used.

3.2.3 GTVAR

This routine handles 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 3.2.4. GTVAR handles all input of the individual variable data. GTVAR may need to be divided into two routines to facilitate compilation on a 64K RAM microcomputer.

The GTVAR routine is 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. 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.

3.2.4 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 3.4.4. The local subroutine, PARMGT, functions just as the PARMGT described in section 3.2.3. PARMGT is local to each routine because it uses and reassigns variables declared

locally in GTVAR and GTMTRX and, therefore, must have direct access to these variables.

3.3 Editor

3.3.1 UPDATE

The main purpose of the UPDATE routine is to control the overall execution of the modification routine. All variables used in the modified N.R.C. version of the U.S.G.S. 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. The version of this routine that controlls the editing of data that is being simulated on a micro-computer is called UPDATEM.

3.3.2 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.

The version of this routine that reads the data files created for simulation on a micro-computer is called EDFILEM.

3.3.3 EDJCL

Called by the UPDATE routine, EDJCL displays the current JCL for the modified N.R.C. version of the U.S.G.S. Solute Transport Model and allows modifications to be made. After the first execution on the IBM 3081D, 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. Appendix IX and Appendix X describe the editing of JCL for the MS-DOS operating system (routine name EDJCLM) and a DEC/VAX (routine name EDJCLD).

Utility routines called by EDJCL are INPUT and INPUTR. These routines are described in Section 3.4.3.

3.3.4 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 3.2.3.

3.3.5 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 3.4.4). The local routine, PARMGT, functions as described in section 3.2.3.

3.4 Utility Routines

3.4.1 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 in ASCII code 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 "O" 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. A second reoutine for use with machines that code in EBCDIC is provided.

3.4.2 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.

3.4.3 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 lover 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.

In the mainframe version of the preprocessor, INPUTR is an external entry point in the subroutine INPUT. PL/I-80 does not allow entry points in subroutines; therefore, it was necessary to form two subroutines from the original subroutine, INPUT, and its entry point, INPUTR.

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

3.4.4 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 2.2.4.1.

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.

3.4.5 SUBFIL

This routine writes the data for the modified N.R.C. version of the U.S.G.S 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. A version that writes data to be executed on a micro-computer is provided under the name of SUBFILM.

3.5 Compilation and Linking

The routines described in sections 3.2 through 3.4 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:

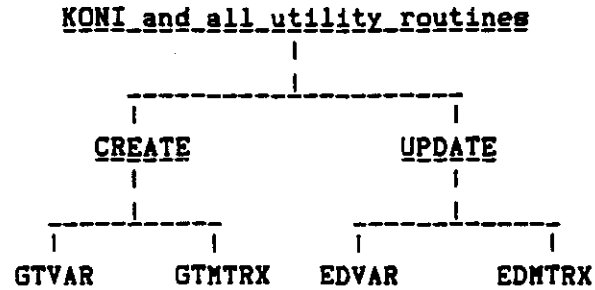
KONI (the controlling program),
CREATE, GTVAR, GTMTRX, UPDATE, EDVAR, EDMTRX, DATATYP,
DBLANK, INPUT, INPUTR, MTRXED, and SUBFIL.

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

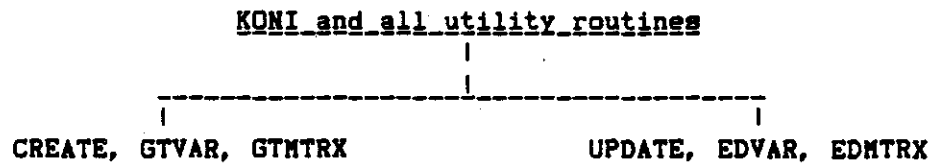
A file, EXTVAR, containing the external declarations of all global variables is included, using %INCLUDE, in several files. These files are: CREATE, GTVAR, GTMTRX, UPDATE, EDVAR, EDMTRX, INPUTR, MTRXED, and SUBFIL. EXTVAR also has a %REPLACE command used to more easily modify the dimensions of the different 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 shown in Figure 3. 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 (i.e. IBM-PC with 512K RAM) will be able to handle larger dimensions (eg. 20 x 20).



Compilation in 64K RAM



Compilation in 512K RAM

Figure 3. Overlay Levels for Preprocessor Compilation in 64K RAM and 512K RAM.

4.0 MODEL PERFORMANCE

To demonstrate and compare the performance of the modified N.R.C. version of the U.S.G.S. Solute Transport 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. For more information on this site, see the thesis by Chang (1985). 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.

4.1 Test Problems

To demonstrate the capability of the modified N.R.C. version of the U.S.G.S. Solute Transport Model 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 4). This problem was

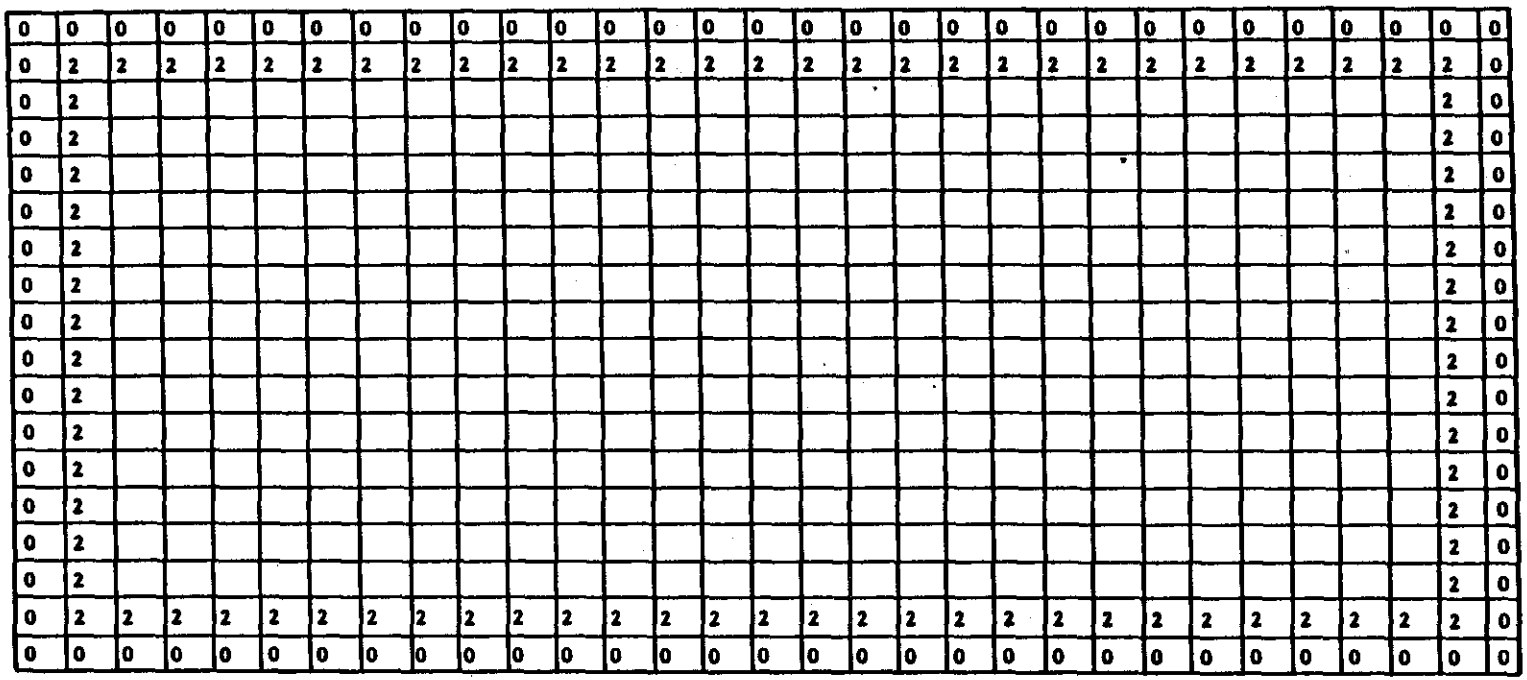


Figure 4 - Nodeid Matrix (Injection source)
For Test Problem 2

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

designed to demonstrate several options in terms of contaminant sources and pumping periods.

All test 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.

4.1.1 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 5). The flow field is influenced by four withdrawal wells. Three equal time steps were used for the transient case of this problem.

4.1.2 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 4. Similar to the patch source, three equal time steps were used during the simulation period of a transient run of this problem.

4.1.3 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

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 5 - 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	-	-	-	-	-

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 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.

5.0 REFERENCES

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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;                                                          00000010
 /* CONTROLS DATA ENTRY OPERATIONS.  */                                 00000020
 /* SETS UP JCL FOR IBM 3081.        */                                 00000030
 /*************************************************/                   00000040
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.         */                   00000050
 %INCLUDE 'B:EXTVAR.PLI';                                               00000060
 /*************************************************/                   00000070
   DCL SUBFIL                    ENTRY,                                 00000080
       GTVAR                     ENTRY,    /* OVERLAY */                00000090
       GTMTRX                    ENTRY;    /* OVERLAY */                00000100
   DCL INPUT                     ENTRY(CHAR(4), CHAR(80) VAR);          00000110
   OPEN FILE(SCREEN) STREAM OUTPUT TITLE('$CON');                       00000120
   OPEN FILE(CRT) INPUT TITLE('$CON');                                  00000130
   PUT FILE(SCREEN) EDIT('ENTER THE DATASET NAME TO BE CREATED',        00000140
       '(INCLUDE DRIVE IDENTIFIER):')(SKIP(3),A,SKIP,A);                00000150
   CALL INPUT('CHAR',FILENM);                                           00000160
   CALL GTJCL;                                                          00000170
   CALL GTVAR;                                                          00000180
   CALL GTMTRX;                                                         00000190
   OPEN FILE(SYSUT4) STREAM OUTPUT TITLE(FILENM) LINESIZE(80);          00000200
   CALL SUBFIL;                                                         00000210
   PUT FILE(SCREEN) EDIT('FILE CREATED:  ',FILENM)(SKIP,A,A);           00000220
 /*************************************************/                   00000230
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.         */                   00000240
 %INCLUDE 'B:GTJCL.PLI';                                                00000250
 /*************************************************/                   00000260
 END;                                                                   00000270
```

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

 CREATEM: PROC;                                                          00000010
 /* CONTROLS DATA ENTRY OPERATIONS.  */                                  00000020
 /* SETS UP JCL FOR MICROCOMPUTER.   */                                  00000030
 /*************************************************/                     00000040
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.         */                     00000050
 %INCLUDE 'B:EXTVAR.PLI';                                                00000060
 /*************************************************/                     00000070
   DCL SUBFILM                  ENTRY,                                   00000080
       GTVAR                    ENTRY,    /* OVERLAY */                  00000090
       GTMTRX                   ENTRY;    /* OVERLAY */                  00000100
   DCL INPUT                    ENTRY(CHAR(4), CHAR(80) VAR);            00000110
   OPEN FILE(SCREEN) STREAM OUTPUT TITLE('$CON');                         00000120
   OPEN FILE(CRT) INPUT TITLE('$CON');                                    00000130
   PUT FILE(SCREEN) EDIT('ENTER THE DATASET NAME TO BE CREATED',          00000140
       '(INCLUDE DRIVE IDENTIFIER):')(SKIP(3),A,SKIP,A);                  00000150
   CALL INPUT('CHAR',FILENM);                                             00000160
   CALL GTJCLM;                                                           00000170
   CALL GTVAR;                                                            00000180
   CALL GTMTRX;                                                           00000190
   OPEN FILE(SYSUT4) STREAM OUTPUT TITLE(FILENM) LINESIZE(80);            00000200
   CALL SUBFILM;                                                          00000210
   PUT FILE(SCREEN) EDIT('FILE CREATED:  ',FILENM)(SKIP,A,A);             00000220
 /*************************************************/                     00000230
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.         */                     00000240
 %INCLUDE 'B:GTJCLM.PLI';                                                00000250
 /*************************************************/                     00000260
 END;                                                                    00000270
```

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

 CREATED: PROC;                                                          00000010
 /* CONTROLS DATA ENTRY OPERATIONS. */                                   00000020
 /* SETS UP JCL FOR DEC/VAX.       */                                   00000030
 /*************************************************/                    00000040
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.         */                    00000050
 %INCLUDE 'B:EXTVAR.PLI';                                                00000060
 /*************************************************/                    00000070
   DCL SUBFILM                  ENTRY,                                   00000080
       GTVAR                    ENTRY,   /* OVERLAY */                  00000090
       GTMTRX                   ENTRY;   /* OVERLAY */                  00000100
   DCL INPUT                    ENTRY(CHAR(4), CHAR(80) VAR);            00000110
   OPEN FILE(SCREEN) STREAM OUTPUT TITLE('$CON');                        00000120
   OPEN FILE(CRT) INPUT TITLE('$CON');                                   00000130
   PUT FILE(SCREEN) EDIT('ENTER THE DATASET NAME TO BE CREATED:')        00000140
                        (SKIP,A);                                        00000150
   CALL INPUT('CHAR',FILENM);                                            00000160
   CALL GTJCLD;                                                          00000170
   CALL GTVAR;                                                           00000180
   CALL GTMTRX;                                                          00000190
   OPEN FILE(SYSUT4) STREAM OUTPUT TITLE(FILENM) LINESIZE(80);           00000200
   CALL SUBFILM;                                                         00000210
   PUT FILE(SCREEN) EDIT('FILE CREATED:  ',FILENM)(SKIP,A,A);            00000220
 /*************************************************/                    00000230
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.         */                    00000240
 %INCLUDE 'B:GTJCLD.PLI';                                                00000250
 /*************************************************/                    00000260
 END;                                                                    00000270
```

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

 GTJCL: PROC;                                                                  00000010
 /* THE GTJCL SUBROUTINE IS USED TO PROMPT THE USER FOR                        00000020
    THE CORRECT JCL TO RUN THE MODEL ON AN IBM 3081.                           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) =  '//FT06F001 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) =  '//FT10F001 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)=  '//FT07F001 DD SYSOUT=B';                                   00000830
  JCL(16) = '//FT05F001 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                                    (GTJCLM  )

 GTJCLM: PROC;                                                          00000010
 /* THE GTJCL SUBROUTINE IS USED TO PROMPT THE USER FOR                 00000020
    THE CORRECT JCL TO RUN THE MODEL ON A MICROCOMPUTER.                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
   PUT FILE(SCREEN) EDIT ('SET UP JCL FOR MODEL')(SKIP,A);              00000090
   PUT FILE(SCREEN) EDIT                                                00000100
     ('ENTER THE DRIVE IDENTIFIER FOR THE MODEL :') (SKIP,A);           00000110
   CALL INPUT('CHAR',ANSWER);                                           00000120
   IF LENGTH(ANSWER)=0 THEN JCL(1)='KONIMOD ';                          00000130
   ELSE JCL(1)=ANSWER || 'KONIMOD ';                                    00000140
   PUT FILE(SCREEN) EDIT                                                00000150
     ('ENTER THE COMPLETE OUTPUT DATA SET NAME',                        00000160
      '(INCLUDE DRIVE IDENTIFIER) :')                                   00000170
     (2(SKIP,A));                                                       00000180
   CALL INPUT('CHAR',ANSWER);                                           00000190
   IF LENGTH(ANSWER) > 44 THEN DO;                                      00000200
     PUT FILE(SCREEN) EDIT ('DATA SET NAME HAS BEEN TRUNCATED')         00000210
                           (SKIP(2),A);                                 00000220
     ANSWER = SUBSTR(ANSWER,1,44);                                      00000230
   END;                                                                 00000240
   JCL(1)=JCL(1) || ANSWER || ','|| FILENM|| ',';                       00000250
   PUT FILE(SCREEN) EDIT                                                00000260
     ('ENTER THE COMPLETE GRAPHICS OUTPUT DATA SET NAME',               00000270
      '(INCLUDE DRIVE IDENTIFIER) :')                                   00000280
     (2(SKIP,A));                                                       00000290
   CALL INPUT('CHAR',ANSWER);                                           00000300
   IF LENGTH(ANSWER) > 44 THEN DO;                                      00000310
     PUT FILE(SCREEN) EDIT ('DATA SET NAME HAS BEEN TRUNCATED')         00000320
                           (SKIP(2),A);                                 00000330
     ANSWER = SUBSTR(ANSWER,1,44);                                      00000340
   END;                                                                 00000350
   JCL(1)=JCL(1) || ANSWER;                                             00000360
   ANSWER = 'Y';                                                        00000370
   DO WHILE (ANSWER = 'Y');                                             00000380
     PUT FILE(SCREEN) EDIT ('THE FOLLOWING IS THE JCL') (SKIP,A);       00000390
     PUT FILE(SCREEN) EDIT (JCL(1)) (SKIP,A(72));                       00000400
     PUT FILE(SCREEN) EDIT                                              00000410
       ('DO YOU WISH TO CHANGE ANYTHING (Y/N) :') (SKIP,A);             00000420
     CALL INPUT('ANS',ANSWER);                                          00000430
     IF ANSWER = 'Y' THEN DO;                                           00000440
       PUT FILE(SCREEN) EDIT(JCL(1),'ENTER THE COMPLETE LINE . . .:')   00000450
           (SKIP,A(72),SKIP,A,SKIP,A);                                  00000460
        CALL INPUT('CHAR',JCL(1));                                      00000470
     END;                                                               00000480
   END;                                                                 00000490
   I=LENGTH(FILENM);                                                    00000500
   DO WHILE ((SUBSTR(FILENM,I,1) ^= '.') & (I > 0));                    00000510
     I=I-1;                                                             00000520
   END;                                                                 00000530
   IF I=0 THEN ANSWER1=FILENM || '.BAT';                                00000540
   ELSE ANSWER1=SUBSTR(FILENM,1,I) || 'BAT';                            00000550
   OPEN FILE(JCLF) STREAM OUTPUT TITLE(ANSWER1) LINESIZE(80);           00000560
   PUT FILE(JCLF) EDIT(JCL(1)) (COL(1),A(80));                          00000570
   CLOSE FILE(JCLF);                                                    00000580
 END;                                                                   00000590
```

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

 GTJCLD: PROC;                                                                  00000010
 /* THE GTJCL SUBROUTINE IS USED TO PROMPT THE USER FOR                         00000020
    THE CORRECT JCL TO RUN THE MODEL ON A DEC/VAX.                              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
   PUT FILE(SCREEN) EDIT ('SET UP JCL FOR MODEL')(SKIP,A);                      00000120
   JCL(1)='$ DEFINE FOR005 ' || FILENM ;                                        00000130
   PUT FILE(SCREEN) EDIT                                                        00000140
     ('ENTER THE COMPLETE OUTPUT DATA SET NAME :') (SKIP,A);                    00000150
   CALL INPUT('CHAR',ANSWER);                                                   00000160
   IF LENGTH(ANSWER) > 44 THEN DO;                                              00000170
     PUT FILE(SCREEN) EDIT ('DATA SET NAME HAS BEEN TRUNCATED')                 00000180
                          (SKIP(2),A);                                          00000190
     ANSWER = SUBSTR(ANSWER,1,44);                                              00000200
   END;                                                                         00000210
   JCL(2)='$ DEFINE FOR006 ' || ANSWER ;                                        00000220
   PUT FILE(SCREEN) EDIT                                                        00000230
     ('ENTER THE COMPLETE GRAPHICS OUTPUT DATA SET NAME :')(SKIP,A);            00000240
   CALL INPUT('CHAR',ANSWER);                                                   00000250
   IF LENGTH(ANSWER) > 44 THEN DO;                                              00000260
     PUT FILE(SCREEN) EDIT ('DATA SET NAME HAS BEEN TRUNCATED')                 00000270
                          (SKIP(2),A);                                          00000280
     ANSWER = SUBSTR(ANSWER,1,44);                                              00000290
   END;                                                                         00000300
   JCL(3)='$ DEFINE FOR010 ' || ANSWER ;                                        00000310
   JCL(4)='$ RUN KONIMOD.EXE';                                                  00000320
   ANSWER = 'Y';                                                                00000330
   DO WHILE (ANSWER = 'Y');                                                     00000340
     PUT FILE(SCREEN) EDIT ('THE FOLLOWING IS THE JCL') (SKIP,A);               00000350
     DO I=1 TO 4;                                                             00000360
       PUT FILE(SCREEN) EDIT ('  ',I,') ',JCL(I)) (SKIP,A,F(2),A,A(72));       00000370
     END;                                                                       00000380
     PUT FILE(SCREEN) EDIT                                                      00000390
       ('DO YOU WISH TO CHANGE ANYTHING (Y/N) :') (SKIP,A);                     00000400
     CALL INPUT('ANS',ANSWER);                                                  00000410
     IF ANSWER = 'Y' THEN DO;                                                   00000420
       PUT FILE(SCREEN)                                                         00000430
         EDIT('ENTER THE NUMBER OF THE LINE YOU WISH TO CHANGE.',               00000440
              '(ONLY ONE AT A TIME):') (A,SKIP,A);                              00000450
         CALL INPUTR('INT',ANSWER1,1,4);                                        00000460
         I=DBLANK(ANSWER1);                                                     00000470
       PUT FILE(SCREEN) EDIT(JCL(I),'ENTER THE COMPLETE LINE . . .:')           00000480
           (SKIP,A(72),SKIP,A,SKIP,A);                                          00000490
         CALL INPUT('CHAR',JCL(I));                                             00000500
     END;                                                                       00000510
   END;                                                                         00000520
   I=LENGTH(FILENM);                                                            00000530
   DO WHILE ((SUBSTR(FILENM,I,1) ^= '.') & (I > 0));                            00000540
     I=I-1;                                                                     00000550
   END;                                                                         00000560
   IF I=0 THEN ANSWER1=FILENM || '.COM';                                        00000570
   ELSE ANSWER1=SUBSTR(FILENM,1,I) || 'COM';                                    00000580
   OPEN FILE(JCLF) STREAM OUTPUT TITLE(ANSWER1) LINESIZE(80);                   00000590
   DO I=1 TO 4;                                                                 00000600
     PUT FILE(JCLF) EDIT(JCL(I)) (COL(1),A(80));                                00000610
   END;                                                                         00000620
```

```
  CLOSE FILE(JCLF);                                          00000630
END;                                                         00000640
```

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

 GTVAR: PROC;                                                                  00000010
 /* THE GTVAR SUBROUTINE PROMPTS FOR THE NECESSARY INFORMATION                 00000020
    TO RUN THE MODEL. (VARIABLES ETC.)                                         00000030
 */                                                                            00000040
 /*********************************************/                              00000050
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.     */                              00000060
 %INCLUDE 'B:EXTVAR.PLI';                                                      00000070
 /*********************************************/                              00000080
   DCL CHARACTER                 CHAR(4) STATIC INIT('CHAR'),                  00000090
       INTEGER                   CHAR(4) STATIC INIT('INT '),                  00000100
       REAL                      CHAR(4) STATIC INIT('REAL'),                  00000110
       NUMBER                    CHAR(4) STATIC INIT('NUM '),                  00000120
       ANSWER                    CHAR(4) STATIC INIT('ANS '),                  00000130
       TYPE                      CHAR(4) STATIC INIT(''),                      00000140
       REPLY                     CHAR(80) VAR,                                 00000150
       UPPER_RANGE               FLOAT STATIC INIT(0),                         00000160
       LOWER_RANGE               FLOAT STATIC INIT(0),                         00000170
       LEN                       FIXED BIN STATIC INIT(4),                     00000180
       VAR_INFO(10)              CHAR(80) VAR,                                 00000190
       NUMBER1                   FLOAT STATIC INIT(0),                         00000200
       NUMBER2                   FLOAT STATIC INIT(0),                         00000210
       COUNTER                   FIXED BIN,                                    00000220
       COUNTER1                  FIXED BIN,                                    00000230
       TEMPC                     CHAR(80) VAR,                                 00000240
       TEMPC2                    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
   VAR_INFO(1) = 'DO YOU WISH TO VERIFY ALL ENTRIES (Y/N) :';                  00000310
   TYPE = ANSWER;                                                              00000320
   LEN = 1;                                                                    00000330
   TEMPC = PARMGT();                                                           00000340
   IF (TEMPC = 'N') THEN VERIFY=0;                                             00000350
   ELSE VERIFY=1;                                                              00000360
   VAR_INFO(1) = 'ENTER THE TITLE, DESCRIPTIVE OF THE PROBLEM.';               00000370
   VAR_INFO(2) = 'MAXIMUM OF 80 CHARACTERS. ';                                 00000380
   VAR_INFO(3) = 'VARIABLE "TITLE" :';                                         00000390
   TYPE = CHARACTER;                                                           00000400
   LEN = 80;                                                                   00000410
   TITLE = PARMGT();                                                           00000420
   LEN = 4;                                                                    00000430
   TYPE = INTEGER;                                                             00000440
   VAR_INFO(1) = 'ENTER THE NUMBER OF NODES IN THE "X" DIRECTION.';            00000450
   VAR_INFO(2) = '("X" REFERS TO COLUMNS).';                                   00000460
   VAR_INFO(3) = 'MINIMUM OF 3, MAXIMUM OF '||NX_LMT||'.';                    00000470
   VAR_INFO(4) = 'VARIABLE "NX" :';                                            00000480
   LOWER_RANGE = 3;                                                            00000490
   UPPER_RANGE = NX_LMT;                                                       00000500
   NX = PARMGT();                                                              00000510
   VAR_INFO(1) = 'ENTER THE NUMBER OF NODES IN THE "Y" DIRECTION.';            00000520
   VAR_INFO(2) = '("Y" REFERS TO ROWS).';                                      00000530
   VAR_INFO(3) = 'MINIMUM OF 3, MAXIMUM OF '||NY_LMT||'.';                    00000540
   VAR_INFO(4) = 'VARIABLE "NY" :';                                            00000550
   LOWER_RANGE = 3;                                                            00000560
   UPPER_RANGE = NY_LMT;                                                       00000570
   NY = PARMGT();                                                              00000580
   VAR_INFO(1) = 'ENTER THE MAXIMUM NUMBER OF PARTICLES.';                     00000590
   VAR_INFO(2) = 'MAXIMUM OF 3200.';                                           00000600
   VAR_INFO(3) = 'VARIABLE "NPMAX" :';                                         00000610
   UPPER_RANGE = 3200;                                                         00000620
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NPMAX = PARMGT();                                                          00000630
VAR_INFO(1) = 'ENTER THE NUMBER OF PARTICLES PER NODE.';                   00000640
VAR_INFO(2) = 'OPTIONS = 4,5,8,9:';                                        00000650
VAR_INFO(3) = 'VARIABLE "NPTPND" :';                                       00000660
NPTPND = PARMGT();                                                         00000670
VAR_INFO(1) = 'ENTER THE NUMBER OF OBSERVATION POINTS TO BE';              00000680
VAR_INFO(2) = 'SPECIFIED NEXT.  MAXIMUM OF '||OBS_LMT||'.';                00000690
VAR_INFO(3) = 'VARIABLE "NUMOBS" :';                                       00000700
UPPER_RANGE = OBS_LMT;                                                     00000710
NUMOBS = PARMGT();                                                         00000720
COUNTER = 0;                                                               00000730
NUMBER1 = NUMOBS;                                                          00000740
DO WHILE(COUNTER < NUMBER1);                                               00000750
  IF (COUNTER = 0) THEN DO;                                                00000760
    VAR_INFO(1) =                                                          00000770
      'NOTE:  OBSERVATION WELLS SHOULD NOT BE PLACED IN THE';              00000780
    VAR_INFO(2) = '       FIRST OR LAST ROWS OR COLUMNS.';                 00000790
  END;                                                                     00000800
  ELSE DO;                                                                 00000810
    VAR_INFO(1) = ' ';                                                     00000820
    VAR_INFO(2) = ' ';                                                     00000830
  END;                                                                     00000840
  COUNTER = COUNTER + 1;                                                   00000850
  TEMPC = COUNTER;                                                         00000860
  TEMPC = DBLANK(TEMPC);                                                   00000870
  VAR_INFO(3) =                                                            00000880
    'ENTER THE "X" COORDINATE OF OBSERVATION POINT '||TEMPC|| '.';         00000890
  VAR_INFO(4) = 'VARIABLE "IXOBS(' || TEMPC || ')" :' ;                    00000900
  LEN = 2;                                                                 00000910
  IXOBS(COUNTER) = PARMGT();                                               00000920
  VAR_INFO(1) =                                                            00000930
    'ENTER THE "Y" COORDINATE OF OBSERVATION POINT '||TEMPC|| '.';         00000940
  VAR_INFO(2) = 'VARIABLE "IYOBS(' || TEMPC || ')" :' ;                    00000950
  IYOBS(COUNTER) = PARMGT();                                               00000960
END;                                                                       00000970
VAR_INFO(1) = 'ENTER THE NUMBER OF NODE IDENTIFICATION CODES';             00000980
VAR_INFO(2) = 'TO BE SPECIFIED.  MAXIMUM OF '||NC_LMT||'.';                00000990
VAR_INFO(3) = 'VARIABLE "NCODES" :';                                       00001000
LEN = 4;                                                                   00001010
UPPER_RANGE = NC_LMT;                                                      00001020
TYPE = INTEGER;                                                            00001030
NCODES = PARMGT();                                                         00001040
NUMBER2 = NCODES;                                                          00001050
COUNTER1 = 1;                                                              00001060
DO WHILE(COUNTER1 <= NUMBER2);                                             00001070
  TEMPC = COUNTER1;                                                        00001080
  TEMPC = DBLANK(TEMPC);                                                   00001090
  VAR_INFO(1) = 'ENTER NODE IDENTIFICATION CODE ' || TEMPC || '.';         00001100
  VAR_INFO(2) = 'VARIABLE "ICODE(' || TEMPC || ')" :';                     00001110
  LEN = 2;                                                                 00001120
  TYPE = INTEGER;                                                          00001130
  ICODE(COUNTER1) = PARMGT();                                              00001140
  VAR_INFO(1) = 'ENTER CORRESPONDING LEAKANCE ((FT/SEC)/FT).';             00001150
  VAR_INFO(2) =                                                            00001160
      '(VERTICAL PERMEABILITY / THICKNESS OF CONFINING LAYER)';            00001170
  VAR_INFO(3) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                      00001180
  VAR_INFO(4) = 'NOTE:  (FT/SEC)/FT = (GPD/FT)/FT * 1.54723 E-6';          00001190
  VAR_INFO(5) = 'VARIABLE "FCTR1(' || TEMPC || ')" :';                     00001200
  LEN = 10;                                                                00001210
  TYPE = REAL;                                                             00001220
  FCTR1(COUNTER1) = PARMGT();                                              00001230
  VAR_INFO(1) = 'ENTER CONCENTRATION (MG/L) FOR ICODE '||TEMPC||'.';       00001240
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                      00001250
  VAR_INFO(3) = 'VARIABLE "FCTR2(' || TEMPC || ')" :';                     00001260
  FCTR2(COUNTER1) = PARMGT();                                              00001270
  VAR_INFO(1) = 'ENTER OPTION TO RETAIN RECHARGE MATRIX VALUES :';         00001280
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  VAR_INFO(2) = '  0) RETAIN VALUES.';                                    00001290
  VAR_INFO(3) = '  1) USE VALUE OF FCTR3.';                               00001300
  VAR_INFO(4) = 'VARIABLE "OVERRD(' || TEMPC || ')" :';                   00001310
  LEN = 2;                                                                00001320
  TYPE = INTEGER;                                                         00001330
  OVERRD(COUNTER1) = PARMGT();                                            00001340
  IF ( OVERRD(COUNTER1)=' 0' )                                            00001350
  THEN FCTR3(COUNTER1)='        0.';                                      00001360
  ELSE DO ;                                                               00001370
    VAR_INFO(1) =                                                         00001380
      'ENTER RECHARGE/DISCHARGE (FT/SEC) FOR ICODE '||TEMPC|| '.';        00001390
    VAR_INFO(2) = 'NEGATIVE FOR RECHARGE, POSITIVE FOR DISCHARGE.';       00001400
    VAR_INFO(3) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                   00001410
    VAR_INFO(4) = 'NOTE:  FT/SEC = IN/YR * 26.7918 E-10';                 00001420
    VAR_INFO(5) = 'ENTER VARIABLE "FCTR3(' || TEMPC || ')" :';            00001430
    LEN = 10;                                                             00001440
    TYPE = REAL;                                                          00001450
    FCTR3(COUNTER1) = PARMGT();                                           00001460
  END;                                                                    00001470
  COUNTER1 = COUNTER1 + 1;                                                00001480
END;                                                                      00001490
VAR_INFO(1) = 'ENTER THE STORAGE COEFFICIENT.';                           00001500
VAR_INFO(2) = '0 FOR STEADY FLOW PROBLEMS.';                              00001510
VAR_INFO(3) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                        00001520
VAR_INFO(4) = 'VARIABLE "S" :';                                           00001530
LEN = 5;                                                                  00001540
TYPE = REAL;                                                              00001550
S = PARMGT();                                                             00001560
VAR_INFO(1) = 'ENTER THE NUMBER OF PUMPING PERIODS.';                     00001570
VAR_INFO(2) = 'MAXIMUM OF '||PMP_LMT||'.';                               00001580
VAR_INFO(3) = 'VARIABLE "NPMP" :';                                        00001590
UPPER_RANGE = PMP_LMT;                                                    00001600
LEN = 4;                                                                  00001610
TYPE = INTEGER;                                                           00001620
NPMP = PARMGT() ;                                                         00001630
COUNTER1 = 1;                                                             00001640
NUMBER2 = NPMP;                                                           00001650
DO WHILE(COUNTER1 = 1 | COUNTER1 <= NUMBER2 );                            00001660
  TEMPC2 = COUNTER1;                                                      00001670
  IF COUNTER1 > 1 THEN DO;                                                00001680
    VAR_INFO(1) =                                                         00001690
    'DO YOU WISH TO MAKE ANY REVISIONS TO PUMPING PERIOD '                00001700
     ||TEMPC2|| '?' ;                                                    00001710
    VAR_INFO(2) = 'VARIABLE "ICHK" (Y/N):';                               00001720
    LEN = 1;                                                              00001730
    TYPE = ANSWER;                                                        00001740
    TEMPC = PARMGT();                                                     00001750
    IF TEMPC = 'N' THEN ICHK(COUNTER1 - 1) = '0';                         00001760
    ELSE ICHK(COUNTER1 - 1) = '1';                                        00001770
  END;                                                                    00001780
  IF COUNTER1 = 1  | ICHK(COUNTER1 - 1) = '1' THEN DO;                    00001790
    VAR_INFO(1) = 'ENTER THE MAXIMUM NUMBER OF TIME STEPS IN ';           00001800
    VAR_INFO(2) = 'PUMPING PERIOD ' ||TEMPC2|| '.  MAXIMUM OF 100.';      00001810
    VAR_INFO(3) = 'VARIABLE "NTIM" :';                                    00001820
    UPPER_RANGE = 100;                                                    00001830
    LEN = 4;                                                              00001840
    TYPE = INTEGER;                                                       00001850
    NTIM(COUNTER1) = PARMGT();                                            00001860
    VAR_INFO(1) = 'PUMPING PERIOD ' || TEMPC2 || ':';                     00001870
    VAR_INFO(2) = 'ENTER THE TIME STEP INTERVAL FOR PRINTING';            00001880
    VAR_INFO(3) = 'HYDRAULIC AND CHEMICAL OUTPUT DATA.';                  00001890
    VAR_INFO(4) = 'VARIABLE "NPNT" :';                                    00001900
    NPNT(COUNTER1) = PARMGT();                                            00001910
    VAR_INFO(1) = 'PUMPING PERIOD ' || TEMPC2 || ':';                     00001920
    VAR_INFO(2) = 'ENTER THE NUMBER OF ITERATION PARAMETERS FOR';         00001930
    VAR_INFO(3) = 'ADIP.  USUALLY FROM 4 TO 7.';                          00001940
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VAR_INFO(4) = 'VARIABLE "NITP" :';                                    00001950
NITP(COUNTER1) = PARMGT();                                            00001960
VAR_INFO(1) = 'PUMPING PERIOD ' || TEMPC2 || ':';                     00001970
VAR_INFO(2) = 'ENTER THE MAXIMUM ALLOWABLE NUMBER OF ITERATIONS';     00001980
VAR_INFO(3) = 'IN ADIP OR SIP. USUALLY FROM 100 TO 200.';             00001990
VAR_INFO(4) = 'VARIABLE "ITMAX" :' ;                                  00002000
ITMAX(COUNTER1) = PARMGT();                                           00002010
VAR_INFO(1) = 'PUMPING PERIOD ' || TEMPC2 || ':';                     00002020
VAR_INFO(2) = 'ENTER THE PARTICLE MOVEMENT INTERVAL (IMOV)';          00002030
VAR_INFO(3) = 'FOR PRINTING CHEMICAL OUTPUT DATA.';                   00002040
VAR_INFO(4) ='SPECIFY O TO PRINT ONLY AT THE END OF TIME STEPS.';     00002050
VAR_INFO(5) = 'VARIABLE "NPNTMV" :';                                  00002060
NPNTMV(COUNTER1) = PARMGT();                                          00002070
VAR_INFO(1) = 'PUMPING PERIOD ' || TEMPC2 || ':';                     00002080
VAR_INFO(2) = 'ENTER THE OPTION FOR PRINTING COMPUTED';               00002090
VAR_INFO(3) = 'VELOCITIES.';                                          00002100
VAR_INFO(4) = '  0) DO NOT PRINT.';                                   00002110
VAR_INFO(5) = '  1) PRINT FOR FIRST TIME STEP.';                      00002120
VAR_INFO(6) = '  2) PRINT FOR ALL TIME STEPS.';                       00002130
VAR_INFO(7) = 'CHOOSE ONE OF THE ABOVE.';                             00002140
VAR_INFO(8) = 'VARIABLE "NPNTVL" :';                                  00002150
UPPER_RANGE = 2;                                                      00002160
NPNTVL(COUNTER1) = PARMGT();                                          00002170
VAR_INFO(1) = 'PUMPING PERIOD ' || TEMPC2 || ':';                     00002180
VAR_INFO(2) = 'ENTER THE OPTION FOR PRINTING COMPUTED';               00002190
VAR_INFO(3) = 'DISPERSION EQUATION COEFFICIENTS.';                    00002200
VAR_INFO(4) = '  0) DO NOT PRINT.';                                   00002210
VAR_INFO(5) = '  1) PRINT FOR FIRST TIME STEP.';                      00002220
VAR_INFO(6) = '  2) PRINT FOR ALL TIME STEPS.';                       00002230
VAR_INFO(7) = 'CHOOSE ONE OF THE ABOVE.';                             00002240
VAR_INFO(8) = 'VARIABLE "NPNTD" :';                                   00002250
UPPER_RANGE = 2;                                                      00002260
NPNTD(COUNTER1) = PARMGT();                                           00002270
VAR_INFO(1) = 'PUMPING PERIOD ' || TEMPC2 || ':';                     00002280
VAR_INFO(2) = 'ENTER THE OPTION TO PRINT COMPUTED CHANGES IN';        00002290
VAR_INFO(3) = 'CONCENTRATION.';                                       00002300
VAR_INFO(4) = '  0) DO NOT PRINT.';                                   00002310
VAR_INFO(5) = '  1) PRINT.';                                          00002320
VAR_INFO(6) = 'CHOOSE ONE OF THE ABOVE.';                             00002330
VAR_INFO(7) = 'VARIABLE "NPDELC" :';                                  00002340
UPPER_RANGE = 1;                                                      00002350
NPDELC(COUNTER1) = PARMGT();                                          00002360
VAR_INFO(1) = 'PUMPING PERIOD ' || TEMPC2 || ':';                     00002370
VAR_INFO(2) = 'ENTER THE OPTION TO PUNCH VELOCITY DATA.';             00002380
VAR_INFO(3) = '  0) DO NOT PUNCH.';                                   00002390
VAR_INFO(4) = '  1) PUNCH FOR FIRST TIME STEP.';                      00002400
VAR_INFO(5) = '  2) PUNCH FOR ALL TIME STEPS.';                       00002410
VAR_INFO(6) = 'CHOOSE ONE OF THE ABOVE.';                             00002420
VAR_INFO(7) = 'VARIABLE "NPNCHV" :';                                  00002430
UPPER_RANGE = 2;                                                      00002440
NPNCHV(COUNTER1) = PARMGT();                                          00002450
VAR_INFO(1) = 'PUMPING PERIOD ' || TEMPC2 || ':';                     00002460
VAR_INFO(2) = 'ENTER THE PUMPING PERIOD (YEARS).';                    00002470
VAR_INFO(3) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                    00002480
VAR_INFO(4) = 'VARIABLE "PINT" :';                                    00002490
TYPE = REAL;                                                          00002500
LEN = 5;                                                              00002510
PINT(COUNTER1) = PARMGT();                                            00002520
NUMBER1 = S;                                                          00002530
IF NUMBER1 ¬= 0 THEN DO;                                              00002540
  VAR_INFO(1) = 'PUMPING PERIOD ' || TEMPC2 || ':';                   00002550
  VAR_INFO(2) = 'ENTER THE TIME INCREMENT MULTIPLIER FOR';            00002560
  VAR_INFO(3) = 'TRANSIENT FLOW PROBLEMS.';                           00002570
  VAR_INFO(4) = 'THIS IS DISREGARDED IF S=0 .';                       00002580
  VAR_INFO(5) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                  00002590
  VAR_INFO(6) = 'VARIABLE "TIMX" :';                                  00002600
```

```
      TIMX(COUNTER1) = PARMGT();                                          00002610
      VAR_INFO(1) = 'PUMPING PERIOD ' || TEMPC2 || ':';                   00002620
      VAR_INFO(2) = 'ENTER THE SIZE OF THE INITIAL TIME STEP';            00002630
      VAR_INFO(3) = 'IN SECONDS.';                                        00002640
      VAR_INFO(4) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                  00002650
      VAR_INFO(5) = 'VARIABLE "TINIT" :';                                 00002660
      TINIT(COUNTER1) = PARMGT();                                         00002670
    END;                                                                  00002680
    ELSE DO;                                                              00002690
      TIMX(COUNTER1) = '   0';                                            00002700
      TINIT(COUNTER1) = '    0';                                          00002710
    END;                                                                  00002720
      VAR_INFO(1) = 'PUMPING PERIOD ' || TEMPC2 || ':';                   00002730
    VAR_INFO(2) = 'ENTER THE NUMBER OF PUMPING OR INJECTION';             00002740
    VAR_INFO(3) = 'WELLS TO BE SPECIFIED.';                               00002750
    VAR_INFO(4) = 'MAXIMUM OF '||NR_LMT||'.';                             00002760
    VAR_INFO(5) = 'VARIABLE "NREC" :';                                    00002770
    UPPER_RANGE = NR_LMT;                                                 00002780
    LEN = 4;                                                              00002790
    TYPE = INTEGER;                                                       00002800
    NREC(COUNTER1) = PARMGT();                                            00002810
    NUMBER1 = NREC(COUNTER1);                                             00002820
    COUNTER = 0;                                                          00002830
    DO WHILE(COUNTER < NUMBER1);                                          00002840
      COUNTER = COUNTER + 1;                                              00002850
      TEMPC = COUNTER;                                                    00002860
      TEMPC = DBLANK(TEMPC);                                              00002870
      VAR_INFO(1) =                                                       00002880
      'ENTER THE X COORDINATE OF PUMPING OR INJECTION WELL '              00002890
       ||TEMPC|| '.';                                                     00002900
      VAR_INFO(2) = 'VARIABLE "IX(' || TEMPC || ')" :';                   00002910
      LEN = 2;                                                            00002920
      TYPE = INTEGER;                                                     00002930
      IX(COUNTER1,COUNTER) = PARMGT();                                    00002940
      VAR_INFO(1) =                                                       00002950
      'ENTER THE Y COORDINATE OF PUMPING OR INJECTION WELL '              00002960
       ||TEMPC|| '.';                                                     00002970
      VAR_INFO(2) = 'VARIABLE "IY(' || TEMPC || ')" :';                   00002980
      IY(COUNTER1,COUNTER) = PARMGT();                                    00002990
      VAR_INFO(1) =                                                       00003000
        'ENTER THE RATE (FT**3/SEC) FOR WELL ' ||TEMPC|| '.';             00003010
      VAR_INFO(2) = 'POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.';      00003020
      VAR_INFO(3) = 'MAXIMUM LENGTH OF 8, REAL NUMBER.';                  00003030
      VAR_INFO(4) = 'NOTE:  FT**3/SEC = GAL/MIN * 0.0022278';             00003040
      VAR_INFO(5) = 'VARIABLE "REC(' || TEMPC || ')" :';                  00003050
      TYPE = REAL;                                                        00003060
      LEN = 8;                                                            00003070
      REC(COUNTER1,COUNTER) = PARMGT();                                   00003080
      TEMPN = REC(COUNTER1,COUNTER);                                      00003090
      IF TEMPN < 0 THEN DO;                                               00003100
        VAR_INFO(1) = 'ENTER THE CONCENTRATION OF THE INJECTED';          00003110
        VAR_INFO(2) = 'FLUID (MG/L) FOR WELL ' ||TEMPC|| '.';             00003120
        VAR_INFO(3) = 'MAXIMUM LENGTH OF 8, REAL NUMBER.';                00003130
        VAR_INFO(4) = 'VARIABLE "CNRECH(' || TEMPC || ')" :';             00003140
        TYPE = REAL;                                                      00003150
        LEN = 8;                                                          00003160
        CNRECH(COUNTER1,COUNTER) = PARMGT();                              00003170
      END;                                                                00003180
      ELSE CNRECH(COUNTER1,COUNTER) = '     0.0';                         00003190
    END;                                                                  00003200
  END;                                                                    00003210
  COUNTER1 = COUNTER1 + 1;                                                00003220
END;                                                                      00003230
VAR_INFO(1) = 'ENTER THE CONVERGENCE CRITERIA FOR THE FLOW';              00003240
VAR_INFO(2) = 'EQUATION.  USUALLY LESS THAN .01 .';                       00003250
VAR_INFO(3) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                        00003260
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VAR_INFO(4) = 'VARIABLE "TOL" :';                                          00003270
LEN = 5;                                                                   00003280
TYPE = REAL;                                                               00003290
TOL = PARMGT();                                                            00003300
VAR_INFO(1) = 'ENTER THE EFFECTIVE POROSITY.';                             00003310
VAR_INFO(2) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                         00003320
VAR_INFO(3) = 'VARIABLE "POROS" :';                                        00003330
POROS = PARMGT();                                                          00003340
VAR_INFO(1) = 'ENTER THE CHARACTERISTIC LENGTH (FEET).';                   00003350
VAR_INFO(2) = '(LONGITUDINAL DISPERSIVITY).';                              00003360
VAR_INFO(3) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                         00003370
VAR_INFO(4) = 'VARIABLE "BETA" :';                                         00003380
BETA = PARMGT();                                                           00003390
VAR_INFO(1) = 'ENTER THE NODE SIZE IN THE "X" DIRECTION (FEET).';          00003400
VAR_INFO(2) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                         00003410
VAR_INFO(3) = 'VARIABLE "XDEL" :';                                         00003420
XDEL = PARMGT();                                                           00003430
VAR_INFO(1) = 'ENTER THE NODE SIZE IN THE "Y" DIRECTION (FEET).';          00003440
VAR_INFO(2) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                         00003450
VAR_INFO(3) = 'VARIABLE "YDEL" :';                                         00003460
YDEL = PARMGT();                                                           00003470
VAR_INFO(1) = 'ENTER THE RATIO OF TRANSVERSE TO ';                         00003480
VAR_INFO(2) = 'LONGITUDINAL DISPERSIVITY.';                                00003490
VAR_INFO(3) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                         00003500
VAR_INFO(4) = 'VARIABLE "DLTRAT" :';                                       00003510
DLTRAT = PARMGT();                                                         00003520
VAR_INFO(1) = 'ENTER THE MAXIMUM CELL DISTANCE PER PARTICLE';              00003530
VAR_INFO(2) = 'MOVE. VALUE BETWEEN 0 AND 1.0 .';                           00003540
VAR_INFO(3) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                         00003550
VAR_INFO(4) = 'VARIABLE "CELDIS" :';                                       00003560
UPPER_RANGE = 1.;                                                          00003570
CELDIS = PARMGT();                                                         00003580
VAR_INFO(1) = 'ENTER THE RATIO OF TRANSMISSIVITY TENSORS';                 00003590
VAR_INFO(2) = '(T(YY) TO T(XX)).';                                         00003600
VAR_INFO(3) = '(USE 1.0 FOR ISOTROPIC AQUIFER.  IF ANISOTROPIC.';          00003610
VAR_INFO(4) = 'MAJOR DIRECTION OF FLOW SHOULD BE ALONG COLUMNS.)';         00003620
VAR_INFO(5) = 'MAXIMUM LENGTH OF 5, REAL NUMBER.';                         00003630
VAR_INFO(6) = 'VARIABLE "ANFCTR" :';                                       00003640
ANFCTR = PARMGT();                                                         00003650
VAR_INFO(1) = 'IS DECAY TO BE SIMULATED (Y/N)?';                           00003660
VAR_INFO(2) = 'VARIABLE "NDECAY" :';                                       00003670
LEN=1;                                                                     00003680
TYPE=ANSWER;                                                               00003690
REPLY=PARMGT();                                                            00003700
IF REPLY='N' THEN DO;                                                      00003710
  NDECAY = '    0';                                                        00003720
  DCYTIM = '        0.';                                                   00003730
END;                                                                       00003740
ELSE DO;                                                                   00003750
  NDECAY = '    1';                                                        00003760
  VAR_INFO(1) = 'ENTER DECAY HALFLIFE (YEARS).';                           00003770
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                      00003780
  VAR_INFO(3) = 'VARIABLE "DCYTIM" :';                                     00003790
  LEN = 10;                                                                00003800
  TYPE = REAL;                                                             00003810
  DCYTIM = PARMGT();                                                       00003820
END;                                                                       00003830
VAR_INFO(1) = 'INDICATE WHICH SORBTION SIMULATION';                        00003840
VAR_INFO(2) = 'IS TO BE USED :';                                           00003850
VAR_INFO(3) = '  0) NONE ';                                                00003860
VAR_INFO(4) = '  1) LINEAR ';                                              00003870
VAR_INFO(5) = '  2) LANGMUIR ';                                            00003880
VAR_INFO(6) = '  3) FREUDLICH ';                                           00003890
VAR_INFO(7) = 'VARIABLE "NSORB" :';                                        00003900
LEN = 5;                                                                   00003910
TYPE = INTEGER;                                                            00003920
```

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LOWER_RANGE = 0;                                                        00003930
UPPER_RANGE = 3;                                                        00003940
NSORB = PARMGT();                                                       00003950
DENROC = '         0.';                                                 00003960
SORBQR = '         0.';                                                 00003970
SORBST = '         0.';                                                 00003980
SORBAL = '         0.';                                                 00003990
IF (NSORB = '    0') THEN;                                              00004000
ELSE DO;                                                                00004010
  LEN =10;                                                              00004020
  TYPE = REAL;                                                          00004030
  VAR_INFO(1) =                                                         00004040
    'ENTER THE PARTICLE DENSITY OF THE AQUIFER (GM/CM**3).';            00004050
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                   00004060
  VAR_INFO(3) = 'VARIABLE "DENROC" :';                                  00004070
  DENROC = PARMGT();                                                    00004080
  VAR_INFO(1) = 'ENTER VALUE OF "KD" (ML/G).';                          00004090
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                   00004100
  VAR_INFO(3) = 'VARIABLE "SORBQR" :';                                  00004110
  SORBQR = PARMGT();                                                    00004120
  IF (NSORB = '    2') THEN DO;                                         00004130
    VAR_INFO(1) = 'ENTER THE SORBTION SATURATION VALUE ';               00004140
    VAR_INFO(2) = 'FOR THE LANGMUIR.';                                  00004150
    VAR_INFO(3) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                 00004160
    VAR_INFO(4) = 'VARIABLE "SORBST" :';                                00004170
    SORBST = PARMGT();                                                  00004180
  END;                                                                  00004190
  IF (NSORB = '    3') THEN DO;                                         00004200
    VAR_INFO(1) = 'ENTER THE VALUE OF ALPHA FOR THE';                   00004210
    VAR_INFO(2) = 'FREUDLICH ISOTHERM.';                                00004220
    VAR_INFO(3) = 'MAXIMUM LENGTH OF 10, REAL NUMBER.';                 00004230
    VAR_INFO(4) = 'VARIABLE "SORBAL" :';                                00004240
    SORBAL = PARMGT();                                                  00004250
  END;                                                                  00004260
END;                                                                    00004270
LEN=4;                                                                  00004280
TYPE=INTEGER;                                                           00004290
VAR_INFO(1) = 'CHOOSE THE ITERATIVE PROCEDURE DESIRED TO SOLVE';        00004300
VAR_INFO(2) = 'A FINITE DIFFERENCE APPROXIMATION TO THE';               00004310
VAR_INFO(3) = 'GROUND-WATER FLOW EQUATION.';                            00004320
VAR_INFO(4) = '  0) ADIP--ALTERNATING DIRECTION IMPLICIT PROCEDURE';    00004330
VAR_INFO(5) = '  1) SIP --STRONGLY IMPLICIT PROCEDURE';                 00004340
VAR_INFO(6) = 'VARIABLE "ISOLV": ';                                     00004350
ISOLV=PARMGT();                                                         00004360
VAR_INFO(1) = 'IS THIS SIMULATION HEAD ONLY OR SOLUTE TRANSPORT ?';     00004370
VAR_INFO(2) = '  0) TRANSPORT';                                         00004380
VAR_INFO(3) = '  1) HEAD ONLY';                                         00004390
VAR_INFO(4) = 'VARIABLE "IHEAD": ';                                     00004400
IHEAD=PARMGT();                                                         00004410
VAR_INFO(1) = 'IS THE AQUIFER BEING MODELED CONFINED OR';               00004420
VAR_INFO(2) = 'UNCONFINED ?  ';                                         00004430
VAR_INFO(3) = '  0) CONFINED ';                                         00004440
VAR_INFO(4) = '  1) UNCONFINED ';                                       00004450
VAR_INFO(5) = 'VARIABLE "FCON": ';                                      00004460
FCON=PARMGT();                                                          00004470
VAR_INFO(1) = 'DO YOU WISH TO ENTER THE TRANSMISSIVITY ';               00004480
VAR_INFO(2) = 'OR PERMEABILITY FOR THE AREA ?';                         00004490
VAR_INFO(3) = '  0) TRANSMISSIVITY ';                                   00004500
VAR_INFO(4) = '  1) PERMEABILITY';                                      00004510
VAR_INFO(5) = 'VARIABLE "TP": ';                                        00004520
TP=PARMGT();                                                            00004530
IF (FCON = '    1') THEN DO;                                            00004540
  VAR_INFO(1) = 'DO YOU WISH TO ENTER THE BOTTOM ELEVATION ';           00004550
  VAR_INFO(2) = 'OR SATURATED THICKNESS FOR THE AREA ?';                00004560
  VAR_INFO(3) = '  0) SATURATED THICKNESS ';                            00004570
  VAR_INFO(4) = '  1) BOTTOM ';                                         00004580
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    VAR_INFO(5) = 'VARIABLE "BTM": ';                                  00004590
    BTM = PARMGT();                                                    00004600
  END;                                                                 00004610
  ELSE BTM = '    0';                                                  00004620
/*************************************************/                  00004630
/* %INCLUDE REQUIRES COMPLETE FILE NAME.         */                  00004640
%INCLUDE 'B:PARMGT.PLI';                                             00004650
/*************************************************/                  00004660
END;                                                                 00004670
```

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

 GTMTRX: PROC;                                                          00000010
 /* THE GTMTRX SUBROUTINE IS USED TO PROMPT FOR THE                     00000020
    NECESSARY INFORMATION TO CREATE THE MATRICES.                       00000030
 */                                                                     00000040
 /*************************************************/                   00000050
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.         */                   00000060
 %INCLUDE 'B:EXTVAR.PLI';                                               00000070
 /*************************************************/                   00000080
   DCL REPLY                        CHAR(80) VAR,                     00000090
       TEMP_NUM                     FIXED BIN,                        00000100
       TEMP_NUM1                    FIXED BIN,                        00000110
       I                            FIXED BIN,                        00000120
       J                            FIXED BIN,                        00000130
       CHARACTER                    CHAR(4) STATIC INIT('CHAR'),      00000140
       INTEGER                      CHAR(4) STATIC INIT('INT '),      00000150
       REAL                         CHAR(4) STATIC INIT('REAL'),      00000160
       NUMBER                       CHAR(4) STATIC INIT('NUM '),      00000170
       ANSWER                       CHAR(4) STATIC INIT('ANS '),      00000180
       TYPE                         CHAR(4) STATIC INIT(''),          00000190
       UPPER_RANGE                  FLOAT STATIC INIT(0),             00000200
       LOWER_RANGE                  FLOAT STATIC INIT(0),             00000210
       LEN                          FIXED BIN STATIC INIT(4),         00000220
       VAR_INFO(10)                 CHAR(80) VAR;                     00000230
   DCL MTRXED                       ENTRY((NX_LMT,NY_LMT) CHAR(4) VAR,00000240
                                    FIXED BIN, FIXED BIN, FIXED BIN); 00000250

   DO I=1 TO 10;                                                        00000260
     VAR_INFO(I) = '';                                                  00000270
   END;                                                                 00000280
   TEMP_NUM = NY;                                                       00000290
   TEMP_NUM1 = NX;                                                      00000300
   IF (TP = 0) THEN DO;                                                 00000310
    VAR_INFO(1) = 'IS THE TRANSMISSIVITY FOR THE AREA CONSTANT ?';      00000320
    VAR_INFO(2) = '(A MATRIX IS NOT REQUIRED IF THE TRANSMISSIVITY';    00000330
   END;                                                                 00000340
   ELSE DO;                                                             00000350
    VAR_INFO(1) = 'IS THE PERMEABILITY FOR THE AREA CONSTANT ?';        00000360
    VAR_INFO(2) = '(A MATRIX IS NOT REQUIRED IF THE PERMEABILITY';      00000370
   END;                                                                 00000380
    VAR_INFO(3) = 'FOR THE AREA IS CONSTANT) (Y/N):';                   00000390
   TYPE = ANSWER;                                                       00000400
   REPLY = PARMGT();                                                    00000410
   IF REPLY = 'Y' THEN DO;                                              00000420
     INPT_VPRM = '0';                                                   00000430
     IF (TP = 0) THEN DO;                                               00000440
       VAR_INFO(1) =                                                    00000450
         'ENTER THE TRANSMISSIVITY FOR THE AREA (FT**2/SEC).';          00000460
       VAR_INFO(2) = 'NOTE:  FT**2/SEC = GPD/FT * 1.54723 E-6';         00000470
     END;                                                               00000480
     ELSE DO;                                                           00000490
       VAR_INFO(1) =                                                    00000500
         'ENTER THE PERMEABILITY FOR THE AREA (FT/SEC).';               00000510
       VAR_INFO(2) = 'NOTE:  FT/SEC = GPD/FT**2 * 1.54723 E-6';         00000520
     END;                                                               00000530
     VAR_INFO(3) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                00000540
     TYPE = REAL;                                                       00000550
     LEN = 10;                                                          00000560
     FACT_VPRM = PARMGT();                                              00000570
   END;                                                                 00000580
   ELSE DO;                                                             00000590
     INPT_VPRM = '1';                                                   00000600
     IF (TP = 0) THEN DO;                                               00000610
       VAR_INFO(1) = 'ENTER THE TRANSMISSIVITY MULTIPLIER.';            00000620
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    VAR_INFO(2) = 'NOTE:  FT**2/SEC = GPD/FT * 1.54723 E-6';          00000630
  END;                                                                00000640
  ELSE DO;                                                            00000650
    VAR_INFO(1) = 'ENTER THE PERMEABILITY MULTIPLIER.';               00000660
    VAR_INFO(2) = 'NOTE:  FT/SEC = GPD/FT**2 * 1.54723 E-6';          00000670
  END;                                                                00000680
  VAR_INFO(3) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                 00000690
  TYPE = REAL;                                                        00000700
  LEN = 10;                                                           00000710
  FACT_VPRM = PARMGT();                                               00000720
  IF (TP = 0) THEN VAR_INFO(1) =                                      00000730
    'WHAT DO YOU WISH THE ENTIRE TRANSMISSIVITY MATRIX ';             00000740
  ELSE VAR_INFO(1) =                                                  00000750
    'WHAT DO YOU WISH THE ENTIRE PERMEABILITY MATRIX ';                00000760
  VAR_INFO(2) = 'INITIALLY SET TO?';                                  00000770
  VAR_INFO(3) = '(MAXIMUM LENGTH OF 4):';                             00000780
  LEN = 4;                                                            00000790
  REPLY = PARMGT();                                                   00000800
  DO I=1 TO TEMP_NUM1;                                                00000810
    DO J=1 TO TEMP_NUM;                                               00000820
      VPRM(J,I) = REPLY;                                              00000830
    END;                                                              00000840
  END;                                                                00000850
  LEN = 10;                                                           00000860
  CALL MTRXED(VPRM,TEMP_NUM1,TEMP_NUM,4);                             00000870
END;                                                                  00000880
IF (BTM = 0) THEN DO;                                                 00000890
  VAR_INFO(1) = 'IS THE SATURATED THICKNESS FOR THE AREA CONSTANT ?';00000900
  VAR_INFO(2) =                                                       00000910
    '(A MATRIX IS NOT REQUIRED IF THE SATURATED THICKNESS';           00000920
END;                                                                  00000930
ELSE DO;                                                              00000940
  VAR_INFO(1) = 'IS THE BOTTOM ELEVATION FOR THE AREA CONSTANT ?';    00000950
  VAR_INFO(2) = '(A MATRIX IS NOT REQUIRED IF THE BOTTOM ELEVATION';  00000960
END;                                                                  00000970
VAR_INFO(3) = 'FOR THE AREA IS CONSTANT) (Y/N):';                     00000980
TYPE = ANSWER;                                                        00000990
REPLY = PARMGT();                                                     00001000
IF REPLY = 'Y' THEN DO;                                               00001010
  INPT_THCK = '0';                                                    00001020
  IF BTM = 0 THEN                                                     00001030
    VAR_INFO(1) =                                                     00001040
      'ENTER THE SATURATED THICKNESS FOR THE AREA (FEET).';           00001050
  ELSE                                                                00001060
    VAR_INFO(1) =                                                     00001070
      'ENTER THE BOTTOM ELEVATION FOR THE AREA (FEET).';              00001080
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                 00001090
  TYPE = REAL;                                                        00001100
  LEN = 10;                                                           00001110
  FACT_THCK = PARMGT();                                               00001120
END;                                                                  00001130
ELSE DO;                                                              00001140
  INPT_THCK = '1';                                                    00001150
  IF BTM = 0 THEN                                                     00001160
    VAR_INFO(1) = 'ENTER THE SATURATED THICKNESS MULTIPLIER.';         00001170
  ELSE                                                                00001180
    VAR_INFO(1) = 'ENTER THE BOTTOM ELEVATION MULTIPLIER.';           00001190
  VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                 00001200
  TYPE = REAL;                                                        00001210
  LEN = 10;                                                           00001220
  FACT_THCK = PARMGT();                                               00001230
  IF BTM = 0 THEN                                                     00001240
    VAR_INFO(1) = 'WHAT DO YOU WISH THE ENTIRE SATURATED THICKNESS ';00001250
  ELSE                                                                00001260
    VAR_INFO(1) = 'WHAT DO YOU WISH THE ENTIRE BOTTOM ELEVATION ';    00001270
  VAR_INFO(2) = 'MATRIX INITIALLY SET TO?';                           00001280
```

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

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

```
    LEN = 10;                                                          00002610
    FACT_CONC = PARMGT();                                              00002620
    VAR_INFO(1) = 'WHAT DO YOU WISH THE ENTIRE CONCENTRATION ';        00002630
    VAR_INFO(2) = 'MATRIX INITIALLY SET TO?';                          00002640
    VAR_INFO(3) = '(MAXIMUM LENGTH OF 4):';                            00002650
    TYPE = REAL;                                                       00002660
    LEN = 4;                                                           00002670
    REPLY = PARMGT();                                                  00002680
    DO I=1 TO TEMP_NUM1;                                               00002690
      DO J=1 TO TEMP_NUM;                                              00002700
        CONC(J,I) = REPLY;                                             00002710
      END;                                                             00002720
    END;                                                               00002730
    CALL MTRXED(CONC,TEMP_NUM1,TEMP_NUM,4);                            00002740
  END;                                                                 00002750
/*************************************************/                  00002760
/* %INCLUDE REQUIRES COMPLETE FILE NAME.         */                  00002770
%INCLUDE 'B:PARMGT.PLI';                                               00002780
/*************************************************/                  00002790
END;                                                                   00002800
```

APPENDIX I-B

EDITOR ROUTINES

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

 UPDATE: PROC;                                                          00000010
 /* CONTROLS EDITING OPERATIONS.  */                                    00000020
 /* SETS UP JCL FOR IBM 3081.     */                                    00000030
 /*********************************************************************/ 00000040
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.                          */   00000050
 %INCLUDE 'B:EXTVAR.PLI';                                               00000060
 /*********************************************************************/ 00000070
   DCL EDVAR                          ENTRY,                            00000080
       SUBFIL                         ENTRY,                            00000090
       EDMTRX                         ENTRY;                            00000100
   DCL INPUT                          ENTRY (CHAR(4),CHAR(80) VAR);     00000110
   OPEN FILE(SCREEN) STREAM OUTPUT TITLE('$CON');                       00000120
   OPEN FILE(CRT) INPUT TITLE('$CON');                                  00000130
   PUT FILE(SCREEN) EDIT('ENTER THE DATASET NAME TO BE MODIFIED',       00000140
       '(INCLUDE DRIVE IDENTIFIER):')(SKIP(3),A,SKIP,A);                00000150
   CALL INPUT('CHAR',FILENM);                                           00000160
   OPEN FILE(SYSUT4) STREAM INPUT TITLE(FILENM) LINESIZE(80);           00000170
   CALL EDFILE;                                                         00000180
   CALL EDJCL;                                                          00000190
   CALL EDVAR;                                                          00000200
   CALL EDMTRX;                                                         00000210
   OPEN FILE(SYSUT4) STREAM OUTPUT TITLE(FILENM) LINESIZE(80);          00000220
   CALL SUBFIL;                                                         00000230
   PUT FILE(SCREEN) EDIT('FILE MODIFIED:  ',FILENM)(SKIP,A,A);          00000240
 /*********************************************************************/ 00000250
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.                          */   00000260
 %INCLUDE 'B:EDFILE.PLI';                                               00000270
 %INCLUDE 'B:EDJCL.PLI';                                                00000280
 /*********************************************************************/ 00000290
 END;                                                                   00000300
```

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

 UPDATEM: PROC;                                                              00000010
 /* CONTROLS EDITING OPERATIONS.    */                                       00000020
 /* SETS UP JCL FOR MICROCOMPUTER. */                                       00000030
 /*****************************************************************/        00000040
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.                         */        00000050
 %INCLUDE 'B:EXTVAR.PLI';                                                   00000060
 /*****************************************************************/        00000070
   DCL EDVAR                          ENTRY,                               00000080
       SUBFILM                        ENTRY,                               00000090
       EDMTRX                         ENTRY;                               00000100
   DCL INPUT                          ENTRY (CHAR(4),CHAR(80) VAR);        00000110
   ON UNDEFINEDFILE(SYSUT4) BEGIN;                                          00000120
     PUT FILE(SCREEN) EDIT('FILE DOES NOT EXIST--PLEASE REENTER:')(A);      00000130
     GOTO GTFLNM;                                                           00000140
   END;                                                                     00000150
   OPEN FILE(SCREEN) STREAM OUTPUT TITLE('$CON');                           00000160
   OPEN FILE(CRT) INPUT TITLE('$CON');                                      00000170
   PUT FILE(SCREEN) EDIT('ENTER THE DATASET NAME TO BE MODIFIED',           00000180
       '(INCLUDE DRIVE IDENTIFIER):')(SKIP(3),A,SKIP,A);                    00000190
   GTFLNM:                                                                  00000200
   CALL INPUT('CHAR',FILENM);                                               00000210
   OPEN FILE(SYSUT4) STREAM INPUT TITLE(FILENM) LINESIZE(80);               00000220
   CALL EDFILEM;                                                            00000230
   CALL EDJCLM;                                                             00000240
   CALL EDVAR;                                                              00000250
   CALL EDMTRX;                                                             00000260
   OPEN FILE(SYSUT4) STREAM OUTPUT TITLE(FILENM) LINESIZE(80);              00000270
   CALL SUBFILM;                                                            00000280
   PUT FILE(SCREEN) EDIT('FILE MODIFIED:  ',FILENM)(SKIP,A,A);              00000290
 /*****************************************************************/        00000300
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.                         */        00000310
 %INCLUDE 'B:EDFILEM.PLI';                                                  00000320
 %INCLUDE 'B:EDJCLM.PLI';                                                   00000330
 /*****************************************************************/        00000340
 END;                                                                       00000350
```

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

 UPDATED: PROC;                                                              00000010
 /* CONTROLS EDITING OPERATIONS. */                                          00000020
 /* SETS UP JCL FOR DEC/VAX.     */                                          00000030
 /*****************************************************************/        00000040
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.                         */        00000050
 %INCLUDE 'B:EXTVAR.PLI';                                                    00000060
 /*****************************************************************/        00000070
   DCL EDVAR                          ENTRY,                                00000080
       SUBFILM                        ENTRY,                                00000090
       EDMTRX                         ENTRY;                                00000100
   DCL INPUT                          ENTRY (CHAR(4),CHAR(80) VAR);         00000110
   ON UNDEFINEDFILE(SYSUT4) BEGIN;                                           00000120
     PUT FILE(SCREEN) EDIT('FILE DOES NOT EXIST--PLEASE REENTER:')(A);       00000130
     GOTO GTFLNM;                                                          00000140
   END;                                                                      00000150
   OPEN FILE(SCREEN) STREAM OUTPUT TITLE('$CON');                            00000160
   OPEN FILE(CRT) INPUT TITLE('$CON');                                       00000170
   PUT FILE(SCREEN) EDIT('ENTER THE DATASET NAME TO BE MODIFIED:')           00000180
                        (SKIP,A);                                            00000190
   GTFLNM:                                                                   00000200
   CALL INPUT('CHAR',FILENM);                                                00000210
   OPEN FILE(SYSUT4) STREAM INPUT TITLE(FILENM) LINESIZE(80);                00000220
   CALL EDFILEM;                                                             00000230
   CALL EDJCLD;                                                              00000240
   CALL EDVAR;                                                               00000250
   CALL EDMTRX;                                                              00000260
   OPEN FILE(SYSUT4) STREAM OUTPUT TITLE(FILENM) LINESIZE(80);               00000270
   CALL SUBFILM;                                                             00000280
   PUT FILE(SCREEN) EDIT('FILE MODIFIED:  ',FILENM)(SKIP,A,A);               00000290
 /*****************************************************************/        00000300
 /* %INCLUDE REAQUIRES COMPLETE FILE NAME.                        */        00000310
 %INCLUDE 'B:EDFILEM.PLI';                                                   00000320
 %INCLUDE 'B:EDJCLD.PLI';                                                    00000330
 /*****************************************************************/        00000340
 END;                                                                        00000350
```

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

 EDFILE: PROC;                                                          00000010
 /* THE EDFILE SUBROUTINE IS USED TO READ THE FILE TO BE                00000020
    EDITED.  READS JCL FOR IBM 3081.  */                                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
```

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

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

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

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

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

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

 EDJCL: PROC ;                                                                  00000010
 /* THE EDJCL SUBROUTINE IS USED TO EDIT THE IBM 3081 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                                    (EDJCLM  )

 EDJCLM: PROC ;                                                          00000010
 /* THE EDJCL SUBROUTINE IS USED TO EDIT THE MICROCOMPUTER              00000020
    JCL FOR THE MODEL. */                                                00000030
   DCL ANSWER                          CHAR(80) VAR,                     00000040
       ANSWER1                         CHAR(80) VAR,                     00000050
       I,II                            FIXED BIN;                        00000060
   DCL INPUT                           ENTRY (CHAR(4),CHAR(80) VAR);     00000070
   ON UNDEFINEDFILE(JCLF) BEGIN;                                         00000090
     JCL(1)='A:KONIMOD B:FILE.LST,GF|| FILENM || 'B:FILE.GRF';           00000100
     GO TO EDITJCL;                                                      00000110
   END;                                                                  00000120
     I=LENGTH(FILENM);                                                   00000130
     DO WHILE ((SUBSTR(FILENM,I,1) ^= '.') & (I>0));                     00000140
       I=I-1;                                                            00000150
     END;                                                                00000160
     IF I=0 THEN ANSWER1=FILENM || '.BAT';                               00000170
     ELSE ANSWER1 = SUBSTR(FILENM,1,I) || 'BAT';                         00000180
     OPEN FILE(JCLF) STREAM INPUT TITLE(ANSWER1) LINESIZE(80);           00000190
     GET FILE(JCLF) EDIT(JCL(1)) (COL(1),A(80));                         00000200
     CLOSE FILE(JCLF);                                                   00000210
   EDITJCL:                                                              00000220
     ANSWER = 'Y';                                                       00000230
     DO WHILE (ANSWER = 'Y');                                            00000240
     PUT FILE(SCREEN) EDIT                                               00000250
       ('THE FOLLOWING IS THE JCL') (SKIP,A);                            00000260
     PUT FILE(SCREEN) EDIT (JCL(1)) (SKIP,A(72));                        00000270
     PUT FILE(SCREEN) EDIT                                               00000280
       ('DO YOU WISH TO CHANGE ANYTHING (Y/N) :') (SKIP,A);              00000290
     CALL INPUT('ANS',ANSWER);                                           00000300
     IF ANSWER = 'Y' THEN DO;                                            00000310
       PUT FILE(SCREEN) EDIT(JCL(1),'ENTER THE COMPLETE LINE . . .:')    00000320
         (SKIP,A(72),SKIP,A,SKIP,A);                                     00000330
       CALL INPUT('CHAR',JCL(1));                                        00000340
     END;                                                                00000350
   END;                                                                  00000360
   OPEN FILE(JCLF) STREAM OUTPUT TITLE(ANSWER1) LINESIZE(80);            00000370
   PUT FILE(JCLF) EDIT(JCL(1)) (COL(1),A(80));                           00000380
   CLOSE FILE(JCLF);                                                     00000390
 END;                                                                    00000400
```

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

 EDJCLD: PROC ;                                                                 00000010
 /* THE EDJCLD SUBROUTINE IS USED TO EDIT THE DEC/VAX 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
   ON UNDEFINEDFILE(JCLF) BEGIN;                                                00000100
     JCL(1)='$ DEFINE FOR005';                                                  00000110
     JCL(2)='$ DEFINE FOR006';                                                  00000120
     JCL(3)='$ DEFINE FOR010';                                                  00000130
     JCL(4)='$ RUN KONIMOD.EXE';                                                00000140
     GO TO EDITJCL;                                                             00000150
   END;                                                                         00000160
     I=LENGTH(FILENM);                                                          00000170
     DO WHILE ((SUBSTR(FILENM,I,1)¬= '.') & (I>0));                             00000180
       I=I-1;                                                                   00000190
     END;                                                                       00000200
     IF I=0 THEN ANSWER1=FILENM || '.COM';                                      00000210
     ELSE ANSWER1=SUBSTR(FILENM,1,I) || 'COM';                                  00000220
     OPEN FILE(JCLF) STREAM INPUT TITLE(ANSWER1) LINESIZE(80);                  00000230
     DO I=1 TO 4;                                                               00000240
       GET FILE(JCLF) EDIT(JCL(I)) (COL(1),A(80));                              00000250
     END;                                                                       00000260
     CLOSE FILE(JCLF);                                                          00000270
   EDITJCL:                                                                     00000280
     ANSWER = 'Y';                                                              00000290
     DO WHILE(ANSWER = 'Y');                                                    00000300
     PUT FILE(SCREEN) EDIT                                                      00000310
       ('THE FOLLOWING IS THE JCL') (SKIP,A);                                   00000320
     DO I=1 TO 4 ;                                                              00000330
       PUT FILE(SCREEN) EDIT                                                    00000340
         ('  ',I,') ',JCL(I)) (SKIP,A,F(2),A,A(80));                            00000350
     END;                                                                       00000360
     PUT FILE(SCREEN) EDIT                                                      00000370
       ('DO YOU WISH TO CHANGE ANYTHING (Y/N) :') (SKIP,A);                     00000380
     CALL INPUT('ANS',ANSWER);                                                  00000390
     IF ANSWER = 'Y' THEN DO;                                                   00000400
       PUT FILE(SCREEN) EDIT                                                    00000410
         ('ENTER THE NUMBER OF THE LINE YOU WISH TO CHANGE.',                   00000420
          '(ONLY ONE AT A TIME):') (A,SKIP,A);                                  00000430
       CALL INPUTR('INT',ANSWER1,1,4);                                          00000440
       I=DBLANK(ANSWER1);                                                       00000450
       PUT FILE(SCREEN) EDIT(JCL(I),'ENTER THE COMPLETE LINE . . .:')           00000460
         (SKIP,A(80),SKIP,A,SKIP,A);                                            00000470
       CALL INPUT('CHAR',JCL(I));                                               00000480
     END;                                                                       00000490
   END;                                                                         00000500
 END;                                                                           00000510
```

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

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

```
  TYPE = INTEGER;                                                          00000630
  NX = PARMGT();                                                           00000640
END;                                                                       00000650
VAR_INFO(1) = 'NY = ' || NY ;                                              00000660
VAR_INFO(2) = 'MINIMUM OF 3, MAXIMUM OF '||NY_LMT||'.';                    00000670
VAR_INFO(3) = 'CHANGE (Y/N):';                                             00000680
TYPE = ANSWER;                                                             00000690
LEN = 1;                                                                   00000700
TEMPC = PARMGT();                                                          00000710
IF TEMPC = 'Y' THEN DO;                                                    00000720
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                       00000730
  LOWER_RANGE = 3;                                                         00000740
  UPPER_RANGE = NY_LMT;                                                    00000750
  LEN = 4;                                                                 00000760
  TYPE = INTEGER;                                                          00000770
  NY = PARMGT();                                                           00000780
END;                                                                       00000790
VAR_INFO(1) = 'NPMAX = ' || NPMAX ;                                        00000800
VAR_INFO(2) = 'MAXIMUM OF 3200.';                                          00000810
VAR_INFO(3) = 'CHANGE (Y/N):';                                             00000820
TYPE = ANSWER;                                                             00000830
LEN = 1;                                                                   00000840
TEMPC = PARMGT();                                                          00000850
IF TEMPC = 'Y' THEN DO;                                                    00000860
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                       00000870
  LEN = 4;                                                                 00000880
  TYPE = INTEGER;                                                          00000890
  UPPER_RANGE = 3200;                                                      00000900
  NPMAX = PARMGT();                                                        00000910
END;                                                                       00000920
VAR_INFO(1) = 'NPTPND = ' || NPTPND ;                                      00000930
VAR_INFO(2) = 'OPTIONS = 4,5,8,9:';                                        00000940
VAR_INFO(3) = 'CHANGE (Y/N):';                                             00000950
TYPE = ANSWER;                                                             00000960
LEN = 1;                                                                   00000970
TEMPC = PARMGT();                                                          00000980
IF TEMPC = 'Y' THEN DO;                                                    00000990
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                       00001000
  LEN = 4;                                                                 00001010
  TYPE = INTEGER;                                                          00001020
  NPTPND = PARMGT();                                                       00001030
END;                                                                       00001040
VAR_INFO(1) = 'NUMOBS = ' || NUMOBS ;                                      00001050
VAR_INFO(2) = 'MAXIMUM OF '||OBS_LMT||'.';                                 00001060
VAR_INFO(3) = 'CHANGE (Y/N):';                                             00001070
TYPE = ANSWER;                                                             00001080
LEN = 1;                                                                   00001090
TEMPC = PARMGT();                                                          00001100
OLDNUM = NUMOBS;                                                           00001110
IF TEMPC = 'Y' THEN DO;                                                    00001120
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                       00001130
  LEN = 4;                                                                 00001140
  TYPE = INTEGER;                                                          00001150
  UPPER_RANGE = OBS_LMT;                                                   00001160
  NUMOBS = PARMGT();                                                       00001170
END;                                                                       00001180
NUMBER1 = NUMOBS;                                                          00001190
IF NUMBER1 > OLDNUM THEN DO;                                               00001200
  COUNTER = OLDNUM;                                                        00001210
  DO WHILE(COUNTER < NUMBER1);                                             00001220
    COUNTER = COUNTER + 1;                                                 00001230
    TEMPC = COUNTER;                                                       00001240
    TEMPC = DBLANK(TEMPC);                                                 00001250
    VAR_INFO(1) =                                                          00001260
      'ENTER THE "X" COORDINATE OF OBSERVATION POINT '||TEMPC||'.';        00001270
    VAR_INFO(2) = 'VARIABLE "IXOBS(' || TEMPC || ')" :' ;                  00001280
```

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

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

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

```
IF TEMPC = 'Y' THEN DO;                                                    00003270
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                       00003280
  LEN = 5;                                                                 00003290
  TYPE = REAL;                                                             00003300
  S = PARMGT();                                                            00003310
END;                                                                       00003320
VAR_INFO(1) = 'NPMP = ' || NPMP ;                                          00003330
VAR_INFO(2) = 'MAXIMUM OF '||PMP_LMT||'.';                                 00003340
VAR_INFO(3) = 'CHANGE (Y/N):';                                             00003350
TYPE = ANSWER;                                                             00003360
LEN = 1;                                                                   00003370
TEMPC = PARMGT();                                                          00003380
IF TEMPC = 'Y' THEN DO;                                                    00003390
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                       00003400
  UPPER_RANGE = PMP_LMT;                                                   00003410
  LEN = 4;                                                                 00003420
  TYPE = INTEGER;                                                          00003430
  NPMP = PARMGT() ;                                                        00003440
END;                                                                       00003450
COUNTER1 = 1;                                                              00003460
NUMBER2 = NPMP;                                                            00003470
DO WHILE(COUNTER1 = 1 | COUNTER1 <= NUMBER2 );                             00003480
  PMP = COUNTER1;                                                          00003490
  PMP = DBLANK(PMP);                                                       00003500
  IF COUNTER1 > 1 THEN DO;                                                 00003510
    VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                               00003520
    VAR_INFO(2) = 'ICHK = ' || ICHK(COUNTER1-1);                           00003530
    VAR_INFO(3) = 'CHANGE (Y/N):';                                         00003540
    LEN = 1;                                                               00003550
    TYPE = ANSWER;                                                         00003560
    TEMPC = PARMGT();                                                      00003570
    TEMPCC = ICHK(COUNTER1-1);                                             00003580
    IF TEMPC = 'Y' THEN DO;                                                00003590
      VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                   00003600
      TYPE = INTEGER;                                                      00003610
      ICHK(COUNTER1 - 1) = PARMGT();                                       00003620
    END;                                                                   00003630
    IF TEMPCC = '0' /* | TEMPCC = ''*/  THEN DO;                          00003640
      NTIM(COUNTER1)='   0';                                               00003650
      NPNT(COUNTER1)='   0';                                               00003660
      NITP(COUNTER1)='   0';                                               00003670
      ITMAX(COUNTER1)='   0';                                              00003680
      NREC(COUNTER1)='   0';                                               00003690
      NPNTMV(COUNTER1)='   0';                                            00003700
      NPNTVL(COUNTER1)='   0';                                            00003710
      NPNTD(COUNTER1)='   0';                                             00003720
      NPDELC(COUNTER1)='   0';                                            00003730
      NPNCHV(COUNTER1)='   0';                                            00003740
      PINT(COUNTER1)='   0.';                                             00003750
      TIMX(COUNTER1)='   0.';                                             00003760
      TINIT(COUNTER1)='   0.';                                            00003770
    END;                                                                   00003780
  END;                                                                     00003790
  IF COUNTER1 = 1  | ICHK(COUNTER1 - 1) = '1' THEN DO;                     00003800
    VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                               00003810
    VAR_INFO(2) = 'NTIM = ' || NTIM(COUNTER1) ;                            00003820
    VAR_INFO(3) = 'CHANGE (Y/N):';                                         00003830
    LEN = 1;                                                               00003840
    TYPE = ANSWER;                                                         00003850
    TEMPC = PARMGT();                                                      00003860
    IF TEMPC = 'Y' THEN DO;                                                00003870
      VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                   00003880
      UPPER_RANGE = 100;                                                   00003890
      LEN = 4;                                                             00003900
      TYPE = INTEGER;                                                      00003910
      NTIM(COUNTER1) = PARMGT();                                           00003920
```

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

```
TYPE = ANSWER;                                                    00004590
TEMPC = PARMGT();                                                 00004600
IF TEMPC = 'Y' THEN DO;                                           00004610
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                              00004620
  LEN = 4;                                                        00004630
  TYPE = INTEGER;                                                 00004640
  UPPER_RANGE = 2;                                                00004650
  NPNTD(COUNTER1) = PARMGT();                                     00004660
END;                                                              00004670
VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                          00004680
VAR_INFO(2) = 'NPDELC = ' || NPDELC(COUNTER1) ;                   00004690
VAR_INFO(3) = 'CHANGE (Y/N):';                                    00004700
LEN = 1;                                                          00004710
TYPE = ANSWER;                                                    00004720
TEMPC = PARMGT();                                                 00004730
IF TEMPC = 'Y' THEN DO;                                           00004740
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                              00004750
  LEN = 4;                                                        00004760
  TYPE = INTEGER;                                                 00004770
  UPPER_RANGE = 1;                                                00004780
  NPDELC(COUNTER1) = PARMGT();                                    00004790
END;                                                              00004800
VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                          00004810
VAR_INFO(2) = 'NPNCHV = ' || NPNCHV(COUNTER1) ;                   00004820
VAR_INFO(3) = 'CHANGE (Y/N):';                                    00004830
LEN = 1;                                                          00004840
TYPE = ANSWER;                                                    00004850
TEMPC = PARMGT();                                                 00004860
IF TEMPC = 'Y' THEN DO;                                           00004870
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                              00004880
  LEN = 4;                                                        00004890
  TYPE = INTEGER;                                                 00004900
  UPPER_RANGE = 2;                                                00004910
  NPNCHV(COUNTER1) = PARMGT();                                    00004920
END;                                                              00004930
VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                          00004940
VAR_INFO(2) = 'PINT = ' || PINT(COUNTER1) ;                       00004950
VAR_INFO(3) = 'CHANGE (Y/N):';                                    00004960
LEN = 1;                                                          00004970
TYPE = ANSWER;                                                    00004980
TEMPC = PARMGT();                                                 00004990
IF TEMPC = 'Y' THEN DO;                                           00005000
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                              00005010
  TYPE = REAL;                                                    00005020
  LEN = 5;                                                        00005030
  PINT(COUNTER1) = PARMGT();                                      00005040
END;                                                              00005050
NUMBER1 = S;                                                      00005060
IF NUMBER1 ¬= 0 THEN DO;                                          00005070
  VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                        00005080
  VAR_INFO(2) = 'TIMX = ' || TIMX(COUNTER1) ;                     00005090
  VAR_INFO(3) = 'NOTE: MUST BE NONZERO.' ;                        00005100
  VAR_INFO(4) = 'CHANGE (Y/N):';                                  00005110
  LEN = 1;                                                        00005120
  TYPE = ANSWER;                                                  00005130
  TEMPC = PARMGT();                                               00005140
  IF TEMPC = 'Y' THEN DO;                                         00005150
    VAR_INFO(1) = 'ENTER NEW VALUE:' ;                            00005160
    TYPE = REAL;                                                  00005170
    LEN = 5;                                                      00005180
    TIMX(COUNTER1) = PARMGT();                                    00005190
  END;                                                            00005200
  VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                        00005210
  VAR_INFO(2) = 'TINIT = ' || TINIT(COUNTER1) ;                   00005220
  VAR_INFO(3) = 'NOTE: MUST BE NONZERO.' ;                        00005230
  VAR_INFO(4) = 'CHANGE (Y/N):';                                  00005240
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```
  LEN = 1;                                                              00005250
  TYPE = ANSWER;                                                        00005260
  TEMPC = PARMGT();                                                     00005270
  IF TEMPC = 'Y' THEN DO;                                               00005280
    VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                  00005290
    TYPE = REAL;                                                        00005300
    LEN = 5;                                                            00005310
    TINIT(COUNTER1) = PARMGT();                                         00005320
  END;                                                                  00005330
END;                                                                    00005340
ELSE DO;                                                                00005350
  TIMX(COUNTER1) = '   0';                                            00005360
  TINIT(COUNTER1) = '    0';                                           00005370
END;                                                                    00005380
VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                                00005390
VAR_INFO(2) = 'NREC = ' || NREC(COUNTER1) ;                             00005400
VAR_INFO(3) = 'MAXIMUM OF '||NR_LMT||'.';                               00005410
VAR_INFO(4) = 'CHANGE (Y/N):';                                          00005420
LEN = 1;                                                                00005430
TYPE = ANSWER;                                                          00005440
TEMPC = PARMGT();                                                       00005450
OLDNUM = NREC(COUNTER1);                                                00005460
IF TEMPC = 'Y' THEN DO;                                                 00005470
  VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                    00005480
  UPPER_RANGE = NR_LMT;                                                 00005490
  LEN = 4;                                                              00005500
  TYPE = INTEGER;                                                       00005510
  NREC(COUNTER1) = PARMGT();                                            00005520
END;                                                                    00005530
NUMBER1 = NREC(COUNTER1);                                               00005540
IF NUMBER1 > OLDNUM THEN DO;                                            00005550
  COUNTER = OLDNUM;                                                     00005560
  DO WHILE(COUNTER < NUMBER1);                                          00005570
    COUNTER = COUNTER + 1;                                              00005580
    TEMPC = COUNTER;                                                    00005590
    TEMPC = DBLANK(TEMPC);                                              00005600
    VAR_INFO(1) =                                                       00005610
    'ENTER THE X COORDINATE OF PUMPING OR INJECTION WELL '              00005620
    || TEMPC || '.' ;                                                   00005630
    VAR_INFO(2) = 'VARIABLE "IX(' || TEMPC || ')" :';                   00005640
    LEN = 2;                                                            00005650
    TYPE = INTEGER;                                                     00005660
    IX(COUNTER1,COUNTER) = PARMGT();                                    00005670
    VAR_INFO(1) =                                                       00005680
    'ENTER THE Y COORDINATE OF THE PUMPING OR INJECTION WELL '          00005690
     ||TEMPC|| '.' ;                                                    00005700
    VAR_INFO(2) = 'VARIABLE "IY(' || TEMPC || ')" :';                   00005710
    IY(COUNTER1,COUNTER) = PARMGT();                                    00005720
    VAR_INFO(1) =                                                       00005730
    'ENTER THE RATE (FT**3/SEC) FOR WELL ' ||TEMPC||'.';                00005740
    VAR_INFO(2) =                                                       00005750
          'POSITIVE FOR PUMPING, NEGATIVE FOR INJECTION.';              00005760
    VAR_INFO(3) = 'MAXIMUM LENGTH OF 8, REAL NUMBER.';                  00005770
    VAR_INFO(4) = 'NOTE:  FT**3/SEC = GAL/MIN * 0.0022278';             00005780
    VAR_INFO(5) = 'VARIABLE "REC(' || TEMPC || ')" :';                  00005790
    TYPE = REAL;                                                        00005800
    LEN = 8;                                                            00005810
    REC(COUNTER1,COUNTER) = PARMGT();                                   00005820
    TEMPN = REC(COUNTER1,COUNTER);                                      00005830
    IF TEMPN < 0 THEN DO;                                               00005840
      VAR_INFO(1) = 'ENTER THE CONCENTRATION OF THE INJECTED';          00005850
      VAR_INFO(2) = 'FLUID (MG/L) FOR WELL ' ||TEMPC|| '.';             00005860
      VAR_INFO(3) = 'MAXIMUM LENGTH OF 8, REAL NUMBER.';                00005870
      VAR_INFO(4) = 'VARIABLE "CNRECH(' || TEMPC || ')" :';             00005880
      TYPE = REAL;                                                      00005890
      LEN = 8;                                                          00005900
```

```
      CNRECH(COUNTER1,COUNTER) = PARMGT();                              00005910
    END;                                                                00005920
    ELSE CNRECH(COUNTER1,COUNTER) = '     0.0';                         00005930
  END;                                                                  00005940
END;                                                                    00005950
DO WHILE((OLDNUM > -1) & (NUMBER1 > 0));                                00005960
  COUNTER = 0;                                                          00005970
  PUT FILE(SCREEN) EDIT('PUMPING/INJECTION WELLS')(X(7),A);             00005980
  PUT FILE(SCREEN) EDIT                                                 00005990
  ('  WELL#     X     Y     REC     CNRECH')                           00006000
  (SKIP,A);                                                             00006010
  DO WHILE(COUNTER < NUMBER1);                                          00006020
    COUNTER = COUNTER + 1;                                              00006030
    IF OLDNUM < COUNTER THEN PUT FILE(SCREEN)                           00006040
        EDIT('NEW')(SKIP,A);                                            00006050
    PUT FILE(SCREEN) EDIT(COUNTER,IX(COUNTER1,COUNTER),                 00006060
    IY(COUNTER1,COUNTER),REC(COUNTER1,COUNTER),                         00006070
    CNRECH(COUNTER1,COUNTER))(SKIP,X(4),F(2),X(1),2(X(4),A(2)),         00006080
                              A(10),X(1),A(10));                        00006090
  END;                                                                  00006100
  VAR_INFO(1) = 'ENTER WELL NUMBER (OR 0 TO CONTINUE):';                00006110
  LEN = 2;                                                              00006120
  TYPE = INTEGER;                                                       00006130
  TEMPCC = PARMGT();                                                    00006140
  COUNTER = TEMPCC;                                                     00006150
    IF COUNTER > 0 THEN DO;                                             00006160
    VAR_INFO(1) = 'PUMPING PERIOD ' || PMP ;                            00006170
    VAR_INFO(2) =                                                       00006180
    'IX(' || TEMPCC || ') = ' || IX(COUNTER1,COUNTER) ;                 00006190
    VAR_INFO(3) = 'CHANGE (Y/N):';                                      00006200
    LEN = 1;                                                            00006210
    TYPE = ANSWER;                                                      00006220
    TEMPC = PARMGT();                                                   00006230
    IF TEMPC = 'Y' THEN DO;                                             00006240
      VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                00006250
      LEN = 2;                                                          00006260
      TYPE = INTEGER;                                                   00006270
      IX(COUNTER1,COUNTER) = PARMGT();                                  00006280
    END;                                                                00006290
    VAR_INFO(1) =                                                       00006300
    'IY(' || TEMPCC || ') = ' || IY(COUNTER1,COUNTER) ;                 00006310
    VAR_INFO(2) = 'CHANGE (Y/N):';                                      00006320
    LEN = 1;                                                            00006330
    TYPE = ANSWER;                                                      00006340
    TEMPC = PARMGT();                                                   00006350
    IF TEMPC = 'Y' THEN DO;                                             00006360
      VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                00006370
      LEN = 2;                                                          00006380
      TYPE = INTEGER;                                                   00006390
      IY(COUNTER1,COUNTER) = PARMGT();                                  00006400
    END;                                                                00006410
    VAR_INFO(1) =                                                       00006420
    'REC(' || TEMPCC || ') = ' || REC(COUNTER1,COUNTER) ;               00006430
    VAR_INFO(2) = 'CHANGE (Y/N):';                                      00006440
    LEN = 1;                                                            00006450
    TYPE = ANSWER;                                                      00006460
    TEMPC = PARMGT();                                                   00006470
    IF TEMPC = 'Y' THEN DO;                                             00006480
      VAR_INFO(1) = 'ENTER NEW VALUE:' ;                                00006490
      TYPE = REAL;                                                      00006500
      LEN = 8;                                                          00006510
      REC(COUNTER1,COUNTER) = PARMGT();                                 00006520
    END;                                                                00006530
    TEMPN = REC(COUNTER1,COUNTER);                                      00006540
    IF TEMPN < 0 THEN DO;                                               00006550
      VAR_INFO(1) =                                                     00006560
```

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

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

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

```
    IF TEMPC='Y' THEN DO;                                          00008550
      LEN =10;                                                     00008560
      VAR_INFO(1) = 'ENTER NEW VALUE:';                            00008570
      TYPE = REAL;                                                 00008580
      SORBST = PARMGT();                                           00008590
    END;                                                           00008600
  END;                                                             00008610
  IF (NSORB = '    3') THEN DO;                                    00008620
    VAR_INFO(1) = 'SORBAL = ' || SORBAL ;                          00008630
    VAR_INFO(2) = 'CHANGE (Y/N):';                                 00008640
    LEN=1;                                                         00008650
    TYPE=ANSWER;                                                   00008660
    TEMPC=PARMGT();                                                00008670
    IF TEMPC='Y' THEN DO;                                          00008680
      LEN =10;                                                     00008690
      VAR_INFO(1) = 'ENTER NEW VALUE:';                            00008700
      TYPE = REAL;                                                 00008710
      SORBAL = PARMGT();                                           00008720
    END;                                                           00008730
  END;                                                             00008740
END;                                                               00008750
VAR_INFO(1) = 'ISOLV = ' || ISOLV ;                                00008760
VAR_INFO(2) = 'CHANGE (Y/N):';                                     00008770
LEN=1;                                                             00008780
TYPE=ANSWER;                                                       00008790
TEMPC=PARMGT();                                                    00008800
IF TEMPC='Y' THEN DO;                                              00008810
  LEN = 4;                                                         00008820
  VAR_INFO(1) = 'ENTER NEW VALUE:';                                00008830
  TYPE = INTEGER;                                                  00008840
  ISOLV=PARMGT();                                                  00008850
END;                                                               00008860
VAR_INFO(1) = 'IHEAD = ' || IHEAD ;                                00008870
VAR_INFO(2) = 'CHANGE (Y/N):';                                     00008880
LEN=1;                                                             00008890
TYPE=ANSWER;                                                       00008900
TEMPC=PARMGT();                                                    00008910
IF TEMPC='Y' THEN DO;                                              00008920
  VAR_INFO(1) = 'ENTER NEW VALUE:';                                00008930
  LEN = 4;                                                         00008940
  TYPE = INTEGER;                                                  00008950
  IHEAD=PARMGT();                                                  00008960
END;                                                               00008970
VAR_INFO(1) = 'FCON = ' || FCON ;                                  00008980
VAR_INFO(2) = 'CHANGE (Y/N):';                                     00008990
LEN=1;                                                             00009000
TYPE=ANSWER;                                                       00009010
TEMPC=PARMGT();                                                    00009020
IF TEMPC='Y' THEN DO;                                              00009030
  VAR_INFO(1) = 'ENTER NEW VALUE:';                                00009040
  LEN = 4;                                                         00009050
  TYPE = INTEGER;                                                  00009060
  FCON=PARMGT();                                                   00009070
END;                                                               00009080
VAR_INFO(1) = 'TP = ' || TP ;                                      00009090
VAR_INFO(2) = 'CHANGE (Y/N):';                                     00009100
LEN=1;                                                             00009110
TYPE=ANSWER;                                                       00009120
TEMPC=PARMGT();                                                    00009130
IF TEMPC='Y' THEN DO;                                              00009140
  LEN = 4;                                                         00009150
  VAR_INFO(1) = 'ENTER NEW VALUE:';                                00009160
  TYPE = INTEGER;                                                  00009170
  TP=PARMGT();                                                     00009180
END;                                                               00009190
IF (FCON = '    1') THEN DO;                                       00009200
```

```
    VAR_INFO(1) = 'BTM = ' || BTM ;                                    00009210
    VAR_INFO(2) = 'CHANGE (Y/N):';                                     00009220
    LEN=1;                                                             00009230
    TYPE=ANSWER;                                                       00009240
    TEMPC=PARMGT();                                                    00009250
    IF TEMPC='Y' THEN DO;                                              00009260
      LEN = 4;                                                         00009270
      VAR_INFO(1) = 'ENTER NEW VALUE:';                                00009280
      TYPE = INTEGER;                                                  00009290
      BTM=PARMGT();                                                    00009300
    END;                                                               00009310
  END;                                                                 00009320
  ELSE BTM = '   0';                                                   00009330
/*************************************************/                  00009340
/* %INCLUDE REQUIRES COMPLETE FILE NAME.         */                  00009350
%INCLUDE 'B:PARMGT.PLI';                                               00009360
/*************************************************/                  00009370
NDVAR: END;                                                            00009380
```

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

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

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

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

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

```
    TYPE = REAL;                                                          00002610
    LEN = 10;                                                             00002620
    FACT_WT = PARMGT();                                                   00002630
  END;                                                                    00002640
  ELSE DO;                                                                00002650
    VAR_INFO(1) = 'POTENTIOMETRIC HEAD MULTIPLIER = ' || FACT_WT;         00002660
    VAR_INFO(2) = 'CHANGE (Y/N):';                                        00002670
    TYPE = ANSWER;                                                        00002680
    REPLY = PARMGT();                                                     00002690
    IF REPLY = 'Y' THEN DO;                                               00002700
      VAR_INFO(1) = 'ENTER NEW VALUE:';                                   00002710
      TYPE = REAL;                                                        00002720
      LEN = 10;                                                           00002730
      FACT_WT = PARMGT();                                                 00002740
    END;                                                                  00002750
    VAR_INFO(1) = 'DISPLAY THE MATRIX FOR POSSIBLE CHANGE (Y/N):';        00002760
    TYPE = ANSWER;                                                        00002770
    REPLY = PARMGT();                                                     00002780
    IF REPLY = 'Y' THEN CALL MTRXED(WT,TEMP_NUM1,TEMP_NUM,4);             00002790
  END;                                                                    00002800
END;                                                                      00002810
IF (INPT_RECH = '0') THEN DO;                                             00002820
  VAR_INFO(1) = 'THE RECHARGE FOR THE AREA IS CONSTANT.';                 00002830
  VAR_INFO(2) = 'CHANGE TO MATRIX (Y/N):';                                00002840
  TYPE = ANSWER;                                                          00002850
  REPLY = PARMGT();                                                       00002860
  IF REPLY = 'N' THEN DO;                                                 00002870
    VAR_INFO(1) = 'RECHARGE = ' || FACT_RECH;                             00002880
    VAR_INFO(2) = 'CHANGE (Y/N):';                                        00002890
    TYPE = ANSWER;                                                        00002900
    REPLY = PARMGT();                                                     00002910
    IF REPLY = 'Y' THEN DO;                                               00002920
      VAR_INFO(1) = 'ENTER NEW VALUE:';                                   00002930
      TYPE = REAL;                                                        00002940
      LEN = 10;                                                           00002950
      FACT_RECH = PARMGT();                                               00002960
    END;                                                                  00002970
  END;                                                                    00002980
  ELSE DO;                                                                00002990
    INPT_RECH = '1';                                                      00003000
    VAR_INFO(1) = 'ENTER THE RECHARGE MULTIPLIER.';                       00003010
    VAR_INFO(2) = 'RECHARGE SHOULD BE NEGATIVE AND INCLUDE E-T.';         00003020
    VAR_INFO(3) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                   00003030
    TYPE = REAL;                                                          00003040
    LEN = 10;                                                             00003050
    FACT_RECH = PARMGT();                                                 00003060
    VAR_INFO(1) = 'WHAT DO YOU WISH THE ENTIRE RECHARGE ';                00003070
    VAR_INFO(2) = 'MATRIX INITIALLY SET TO?';                             00003080
    VAR_INFO(3) = '(MAXIMUM LENGTH OF 4):';                               00003090
    TYPE = REAL;                                                          00003100
    LEN = 4;                                                              00003110
    REPLY = PARMGT();                                                     00003120
    DO I = 1 TO NX;                                                       00003130
      DO J = 1 TO NY;                                                     00003140
        RECH(J,I) = REPLY;                                                00003150
      END;                                                                00003160
    END;                                                                  00003170
    CALL MTRXED(RECH,TEMP_NUM1,TEMP_NUM,4);                               00003180
  END;                                                                    00003190
END;                                                                      00003200
ELSE DO;                                                                  00003210
  VAR_INFO(1) = 'THE RECHARGE FOR THE AREA IS A MATRIX.';                 00003220
  VAR_INFO(2) = 'CHANGE TO CONSTANT (Y/N):';                              00003230
  TYPE = ANSWER;                                                          00003240
  REPLY = PARMGT();                                                       00003250
  IF REPLY = 'Y' THEN DO;                                                 00003260
```

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

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

```
  END;                                                                    00004590
  ELSE DO;                                                                00004600
    VAR_INFO(1) = 'THE CONCENTRATION FOR THE AREA IS A MATRIX.';          00004610
    VAR_INFO(2) = 'CHANGE TO CONSTANT (Y/N):';                            00004620
    TYPE = ANSWER;                                                        00004630
    REPLY = PARMGT();                                                     00004640
    IF REPLY = 'Y' THEN DO;                                               00004650
      INPT_CONC = 'O';                                                    00004660
      VAR_INFO(1) =                                                       00004670
        'ENTER THE CONCENTRATION FOR THE AREA.';                          00004680
      VAR_INFO(2) = 'MAXIMUM LENGTH OF 10, REAL NUMBER:';                 00004690
      TYPE = REAL;                                                        00004700
      LEN = 10;                                                           00004710
      FACT_CONC = PARMGT();                                               00004720
    END;                                                                  00004730
    ELSE DO;                                                              00004740
      VAR_INFO(1) = 'CONCENTRATION MULTIPLIER = ' || FACT_CONC;           00004750
      VAR_INFO(2) = 'CHANGE (Y/N):';                                      00004760
      TYPE = ANSWER;                                                      00004770
      REPLY = PARMGT();                                                   00004780
      IF REPLY = 'Y' THEN DO;                                             00004790
        VAR_INFO(1) = 'ENTER NEW VALUE:';                                 00004800
        TYPE = REAL;                                                      00004810
        LEN = 10;                                                         00004820
        FACT_CONC = PARMGT();                                             00004830
      END;                                                                00004840
      VAR_INFO(1) = 'DISPLAY THE MATRIX FOR POSSIBLE CHANGE (Y/N):';      00004850
      TYPE = ANSWER;                                                      00004860
      REPLY = PARMGT();                                                   00004870
      IF REPLY = 'Y' THEN CALL MTRXED(CONC,TEMP_NUM1,TEMP_NUM,4);         00004880
    END;                                                                  00004890
  END;                                                                    00004900
/*************************************************/                     00004910
/* %INCLUDE REQUIRES COMPLETE FILE NAME.         */                     00004920
%INCLUDE 'B:PARMGT.PLI';                                                  00004930
/*************************************************/                     00004940
NDMAT: END;                                                               00004950
```

APPENDIX I-C

UTILITY ROUTINES

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

 DATATP: PROC(STRING,TYPE);                                                    00000010
  /* THE DATATYP SUBROUTINE USES A FSA TO DETERMINE THE                       00000020
     TYPE OF DATA PASSED TO THE SUBROUTINE (USE WITH ASCII DATA).             00000030
     RENAME TO "ASCII" IF USING EBCDIC.                                       00000040
  */                                                                          00000050
   DCL STRING                          CHAR(80) VAR,                          00000060
       TYPE                            CHAR(4),                               00000070
       TEMPSTR                         CHAR(128) VAR,                         00000080
       TRANSSTR                        CHAR(128) VAR,                         00000090
       LEVEL                           FIXED BIN,                             00000100
       COL                             FIXED BIN,                             00000110
       I                               FIXED BIN,                             00000120
       J                               FIXED BIN,                             00000130
       F_S_A(13,9)                     FIXED BIN STATIC INIT(                 00000140
             /* 1   2   3   4   5   6   7   8   9 */                          00000150
             /*A-Z,0-9, . ,+/-, Y , E , S , N , 0 */                          00000160
    /* 1  */    99, 2 , 3 , 8 , 9 , 99, 99, 12, 99, /*99 = CHARACTER*/       00000170
    /* 2  */    99, 2 , 3 , 99, 99, 99, 99, 99, 99, /* 2 = INTEGER  */       00000180
    /* 3  */    99, 3 , 99, 99, 99, 4 , 99, 99, 99, /* 3 = REAL     */       00000190
    /* 4  */    99, 5 , 99, 7 , 99, 99, 99, 99, 99, /* 4 = CHARACTER*/       00000200
    /* 5  */    99, 6 , 99, 99, 99, 99, 99, 99, 99, /* 5 = REAL EXP */       00000210
    /* 6  */    99, 99, 99, 99, 99, 99, 99, 99, 99, /* 6 = REAL EXP */       00000220
    /* 7  */    99, 5 , 99, 99, 99, 99, 99, 99, 99, /* 7 = CHARACTER*/       00000230
    /* 8  */    99, 2 , 3 , 99, 99, 99, 99, 99, 99, /* 8 = CHARACTER*/       00000240
    /* 9  */    99, 99, 99, 99, 99, 10, 99, 99, 99, /* 9 = YES      */       00000250
    /* 10 */    99, 99, 99, 99, 99, 99, 11, 99, 99, /*10 = CHARACTER*/       00000260
    /* 11 */    99, 99, 99, 99, 99, 99, 99, 99, 99, /*11 = YES      */       00000270
    /* 12 */    99, 99, 99, 99, 99, 99, 99, 99, 13, /*12 = NO       */       00000280
    /* 13 */    99, 99, 99, 99, 99, 99, 99, 99, 99);/*13 = NO       */       00000290
   TRANSSTR = '1111111111'||'1111111111'||'1111111111'||'1111111111';         00000300
   TRANSSTR = TRANSSTR ||'1141431'||'2222222222'||'1111111111';               00000310
   TRANSSTR = TRANSSTR ||'6'||'11111111'||'89111'||'7111115';                 00000320
   TRANSSTR = TRANSSTR ||'1111111111'||'1111111111'||'1111111111';           00000330
   TRANSSTR = TRANSSTR ||'11111111';                                          00000340
   TEMPSTR  = TRANSLATE(STRING,TRANSSTR);                                     00000350
   LEVEL=1;                                                                   00000360
   J = LENGTH(TEMPSTR);                                                       00000370
   DO I=1 TO J;                                                               00000380
     COL = SUBSTR(TEMPSTR,I,1);                                               00000390
     LEVEL = F_S_A(LEVEL,COL);                                                00000400
     IF LEVEL = 99 THEN GO TO LV;                                             00000410
   END;                                                                       00000420
 LV:                                                                          00000430
   IF LEVEL=99 | LEVEL=1 | LEVEL=4 | LEVEL=7 | LEVEL=8 | LEVEL=10            00000440
     THEN TYPE = 'CHAR';                                                      00000450
   ELSE IF LEVEL=3 | LEVEL=5 | LEVEL=6 THEN TYPE = 'REAL';                    00000460
   ELSE IF LEVEL=2 THEN TYPE = 'INT ';                                        00000470
   ELSE IF LEVEL=9 | LEVEL=11 | LEVEL=12 | LEVEL=13 THEN TYPE = 'ANS ';      00000480
   ELSE SIGNAL ERROR;                                                         00000490
 END;                                                                         00000500
```

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

 EBCDIC:PROC(STRING,TYPE);                                                      00000010
 /* THIS SUBROUTINE USES A FSA TO DETERMINE THE                                00000020
    TYPE OF DATA PASSED TO THE SUBROUTINE (USE WITH EBCDIC DATA).               00000030
    RENAME TO "DATATP" BEFOR USING.                                             00000040
 */                                                                             00000050
   DCL STRING                          CHAR(*) VAR,                           00000060
       TYPE                            CHAR(*),                               00000070
       TEMPSTR                         CHAR(256) VAR,                         00000080
       TRANSSTR                        CHAR(256) VAR,                         00000090
       LEVEL                           FIXED BIN INIT(1),                     00000100
       COL                             FIXED BIN INIT(0),                     00000110
       I                               FIXED BIN INIT(0),                     00000120
       J                               FIXED BIN INIT(0),                     00000130
       F_S_A(13,9)                     FIXED BIN STATIC INIT(                 00000140
             /* 1   2   3   4   5   6   7   8   9 */                          00000150
             /*A-Z,0-9, . ,+/-, Y , E , S , N , 0 */                          00000160
    /* 1  */    99, 2 , 3 , 8 , 9 , 99, 99, 12, 99, /*99 = CHARACTER*/       00000170
    /* 2  */    99, 2 , 3 , 99, 99, 99, 99, 99, 99, /* 2 = INTEGER  */       00000180
    /* 3  */    99, 3 , 99, 99, 99, 4 , 99, 99, 99, /* 3 = REAL     */       00000190
    /* 4  */    99, 5 , 99, 7 , 99, 99, 99, 99, 99, /* 4 = CHARACTER*/       00000200
    /* 5  */    99, 6 , 99, 99, 99, 99, 99, 99, 99, /* 5 = REAL EXP */       00000210
    /* 6  */    99, 99, 99, 99, 99, 99, 99, 99, 99, /* 6 = REAL EXP */       00000220
    /* 7  */    99, 5 , 99, 99, 99, 99, 99, 99, 99, /* 7 = CHARACTER*/       00000230
    /* 8  */    99, 2 , 3 , 99, 99, 99, 99, 99, 99, /* 8 = CHARACTER*/       00000240
    /* 9  */    99, 99, 99, 99, 99, 10, 99, 99, 99, /* 9 = YES      */       00000250
    /* 10 */    99, 99, 99, 99, 99, 99, 11, 99, 99, /*10 = CHARACTER*/       00000260
    /* 11 */    99, 99, 99, 99, 99, 99, 99, 99, 99, /*11 = YES      */       00000270
    /* 12 */    99, 99, 99, 99, 99, 99, 99, 99, 13, /*12 = NO       */       00000280
    /* 13 */    99, 99, 99, 99, 99, 99, 99, 99, 99);/*13 = NO       */       00000290
   TRANSSTR = (75)'1' || '3114' || (17)'1' || '4';                              00000300
   TRANSSTR = TRANSSTR || (100)'1' || '6' ;                                     00000310
   TRANSSTR = TRANSSTR || (15)'1' || '89' ;                                     00000320
   TRANSSTR = TRANSSTR || (11)'1' || '7' || (5)'1' || '5' ;                     00000330
   TRANSSTR = TRANSSTR || (7)'1' || (10)'2' || (6)'1' ;                         00000340
                                                                                00000350
   TEMPSTR  = TRANSLATE(STRING,TRANSSTR);                                       00000360
   J = LENGTH(TEMPSTR);                                                         00000370
   DO I=1 TO J;                                                                 00000380
     COL = SUBSTR(TEMPSTR,I,1);                                                 00000390
     LEVEL = F_S_A(LEVEL,COL);                                                  00000400
     IF LEVEL = 99 THEN GO TO LV;                                               00000410
   END;                                                                         00000420
 LV:                                                                            00000430
   IF LEVEL=99 | LEVEL=1 | LEVEL=4 | LEVEL=7 | LEVEL=8 | LEVEL=10              00000440
     THEN TYPE = 'CHAR';                                                        00000450
   ELSE IF LEVEL=3 | LEVEL=5 | LEVEL=6 THEN TYPE = 'REAL';                     00000460
   ELSE IF LEVEL=2 THEN TYPE = 'INT';                                           00000470
   ELSE IF LEVEL=9 | LEVEL=11 | LEVEL=12 | LEVEL=13 THEN TYPE = 'ANS';         00000480
   ELSE SIGNAL ERROR;                                                           00000490
 END;                                                                           00000500
```

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

  DBLANK: PROC(LINE) RETURNS(CHAR(80) VAR);                              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
        SUBSTR                      BUILTIN;                            00000120
    OUT_LINE = LINE;                                                    00000130
    IF OUT_LINE ¬= '' THEN DO WHILE (SUBSTR(OUT_LINE,1,1) = ' ');       00000140
      OUT_LINE = SUBSTR(OUT_LINE,2);                                    00000150
    END;                                                                00000160
    IF OUT_LINE ¬= '' THEN                                              00000170
      DO WHILE(SUBSTR(OUT_LINE,LENGTH(OUT_LINE)) = ' ');                00000180
      OUT_LINE = SUBSTR(OUT_LINE,1,(LENGTH(OUT_LINE)-1));               00000190
    END;                                                                00000200
    OUT_LINE = TRANSLATE(OUT_LINE,UPPER_CASE,LOWER_CASE);               00000210
    RETURN(OUT_LINE);                                                   00000220
  END;                                                                  00000230
```

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

 INPUT: PROC(INFO_TYPE,IN_LINE);                                        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);                    00000010
 /* THE INPUT SUBROUTINE IS USED TO READ IN ALL INFORMATION             00000020
    FROM THE SCREEN AND DETERMINE THE DATA TYPE. (CALLS DATATP)         00000030
 */                                                                     00000040
 /*************************************************/                   00000050
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.         */                   00000060
 %INCLUDE 'B:EXTVAR.PLI';                                               00000070
 /*************************************************/                   00000080
   DCL INFO_TYPE                    CHAR(4),                           00000090
       IN_LINE                      CHAR(80) VAR,                      00000100
       UP_LIMIT                     FLOAT,                             00000110
       LOW_LIMIT                    FLOAT,                             00000120
       TEMP_NUM                     FLOAT,                             00000130
       TEMP_TYPE                    CHAR(4),                           00000140
       COMPLETE                     BIT(1), /* TRUE */                 00000150
       DBLANK   ENTRY(CHAR(80) VAR) RETURNS(CHAR(80) VAR),             00000160
       DATATP   ENTRY(CHAR(80) VAR, CHAR(4));                          00000170
   COMPLETE = '1'B;                                                    00000180
   DO WHILE(COMPLETE);                                                 00000190
     GET FILE(CRT) EDIT(IN_LINE) (A);                                  00000200
     IN_LINE = DBLANK(IN_LINE);                                        00000210
     IF IN_LINE = 'EXIT' THEN STOP;                                    00000220
     CALL DATATP(IN_LINE,TEMP_TYPE);                                   00000230
     IF INFO_TYPE='CHAR' THEN COMPLETE = '0'B;                         00000240
     ELSE IF INFO_TYPE='NUM ' THEN DO;                                 00000250
       IF TEMP_TYPE = 'INT ' | TEMP_TYPE = 'REAL' THEN DO;             00000260
         TEMP_NUM = IN_LINE;                                           00000270
         IF LOW_LIMIT > TEMP_NUM | TEMP_NUM > UP_LIMIT THEN            00000280
           PUT FILE(SCREEN) EDIT(                                      00000290
             'INCORRECT RESPONSE, YOUR ANSWER MUST BE FROM',LOW_LIMIT, 00000300
             'TO ',UP_LIMIT,                                           00000310
             'REENTER :') (A,F(10,4),SKIP,A,F(10,4),SKIP,A);           00000320
         ELSE COMPLETE = '0'B;                                         00000330
       END;                                                            00000340
       ELSE                                                            00000350
         PUT FILE(SCREEN) EDIT(                                        00000360
           'INCORRECT RESPONSE, YOUR ANSWER MUST BE NUMERICAL.',       00000370
           'REENTER :') (2(SKIP,A));                                   00000380
     END;                                                              00000390
     ELSE IF INFO_TYPE='REAL' THEN DO;                                 00000400
       IF TEMP_TYPE = 'INT ' | TEMP_TYPE = 'REAL' THEN DO;             00000410
         TEMP_NUM = IN_LINE;                                           00000420
         IF TEMP_TYPE = 'INT ' THEN PUT FILE(SCREEN) SKIP;             00000430
         IF LOW_LIMIT > TEMP_NUM | TEMP_NUM > UP_LIMIT THEN            00000440
           PUT FILE(SCREEN) EDIT(                                      00000450
             'INCORRECT RESPONSE, YOUR ANSWER MUST BE FROM',LOW_LIMIT, 00000460
             'TO ',UP_LIMIT,                                           00000470
             'REENTER :') (A,F(10,4),SKIP,A,F(10,4),SKIP,A);           00000480
         ELSE COMPLETE = '0'B;                                         00000490
       END;                                                            00000500
       ELSE                                                            00000510
         PUT FILE(SCREEN) EDIT                                         00000520
           ('INCORRECT RESPONSE, YOUR ANSWER MUST BE A REAL NUMBER.',  00000530
            'REENTER :') (2(SKIP,A));                                  00000540
     END;                                                              00000550
     ELSE IF INFO_TYPE='INT' THEN DO;                                  00000560
       IF TEMP_TYPE ¬= 'INT ' THEN                                     00000570
         PUT FILE(SCREEN) EDIT(                                        00000580
           'INCORRECT RESPONSE, YOUR ANSWER MUST BE AN INTEGER ',      00000590
           '(NO DECIMAL) REENTER :') (2(SKIP,A));                      00000600
       ELSE DO;                                                        00000610
         TEMP_NUM = IN_LINE;                                           00000620
```

```
        IF LOW_LIMIT > TEMP_NUM | TEMP_NUM > UP_LIMIT THEN                00000630
          PUT FILE(SCREEN) EDIT(                                          00000640
            'INCORRECT RESPONSE, YOUR ANSWER MUST BE FROM',LOW_LIMIT,     00000650
            'TO ',UP_LIMIT,                                               00000660
            'REENTER :') (A,F(6),SKIP,A,F(6),SKIP,A);                     00000670
          ELSE COMPLETE = '0'B;                                           00000680
        END;                                                              00000690
      END;                                                                00000700
      ELSE IF INFO_TYPE='ANS ' THEN DO;                                   00000710
        IF TEMP_TYPE ¬= 'ANS ' THEN                                       00000720
          PUT FILE(SCREEN) EDIT(                                          00000730
            'INCORRECT RESPONSE, YOUR ANSWER MUST BE "YES" OR "NO"',      00000740
            'REENTER :') (2(SKIP,A));                                     00000750
        ELSE DO;                                                          00000760
          COMPLETE = '0'B;                                                00000770
          IN_LINE = SUBSTR(IN_LINE,1,1);                                  00000780
        END;                                                              00000790
      END;                                                                00000800
      ELSE SIGNAL ERROR;                                                  00000810
    END;                                                                  00000820
END;                                                                      00000830
```

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

 MTRXED: PROC(MATRIX,COL_SIZE,ROW_SIZE,FMT_SIZE);                        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
 /************************************************/                      00000300
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.        */                      00000310
 %INCLUDE 'B:EXTVAR.PLI';                                                00000320
 /************************************************/                      00000330
   DCL MATRIX(NX_LMT,NY_LMT)                CHAR(4) VAR,                00000340
       COL_SIZE                        FIXED BIN,                       00000350
       ROW_SIZE                        FIXED BIN,                       00000360
       FMT_SIZE                        FIXED BIN,                       00000370
       START_COL                       FIXED BIN,                       00000380
       START_ROW                       FIXED BIN,                       00000390
       END_COL                         FIXED BIN,                       00000400
       END_ROW                         FIXED BIN,                       00000410
       CURRENT_ROW                     FIXED BIN,                       00000420
       I                               FIXED BIN,                       00000430
       J                               FIXED BIN,                       00000440
       NUMBER_OF_FIELDS                FIXED BIN,                       00000450
       CHAR_TYP                        CHAR(4),                         00000460
       NUMBER                          CHAR(80) VAR,                    00000470
       ANSWER                          CHAR(80) VAR,                    00000480
       BAD_INFO                        CHAR(80) VAR,                    00000490
       TEMP                            CHAR(80) VAR,                    00000500
       BLANKS        CHAR(20) STATIC INIT('                    '),      00000510
       C_FLAG                          BIT(1);                          00000520
   DCL DBLANK    ENTRY (CHAR(80) VAR) RETURNS(CHAR(80) VAR),            00000530
       DATATP    ENTRY (CHAR(80) VAR,CHAR(4)),                          00000540
       INPUT     ENTRY (CHAR(4),CHAR(80) VAR);                          00000550
   START_COL=1;                                                         00000560
   START_ROW=1;                                                         00000570
   END_COL=0;                                                           00000580
   END_ROW=0;                                                           00000590
   CURRENT_ROW=1;                                                       00000600
   I=1;                                                                 00000610
   J=1;                                                                 00000620
```

```
  NUMBER_OF_FIELDS=0;                                                    00000630
  C_FLAG='0'B;                                                           00000640
/*                                                                      */00000650
/*  CHECK FOR ERRORS ON THE THE PARAMETERS PASSED IN AND PRINT          */00000660
/*  ERROR MESSAGES AND RETURN.                                          */00000670
/*                                                                      */00000680
  IF COL_SIZE < 3    |  /* OR */                                        00000690
     ROW_SIZE < 3    |  /* OR */                                        00000700
     FMT_SIZE < 1   THEN DO;                                           00000710
     PUT FILE(SCREEN) EDIT                                             00000720
       ('****** ERROR  MATRIX TO BE EDITED HAS :',                     00000730
        '              NO COLUMNS, AND OR,',                           00000740
        '              NO ROWS, AND OR,',                              00000750
        '              NO LENGTH.',                                    00000760
        '"MATRXED" ENDING ON ERROR.') (SKIP(2),5(A,SKIP));             00000770
     RETURN;                                                           00000780
  END ;                                                                00000790
/*                                                                      */00000800
/*  THE FOLLOWING SETS UP FOR 80 COLUMN TERMINALS.                      */00000810
/*                                                                      */00000820
  NUMBER_OF_FIELDS = 72./FLOAT(FMT_SIZE + 1);                          00000830
/*                                                                      */00000840
/*  THE FOLLOWING CHECKS TO SEE IF THE DATA PASSED TO THE MATRIX        */00000850
/*  EDITOR IS OF THE CORRECT FORMAT IF NOT IT CORRECTS IT.              */00000860
/*                                                                      */00000870
  DO I=1 TO COL_SIZE;                                                  00000880
    DO J=1 TO ROW_SIZE;                                                00000890
      NUMBER = MATRIX(J,I);                                            00000900
      NUMBER = DBLANK(NUMBER);                                         00000910
      IF LENGTH(NUMBER) < FMT_SIZE THEN                                00000920
         NUMBER = SUBSTR(BLANKS,1,                                     00000930
                  (FMT_SIZE-LENGTH(NUMBER))) || NUMBER ;               00000940
      IF LENGTH(NUMBER) > FMT_SIZE THEN                                00000950
        NUMBER = SUBSTR(NUMBER,1,FMT_SIZE);                            00000960
      MATRIX(J,I) = NUMBER;                                            00000970
    END;                                                               00000980
  END;                                                                 00000990
/*                                                                      */00001000
/*  SET INITIAL CONDITIONS FOR END OF COLUMN AND END OF ROW.            */00001010
/*                                                                      */00001020
  IF COL_SIZE > NUMBER_OF_FIELDS THEN END_COL = NUMBER_OF_FIELDS;      00001030
  ELSE END_COL = COL_SIZE;                                             00001040
  IF ROW_SIZE > 12 THEN END_ROW = 12;                                  00001050
  ELSE END_ROW = ROW_SIZE;                                             00001060
/*                                                                      */00001070
/*  WRITE THE INITIAL MATRIX TO THE SCREEN.                             */00001080
/*                                                                      */00001090
  CALL WRTSCRN;                                                        00001100
/*                                                                      */00001110
/*  ENTER LOOP TO READ FROM SCREEN AND INTERPRET COMMANDS.              */00001120
/*                                                                      */00001130
  DO WHILE('1'B);                                                      00001140
/*                                                                      */00001150
/*  READ THE UPDATED LINE OR COMMAND FROM THE SCREEN, REMOVE BLANKS     */00001160
/*  AND UPCASE LOWER CASE LETTERS.                                      */00001170
/*  REMOVE CARRIAGE RETURN, LINE FEED IF MICRO VERSION.                 */00001180
/*                                                                      */00001190
    GET FILE(CRT) EDIT(ANSWER)(A);                                     00001200
    ANSWER = DBLANK(ANSWER);                                           00001210
/*                                                                      */00001220
/*  DETERMINE IF THE LINE THAT WAS ENTERED IS AN UPDATED ROW OR         */00001230
/*  A COMMAND.                                                          */00001240
/*                                                                      */00001250
    IF SUBSTR(ANSWER,1,1) = '*' THEN DO;                               00001260
/*                                                                      */00001270
/*  "PEAL" OFF FIRST SET OF CHARACTERS AND DETERMINE IF THEY ARE        */00001280
```

```
/*  A NUMBER OR NOT.                                                    */00001290
/*                                                                      */00001300
      ANSWER = SUBSTR(ANSWER,2);                                          00001310
      TEMP = PEAL(ANSWER);                                                00001320
      CALL DATATP(TEMP,CHAR_TYP);                                         00001330
      IF CHAR_TYP = 'INT ' THEN DO;                                       00001340
/*                                                                      */00001350
/*  SET CURRENT_ROW (I.E ROW) EQUAL TO TEMP, AND ENTER LOOP             */00001360
/*  TO RESET CURRENT MATRIX ROW TO NEW VALUES.                          */00001370
/*                                                                      */00001380
        CURRENT_ROW = TEMP;                                               00001390
        DO I = START_COL TO END_COL;                                      00001400
          NUMBER = PEAL(ANSWER);                                          00001410
/*                                                                      */00001420
/*  CHECK TO SEE IF "NUMBER" IS A NUMBER, PAD WITH BLANKS ON LEFT       */00001430
/*  SIDE (IF NECESSARY) AND ENTER IT INTO THE "MATRIX".                 */00001440
/*  IF "NUMBER" IS A CHARACTER THEN LEAVE CURRENT VALUE OF              */00001450
/*  MATRIX(CURRENT_ROW,I) ALONE AND CONTINUE WITH LINE.                 */00001460
/*                                                                      */00001470
          CALL DATATP(NUMBER,CHAR_TYP);                                   00001480
          IF CHAR_TYP = 'INT ' |   /* OR */                              00001490
             CHAR_TYP = 'REAL'    THEN DO;                                00001500
             IF LENGTH(NUMBER) < FMT_SIZE THEN                            00001510
                NUMBER = SUBSTR(BLANKS,1,                                 00001520
                         (FMT_SIZE-LENGTH(NUMBER))) || NUMBER ;           00001530
             IF LENGTH(NUMBER) > FMT_SIZE THEN                            00001540
                NUMBER = SUBSTR(NUMBER,1,FMT_SIZE);                       00001550
             MATRIX(CURRENT_ROW,I) = NUMBER;                              00001560
          END;                                                            00001570
        END;                                                              00001580
      END;                                                                00001590
      ELSE DO;                                                            00001600
        C_FLAG = '1'B;                                                    00001610
        BAD_INFO = 'INVALID ROW, OR COMMAND STARTING WITH "*".';          00001620
      END;                                                                00001630
    END;                                                                  00001640
/*                                                                      */00001650
/*  IF IT IS NOT AN UPDATE ROW THEN CHECK TO SEE IF IT IS NULL          */00001660
/*  IF NOT THEN ASSUME IT IS A COMMAND.                                 */00001670
/*                                                                      */00001680
    ELSE DO;                                                              00001690
      IF SUBSTR(ANSWER,1,1) = '@' THEN                                    00001700
         ANSWER = DBLANK(SUBSTR(ANSWER,12));                              00001710
      IF ANSWER = '' THEN GO TO LV;                                       00001720
/*                                                                      */00001730
/*  "PEAL" OFF THE NEXT CHARACTER STRING AND DETERMINE IF IT IS         */00001740
/*  A COMMAND.                                                          */00001750
/*                                                                      */00001760
      C_FLAG = '1'B;                                                      00001770
      NUMBER=PEAL(ANSWER);                                                00001780
      IF NUMBER='E'|NUMBER='EN'|NUMBER='END' THEN RETURN;                 00001790
/*                                                                      */00001800
/*  IF THE COMMAND IS SHIFT THEN "PEAL" OFF THE NEXT CHARACTER          */00001810
/*  STRING AND CHECK TO SEE IF IT IS A NUMBER, IF NOT THEN              */00001820
/*  PROMPT FOR THE COLUMN NUMBER. THEN SET THE START COLUMN.            */00001830
/*                                                                      */00001840
      ELSE IF NUMBER='S'|NUMBER='SH'|NUMBER='SHI'|NUMBER='SHIF'|          00001850
              NUMBER='SHIFT' THEN DO;                                     00001860
        NUMBER = PEAL(ANSWER);                                            00001870
        CALL DATATP(NUMBER,CHAR_TYP);                                     00001880
        IF CHAR_TYP = 'CHAR' THEN DO;                                     00001890
          PUT FILE(SCREEN) EDIT                                           00001900
            ('ENTER THE COLUMN NUMBER :') (SKIP,A);                       00001910
          CALL INPUT('INT ',NUMBER);                                      00001920
        END;                                                              00001930
        START_COL = NUMBER;                                               00001940
```

```
      END;                                                                  00001950
/*                                                                         */00001960
/*  IF THE LIST COMMAND IS FOUND THE SAME PROCEDURE IS USED AS             */00001970
/*  WITH THE SHIFT COMMAND.                                                */00001980
/*                                                                         */00001990
      ELSE IF NUMBER='L'|NUMBER='LI'|NUMBER='LIS'|NUMBER='LIST'             00002000
      THEN DO;                                                              00002010
        NUMBER = PEAL(ANSWER);                                              00002020
        CALL DATATP(NUMBER,CHAR_TYP);                                       00002030
        IF CHAR_TYP = 'CHAR' THEN DO;                                       00002040
          PUT FILE(SCREEN) EDIT                                             00002050
            ('ENTER THE ROW NUMBER :') (SKIP,A);                            00002060
          CALL INPUT('INT ',NUMBER);                                        00002070
        END;                                                                00002080
        START_ROW = NUMBER;                                                 00002090
      END;                                                                  00002100
/*                                                                         */00002110
/*  IF THE HELP COMMAND IS FOUND, SHOW HELP INFO,                          */00002120
/*  THEN REWRITE SCREEN.                                                   */00002130
/*                                                                         */00002140
      ELSE IF NUMBER='H'|NUMBER='HE'|NUMBER='HEL'|NUMBER='HELP'             00002150
      THEN DO;                                                              00002160
        PUT FILE(SCREEN) EDIT                                               00002170
          ('MATRIX WINDOW - 12 ROWS, OR NUMBER OF ROWS IN MATRIX ',         00002180
           'IF LESS THAN 12.','THE NUMBER OF COLUMNS DEPEND ON THE ',       00002190
           'DATA REQUIREMENTS FOR','EACH MATRIX.')                          00002200
           (SKIP(5),A,A,SKIP,X(5),A,A,SKIP,X(5),A);                         00002210
        PUT FILE(SCREEN) EDIT                                               00002220
          ('EDITING - TO EDIT THE PORTION OF THE MATRIX DISPLAYED IN ',     00002230
           'THE WINDOW,',','TYPE THE ASTERISK (*) AND ROW NUMBER, WITH ',   00002240
           'A SPACE BETWEEN THEM.','FOLLOW WITH THE DATA TO BE ',           00002250
           'ENTERED.') (SKIP,A,A,SKIP,X(5),A,A,SKIP,X(5),A,A);             00002260
        PUT FILE(SCREEN) EDIT                                               00002270
          ('USE THE FOLLOWING COMMANDS TO DISPLAY EDITED DATA ',            00002280
           'AND/OR ADJUST','THE MATRIX WINDOW.') (SKIP(2),A,A,SKIP,A);      00002290
        PUT FILE(SCREEN) EDIT                                               00002300
          ('SHIFT - USE TO INDICATE FIRST COLUMN OF MATRIX WINDOW.',        00002310
           'EX:  "SHIFT 10" BEGINS MATRIX DISPLAY WITH COLUMN 10.')         00002320
           (SKIP,A,SKIP,X(5),A);                                            00002330
        PUT FILE(SCREEN) EDIT                                               00002340
          ('LIST - USE TO INDICATE FIRST ROW OF MATRIX WINDOW.',            00002350
           'EX:  "LIST 13" BEGINS MATRIX DISPLAY WITH ROW 13.')             00002360
           (SKIP,A,SKIP,X(5),A);                                            00002370
        PUT FILE(SCREEN) EDIT                                               00002380
          ('END - USE TO END EDIT OF CURRENT MATRIX DATA.')                 00002390
           (SKIP,A);                                                        00002400
        PUT FILE(SCREEN) EDIT                                               00002410
          ('EX:  SITUATION - MATRIX WINDOW CURRENTLY BEGINS AT ROW ',       00002420
           '1, COLUMN 1.','TO EDIT THE ELEMENT AT ROW 13, COLUMN ',         00002430
           '10 -','DO THE FOLLOWING (EACH LINE INDICATES A ',               00002440
           'SEPERATE COMMAND):','LIST 13','SHIFT 10','* 13 50.1',           00002450
           'TO EDIT SEVERAL CONSECUTIVE ELEMENTS ON A ROW, ',               00002460
           'SEPARATE EACH BY A','COMMA OR SPACE AS SHOWN BELOW:',           00002470
           '* 13 50.1,50.0 49.8')                                           00002480
          (SKIP(2),A,A,SKIP,A,A,A,SKIP,A,A,3(SKIP,X(5),A),SKIP,A,A,SKIP,   00002490
           A,SKIP,X(5),A);                                                  00002500
        C_FLAG = '0'B;                                                      00002510
      END;                                                                  00002520
/*                                                                         */00002530
/*  IF NEITHER LIST,LOCATE,SHIFT OR END IS FOUND THEN AN ERROR             */00002540
/*  MSG IS PRINTED WHEN THE MATRIX IS RESHOWN                              */00002550
/*                                                                         */00002560
      ELSE BAD_INFO = 'INVALID COMMAND.' ;                                  00002570
    END;                                                                    00002580
/*                                                                         */00002590
/*  CHECK TO SEE IF A COMMAND WAS ENTERED                                  */00002600
```

```
/*                                                                    */00002610
    LV: IF C_FLAG THEN DO;                                            00002620
/*                                                                    */00002630
/*  SET START_COL,START_ROW,END_COL,END_ROW TO THERE VALID VALUES      */00002640
/*                                                                    */00002650
        IF START_COL < 1 THEN START_COL = 1;                          00002660
        IF START_COL > COL_SIZE THEN START_COL = COL_SIZE ;           00002670
        END_COL = START_COL + NUMBER_OF_FIELDS - 1;                   00002680
        IF END_COL > COL_SIZE THEN END_COL = COL_SIZE;                00002690
        IF START_ROW < 1 THEN START_ROW = 1;                          00002700
        IF START_ROW > ROW_SIZE THEN START_ROW = COL_SIZE ;           00002710
        END_ROW = START_ROW + 11;                                     00002720
        IF END_ROW > ROW_SIZE THEN END_ROW = ROW_SIZE;                00002730
/*                                                                    */00002740
/*  REWRITE THE MATRIX ON THE SCREEN AND RESET COMMAND FLAG           */00002750
/*                                                                    */00002760
        CALL WRTSCRN;                                                 00002770
    END;                                                              00002780
    ELSE /* C_FLAG = 'O'B */                                         00002790
        PUT FILE(SCREEN) EDIT('@ COMMAND :') (SKIP(2),A);             00002800
  END;                                                                00002810
                                                                      00002820
  PEAL: PROC(STRING)                RETURNS(CHAR(80) VAR);            00002830
/*                                                                    */00002840
/*  THIS PROC LOOKS FOR THE FIRST BLANK AND REMOVES ALL OF THE        */00002850
/*  STRING IN FRONT OF IT. IT THEN DEBLANKS THE SHORTTENED STRING.    */00002860
/*  IT THEN RETURNS THE SHORTTENED STRING AND THE "SKIN" IT           */00002870
/*  REMOVED.                                                          */00002880
/*                                                                    */00002890
    DCL STRING                      CHAR(80) VAR,                     00002900
        SKIN                        CHAR(80) VAR;                     00002910
    DCL DBLANK  ENTRY (CHAR(80) VAR) RETURNS(CHAR(80) VAR);           00002920
    STRING = DBLANK(STRING);                                          00002930
    IF INDEX(STRING,' ') = 0 THEN DO;                                 00002940
      SKIN = STRING;                                                  00002950
      STRING = '';                                                    00002960
      RETURN(SKIN);                                                   00002970
    END;                                                              00002980
    SKIN = SUBSTR(STRING,1,INDEX(STRING,' ')-1);                      00002990
    SKIN = DBLANK(SKIN);                                              00003000
    STRING = SUBSTR(STRING,INDEX(STRING,' ')+1);                      00003010
    STRING = DBLANK(STRING);                                          00003020
    RETURN(SKIN);                                                     00003030
  END;                                                                00003040
                                                                      00003050
  WRTSCRN: PROC;                                                      00003060
/*                                                                    */00003070
/*  THE FOLLOWING PROCEDURE WRITES THE ARRARY TO THE SCREEN IN        */00003080
/*  THE CORRECT FORMAT FOR THAT TERMINAL IN WHICH THE USER IS         */00003090
/*  WORKING ON                                                        */00003100
/*                                                                    */00003110
/*                                                                    */00003120
    DCL I                       FIXED BIN,                            00003130
        SPACE                   FIXED BIN,                            00003140
        J                       FIXED BIN;                            00003150
    SPACE = FLOOR(FLOAT(FMT_SIZE)/2.);                                00003160
    PUT FILE(SCREEN) EDIT('C  O  L  U  M  N  S') (COL(29),A);         00003170
    IF FMT_SIZE=1 THEN DO;                                            00003180
      PUT FILE(SCREEN) EDIT                                           00003190
        (' ROWS',(I  DO I=START_COL TO END_COL))                      00003200
        (SKIP,A,40(F(2)));                                            00003210
      DO I=START_ROW TO END_ROW;                                      00003220
        PUT FILE(SCREEN) EDIT                                         00003230
          (' *',I,(MATRIX(I,J) DO J=START_COL TO END_COL))            00003240
          (SKIP,A,F(2),X(2),40(A(2)));                                00003250
      END;                                                            00003260
```

```
    END;                                                                    00003270
    ELSE IF FMT_SIZE=3 THEN DO;                                             00003280
      PUT FILE(SCREEN) EDIT                                                 00003290
        (' ROWS',(I  DO I=START_COL TO END_COL))                            00003300
        (SKIP,A,X(1),40(F(2),X(2)));                                        00003310
      DO I=START_ROW TO END_ROW;                                            00003320
        PUT FILE(SCREEN) EDIT                                               00003330
          (' *',I,(MATRIX(I,J) DO J=START_COL TO END_COL))                  00003340
          (SKIP,A,F(2),X(2),40(A(4)));                                      00003350
      END;                                                                  00003360
    END;                                                                    00003370
    ELSE /* FMT_SIZE=4 */ DO;                                              00003380
      PUT FILE(SCREEN) EDIT                                                 00003390
        (' ROWS',(I  DO I=START_COL TO END_COL))                            00003400
        (SKIP,A,X(2),40(F(2),X(3)));                                        00003410
      DO I=START_ROW TO END_ROW;                                            00003420
        PUT FILE(SCREEN) EDIT                                               00003430
          (' *',I,(MATRIX(I,J) DO J=START_COL TO END_COL))                  00003440
          (SKIP,A,F(2),X(2),40(A(5)));                                      00003450
      END;                                                                  00003460
    END;                                                                    00003470
    PUT FILE(SCREEN) EDIT(                                                  00003480
      'REMEMBER TO HIT ENTER AFTER YOU CHANGE EACH LINE.',                  00003490
      'COMMANDS ARE: SHIFT,LIST,HELP,END')                                  00003500
      (2(SKIP,A));                                                          00003510
    PUT FILE(SCREEN) EDIT(BAD_INFO) (SKIP,A);                               00003520
    PUT FILE(SCREEN) EDIT('@ COMMAND :') (SKIP,A);                          00003530
    C_FLAG = '0'B;                                                          00003540
    BAD_INFO = '';                                                          00003550
  END;                                                                      00003560
END;                                                                        00003570
```

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

 SUBFIL: PROC;                                                          00000010
 /* THE SUBFILE SUBROUTINE IS USED TO WRITE THE DATA TO THE            00000020
    INPUT DATA SET FOR IBM 3081.                                        00000030
 */                                                                     00000040
 /*************************************************/                   00000050
 /* %INCLUDE REQUIRES COMPLETE FILE NAME.         */                   00000060
 %INCLUDE 'B:EXTVAR.PLI';                                               00000070
 /*************************************************/                   00000080
   DCL COUNT                          FIXED BIN,                       00000090
       TEMP_NUM1                      FIXED BIN,                       00000100
       TEMP_NUM2                      FIXED BIN,                       00000110
       I                              FIXED BIN,                       00000120
       J                              FIXED BIN,                       00000130
       K                              FIXED BIN,                       00000140
       L                              FIXED BIN,                       00000150
       COUNT1                         FIXED BIN;                       00000160
   DCL DBLANK ENTRY (CHAR(80) VAR) RETURNS(CHAR(80) VAR);               00000170
   DO I=1 TO 16;                                                        00000180
     PUT FILE(SYSUT4) EDIT(JCL(I)) (COL(1),A(80));                      00000190
   END;                                                                 00000200
   PUT FILE(SYSUT4) EDIT(TITLE) (COL(1),A(80));                         00000210
   PUT FILE(SYSUT4) EDIT(NTIM(1),NPMP,NX,NY,NPMAX,NPNT(1),NITP(1),      00000220
                         NUMOBS,ITMAX(1),NREC(1),NPTPND,NCODES,         00000230
                         NPNTMV(1),NPNTVL(1),NPNTD(1),NPDELC(1),NPNCHV(1)) 00000240
                        (COL(1),17(A(4)));                              00000250
   PUT FILE(SYSUT4) EDIT(PINT(1),TOL,POROS,BETA,S,TIMX(1),TINIT(1),     00000260
                         XDEL,YDEL,DLTRAT,CELDIS,ANFCTR)                00000270
                        (COL(1),12(A(5)));                              00000280
   PUT FILE(SYSUT4) EDIT(NDECAY,NSORB,DCYTIM,DENROC,SORBQR,SORBST,      00000290
                         SORBAL)(COL(1),2(A(5)),5(A(10)));              00000300
   PUT FILE(SYSUT4) EDIT(ISOLV,IHEAD,FCON,TP,BTM)(COL(1),5(A(4)));      00000310
   COUNT = 0;                                                           00000320
   TEMP_NUM1 = DBLANK(NUMOBS);                                          00000330
   DO WHILE(COUNT < TEMP_NUM1);                                         00000340
     COUNT = COUNT + 1;                                                 00000350
     PUT FILE(SYSUT4) EDIT(IXOBS(COUNT),IYOBS(COUNT))                   00000360
                      (COL(1),2(A(2)));                                 00000370
   END;                                                                 00000380
   COUNT = 0;                                                           00000390
   TEMP_NUM1 = DBLANK(NREC(1));                                         00000400
   DO WHILE(COUNT < TEMP_NUM1);                                         00000410
     COUNT = COUNT + 1;                                                 00000420
     PUT FILE(SYSUT4) EDIT(IX(1,COUNT),IY(1,COUNT),                     00000430
                           REC(1,COUNT),CNRECH(1,COUNT))                00000440
                      (COL(1),2(A(2)),2(A(8)));                         00000450
   END;                                                                 00000460
   PUT FILE(SYSUT4) EDIT(INPT_VPRM,FACT_VPRM)                           00000470
                    (COL(1),A(1),A(10));                                00000480
   IF INPT_VPRM ¬= 0 THEN DO;                                           00000490
     I = DBLANK(NX);                                                    00000500
     J = DBLANK(NY);                                                    00000510
     DO K=1 TO J;                                                       00000520
       PUT FILE(SYSUT4) EDIT(VPRM(K,1)) (COL(1),A(4));                  00000530
       DO L=2 TO I;                                                     00000540
         PUT FILE(SYSUT4) EDIT(VPRM(K,L)) (A(4));                       00000550
       END;                                                             00000560
     END;                                                               00000570
   END;                                                                 00000580
   PUT FILE(SYSUT4) EDIT(INPT_THCK,FACT_THCK)                           00000590
                    (COL(1),A(1),A(10));                                00000600
   IF INPT_THCK ¬= 0 THEN DO;                                           00000610
     I = DBLANK(NX);                                                    00000620
```

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

```
  DO WHILE(COUNT < TEMP_NUM1);                                          00001290
    COUNT = COUNT + 1;                                                  00001300
    PUT FILE(SYSUT4) EDIT(ICHK(COUNT-1)) (COL(1),A(1));                 00001310
    IF ICHK(COUNT-1) = 1 THEN DO;                                       00001320
      PUT FILE(SYSUT4) EDIT(NTIM(COUNT),NPNT(COUNT),NITP(COUNT),        00001330
                           ITMAX(COUNT),                                00001340
                           NREC(COUNT),NPNTMV(COUNT),NPNTVL(COUNT),     00001350
                           NPNTD(COUNT),NPDELC(COUNT),NPNCHV(COUNT),    00001360
                           PINT(COUNT),TIMX(COUNT),TINIT(COUNT))        00001370
                          (COL(1),10(A(4)),3(A(5)));                    00001380
      COUNT1 = 0;                                                       00001390
      TEMP_NUM2 = DBLANK(NREC(COUNT));                                  00001400
      DO WHILE(COUNT1 < NREC(COUNT));                                   00001410
        COUNT1 = COUNT1 + 1;                                            00001420
        PUT FILE(SYSUT4) EDIT(IX(COUNT,COUNT1),IY(COUNT,COUNT1),        00001430
                              REC(COUNT,COUNT1),CNRECH(COUNT,COUNT1))   00001440
                             (COL(1),2(A(2)),2(A(8)));                  00001450
      END;                                                              00001460
    END;                                                                00001470
  END;                                                                  00001480
  CLOSE FILE(SYSUT4);                                                   00001490
END;                                                                    00001500
```

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

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

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

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

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

 %REPLACE NX_LMT BY 20,                                                  00000010
          NY_LMT BY 20,                                                  00000020
          PMP_LMT BY 20,                                                 00000030
          NR_LMT BY 50,                                                  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
       NPDELC(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
     JCLF                         FILE,                 /* JCL FILE */ 00000900
     FILENM                       CHAR(80) VAR EXTERNAL;               00000910
```

```
**** 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                                    (KONI     )

 KONI: PROC OPTIONS(MAIN);                                                  00000010
/* CONTROLLING PROGRAM.  CREATES JCL FOR IBM 3081. */                      00000020
   DCL CHOOSE                    CHAR(1),                                  00000030
       FLAG_ON                   BIT(1) STATIC INIT('1'B);                 00000040
   DCL CREATE                    ENTRY,                                    00000050
       UPDATE                    ENTRY;                                    00000060
     PUT EDIT(                                                            00000070
       '         MODIFIED N.R.C. VERSION',                                00000080
       'OF THE U.S.G.S. SOLUTE TRANSPORT MODEL,',                         00000090
       ' VOLUME 2:  INTERACTIVE PREPROCESSOR',                            00000100
       '                    BY',                                          00000110
       'D.C. KENT, L. LEMASTER, AND J. WAGNER',                           00000120
       '                    FOR',                                         00000130
       ' U.S. ENVIRONMENTAL PROTECTION AGENCY')(7(SKIP,A));               00000140
   DO WHILE (FLAG_ON);                                                    00000150
     PUT EDIT('CHOOSE ACTION: ',                                          00000160
              '    1) CREATE NEW DATA',                                   00000170
              '    2) MODIFY EXISTING DATA',                              00000180
              '    3) END PROGRAM',                                       00000190
              '(ENTER CORRESPONDING NUMBER): ')                           00000200
         (SKIP(3),A,4(SKIP,A));                                           00000210
     GET EDIT(CHOOSE)(A);                                                 00000220
     IF CHOOSE = '1' THEN CALL CREATE;                                    00000230
     ELSE IF CHOOSE = '2' THEN CALL UPDATE;                               00000240
     ELSE IF CHOOSE = '3' THEN FLAG_ON = '0'B;                            00000250
     ELSE PUT EDIT('IMPROPER RESPONSE--TRY AGAIN.')(SKIP(2),A);           00000260
   END;                                                                   00000270
 END; /* KONI */                                                         00000280
```

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

 KONI: PROC OPTIONS(MAIN);                                                  00000010
/* CONTROLLING PROGRAM.  CREATES JCL FOR MICROCOMPUTER. */                  00000020
   DCL CHOOSE                    CHAR(1),                                   00000030
       FLAG_ON                   BIT(1) STATIC INIT('1'B);                  00000040
   DCL CREATEM                   ENTRY,                                     00000050
       UPDATEM                   ENTRY;                                     00000060
     PUT EDIT(                                                              00000070
       '        MODIFIED N.R.C. VERSION',                                   00000080
       'OF THE U.S.G.S. SOLUTE TRANSPORT MODEL,',                          00000090
       ' VOLUME 2:  INTERACTIVE PREPROCESSOR',                             00000100
       '                  BY',                                             00000110
       'D.C. KENT, L. LEMASTER, AND J. WAGNER',                            00000120
       '                  FOR',                                            00000130
       ' U.S. ENVIRONMENTAL PROTECTION AGENCY')(7(SKIP,A));                 00000140
   DO WHILE (FLAG_ON);                                                      00000150
     PUT EDIT('CHOOSE ACTION: ',                                            00000160
              '   1) CREATE NEW DATA',                                      00000170
              '   2) MODIFY EXISTING DATA',                                 00000180
              '   3) END PROGRAM',                                          00000190
              '(ENTER CORRESPONDING NUMBER): ')                             00000200
         (SKIP(3),A,4(SKIP,A));                                             00000210
     GET EDIT(CHOOSE)(A);                                                   00000220
     IF CHOOSE = '1' THEN CALL CREATEM;                                     00000230
     ELSE IF CHOOSE = '2' THEN CALL UPDATEM;                                00000240
     ELSE IF CHOOSE = '3' THEN FLAG_ON = '0'B;                              00000250
     ELSE PUT EDIT('IMPROPER RESPONSE--TRY AGAIN.')(SKIP(2),A);             00000260
   END;                                                                     00000270
 END; /* KONI */                                                           00000280
```

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

 KONID: PROC OPTIONS(MAIN);                                                  00000010
 /* CONTROLLING PROGRAM.  CREATES JCL FOR DEC/VAX. */                        00000020
   DCL CHOOSE                      CHAR(1),                                  00000030
       FLAG_ON                     BIT(1) STATIC INIT('1'B);                 00000040
   DCL CREATED                     ENTRY,                                    00000050
       UPDATED                     ENTRY;                                    00000060
     PUT EDIT(                                                               00000070
       '         MODIFIED N.R.C. VERSION',                                   00000080
       'OF THE U.S.G.S. SOLUTE TRANSPORT MODEL,',                            00000090
       ' VOLUME 2:  INTERACTIVE PREPROCESSOR',                               00000100
       '                    BY',                                             00000110
       'D.C. KENT, L. LEMASTER, AND J. WAGNER',                              00000120
       '                    FOR',                                            00000130
       ' U.S. ENVIRONMENTAL PROTECTION AGENCY')(7(SKIP,A));                  00000140
   DO WHILE (FLAG_ON);                                                       00000150
     PUT EDIT('CHOOSE ACTION: ',                                             00000160
              '    1) CREATE NEW DATA',                                      00000170
              '    2) MODIFY EXISTING DATA',                                 00000180
              '    3) END PROGRAM',                                          00000190
              '(ENTER CORRESPONDING NUMBER): ')                              00000200
         (SKIP(3),A,4(SKIP,A));                                              00000210
     GET EDIT(CHOOSE)(A);                                                    00000220
     IF CHOOSE = '1' THEN CALL CREATED;                                      00000230
     ELSE IF CHOOSE = '2' THEN CALL UPDATED;                                 00000240
     ELSE IF CHOOSE = '3' THEN FLAG_ON = '0'B;                               00000250
     ELSE PUT EDIT('IMPROPER RESPONSE--TRY AGAIN.')(SKIP(2),A);              00000260
   END;                                                                      00000270
 END; /* KONID */                                                           00000280
```

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 DEFINITIONS AND 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=20)*.
	9-12	I4	NX	Number of nodes in x direction (limit=20)*.
	13-16	I4	NY	Number of nodes in y direction (limit=20)*.
	17-20	I4	NPMAX	Maximum number of particles (limit=3200)*.
	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 Transmissivity tensors for anisotropic site (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_VPRM, 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=20)*	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=20)*	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=20)*	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=20)*	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=20)*	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=20)*	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=0, the data set has a constant value, which is defined by FACT_var. If INPT_var=1, 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	FIELD UNITS	*	CONVERSION	=	MODEL UNITS
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		.001400463		ft3/s
CNRECH	mg/l		-		mg/l
VPRM TRANS	gpd/ft		1.54723 E-6		ft2/s
or PERM	gpd/ft2		1.54723 E-6		ft/s
THCK	ft		-		ft
WT	ft		-		ft

VARIABLE	FIELD UNITS	*	CONVERSION	=	MODEL UNITS
RECH	in/yr		26.7918 E-10		ft/s
NODEID	-		-		-
FCTR1	(gpd/ft2)/ft		1.54723 E-6		(ft/s)/ft
FCTR2	mg/l		-		mg/l
FCTR3	in/yr		26.7918 E-10		ft/s
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      0.0E00
1          1.
00000000000000000
02222222222222220
02000003145000020
02000000000000020
02000000000000020
02000000000000020
02000000000000020
02000000000000020
02000000000000020
02000000000000020
02000000000000020
02000000000000020
02000000000000020
02000000000000020
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02000000000000020
02000000000000020
02000000000000020
02000000000000020
02000000000000020
02000000000000020
02000000000000020
02000000000000020
02222222222222220
00000000000000000
 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)   :     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+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       5      4
                2      10     16
                3      10     26

          LOCATION  OF  PUMPING  WELLS

          X    Y    RATE(IN CFS)    CONC.

          5   29    0.724E-01        0.00
          8   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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	0.0
0.0	0.0	0.0	0.0	0.0	0.0	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.	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.	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.	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.	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.	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.	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.	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.

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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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) = 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

NODE IDENTIFICATION MAP

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		

```
HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS :      0
       TIME(SECONDS)  :  0.000000E+00
       TIME(DAYS)     :  0.000000E+00
       TIME(YEARS)    :  0.000000E+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  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
   2.568E-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		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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 = 6

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 1
TIME(SECONDS) = 1.10000E+08
TIME(DAYS) = 1.27315E+03
TIME(YEARS) = 3.48588E+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 46.5999996 46.5999995 46.5999995 46.5999996 46.5999996 46.5999996
46.5999996 46.5999995 46.5999995 46.5999995 46.5999996 46.5999995 46.5999996  0.0000000
 0.0000000 45.9000000 45.8445756 45.7972553 45.7717024 45.7884295 45.7980729 45.8999972 45.8999981 45.8999981
45.8999972 45.7980729 45.7884295 45.7717024 45.7972553 45.8445756 45.9000000  0.0000000
 0.0000000 45.2999998 45.0815785 44.9726800 44.9217013 44.9054513 44.9170068 44.9502227 44.9601372 44.9601372
44.9502227 44.9170068 44.9054513 44.9217013 44.9726800 45.0815785 45.2999998  0.0000000
 0.0000000 44.4999995 44.2088171 44.0888852 44.0374250 44.0171488 44.0183804 44.0259605 44.0312835 44.0312835
44.0259605 44.0183804 44.0171488 44.0374250 44.0888852 44.2088171 44.4999995  0.0000000
 0.0000000 43.1999998 43.1885137 43.1404476 43.1208803 43.1092187 43.1054688 43.1066457 43.1063248 43.1063248
43.1066457 43.1054688 43.1092187 43.1208803 43.1404476 43.1885137 43.1999998  0.0000000
 0.0000000 41.8000006 42.1138131 42.1857819 42.1980880 42.1918388 42.1883304 42.1870426 42.1869025 42.1869025
42.1870426 42.1883304 42.1918388 42.1980880 42.1857819 42.1138131 41.8000006  0.0000000
```

0.0000000	41.3888887	41.3072888	41.2918083	41.2888038	41.2782211	41.2734883	41.2883627	41.2878308	41.2878308
41.2883627	41.2734883	41.2782211	41.2888038	41.2918083	41.3072888	41.3888887	0.0000000		
0.0000000	40.4888884	40.4188878	40.3807527	40.3748287	40.3628287	40.3640888	40.3483409	40.3487418	40.3487418
40.3483409	40.3540888	40.3628287	40.3748287	40.3807527	40.4188878	40.4888884	0.0000000		
0.0000000	39.4000003	39.4808282	39.4770482	39.4882882	39.4433873	39.4320388	39.4250887	39.4218884	39.4218884
39.4250887	39.4320388	39.4433873	39.4882882	39.4770482	39.4808282	39.4000003	0.0000000		
0.0000000	38.7000000	38.5273881	38.5788548	38.5438188	38.5218488	38.5072787	38.4883388	38.4851873	38.4851873
38.4883388	38.5072787	38.5218488	38.5438188	38.5788548	38.5273881	38.7000000	0.0000000		
0.0000000	37.8888888	37.7528283	37.8888148	37.8187880	37.8027288	37.8778884	37.8888823	37.8882222	37.8882222
37.8888823	37.8778884	37.8827288	37.8187880	37.8888148	37.7528283	37.8888888	0.0000000		
0.0000000	36.7000002	36.7200382	36.8848280	36.8882088	36.8818804	36.8387883	36.8341108	36.8308888	36.8308888
36.8341108	36.8387883	36.8818804	36.8882088	36.8848280	36.7200382	36.7000002	0.0000000		
0.0000000	35.7000001	35.7353847	35.7282481	35.7158788	35.7058888	35.8888488	35.8881734	35.8838328	35.8838328
35.8881734	35.8888488	35.7058888	35.7158788	35.7282481	35.7353847	35.7000001	0.0000000		
0.0000000	34.8888887	34.7838438	34.7872824	34.7888888	34.7878388	34.7880088	34.7888080	34.7888288	34.7888288
34.7888080	34.7880088	34.7878388	34.7888888	34.7872824	34.7838438	34.8888887	0.0000000		
0.0000000	33.7000002	33.7700734	33.7888883	33.7974188	33.8047244	33.8101118	33.8183077	33.8188540	33.8188540
33.8183077	33.8101118	33.8047244	33.7974188	33.7888883	33.7700734	33.7000002	0.0000000		
0.0000000	32.7888888	32.8008772	32.8188318	32.8384031	32.8888847	32.8880884	32.8774118	32.8810700	32.8810700
32.8774118	32.8880884	32.8888847	32.8384031	32.8188318	32.8008772	32.7888888	0.0000000		
0.0000000	31.7888888	31.8128874	31.8471882	31.8814718	31.8084488	31.8284378	31.8433223	31.8482582	31.8482582
31.8433223	31.8284378	31.8084488	31.8814718	31.8471882	31.8128874	31.7888888	0.0000000		
0.0000000	30.7000001	30.8027828	30.8782288	30.8308183	30.8788788	30.8878538	31.0188884	31.0238820	31.0238820
31.0188884	30.8878538	30.8788788	30.8308183	30.8782288	30.8027828	30.7000001	0.0000000		
0.0000000	29.7000000	29.8238881	29.8238824	29.8888284	30.0482888	30.0777441	30.0881834	30.1073854	30.1073854
30.0881834	30.0777441	30.0482888	29.8888284	29.8238824	29.8238881	29.7000000	0.0000000		
0.0000000	28.8000004	28.8887288	29.0011310	29.0828182	29.1348804	29.1887821	29.1800082	29.1887477	29.1887477
29.1800082	29.1887821	29.1348804	29.0828182	29.0011310	28.8887288	28.8000004	0.0000000		
0.0000000	27.8000001	28.0384884	28.1322787	28.1874214	28.2432803	28.2742429	28.2934851	28.3024882	28.3024882
28.2934851	28.2742429	28.2432803	28.1874214	28.1322787	28.0384884	27.8000001	0.0000000		
0.0000000	27.2888888	27.2888781	27.2818648	27.3322207	27.3888847	27.3818908	27.4071107	27.4143850	27.4143850
27.4071107	27.3818908	27.3888847	27.3322207	27.2818648	27.2888781	27.2888888	0.0000000		
0.0000000	26.3888888	26.4088414	26.4488818	26.4738414	26.4888822	26.5178880	26.5288828	26.5333563	26.5333563
26.5288828	26.5178880	26.4888822	26.4738414	26.4488818	26.4088414	26.3888888	0.0000000		
0.0000000	25.4000003	25.5338830	25.5878384	25.6188732	25.6488888	25.6513231	25.6557188	25.6567880	25.6567880
25.6557188	25.6513231	25.6488888	25.6188732	25.5878384	25.5338830	25.4000003	0.0000000		
0.0000000	24.7888887	24.7411008	24.7888831	24.7788842	24.7824787	24.7838842	24.7878078	24.7822371	24.7822371
24.7878078	24.7838842	24.7824787	24.7788842	24.7888831	24.7411008	24.7888887	0.0000000		
0.0000000	23.8000000	23.8712487	23.8208428	23.8478172	23.8638222	23.8418013	23.8171378	23.8018881	23.8018881
23.8171378	23.8418013	23.8638222	23.8478172	23.8208428	23.8712487	23.8000000	0.0000000		
0.0000000	22.8000004	23.0232888	23.1088387	23.1388182	23.1337280	23.1018488	23.0388827	23.0084348	23.0084348
23.0388827	23.1018488	23.1337280	23.1388182	23.1088387	23.0232888	22.8000004	0.0000000		
0.0000000	22.2888888	22.3178833	22.3488182	22.3874584	22.3472788	22.2943202	22.1282447	22.0778147	22.0778147
22.1282447	22.2943202	22.3472788	22.3874584	22.3488182	22.3178833	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)  =  1.10000E+08
       TIME(DAYS)     =  1.27315E+03
       TIME(YEARS)    =  3.48568E+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	38	38	39	39	39	39	38	39	39	39	39	38	39	39	0
0	38	38	38	39	39	39	38	38	38	38	39	39	38	39	39	39	0
0	38	38	38	38	38	36	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	24	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	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
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

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	24.8	24.9	24.9	24.9	25.0	25.0	25.0	25.0	24.9	24.9	24.8	24.9	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	24.9	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	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	24.9	24.9	24.9	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	24.9	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	24.8	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	24.9	24.9	24.9	24.9	24.9	24.9	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	25.1	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	25.6	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	=	0.00000E+00
INJECTION	=	0.00000E+00
PUMPAGE	=	3.18580E+07
CUMULATIVE NET PUMPAGE	=	3.18580E+07
WATER RELEASE FROM STORAGE	=	-1.46403E+03
LEAKAGE INTO AQUIFER	=	-3.70514E+08
LEAKAGE OUT OF AQUIFER	=	3.37840E+08
CUMULATIVE NET LEAKAGE	=	-3.26339E+07
MASS BALANCE RESIDUAL	=	7.76448E+05
ERROR (AS PERCENT)	=	2.09780E-01

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

RECHARGE	=	0.00000E+00
LEAKAGE INTO AQUIFER	=	3.36831E+00
LEAKAGE OUT OF AQUIFER	=	-3.07164E+00
NET LEAKAGE (QNET)	=	2.88548E-01
INJECTION	=	0.00000E+00
PUMPAGE	=	2.88600E-01
NET WITHDRAWAL (TPUM)	=	2.88600E-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)    :  3.48568E+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	0.0003	0.0233	5.1023	2.1282	3.0206
4.0801	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	0.5126	87.8050	38.2352	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	56.3122	79.4719
102.9751	1.9783	0.0233	0.0003	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0013	0.0755	3.8887	118.2212	56.8264	78.0089
95.7738	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	6.0788	120.4716	59.0508	79.3969
98.0008	4.9059	0.1322	0.0027	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0001	0.0074	0.2837	7.7481	110.7240	59.6300	77.9038
90.7228	6.2762	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	118.5118	61.0815	76.3259
97.4440	7.7222	0.3250	0.0098	0.0002	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0005	0.0177	0.5183	10.3346	105.4207	60.0001	75.9383
87.1162	8.4164	0.4195	0.0143	0.0004	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0008	0.0222	0.6123	11.2904	106.5285	59.8852	74.5013
87.5132	9.1795	0.4960	0.0180	0.0005	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0006	0.0183	0.5934	10.2329	86.4098	51.1294	63.1210
71.9008	8.3511	0.4809	0.0148	0.0005	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0003	0.0083	0.4118	7.4950	73.3874	41.3824	52.2727
50.7480	6.1085	0.2336	0.0075	0.0002	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0001	0.0041	0.1867	3.1842	23.6286	13.9171	17.1085
19.8637	2.8875	0.1512	0.0033	0.0001	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0014	0.0518	0.8341	5.8828	3.7818	4.8328
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	0.0088	0.1809	1.8131	0.9862	1.2012
1.3404	0.1475	0.0078	0.0002	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0001	0.0016	0.0296	0.2728	0.1596	0.1886
0.2283	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	0.0208	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
0.0035	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	56	70	0	0	0	0	0	0	0
0	0	0	0	0	0	2	128	66	79	103	2	0	0	0	0	0	0
0	0	0	0	0	0	4	116	67	78	95	3	0	0	0	0	0	0
0	0	0	0	0	0	6	120	69	79	98	5	0	0	0	0	0	0
0	0	0	0	0	0	8	111	60	76	91	6	0	0	0	0	0	0
0	0	0	0	0	0	10	119	61	76	87	6	0	0	0	0	0	0
0	0	0	0	0	1	10	105	60	76	87	8	0	0	0	0	0	0
0	0	0	0	0	1	11	108	80	75	88	8	0	0	0	0	0	0
0	0	0	0	0	1	10	86	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	6	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
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	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      :  6.29875E+08
     MASS OUT BOUNDARIES     : -3.73727E+00
     MASS PUMPED IN          :  0.00000E+00
     MASS PUMPED OUT         : -7.44394E-11
     INFLOW MINUS OUTFLOW    :  6.29875E+08
     INITIAL MASS STORED     :  0.00000E+00
     PRESENT MASS STORED     :  5.33282E+08
     CHANGE MASS STORED      :  5.33282E+08
   COMPARE RESIDUAL WITH NET FLUX AND MASS ACCUMULATION:
     MASS BALANCE RESIDUAL   :  9.63981E+07
     ERROR  (AS PERCENT)     :  1.53068E+01
```

N : 3
NUMBER OF ITERATIONS : 1

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS : 3
TIME(SECONDS) : 3.155758E+08
TIME(DAYS) : 3.652560E+03
TIME(YEARS) : 1.000000E+01

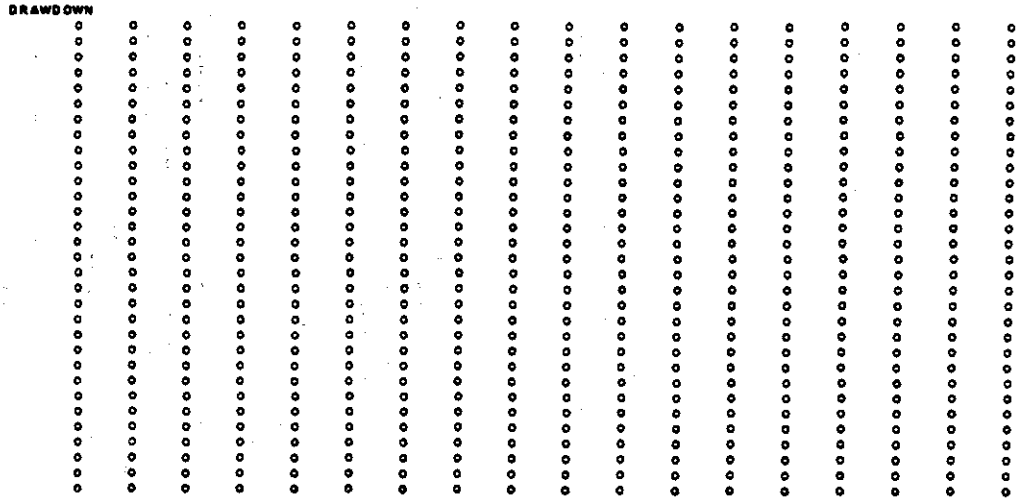
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		
0.0000000	46.5999996	46.5999996	46.5999996	46.5999996	46.5999996	46.5999996	46.5999996	46.5999996	46.5999996
46.5999996	46.5999996	46.5999996	46.5999996	46.5999996	46.5999996	46.5999996	0.0000000		
0.0000000	46.5000000	46.5483398	46.5000053	46.7750384	46.7718977	46.7585159	46.5999973	46.5999981	46.5999981
46.5999973	46.7585159	46.7718978	46.7750384	46.5000053	46.5483398	46.5000000	0.0000000		
0.0000000	46.2999996	46.0820702	44.8730398	44.9221181	44.9060947	44.9174638	44.9502820	44.9503242	44.9503242
44.9502820	44.9174638	44.9060947	44.9221181	44.8730398	46.0820702	46.2999996	0.0000000		
0.0000000	44.4999995	44.2063738	44.0625562	44.0281810	44.0072202	44.0063255	44.0158892	44.0214844	44.0214844
44.0158892	44.0063255	44.0072202	44.0281810	44.0625562	44.2063738	44.4999995	0.0000000		
0.0000000	43.1999989	43.1591830	43.1284562	43.1062184	43.0935293	43.0895020	43.0910276	43.0926718	43.0926718
43.0910276	43.0895020	43.0935293	43.1062184	43.1284562	43.1591830	43.1999989	0.0000000		
0.0000000	41.8000008	42.1115811	42.1818302	42.1903285	42.1868836	42.1831907	42.1818146	42.1814954	42.1814954
42.1818146	42.1831907	42.1868836	42.1903285	42.1818303	42.1115811	41.8000008	0.0000000		
0.0000000	41.3999997	41.3078161	41.2931044	41.2868857	41.2801984	41.2745150	41.2707534	41.2690543	41.2690543
41.2707534	41.2745150	41.2801984	41.2868857	41.2931044	41.3078162	41.3999997	0.0000000		
0.0000000	40.4999998	40.4182707	40.3903798	40.3741888	40.3623186	40.3537862	40.3481420	40.3454871	40.3454871
40.3481420	40.3537862	40.3623186	40.3741888	40.3903798	40.4182707	40.4999998	0.0000000		
0.0000000	39.6000003	39.4811447	39.4777841	39.4802505	39.4444003	39.4328896	39.4258368	39.4220222	39.4220222
39.4258368	39.4328896	39.4444003	39.4802505	39.4777841	39.4811447	39.6000003	0.0000000		
0.0000000	38.7000000	38.5282943	38.5780257	38.5442468	38.5217223	38.5070379	38.4981288	38.4938297	38.4938297
38.4981288	38.5070379	38.5217223	38.5442468	38.5780257	38.5282943	38.7000000	0.0000000		
0.0000000	37.8999995	37.7494775	37.6543212	37.6087423	37.5826318	37.5666586	37.5572885	37.5528496	37.5528496
37.5572885	37.5666586	37.5826318	37.6087423	37.6543212	37.7494775	37.8999995	0.0000000		
0.0000000	38.7000002	38.7147408	38.6845804	38.5557219	38.5351908	38.5218764	38.5139575	38.5102888	38.5102888
38.5139575	38.5218764	38.5351908	38.5557219	38.5845804	38.7147408	38.7000002	0.0000000		
0.0000000	35.7000001	35.7306415	35.7189278	35.7022051	35.6888820	35.6798388	35.6743482	35.6718172	35.6718172
35.6743482	35.6798388	35.6888820	35.7022051	35.7189278	35.7306415	35.7000001	0.0000000		
0.0000000	34.5999997	34.7877851	34.7557800	34.7432268	34.7284910	34.7325252	34.7302853	34.7293204	34.7293204
34.7302853	34.7325252	34.7384810	34.7432268	34.7557800	34.7877851	34.5999997	0.0000000		
0.0000000	33.7000002	33.7838804	33.7780213	33.7706817	33.7625900	33.7582982	33.7572850	33.7563681	33.7563681
33.7572850	33.7582982	33.7625900	33.7706817	33.7780213	33.7838804	33.7000002	0.0000000		
0.0000000	32.7999999	32.7842465	32.8062505	32.8208827	32.8332810	32.8428360	32.8482567	32.8525094	32.8525094
32.8482567	32.8428360	32.8332810	32.8208827	32.8062505	32.7942465	32.7999999	0.0000000		
0.0000000	31.7999998	31.8058488	31.8341573	31.8830883	31.8587303	31.8040288	31.8151147	31.8205821	31.8205821
31.8151147	31.8040288	31.8587303	31.8830883	31.8341573	31.8058488	31.7999998	0.0000000		
0.0000000	30.7000001	30.7986854	30.8845351	30.9144101	30.9606493	30.9755255	30.9910951	30.9986183	30.9986183
30.9910951	30.9755255	30.9606493	30.9144101	30.8845351	30.7986854	30.7000001	0.0000000		
0.0000000	29.7000000	29.8188998	29.8153462	29.8838854	30.0301978	30.0810638	30.0786780	30.0888512	30.0888512
30.0786780	30.0810638	30.0301978	29.8838854	29.8153462	29.8188998	29.7000000	0.0000000		
0.0000000	28.8000004	28.8850720	28.8990855	28.0786468	28.1300091	28.1634235	28.1838548	28.1932423	28.1932423
28.1838548	28.1634235	28.1300091	28.0786468	28.8990855	28.8850720	28.8000004	0.0000000		
0.0000000	27.9000001	28.0420838	28.1382883	28.2020778	28.2481142	28.2781886	28.2982120	28.3072786	28.3072786
28.2982120	28.2781886	28.2481142	28.2020780	28.1382884	28.0420838	27.9000001	0.0000000		
0.0000000	27.2999994	27.2822614	27.2982027	27.3276897	27.3730822	27.3885838	27.4144784	27.4220648	27.4220648
27.4144784	27.3885838	27.3730822	27.3276897	27.2982028	27.2822614	27.2999994	0.0000000		

0.0000000	25.3999999	26.4094140	26.4419069	26.4758707	26.5037168	26.5230781	26.5345237	26.5387478	26.5387478
26.5345237	26.5230781	26.5037168	26.4758707	26.4419069	26.4094141	26.3999999	0.0000000		
0.0000000	25.4000003	26.5381569	26.5804752	26.6237547	26.6468430	26.6681542	26.6835201	26.6881366	26.6881366
26.6835201	26.6681542	26.6468430	26.6237547	26.5804752	26.5381569	26.4000003	0.0000000		
0.0000000	24.7999997	24.7414232	24.7582031	24.7816395	24.7956947	24.7983665	24.7937563	24.7892872	24.7892872
24.7937563	24.7983665	24.7956947	24.7816395	24.7582031	24.7414232	24.7999997	0.0000000		
0.0000000	23.8000000	23.8704788	23.9187538	23.9473878	23.8648797	23.9440725	23.8212667	23.8068271	23.8068271
23.8212667	23.9440725	23.8648797	23.9473878	23.9187538	23.8704788	23.8000000	0.0000000		
0.0000000	22.8000004	23.0246117	23.1083685	23.1389564	23.1382106	23.1074010	23.0444029	23.0132888	23.0132888
23.0444028	23.1074010	23.1382108	23.1389564	23.1083685	23.0244117	22.8000004	0.0000000		
0.0000000	22.2999999	22.3190015	22.3477383	22.3807419	22.3809579	22.2865512	22.1323826	22.0821106	22.0821106
22.1323826	22.2865512	22.3809579	22.3807418	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		

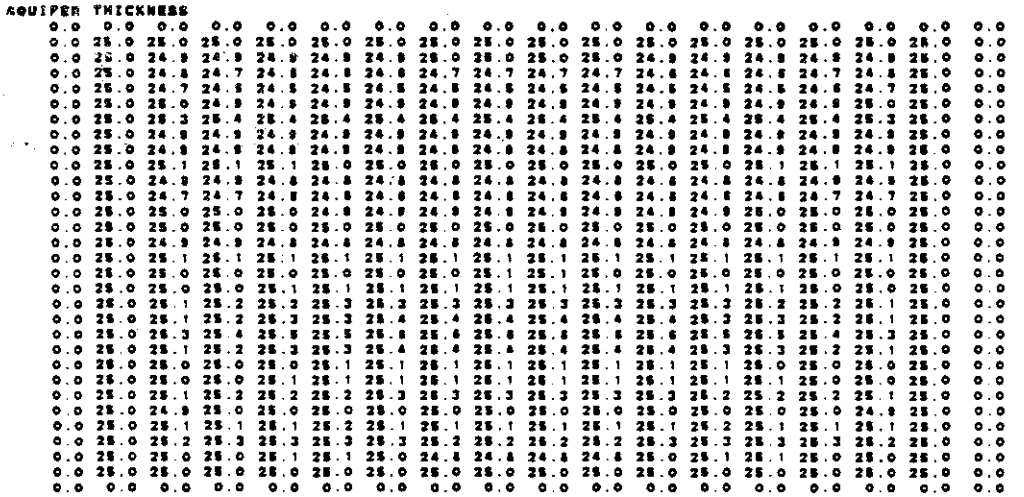
HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 3
TIME(SECONDS) = 3.15576E+08
TIME(DAYS) = 3.65250E+03
TIME(YEARS) = 1.00000E+01

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	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	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 0.14 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 0.16 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                     :  5.13908E+07
  CUMULATIVE  NET  PUMPAGE    :  5.13908E+07
 WATER RELEASE FROM STORAGE   : -1.22983E+03
  LEAKAGE INTO AQUIFER        : -1.08050E+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        :  3.35602E+00
  LEAKAGE OUT OF AQUIFER      : -3.06558E+00
  NET LEAKAGE     (QNET)      :  2.89415E-01
  INJECTION                   :  0.00000E+00
  PUMPAGE                     :  2.89500E-01
  NET WITHDRAWAL     (TPUM)   :  2.89500E-01
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CONCENTRATION

NUMBER OF TIME STEPS :      3
       DELTA T       :  9.55750E+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 :     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     0.0004     0.0226     4.8618     2.1841     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     0.4508    86.2553    43.7881    62.9750
   69.1525     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     2.6812   127.5345    55.9124    75.8304
  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     0.0582     3.5248   117.2404    85.3894    76.1750
   94.9184     3.1582     0.0548     0.0009     0.0000     0.0000     0.0000     0.0000
    0.0000     0.0000     0.0000     0.0001     0.0038     0.1565     5.3824   118.5507    57.8544    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	0.0058	0.2388	7.3537	112.7078	58.2719	76.7540
92.1858	5.9518	0.1927	0.0067	0.0001	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0003	0.0128	0.4268	9.5289	110.0856	60.0688	77.2322
90.5959	7.7281	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	108.5875	60.7201	78.7160
90.5877	8.5880	0.4340	0.0146	0.0004	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0007	0.0248	0.6739	11.9069	106.0951	61.5878	78.5241
87.3322	9.7128	0.5463	0.0201	0.0005	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0008	0.0287	0.7424	12.4188	105.5322	60.8510	80.8538
91.1450	10.1468	0.5828	0.0233	0.0006	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0008	0.0248	0.7855	12.9254	106.7815	61.5817	79.5471
88.0035	10.5873	0.6388	0.0262	0.0007	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0011	0.0283	0.8146	12.3188	83.3873	84.3484	85.0909
70.5550	10.1188	0.8672	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	52.1524	76.5077
85.5192	10.7406	0.7191	0.0281	0.0012	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0001	0.0022	0.0447	0.9854	13.5882	100.7144	82.7971	75.5202
84.2217	11.2280	0.8212	0.0378	0.0018	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0002	0.0045	0.0828	1.2897	14.7048	98.4518	83.3333	75.9886
83.3770	12.2813	1.0873	0.0701	0.0038	0.0002	0.0000	0.0000		
0.0000	0.0000	0.0010	0.0080	0.1325	1.7447	17.0280	95.1389	85.2177	76.1476
80.3857	14.3228	1.4897	0.1115	0.0067	0.0007	0.0000	0.0000		
0.0000	0.0000	0.0005	0.0111	0.1868	2.2874	18.8718	93.4316	86.8327	76.7676
79.7478	16.4634	1.8073	0.1544	0.0091	0.0004	0.0000	0.0000		
0.0000	0.0001	0.0022	0.0154	0.2298	2.8408	20.9732	88.1550	88.1343	76.3060
78.8807	17.5073	2.1820	0.1588	0.0128	0.0018	0.0001	0.0000		
0.0000	0.0001	0.0011	0.0184	0.2881	2.9458	22.1885	90.5721	88.8398	76.0863
78.1478	18.5388	2.4302	0.2187	0.0182	0.0008	0.0001	0.0000		
0.0000	0.0001	0.0018	0.0230	0.3037	3.2132	22.8628	87.4737	88.4824	76.4888
75.7867	19.1287	2.5832	0.2480	0.0188	0.0018	0.0001	0.0000		
0.0000	0.0001	0.0075	0.0370	0.3515	3.4854	23.8882	88.0612	70.4075	76.9918
77.3480	20.0338	2.8898	0.2885	0.0303	0.0081	0.0002	0.0000		
0.0000	0.0003	0.0141	0.1888	0.4858	3.7813	27.1241	85.7843	70.8820	76.9749
74.8157	22.7533	3.1388	0.3980	0.1371	0.0115	0.0003	0.0000		
0.0000	0.0004	0.0147	0.1833	1.3002	4.7558	22.4227	84.9707	70.8835	76.1573
74.3348	18.9253	3.9352	1.0799	0.1262	0.0120	0.0004	0.0000		
0.0000	0.0005	0.0141	0.1535	1.3488	5.8910	25.1843	81.7870	89.3432	74.8128
71.7573	21.2388	4.7110	1.1204	0.1285	0.0116	0.0004	0.0000		
0.0000	0.0004	0.0123	0.1483	1.3088	5.8543	24.8882	78.1284	88.0223	72.4588
69.5383	21.0371	4.8505	1.0841	0.1206	0.0101	0.0003	0.0000		
0.0000	0.0006	0.0127	0.1330	1.1702	5.5185	23.4828	72.9421	82.9487	68.1882
84.3705	19.8825	4.8570	0.9717	0.1087	0.0104	0.0004	0.0000		
0.0000	0.0012	0.0123	0.1163	0.9802	4.7488	18.2105	63.8242	58.8558	80.8778
58.7838	15.4882	3.8410	0.7975	0.0858	0.0101	0.0010	0.0000		
0.0000	0.0007	0.0110	0.0804	0.6708	2.8020	18.2287	48.4618	42.9986	44.9883
42.0788	13.7258	2.3285	0.5588	0.0744	0.0090	0.0006	0.0000		
0.0000	0.0006	0.0080	0.0571	0.1681	1.3422	8.7807	28.3221	29.8812	31.7113
24.8722	8.8438	1.1138	0.1385	0.0468	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	66	44	63	69	0	0	0	0	0	0	0	0
0	0	0	0	0	0	3	126	96	79	103	2	0	0	0	0	0	0	0
0	0	0	0	0	0	4	117	95	76	96	3	0	0	0	0	0	0	0
0	0	0	0	0	0	6	115	96	78	97	5	0	0	0	0	0	0	0
0	0	0	0	0	0	7	113	96	77	92	6	0	0	0	0	0	0	0
0	0	0	0	0	0	10	110	90	77	91	8	0	0	0	0	0	0	0
0	0	0	0	0	1	11	110	91	77	91	9	0	0	0	0	0	0	0
0	0	0	0	0	1	12	105	92	77	87	10	1	0	0	0	0	0	0
0	0	0	0	0	1	12	110	91	81	91	10	1	0	0	0	0	0	0
0	0	0	0	0	1	13	107	92	80	88	11	1	0	0	0	0	0	0
0	0	0	0	0	1	12	83	84	85	71	10	1	0	0	0	0	0	0
0	0	0	0	0	1	13	102	92	77	88	11	1	0	0	0	0	0	0
0	0	0	0	0	1	14	101	93	78	84	11	1	0	0	0	0	0	0
0	0	0	0	0	1	15	98	94	78	83	12	1	0	0	0	0	0	0
0	0	0	0	0	2	17	95	95	78	80	14	1	0	0	0	0	0	0
0	0	0	0	0	2	20	93	97	78	80	16	2	0	0	0	0	0	0
0	0	0	0	0	3	21	89	96	78	77	16	2	0	0	0	0	0	0
0	0	0	0	0	3	22	91	98	78	78	16	2	0	0	0	0	0	0
0	0	0	0	0	3	23	87	99	78	76	16	3	0	0	0	0	0	0
0	0	0	0	0	3	24	89	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	18	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	8	25	78	68	72	70	21	5	1	0	0	0	0	0
0	0	0	0	1	8	23	73	83	66	64	20	6	1	0	0	0	0	0
0	0	0	0	1	5	18	64	67	61	67	15	4	1	0	0	0	0	0
0	0	0	0	1	3	15	48	43	46	42	14	2	1	0	0	0	0	0
0	0	0	0	0	1	7	28	30	32	26	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	=	1.771498+10
MASS OUT BOUNDARIES	=	-1.595938+06
MASS PUMPED IN	=	0.00000E+00
MASS PUMPED OUT	=	-2.37135E+06
INFLOW MINUS OUTFLOW	=	1.73078E+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	=	2.59902E+09
ERROR (AS PERCENT)	=	1.46713E+01

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	46.3	0.0	0.000
			1	45.0	128.0	3.466
			2	45.0	134.4	6.571
			3	45.0	127.5	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	33.5	0.2	3.466
			2	33.5	77.5	6.571
			3	33.5	75.0	10.000
OBS.WELL NO.	X	Y	N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
3	10	26				
			0	24.5	0.0	0.000
			1	24.5	0.0	3.466
			2	24.5	0.2	6.571
			3	24.5	72.5	10.000

MESSAGE SUMMARY: MESSAGE NUMBER - COUNT

206 511 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,LEVELB,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   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   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          0
1          1.
0000000000000000000
0222222222222222220
0200000000000000020
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0222222222222222220
0000000000000000000
 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,LEVELS,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+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)       :   3520
            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     15
                 3      10     26

          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   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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	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.	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.	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.	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.	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.	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.	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.	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.

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) = 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
```

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  46.5000000  46.5000000  46.5000000  46.5000000  46.5000000  46.5000000  46.5000000  46.5000000  46.5000000
 46.5000000  46.5000000  46.5000000  46.5000000  46.5000000  46.5000000  46.5000000   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	34.9000000	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

2.556E-03	6.926E-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		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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 : 6

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	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	46.5999996	46.5999997	46.5999997	46.5999997
46.5999997	46.5999996	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	0.0000000		
0.0000000	45.9000000	45.8477570	45.8042759	45.7843100	45.7812271	45.8430684	46.0068999	46.0593821	46.0593821
46.0068999	45.8430684	45.7812271	45.7843100	45.8042759	45.8477570	45.9000000	0.0000000		
0.0000000	45.2999998	45.0668388	44.9842576	44.9421061	44.9393615	44.9708013	45.0381836	45.0684205	45.0684205
45.0381836	44.9708013	44.9393615	44.9421061	44.9842576	45.0668388	45.2999998	0.0000000		
0.0000000	44.4999995	44.2163205	44.1041596	44.0806171	44.0523923	44.0668347	44.0838181	44.1105720	44.1105720
44.0838181	44.0668347	44.0523923	44.0806171	44.1041596	44.2163205	44.4999995	0.0000000		
0.0000000	43.1999999	43.1738801	43.1552787	43.1443013	43.1425183	43.1497272	43.1612324	43.1684119	43.1684119
43.1612324	43.1497272	43.1425183	43.1443013	43.1552787	43.1738801	43.1999999	0.0000000		
0.0000000	41.8000008	42.1205805	42.1999802	42.2169458	42.2215134	42.2281425	42.2316919	42.2355115	42.2355115
42.2316919	42.2281425	42.2215134	42.2169458	42.1999802	42.1205805	41.8000008	0.0000000		
0.0000000	41.3999987	41.3137085	41.3048412	41.3053733	41.3053545	41.3054383	41.3063077	41.3070581	41.3070581
41.3063077	41.3054383	41.3053545	41.3053733	41.3048412	41.3137085	41.3999987	0.0000000		
0.0000000	40.4999996	40.4253144	40.4021887	40.3915940	40.3860273	40.3808440	40.3789057	40.3780803	40.3780803
40.3789057	40.3808440	40.3860273	40.3915940	40.4021887	40.4253144	40.4999996	0.0000000		
0.0000000	39.4000003	39.4855328	39.4889644	39.4738854	39.4823038	39.4846853	39.4802415	39.4482981	39.4482981
39.4802415	39.4846853	39.4823038	39.4738854	39.4889644	39.4855328	39.4000003	0.0000000		
0.0000000	38.7000000	38.5316653	38.5854432	38.5554911	38.5374419	38.5282800	38.5199851	38.5171842	38.5171842
38.5199851	38.5282800	38.5374419	38.5554911	38.5854432	38.5316653	38.7000000	0.0000000		
0.0000000	37.8999995	37.7562025	37.6870097	37.6271434	37.6058132	37.5934723	37.5885161	37.5834289	37.5834289
37.5885161	37.5934723	37.6058132	37.6271434	37.6870097	37.7562025	37.8999995	0.0000000		
0.0000000	36.7000002	36.7231413	36.7005787	36.6778675	36.6623272	36.6529884	36.6478243	36.6456072	36.6456072
36.6478243	36.6529884	36.6623272	36.6778675	36.7005787	36.7231413	36.7000002	0.0000000		
0.0000000	35.7000001	35.7379623	35.7333081	35.7228489	35.7148123	35.7098298	35.7073138	35.7062559	35.7062559
35.7073138	35.7098298	35.7148123	35.7228489	35.7333081	35.7379623	35.7000001	0.0000000		
0.0000000	34.8999997	34.7961184	34.7715025	34.7658082	34.7648770	34.7651203	34.7658884	34.7660672	34.7660672
34.7658884	34.7651203	34.7648770	34.7658082	34.7715025	34.7961184	34.8999997	0.0000000		
0.0000000	33.7000002	33.7718777	33.7920805	33.8022982	33.8108474	33.8176396	33.8228852	33.8252743	33.8252743
33.8228852	33.8176396	33.8108474	33.8022982	33.7920805	33.7718777	33.7000002	0.0000000		
0.0000000	32.7999999	32.8020853	32.8214012	32.8424088	32.8604481	32.8742034	32.8834084	32.8879780	32.8879780
32.8834084	32.8742034	32.8604481	32.8424088	32.8214012	32.8020853	32.7999999	0.0000000		
0.0000000	31.8000000	31.8138876	31.8495515	31.8847532	31.9134486	31.9346087	31.9482185	31.9549073	31.9549073
31.9482185	31.9346087	31.9134486	31.8847532	31.8495515	31.8138876	31.8000000	0.0000000		
0.0000000	30.7000001	30.8037874	30.8782455	30.9334979	30.9739107	31.0020855	31.0199174	31.0284885	31.0284885
31.0199174	31.0020855	30.9739107	30.9334979	30.8782455	30.8037874	30.7000001	0.0000000		
0.0000000	29.7000000	29.8244061	29.9255386	29.9960075	30.0479159	30.0810901	30.1014851	30.1111073	30.1111073
30.1014851	30.0810901	30.0479159	29.9960075	29.9255386	29.8244061	29.7000000	0.0000000		
0.0000000	28.8000004	28.8883883	29.0023880	29.0837783	29.1387433	29.1714837	29.1927085	29.2027720	29.2027720
29.1927085	29.1714837	29.1387433	29.0837783	29.0023880	28.8883883	28.8000004	0.0000000		
0.0000000	27.9000001	28.0399840	28.1332833	28.1988468	28.2460405	28.2783810	28.2957118	28.3049282	28.3049282
28.2957118	28.2783810	28.2460405	28.1988468	28.1332833	28.0399840	27.9000001	0.0000000		
0.0000000	27.2999988	27.2803871	27.2918613	27.3333608	27.3663087	27.3833887	27.4089194	27.4183294	27.4183294
27.4089194	27.3833887	27.3663087	27.3333608	27.2918613	27.2803871	27.2999988	0.0000000		
0.0000000	26.3999999	26.4089805	26.4407155	26.4739429	26.5005019	26.5183135	26.5300437	26.5348784	26.5348784
26.5300437	26.5183135	26.5005019	26.4739429	26.4407155	26.4089805	26.3999999	0.0000000		
0.0000000	25.4000003	25.5339374	25.5884182	25.6203734	25.6408626	25.6523372	25.6568882	25.6579750	25.6579750
25.6568882	25.6523372	25.6408626	25.6203734	25.5884182	25.5339374	25.4000003	0.0000000		

0.0000000	24.7999997	24.7412825	24.7573413	24.7601218	24.7621600	24.7644662	24.7884881	24.7831182	24.7831182
24.7884881	24.7644662	24.7831600	24.7601218	24.7573413	24.7412825	24.7999997	0.0000000		
0.0000000	23.8000000	23.8713771	23.8207868	23.8478845	23.8844180	23.8420340	23.8177884	23.8021883	23.8021883
23.8177884	23.8420340	23.8844180	23.8478845	23.8207868	23.8713771	23.8000000	0.0000000		
0.0000000	22.8000004	23.0234518	23.1067882	23.1361512	23.1340468	23.1018882	23.0373781	23.0058277	23.0058277
23.0373781	23.1018883	23.1340465	23.1361612	23.1067882	23.0234518	22.8000004	0.0000000		
0.0000000	22.2888888	22.3178232	22.3480864	22.3675774	22.3474388	22.2844885	22.1284537	22.0780117	22.0780117
22.1284537	22.2844885	22.3474388	22.3675774	22.3480864	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) = 1.100005+08
TIME(DAYS) = 1.27315E+03
TIME(YEARS) = 3.48589E+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	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
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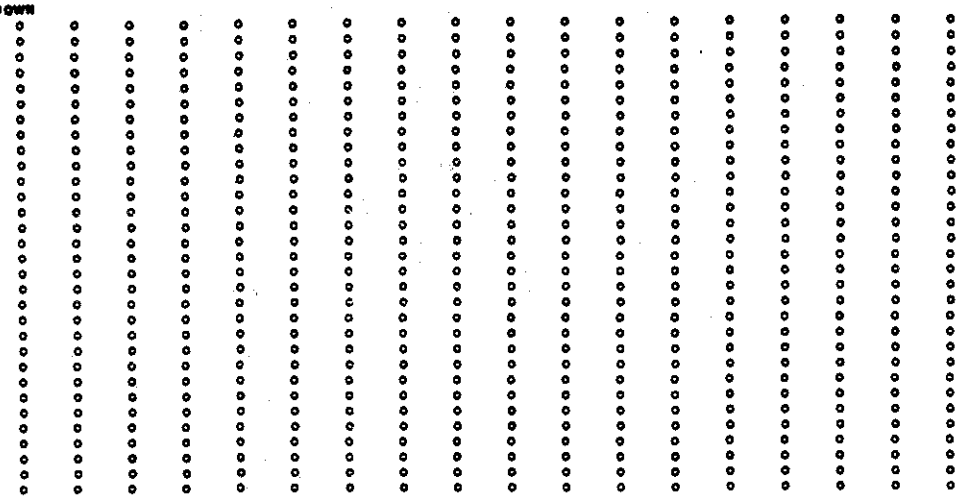
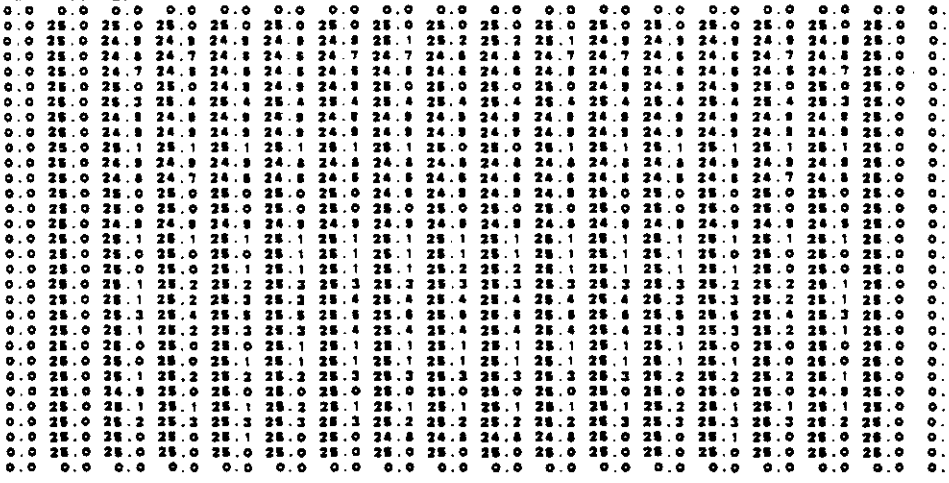
0	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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                    : -3.18560E+07
   PUMPAGE                      :  3.18560E+07
   CUMULATIVE  NET  PUMPAGE     :  0.00000E+00
   WATER RELEASE FROM STORAGE   : -2.02448E+03
   LEAKAGE INTO AQUIFER         : -3.38714E+08
   LEAKAGE OUT OF AQUIFER       :  3.38755E+08
   CUMULATIVE  NET  LEAKAGE     :  6.04480E+04

       MASS BALANCE RESIDUAL    : -4.24860E+04
       ERROR  (AS PERCENT)      : -1.14871E-02

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

   RECHARGE                     :  0.00000E+00
   LEAKAGE INTO AQUIFER         :  3.07822E+00
   LEAKAGE OUT OF AQUIFER       : -3.07868E+00
   NET LEAKAGE      (QNET)      : -3.89013E-04
   INJECTION                    : -2.88600E-01
   PUMPAGE                      :  2.88600E-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)  :  3.48868E+00
  CHEM.TIME(YEARS)   :  3.48862E+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     0.0858    11.6479     7.9048    11.2240

     9.2852     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   182.4552   128.0205   184.9878

   164.8857     2.4687     0.0078     0.0002     0.0000     0.0000     0.0000     0.0000

     0.0000     0.0000     0.0000     0.0001     0.0064     0.5870    40.3986   186.7570   124.7480   178.1530

   180.2038    32.5586     0.4588     0.0052     0.0001     0.0000     0.0000     0.0000

     0.0000     0.0000     0.0000     0.0005     0.0302     1.8201    84.6731   181.0646   115.8284   188.8013

   147.5289    68.3667     1.4898     0.0244     0.0004     0.0000     0.0000     0.0000

     0.0000     0.0000     0.0000     0.0011     0.0683     2.7778    75.8842   170.9780   123.4220   167.8880

   140.3898    81.2510     2.2441     0.0527     0.0009     0.0000     0.0000     0.0000

     0.0000     0.0000     0.0000     0.0024     0.1188     4.4038    84.7881   180.8272   129.2811   172.8862

   149.2718    68.5184     3.5572     0.0860     0.0019     0.0000     0.0000     0.0000
```

0.0000	0.0000	0.0001	0.0044	0.1758	4.8872	81.3483	188.8708	122.3023	158.8453
141.5119	65.9208	3.9587	0.1420	0.0035	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0001	0.0068	0.2525	6.3920	78.9231	187.3347	128.2730	162.8506
140.2188	53.9442	5.1888	0.2038	0.0065	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0002	0.0083	0.2774	6.1268	78.6397	160.7488	108.4530	138.0172
128.6058	63.7277	4.8519	0.2240	0.0067	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0001	0.0077	0.2581	5.7068	59.8828	128.4848	108.1434	134.8080
108.6883	45.8386	4.6133	0.2093	0.0062	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0001	0.0032	0.1218	3.3885	41.1067	92.0348	59.7884	88.3283
77.7827	33.3748	2.7389	0.0584	0.0028	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0009	0.0482	1.2509	14.0100	28.8559	28.8523	37.7511
24.8782	11.3819	1.0120	0.0390	0.0008	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0002	0.0115	0.2788	3.2242	10.8213	9.1239	11.5188
8.8829	2.8277	0.2243	0.0083	0.0002	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0019	0.0475	0.8457	2.8535	2.0271	2.5819
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	0.3871	0.4803
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	0.0859	0.0580	0.0708
0.0882	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	0.0018	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	0.0008	0.0007	0.0009
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	182	129	188	165	2	0	0	0	0	0	0
0	0	0	0	0	1	40	188	125	175	150	33	0	0	0	0	0	0
0	0	0	0	0	2	85	181	116	160	148	89	1	0	0	0	0	0
0	0	0	0	0	3	78	171	123	166	140	61	2	0	0	0	0	0
0	0	0	0	0	4	85	181	123	173	148	88	4	0	0	0	0	0
0	0	0	0	0	5	81	170	122	180	142	66	4	0	0	0	0	0
0	0	0	0	0	5	79	187	126	183	140	64	5	0	0	0	0	0
0	0	0	0	0	5	79	151	108	138	127	84	5	0	0	0	0	0
0	0	0	0	0	5	60	128	106	135	107	49	5	0	0	0	0	0
0	0	0	0	0	3	41	92	70	88	78	33	3	0	0	0	0	0
0	0	0	0	0	1	14	29	30	38	28	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	46.5999995	46.5999995	46.5999995	46.5999995	46.5999996	46.5999997	46.5999997	46.5999997
46.5999997	46.5999996	46.5999995	46.5999995	46.5999995	46.5999996	46.5999996	0.0000000		
0.0000000	45.9000000	45.8490547	45.8082365	45.7888302	45.7941012	45.8459926	46.0120817	46.0621988	46.0621988
46.0120817	45.8459925	45.7941012	45.7888302	45.8082365	45.8490547	45.9000000	0.0000000		
0.0000000	45.2999996	45.0888845	44.9638912	44.9411887	44.9384823	44.9708880	45.0388718	45.0898300	45.0898300
45.0388718	44.9708880	44.9384823	44.9411887	44.9638912	45.0888845	45.2999998	0.0000000		
0.0000000	44.4999995	44.2114520	44.0958040	44.0500302	44.0407804	44.0554477	44.0830788	44.1008448	44.1008448
44.0830788	44.0554477	44.0407804	44.0500302	44.0958040	44.2114520	44.4999995	0.0000000		
0.0000000	43.1999999	43.1858818	43.1420253	43.1279273	43.1247851	43.1318171	43.1439453	43.1524287	43.1524287
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	42.2187900	42.2242883	42.2280794	42.2280794
42.2242883	42.2187900	42.2144271	42.2103986	42.1945885	42.1179188	41.8000008	0.0000000		

0.0000000	41.3999997	41.3138060	41.3048052	41.3048525	41.3041180	41.3041436	41.3051833	41.3051373	41.3051373
41.3051833	41.3041436	41.3041180	41.3048525	41.3048052	41.3138060	41.3999997	0.0000000		
0.0000000	40.4999998	40.4243827	40.4006384	40.3895257	40.3826873	40.3763233	40.3761836	40.3763592	40.3763592
40.3761836	40.3763233	40.3826873	40.3895257	40.4006384	40.4243827	40.4999998	0.0000000		
0.0000000	39.4000003	39.4885805	39.4886741	39.4733147	39.4614070	39.4532548	39.4484721	39.4483141	39.4483141
39.4484721	39.4532548	39.4614070	39.4733147	39.4886741	39.4885805	39.4000003	0.0000000		
0.0000000	38.7000000	38.5320885	38.5885054	38.5552457	38.5360064	38.5236902	38.5188485	38.5138026	38.5136026
38.5188485	38.5236902	38.5360064	38.5552457	38.5885054	38.5320885	38.7000000	0.0000000		
0.0000000	37.9999995	37.7528544	37.8606011	37.8178324	37.8044078	37.8005747	37.8727548	37.8882402	37.8882402
37.8727548	37.8005747	37.8044078	37.8178324	37.8606011	37.7528544	37.8999995	0.0000000		
0.0000000	36.7000002	36.7174063	36.8898081	36.8633893	36.8449485	36.8323868	36.8288586	36.8238847	36.8238847
36.8288586	36.8323868	36.8449485	36.8633893	36.8898081	36.7174063	36.7000002	0.0000000		
0.0000000	35.7000001	35.7328854	35.7232871	35.7085852	35.8989578	35.8853088	35.8828488	35.8828280	35.8828280
35.8828488	35.8853088	35.8989578	35.7085852	35.7232871	35.7328854	35.7000001	0.0000000		
0.0000000	34.8999997	34.7898021	34.7583908	34.7684883	34.7431881	34.7403277	34.7389283	34.7383862	34.7383862
34.7389283	34.7403277	34.7431881	34.7684883	34.7583908	34.7898021	34.8999997	0.0000000		
0.0000000	33.7000002	33.7882133	33.7780234	33.7840382	33.7881005	33.7917187	33.7944121	33.7888310	33.7888310
33.7944121	33.7917187	33.7881005	33.7840382	33.7780234	33.7882133	33.7000002	0.0000000		
0.0000000	32.7999999	32.7886182	32.8067325	32.8242723	32.8378285	32.8482227	32.8551807	32.8586648	32.8586648
32.8551807	32.8482227	32.8378285	32.8242723	32.8067325	32.7886182	32.7999999	0.0000000		
0.0000000	31.7999998	31.8088941	31.8362068	31.8880468	31.8804713	31.8083782	31.8199879	31.8258384	31.8258384
31.8199879	31.8083782	31.8804713	31.8880468	31.8362068	31.8088942	31.7999998	0.0000000		
0.0000000	30.7000001	30.7975811	30.8862235	30.9186449	30.8538238	30.8780888	30.8850885	31.0027753	31.0027753
30.8850885	30.8780888	30.8538240	30.9186449	30.8862235	30.7975811	30.7000001	0.0000000		
0.0000000	29.7000000	29.8197127	29.9167338	29.9885853	30.0327188	30.0839830	30.0831841	30.0822846	30.0822846
30.0831841	30.0839830	30.0327189	29.9885853	29.9167338	29.8197127	29.7000000	0.0000000		
0.0000000	28.6000004	28.8888874	29.0002042	29.0802851	29.1320729	29.1658286	29.1883386	29.1980388	29.1980388
29.1883386	29.1658286	29.1320728	29.0802851	29.0002042	28.8888875	28.8000004	0.0000000		
0.0000000	27.8000001	28.0428408	28.1372178	28.2034138	28.2487857	28.2811227	28.3003887	28.3088636	28.3088636
28.3003887	28.2811227	28.2487857	28.2034138	28.1372178	28.0428408	27.8000001	0.0000000		
0.0000000	27.2999998	27.2828281	27.2958530	27.3388396	27.3744411	27.4001788	27.4152488	27.4238052	27.4238052
27.4152488	27.4001788	27.3744411	27.3388396	27.2958530	27.2828281	27.2999998	0.0000000		
0.0000000	26.3999999	26.4087213	26.4428085	26.4786338	26.5048026	26.5243443	26.5388386	26.5412285	26.5412285
26.5388386	26.5243443	26.5048025	26.4786339	26.4428085	26.4087213	26.3999999	0.0000000		
0.0000000	25.4000003	25.5364104	25.5909466	25.6244332	25.6466962	25.6581803	25.6646343	25.6663034	25.6663034
25.6646343	25.6581803	25.6466962	25.6244332	25.5909466	25.5364104	25.4000003	0.0000000		
0.0000000	24.7999997	24.7416075	24.7666629	24.7821676	24.7863480	24.7891474	24.7946080	24.7901686	24.7901686
24.7946080	24.7891474	24.7863480	24.7821676	24.7666629	24.7416075	24.7999997	0.0000000		
0.0000000	23.6000000	23.6706130	23.8200142	23.9477632	23.9884518	23.9446241	23.9216880	23.9071763	23.9071763
23.9216880	23.9446241	23.9884518	23.9477632	23.8200143	23.6706130	23.6000000	0.0000000		
0.0000000	22.6000004	23.0244891	23.1066391	23.1382020	23.1385197	23.1077824	23.0448987	23.0137164	23.0137164
23.0448987	23.1077824	23.1385197	23.1382020	23.1066391	23.0244891	22.6000004	0.0000000		
0.0000000	22.2999998	22.3190450	22.3478213	22.3609843	22.3811120	22.2887318	22.1325886	22.0823241	22.0823241
22.1325886	22.2887318	22.3811120	22.3609843	22.3478213	22.3190450	22.2999998	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) = 3.15576E+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	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	25	26	26	25	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
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

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	24.6	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	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.8	24.8	25.0	0.0
0.0	25.0	24.9	24.9	24.9	24.9	24.9	24.8	24.9	24.8	24.8	24.9	24.8	24.9	24.9	24.8	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	24.8	24.8	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	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.7	24.6	25.0	0.0
0.0	25.0	25.0	25.0	25.0	24.9	24.9	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	24.8	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	25.6	25.6	25.6	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	25.1	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	0.14	0.14	0.14	0.14	0.14	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	0.14	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
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	= -5.13808E+07
PUMPAGE	= 5.13808E+07
CUMULATIVE NET PUMPAGE	= 0.00000E+00
WATER RELEASE FROM STORAGE	= -1.80025E+03
LEAKAGE INTO AQUIFER	= -9.70743E+08
LEAKAGE OUT OF AQUIFER	= 9.70797E+08
CUMULATIVE NET LEAKAGE	= 5.42720E+04
MASS BALANCE RESIDUAL	= -5.50640E+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	= -2.88800E-01
PUMPAGE	= 2.88800E-01
NET WITHDRAWAL (TPUM)	= 0.00000E+00

CONCENTRATION

```
NUMBER OF TIME STEPS :      3
       DELTA T       :  9.56780E+07
       TIME(SECONDS) :  3.15578E+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 :     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	6.4231	9.3333
9.6389	-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	-0.4666	209.9338	111.3610	182.2826
187.7689	-0.3890	-0.0059	-0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	-0.0888	3.0265	187.6257	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	-0.0433	32.2282	180.8475	98.9273	143.7879
152.6435	25.7611	-0.0883	0.0003	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0021	0.0027	65.1638	194.3383	118.4587	167.7821
158.8622	52.9614	0.0071	0.0012	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	-0.0000	0.0002	0.0098	0.3854	74.5705	186.6483	114.5766	163.8897
149.3847	59.7428	0.3182	0.0082	0.0002	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0017	0.0645	2.5812	81.8037	179.4837	116.9832	180.2518
146.3828	65.9089	2.1782	0.0565	0.0014	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0002	0.0072	0.2352	5.5209	82.4808	174.2218	126.3331	164.1307
146.2707	66.5529	4.5892	0.2011	0.0063	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0003	0.0131	0.3835	7.8580	85.4540	174.8007	130.2509	168.3577
146.9488	68.4415	6.1837	0.3084	0.0105	0.0003	0.0000	0.0000		
0.0000	0.0000	0.0005	0.0176	0.4876	8.4872	88.7287	189.9980	131.8189	166.3813
144.6580	70.1775	6.8531	0.3759	0.0141	0.0004	0.0000	0.0000		
0.0000	0.0000	0.0006	0.0210	0.5377	9.2551	84.1869	186.1838	130.6128	163.8138
141.6881	67.8234	7.4332	0.4311	0.0188	0.0005	0.0000	0.0000		
0.0000	0.0000	0.0006	0.0222	0.5825	9.8081	85.8519	188.5870	130.2249	163.1541
140.9968	69.2729	7.7107	0.4505	0.0178	0.0006	0.0000	0.0000		
0.0000	0.0000	0.0006	0.0213	0.5415	9.7376	84.6581	165.5889	134.5225	166.6537
144.9472	68.4527	7.8097	0.4327	0.0171	0.0006	0.0000	0.0000		
0.0000	0.0000	0.0006	0.0214	0.5128	9.5034	83.3038	186.4080	129.8700	160.6445
141.2898	67.1682	7.8288	0.4112	0.0172	0.0005	0.0000	0.0000		
0.0000	0.0000	0.0008	0.0242	0.6341	9.0279	75.4910	182.3280	126.7192	164.6435
138.4109	61.0228	7.2884	0.4294	0.0198	0.0008	0.0000	0.0000		
0.0000	0.0000	0.0012	0.0298	0.6852	8.5856	72.1024	160.4471	128.3580	155.3024
138.9444	58.4535	5.9305	0.4586	0.0240	0.0010	0.0000	0.0000		
0.0000	0.0001	0.0028	0.0417	0.6843	6.3261	62.9376	154.2485	133.9227	158.2330
137.8408	51.5127	5.7676	0.5401	0.0340	0.0021	0.0001	0.0000		
0.0000	0.0001	0.0025	0.0848	0.8288	9.8453	63.3510	156.5784	134.9161	156.1305
136.3391	52.1684	6.0368	0.7596	0.0631	0.0020	0.0001	0.0000		
0.0000	0.0002	0.0083	0.0967	1.3489	12.7107	72.1008	188.4730	137.4008	158.8682
137.5883	59.4832	10.4008	1.1058	0.0797	0.0052	0.0001	0.0000		
0.0000	0.0004	0.0100	0.1344	1.7685	15.4496	79.5883	155.6271	138.0441	159.0304
137.6284	65.7128	12.8851	1.4820	0.1107	0.0083	0.0007	0.0000		
0.0000	0.0014	0.0287	0.1883	2.1841	17.4110	82.5080	152.8040	136.9732	158.8522
136.4870	68.3853	14.2783	1.7718	0.1518	0.0242	0.0009	0.0000		
0.0000	0.0026	0.0394	0.2412	2.8385	18.8112	82.4829	144.5429	137.6537	153.7636
132.2970	68.8700	15.4137	2.0724	0.1987	0.0322	0.0021	0.0000		
0.0000	0.0038	0.0550	0.3889	2.8223	19.7178	82.6847	145.0148	137.2201	151.8889
129.8102	68.8119	16.1519	2.3001	0.3002	0.0447	0.0029	0.0000		

0.0000	0.0045	0.1284	0.5989	3.5755	20.3536	80.5125	141.9559	134.3225	145.6110
127.9858	67.3398	16.8771	2.9170	0.5681	0.1051	0.0037	0.0000		
0.0000	0.0043	0.1615	1.2102	5.3863	24.3049	81.0280	135.5645	129.2586	141.5668
123.0878	66.7615	19.8744	4.3839	0.8871	0.1313	0.0034	0.0000		
0.0000	0.0048	0.1178	1.0791	6.4879	26.1045	72.9546	124.3830	123.5742	130.3087
112.3087	62.1399	21.3722	5.3429	0.6815	0.0858	0.0040	0.0000		
0.0000	0.0082	0.0841	0.6085	5.0131	21.0898	59.9215	104.3337	102.4342	110.2844
93.4387	51.0858	17.4730	4.1345	0.6630	0.0787	0.0043	0.0000		
0.0000	0.0050	0.0709	0.5529	3.4323	14.4840	43.5800	59.3384	65.9384	75.4846
60.9577	35.2184	11.8004	2.8005	0.4801	0.0575	0.0041	0.0000		
0.0000	0.0029	0.0352	0.2876	1.5835	5.5858	20.5235	54.2515	53.2747	61.0315
47.4883	16.9326	5.3381	1.2782	0.2182	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	6	9	10	0	0	0	0	0	0	0
0	0	0	0	0	0	0	210	111	162	158	0	0	0	0	0	0	0
0	0	0	0	0	0	3	188	96	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	55	194	118	168	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	179	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	64	6	0	0	0	0	0
0	0	0	0	0	8	88	170	132	165	146	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	88	167	130	163	141	69	6	0	0	0	0	0
0	0	0	0	1	10	85	169	135	167	148	65	6	0	0	0	0	0
0	0	0	0	1	10	83	166	130	161	141	67	6	0	0	0	0	0
0	0	0	0	1	9	75	162	126	155	136	61	7	0	0	0	0	0
0	0	0	0	1	5	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	136	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	156	139	159	136	66	13	1	0	0	0	0
0	0	0	0	2	17	83	153	138	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	149	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	28	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	44	69	66	75	61	38	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	=	0.000000E+00
MASS OUT BOUNDARIES	=	-3.122918E+08
MASS PUMPED IN	=	2.883028E+10
MASS PUMPED OUT	=	-3.814148E+08
INFLOW MINUS OUTFLOW	=	2.922858E+10
INITIAL MASS STORED	=	0.000000E+00
PRESENT MASS STORED	=	3.061838E+10
CHANGE MASS STORED	=	3.061838E+10

COMPARE RESIDUAL WITH NET FLUX AND MASS ACCUMULATION:

MASS BALANCE RESIDUAL	=	-1.392888E+08
ERROR (AS PERCENT)	=	-4.321928E+00

BABYLON,LEVEL8,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	6				
			0	45.3	0.0	0.000
			1	45.0	185.8	3.486
			2	45.0	201.1	8.971
			3	45.0	187.8	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	0.8	3.486
			2	32.8	157.1	8.971
			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	0.8	8.971
			3	24.8	141.6	10.000

MESSAGE SUMMARY: MESSAGE NUMBER - COUNT

204 511 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=B
//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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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.
00000000000000000
02222222222222220
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022222222222222220
00000000000000000
 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
```

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

BABYLON,LEVELS,CHLORIDE                                                   00000000

                    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)         =       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)       =  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)
   0.31000E+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     15
                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   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)

0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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

WATER TABLE

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.	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.	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.	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.	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.	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.	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.

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	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	1.45E-01	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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 = 1.16000E+08 SQ. FT.

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

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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
  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
  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	46.5000000	46.5000000	46.5000000	46.5000000	46.5000000	46.5000000	46.5000000	46.5000000	46.5000000
46.5000000	46.5000000	46.5000000	46.5000000	46.5000000	46.5000000	46.5000000	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	34.9000000	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	28.8000000	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	27.9000000	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	6.938E-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		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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 = 6

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 1
TIME(SECONDS) = 3.10000E+07
TIME(DAYS) = 3.58796E+02
TIME(YEARS) = 9.82331E-01

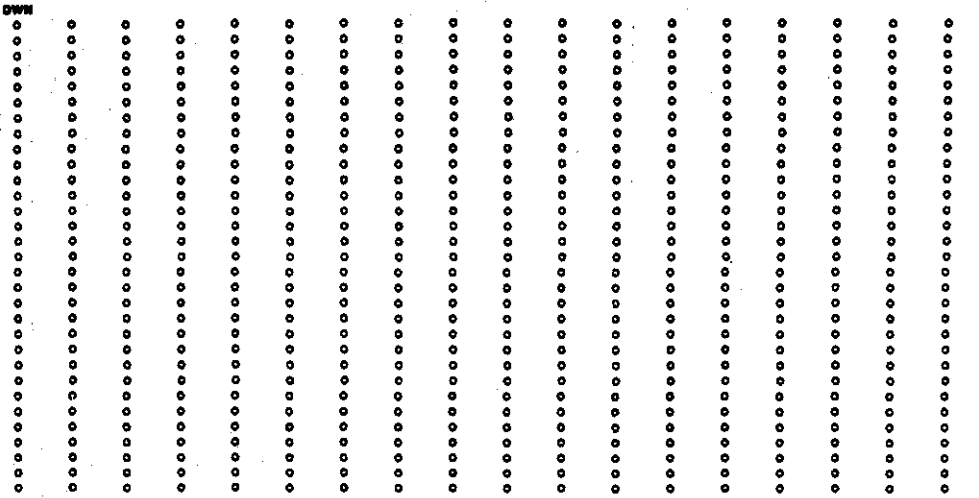
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		
0.0000000	46.5999985	46.5999985	46.5999985	46.5999985	46.5999985	46.5999985	46.5999985	46.5999985	46.5999985
46.5999985	46.5999985	46.5999985	46.5999985	46.5999985	46.5999985	46.5999985	0.0000000		
0.0000000	46.5000000	46.5477905	46.5042823	46.7843183	46.7812381	46.8430753	46.0089073	46.0883985	46.0883985
46.0089073	46.8430753	46.7812381	46.7843183	46.5042823	46.5477905	46.5000000	0.0000000		
0.0000000	45.2999985	45.0884435	44.9842884	44.9421200	44.9393779	44.9706177	45.0382088	45.0884383	45.0884383
45.0382088	44.9706177	44.9393779	44.9421200	44.9842884	45.0884435	45.2999985	0.0000000		
0.0000000	44.4999985	44.2163277	44.1041722	44.0806331	44.0824102	44.0885531	44.0835343	44.1105888	44.1105888
44.0835343	44.0885531	44.0824102	44.0806331	44.1041722	44.2163277	44.4999985	0.0000000		
0.0000000	43.1999998	43.1736841	43.1552882	43.1443115	43.1425302	43.1497400	43.1812454	43.1884248	43.1884248
43.1812454	43.1497400	43.1425302	43.1443115	43.1552882	43.1736841	43.1999998	0.0000000		
0.0000000	41.8000008	42.1205816	42.1999832	42.2169508	42.2215205	42.2281507	42.2317007	42.2355205	42.2355205
42.2317007	42.2281507	42.2215205	42.2169508	42.1999832	42.1205816	41.8000008	0.0000000		
0.0000000	41.3999997	41.3137080	41.3048681	41.3053802	41.3053830	41.3054480	41.3063182	41.3070880	41.3070880
41.3063182	41.3054480	41.3053830	41.3053802	41.3048681	41.3137080	41.3999997	0.0000000		
0.0000000	40.4999998	40.4253178	40.4021981	40.3916028	40.3850381	40.3809563	40.3789189	40.3780738	40.3780738
40.3789189	40.3809563	40.3850381	40.3916028	40.4021981	40.4253178	40.4999998	0.0000000		
0.0000000	39.4000003	39.4855380	39.4889707	39.4738845	39.4823150	39.4848063	39.4802554	39.4483125	39.4483125
39.4802554	39.4848063	39.4823150	39.4738845	39.4889707	39.4855380	39.4000003	0.0000000		
0.0000000	38.7000000	38.8318885	38.8854510	38.8889018	38.8374847	38.8282942	38.8200001	38.8171886	38.8171886
38.8200001	38.8282842	38.8374847	38.8889018	38.8854510	38.8318885	38.7000000	0.0000000		
0.0000009	37.8999998	37.7882088	37.8870174	37.8271833	37.8058244	37.8834845	37.8885288	37.8834419	37.8834419
37.8885288	37.8834845	37.8058244	37.8271833	37.8870174	37.7882088	37.8999998	0.0000000		
0.0000000	36.7000002	36.7231428	36.7005824	36.8778811	36.8823313	36.8829807	36.8478288	36.8488114	36.8488114
36.8478288	36.8829807	36.8823313	36.8778811	36.7005824	36.7231428	36.7000002	0.0000000		
0.0000000	35.7000001	35.7378810	35.7333067	35.7228464	35.7148078	35.7098240	35.7073071	35.7062488	35.7062488
35.7073071	35.7098240	35.7148078	35.7228464	35.7333067	35.7378810	35.7000001	0.0000000		
0.0000000	34.8999997	34.7851150	34.7714955	34.7858986	34.7848832	34.7851040	34.7858383	34.7880483	34.7880483
34.7858383	34.7851040	34.7848832	34.7858986	34.7714955	34.7851150	34.8999997	0.0000000		
0.0000000	33.7000002	33.7718706	33.7820670	33.8022799	33.8106230	33.8178112	33.8226240	33.8252417	33.8252417
33.8226240	33.8178112	33.8106230	33.8022799	33.7820670	33.7718706	33.7000002	0.0000000		
0.0000000	32.7999998	32.8020884	32.8213818	32.8423817	32.8804128	32.8741824	32.8833818	32.8878311	32.8878311
32.8833818	32.8741824	32.8804128	32.8423817	32.8213818	32.8020884	32.7999998	0.0000000		
0.0000000	31.8000000	31.8138745	31.8485259	31.8847185	31.9134035	31.9344584	31.9481813	31.9548488	31.9548488
31.9481813	31.9344584	31.9134035	31.8847185	31.8485259	31.8138745	31.8000000	0.0000000		
0.0000000	30.7000001	30.8037709	30.8782135	30.8334525	30.8738842	31.0020204	31.0188485	31.0284157	31.0284157
31.0188485	31.0020204	30.8738842	30.8334525	30.8782135	30.8037709	30.7000001	0.0000000		
0.0000000	29.7000000	29.8243888	29.9255018	29.9879881	30.0478810	30.0810188	30.1013742	30.1110233	30.1110233
30.1013742	30.0810188	30.0478810	29.9879881	29.9255018	29.8243888	29.7000000	0.0000000		
0.0000000	28.6000004	28.6883488	28.8023488	28.8837229	28.1388750	28.1714055	28.1826237	28.2028838	28.2028838
28.1826237	28.1714055	28.1388750	28.8837229	28.8023488	28.6883488	28.6000004	0.0000000		
0.0000000	27.8000001	28.0388848	28.1332488	28.1887848	28.2448787	28.2783188	28.2988308	28.3048440	28.3048440
28.2988308	28.2783188	28.2448787	28.1887848	28.1332488	28.0388848	27.8000001	0.0000000		
0.0000000	27.2999998	27.2803708	27.2818294	27.3333180	27.3682811	27.3833222	27.4088470	27.4182540	27.4182540
27.4088470	27.3833222	27.3682811	27.3333180	27.2818294	27.2803708	27.2999998	0.0000000		
0.0000000	26.3999998	26.4088468	26.4408873	26.4739020	26.5007807	26.5182544	26.5288784	26.5348115	26.5348115
26.5288784	26.5182544	26.5007807	26.4739020	26.4408873	26.4088468	26.3999998	0.0000000		
0.0000000	25.4000002	25.5338241	25.5883935	25.6203370	25.6409178	25.6522588	25.6588134	25.6578171	25.6578171
25.6588134	25.6522588	25.6409178	25.6203370	25.5883935	25.5338241	25.4000002	0.0000000		

0.0000000	24.7886887	24.7412715	24.7873198	24.7800912	24.7831222	24.7843853	24.7884831	24.7830717	24.7830717
24.7884831	24.7843853	24.7831222	24.7800912	24.7873198	24.7412715	24.7886887	0.0000000		
0.0000000	23.8000000	23.8713872	23.9207781	23.9478585	23.9543846	23.9419882	23.9177488	23.9021510	23.9021510
23.9177488	23.9419882	23.9543846	23.9478585	23.9207781	23.8713872	23.8000000	0.0000000		
0.0000000	22.8000004	23.0234435	23.1067840	23.1361410	23.1340229	23.1018810	23.0373806	23.0088120	23.0088120
23.0373806	23.1018810	23.1340229	23.1361410	23.1067840	23.0234435	22.8000004	0.0000000		
0.0000000	22.2888888	22.3176188	22.3480675	22.3575886	22.3474242	22.2944728	22.1284416	22.0780000	22.0780000
22.1284416	22.2944728	22.3474242	22.3575886	22.3480675	22.3176188	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		

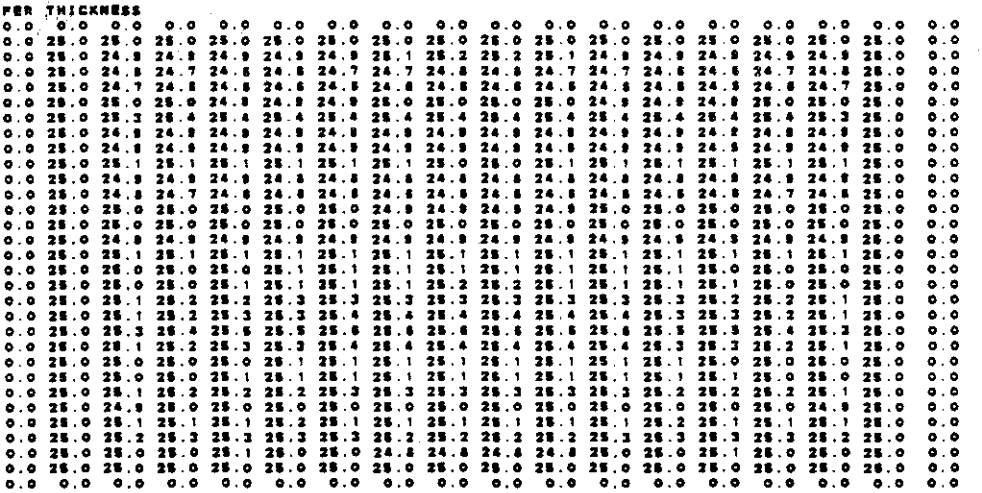
HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 1
TIME(SECONDS) = 3.100000E+07
TIME(DAYS) = 3.587888E+02
TIME(YEARS) = 9.823318-01

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	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	26	25	25	26	26	26	26	26	26	26	26	26	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
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	=	-8.97760E+06
PUMPAGE	=	8.97760E+06
CUMULATIVE NET PUMPAGE	=	0.00000E+00
WATER RELEASE FROM STORAGE	=	-2.06365E+03
LEAKAGE INTO AQUIFER	=	-9.54561E+07
LEAKAGE OUT OF AQUIFER	=	9.54556E+07
CUMULATIVE NET LEAKAGE	=	5.56200E+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)	=	-3.41058E-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)	=	3.09899E+07
CHEM.TIME(DAYS)	=	3.58785E+02
TIME(YEARS)	=	9.82331E-01
CHEM.TIME(YEARS)	=	9.82328E-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	-0.0246	4.5369	4.4151	4.5023
4.4454	-0.0225	-0.0002	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0000	-0.0058	1.5823	103.7530	91.1653	99.1853
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	0.1810	31.8814	95.8457	92.6062	100.4582
92.2252	30.8834	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
63.5427	16.0851	0.1651	0.0004	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0001	0.0461	1.3458	17.5792	18.1198	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	0.0016	0.0833	1.8158	1.8871	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	0.1163	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	0.0066	0.0068	0.0076
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	0.0002	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	99	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	88	84	88	84	16	0	0	0	0	0	0
0	0	0	0	0	0	1	18	18	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	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	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     = -3.10218E-06
    MASS PUMPED IN          =  2.13217E+09
    MASS PUMPED OUT         =  0.00000E+00
    INFLOW MINUS OUTFLOW    =  2.13217E+09
    INITIAL MASS STORED     =  0.00000E+00
    PRESENT MASS STORED     =  1.91464E+09
    CHANGE MASS STORED      =  1.91464E+09
  COMPARE RESIDUAL WITH NET FLUX AND MASS ACCUMULATION:
    MASS BALANCE RESIDUAL   =  2.17534E+08
    ERROR  (AS PERCENT)     =  1.02028E+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 3
			1	45.0	95.8	0.982
			2	45.0	109.1	1.965
			3	46.0	106.3	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
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00
0.00000E+00 0.00000E+00 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 = 6

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS : 1
TIME(SECONDS) : 2.13000E+08
TIME(DAYS) : 2.46528E+03
TIME(YEARS) : 6.74958E+00

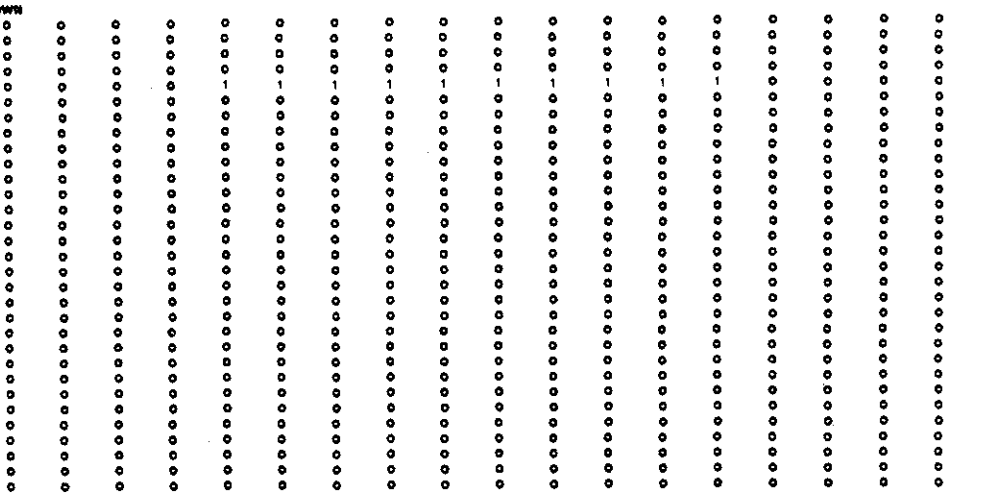
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		
0.0000000	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995
46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	46.5999995	0.0000000		
0.0000000	45.8000000	45.8425185	45.7910140	45.7579887	45.7385823	45.7288686	45.7216221	45.7183524	45.7183524
45.7216221	45.7288686	45.7385823	45.7579887	45.7910140	45.8425185	45.8000000	0.0000000		
0.0000000	45.2999998	45.0780821	44.9558058	44.8981128	44.8617243	44.8435000	44.8333879	44.8299481	44.8299481
44.8333879	44.8435000	44.8617243	44.8981128	44.9558065	45.0780621	45.2999998	0.0000000		
0.0000000	44.4999995	44.1975187	44.0857815	43.9999960	43.9638120	43.9431840	43.9323251	43.9273339	43.9273339
43.9323251	43.9431840	43.9638130	43.9999960	44.0857815	44.1975187	44.4999995	0.0000000		
0.0000000	43.1999999	43.1503415	43.1119480	43.0795749	43.0562393	43.0382931	43.0282409	43.0232423	43.0232423
43.0282409	43.0382931	43.0562393	43.0795749	43.1119480	43.1503415	43.1999999	0.0000000		
0.0000000	41.6000006	42.1048064	42.1662488	42.1871309	42.1548227	42.1424153	42.1338230	42.1291366	42.1291366
42.1338230	42.1424153	42.1548227	42.1871308	42.1662488	42.1048065	41.6000006	0.0000000		
0.0000000	41.3999997	41.3016052	41.2810605	41.2878446	41.2541251	41.2423809	41.2339288	41.2296687	41.2296687
41.2339288	41.2423808	41.2541251	41.2878446	41.2810606	41.3016053	41.3999997	0.0000000		
0.0000000	40.4999994	40.4139825	40.3801153	40.3588856	40.3422026	40.3282833	40.3204098	40.3159986	40.3159986
40.3204099	40.3282833	40.3422026	40.3588855	40.3801153	40.4139828	40.4999998	0.0000000		
0.0000000	39.4000003	39.4773219	39.4687504	39.4487013	39.4294228	39.4148242	39.4051878	39.4004884	39.4004884
39.4051878	39.4148242	39.4294228	39.4487013	39.4687504	39.4773219	39.4000003	0.0000000		
0.0000000	38.7000000	38.6258147	38.5728229	38.5380811	38.5110817	38.4943349	38.4839888	38.4790139	38.4790139
38.4839888	38.4943349	38.5110817	38.5380811	38.5728229	38.6258147	38.7000000	0.0000000		
0.0000000	37.9999956	37.7474028	37.6508528	37.6034658	37.5757737	37.5586086	37.5484876	37.5436782	37.5436782
37.5484876	37.5586088	37.5757736	37.6034658	37.6508528	37.7474028	37.9999956	0.0000000		
0.0000000	36.7000002	36.7137007	36.6824014	36.6631125	36.6319877	36.6179823	36.6086139	36.6058449	36.6058449
36.6086139	36.6179823	36.6319877	36.6631125	36.6824014	36.7137007	36.7000002	0.0000000		
0.0000000	35.7000001	35.7308182	35.7188546	35.7020718	35.6888830	35.6798450	35.6740733	35.6714902	35.6714902
35.6740733	35.6798450	35.6888830	35.7020718	35.7188545	35.7308182	35.7000001	0.0000000		
0.0000000	34.8999997	34.7863272	34.7575903	34.7454287	34.7391832	34.7358946	34.7338180	34.7331813	34.7331813
34.7338180	34.7358946	34.7391833	34.7454287	34.7575903	34.7863272	34.8999997	0.0000000		
0.0000000	33.7000002	33.7684635	33.7789850	33.7843164	33.7885254	33.7921191	33.7947642	33.7961632	33.7961632
33.7947642	33.7921191	33.7885254	33.7843164	33.7789850	33.7684635	33.7000002	0.0000000		
0.0000000	32.7999999	32.7987986	32.8113181	32.8277878	32.8422282	32.8534181	32.8608335	32.8647193	32.8647193
32.8608335	32.8534181	32.8422282	32.8277878	32.8113181	32.7987986	32.7999999	0.0000000		
0.0000000	31.7999999	31.8082373	31.8408302	31.8729173	31.8992262	31.9186846	31.9313369	31.9376874	31.9376874
31.9313369	31.9186846	31.8992262	31.8729173	31.8408302	31.8082373	31.7999999	0.0000000		
0.0000000	30.7000001	30.8012351	30.8732483	30.9273246	30.9670941	30.9949828	31.0125858	31.0211792	31.0211792
31.0125858	30.9949828	30.9670941	30.9273246	30.8732453	30.8012352	30.7000001	0.0000000		
0.0000000	29.7000000	29.8244483	29.9267347	30.0000781	30.0613084	30.0880729	30.1077027	30.1181504	30.1181504
30.1077027	30.0880729	30.0613084	30.0000781	29.9267347	29.8244484	29.7000000	0.0000000		
0.0000000	28.6000004	28.8724689	29.0131720	29.0894684	29.1686898	29.1953060	29.2191826	29.2306806	29.2306806
29.2191826	29.1953060	29.1686898	29.0894684	29.0131720	28.8724689	28.6000004	0.0000000		
0.0000000	27.9000001	28.0611740	28.1540026	28.2280582	28.2817552	28.3193832	28.3433899	28.3550774	28.3550774
28.3433899	28.3193832	28.2817552	28.2280582	28.1540026	28.0611740	27.9000001	0.0000000		
0.0000000	27.2999998	27.2728117	27.3185489	27.3682787	27.4147322	27.4480441	27.4718047	27.4830177	27.4830177
27.4718047	27.4480441	27.4147322	27.3682787	27.3185460	27.2728117	27.2999998	0.0000000		
0.0000000	26.4000000	26.4215085	26.4888081	26.5138320	26.5545281	26.5858608	26.6070417	26.6175890	26.6175890
26.6070417	26.5858608	26.5545281	26.5138320	26.4888082	26.4215086	26.4000000	0.0000000		
0.0000000	25.4000003	25.5493601	25.6188449	25.6677788	25.7064806	25.7358828	25.7552417	25.7650878	25.7650878
25.7552417	25.7358828	25.7064805	25.6677788	25.6188449	25.5493601	25.4000003	0.0000000		
0.0000000	24.7999997	24.7559863	24.7581172	24.8305895	24.8660437	24.8930335	24.9107884	24.9199503	24.9199503
24.9107884	24.8930335	24.8660437	24.8305898	24.7581172	24.7559863	24.7999997	0.0000000		

0.0000000	23.8000000	23.8844573	23.9500207	23.9951038	24.0327848	24.0573518	24.0731558	24.0811368	24.0811368
24.0731558	24.0573518	24.0327848	23.9951038	23.9500207	23.8844573	23.8000000	0.0000000		
0.0000000	22.8000004	23.0363401	23.1339075	23.1846283	23.2158758	23.2350334	23.2464278	23.2538258	23.2538258
23.2464277	23.2350334	23.2158758	23.1846283	23.1339075	23.0363401	22.8000004	0.0000000		
0.0000000	22.2999999	22.3258862	22.3538441	22.3902578	22.4070309	22.4180778	22.4238533	22.4272111	22.4272111
22.4238533	22.4180778	22.4070309	22.3902578	22.3538441	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) : 2.130000E+06
TIME(DAYS) : 2.465278E+03
TIME(YEARS) : 6.748858E+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	39	39	39	38	39	38	38	38	38	38	38	39	39	39	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	27	27	27	27	27	27	27	27	27	27	26	26	26	0
0	25	25	25	25	26	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	23	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

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	24.8	24.8	24.8	24.9	25.0	0.0
0.0	25.0	24.8	24.7	24.6	24.6	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.6	24.6	24.7	24.8	0.0
0.0	25.0	24.7	24.6	24.5	24.5	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.5	24.5	24.5	24.7	25.0	0.0
0.0	25.0	25.0	24.9	24.9	24.9	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	25.0	25.0	0.0
0.0	25.0	25.3	25.4	25.4	25.4	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.4	25.4	25.4	25.3	25.0	0.0
0.0	25.0	24.8	24.8	24.9	24.9	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.9	24.9	24.9	24.9	25.0	0.0
0.0	25.0	24.8	24.9	24.9	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.9	24.9	24.8	25.0	0.0
0.0	25.0	25.1	25.1	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.1	25.1	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	24.8	24.9	24.9	25.0	0.0
0.0	25.0	24.7	24.7	24.6	24.6	24.5	24.5	24.5	24.5	24.5	24.6	24.6	24.6	24.7	24.7	24.7	25.0	0.0
0.0	25.0	25.0	25.0	24.9	24.9	24.9	24.8	24.8	24.8	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	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	24.8	24.8	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	25.1	25.0	0.0
0.0	25.0	25.0	25.0	25.0	25.0	25.1	25.1	25.1	25.1	25.1	25.1	25.1	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	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	25.0	0.0
0.0	25.0	25.1	25.2	25.3	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.3	25.2	25.1	25.0	25.0	0.0
0.0	25.0	25.3	25.4	25.5	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.5	25.4	25.3	25.0	25.0	0.0
0.0	25.0	25.2	25.3	25.3	25.4	25.4	25.4	25.5	25.5	25.4	25.4	25.4	25.3	25.3	25.2	25.0	25.0	0.0
0.0	25.0	25.0	25.1	25.1	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.1	25.1	25.0	25.0	25.0	0.0
0.0	25.0	25.1	25.2	25.3	25.3	25.3	25.4	25.4	25.4	25.4	25.3	25.3	25.3	25.2	25.1	25.0	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	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	25.0	0.0
0.0	25.0	25.2	25.3	25.4	25.4	25.4	25.4	25.5	25.5	25.4	25.4	25.4	25.4	25.3	25.2	25.0	25.0	0.0
0.0	25.0	25.0	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	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	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

```
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 0.14 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                     = -2.69326E+07
   PUMPAGE                       =  2.69328E+07
   CUMULATIVE  NET  PUMPAGE      =  0.00000E+00
   WATER RELEASE FROM STORAGE    = -1.80546E+03
   LEAKAGE INTO AQUIFER          = -5.55583E+06
   LEAKAGE OUT OF AQUIFER        =  5.55580E+06
   CUMULATIVE  NET  LEAKAGE      =  1.71520E+04

       MASS BALANCE RESIDUAL     = -1.69440E+04
       ERROR  (AS PERCENT)       = -2.65787E-03

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

   RECHARGE                      =  0.00000E+00
   LEAKAGE INTO AQUIFER          =  3.33167E+00
   LEAKAGE OUT OF AQUIFER        = -3.33167E+00
   NET LEAKAGE     (QNET)        = -3.24246E-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)   =   6.74556E+00
  CHEM.TIME(YEARS)   =   6.74556E+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
   0.0000   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   0.0016   0.0286   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   0.0006   0.0078   0.1087   0.1080   0.1167
   0.1048   0.0073   0.0006   0.0000   0.0000   0.0000   0.0000   0.0000
   0.0000   0.0000   0.0000   0.0000   0.0003   0.0038   0.0801   0.4818   0.5102   0.5418
   0.4781   0.0483   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   1.8848   1.8882   1.9824
   1.5583   0.2244   0.0207   0.0016   0.0001   0.0000   0.0000   0.0000
```

0.0000	0.0000	0.0000	0.0006	0.0075	0.0922	0.8813	5.8873	5.8524	5.9489
5.4959	0.8595	0.0888	0.0073	0.0006	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0001	0.0021	0.0277	0.3148	2.8981	18.1324	18.0272	18.0844
16.5885	2.8002	0.3034	0.0287	0.0020	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0002	0.0026	0.0316	0.3108	7.4880	42.3886	43.1100	46.8447
40.9070	7.2201	0.8785	0.0788	0.0066	0.0002	0.0000	0.0000		
0.0000	0.0000	0.0004	0.0038	0.1871	1.8330	14.0410	83.8524	74.8975	74.9815
83.8972	13.5818	1.7882	0.1810	0.0035	0.0003	0.0000	0.0000		
0.0000	0.0000	0.0006	0.0169	0.2882	2.8444	20.5818	87.3113	93.9889	98.5435
85.3362	19.8884	2.8384	0.2872	0.0182	0.0005	0.0000	0.0000		
0.0000	0.0000	0.0012	0.0281	0.5125	5.1888	32.4188	97.7888	107.1180	112.2827
95.8470	31.3851	5.0025	0.4538	0.0242	0.0011	0.0000	0.0000		
0.0000	0.0000	0.0017	0.0330	0.8721	8.7881	39.4340	100.8872	110.0105	114.8827
98.8084	38.1154	6.8535	0.8473	0.0316	0.0015	0.0000	0.0000		
0.0000	0.0001	0.0024	0.0507	0.7843	7.4488	40.8188	98.2804	107.0880	111.8894
95.8948	38.5505	7.1808	0.7288	0.0488	0.0023	0.0001	0.0000		
0.0000	0.0001	0.0028	0.0530	0.7718	7.8248	38.2830	92.8168	103.8877	107.4381
91.4232	36.9790	7.6381	0.7423	0.0511	0.0027	0.0001	0.0000		
0.0000	0.0001	0.0025	0.0508	0.7308	7.0404	36.4382	86.8203	93.8808	97.4386
83.9880	27.1806	6.7885	0.7040	0.0488	0.0025	0.0001	0.0000		
0.0000	0.0001	0.0024	0.0427	0.5838	5.6982	31.4866	73.0483	78.3878	82.0887
71.4301	30.4646	5.8883	0.5722	0.0411	0.0025	0.0001	0.0000		
0.0000	0.0003	0.0084	0.0341	0.4018	3.8332	13.2871	46.1788	52.5300	53.7140
45.5552	12.8478	3.8982	0.3872	0.0328	0.0082	0.0003	0.0000		
0.0000	0.0002	0.0053	0.0776	0.2588	1.8277	7.8847	18.7181	20.3337	21.5444
19.2483	7.4081	1.7830	0.2478	0.0780	0.0051	0.0002	0.0000		
0.0000	0.0001	0.0021	0.0185	0.2251	0.7015	2.8244	7.0083	7.8183	7.8244
6.8848	2.8310	0.6788	0.2172	0.0178	0.0020	0.0001	0.0000		
0.0000	0.0000	0.0005	0.0086	0.0753	0.1888	0.8405	2.1120	2.3117	2.4026
2.0720	0.8143	0.1833	0.0727	0.0062	0.0004	0.0000	0.0000		
0.0000	0.0000	0.0002	0.0021	0.0218	0.0486	0.2518	0.5805	0.6048	0.6273
0.5800	0.2438	0.0478	0.0212	0.0020	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0008	0.0081	0.0117	0.0625	0.1315	0.1427	0.1477
0.1281	0.0505	0.0113	0.0089	0.0006	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0001	0.0013	0.0024	0.0118	0.0281	0.0285	0.0295
0.0258	0.0116	0.0023	0.0013	0.0001	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0001	0.0003	0.0018	0.0047	0.0051	0.0053
0.0046	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
0.0006	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	5	6	8	5	1	0	0	0	0	0	0
0	0	0	0	0	0	3	15	16	19	16	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	78	64	14	2	0	0	0	0	0
0	0	0	0	0	3	21	87	94	89	85	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	99	38	7	1	0	0	0	0
0	0	0	0	1	7	41	96	107	112	88	40	7	1	0	0	0	0
0	0	0	0	1	8	36	92	104	107	91	37	8	1	0	0	0	0
0	0	0	0	1	7	38	86	94	97	84	37	7	1	0	0	0	0
0	0	0	0	1	6	31	73	78	82	71	30	8	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	18	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       = -1.53688E+03
    MASS PUMPED IN            =  6.39641E+09
    MASS PUMPED OUT           = -3.23428E-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     = -2.51716E+08
    ERROR  (AS PERCENT)       = -3.93529E+00
```

```
     TIME VERSUS HEAD AND CONCENTRATION AT SELECTED OBSERVATION POINTS
             PUMPING PERIOD NO.    2


              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         44.8          0.0            6.750
                 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        114.7            6.750
                 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          0.1            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  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


 N =     1
 NUMBER OF ITERATIONS =     6
```

HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS : 1
TIME(SECONDS) : 2.450000E+08
TIME(DAYS) : 2.835855E+03
TIME(YEARS) : 7.763558E+00

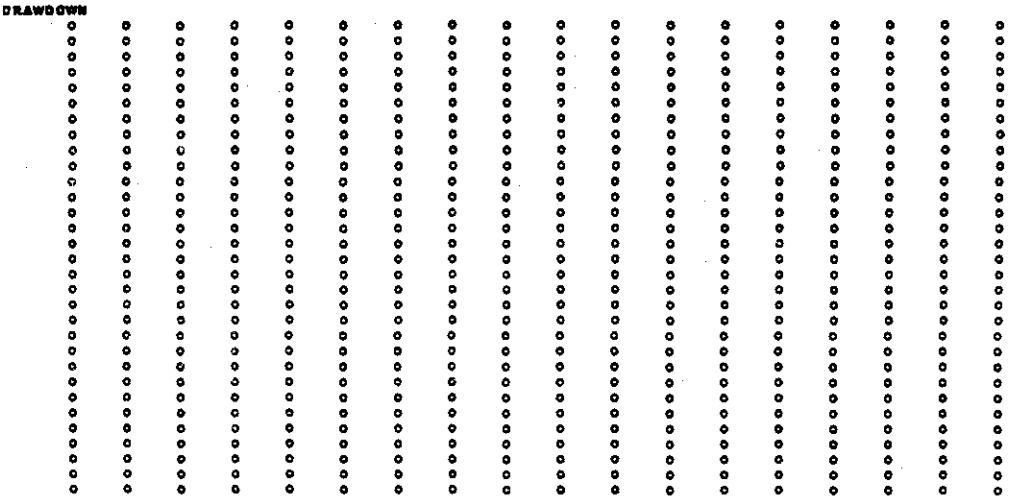
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		
0.0000000	46.5999996	46.5999996	46.5999996	46.5999996	46.5999996	46.5999996	46.5999997	46.5999997	46.5999997
46.5999997	46.5999996	46.5999996	46.5999996	46.5999996	46.5999996	46.5999996	0.0000000		
0.0000000	46.0000000	45.8484048	45.8065370	45.7870255	45.7842177	45.8463982	46.0134386	46.0842466	46.0842466
46.0134386	45.8463982	45.7842177	45.7870255	45.8065370	45.8484048	46.0000000	0.0000000		
0.0000000	45.2999996	45.0871431	44.8628123	44.8405864	44.8372521	44.8887012	45.0344846	45.0868831	45.0868831
45.0344846	44.8887012	44.8372521	44.8405864	44.8628123	45.0871431	45.2999996	0.0000000		
0.0000000	44.4999995	44.2108536	44.0845426	44.0461804	44.0378021	44.0514341	44.0775323	44.0847890	44.0847890
44.0775323	44.0514341	44.0378021	44.0461804	44.0845426	44.2108536	44.4999995	0.0000000		
0.0000000	43.1999999	43.1639079	43.1399815	43.1248841	43.1208496	43.1263791	43.1371810	43.1450814	43.1450814
43.1371810	43.1263791	43.1208496	43.1248841	43.1399815	43.1639079	43.1999999	0.0000000		
0.0000000	41.8000008	42.1172636	42.1817316	42.2067710	42.2098590	42.2128235	42.2188877	42.2200588	42.2200588
42.2188877	42.2128235	42.2098590	42.2067710	42.1817316	42.1172636	41.8000008	0.0000000		
0.0000000	41.3999997	41.3123250	41.3028011	41.3007342	41.2998838	41.2978078	41.2978750	41.2983580	41.2983580
41.2978750	41.2978078	41.2998838	41.3007342	41.3028011	41.3123250	41.3999997	0.0000000		
0.0000000	40.4999998	40.4228343	40.3978464	40.3885048	40.3772944	40.3719864	40.3690834	40.3677482	40.3677482
40.3690834	40.3719864	40.3772944	40.3885048	40.3978464	40.4228343	40.4999998	0.0000000		
0.0000000	39.4000003	39.4843248	39.4638948	39.4894018	39.4884134	39.4472081	39.4418473	39.4390503	39.4390503
39.4418473	39.4472081	39.4884134	39.4894018	39.4638948	39.4843248	39.4000003	0.0000000		
0.0000000	38.7000000	38.6311258	38.5831283	38.5515550	38.5310892	38.5161286	38.5105385	38.5070578	38.5070578
38.5105385	38.5161286	38.5310892	38.5515550	38.5831283	38.6311258	38.7000000	0.0000000		
0.0000000	37.8999995	37.7811468	37.8582527	37.8142886	37.8898404	37.5780611	37.8867034	37.8628282	37.8628282
37.8867034	37.5780611	37.8898404	37.8142886	37.8582527	37.7811468	37.8999995	0.0000000		
0.0000000	36.7000002	36.7160390	36.6888845	36.6587922	36.6405200	36.6280884	36.6207807	36.6174288	36.6174288
36.6207807	36.6280884	36.6405200	36.6587922	36.6888845	36.7160390	36.7000002	0.0000000		
0.0000000	35.7000001	35.7316858	35.7208855	35.7050436	35.6824761	35.6640510	35.6780187	35.6787366	35.6787366
35.6780187	35.6640510	35.6824761	35.7050436	35.7208855	35.7316858	35.7000001	0.0000000		
0.0000000	34.8999997	34.7881426	34.7572563	34.7448221	34.7388287	34.7348992	34.7331374	34.7323714	34.7323714
34.7331374	34.7348992	34.7388287	34.7448221	34.7572563	34.7881426	34.8999997	0.0000000		
0.0000000	33.7000002	33.7841083	33.7782743	33.7804541	33.7838283	33.7863963	33.7884701	33.7898762	33.7898762
33.7884701	33.7863963	33.7838283	33.7804541	33.7782743	33.7841083	33.7000002	0.0000000		
0.0000000	32.7999999	32.7942330	32.8063093	32.8205276	32.8330200	32.8426263	32.8490730	32.8522663	32.8522663
32.8490730	32.8426263	32.8330200	32.8205277	32.8063093	32.7942330	32.7999999	0.0000000		
0.0000000	31.7999999	31.8054287	31.8334884	31.8520971	31.8854764	31.9026344	31.9135708	31.9188207	31.9188207
31.9135708	31.9026344	31.8854764	31.8520971	31.8334884	31.8054287	31.7999999	0.0000000		
0.0000000	30.7000001	30.7561012	30.8521468	30.8128614	30.8484082	30.8729886	30.8883240	30.8958522	30.8958522
30.8883240	30.8729886	30.8484082	30.8128614	30.8521468	30.7561012	30.7000001	0.0000000		
0.0000000	29.7000000	29.8178581	29.9137832	29.9811683	30.0271143	30.0574818	30.0750608	30.0848288	30.0848288
30.0750608	30.0574818	30.0271143	29.9811683	29.9137832	29.8178581	29.7000000	0.0000000		
0.0000000	28.8000004	28.8843118	28.9970889	29.0758618	29.1284584	29.1591767	29.1769448	29.1862638	29.1862638
29.1769448	29.1591767	29.1284584	29.0758618	28.9970889	28.8843120	28.8000004	0.0000000		
0.0000000	27.8000001	28.0413500	28.1344772	28.1881681	28.2441811	28.2744303	28.2929096	28.3018795	28.3018795
28.2929096	28.2744303	28.2441811	28.1881681	28.1344772	28.0413501	27.8000001	0.0000000		
0.0000000	27.2999998	27.2812320	27.2833677	27.3345864	27.3890028	27.3938268	27.4088228	27.4150581	27.4150581
27.4088228	27.3938268	27.3890028	27.3345864	27.2833677	27.2812320	27.2999998	0.0000000		
0.0000000	26.3999996	26.4082067	26.4389398	26.4729881	26.4998892	26.5180763	26.5287037	26.5334786	26.5334786
26.5287037	26.5180763	26.4998892	26.4729881	26.4389398	26.4082067	26.3999996	0.0000000		
0.0000000	25.4000003	25.5348520	25.5885321	25.6211013	25.6420303	25.6533728	25.6577748	25.6587502	25.6587502
25.6577748	25.6533728	25.6420303	25.6211013	25.5885321	25.5348520	25.4000003	0.0000000		

0.0000000	24.7888887	24.7405974	24.7570665	24.7784330	24.7824388	24.7840430	24.7865490	24.7834217	24.7834217
24.7865490	24.7840430	24.7824388	24.7784330	24.7570665	24.7405974	24.7888887	0.0000000		
0.0000000	23.8000000	23.8888235	23.8187486	23.8468780	23.8827132	23.8407894	23.8189548	23.8018238	23.8018240
23.8189548	23.8407894	23.8827132	23.8468780	23.8187486	23.8888235	23.8000000	0.0000000		
0.0000000	22.8000004	23.0248838	23.1078288	23.1383278	23.1370878	23.1058287	23.0417828	23.0105338	23.0105338
23.0417828	23.1058287	23.1370878	23.1383278	23.1078288	23.0248838	22.8000004	0.0000000		
0.0000000	22.2888888	22.3188228	22.3480587	22.3808828	22.3811811	22.2890810	22.1344281	22.0845788	22.0845788
22.1344281	22.2890810	22.3811811	22.3808828	22.3480587	22.3188228	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		

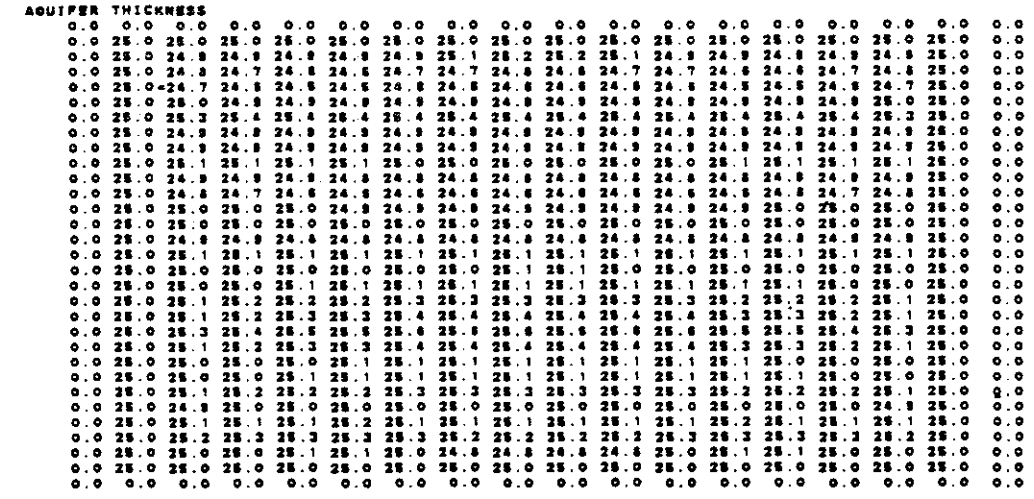
HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS = 1
TIME(SECONDS) = 2.480000E+08
TIME(DAYS) = 2.835585E+03
TIME(YEARS) = 7.763585E+00

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	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
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	=	1.88880E+04
MASS BALANCE RESIDUAL	=	-2.04800E+04
ERROR (AS PERCENT)	=	-2.49618E-03

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

RECHARGE	=	0.00000E+00
LEAKAGE INTO AQUIFER	=	3.07488E+00
LEAKAGE OUT OF AQUIFER	=	-3.07480E+00
NET LEAKAGE (QNET)	=	-3.03884E-05
INJECTION	=	-2.88600E-01
PUMPAGE	=	2.88600E-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)	=	2.83565E+03
TIME(YEARS)	=	7.76358E+00
CHEM.TIME(YEARS)	=	7.76358E+00
NO. MOVES COMPLETED	=	8

0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	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	4.8571	4.9870
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	114.8488	125.0413
114.6758	1.5020	-0.0020	0.0000	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0002	0.1199	23.7484	102.0606	92.7715	100.6887
96.1712	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	18.9830	53.9846	67.5280	73.0829
52.0632	16.3346	0.0736	0.0002	0.0000	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0001	0.0088	0.5083	7.6247	9.8470	10.8646
7.3808	0.6881	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	1.3203	1.3244	1.4341
1.2726	0.0685	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	0.1804	0.2120	0.2290
0.1838	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
0.0584	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	0.0375	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	0.0193	0.1280	0.7117	0.8148	0.8539
0.6979	0.1237	0.0169	0.0015	0.0001	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0004	0.0048	0.0595	0.4732	2.2495	2.7171	2.8880
2.2133	0.4580	0.0574	0.0047	0.0004	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0001	0.0014	0.0157	0.1989	1.5085	6.8439	7.1906	7.4427
5.7818	1.4603	0.1919	0.0151	0.0014	0.0001	0.0000	0.0000		
0.0000	0.0000	0.0003	0.0042	0.0582	0.5556	4.1125	16.2883	20.8846	21.8825
17.7752	3.9826	0.5267	0.0561	0.0041	0.0003	0.0000	0.0000		
0.0000	0.0000	0.0008	0.0119	0.1479	1.3825	9.4479	41.5009	44.2832	47.2938
40.2785	9.1531	1.3448	0.1427	0.0115	0.0007	0.0000	0.0000		
0.0000	0.0000	0.0011	0.0213	0.3218	2.9402	18.8171	69.1203	78.2007	81.5514
57.7237	18.2370	2.8394	0.3102	0.0205	0.0011	0.0000	0.0000		
0.0000	0.0001	0.0021	0.0420	0.5822	4.8823	27.9989	88.5793	99.5559	102.7753
87.2758	27.1389	4.7225	0.5418	0.0404	0.0019	0.0001	0.0000		
0.0000	0.0002	0.0055	0.0680	0.8244	7.0487	35.2853	96.5134	107.8714	111.1619
96.0672	35.1291	5.7863	0.7943	0.0855	0.0053	0.0002	0.0000		
0.0000	0.0004	0.0058	0.0713	1.0342	8.2258	40.5492	96.7274	107.9741	111.5488
95.2881	38.2459	7.9339	0.9884	0.0685	0.0055	0.0004	0.0000		
0.0000	0.0005	0.0064	0.0816	1.0242	8.5447	41.2184	93.0843	104.4147	107.8223
91.7784	39.9280	8.2431	0.9868	0.0788	0.0052	0.0005	0.0000		
0.0000	0.0006	0.0061	0.0900	0.9750	8.6356	38.5037	87.5180	97.2008	100.8804
85.0282	37.3219	8.3288	0.9385	0.0887	0.0058	0.0006	0.0000		
0.0000	0.0007	0.0342	0.2174	1.0064	7.8118	33.3537	78.7304	85.7878	88.4086
76.1234	32.3389	7.5354	0.9899	0.2085	0.0329	0.0007	0.0000		
0.0000	0.0005	0.0203	0.2085	1.2883	5.9819	24.9873	60.6381	69.8819	71.2359
58.7552	24.2249	5.7834	1.2445	0.2019	0.0195	0.0005	0.0000		
0.0000	0.0004	0.0119	0.1277	0.9488	4.5305	13.4689	40.8857	44.1225	47.4710
39.9757	13.0832	4.3724	0.9139	0.1231	0.0115	0.0004	0.0000		
0.0000	0.0003	0.0054	0.0804	0.4837	2.0287	6.8444	17.1507	18.3899	19.2865
15.7982	5.8353	1.9546	0.4687	0.0582	0.0052	0.0003	0.0000		
0.0000	0.0002	0.0019	0.0208	0.1694	0.8019	2.2880	5.5305	6.0365	6.3020
5.4345	2.1980	0.5809	0.1834	0.0201	0.0018	0.0002	0.0000		
0.0000	0.0001	0.0007	0.0077	0.0805	0.1888	0.7253	1.7243	1.8926	1.9850
1.8958	0.7030	0.1830	0.0584	0.0074	0.0006	0.0001	0.0000		
0.0000	0.0000	0.0002	0.0020	0.0183	0.0453	0.1885	0.4685	0.5141	0.5327
0.4807	0.1828	0.0438	0.0177	0.0019	0.0002	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0004	0.0039	0.0088	0.0348	0.0815	0.0830	0.0853
0.0802	0.0336	0.0085	0.0038	0.0004	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0001	0.0002	0.0005	0.0043	0.0291	0.0260	0.0289
0.0286	0.0042	0.0006	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	115	125	115	2	0	0	0	0	0	0	0
0	0	0	0	0	0	24	102	83	101	88	23	0	0	0	0	0	0	0
0	0	0	0	0	0	17	84	88	73	82	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	16	69	76	82	68	16	3	0	0	0	0	0	0
0	0	0	0	1	5	25	89	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	9	38	88	97	101	86	37	8	1	0	0	0	0	0
0	0	0	0	1	8	33	77	87	88	76	32	8	1	0	0	0	0	0
0	0	0	0	1	8	25	61	70	71	60	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	6	6	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

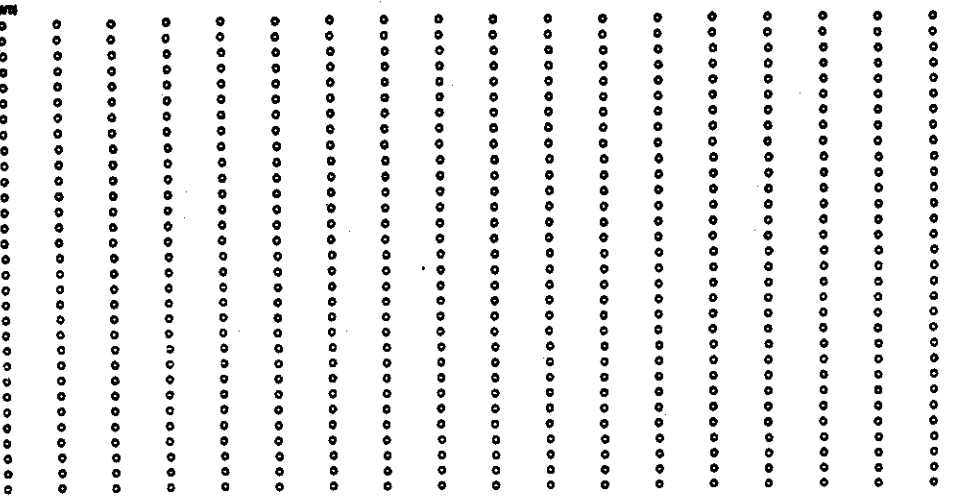
```
HEAD DISTRIBUTION - ROW
NUMBER OF TIME STEPS =      3
      TIME(SECONDS) =  3.090000E+08
      TIME(DAYS)    =  3.575398E+03
      TIME(YEARS)   =  9.791622E+00

 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  46.5999996  46.5999995  46.5999995  46.5999995  46.5999996  46.5999997  46.5999997  46.5999997
46.5999997  46.5999995  46.5999995  46.5999995  46.5999995  46.5999995  46.5999996  46.5999995  0.0000000
 0.0000000  45.9000000  45.8483884  45.8055488  45.7871048  45.7842728  45.8480511  46.0124418  46.0825242  46.0825242
46.0124417  45.8480511  45.7842728  45.7871048  45.8055488  45.8483884  45.9000000  0.0000000
 0.0000000  45.2999995  45.0874449  44.9541383  44.9415814  44.9388277  44.9710978  45.0373195  45.0703417  45.0703417
45.0373195  44.9710978  44.9388277  44.9415814  44.9541383  45.0874448  45.2999995  0.0000000
 0.0000000  44.4999995  44.2115236  44.0857925  44.0502887  44.0411061  44.0558857  44.0835408  44.1011400  44.1011400
44.0835406  44.0558857  44.0411061  44.0502887  44.0857925  44.2115238  44.4999995  0.0000000
 0.0000000  43.1999999  43.1848117  43.1418915  43.1278395  43.1248387  43.1320957  43.1442300  43.1527215  43.1527215
43.1442300  43.1320957  43.1248387  43.1278395  43.1418915  43.1848117  43.1999995  0.0000000
 0.0000000  41.8000008  42.1164843  42.1941363  42.2104680  42.2147007  42.2188594  42.2243747  42.2281226  42.2281226
42.2243747  42.2188594  42.2147007  42.2104680  42.1941383  42.1164843  41.8000008  0.0000000
 0.0000000  41.3999997  41.3138868  41.3064825  41.3047723  41.3040414  41.3041815  41.3064072  41.3064414  41.3064414
41.3064072  41.3041815  41.3040414  41.3047723  41.3064825  41.3138868  41.3999997  0.0000000
 0.0000000  40.4999998  40.4242815  40.4006841  40.3897095  40.3828395  40.3788139  40.3788044  40.3788918  40.3788918
40.3788044  40.3788138  40.3828395  40.3897095  40.4006841  40.4242815  40.4999998  0.0000000
 0.0000000  39.4000003  39.4867797  39.4868750  39.4736388  39.4618868  39.4527344  39.4488276  39.4487648  39.4487648
39.4488278  39.4527344  39.4618868  39.4736388  39.4868750  39.4867797  39.4000003  0.0000000
 0.0000000  38.7000000  38.8328869  38.8888787  38.8887415  38.8364488  38.8244885  38.8178045  38.8144911  38.8144911
38.8178045  38.8244885  38.8364488  38.8887415  38.8888787  38.8328888  38.7000000  0.0000000
 0.0000000  37.8999995  37.7528824  37.8611841  37.8183706  37.8848820  37.8812288  37.8738481  37.8700887  37.8700887
37.8738481  37.8812288  37.8848820  37.8183706  37.8611841  37.7528824  37.8999998  0.0000000
 0.0000000  36.7000002  36.7174308  36.8887298  36.8837895  36.8488320  36.8340788  36.8273883  36.8243473  36.8243473
36.8273883  36.8340788  36.8488320  36.8837895  36.8887298  36.7174308  36.7000002  0.0000000
 0.0000000  35.7000001  35.7332338  35.7235881  35.7088991  35.6874588  35.6888850  35.6854449  35.6834469  35.6834469
35.6854449  35.6888850  35.6874588  35.7088991  35.7235881  35.7332338  35.7000001  0.0000000
 0.0000000  34.6999997  34.7884818  34.7998050  34.7487851  34.7434027  34.7408898  34.7384118  34.7368286  34.7368286
34.7384118  34.7408885  34.7434027  34.7487851  34.7998050  34.7884818  34.6999997  0.0000000
 0.0000000  33.7000002  33.7854483  33.7788882  33.7842523  33.7884374  33.7920123  33.7948485  33.7960397  33.7960397
33.7948485  33.7920123  33.7884374  33.7842523  33.7788882  33.7854483  33.7000002  0.0000000
 0.0000000  32.7999999  32.7958704  32.8089282  32.8243097  32.8378072  32.8482267  32.8552142  32.8587051  32.8587051
32.8552142  32.8482267  32.8378072  32.8243097  32.8089282  32.7958704  32.7999998  0.0000000
 0.0000000  31.7999999  31.8057885  31.8380918  31.8658885  31.8802801  31.8851632  31.8197414  31.8254039  31.8254039
31.8197414  31.8851632  31.8802801  31.8658885  31.8380816  31.8057685  31.7999999  0.0000000
 0.0000000  30.7000001  30.7874430  30.8887825  30.8164838  30.8532833  30.8788850  30.8948877  31.0022431  31.0022431
30.8948877  30.8788850  30.8532833  30.8164838  30.8887825  30.7874430  30.7000001  0.0000000
 0.0000000  29.7000000  29.8191981  29.8184292  29.8850281  30.0320442  30.0633067  30.0824738  30.0915805  30.0915805
30.0824738  30.0633067  30.0320442  29.8850281  29.8184292  29.8191981  29.7000000  0.0000000
 0.0000000  28.8000004  28.8858385  28.9987099  29.0787524  29.1314894  29.1551152  29.1558468  29.1552108  29.1552108
29.1558468  29.1551152  29.1314894  29.0787524  28.9987099  28.8858385  28.8000004  0.0000000
 0.0000000  27.8000001  28.0428583  28.1370831  28.2030478  28.2482507  28.2804700  28.2958888  28.3068438  28.3068438
28.2958888  28.2804700  28.2482507  28.2030478  28.1370831  28.0428583  27.8000001  0.0000000
 0.0000000  27.2999998  27.2824810  27.2958804  27.3383702  27.3740180  27.3998605  27.4187188  27.4233682  27.4233682
27.4187188  27.3998605  27.3740180  27.3383702  27.2958804  27.2824810  27.2999998  0.0000000
 0.0000000  26.3999998  26.4083708  26.4422954  26.4786783  26.5044982  26.5238821  26.5358388  26.5407870  26.5407870
26.5358388  26.5238821  26.5044882  26.4786783  26.4422955  26.4083708  26.3999999  0.0000000
 0.0000000  25.4000003  25.5358707  25.5905968  25.6242818  25.6463858  25.6589258  25.6642904  25.6659018  25.6659018
25.6642904  25.6589258  25.6463858  25.6242818  25.5905968  25.5358707  25.4000003  0.0000000
```

0.0000000	24.7989987	24.7413828	24.7587228	24.7819819	24.7980671	24.7988854	24.7943718	24.7889414	24.7889414
24.7943718	24.7988854	24.7980671	24.7819819	24.7587228	24.7413828	24.7989987	0.0000000		
0.0000000	23.8000000	23.8703026	23.9197838	23.9475876	23.9553106	23.9444881	23.9218488	23.9088325	23.9088325
23.9218488	23.9444881	23.9553106	23.9475876	23.9197838	23.8703026	23.8000000	0.0000000		
0.0000000	22.8000004	23.0247908	23.1082788	23.1381157	23.1384877	23.1078414	23.0446729	23.0135409	23.0135409
23.0446729	23.1078414	23.1384877	23.1381157	23.1082788	23.0247908	22.8000004	0.0000000		
0.0000000	22.2989889	22.3190131	22.3481804	22.3808439	22.3508879	22.2985258	22.1328708	22.0824847	22.0824847
22.1328708	22.2985258	22.3508879	22.3808438	22.3481804	22.3190131	22.2989889	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)   :  9.79182E+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	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	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

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	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	24.8	24.7	24.7	24.8	24.8	24.7	24.8	24.8	25.0	0.0
0.0	25.0	24.7	24.6	24.6	24.5	24.6	24.5	24.6	24.6	24.6	24.6	24.5	24.5	24.6	24.6	24.7	25.0	0.0	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	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	0.0
0.0	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	24.9	24.9	24.9	25.0	0.0	0.0
0.0	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	24.9	24.9	24.9	25.0	0.0	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	0.0
0.0	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	24.9	24.9	24.9	25.0	0.0	0.0
0.0	25.0	24.8	24.7	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.7	24.8	25.0	0.0	0.0
0.0	25.0	25.0	25.0	25.0	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	25.0	25.0	25.0	25.0	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	0.0	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	24.8	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	25.1	25.0	0.0	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	25.0	0.0	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	25.1	25.1	25.0	25.0	25.0	0.0	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	25.3	25.2	25.2	25.1	25.0	0.0	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	25.4	25.3	25.3	25.2	25.1	25.0	0.0	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	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	0.0
0.0	25.0	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	0.0	0.0	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	25.1	25.1	25.0	25.0	25.0	0.0	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	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	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	25.1	25.2	25.1	25.1	25.0	0.0	0.0	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	0.0
0.0	25.0	25.0	25.0	25.1	25.1	25.0	24.9	24.9	24.9	24.9	25.0	25.1	25.0	25.0	25.0	25.0	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	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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 0.15 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
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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 0.15 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
    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                     : -5.47343E+07
    PUMPAGE                       :  5.47343E+07
    CUMULATIVE  NET  PUMPAGE      :  0.00000E+00
    WATER RELEASE FROM STORAGE    : -1.80201E+03
    LEAKAGE INTO AQUIFER          : -9.80574E+08
    LEAKAGE OUT OF AQUIFER        :  9.80599E+08
    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)       : -2.38419E-07
    INJECTION                     : -2.89800E-01
    PUMPAGE                       :  2.89600E-01
    NET WITHDRAWAL    (TPUM)      :  0.00000E+00


CONCENTRATION

NUMBER OF TIME STEPS :      3
         DELTA T      :  3.20000E+07
     TIME(SECONDS)    :  3.08000E+08
  CHEM.TIME(SECONDS)  :  3.08898E+08
  CHEM.TIME(DAYS)     :  3.57538E+03
     TIME(YEARS)      :  9.76182E+00
  CHEM.TIME(YEARS)    :  9.79155E+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    -0.0571    -0.0008     0.0000     0.0000     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0000     0.0001    -0.0119     0.7201   125.8475   119.0110   128.7888

  123.8722     0.8828    -0.0114     0.0001     0.0000     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0000     0.0005    -0.0182     2.0015   106.5514   108.8223   118.4048

  102.3158     1.9285    -0.0158     0.0004     0.0000     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0001     0.0080     0.3496    44.9137   104.1140    89.6085    97.4284

  100.0886    43.1627     0.3362     0.0048     0.0001     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0005     0.0311     1.3189    38.7598    95.5834    88.3219   106.8888

   53.2589    35.3779     1.2862     0.0289     0.0005     0.0000     0.0000     0.0000

    0.0000     0.0000     0.0000     0.0009     0.0525     1.9415    45.7340   100.8485    99.8485   105.9861

   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    35.7885    95.1012    95.7238   103.2814

   82.1288    34.4823     2.1380     0.0700     0.0018     0.0000     0.0000     0.0000
```

0.0000	0.0000	0.0000	0.0023	0.0858	2.5157	35.5880	81.8227	91.2789	87.1970
78.5470	34.6585	2.4208	0.0821	0.0022	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0018	0.0852	2.4384	30.8254	81.7410	83.5087	88.7870
78.4082	29.5770	2.3444	0.0820	0.0016	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0010	0.0412	1.1750	18.4777	85.2882	81.7485	88.7472
53.7817	18.7725	1.1315	0.0385	0.0008	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0001	0.0087	0.3363	4.8700	15.2782	19.2125	20.4815
15.8588	4.5027	0.2240	0.0084	0.0001	0.0000	0.0000	0.0000		
0.0000	0.0000	0.0000	0.0000	0.0016	0.0588	0.8539	2.8285	3.5406	3.7700
2.7578	0.5238	0.0546	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	1.1886
0.8285	0.1578	0.0084	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	0.5288
0.4101	0.0988	0.0118	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	1.1674
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	0.0838	0.8284	2.3288	2.8830	2.7457
2.2778	0.5118	0.0908	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	7.4815	7.7873
6.0764	1.5758	0.2985	0.0485	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	17.7825
14.0453	4.0314	0.7366	0.0981	0.0280	0.0008	0.0001	0.0000		
0.0000	0.0002	0.0036	0.0190	0.2208	1.5828	8.8785	28.0495	33.1870	33.8834
27.7757	8.7288	1.8285	0.2131	0.0182	0.0034	0.0002	0.0000		
0.0000	0.0003	0.0056	0.0412	0.4340	3.2289	18.2522	51.5807	60.0454	61.8348
50.8375	15.8142	3.1256	0.4190	0.0388	0.0084	0.0003	0.0000		
0.0000	0.0007	0.0187	0.0789	0.7510	5.2574	25.3706	73.8488	84.8738	87.8500
72.5705	24.5818	5.0881	0.7248	0.0770	0.0181	0.0006	0.0000		
0.0000	0.0013	0.0387	0.1388	1.1042	7.8958	34.0682	88.2840	99.8527	103.2184
84.8885	33.1107	7.3426	1.0852	0.1318	0.0353	0.0013	0.0000		
0.0000	0.0023	0.0842	0.1906	1.4807	8.3885	38.4873	91.4238	108.2492	108.2185
90.0701	38.3846	8.0823	1.4080	0.1837	0.0811	0.0023	0.0000		
0.0000	0.0029	0.0788	0.2880	1.8882	10.4471	42.0801	90.8859	103.8863	106.8130
88.0511	40.8434	10.0832	1.8306	0.2732	0.0787	0.0028	0.0000		
0.0000	0.0022	0.0617	0.3028	3.4437	14.8871	38.8886	83.8880	96.4747	98.8877
82.8831	38.4838	14.1751	3.3280	0.5814	0.0885	0.0021	0.0000		
0.0000	0.0024	0.0832	0.4717	2.8883	12.7881	33.0420	71.7418	83.4032	84.5800
71.2112	32.1174	12.3438	2.4881	0.4850	0.0808	0.0024	0.0000		
0.0000	0.0039	0.0823	0.3218	2.0444	8.2000	25.3802	55.9773	67.1411	68.1771
56.3500	25.5101	7.8228	1.8738	0.3104	0.0505	0.0038	0.0000		
0.0000	0.0019	0.0532	0.2208	1.1303	4.7427	14.4832	30.8838	34.5173	35.5815
30.3348	14.0888	4.5821	1.0811	0.2128	0.0513	0.0018	0.0000		
0.0000	0.0015	0.0388	0.0743	0.5018	1.4288	5.1351	23.8280	23.8458	24.4547
23.3088	5.8882	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	7	7	8	7	0	0	0	0	0	0	0
0	0	0	0	0	0	1	129	118	130	124	1	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	46	104	90	97	100	43	0	0	0	0	0	0
0	0	0	0	0	1	37	97	88	107	93	35	1	0	0	0	0	0
0	0	0	0	0	2	46	101	100	107	88	44	2	0	0	0	0	0
0	0	0	0	0	2	38	95	87	103	92	34	2	0	0	0	0	0
0	0	0	0	0	3	36	82	91	97	80	25	2	0	0	0	0	0
0	0	0	0	0	2	31	82	84	88	78	30	2	0	0	0	0	0
0	0	0	0	0	1	18	85	82	85	84	18	1	0	0	0	0	0
0	0	0	0	0	0	5	16	18	20	16	5	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	1	1	1	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	1	1	1	1	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	2	6	7	8	6	2	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	2	9	28	33	34	28	9	2	0	0	0	0	0
0	0	0	0	0	3	16	32	50	52	51	16	3	0	0	0	0	0
0	0	0	0	1	5	25	74	85	86	73	25	5	1	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	1	8	38	91	105	108	90	36	8	1	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	1	3	15	40	84	86	88	83	36	14	3	1	0	0	0
0	0	0	0	3	13	33	72	83	85	71	32	12	2	0	0	0	0
0	0	0	0	2	8	25	57	67	68	58	28	8	2	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	1	1	6	24	24	24	23	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

CHEMICAL MASS BALANCE

MASS IN BOUNDARIES	=	0.000000E+00
MASS OUT BOUNDARIES	=	-1.312142+08
MASS PUMPED IN	=	1.258912+10
MASS PUMPED OUT	=	-1.584882+08
INFLOW MINUS OUTFLOW	=	1.270842+10
INITIAL MASS STORED	=	0.000000E+00
PRESENT MASS STORED	=	1.243318+10
CHANGE MASS STORED	=	1.24331E+10

COMPARE RESIDUAL WITH NET FLUX AND MASS ACCUMULATION:

MASS BALANCE RESIDUAL	=	2.79243E+08
ERROR (AS PERCENT)	=	2.117408+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	6	4				
			0	45.3	0.0	0.000
			1	45.0	102.1	7.754
			2	45.0	107.7	8.775
			3	45.0	105.5	9.782
OBS.WELL NO.	X	Y	N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
2	10	16				
			0	33.7	0.0	0.000
			1	33.5	81.6	7.754
			2	33.5	8.7	8.775
			3	33.5	1.2	9.782
OBS.WELL NO.	X	Y	N	HEAD (FT)	CONC.(MG/L)	TIME (YEARS)
3	10	28				
			0	24.5	0.0	0.000
			1	24.5	5.3	7.754
			2	24.5	58.5	8.775
			3	24.5	98.7	9.782

MESSAGE SUMMARY: MESSAGE NUMBER - COUNT

208 511 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.	3FI0.4, 3EI0.2, I10, E10.2	BOT,WT,THCK, TRANS,PERM, RECH,NODEID VPRM	Initial matrix data.

Data Set	Number of Card Images		Format	Variable	Definition
5++	1		X1,2I4	INT,N	Pumping period and time step. If INT>-1, then data set 6 is read. If INT=-1, then data sets 7 and 8 are read.
6	1+ (NX*NY)	a.	X1,2I4, 3E12.5	INT,N, N,SUMT,TIMD, TIMY	Pumping period, time step, total elapsed time in seconds, elapsed time in days, elapsed time in years.
		b.	X1,4I4 3F10.4, E10.2, F10.4	INT,N,I,J WT,DD,THCK, TRANS, CONC	Pumping period, time step, X and Y coordinates for matrix data. Matrix values at end of time step.
7	N*NUMOBS		X1,4I4, 3F7.3	INT,N,NOBS, TIM, TMWC,TMCN, TMYR	Pumping period, time step, observation number, time step, head (ft), conc (MG/L), time (years). This data set is eliminated if NUMOBS=0.

Data Set	Number of Card Images	Format	Variable	Definition
8	a. 1	X1,4I4, F11.3	INT,N,NTIM, NREC,PINT	This data set is used only if NPMP>1. Appears for each pumping period greater than 1. Pumping period, time step, number of time steps for the pumping period, number of injection (-) or pumping (+) wells, NTIM,NREC and PINT all = -1 if same as last pumping period. Pumping period (years).
	b. Value of NREC	X1,4I4, 2E9.3	INT,N,1X,1Y, REC,CNREC H	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.

\+ End of initial data.
++ Beginning of results from time steps and pumping periods.

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 Konikov 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 Konikov 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;
```

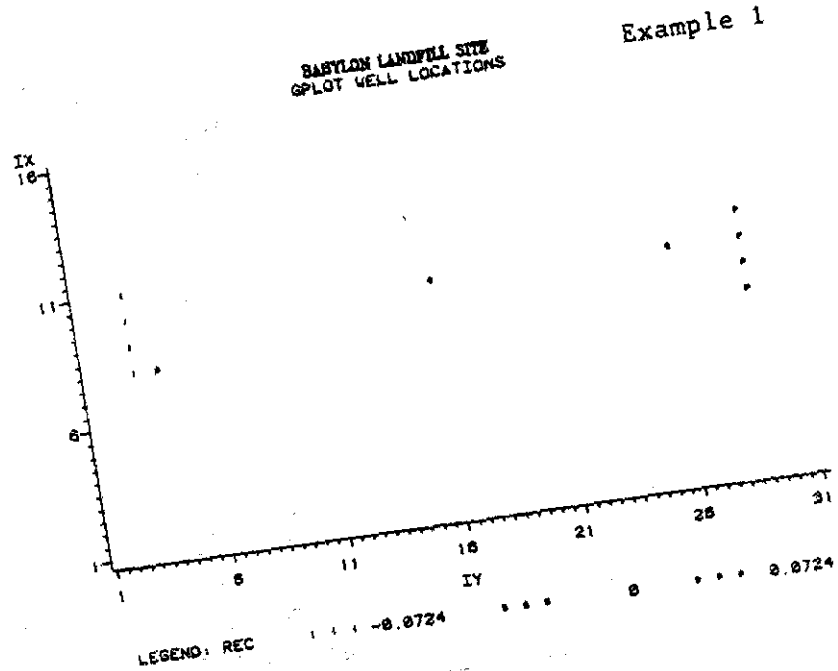
```
      REC=0;
    END;
    IF REC<0 THEN REC=-1;
    IF REC>0 THEN REC=1;
    IF NOBS>0 & NOBS<=NUMOBS THEN OUTPUT;
    IF WELLS>0 & WELLS <=NREC THEN OUTPUT;
    KEEP IX IY REC;
  PROC SORT DATA=&PROCFL;
    BY IX IY;
%MEND FNDWLS;

%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;
```

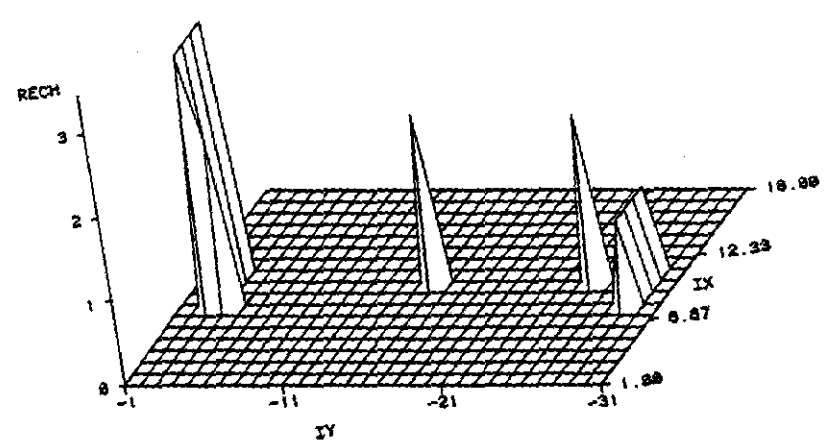
```
    INT=&PUMPPER;
    VAL1=&LOW;
    %DO CT=2 %TO &LVLS;
      VAL&CT=VAL1+(&INTER*&CT);
    %END;
    OUTPUT;
  DATA &DATAFL;
  MERGE RNG &DATAFL;
    BY INT;
  DATA &PROCFL;
  SET &DATAFL;
    KEEP &LVAR N INT I J NX NY;
    %IFELSE
    OUTPUT;
%MEND SHDSET;
%MACRO IFELSE;
  IF &LVAR<=VAL1 THEN &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=TEK401O;                                                    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=O    ;     /* TIME STEP TO BE PLOTTED */                     00000150
 %LET PUMPPER=O     ;     /* PUMP PERIOD TO BE PLOTTED */                   00000160
 %LET TIMECT=O      ;     /* 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=O    ;     /* TIME STEP TO BE PLOTTED */                     00000460
 %LET PUMPPER=O     ;     /* PUMP PERIOD TO BE PLOTTED */                   00000470
 %LET TIMECT=O      ;     /* 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

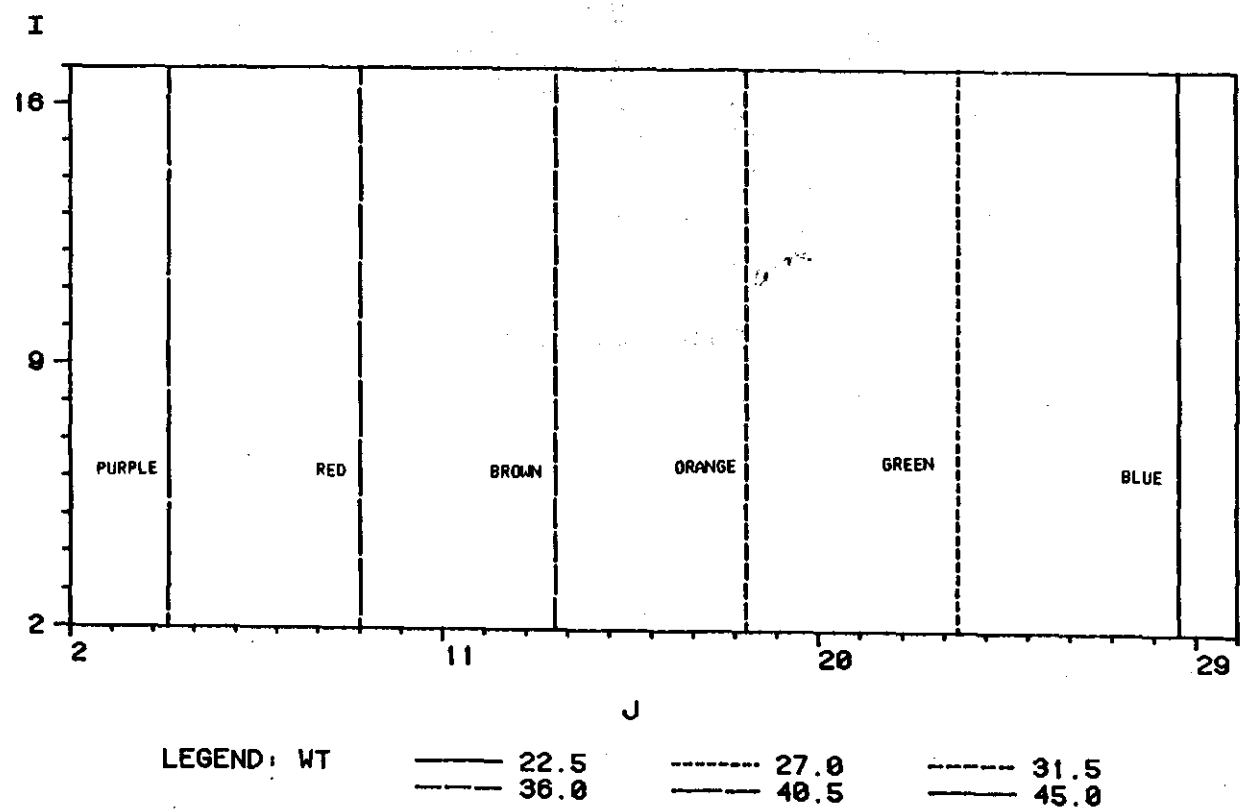


Example 2



```
**** 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
```

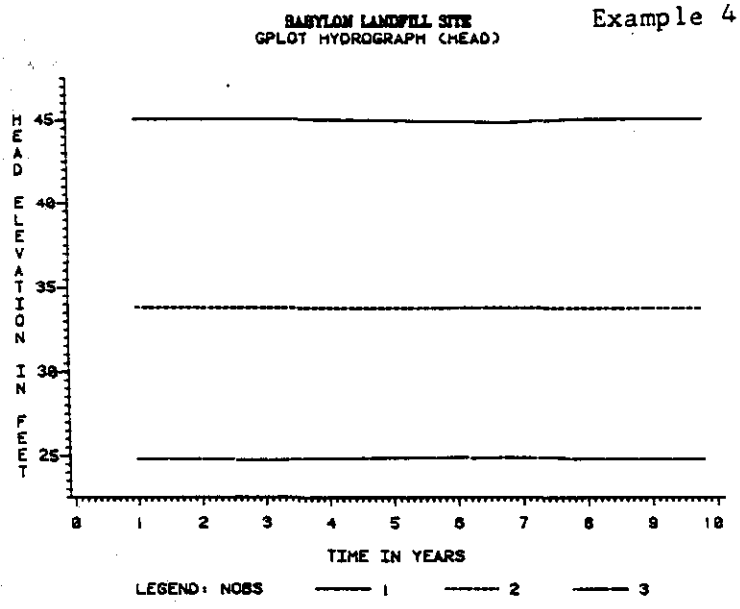
BABYLON LANDFILL SITE
GCONTOUR WATER TABLE



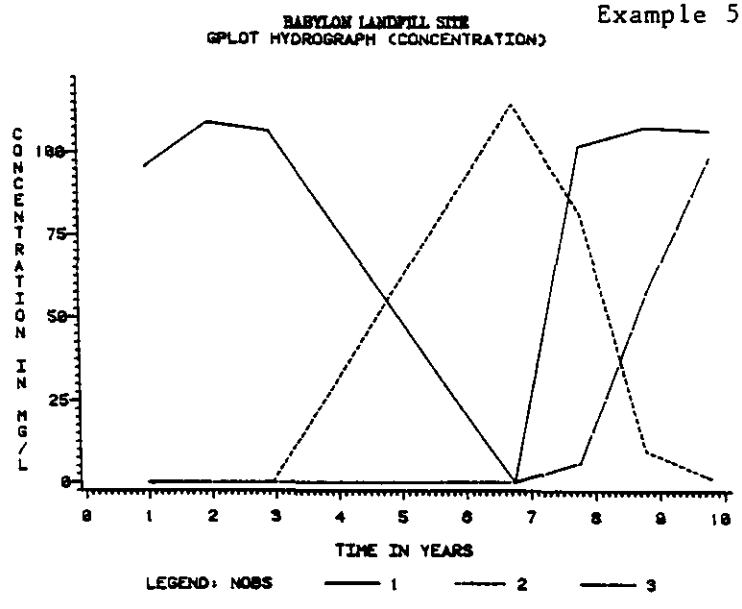
```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.MACS.CNTL                                (OBS     )

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

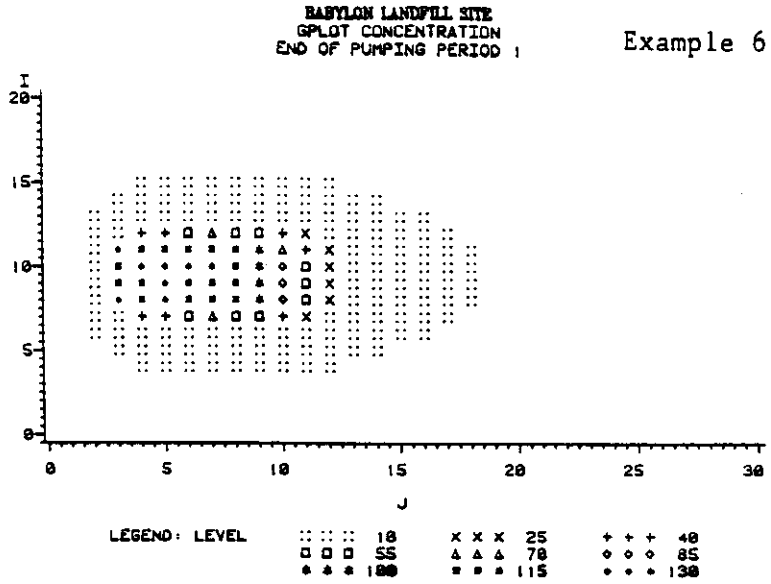


Example 5

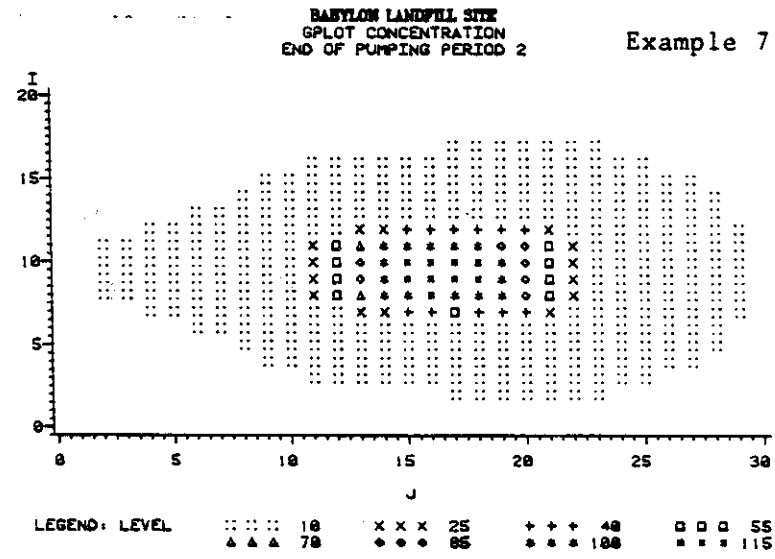


```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.MACS.CNTL                                (SHADE    )

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
```

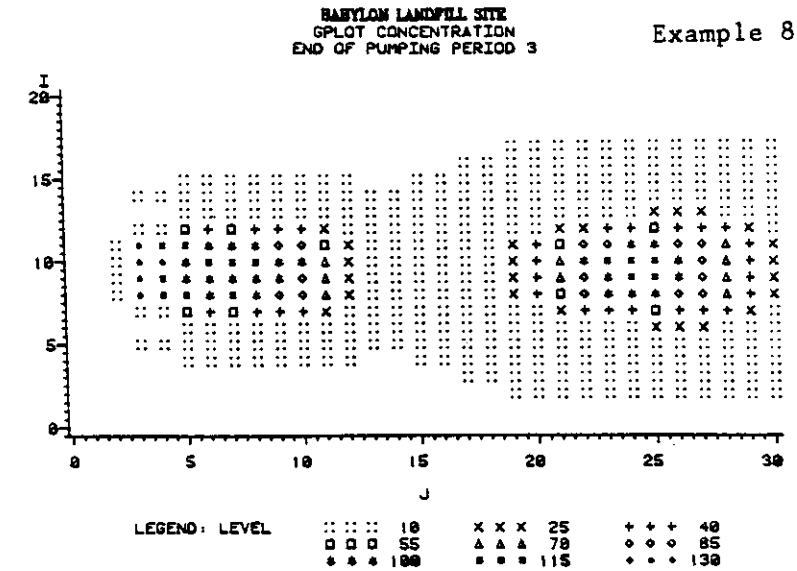
```
%LET PUMPPER=2     ;     /* PUMP PERIOD TO BE PLOTTED */                  00000630
%LET TIMESTEP=1    ;     /* TIME STEP DATA TO BE PLOTTED */               00000640
%LET TIMECT=7      ;     /* TIME ELAPSED IN SIMULATION */                 00000650
%LET VERT=I        ;     /* VERTICAL AXIS FOR PLOT */                     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
```



Example 6



Example 7



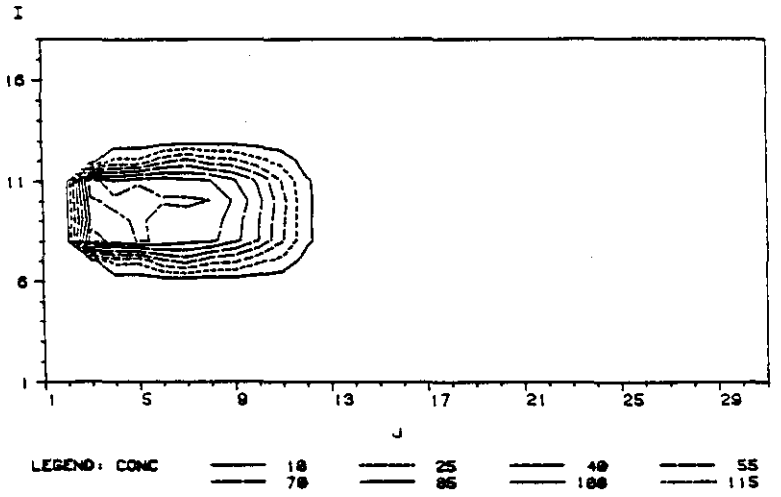
Example 8

```
**** 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
```

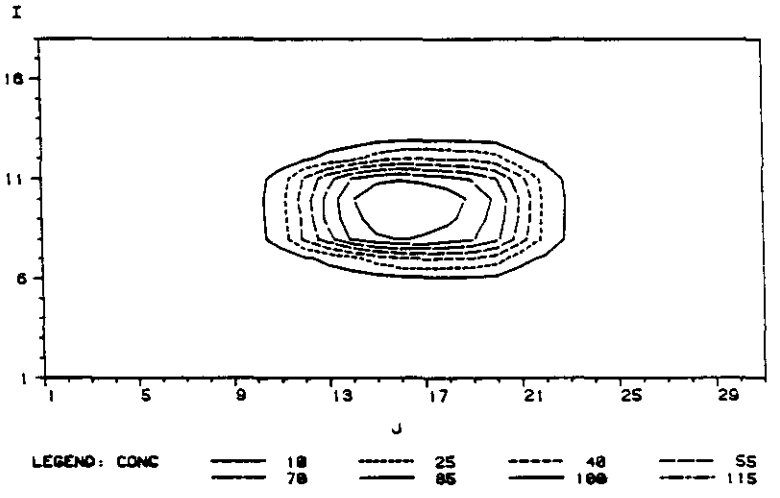
BABYLON LANDFILL SITE
GCONTOUR CONCENTRATION
END OF PUMPING PERIOD 1

Example 9



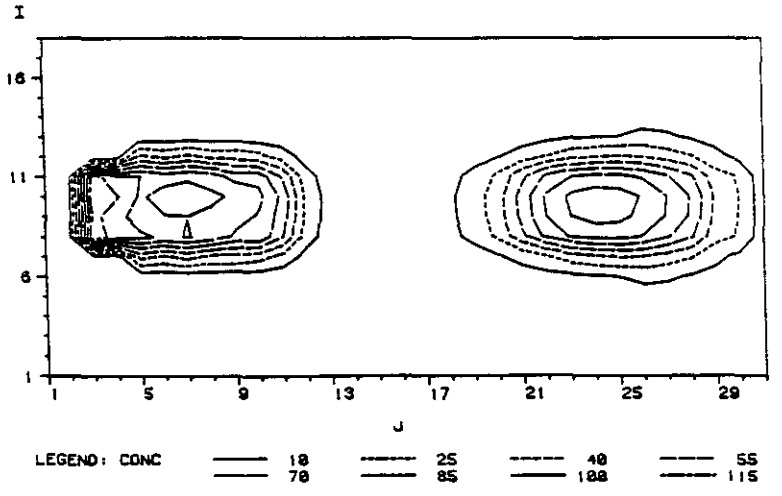
BABYLON LANDFILL SITE
GCONTOUR CONCENTRATION
END OF PUMPING PERIOD 2

Example 10



BABYLON LANDFILL SITE
GCONTOUR CONCENTRATION
END OF PUMPING PERIOD 3

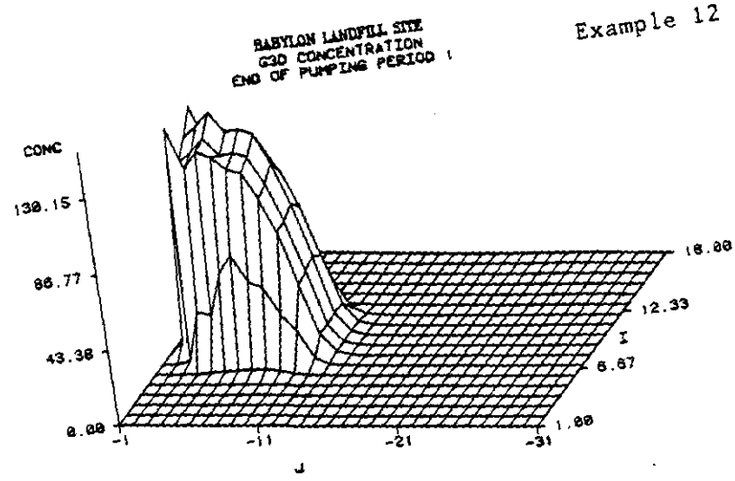
Example 11



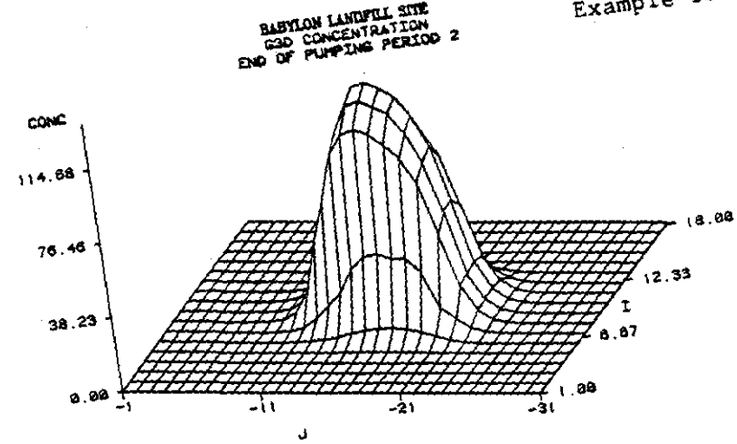
```
**** TSO FOREGROUND HARDCOPY ****
DSNAME=U11236C.MACS.CNTL                          (G3D      )

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
```

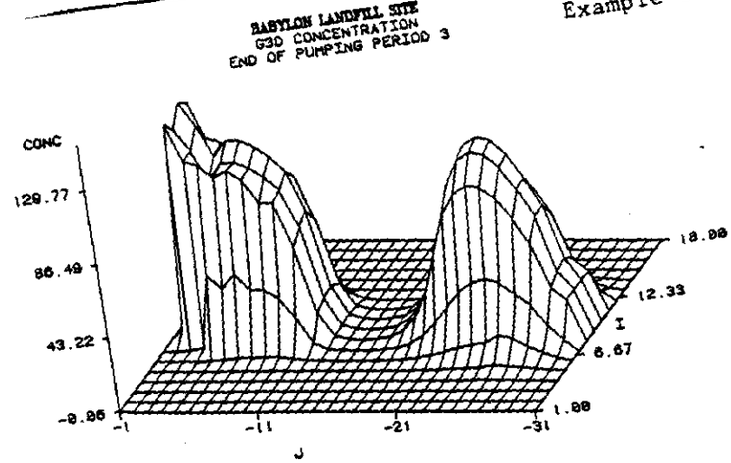
Example 12



Example 13



Example 14



APPENDIX IX

PREPROCESSOR MODIFICATIONS NECESSARY FOR MODEL EXECUTION WITH MS-DOS OPERATING SYSTEM

IX.1 GENERAL DESCRIPTION

A version of the preprocessor has been developed to allow the Modified N.R.C. Version of the U.S.G.S. Solute Transport to be executed on any MS-DOS based microcomputer with 512K random access memory (RAM). The preprocessors are identical except for the development of the JCL, which is described below. The controlling program used to initiate the preprocessor for the microcomputer model simulation is identified as "konim". The modeler enters the initial command

```
konim
```

to begin execution of the controlling program. Subsequently, an introductory screen and opening menu (identical to those described in section 2.1 in the body of the report) are displayed as shown below.

```
          MODIFIED N.R.C. VERSION
OF THE U.S.G.S. SOLUTE TRANSPORT MODEL,
 VOLUME 2:  INTERACTIVE PREPROCESSOR
                    BY
D.C. KENT, L. LEMASTER, AND J. WAGNER
                    FOR
 U.S. ENVIRONMENTAL PROTECTION AGENCY


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

The options are described in the sections 2.2 through 2.4, beginning on page 2-1.

IX.1.1 Preprocessor

The choice of Option 1 on the menu above creates the data sets where the JCL and input parameters are stored in their proper formats. The first prompt asks for the name of the data set to be created. The drive

identifier must be included in the name if the drive is other than the logged drive.

```
ENTER THE DATASET NAME TO BE CREATED
(INCLUDE DRIVE IDENTIFIER):  b:longis23.dat
```

The data set name given is "b:longis23.dat" and follows the standard microcomputer conventions. That is, the data set name contains no more than eight characters and begins with an alphabetic character. The data set descriptor (three characters), which is separated from the data set name with a period ".", may be any three alphanumeric character combinations. There is one exception for the data set descriptor, that is the combination "bat" which is the data set descriptor and that identifies the data set that contains the microcomputer JCL.

The drive identifier is requested next.

```
SET UP JCL FOR MODEL
ENTER THE DRIVE IDENTIFIER FOR THE MODEL:  c:
```

If no identifier is entered, the microcomputer assumes that the model will be on the default drive.

The output data set is requested next. The prompt for this is:

```
ENTER THE COMPLETE OUTPUT DATA SET NAME
(INCLUDE DRIVE IDENTIFIER):  b:longis23.lst
```

The output file name is "b:longis23.lst". The file that is to be used with graphics packages such as the Statistical Analysis System (SAS) is nov requested.

```
ENTER THE COMPLETE GRAPHICS OUTPUT DATA SET NAME
(INCLUDE DRIVE IDENTIFIER):  b:longis23.grf
```

The graphics file name is "b:longis23.grf".

Following the input of the graphics file name, the JCL is displayed:

```
THE FOLLOWING IS THE JCL
C:KONIMOD B:LONGIS23.LST,B:LONGIS23.DAT,B:LONGIS23.GRF
DO YOU WISH TO CHANGE ANYTHING  (Y/N):  y
```

If the JCL is correct, then "n" is entered. If any error is present, then "y" is entered ("y" and "n" are sufficient to represent "yes" and "no".) In this example, "y" is entered. The model is on disk and will be executed from drive "a:" instead of drive "c:". The following is displayed:

```
C:KONIMOD B:LONGIS23.LST,B:LONGIS23.DAT,B:LONGIS23.GRF
ENTER THE COMPLETE LINE . . .:  a:konimod b:longis23.lst,
b:longis23.dat,b:longis23.grf
```

Note that the correction is entered as one line. The line may wrap around if necessary (as shown above). After the change is entered, The corrected JCL is now displayed.

```
THE FOLLOWING IS THE JCL
A:KONIMOD B:LONGIS23.LST,B:LONGIS23.DAT,B:LONGIS23.GRF
DO YOU WISH TO CHANGE ANYTHING  (Y/N):  n
```

If the JCL is correct, then "n" is entered and the program will proceed to the next prompt described in section 2.2.2, page 2-5.

IX.1.2 Editor

The editor is implemented when option 2 from the menu in IX.1 is chosen. Editing of the JCL is as follows; the data set to be edited is requested first.

```
ENTER THE DATASET NAME TO BE MODIFIED
(INCLUDE DRIVE IDENTIFIER):  longis23.dat
```

The file name entered is "longis23.dat". This file does not exist on the logged drive as indicated in the previous section. Therefore, the correct file name is requested.

```
FILE DOES NOT EXIST--PLEASE REENTER:  b:longis23.dat
```

The file name, with the correct drive identifier, is "b:longis23.dat". The JCL is displayed next to allow editing. Editing is performed as described in IX.1.1, above.

```
THE FOLLOWING IS THE JCL
A:KONIMOD B:LONGIS23.LST,B:LONGIS23.DAT,B:LONGIS23.GRF
DO YOU WISH TO CHANGE ANYTHING  (Y/N):  n
```

No editing of JCL is required in this example. Editing continues with the next prompt as described in section 2.3.2, page 2-27.

IX.2 Microcomputer Model Execution

A model simulation makes an initial access to the data sets used by the model in the following order, 1) output data set, 2) input data set, and 3) graphics data set. The preprocessor produces two data sets for microcomputer model simulation. The data for the model input is stored under the name "longis23.dat" on drive "b", from the above example. A second file is created by the preprocessor to execute the model and to provide data set names in the order described above for the model simulation. The second data set has the same data set name, "b:longis23" for the example above, with the data set descriptor "bat".

A model simulation (execute the model on a microcomputer) is initiated on a two floppy drive system by the following steps. First, place the disks in the appropriate drives. (From the above example, drive "a" for the model disk, drive "b" for the input data disk). Second, execute the "bat" file, which in turn executes the model, by typing the "bat" file name without the descriptor. (For the above example, if the logged drive is "a", type "b:longis23"; if the logged drive is "b", type "longis23"). In the above example, all output data is stored on the disk in drive "b".

The model and data files may be stored on a hard disk and executed from that disk. No provisions have been made to handle path names. If the hard disk drive is the logged drive, drive identifiers are not necessary.

APPENDIX X

PREPROCESSOR MODIFICATIONS NECESSARY FOR MODEL EXECUTION WITH DEC/VAX SYSTEM

X.1 GENERAL DESCRIPTION

A version of the preprocessor has been developed to allow the Modified N.R.C. Version of the U.S.G.S. Solute Transport to be executed on a DEC/VAX minicomputer with a VMS operating system. The preprocessors are identical except for the development of the JCL, which is described below. The controlling program used to initiate the preprocessor for the DEC/VAX model simulation is identified as "konid". The modeler enters the initial command

```
konid
```

to begin execution of the controlling program. Subsequently, an introductory screen and opening menu (identical to those described in section 2.1 in the body of the report) are displayed as shown below.

```
          MODIFIED N.R.C. VERSION
OF THE U.S.G.S. SOLUTE TRANSPORT MODEL,
 VOLUME 2:  INTERACTIVE PREPROCESSOR
                    BY
D.C. KENT, L. LEMASTER, AND J. WAGNER
                   FOR
 U.S. ENVIRONMENTAL PROTECTION AGENCY


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

The options are described in the sections 2.2 through 2.4, beginning on page 2-1.

X.1.1 Preprocessor

The choice of Option 1 on the menu above creates the data sets where the JCL and input parameters are stored in their proper formats. The first prompt asks for the name of the data set to be created. The full file name must be given.

ENTER THE DATASET NAME TO BE CREATED: longis23.dat

The data set name given is "longis23.dat" and follows the standard DEC/VAX conventions. That is, the data set name contains no more than eight characters and begins with an alphabetic character. The data set descriptor (three characters), which is separated from the data set name with a period ".", may be any three alphanumeric character combinations. There is one exception for the data set descriptor, that is the combination "com" which is the data set descriptor and that identifies the data set that contains the DEC/VAX JCL.

The output data set is requested next. The prompt for this is:

ENTER THE COMPLETE OUTPUT DATA SET NAME: longis23.lst

The output file name is "longis23.lst". The file that is to be used with graphics packages such as the Statistical Analysis System (SAS) is now requested.

ENTER THE COMPLETE GRAPHICS OUTPUT DATA SET NAME: longis23.grf

The graphics file name is "longis23.grf".

Following the input of the graphics file name, the JCL is displayed:

```
THE FOLLOWING IS THE JCL
   1) $ DEFINE FOR005 LONGIS23.DAT
   2) $ DEFINE FOR006 LONGIS23.LST
   3) $ DEFINE FOR010 LONGIS23.GRF
   4) $ RUN KONIMOD.EXE
DO YOU WISH TO CHANGE ANYTHING  (Y/N):  y
```

If the JCL is correct, then "n" is entered. If any error is present, then "y" is entered ("y" and "n" are sufficient to represent "yes" and "no".) In this example "n" is entered and the program will proceed to the next prompt described in section 2.2.2, page 2-5.

X.1.2 Editor

The editor is implemented when option 2 from the menu in X.1 is

chosen. Editing of the JCL is as follows; the data set to be edited is requested first.

```
ENTER THE DATASET NAME TO BE MODIFIED:  longis23.dat
```

The file name entered is "longis23.dat". The JCL is displayed next to allow editing. Editing is performed as described in X.1.1, above.

```
THE FOLLOWING IS THE JCL
   1) $ DEFINE FOR005 LONGIS23.DAT
   2) $ DEFINE FOR006 LONGIS23.LST
   3) $ DEFINE FOR010 LONGIS23.GRF
   4) $ RUN KONIMOD.EXE
DO YOU WISH TO CHANGE ANYTHING  (Y/N):  n
```

No editing of JCL is required in this example. Editing continues with the next prompt as described in section 2.3.2, page 2-27.

X.2 Model Execution on DEC/VAX

The preprocessor produces two data sets for model simulation. The data for the model input is stored under the name "longis23.dat" for the above example. A second file is created by the preprocessor to execute the model and to allocate the data set names given above for the model simulation. The second data set has the same data set name, "longis23" for the example above, with the data set descriptor "com".

A batch model simulation (execution of the model on a DEC/VAX) is initiated by typing the following:

```
SUBMIT LONGIS23.COM
```

The system will allow thirty seconds for model execution. This should be sufficient for hydraulic calibration. If more time is needed, specify a queue that has no time limit with the following command:

```
SUBMIT LONGIS23.COM /SLOW
```

The SLOW queue has a lower priority than the default queue, but the model will not be terminated prematurely.