CIORBA GROUP | Consulting Engineers

Quality Engineering Services for the Community

Fairmont Community

Flood Study Feasibility Report

Volume III

Prepared for

Will County Land Use Department

April 2015

Prepared by
Ciorba Group, Inc.
5507 N. Cumberland Avenue, Suite 402
Chicago, Illinois, 60656
www.ciorba.com
P: 773.775.4009 | F: 773.775.4014

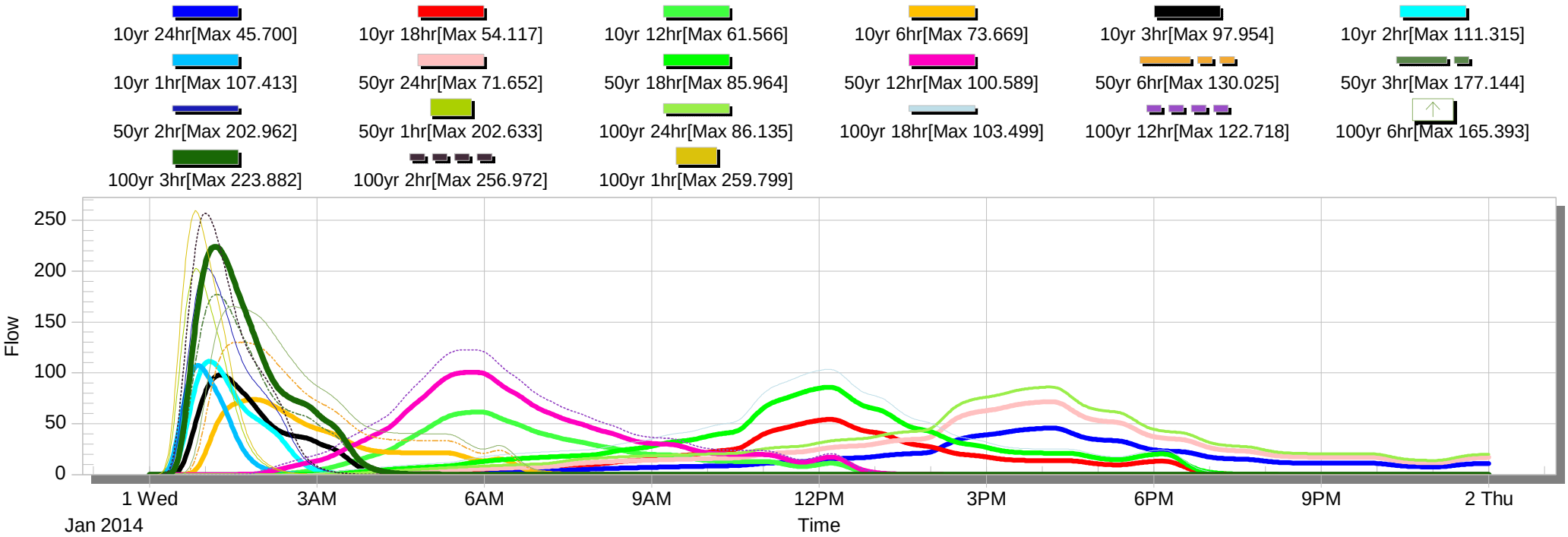
XP-SWMM

PROPOSED ALTERNATIVE 1B ANALYSIS

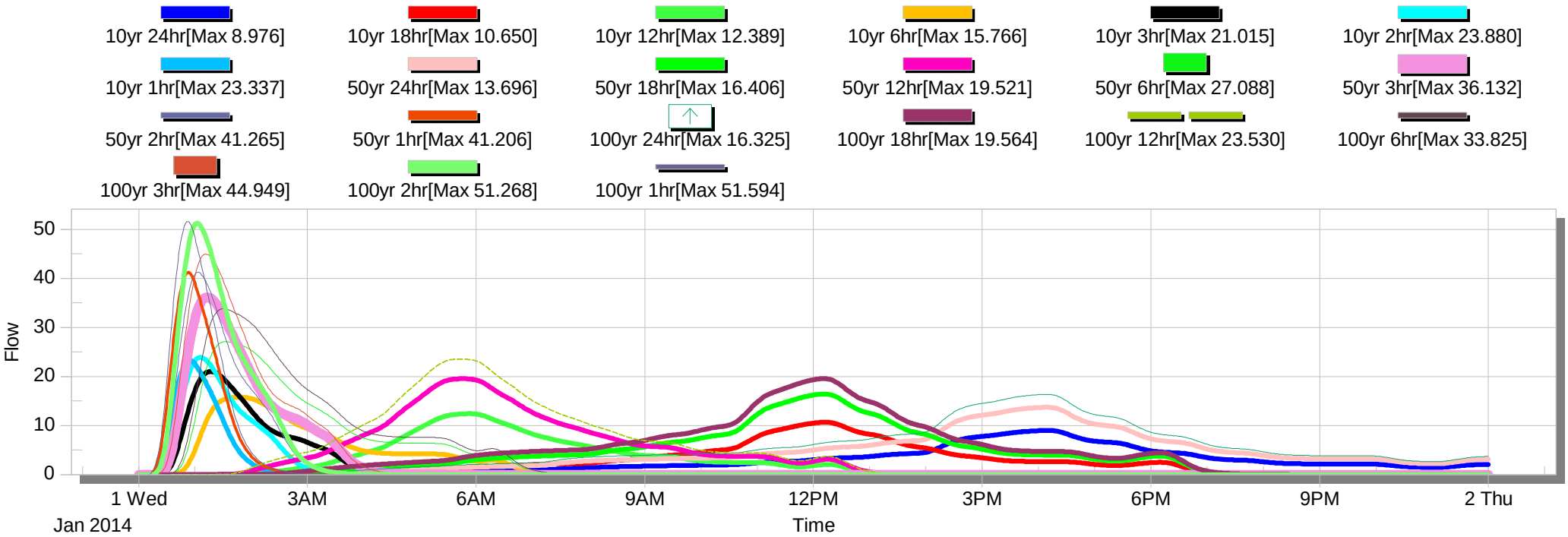
PROPOSED ALTERNATIVE 1B

PEAK FLOW RATES BY TRIBUTARY AREA

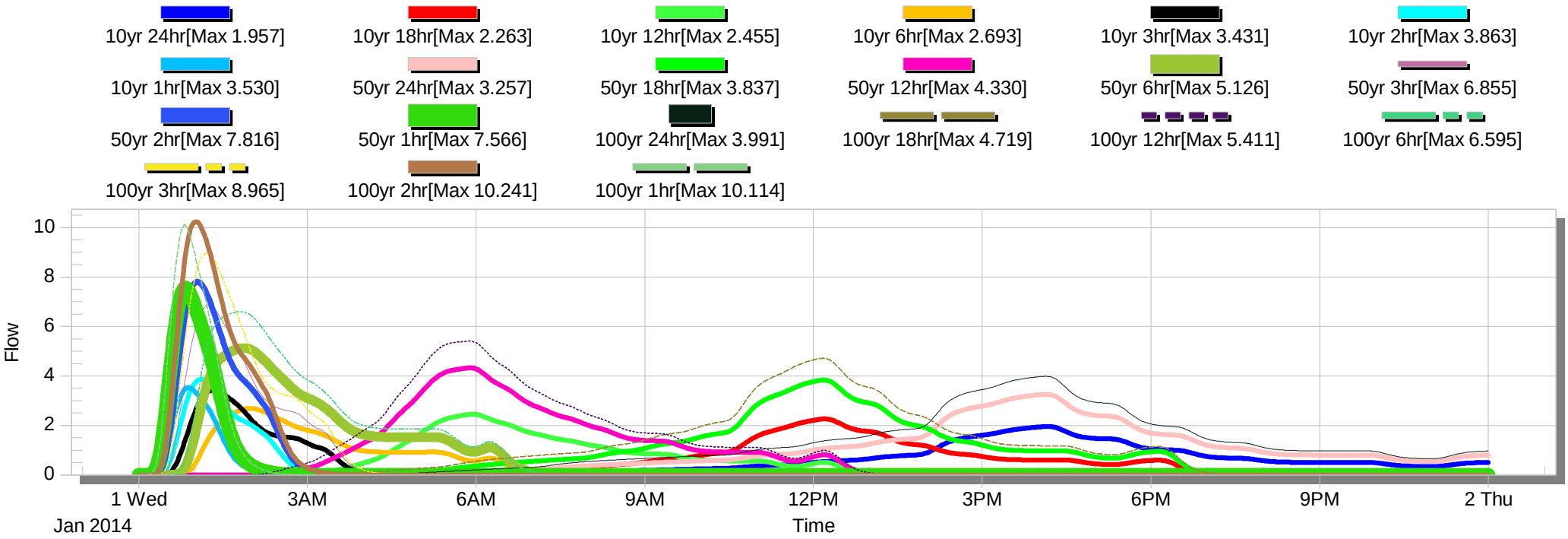
Node - Node11



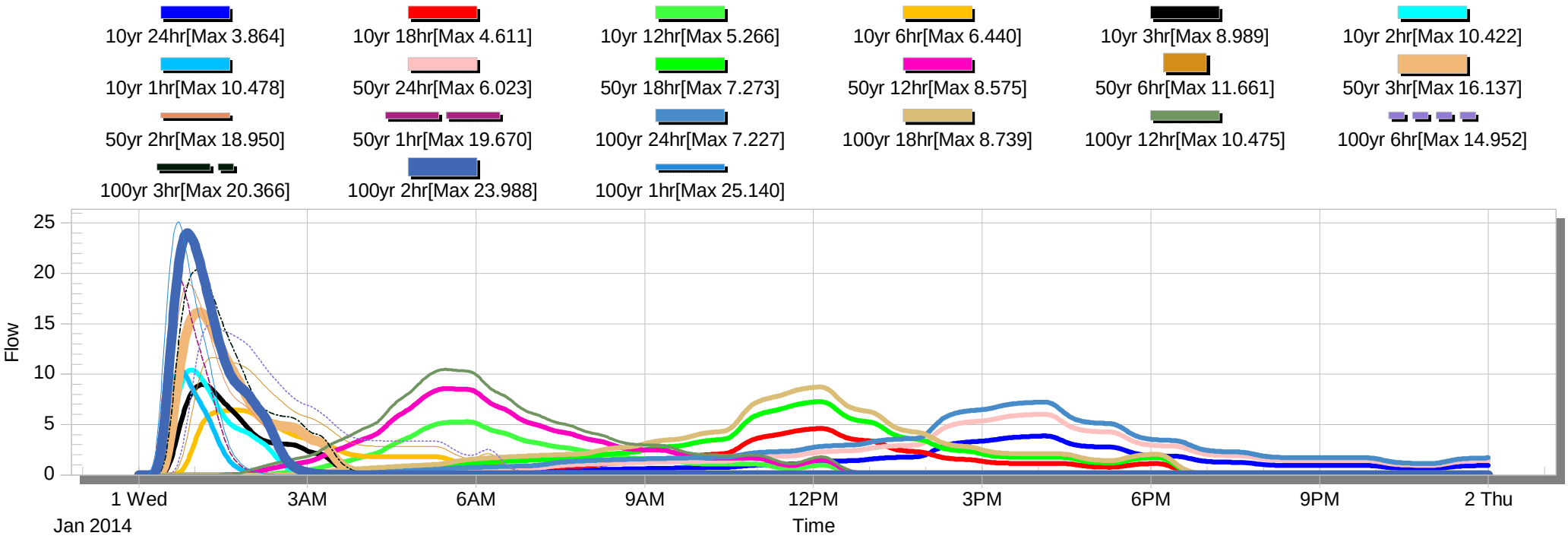
Node - Node24



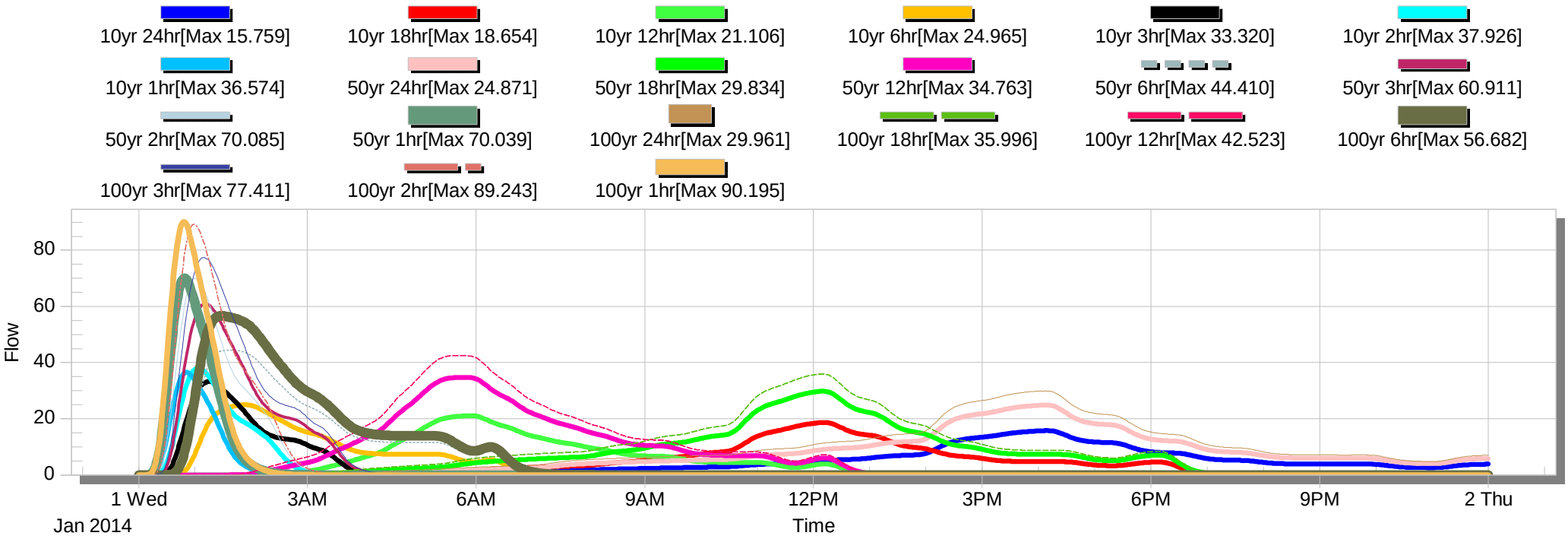
Node - Node25



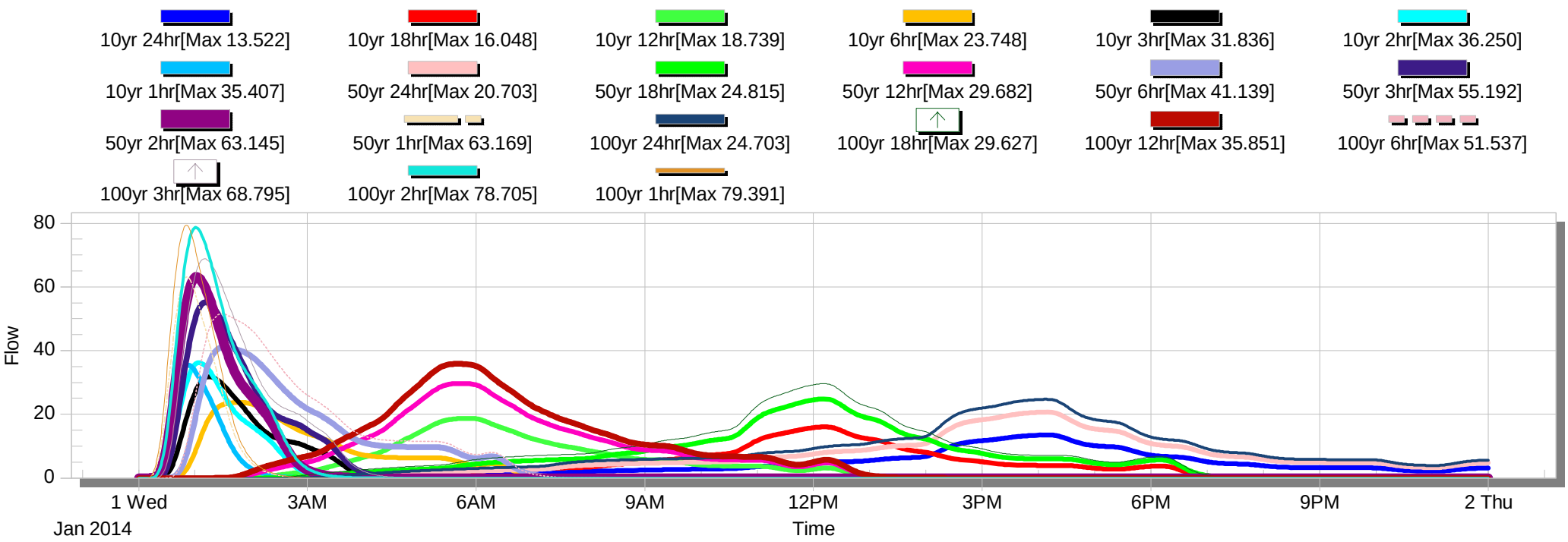
Node - Node30



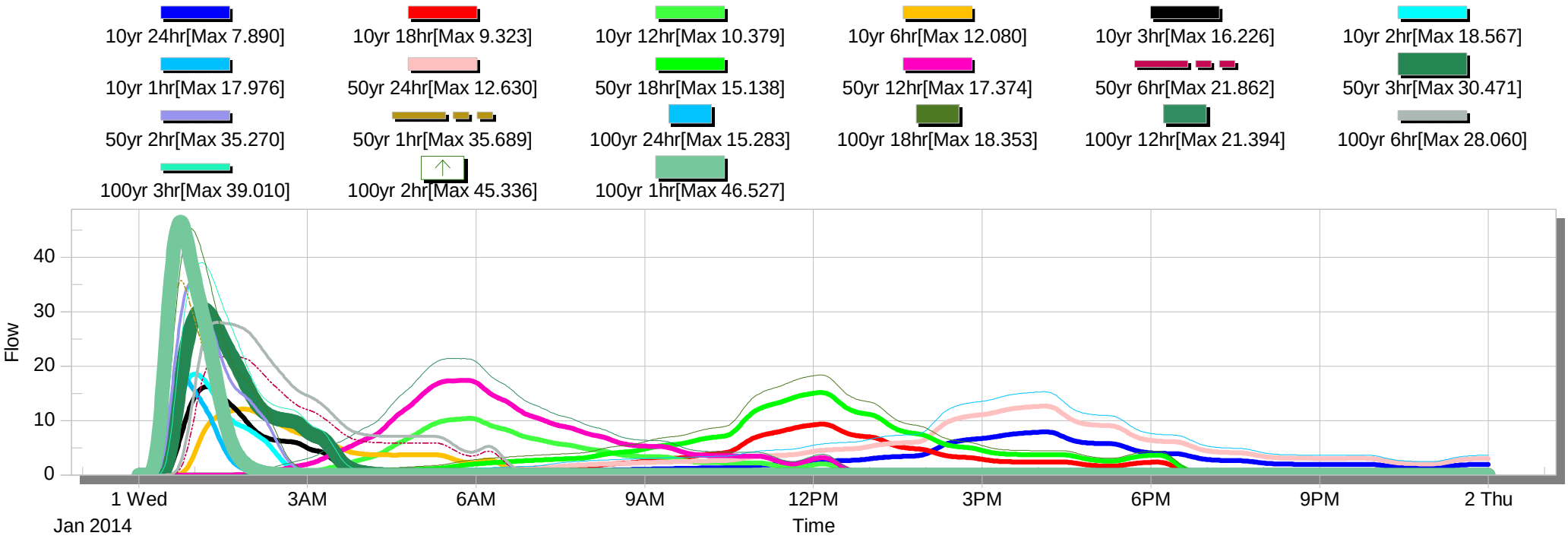
Node - Node33



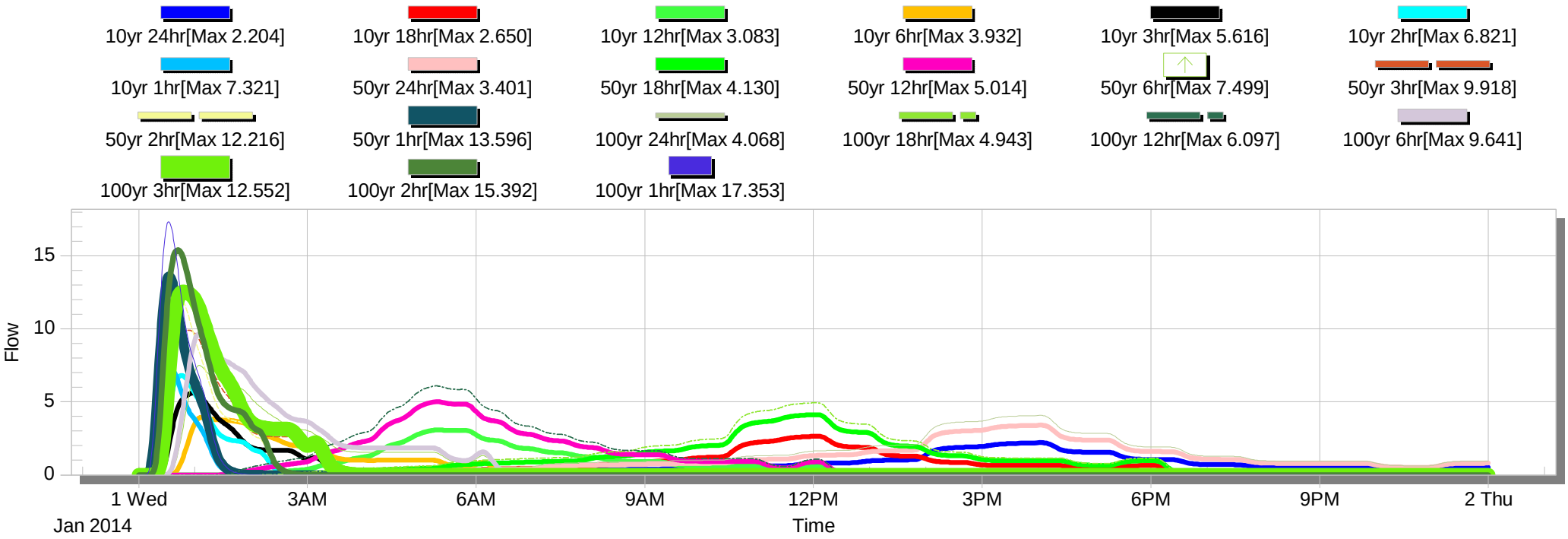
Node - Node46



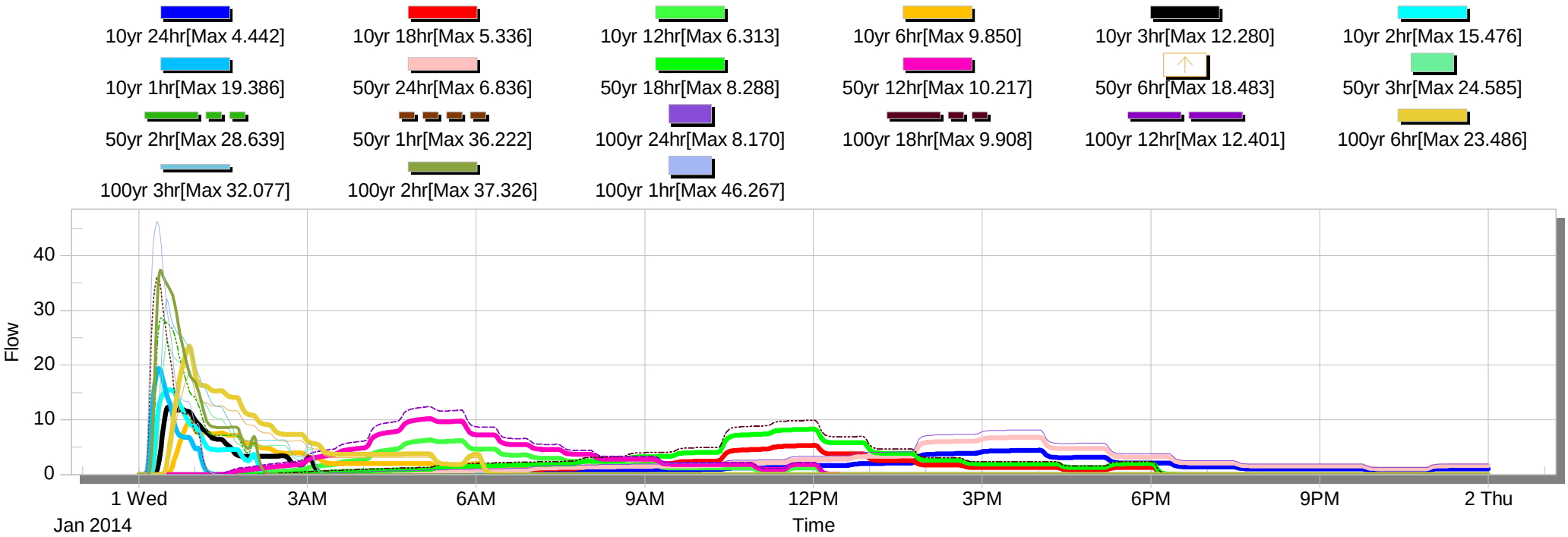
Node - Node48



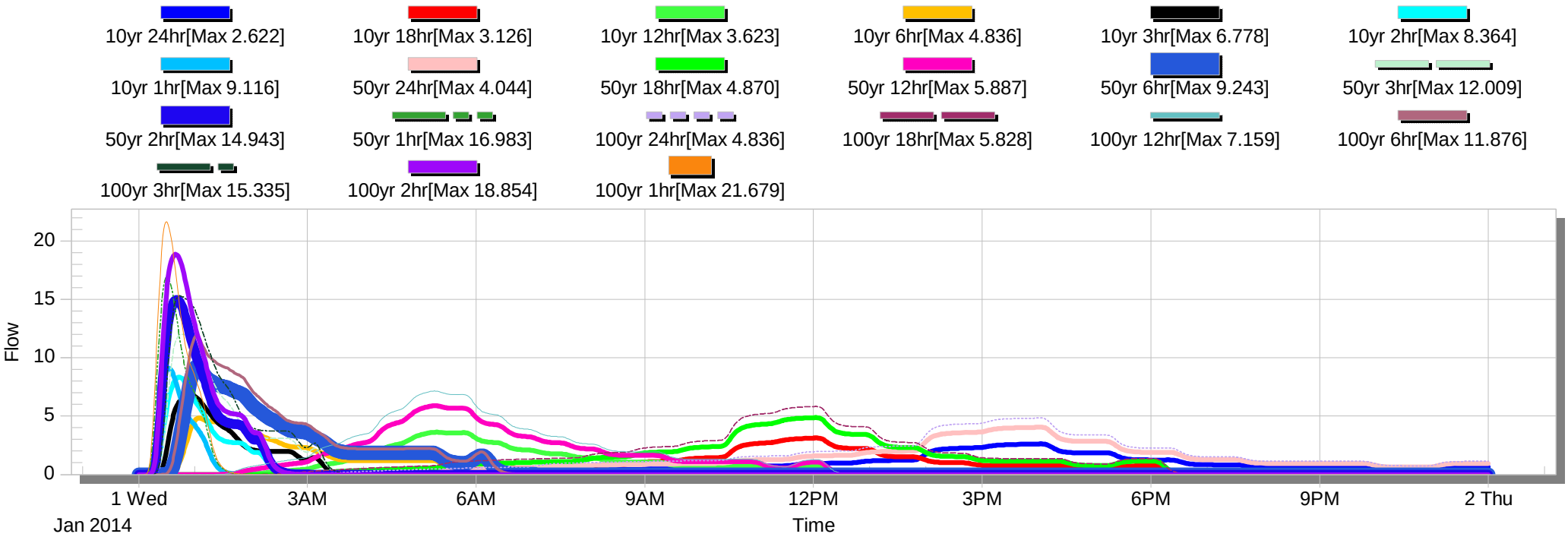
Node - Node63



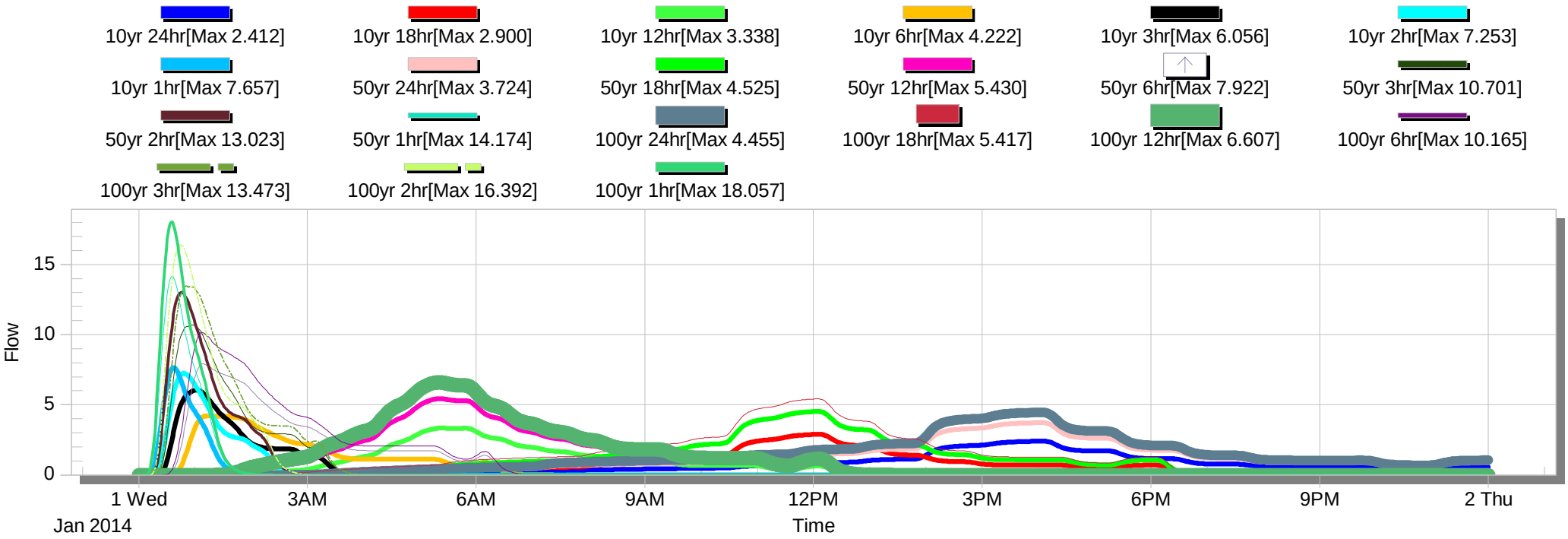
Node - Node66



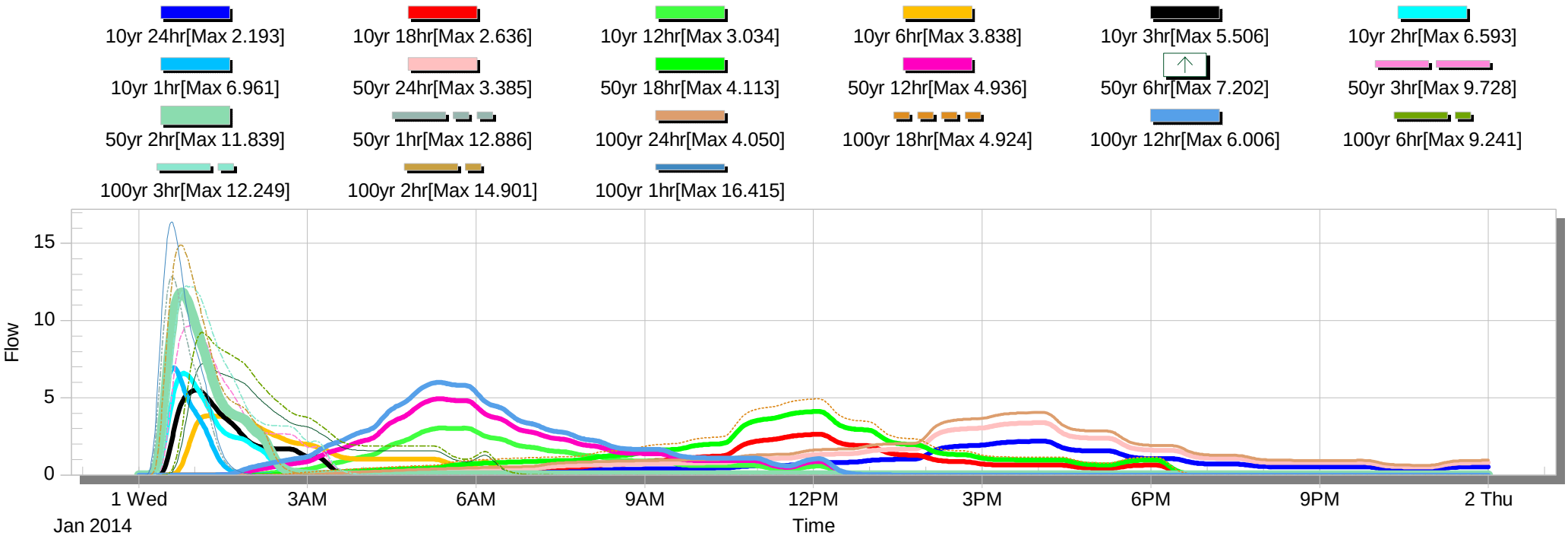
Node - Node89



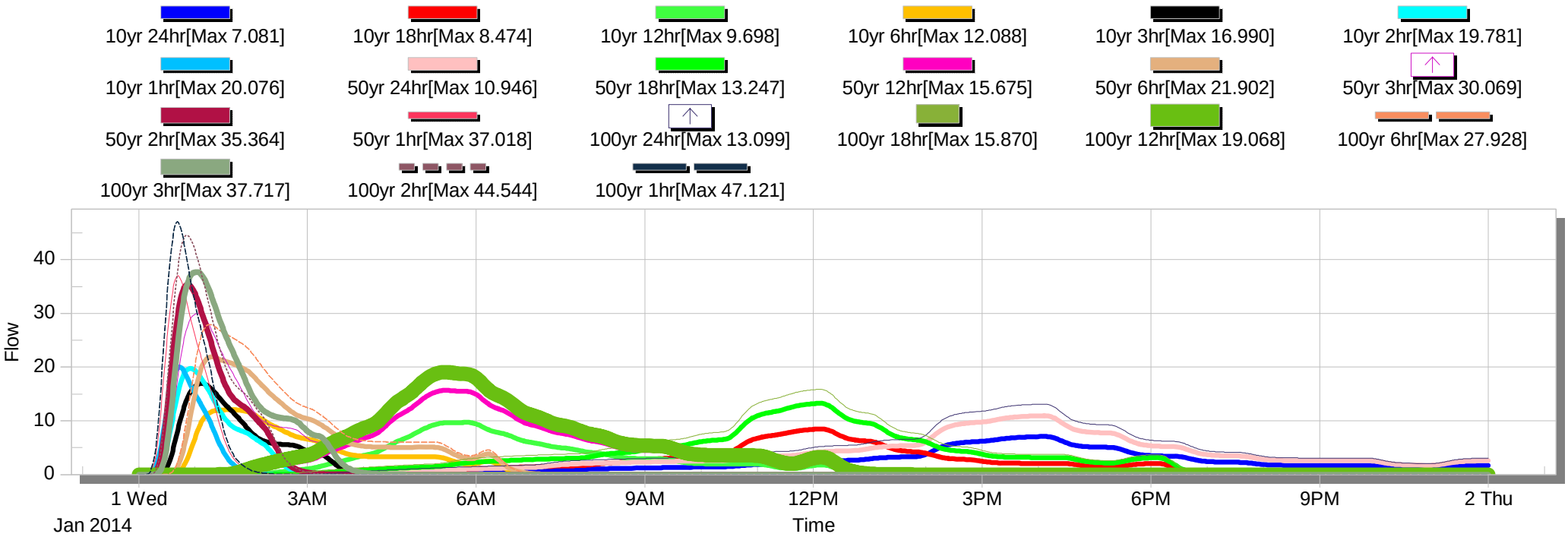
Node - Node92



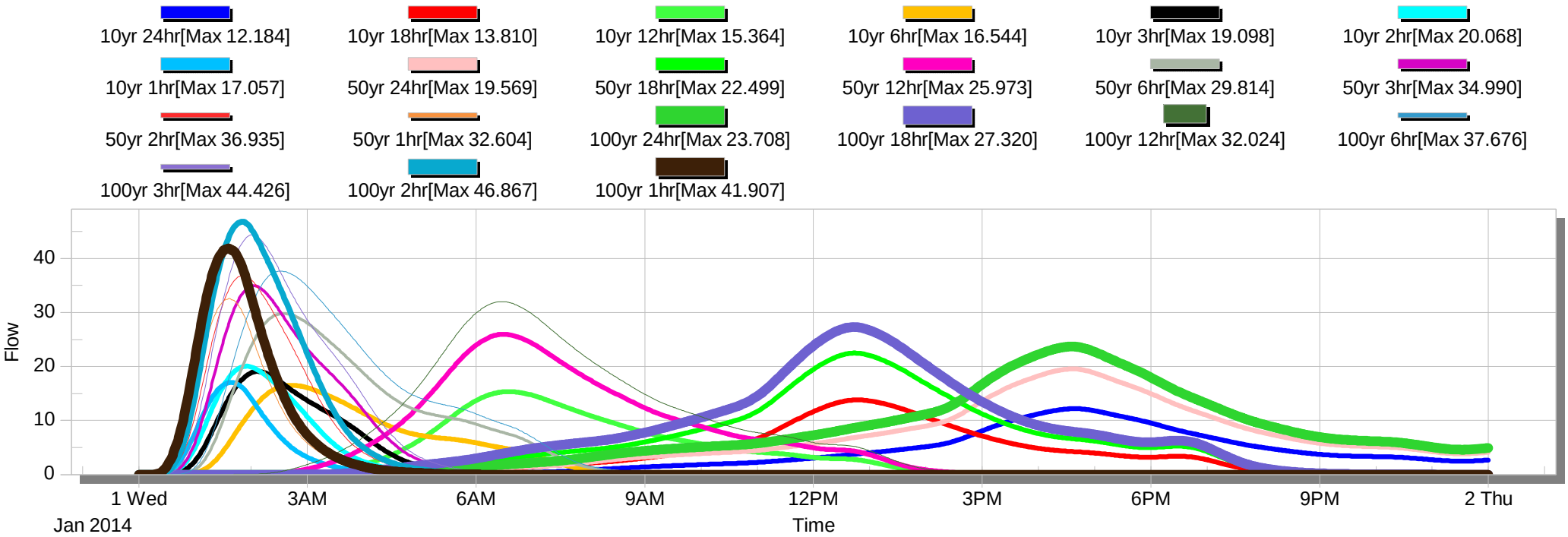
Node - Node94



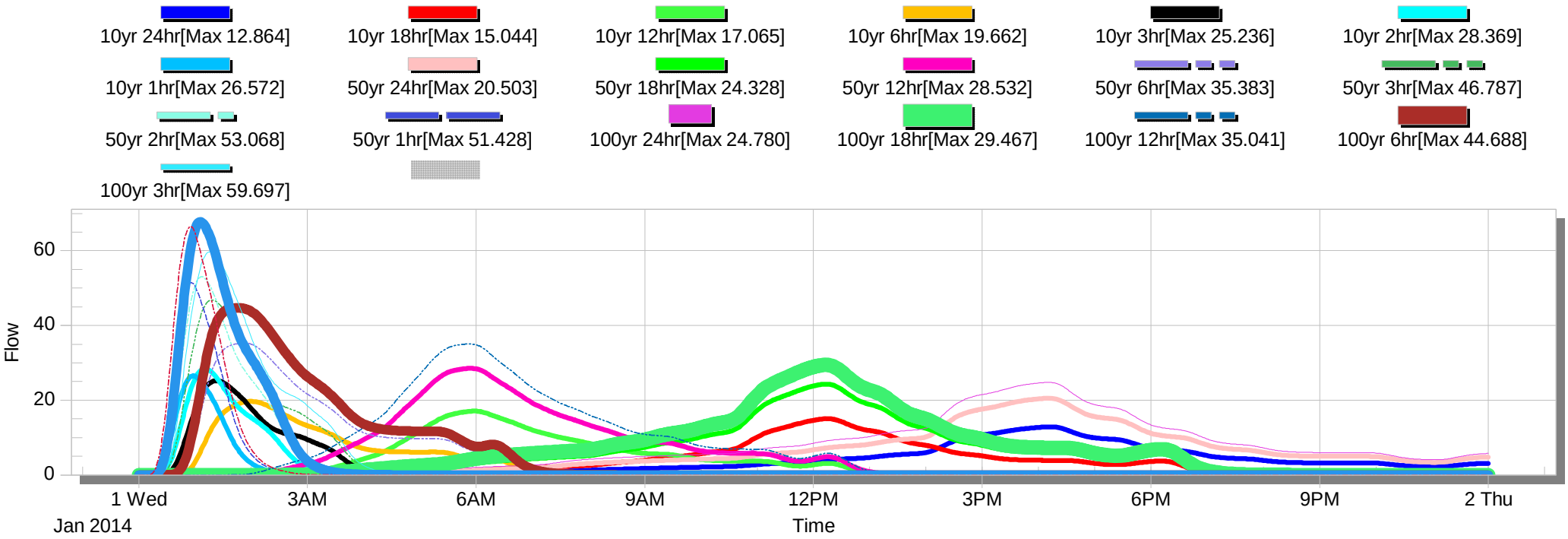
Node - Node65



Node - Node99

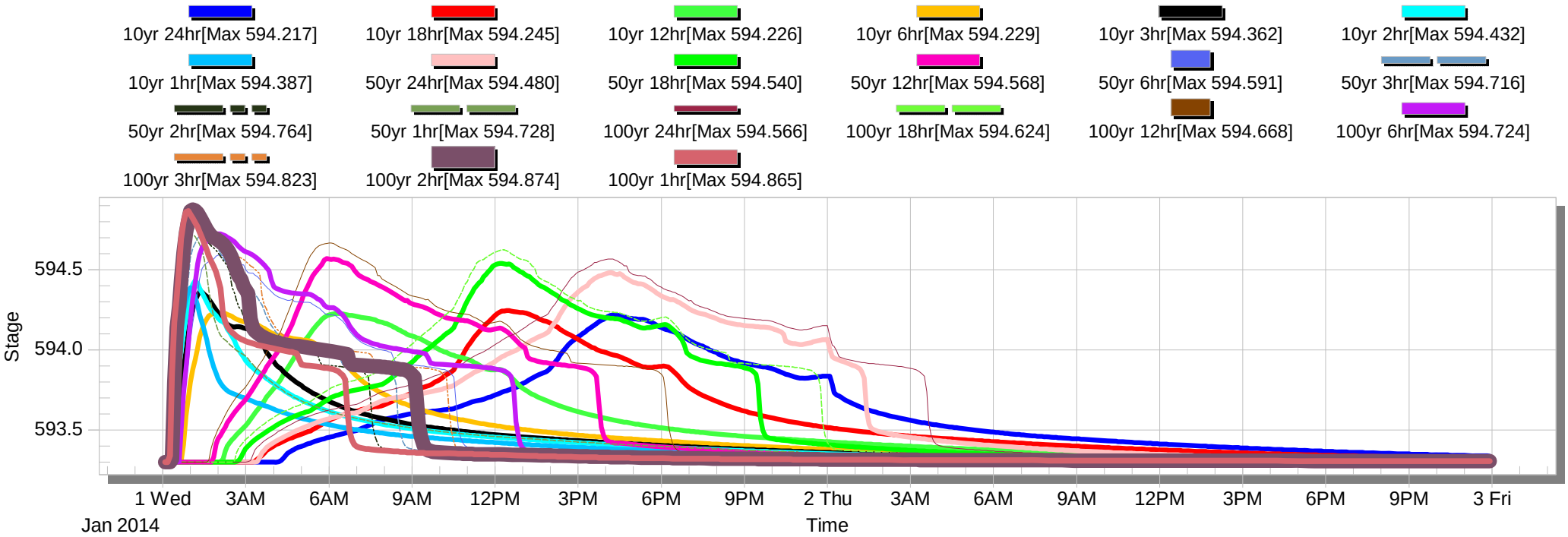


Node - Node120

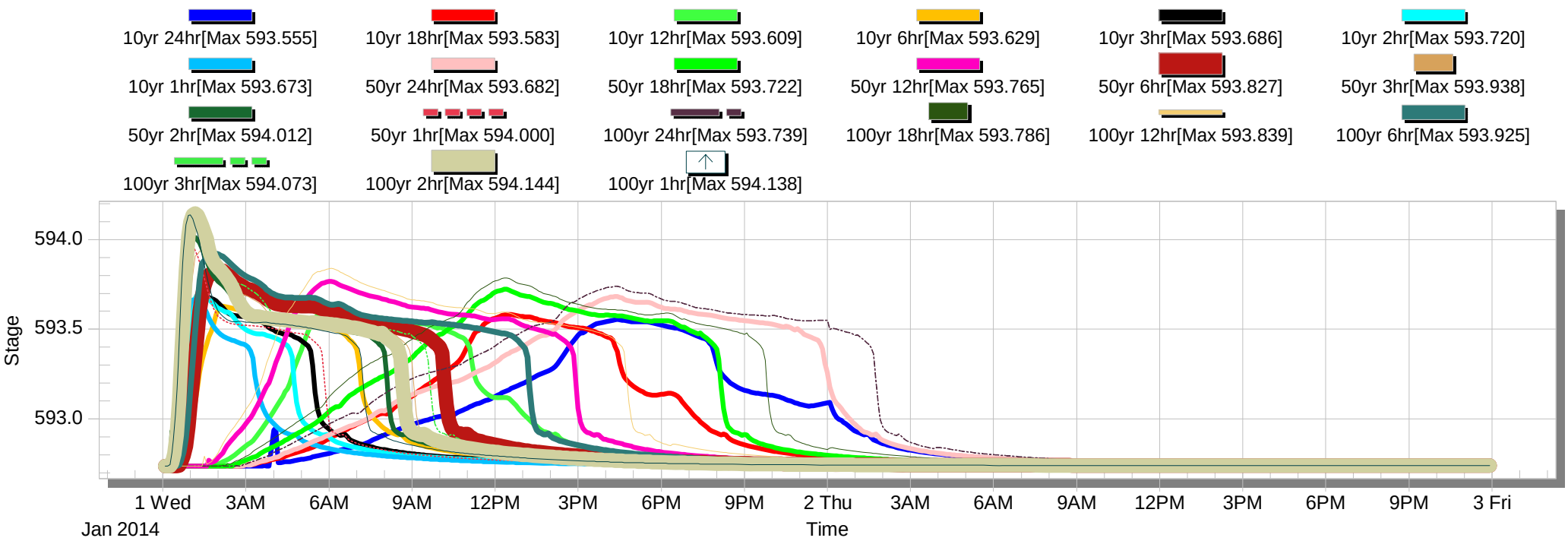


PROPOSED ALTERNATIVE 1B
HIGH WATER LEVEL AT EACH NODE

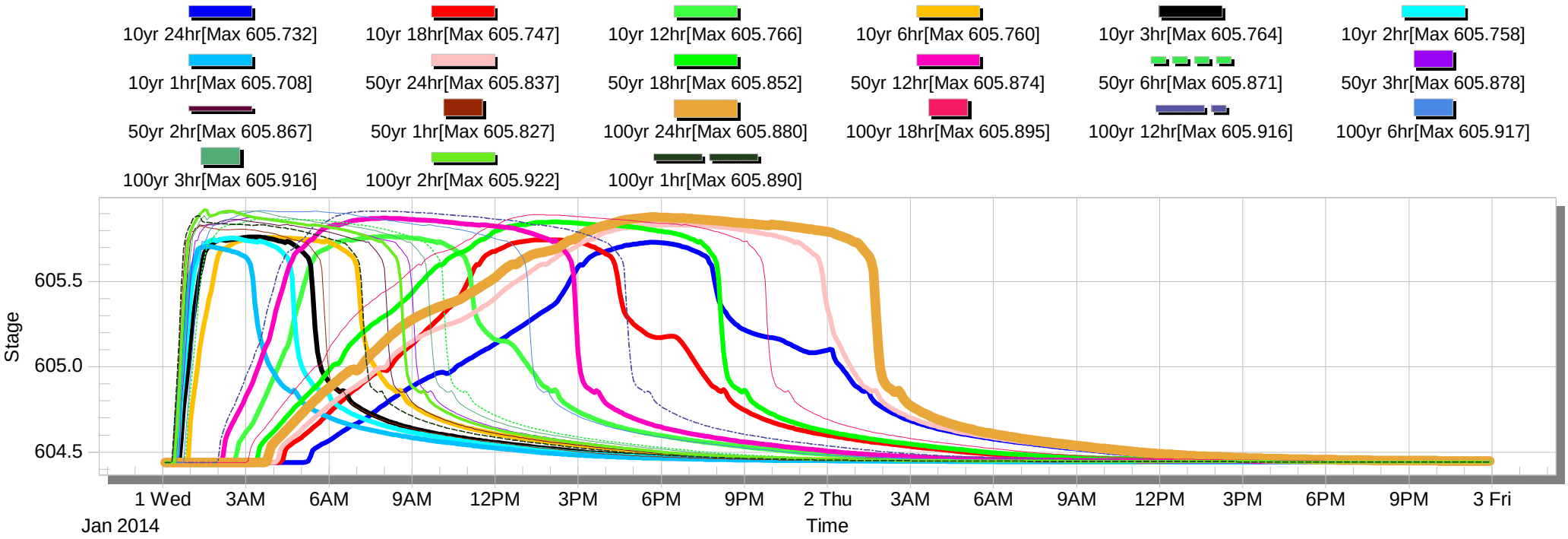
Node - Node48



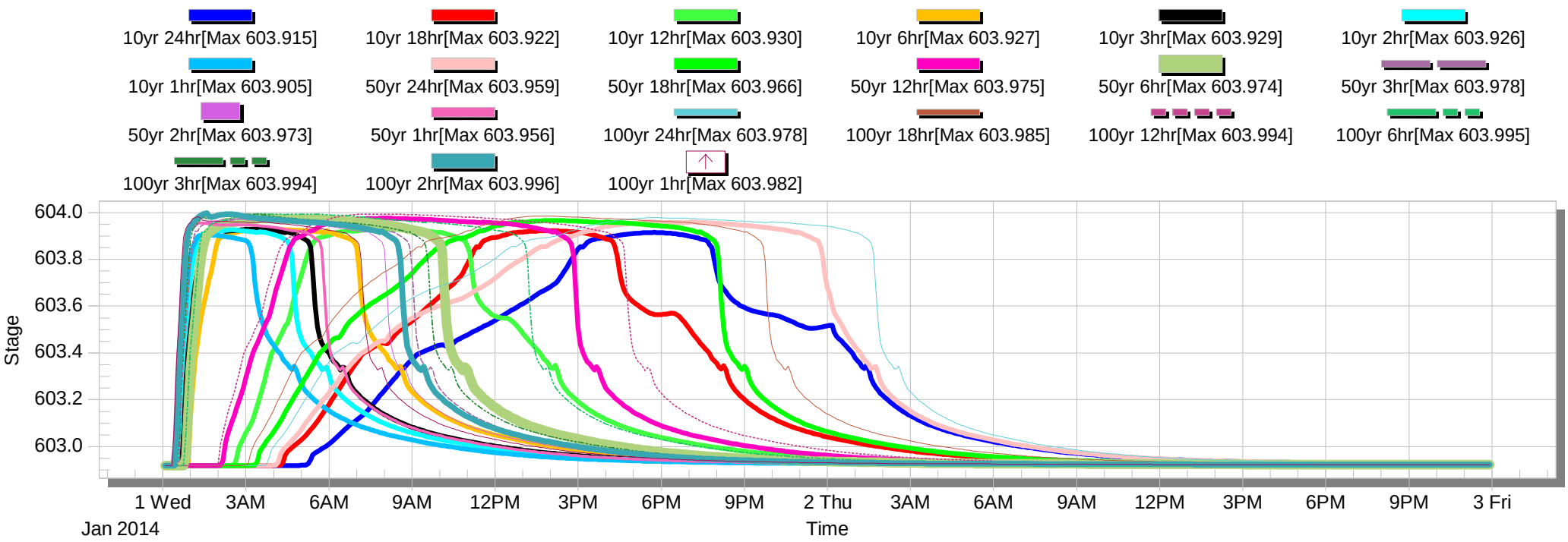
Node - Node46



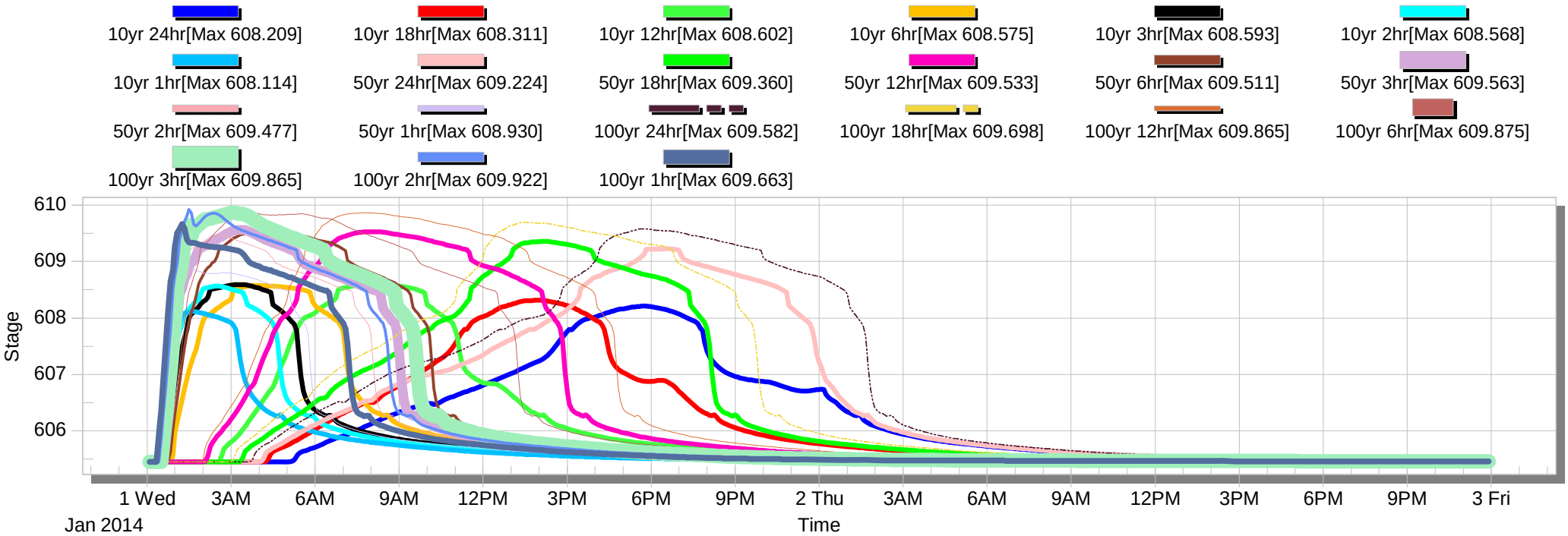
Node - Node39



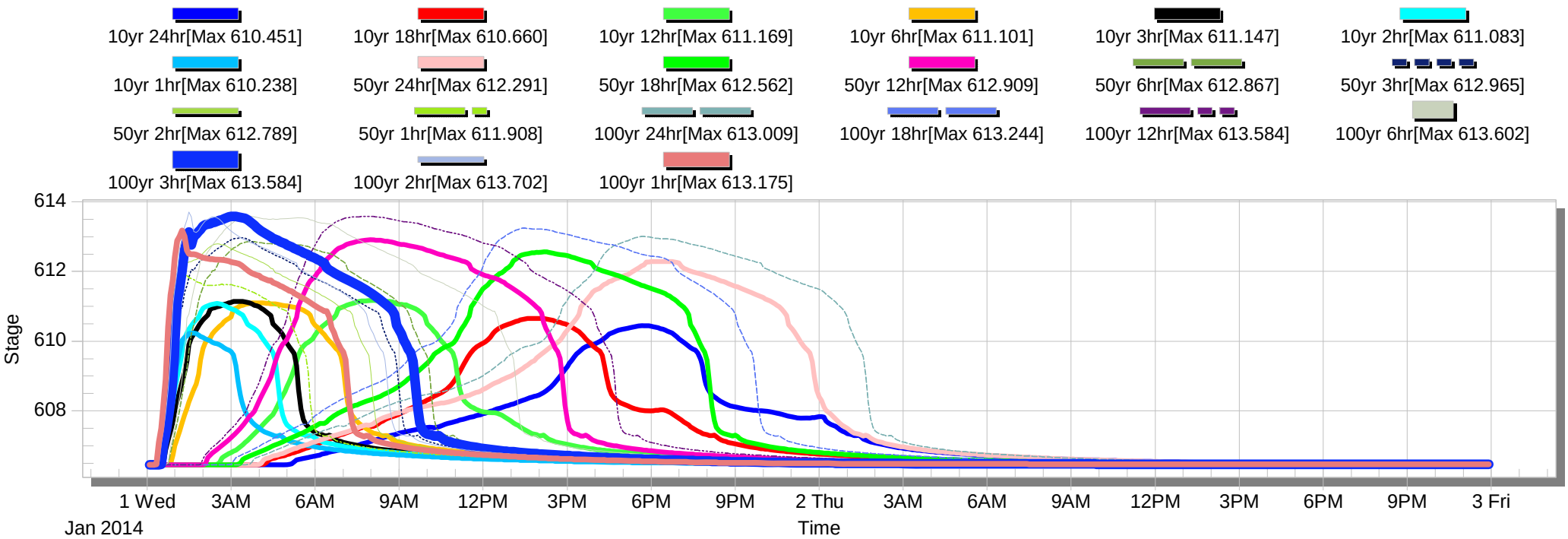
Node - Node75



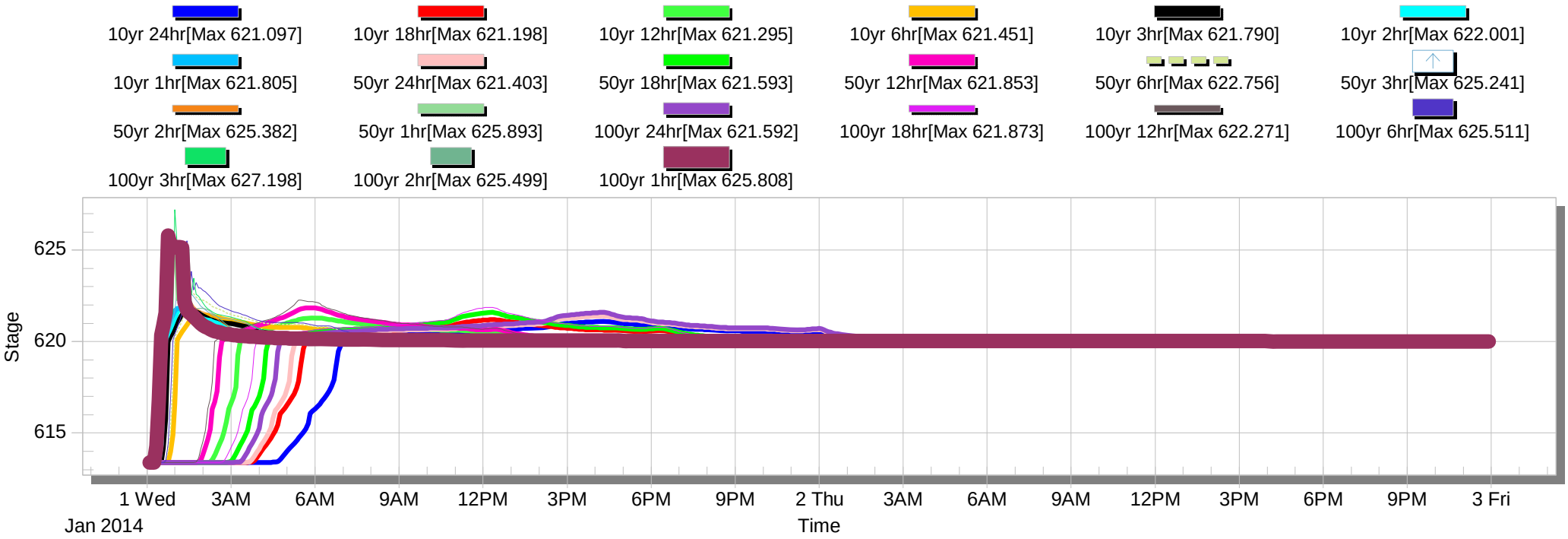
Node - Node38



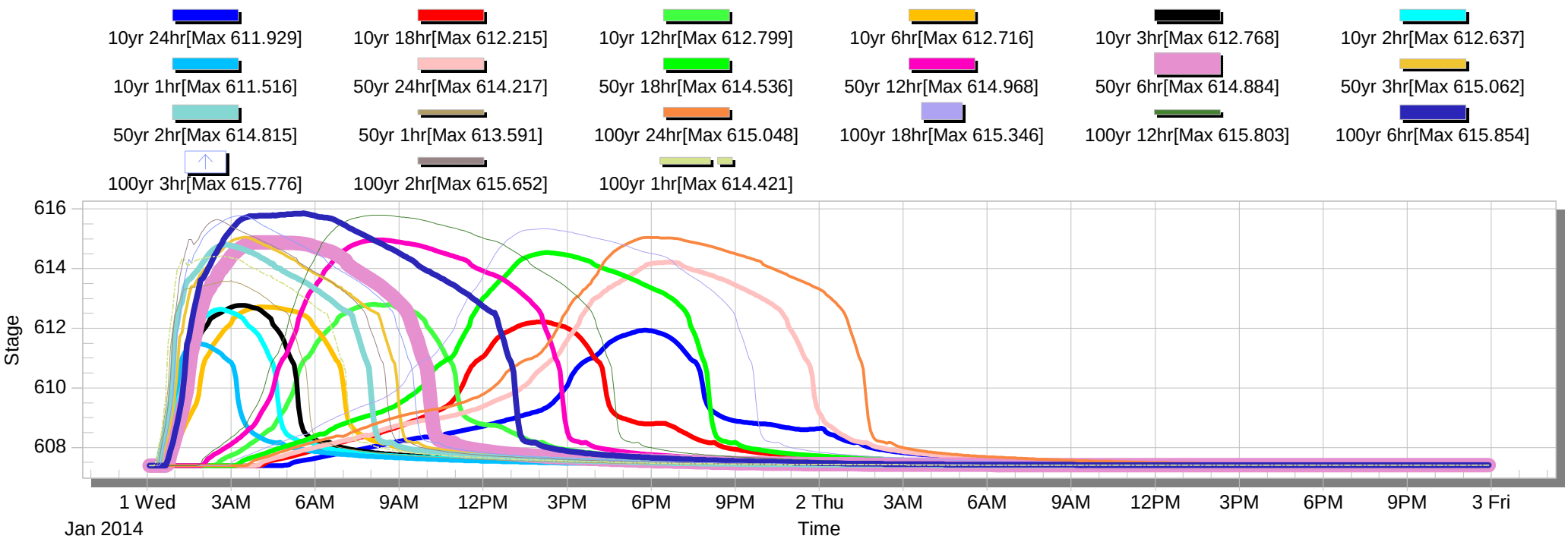
Node - Node37



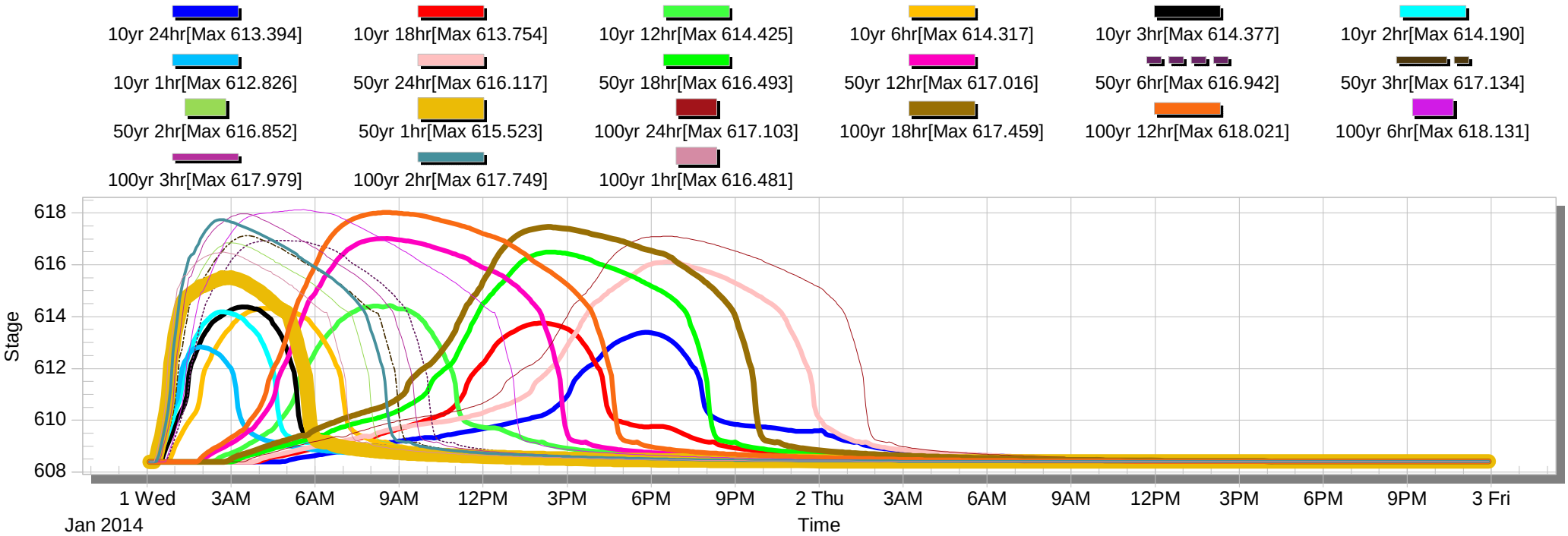
Node - Node124



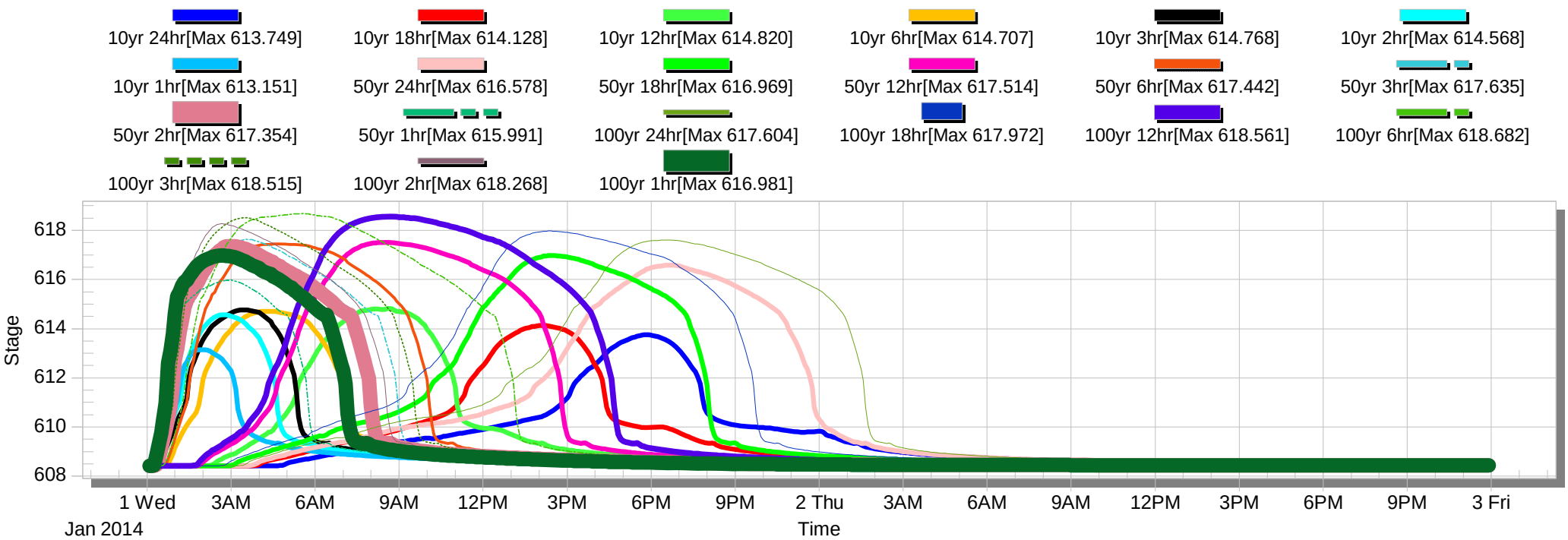
Node - Node36



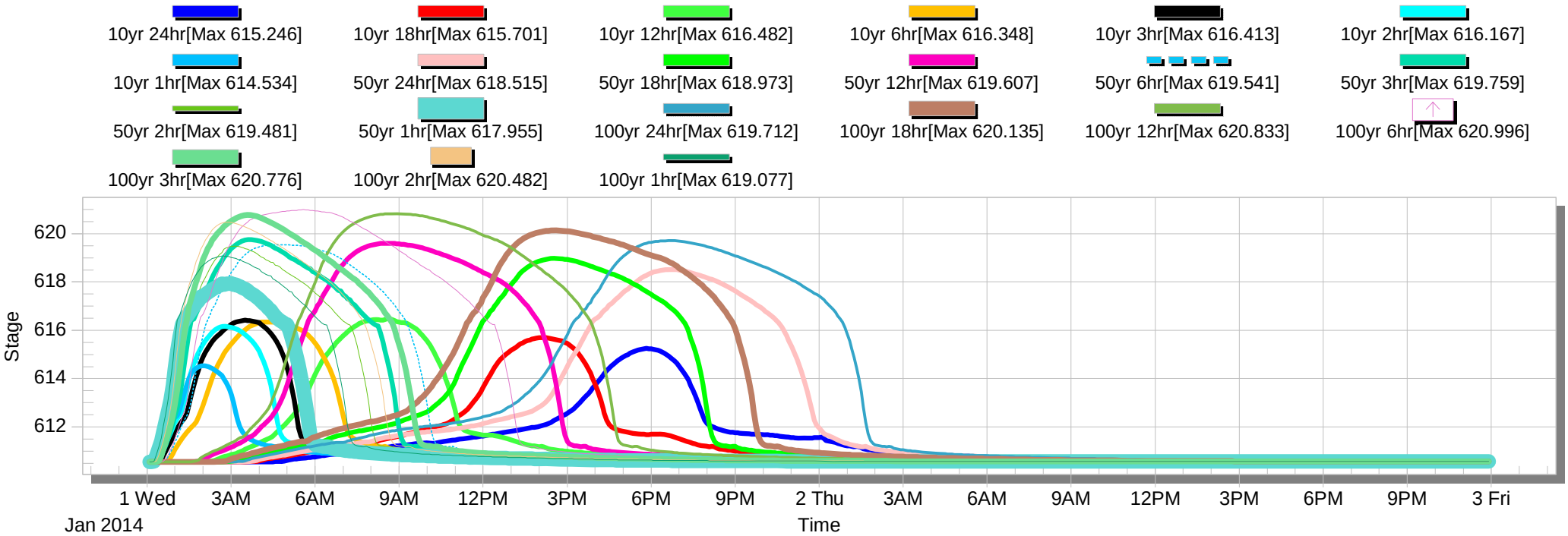
Node - Node35



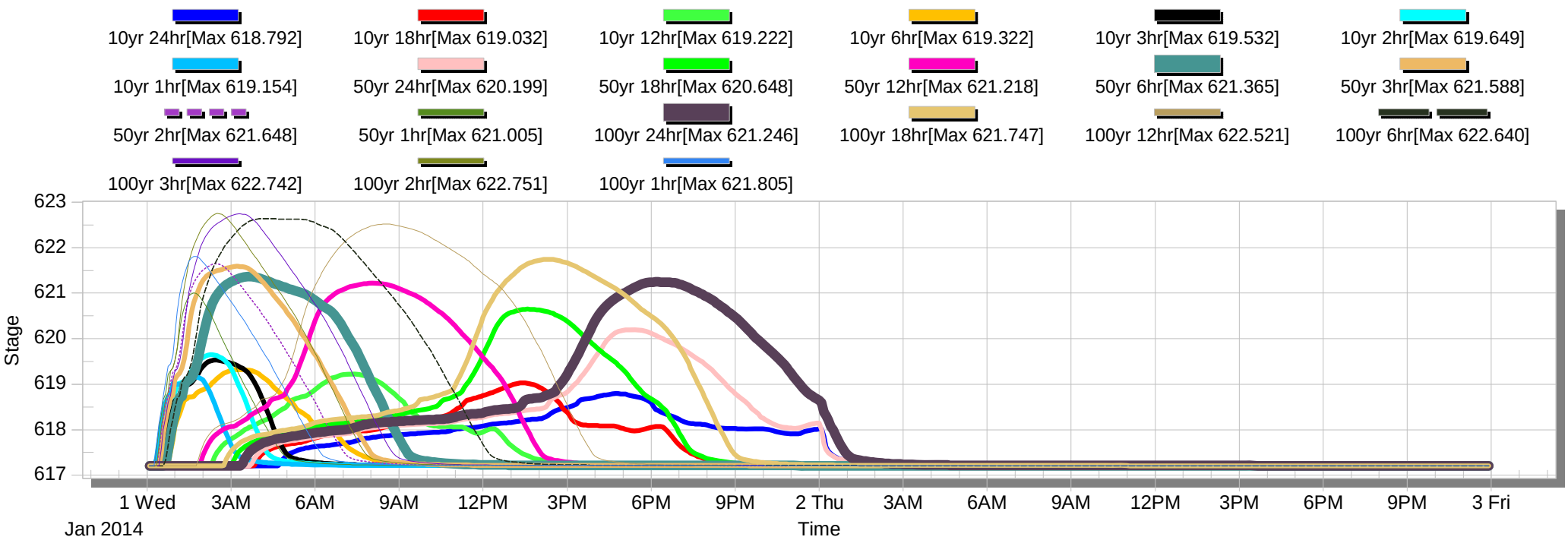
Node - Node34



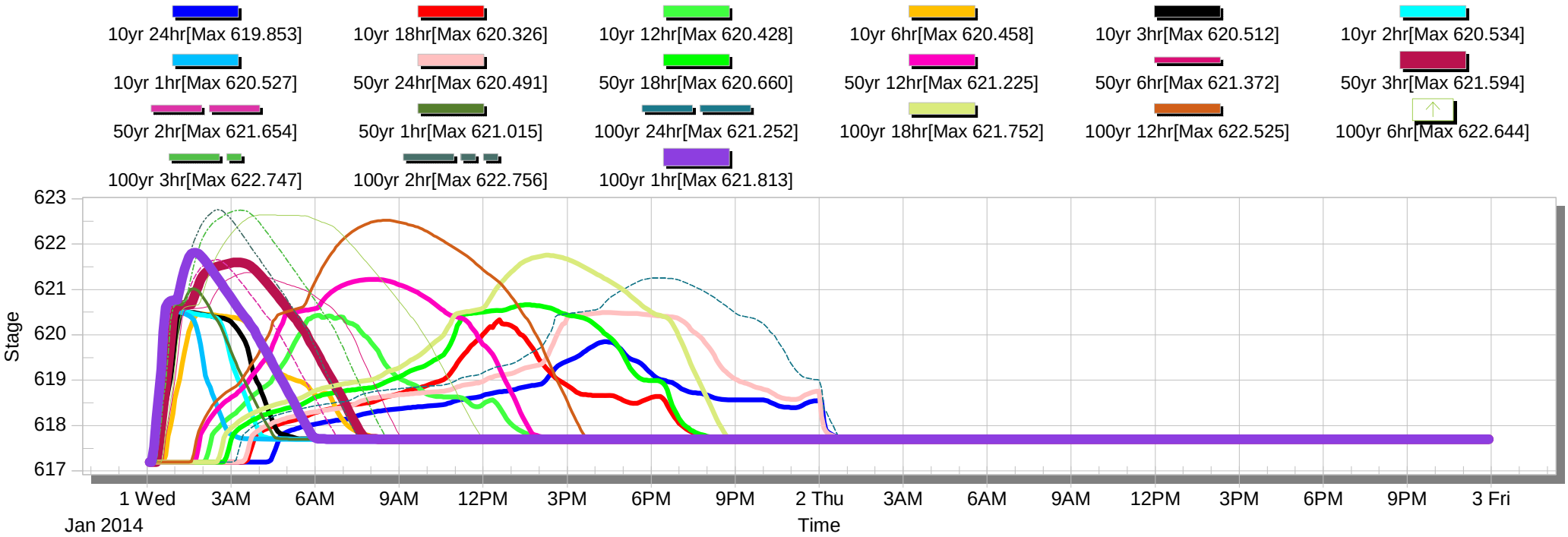
Node - Node33



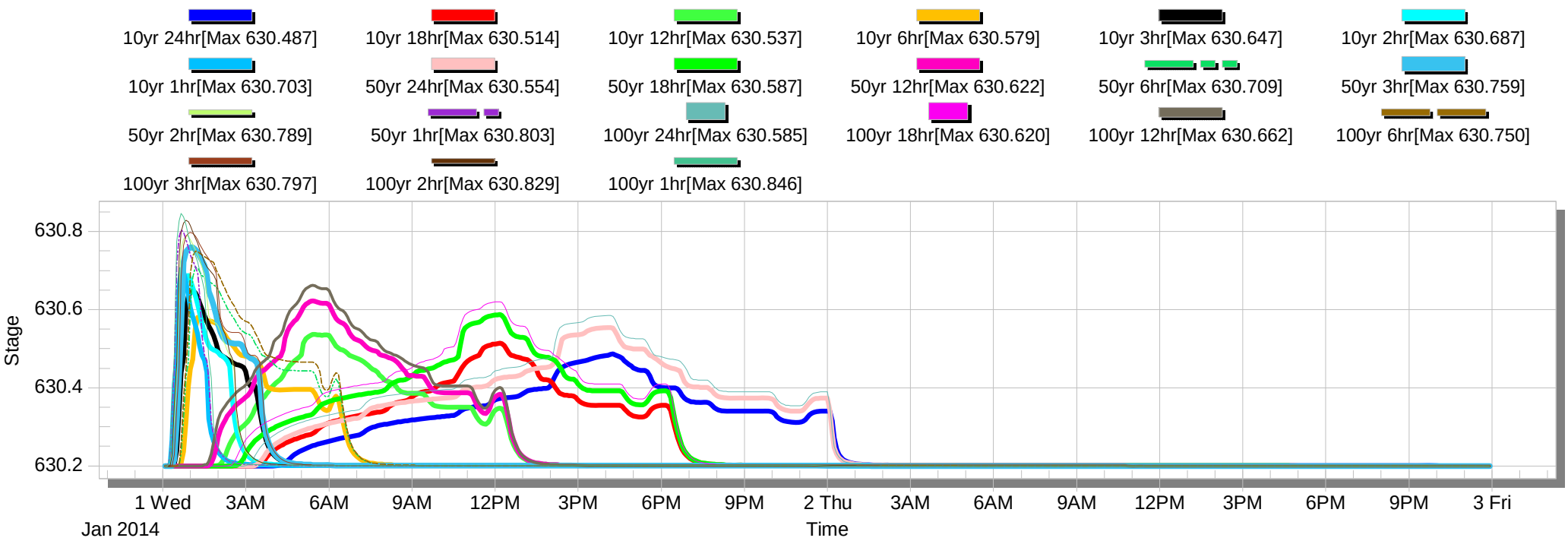
Node - Node12



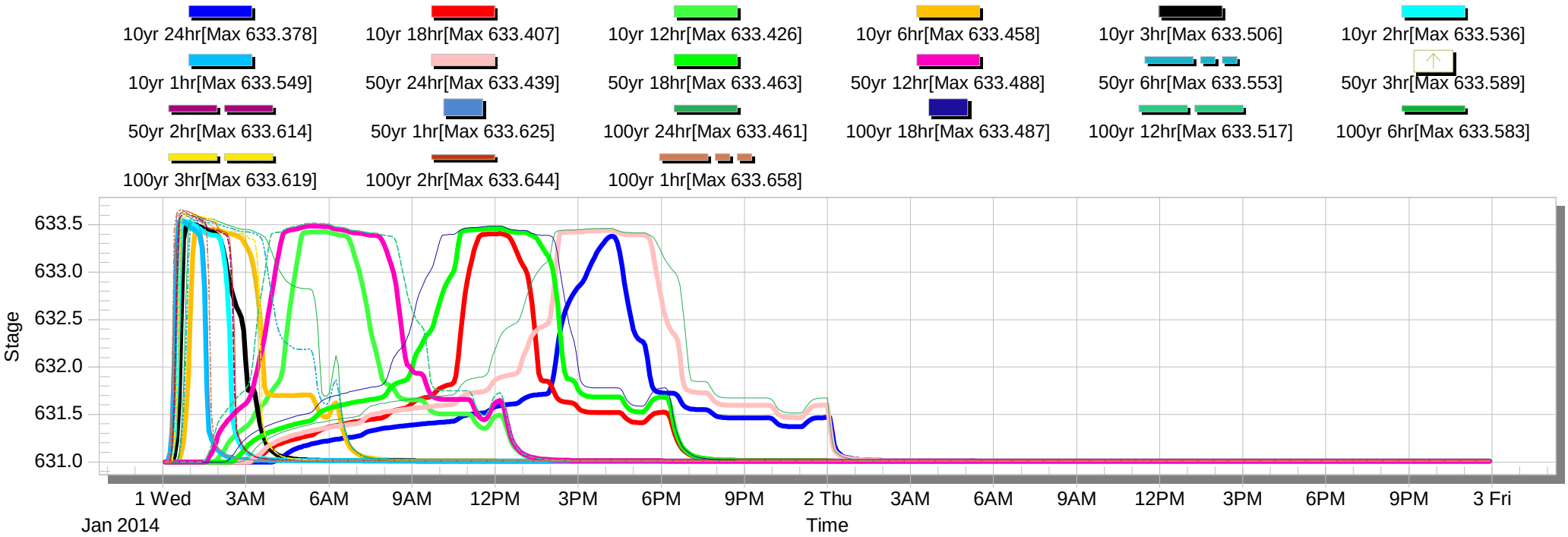
Node - Node11



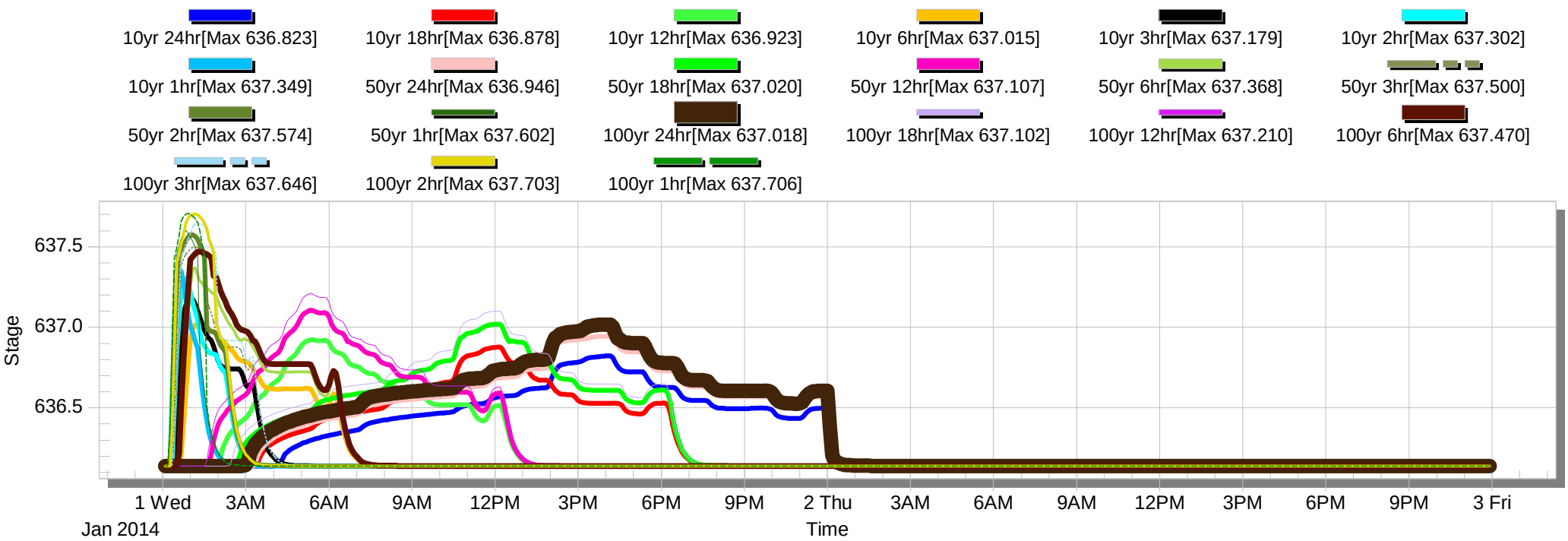
Node - Node41



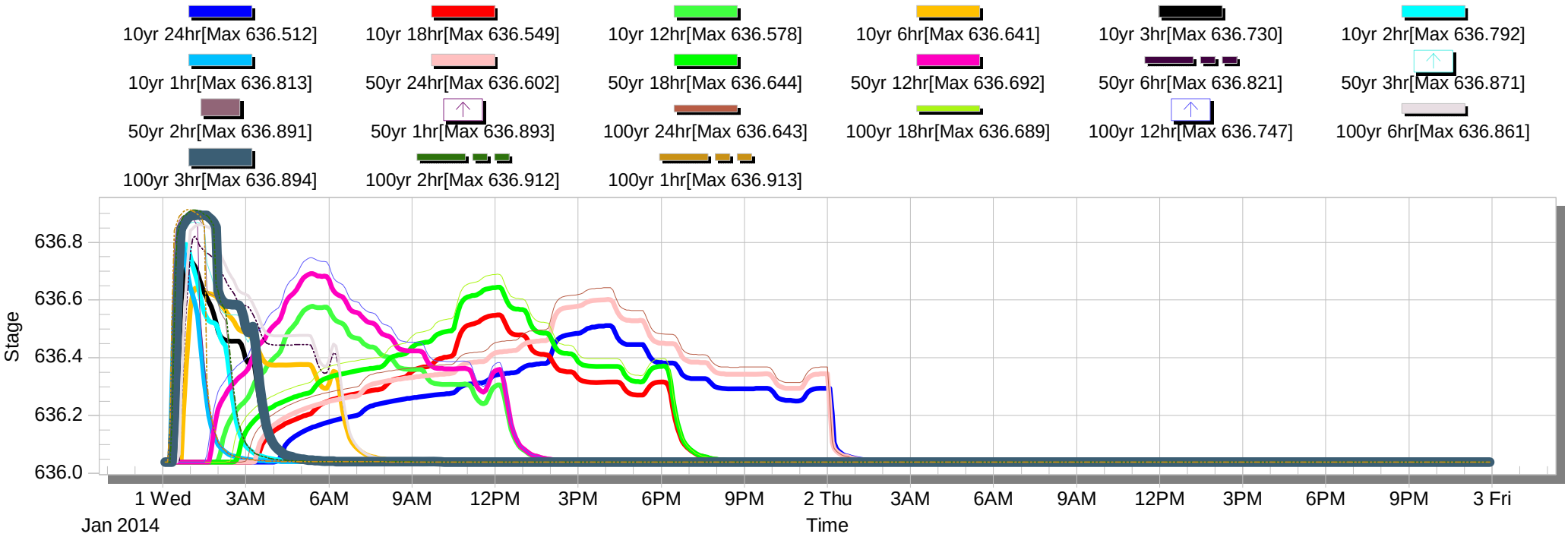
Node - Node63



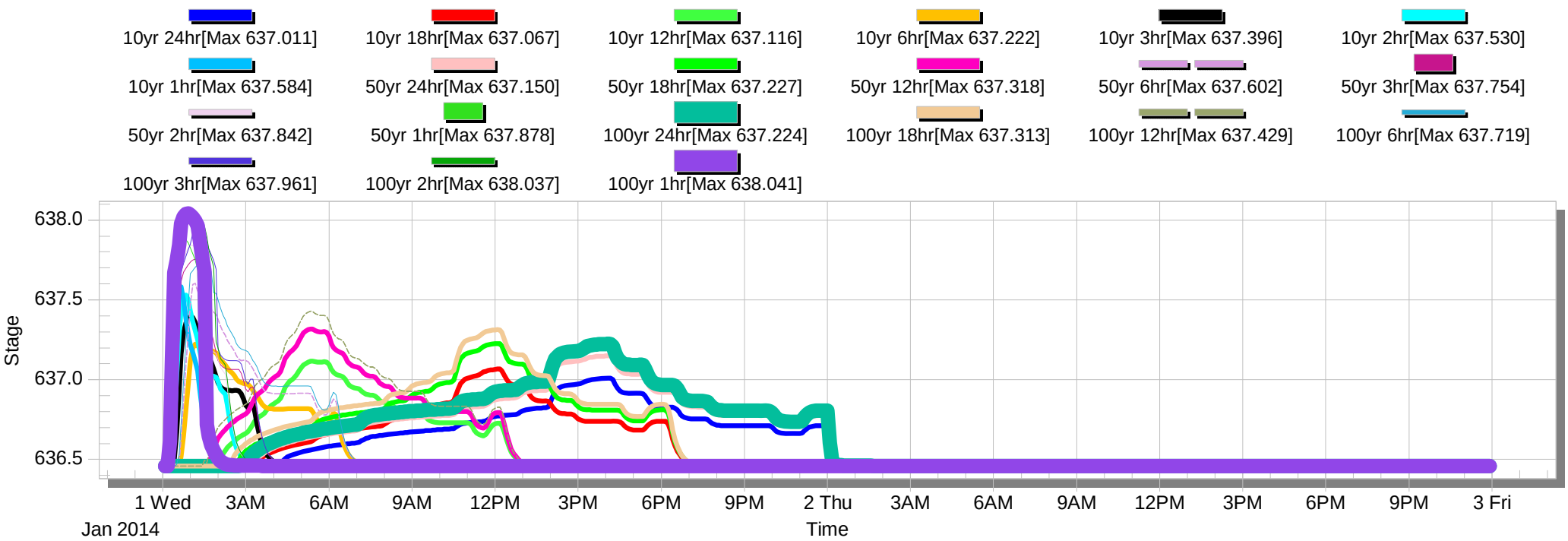
Node - Node44



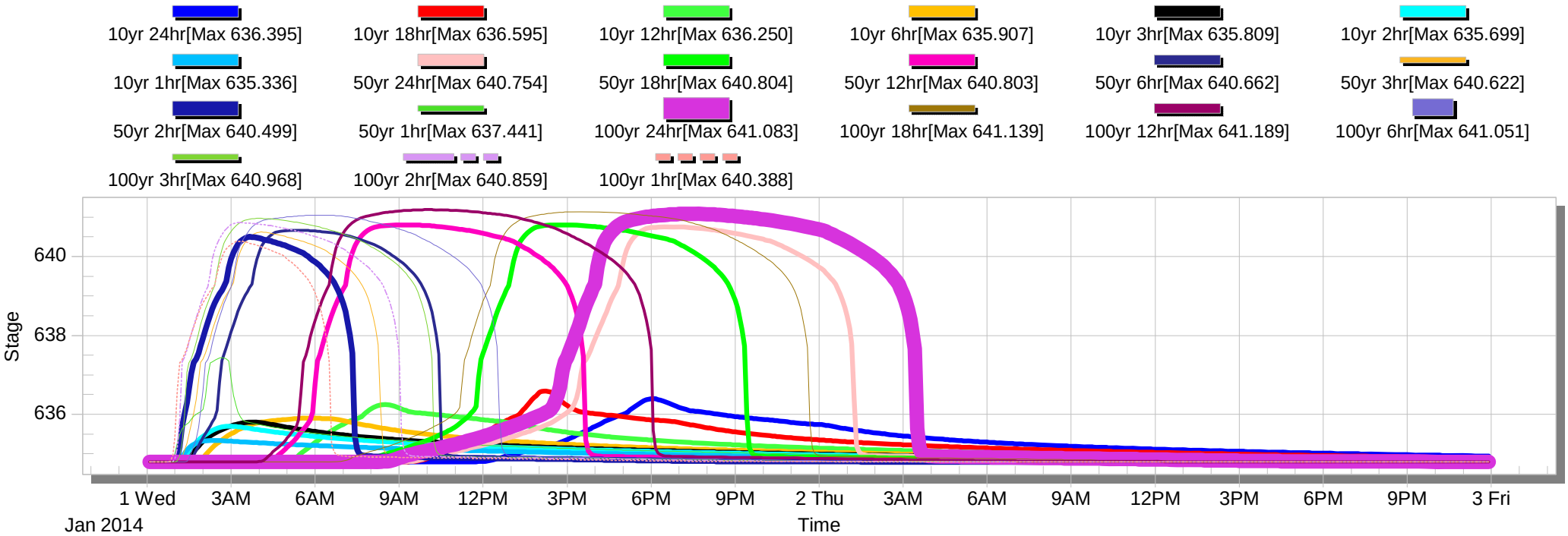
Node - Node45



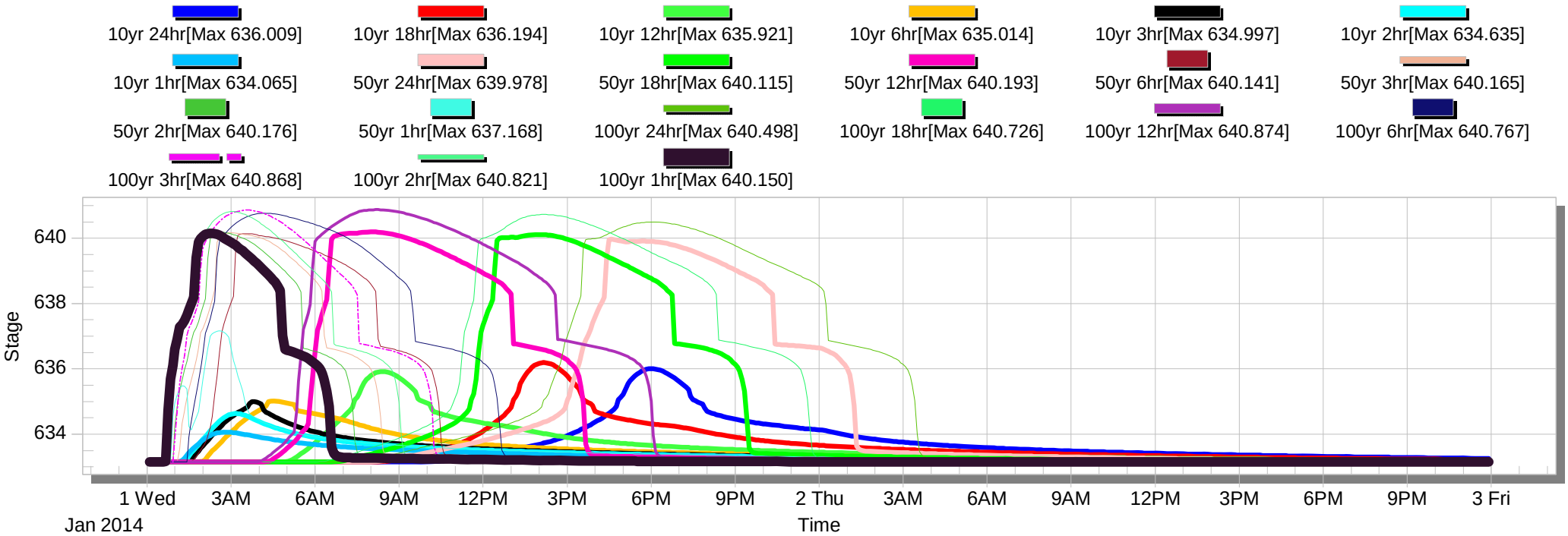
Node - Node43



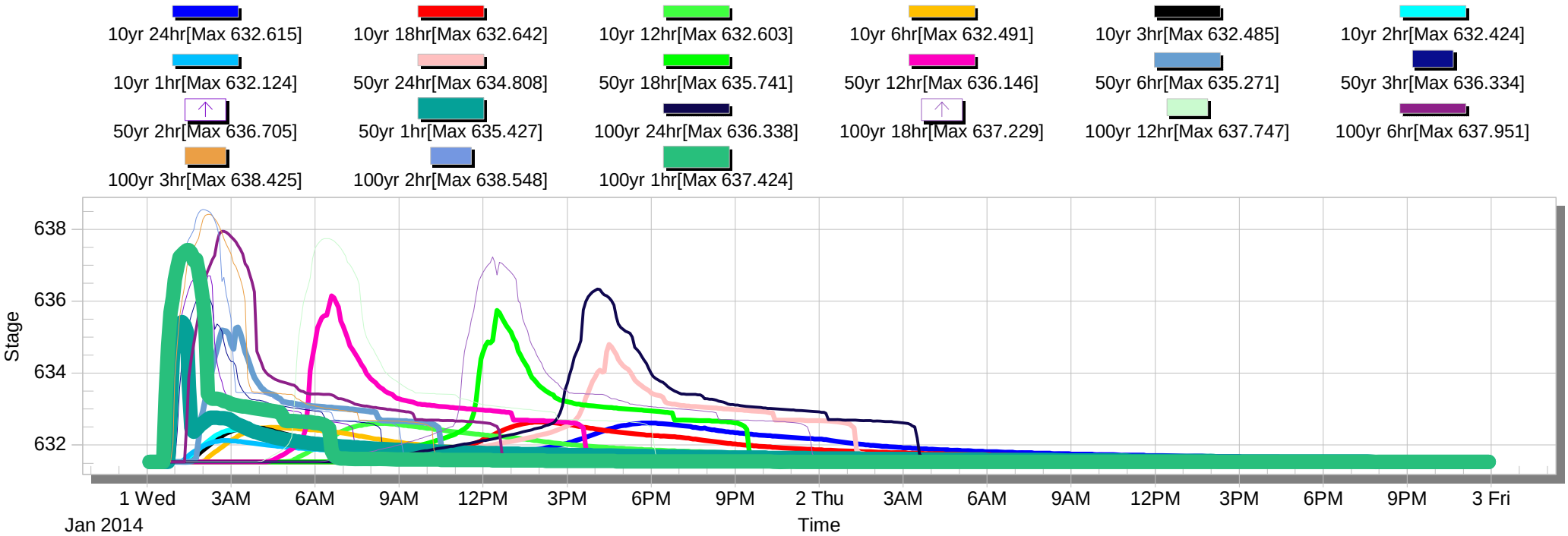
Node - Node20



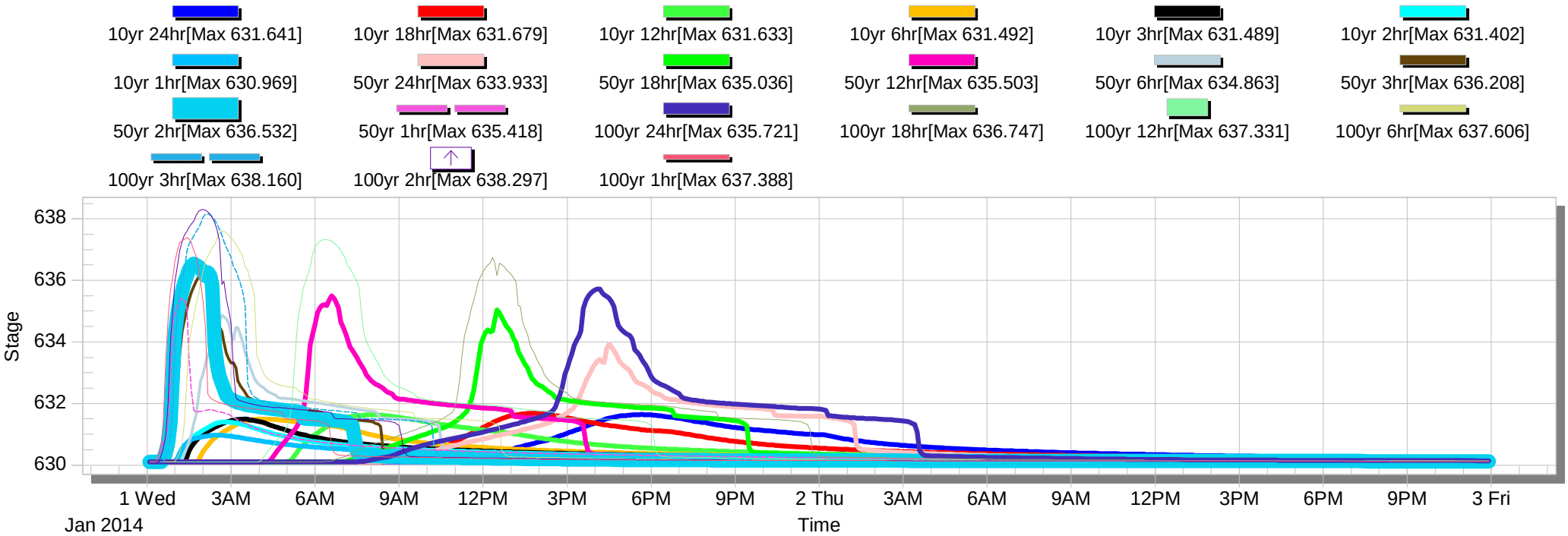
Node - Node21



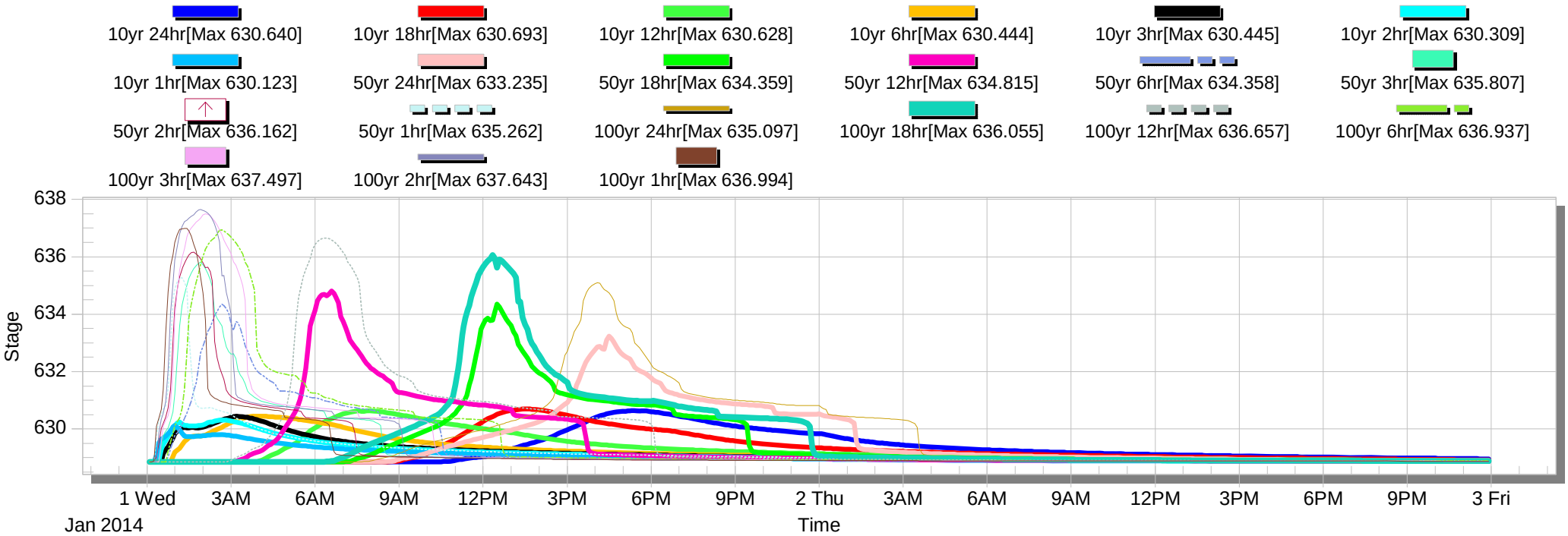
Node - Node84



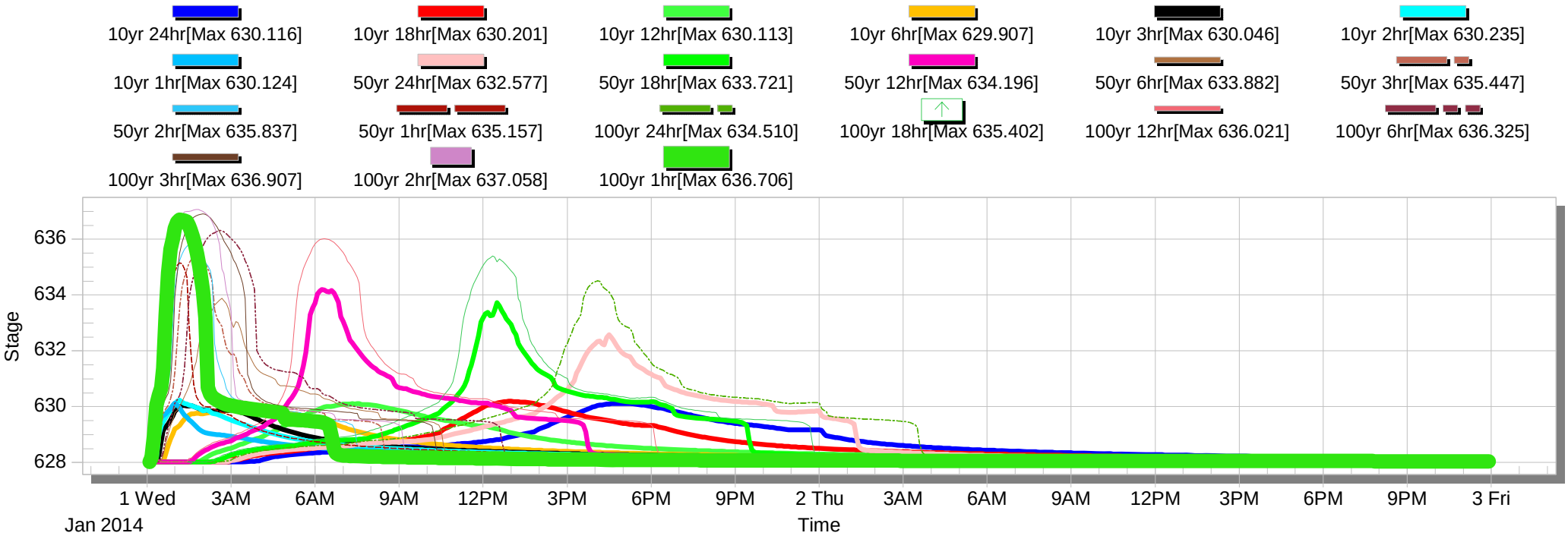
Node - Node22



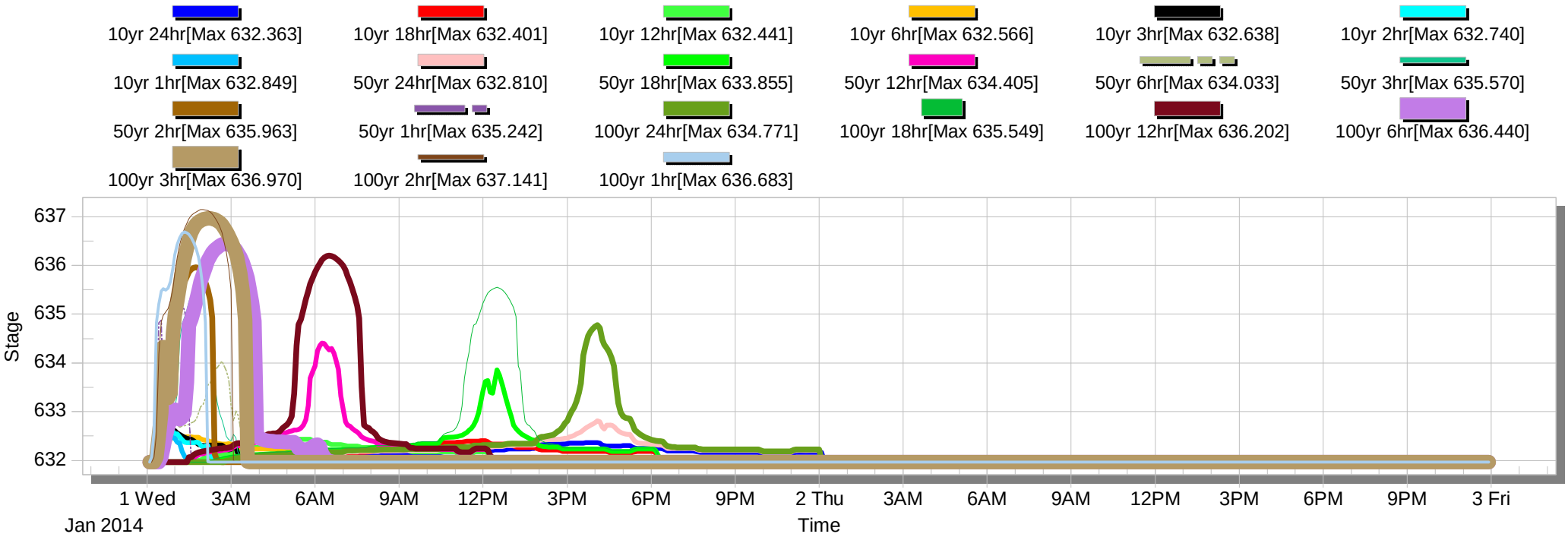
Node - Node23



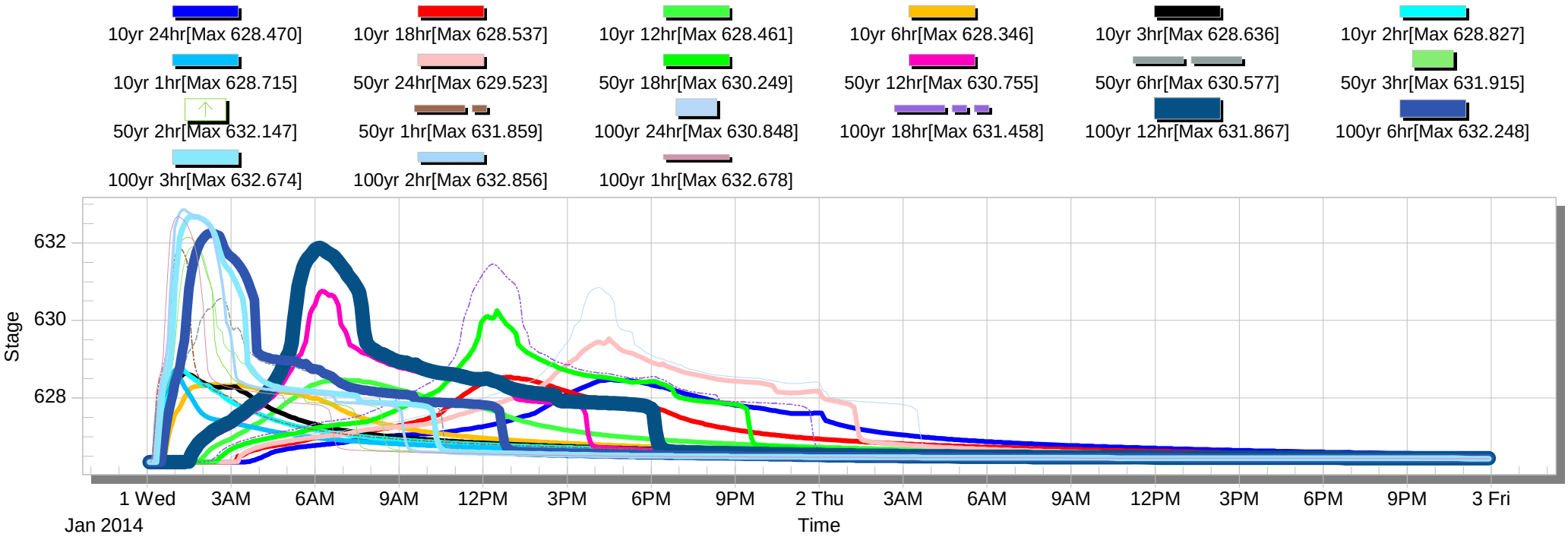
Node - Node24



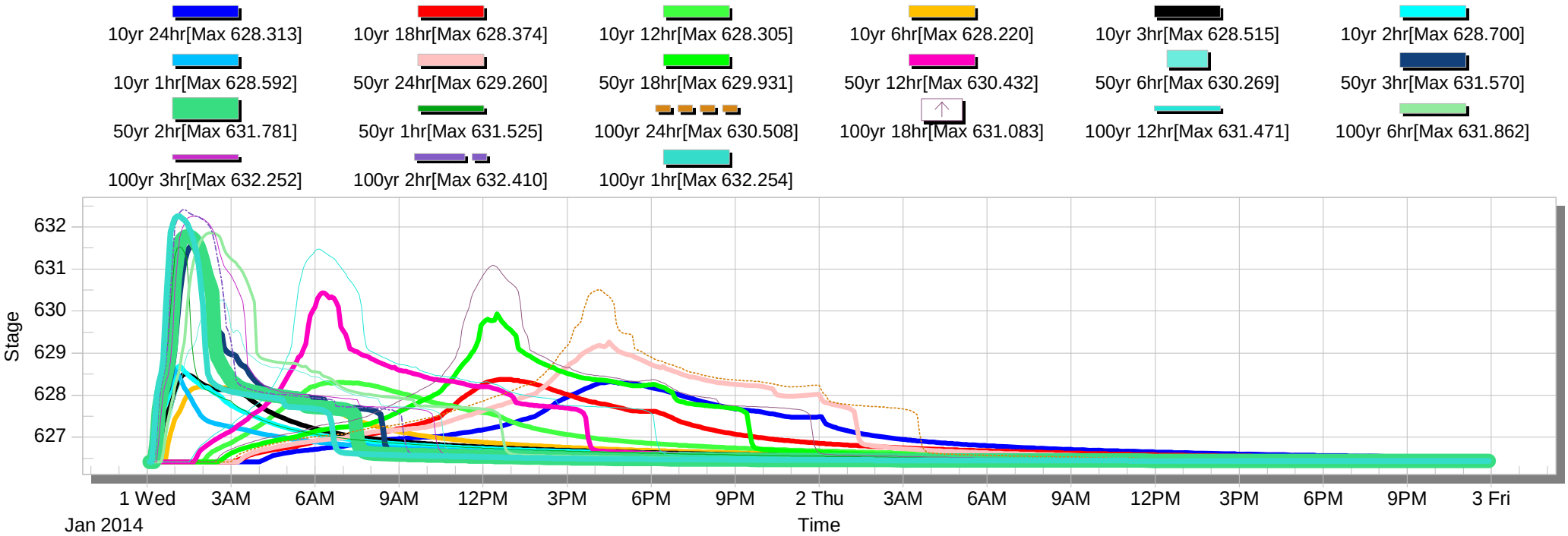
Node - Node66



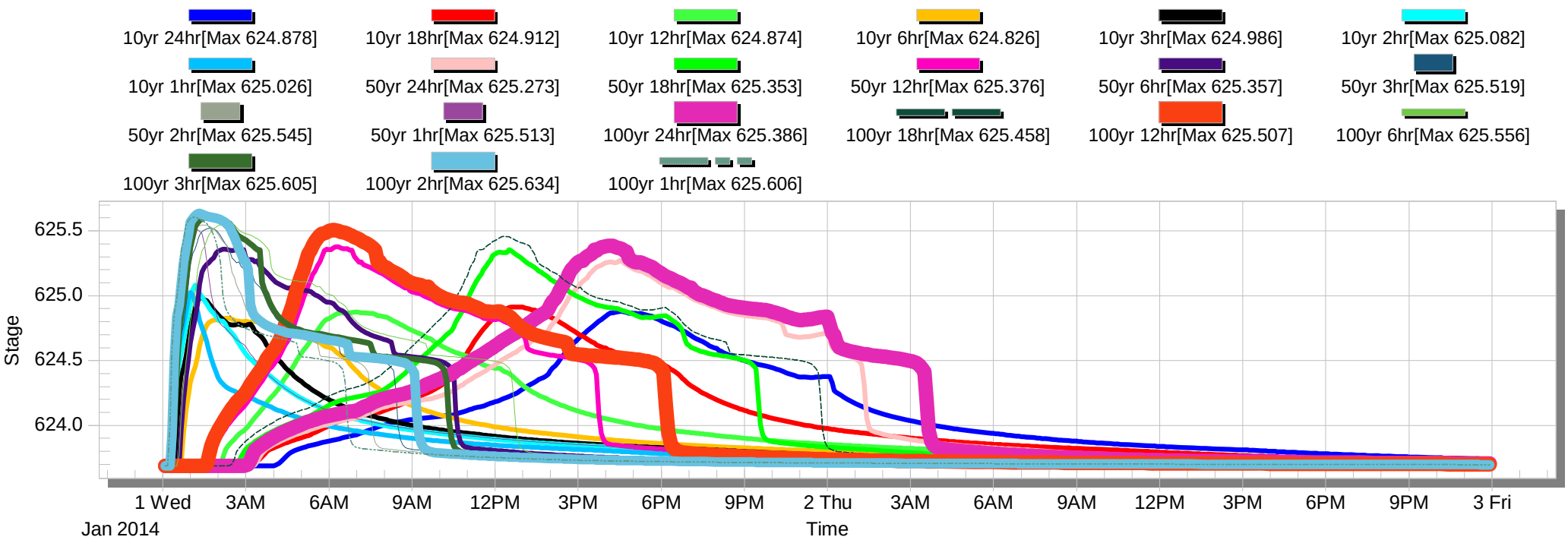
Node - Node25



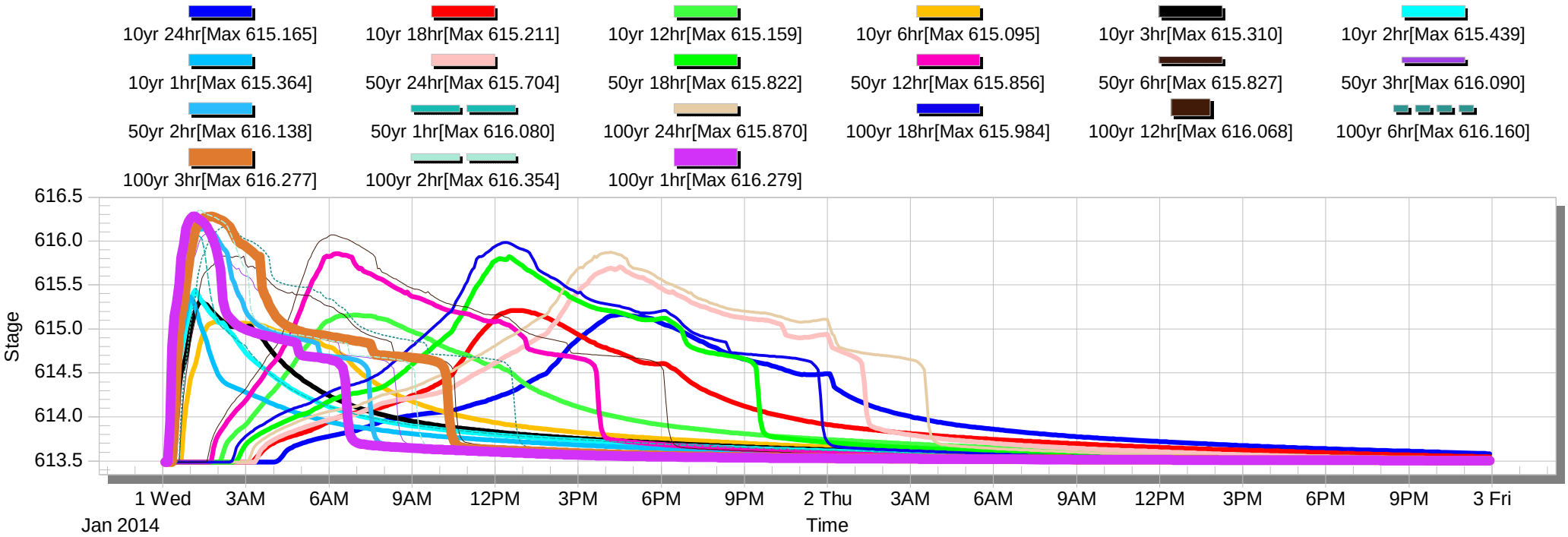
Node - Node26



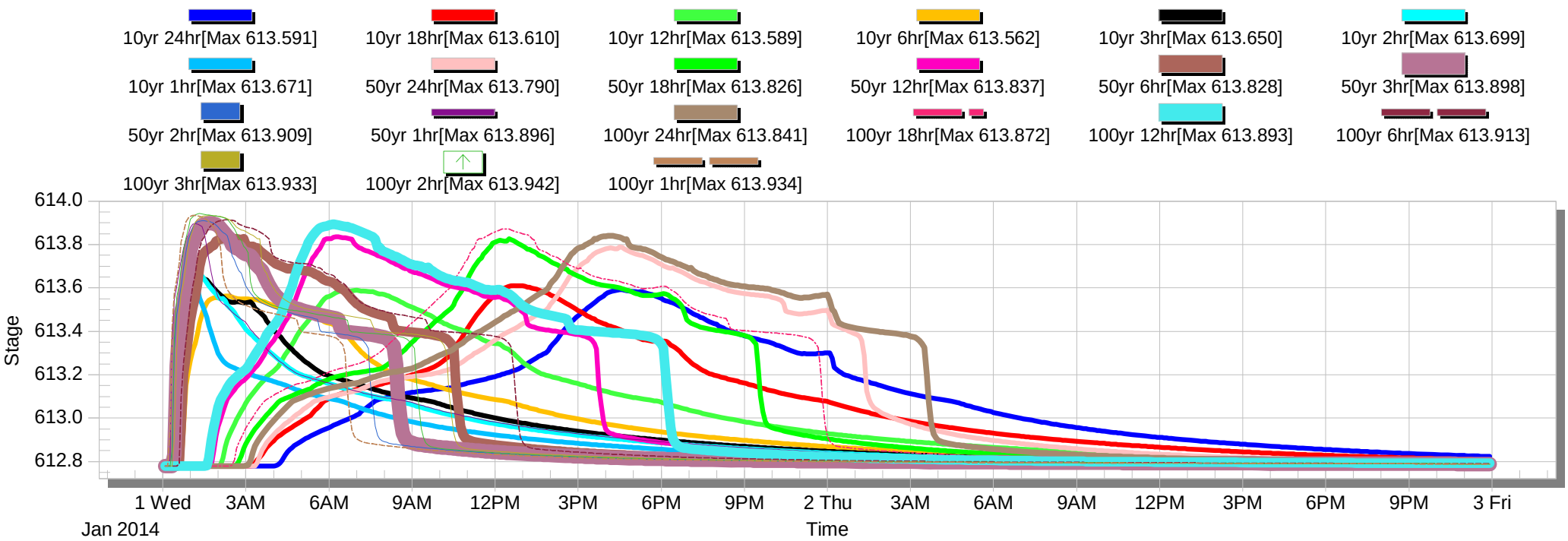
Node - Node27



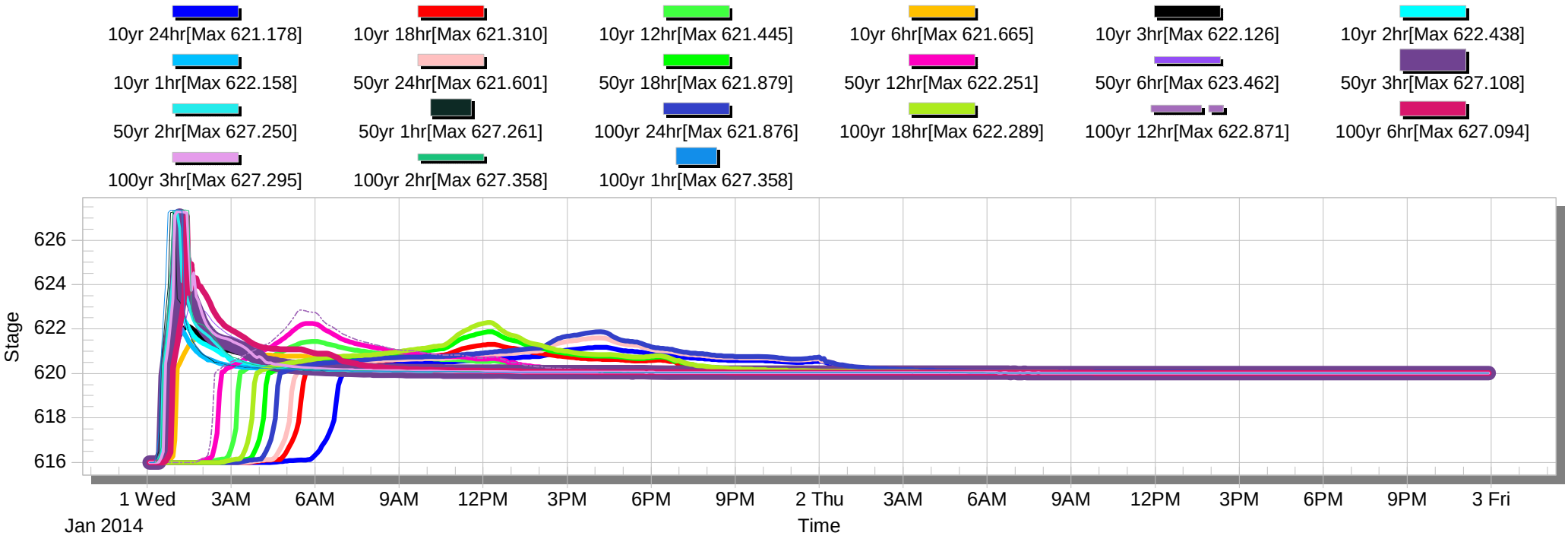
Node - Node86



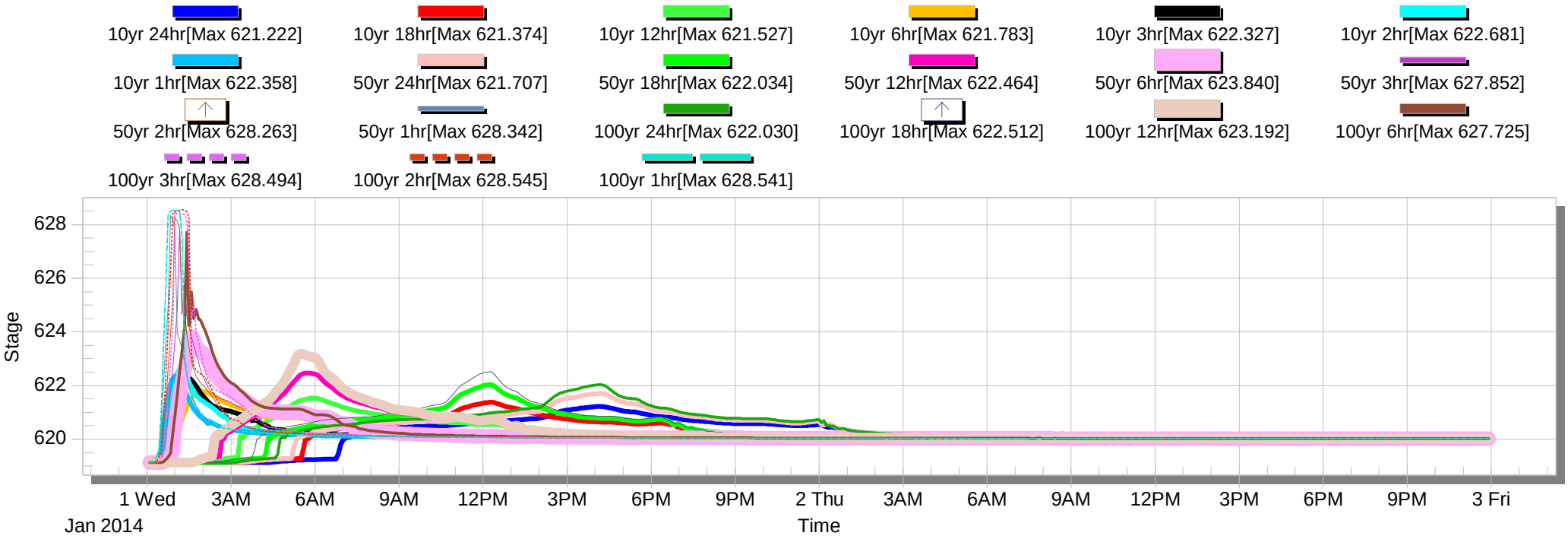
Node - Node29



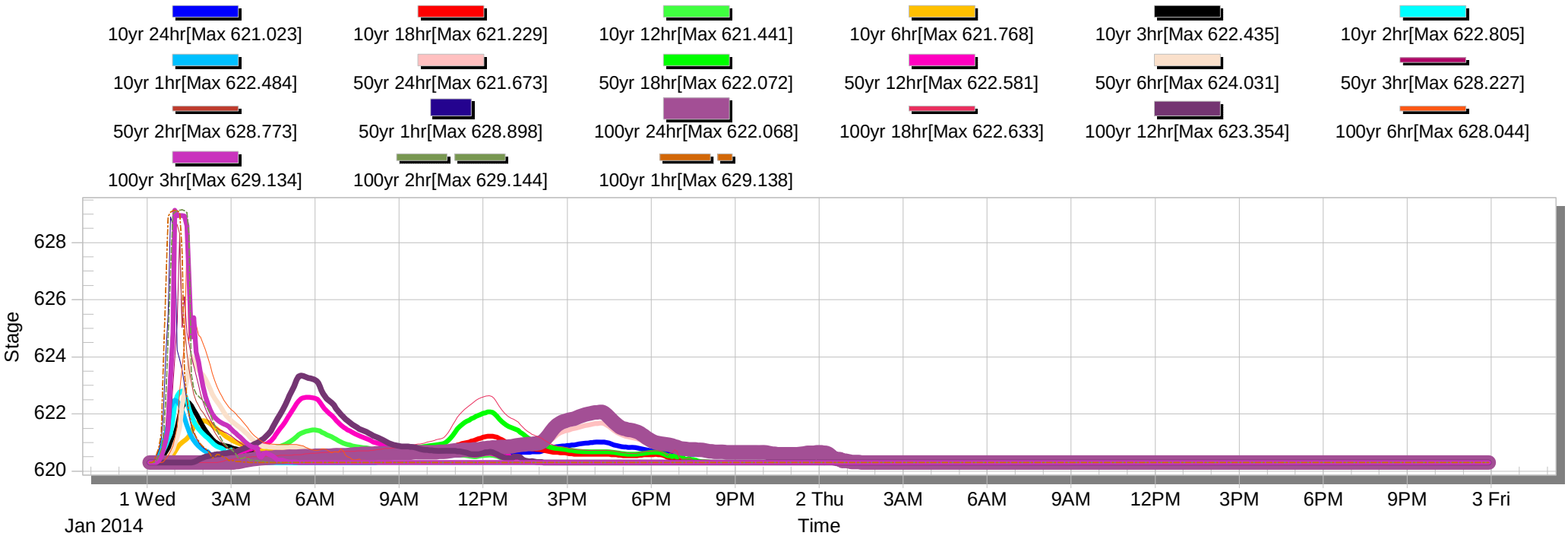
Node - Node31



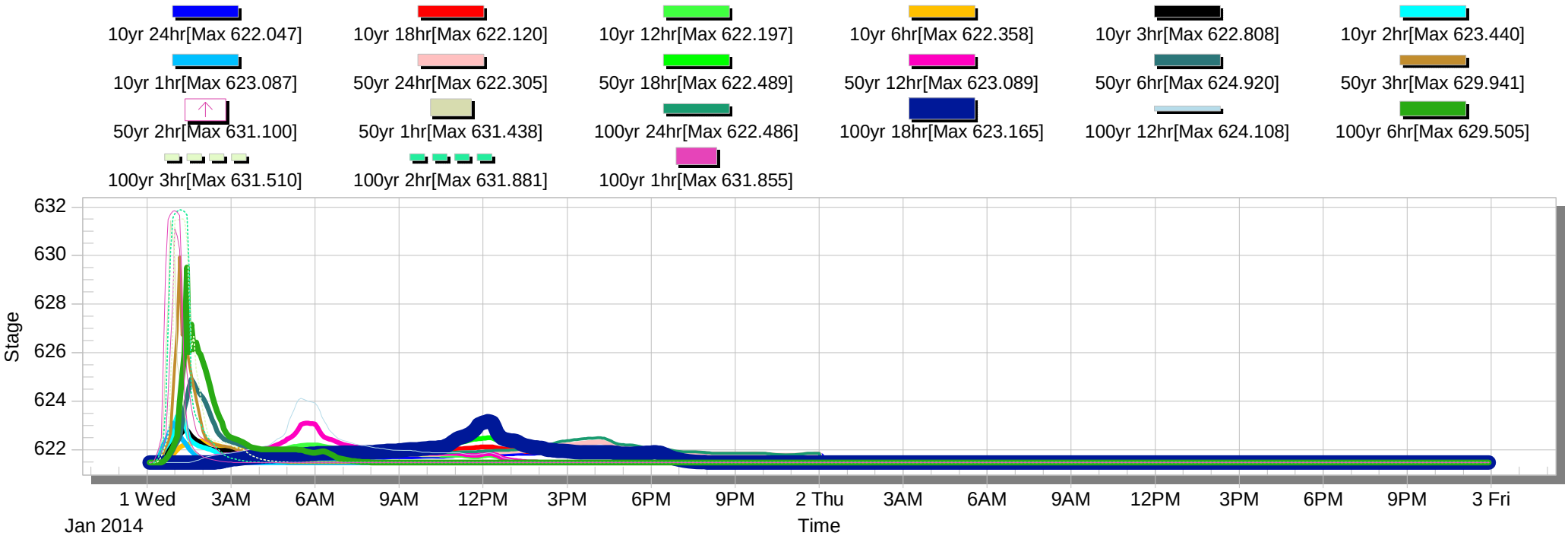
Node - Node30.1



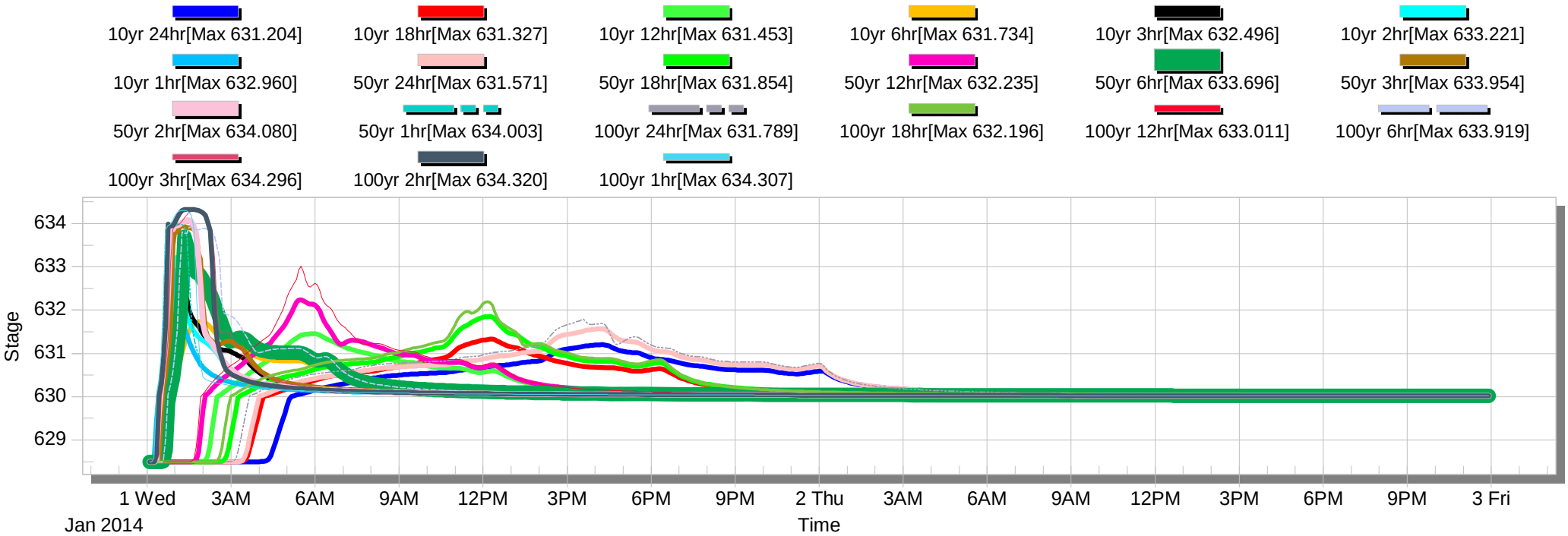
Node - Node30.2



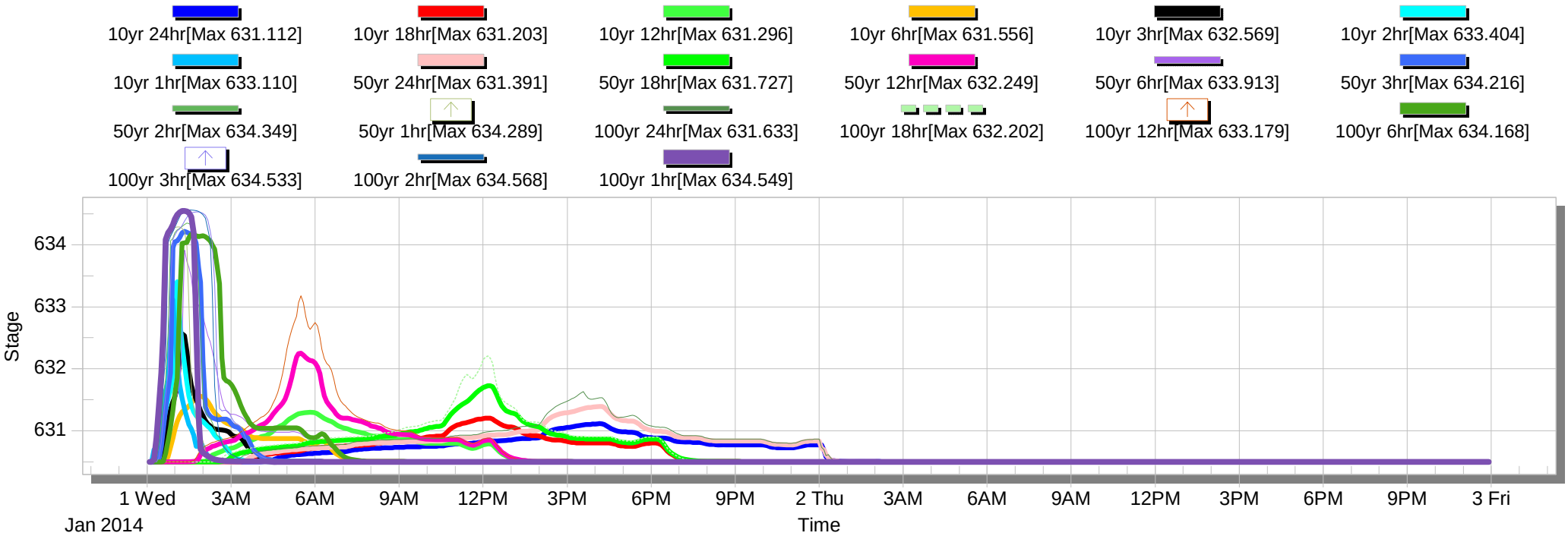
Node - Node30



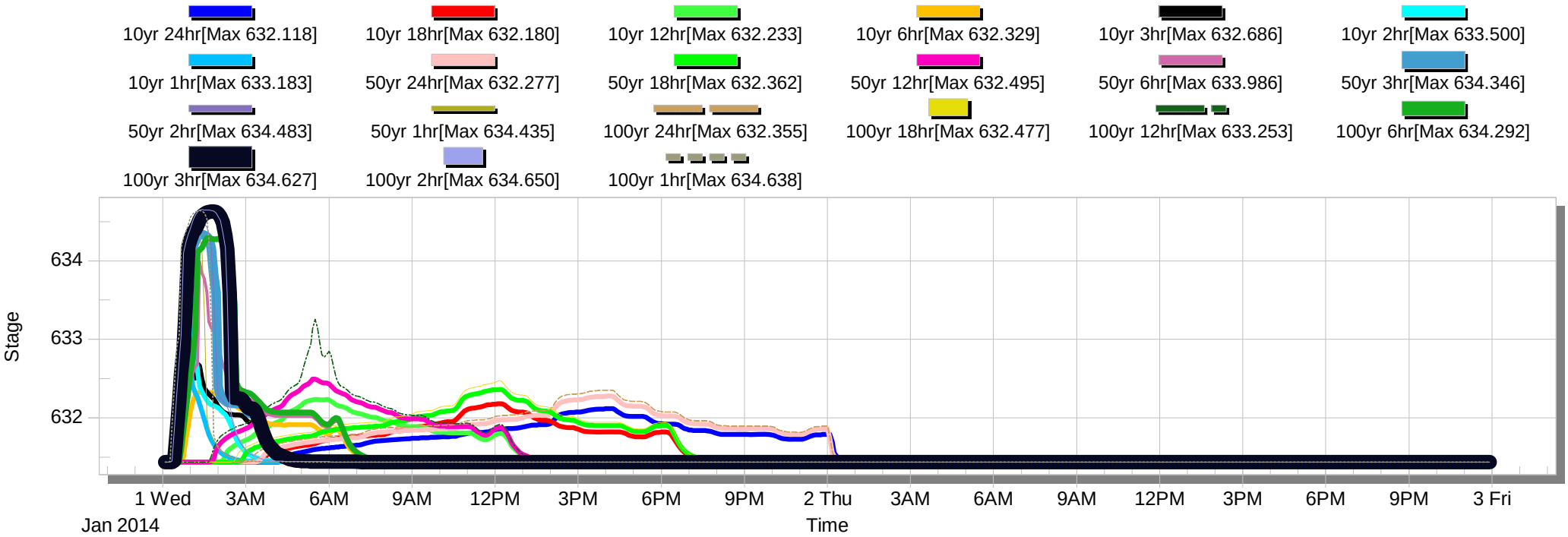
Node - Node125



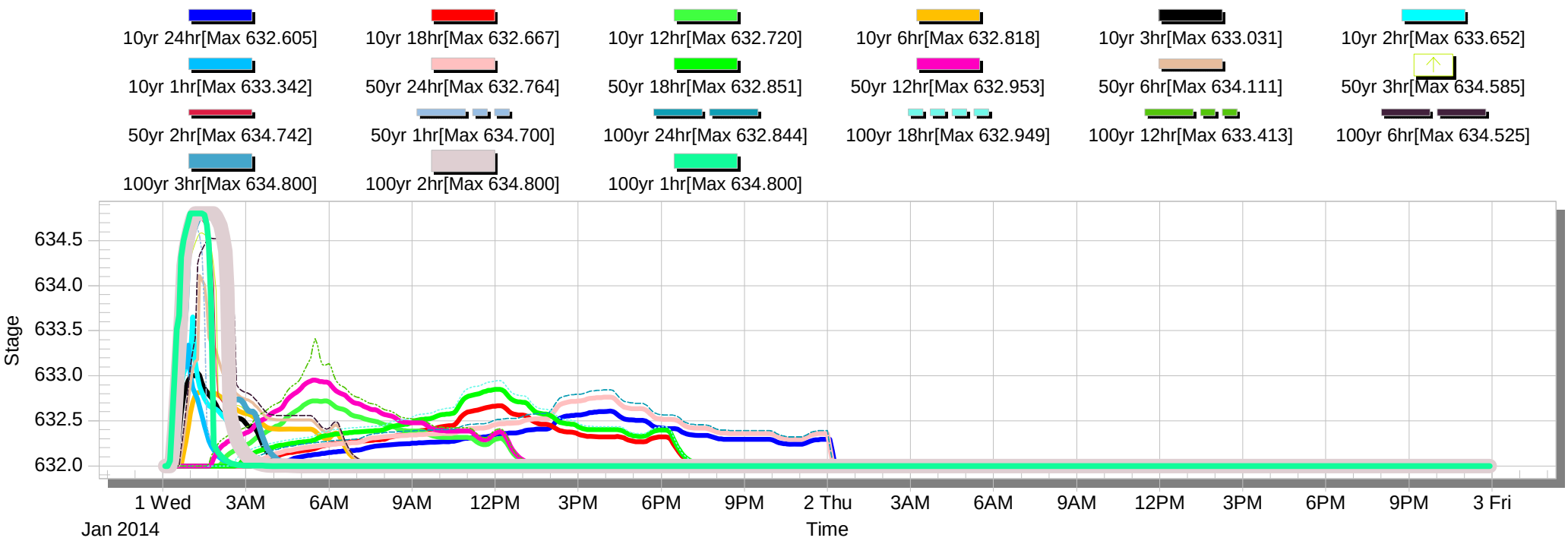
Node - Node108



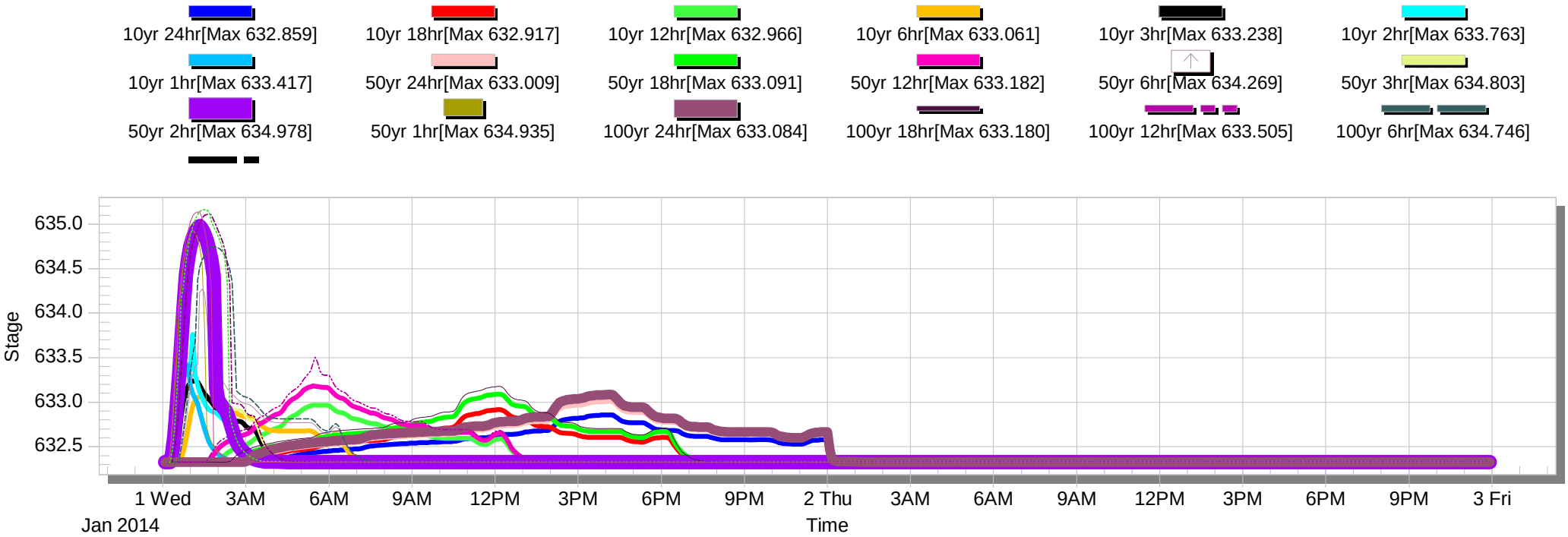
Node - Node103



Node - Node101

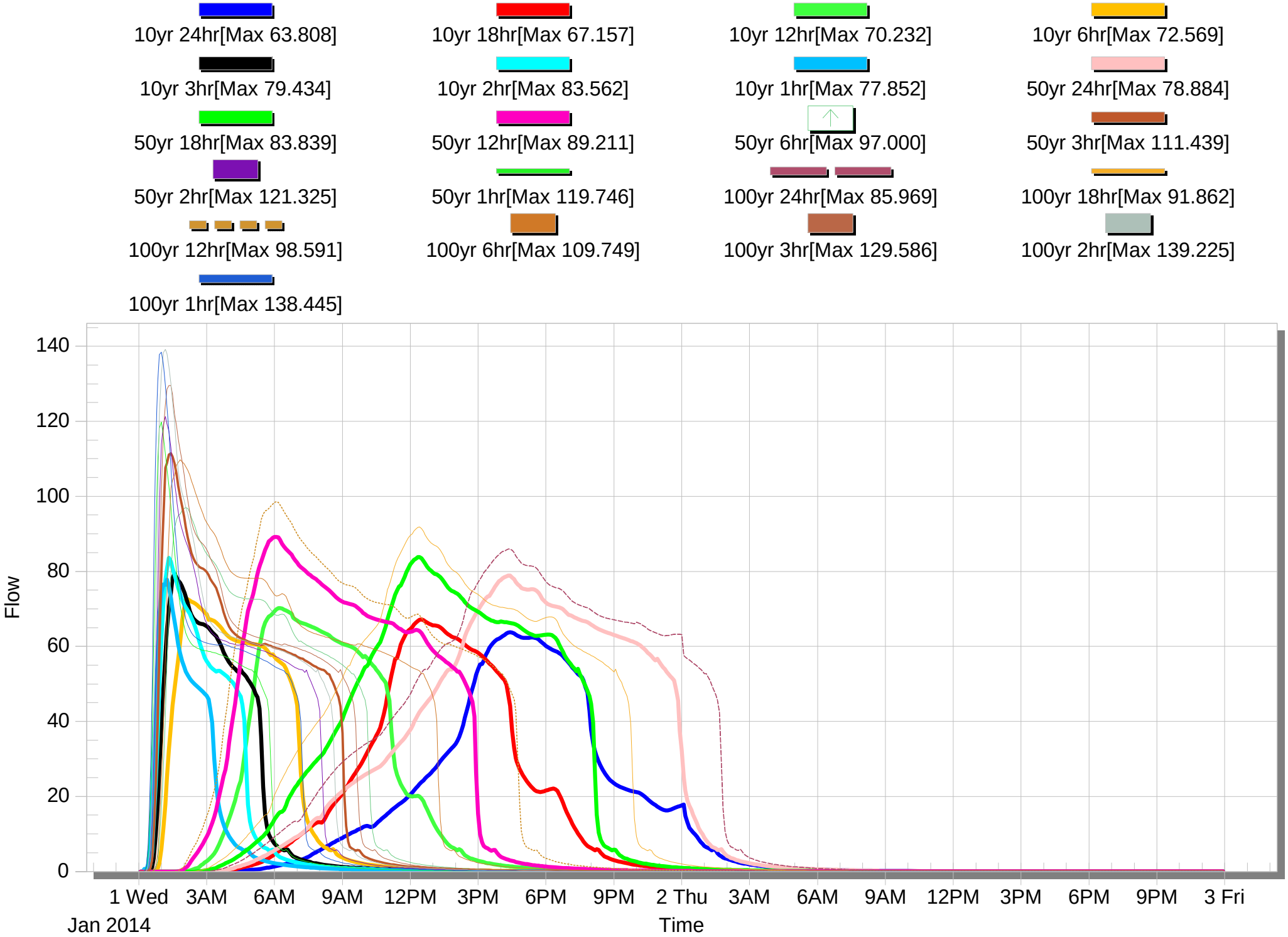


Node - Node100



PROPOSED ALTERNATIVE 1B
RELEASE RATES (NORTH)

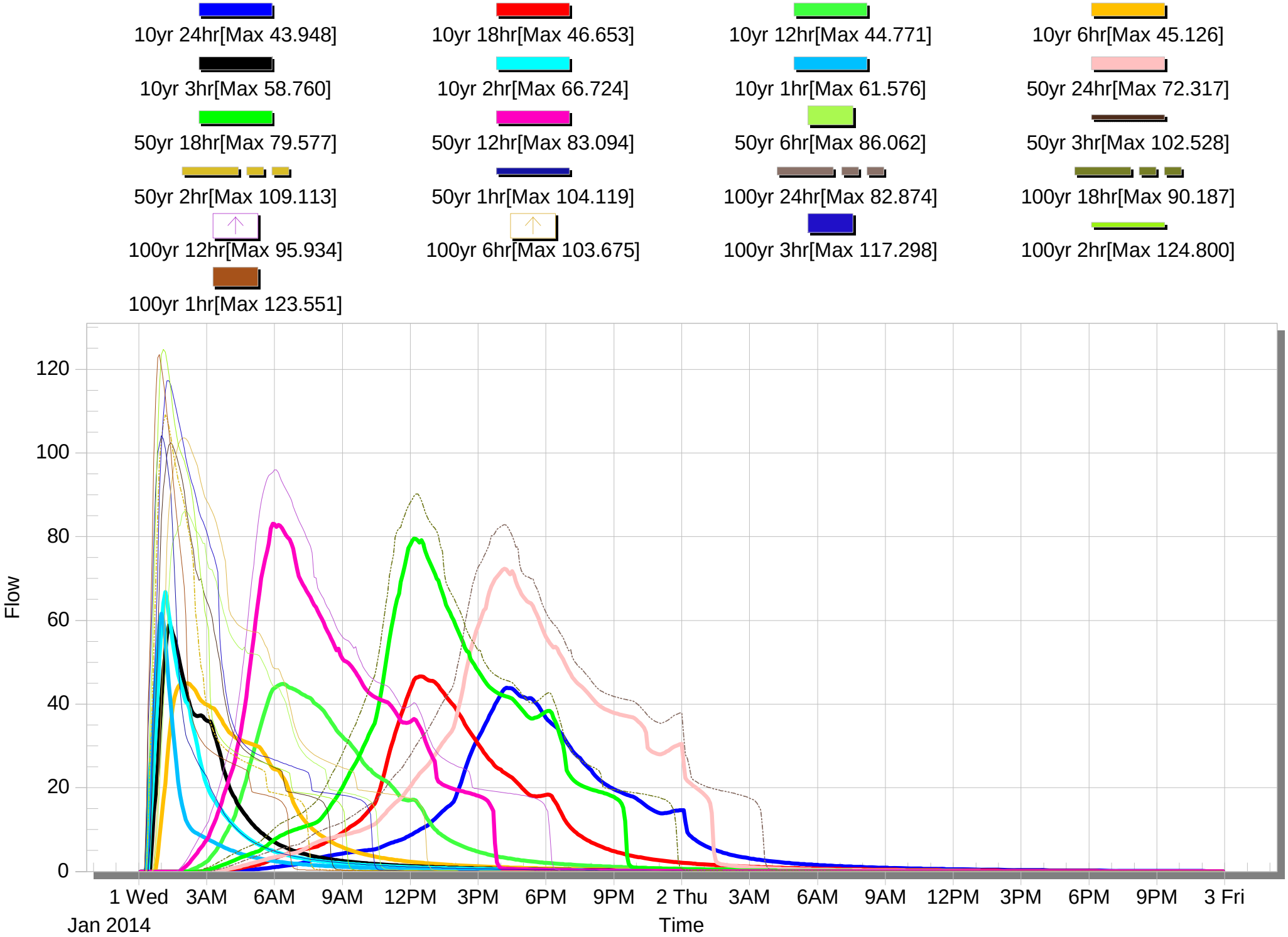
Conduit Link32 from Node46 to Node47



PROPOSED ALTERNATIVE 1B

RELEASE RATES (SOUTH)

Conduit Link33 from Node48 to Node47



PROPOSED ALTERNATIVE 1B

XPSWMM OUTPUT REPORT

```
Current Directory:   N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Stud
Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


Input File : port\Loc_Drain_Study\XPSWMM model\Proposed\Proposed1B_10yr 2hr.XP

          *==============================================*
          |                    xpswmm                    |
          |     Storm and Wastewater Management Model    |
          |         Developed by XP Solutions Inc.       |
          |==============================================|
          |                                              |
          | Last Update      : Jan., 2013                |
          | Interface Version: 2012                      |
          | Engine Version   : 12.0                      |
          | Data File Version: 12.6                      |
          |                                              |
          |                                              |
          *==============================================*

Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


*====================================================*
|       Input and Output file names by Layer         |
*====================================================*

 Input File  to Layer #     1 JOT.US


 Output File to Layer #     1 JOT.US


 Input File  to Layer #     2 JOT.US


 Output File to Layer #     2 JOT.US


*==========================================================*
|   Special command line arguments in XP-SWMM2000. This    |
|   now includes program defaults. $Keywords are the program|
|   defaults.  Other Keywords are from the SWMMCOM.CFG file.|
|   or the command line or any cfg file on the command line.|
|   Examples include these in the file xpswm.bat under the  |
|   section :solve or in the windows version XPSWMM32 in the|
|   file solve.bat                                          |
|                                                           |
|   Note: the cfg file should be in the subdirectory swmxp  |
|         or defined by the set variable in the xpswm.bat   |
|         file.  Some examples of the command lines possible|
|         are shown below:                                  |
|                                                           |
|   swmmd swmmcom.cfg                                       |
|   swmmd my.cfg                                            |
|   swmmd nokeys nconv5 perv extranwq                       |
*==========================================================*

 $powerstation                        0.0000         1         2
 $perv                                0.0000         0         4
 $oldegg                              0.0000         0         7
 $as                                  0.0000         0        11
 $noflat                              0.0000         0        21
 $oldomega                            0.0000         0        24
 $oldvol                              0.0000         1        28
 $implicit                            0.0000         1        29
 $oldhot                              0.0000         1        31
 $oldscs                              0.0000         0        33
 $flood                               0.0000         1        40
 $nokeys                              0.0000         0        42
 $pzero                               0.0000         0        55
 $oldvol2                             0.0000         2        59
 $storage2                            0.0000         3        62
 $oldhot1                             0.0000         1        63
 $pumpwt                              0.0000         1        70
 $ecloss                              0.0000         1        77
 $exout                               0.0000         0        97
 $spatial = 0.90                      0.9000         5       124
 $djref = -1.0                       -0.1000         3       143
 $weirlen = 50                       50.0000         1       153
 $oldbnd                              0.0000         1       154
 $nogrelev                            0.0000         1       161
 $ncmid                               0.0000         0       164
 $new_nl_97                           0.0000         2       290
 SCSIADEPTH=ON                        0.0000         1       293
 $best97                              0.0000         1       294
 $newbound                            0.0000         1       295
 $q_tol = 0.01                        0.0001         1       316
 $new_storage                         0.0000         1       322
 $old_iteration                       0.0000         1       333
 MINLEN=5                             5.0000         1       346
 $review_elevation                    0.0000         1       383
 $use_half_volume                     0.0000         1       385
 VERT_WALLS=ON                        0.0000         1       389
 $min_ts = 1.0                        1.0000         1       407
 $design_restart = on                 0.0000         1       412
 $zero_value=1.e-05                   0.0000         1       415
 SUBCATCHMENT_RES=ON                  0.0000         1       419
 $relax_depth = on                    0.0000         1       427
 $saveallpts = on                     0.0000         1       434
 $channel_geometry=1                  0.0000         1       456

 *==========================================================*
```

```
| Parameter Values on the Tapes Common Block.These are the |
| values read from the data file and dynamically allocated |
| by the model for this simulation.                        |
*==========================================================*

 Number of Subcatchments in the Runoff Block (NW)....    15
 Number of Channel/Pipes in the Runoff Block (NG)....     0
 Runoff Water quality constituents (NRQ)............     0
 Runoff Land Uses per Subcatchment (NLU)............     0
 Number of Elements in the Transport Block (NET).....     0
 Number of Storage Junctions in Transport (NTSE).....     0
 Number of Input Hydrographs in Transport (NTH)......     0
 Number of Elements in the Extran Block (NEE)........    60
 Number of Groundwater Subcatchments in Runoff (NGW).     0
 Number of Interface locations for all Blocks (NIE)..    60
 Number of Pumps in Extran (NEP).....................     0
 Number of Orifices in Extran (NEO)..................     3
 Number of Tide Gates/Free Outfalls in Extran (NTG)..     1
 Number of Extran Weirs (NEW)........................     5
 Number of scs hydrograph points.....................  1513
 Number of Extran printout locations (NPO)...........     0
 Number of Tide elements in Extran (NTE)............     1
 Number of Natural channels (NNC)....................    12
 Number of Storage junctions in Extran (NVSE)........     4
 Number of Time history data points in Extran(NTVAL).     0
 Number of Variable storage elements in Extran (NVST)     5
 Number of Input Hydrographs in Extran (NEH).........     0
 Number of Particle sizes in Transport Block (NPS)...     0
 Number of User defined conduits (NHW)...............    15
 Number of Connecting conduits in Extran (NECC)......    20
 Number of Upstream elements in Transport (NTCC).....    10
 Number of Storage/treatment plants (NSTU)...........     1
 Number of Values for R1 lines in Transport (NR1)....     0
 Number of Nodes to be allowed for (NNOD)............    60
 Number of Plugs in a Storage Treatment Unit.........     1


#########################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
#    Last Updated Jan., 2013 by XP Solutions          #

*==========================================================*
|          RUNOFF TABLES IN THE OUTPUT FILE.               |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,      |
|  for example: search for Table R3 to check continuity.   |
|  This output file can be imported into a Word Processor  |
|  and printed on US letter or A4 paper using portrait     |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                          |
| Table R1  - Physical Hydrology Data                      |
| Table R2  - Infiltration data                            |
| Table R3  - Raingage and Infiltration Database Names     |
| Table R4  - Groundwater Data                             |
| Table R5  - Continuity Check for Surface Water           |
| Table R6  - Continuity Check for Channels/Pipes          |
| Table R7  - Continuity Check for Subsurface Water        |
| Table R8  - Infiltration/Inflow Continuity Check         |
| Table R9  - Summary Statistics for Subcatchments         |
| Table R10 - Sensitivity anlysis for Subcatchments        |
*==========================================================*

                    A1

###########################################
#             RUNOFF JOB CONTROL          #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                 0
 Runoff graph plot control....                                 0
 Runoff output print control..                                 0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                     60.0
 Dry time step length (seconds)......                  86400.0
 Wet/Dry time step length (seconds)...                    60.0
 Simulation length is......                               24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ..........................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..         21
 KINC   - Rainfall values(pairs) per line..         10
 KPRINT - Print rainfall(0-Yes,1-No)......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
```

```
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval...........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00


#######################################
# Rainfall input summary from Runoff #
#######################################

 Total rainfall for gage #     1 is    2.6400 inches

   ############################
   #        Data Group F1     #
   # Evaporation Rate (in/day) #
   ############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100


  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################
```

Number	Subcatchment Name	Channel or inlet	Width (ft)	Area (ac)	Per-cent Imperv	Slope ft/ft	"n" Imprv	"n" Perv	Deprs -sion Storge Imprv	Deprs -sion Strge Perv	Prcnt Zero Deten -tion
1	Node89#1	Node89	200.00	5.9000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
2	Node63#1	Node63	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
3	Node11#1	Node11	1000.0	107.90	0.00	0.020	0.020	0.020	0.000	0.000	0.00
4	Node33#1	Node33	400.00	37.800	0.00	0.010	0.020	0.020	0.000	0.000	0.00
5	Node30#1	Node30	450.00	9.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
6	Node46#1	Node46	600.00	30.100	0.00	0.015	0.020	0.020	0.000	0.000	0.00
7	Node65#1	Node65	450.00	16.100	0.00	0.023	0.020	0.020	0.000	0.000	0.00
8	Node120#1	Node120	700.00	32.000	0.00	0.020	0.020	0.020	0.000	0.000	0.00
9	Node99#1	Node99	700.00	32.100	0.00	0.020	0.020	0.020	0.000	0.000	0.00
10	Node66#1	Node66	150.00	10.000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
11	Node24#1	Node24	950.00	19.700	0.00	0.040	0.020	0.020	0.000	0.000	0.00
12	Node25#1	Node25	300.00	5.4000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
13	Node94#1	Node94	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
14	Node92#1	Node92	200.00	5.5000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
15	Node48#1	Node48	600.00	19.600	0.00	0.014	0.020	0.020	0.000	0.000	0.00

```
##########################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                 #
#                     Infiltration or Time of Concentration Data                         #
#                                                                                        #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)             Infl #4(#8)  #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction  #
# SBUH                ->   Comp CN          Time Conc                 N/A                      N/A  #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                     N/A  #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume  #
# Proportional        ->  Constant               N/A                 N/A                      N/A  #
# Initial/Cont Loss   ->   Initial         Continuing                N/A                      N/A  #
# Initial/Proportional ->  Initial           Constant                N/A                      N/A  #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                Exponent  #
# Rational Formula     -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance  #
#                                 (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)            #
#                     Rational Formula Tc Method: 1 = Constant                                       #
#                                                 2 = Friend's Equation                              #
#                                                 3 = Kinematic Wave                                 #
#                                                 4 = Alameda Method                                 #
#                                                 5 = Izzard's Formula                               #
#                                                 6 = Kerby's Equation                               #
#                                                 7 = Kirpich's Equation                             #
#                                                 8 = Bransby Williams Equation                      #
#                                                 9 = Federal Aviation Authority Equation            #
##########################################################################################
```

Number	Subcatchment Name	Infl # 1	Infl # 2	Infl # 3	Infl # 4	Infl # 5	Infl # 6	Infl # 7	Infl # 8
1	Node89#1	87.0000	0.3183	484.0000	0.2000				
2	Node63#1	87.0000	0.3617	484.0000	0.2000				
3	Node11#1	85.5000	0.6700	484.0000	0.2000				
4	Node33#1	84.7000	0.6350	484.0000	0.2000				
5	Node30#1	86.0000	0.5333	484.0000	0.2000				
6	Node46#1	88.5000	0.7083	484.0000	0.2000				
7	Node65#1	87.0000	0.5283	484.0000	0.2000				
8	Node120#1	83.7000	0.7500	484.0000	0.2000				
9	Node99#1	83.7000	1.5200	484.0000	0.2000				
10	Node66#1	87.0000	0.1450	484.0000	0.2000				
11	Node24#1	89.0000	0.7383	484.0000	0.2000				
12	Node25#1	79.0000	0.6200	484.0000	0.2000				
13	Node94#1	87.0000	0.4167	484.0000	0.2000				
14	Node92#1	87.0000	0.4167	484.0000	0.2000				
15	Node48#1	83.0000	0.5633	484.0000	0.2000				

```
#############################################################
#     Table R3.  SUBCATCHMENT  DATA                         #
#                Rainfall and Infiltration Database Names  #
#############################################################
```

Number	Subcatchment Name	Gage No	Infiltration Type	Routing Type
1	Node89#1	1	SCS Method	SCS curvilinear
2	Node63#1	1	SCS Method	SCS curvilinear

```
     3         Node11#1      1   SCS Method       SCS curvilinear
     4         Node33#1      1   SCS Method       SCS curvilinear
     5         Node30#1      1   SCS Method       SCS curvilinear
     6         Node46#1      1   SCS Method       SCS curvilinear
     7         Node65#1      1   SCS Method       SCS curvilinear
     8        Node120#1      1   SCS Method       SCS curvilinear
     9         Node99#1      1   SCS Method       SCS curvilinear
    10         Node66#1      1   SCS Method       SCS curvilinear
    11         Node24#1      1   SCS Method       SCS curvilinear
    12         Node25#1      1   SCS Method       SCS curvilinear
    13         Node94#1      1   SCS Method       SCS curvilinear
    14         Node92#1      1   SCS Method       SCS curvilinear
    15         Node48#1      1   SCS Method       SCS curvilinear

Total Number of Subcatchments...             15
Total Tributary Area (acres)....         341.10
Impervious Area (acres).........           0.00
Pervious Area (acres)...........         341.10
Total Width (feet)..............        7300.00
Impervious Area (%).............           0.00


 ##################################################
 #          S U B C A T C H M E N T  D A T A      #
 #   Default, Ratio values for subcatchment data  #
 #   Used with the calibrate node in the runoff.  #
 # 1 - width     2 - area       3 - impervious %  #
 # 4 - slope     5 - imp "n"    6 - perv "n"      #
 # 7 - imp ds    8 - perv ds    9 - 1st infil     #
 #10 - 2nd infil               11 - 3rd infil     #
 ##################################################

Column           1         2         3         4         5         6         7         8         9        10        11
Default     0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
Ratio       1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000

*******************************************************
*     Arrangement of Subcatchments and Channel/Pipes    *
*******************************************************


    Inlet
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


*********************************************************
* Hydrographs will be stored for the following  15 INLETS *
*********************************************************
Node89    Node63    Node11    Node33    Node30    Node46
Node65    Node120   Node99    Node66    Node24    Node25
Node94    Node92    Node48


***********************************************
*  Quality Simulation not included in this run *
***********************************************



*****************************************************
*  Precipitation Interface File Summary             *
*  Number of precipitation station....         1    *
*****************************************************

Location Station Number
-------- --------------
       1.             1

XXX End of Header Section XXX

#########################################################
#    Entry made to the HYDRAULIC Layer of XP-SWMM     #
#    Last Updated in Jan., 2013 by XP Solutions       #

#########################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
```

```
#    Last Updated Jan., 2013 by XP Solutions          #

*=========================================================*
|         RUNOFF TABLES IN THE OUTPUT FILE.               |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,      |
|  for example: search for Table R3 to check continuity.   |
|  This output file can be imported into a Word Processor  |
|  and printed on US letter or A4 paper using portrait     |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                          |
| Table R1  - Physical Hydrology Data                      |
| Table R2  - Infiltration data                            |
| Table R3  - Raingage and Infiltration Database Names     |
| Table R4  - Groundwater Data                             |
| Table R5  - Continuity Check for Surface Water           |
| Table R6  - Continuity Check for Channels/Pipes          |
| Table R7  - Continuity Check for Subsurface Water        |
| Table R8  - Infiltration/Inflow Continuity Check         |
| Table R9  - Summary Statistics for Subcatchments         |
| Table R10 - Sensitivity anlysis for Subcatchments        |
*=========================================================*

                    A1

###########################################
#          RUNOFF JOB CONTROL             #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                0
 Runoff graph plot control....                                0
 Runoff output print control..                                0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                      60.0
 Dry time step length (seconds)......                  86400.0
 Wet/Dry time step length (seconds)...                     60.0
 Simulation length is......                                24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ............................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..        21
 KINC   - Rainfall values(pairs) per line..        10
 KPRINT - Print rainfall(0-Yes,1-No).......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval..........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00


#######################################
# Rainfall input summary from Runoff #
#######################################

 Total rainfall for gage #     1 is    2.6400 inches

   ############################
   #        Data Group F1     #
   # Evaporation Rate (in/day) #
   ############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100


  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################
```

Number	Subcatchment Name	Channel or inlet	Width (ft)	Area (ac)	Per-cent Imperv	Slope ft/ft	"n" Imprv	"n" Perv	Deprs -sion Storge	Deprs -sion Strge Perv	Prcnt Zero Deten -tion
1	Node89#1	Node89	200.00	5.9000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
2	Node63#1	Node63	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
3	Node11#1	Node11	1000.0	107.90	0.00	0.020	0.020	0.020	0.000	0.000	0.00
4	Node33#1	Node33	400.00	37.800	0.00	0.010	0.020	0.020	0.000	0.000	0.00
5	Node30#1	Node30	450.00	9.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
6	Node46#1	Node46	600.00	30.100	0.00	0.015	0.020	0.020	0.000	0.000	0.00

```
      7         Node65#1          Node65 450.00    16.100      0.00 0.023 0.020 0.020 0.000 0.000  0.00
      8        Node120#1         Node120 700.00    32.000      0.00 0.020 0.020 0.020 0.000 0.000  0.00
      9         Node99#1          Node99 700.00    32.100      0.00 0.020 0.020 0.020 0.000 0.000  0.00
     10         Node66#1          Node66 150.00    10.000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     11         Node24#1          Node24 950.00    19.700      0.00 0.040 0.020 0.020 0.000 0.000  0.00
     12         Node25#1          Node25 300.00    5.4000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     13         Node94#1          Node94 300.00    5.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     14         Node92#1          Node92 200.00    5.5000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     15         Node48#1          Node48 600.00    19.600      0.00 0.014 0.020 0.020 0.000 0.000  0.00


##############################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                     #
#                     Infiltration or Time of Concentration Data                             #
#                                                                                            #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)             Infl #4(#8)  #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction  #
# SBUH                ->   Comp CN          Time Conc                N/A                      N/A  #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                    N/A  #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume  #
# Proportional        ->  Constant                N/A                 N/A                      N/A  #
# Initial/Cont Loss   ->   Initial         Continuing                 N/A                      N/A  #
# Initial/Proportional ->  Initial           Constant                 N/A                      N/A  #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                 Exponent  #
# Rational Formula    -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance  #
#                                 (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)            #
#                     Rational Formula Tc Method: 1 = Constant                                     #
#                                                 2 = Friend's Equation                            #
#                                                 3 = Kinematic Wave                               #
#                                                 4 = Alameda Method                               #
#                                                 5 = Izzard's Formula                             #
#                                                 6 = Kerby's Equation                             #
#                                                 7 = Kirpich's Equation                           #
#                                                 8 = Bransby Williams Equation                    #
#                                                 9 = Federal Aviation Authority Equation          #
##############################################################################################

     Subcatchment           Infl      Infl      Infl      Infl      Infl      Infl      Infl      Infl
  Number     Name            # 1       # 2       # 3       # 4       # 5       # 6       # 7       # 8
  ===============        ========  ========  ========  ========  ========  ========  ========  ========
    1         Node89#1    87.0000    0.3183  484.0000    0.2000
    2         Node63#1    87.0000    0.3617  484.0000    0.2000
    3         Node11#1    85.5000    0.6700  484.0000    0.2000
    4         Node33#1    84.7000    0.6350  484.0000    0.2000
    5         Node30#1    86.0000    0.5333  484.0000    0.2000
    6         Node46#1    88.5000    0.7083  484.0000    0.2000
    7         Node65#1    87.0000    0.5283  484.0000    0.2000
    8        Node120#1    83.7000    0.7500  484.0000    0.2000
    9         Node99#1    83.7000    1.5200  484.0000    0.2000
   10         Node66#1    87.0000    0.1450  484.0000    0.2000
   11         Node24#1    89.0000    0.7383  484.0000    0.2000
   12         Node25#1    79.0000    0.6200  484.0000    0.2000
   13         Node94#1    87.0000    0.4167  484.0000    0.2000
   14         Node92#1    87.0000    0.4167  484.0000    0.2000
   15         Node48#1    83.0000    0.5633  484.0000    0.2000


##############################################################
#     Table R3.  SUBCATCHMENT  DATA                         #
#                Rainfall and Infiltration Database Names  #
##############################################################

     Subcatchment          Gage  Infiltration       Routing
  Number           Name      No       Type             Type
  ====== =============== ======= ============ ====================
      1         Node89#1      1   SCS Method       SCS curvilinear
      2         Node63#1      1   SCS Method       SCS curvilinear
      3         Node11#1      1   SCS Method       SCS curvilinear
      4         Node33#1      1   SCS Method       SCS curvilinear
      5         Node30#1      1   SCS Method       SCS curvilinear
      6         Node46#1      1   SCS Method       SCS curvilinear
      7         Node65#1      1   SCS Method       SCS curvilinear
      8        Node120#1      1   SCS Method       SCS curvilinear
      9         Node99#1      1   SCS Method       SCS curvilinear
     10         Node66#1      1   SCS Method       SCS curvilinear
     11         Node24#1      1   SCS Method       SCS curvilinear
     12         Node25#1      1   SCS Method       SCS curvilinear
     13         Node94#1      1   SCS Method       SCS curvilinear
     14         Node92#1      1   SCS Method       SCS curvilinear
     15         Node48#1      1   SCS Method       SCS curvilinear

 Total Number of Subcatchments...              15
 Total Tributary Area (acres)....          341.10
 Impervious Area (acres).........            0.00
 Pervious Area (acres)...........          341.10
 Total Width (feet)..............         7300.00
 Impervious Area (%).............            0.00


  ##################################################
  #          S U B C A T C H M E N T  D A T A      #
  #   Default, Ratio values for subcatchment data  #
  #   Used with the calibrate node in the runoff.  #
  # 1 - width     2 - area       3 - impervious %  #
  # 4 - slope     5 - imp "n"    6 - perv "n"      #
  # 7 - imp ds    8 - perv ds    9 - 1st infil     #
  #10 - 2nd infil               11 - 3rd infil     #
  ##################################################

 Column          1         2         3         4         5         6         7         8         9        10        11
 Default    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
 Ratio      1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000

 *******************************************************
 *     Arrangement of Subcatchments and Channel/Pipes    *
 *******************************************************
```

```
    Inlet
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


************************************************************
* Hydrographs will be stored for the following  15 INLETS *
************************************************************
Node89    Node63    Node11    Node33    Node30    Node46
Node65    Node120   Node99    Node66    Node24    Node25
Node94    Node92    Node48


************************************************
*  Quality Simulation not included in this run *
************************************************



**************************************************
*  Precipitation Interface File Summary          *
*  Number of precipitation station....        1   *
**************************************************

Location Station Number
-------- --------------
       1.             1


    A1


*==========================================================*
|        HYDRAULICS TABLES IN THE OUTPUT FILE               |
|  These are the more important tables in the output file.  |
|  You can use your editor to find the table numbers,       |
|  for example: search for Table E20 to check continuity.   |
|  This output file can be imported into a Word Processor   |
|  and printed on US letter or A4 paper using portrait      |
|  mode, courier font, a size of 8 pt. and margins of 0.75  |
|                                                           |
| Table E1   - Basic Conduit Data                           |
| Table E2   - Conduit Factor Data                          |
| Table E3a  - Junction Data                                |
| Table E3b  - Junction Data                                |
| Table E4   - Conduit Connectivity Data                    |
| Table E4a  - Dry Weather Flow Data                        |
| Table E4b  - Real Time Control Data                       |
| Table E5   - Junction Time Step Limitation Summary        |
| Table E5a  - Conduit Explicit Condition Summary           |
| Table E6   - Final Model Condition                        |
| Table E7   - Iteration Summary                            |
| Table E8   - Junction Time Step Limitation Summary        |
| Table E9   - Junction  Summary  Statistics                |
| Table E10  - Conduit   Summary  Statistics                |
| Table E11  - Area assumptions used in the analysis        |
| Table E12  - Mean conduit information                     |
| Table E13  - Channel losses(H) and culvert info           |
| Table E13a - Culvert Analysis Classification              |
| Table E14  - Natural Channel Overbank Flow Information    |
| Table E14a - Natural Channel Encroachment Information     |
| Table E14b - Floodplain Mapping                           |
| Table E15  - Spreadsheet Info List                        |
| Table E15a - Spreadsheet Reach List                       |
| Table E16  - New Conduit Output Section                   |
| Table E17  - Pump Operation                               |
| Table E18  - Junction Continuity Error                    |
| Table E19  - Junction Inflow & Outflow Listing            |
| Table E20  - Junction Flooding and Volume List            |
| Table E21  - Continuity balance at simulation end         |
| Table E22  - Model Judgement Section                      |
*==========================================================*

Time Control from Hydraulics Job Control
```

```
Year.........    2014 Month.......       1
Day..........       1 Hour........       0
Minute.......       0 Second......       0


Control information for simulation
----------------------------------

Integration cycles................       576
Length of integration step is......    300.00 seconds
Simulation length..................     48.00 hours
Do not create equiv. pipes(NEQUAL).         0
Use U.S. customary units for I/O...         0
Printing starts in cycle...........         1
Intermediate printout intervals of.       500 cycles
Intermediate printout intervals of.   2500.00 minutes
Summary printout intervals of......       500 cycles
Summary printout time interval of..   2500.00 minutes
Hot start file parameter (REDO)....         0
Initial time.......................      0.00 hours

Iteration variables: Flow Tolerance.   0.00010
                     Head Tolerance.   0.00050
    Minimum depth (m or ft).........   0.00001
    Underrelaxation parameter........  0.85000
    Time weighting parameter........   0.85000
    Conduit roughness factor........   1.00000
    Flow adjustment factor..........   1.00000
    Initial Condition Smoothing.....         0
    Courant Time Step Factor........   1.00000
    Default Expansion/Contraction K.   0.00000
    Default Entrance/Exit K.........   0.00000
    Routing Method..................   Dynamic Wave
Default surface area of junctions...     12.57 square feet.
Minimum Junction/Conduit Depth......   0.00001 feet.
Ponding Area Coefficient............   5000.00
Ponding Area Exponent...............    1.0000
Minimum Orifice Length..............   1000.00 feet.
NJSW input hydrograph junctions.....     0
     or user defined hydrographs....

*==========================================================*
|               Flap Gate Conduit Information              |
|               ----------------------------               |
| Positive Flap Gate - Flow only allowed from the upstream |
|                      to the downstream junction          |
| Negative Flap Gate - Flow only allowed from the          |
|                      downstream to the upstream junction |
*==========================================================*

   Conduit   Type of Flap Gate
   -------   -----------------
Link12      Positive Flap Gate

        Natural Cross-Section information for Channel Link53
        ====================================================
         Cross-Section ID (from X1 card) :     1.0 Channel sequence number :     1

  Left Overbank Length   :     33.0 ft                Maximum Elevation        :   636.86 ft.
  Main Channel Length    :     33.0 ft                Maximum Depth            :     0.50 ft.
  Right Overbank Length  :     33.0 ft                Maximum Section Area     :   1.8534 ft^2
                                                      Maximum hydraulic radius :     0.30 ft.
  Manning N :      0.025  to Station         -21.2    Max topwidth             :     6.04 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 6.17E+00 ft
    "    "  :      0.025  Beyond station      17.8    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :   1.8534 ft^2

        Natural Cross-Section information for Channel Link55
        ====================================================
         Cross-Section ID (from X1 card) :     2.0 Channel sequence number :     2

  Left Overbank Length   :    138.0 ft                Maximum Elevation        :   633.71 ft.
  Main Channel Length    :    138.0 ft                Maximum Depth            :     2.63 ft.
  Right Overbank Length  :    138.0 ft                Maximum Section Area     :  38.1355 ft^2
                                                      Maximum hydraulic radius :     1.14 ft.
  Manning N :      0.025  to Station         -23.6    Max topwidth             :    33.00 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.34E+01 ft
    "    "  :      0.025  Beyond station       9.4    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  38.1355 ft^2

        Natural Cross-Section information for Channel Link68
        ====================================================
         Cross-Section ID (from X1 card) :     3.0 Channel sequence number :     3

  Left Overbank Length   :    400.0 ft                Maximum Elevation        :   621.54 ft.
  Main Channel Length    :    400.0 ft                Maximum Depth            :     2.24 ft.
  Right Overbank Length  :    400.0 ft                Maximum Section Area     :  24.1409 ft^2
                                                      Maximum hydraulic radius :     0.65 ft.
  Manning N :      0.025  to Station         -67.2    Max topwidth             :    36.52 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.71E+01 ft
    "    "  :      0.025  Beyond station      30.6    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  24.1409 ft^2

        Natural Cross-Section information for Channel Link69
        ====================================================
         Cross-Section ID (from X1 card) :     4.0 Channel sequence number :     4

  Left Overbank Length   :    258.0 ft                Maximum Elevation        :   621.55 ft.
  Main Channel Length    :    260.0 ft                Maximum Depth            :     3.23 ft.
  Right Overbank Length  :    262.0 ft                Maximum Section Area     : 311.6711 ft^2
                                                      Maximum hydraulic radius :     1.29 ft.
  Manning N :      0.025  to Station        -126.4    Max topwidth             :   240.74 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 2.41E+02 ft
```

```
  "    "  :      0.025  Beyond station     174.6    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 311.6711 ft^2

      Natural Cross-Section information for Channel Link70
      ====================================================
       Cross-Section ID (from X1 card) :     5.0 Channel sequence number :     5

Left Overbank Length   :    450.0 ft                Maximum Elevation        :   619.53 ft.
Main Channel Length    :    450.0 ft                Maximum Depth            :     3.20 ft.
Right Overbank Length  :    450.0 ft                Maximum Section Area     : 191.8283 ft^2
                                                    Maximum hydraulic radius :     1.45 ft.
Manning N :      0.025  to Station         -64.2    Max topwidth             :   131.68 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.32E+02 ft
  "    "  :      0.025  Beyond station     121.3    Max left bank area       :     0.02 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 191.8040 ft^2

      Natural Cross-Section information for Channel Link73
      ====================================================
       Cross-Section ID (from X1 card) :     6.0 Channel sequence number :     6

Left Overbank Length   :     40.0 ft                Maximum Elevation        :   613.47 ft.
Main Channel Length    :     73.0 ft                Maximum Depth            :    11.92 ft.
Right Overbank Length  :    100.0 ft                Maximum Section Area     : 1101.166 ft^2
                                                    Maximum hydraulic radius :     6.02 ft.
Manning N :      0.025  to Station         -92.8    Max topwidth             :   181.40 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
  "    "  :      0.025  Beyond station      88.6    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1101.166 ft^2

      Natural Cross-Section information for Channel Link74
      ====================================================
       Cross-Section ID (from X1 card) :     7.0 Channel sequence number :     7

Left Overbank Length   :    102.0 ft                Maximum Elevation        :   613.84 ft.
Main Channel Length    :    102.0 ft                Maximum Depth            :    15.95 ft.
Right Overbank Length  :    102.0 ft                Maximum Section Area     : 1003.556 ft^2
                                                    Maximum hydraulic radius :     7.52 ft.
Manning N :      0.025  to Station         -93.3    Max topwidth             :   126.70 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.33E+02 ft
  "    "  :      0.025  Beyond station      33.4    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1003.556 ft^2

      Natural Cross-Section information for Channel Link75
      ====================================================
       Cross-Section ID (from X1 card) :     8.0 Channel sequence number :     8

Left Overbank Length   :     52.0 ft                Maximum Elevation        :   612.13 ft.
Main Channel Length    :     52.0 ft                Maximum Depth            :    17.46 ft.
Right Overbank Length  :     52.0 ft                Maximum Section Area     : 1220.157 ft^2
                                                    Maximum hydraulic radius :     8.32 ft.
Manning N :      0.025  to Station         -92.5    Max topwidth             :   141.30 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.47E+02 ft
  "    "  :      0.025  Beyond station      48.8    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1220.157 ft^2

      Natural Cross-Section information for Channel Link76
      ====================================================
       Cross-Section ID (from X1 card) :     9.0 Channel sequence number :     9

Left Overbank Length   :     40.0 ft                Maximum Elevation        :   609.77 ft.
Main Channel Length    :     40.0 ft                Maximum Depth            :    17.61 ft.
Right Overbank Length  :     40.0 ft                Maximum Section Area     : 829.0790 ft^2
                                                    Maximum hydraulic radius :     7.27 ft.
Manning N :      0.025  to Station         -46.5    Max topwidth             :   106.90 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.14E+02 ft
  "    "  :      0.025  Beyond station      60.4    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 829.0790 ft^2

      Natural Cross-Section information for Channel Link84
      ====================================================
       Cross-Section ID (from X1 card) :    10.0 Channel sequence number :    10

Left Overbank Length   :    270.0 ft                Maximum Elevation        :   618.53 ft.
Main Channel Length    :    280.0 ft                Maximum Depth            :     7.43 ft.
Right Overbank Length  :    290.0 ft                Maximum Section Area     : 222.9791 ft^2
                                                    Maximum hydraulic radius :     3.66 ft.
Manning N :      0.025  to Station         -30.6    Max topwidth             :    57.40 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 6.09E+01 ft
  "    "  :      0.025  Beyond station      26.8    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 222.9791 ft^2

      Natural Cross-Section information for Channel Link85
      ====================================================
       Cross-Section ID (from X1 card) :    11.0 Channel sequence number :    11

Left Overbank Length   :    450.0 ft                Maximum Elevation        :   616.00 ft.
Main Channel Length    :    470.0 ft                Maximum Depth            :    16.50 ft.
Right Overbank Length  :    490.0 ft                Maximum Section Area     : 1074.025 ft^2
                                                    Maximum hydraulic radius :     5.87 ft.
Manning N :      0.025  to Station         -68.1    Max topwidth             :   177.10 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
  "    "  :      0.025  Beyond station     109.0    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1074.025 ft^2

      Natural Cross-Section information for Channel Link127
      =====================================================
       Cross-Section ID (from X1 card) :    12.0 Channel sequence number :    12
```

```
  Left Overbank Length   :    383.0 ft                Maximum Elevation        :   616.61 ft.
  Main Channel Length    :    383.0 ft                Maximum Depth            :     1.00 ft.
  Right Overbank Length  :    383.0 ft                Maximum Section Area     :  59.5650 ft^2
                                                      Maximum hydraulic radius :     0.38 ft.
  Manning N :      0.025  to Station        -245.8    Max topwidth             :   155.24 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.55E+02 ft
    "    "  :      0.025  Beyond station      65.5    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  59.5650 ft^2
```

==========
|Table E1 - Conduit Data|
==========

Inp Num	Conduit Name	Length (ft)	Conduit Class	Area (ft^2)	Manning Coef.	Max Width (ft)	Depth (ft)	Trapezoid Side Slopes	Hazen Williams c-factor
1	Link12	312.0000	Circular	2.4053	0.0120	1.7500	1.7500		
2	Link13	311.0000	Circular	2.4053	0.0120	1.7500	1.7500		
3	Link14	341.0000	Circular	7.0686	0.0120	3.0000	3.0000		
4	Link15	322.0000	Circular	7.0686	0.0120	3.0000	3.0000		
5	Link16	631.0000	Circular	7.0686	0.0120	3.0000	3.0000		
6	Link17	51.0000	Circular	7.0686	0.0120	3.0000	3.0000		
7	Link18	462.0000	Circular	7.0686	0.0120	3.0000	3.0000		
8	Link22	340.0000	Circular	3.1416	0.0120	2.0000	2.0000		
9	Link23	312.0000	Circular	7.0686	0.0120	3.0000	3.0000		
10	Link24	74.0000	Circular	7.0686	0.0120	3.0000	3.0000		
11	Link25	305.0000	Circular	7.0686	0.0120	3.0000	3.0000		
12	Link26	308.0000	Circular	7.0686	0.0120	3.0000	3.0000		
13	Link27	324.0000	Circular	7.0686	0.0140	3.0000	3.0000		
14	Link28	327.0000	Circular	7.0686	0.0120	3.0000	3.0000		
15	Link31	60.4000	Circular	1.7671	0.0120	1.5000	1.5000		
16	Link32	400.0000	Rectangle	16.0000	0.0120	4.0000	4.0000		
17	Link33	260.0000	Circular	12.5664	0.0140	4.0000	4.0000		
18	Link47	54.0000	Circular	1.7671	0.0120	1.5000	1.5000		
19	Link53	33.0000	Natural	1.8534	0.0250	6.0429	0.5000		
20	Link54	250.0000	Trapezoid	1.6250	0.0400	4.0000	0.2500	10.0000	10.0000
21	Link55	138.0000	Natural	38.1355	0.0250	33.0000	2.6300		
22	Link56	305.0000	Trapezoid	19.0000	0.0400	4.0000	1.0000	15.0000	15.0000
23	Link68	400.0000	Natural	24.1409	0.0250	36.5247	2.2400		
24	Link69	260.0000	Natural	311.6711	0.0250	240.7429	3.2300		
25	Link70	450.0000	Natural	191.8283	0.0250	131.6760	3.2000		
26	Link72	42.0000	Circular	7.0686	0.0120	3.0000	3.0000		
27	Link73	73.0000	Natural	1101.1655	0.0250	181.4000	11.9200		
28	Link74	102.0000	Natural	1003.5558	0.0250	126.7000	15.9500		
29	Link75	52.0000	Natural	1220.1569	0.0250	141.3000	17.4600		
30	Link76	40.0000	Natural	829.0790	0.0250	106.9000	17.6100		
31	Link77	60.0000	Circular	3.1416	0.0120	2.0000	2.0000		
32	Link78	325.0000	Trapezoid	195.0000	0.0400	20.0000	3.0000	15.0000	15.0000
33	Link82	436.0000	Circular	7.0686	0.0120	3.0000	3.0000		
34	Link83	123.0000	Circular	7.0686	0.0120	3.0000	3.0000		
35	Link84	280.0000	Natural	222.9791	0.0250	57.4000	7.4310		
36	Link85	470.0000	Natural	1074.0250	0.0250	177.1000	16.5000		
37	Link90	250.0000	Circular	1.7671	0.0120	1.5000	1.5000		
38	Link93	175.0000	Circular	1.7671	0.0120	1.5000	1.5000		
39	Link98	31.0000	Circular	1.7671	0.0140	1.5000	1.5000		
40	Link104	162.0000	Circular	3.1416	0.0140	2.0000	2.0000		
41	Link105	89.0000	Circular	3.1416	0.0140	2.0000	2.0000		
42	Link106	208.0000	Circular	4.9087	0.0120	2.5000	2.5000		
43	Link21.1	180.0000	Circular	3.1416	0.0120	2.0000	2.0000		
44	Link21.2	90.0000	Circular	3.1416	0.0120	2.0000	2.0000		
45	Link118	200.0000	Circular	1.7671	0.0120	1.5000	1.5000		
46	Link126	90.0000	Circular	1.7671	0.0120	1.5000	1.5000		
47	Link127	383.0000	Natural	59.5650	0.0250	155.2386	1.0000		
48	214.1	29.0000	Circular	3.1416	0.0240	2.0000	2.0000		
49	272.1	32.0000	Circular	1.7671	0.0120	1.5000	1.5000		
50	283.1	40.0000	Circular	0.7854	0.0240	1.0000	1.0000		
51	336.1	52.0000	Circular	2.4053	0.0120	1.7500	1.7500		

Total length of all conduits .... 11044.4000 feet

==========
|Table E2 - Conduit Factor Data|
==========

Conduit Name	Number of Barrels	Entrance Loss Coef	Exit Loss Coef	Exp/Contc Coefficnt	Weighting Parameter	Low Flow Roughness Factor	Depth at Which n Changes	Sediment Depth	Flow Routing
Link31	1.0000	0.0000	0.0000	0.0000	0.6500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
Link56	1.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
214.1	2.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave

```
*==================================================*
| If there are messages about (sqrt(g*d)*dt/dx), or |
| the sqrt(wave celerity)*time step/conduit length  |
| in the output file all it means is that the       |
| program will lower the internal time step to      |
| satisfy this condition (explicit condition).      |
| You control the actual internal time step by      |
| using the minimum courant time step factor in the |
| HYDRAULICS job control.  The message put in words |
| states that the smallest conduit with the fastest |
| velocity will control the time step selection.    |
| You have further control by using the modify      |
| conduit option in the HYDRAULICS Job Control.     |
*==================================================*
```

Conduit Name	Courant Ratio	
Link12	7.22	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link13	7.24	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link14	8.65	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link15	9.16	===> Warning ! (sqrt(wave celerity)*time step/conduit length)

```
          Link16        4.67  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link17       57.81  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link18        6.38  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link22        7.08  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link23        9.45  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link24       39.85  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link25        9.67  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link26        9.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link27        9.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link28        9.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link31       34.52  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link32        8.51  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link33       13.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link47       38.61  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link53       28.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link54        2.89  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link55       13.26  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link56        4.17  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link68        3.46  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link69        7.45  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link70        4.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link72       70.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link73       57.46  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link74       46.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link75       96.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link76      119.30  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link77       40.12  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link78        6.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link82        6.76  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link83       23.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link84       11.98  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link85        8.92  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link90        8.34  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link93       11.91  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link98       67.26  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link104       14.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link105       27.05  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link106       12.94  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link21.1       13.37  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link21.2       26.75  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link118       10.42  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link126       23.17  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link127        2.75  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
           214.1       83.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
           272.1       65.15  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
           283.1       42.56  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
           336.1       43.31  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)

 *==================*
 |  Conduit Volume  |
 *==================*

 Full pipe or full open conduit volume
 Input full depth volume............    1.1669E+06 cubic feet

 ===> Warning !! The upstream and downstream junctions for the following conduits
                 have been reversed to correspond to the positive flow and decreasing
                 slope convention.  A negative flow in the output thus means
                 the flow was from your original upstream junction to your original
                 downstream junction.  Any initial flow has been multiplied by -1.

                 1.  Conduit #...Link17      has been changed.

 ===> ERROR !!!  Conduit Link73           has caused ZCROWN  of Junction Node75     to lie above the specified ground elev of     614.84
611.73

 ===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node81     to lie above the specified ground elev of     612.64
611.30

 ===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.13
611.67

 ===> ERROR !!!  Conduit Link76           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.28
611.67


 *====================================================*
 |            Table E3a - Junction Data               |
 *====================================================*

 Inp         Junction     Ground     Crown    Invert     Qinst  Initial  Interface
 Num             Name  Elevation Elevation Elevation       cfs Depth-ft   Flow (%)
 ---  ---------------  --------- --------- --------- -------- --------  ---------
   1           Node11   623.2500  620.4300  617.2000   0.0000   0.0000   100.0000
   2           Node12   624.9700  620.4100  617.2100   0.0000   0.0000   100.0000
   3           Node20   637.3000  636.5500  634.8000   0.0000   0.0000   100.0000
   4           Node21   638.2600  636.2000  633.1600   0.0000   0.0000   100.0000
   5           Node22   639.3500  639.3500  630.1100   0.0000   0.0000   100.0000
   6           Node23   635.9100  631.8600  628.8600   0.0000   0.0000   100.0000
   7           Node24   635.3400  631.0300  628.0300   0.0000   0.0000   100.0000
   8           Node25   634.1030  629.3500  626.3500   0.0000   0.0000   100.0000
   9           Node26   634.3200  629.4200  626.4200   0.0000   0.0000   100.0000
  10           Node27   635.4400  626.6900  623.6900   0.0000   0.0000   100.0000
  11           Node29   620.2110  620.2110  612.7800   0.0000   0.0000   100.0000
  12           Node30   631.4300  622.9800  621.4800   0.0000   0.0000   100.0000
  13           Node31   627.0900  618.0000  616.0000   0.0000   0.0000   100.0000
  14           Node33   619.3200  613.5630  610.5600   0.0000   0.0000   100.0000
  15           Node34   618.6800  611.4300  608.4300   0.0000   0.0000   100.0000
  16           Node35   621.6500  611.4000  608.4000   0.0000   0.0000   100.0000
  17           Node36   633.6100  610.4000  607.4000   0.0000   0.0000   100.0000
  18           Node37   632.4600  609.4600  606.4600   0.0000   0.0000   100.0000
  19           Node38   626.7800  608.4500  605.4500   0.0000   0.0000   100.0000
  20           Node39   611.6440  607.4400  604.4400   0.0000   0.0000   100.0000
  21           Node41   633.3700  631.2200  630.2000   0.0000   0.0000   100.0000
  22           Node43   638.5000  637.9600  636.4600   0.0000   0.0000   100.0000
  23           Node44   637.9900  637.6400  636.1400   0.0000   0.0000   100.0000
```

24	Node45	638.0000	637.5400	636.0400	0.0000	0.0000	100.0000
25	Node46	608.0000	610.3500	592.7400	0.0000	0.0000	100.0000
26	Node47	610.0000	576.0000	572.0000	0.0000	0.0000	100.0000
27	Node48	618.0000	609.8000	593.3000	0.0000	0.0000	100.0000
28	Node63	633.6300	633.6300	631.0000	0.0000	0.0000	100.0000
29	Node65	642.0000	642.0000	638.0000	0.0000	0.0000	100.0000
30	Node66	634.7700	633.4700	631.9700	0.0000	0.0000	100.0000
31	Node69	638.1000	636.5000	636.0000	0.0000	0.0000	100.0000
32	Node70	636.1000	636.0600	633.4300	0.0000	0.0000	100.0000
33	Node71	624.7000	624.2400	622.0000	0.0000	0.0000	100.0000
34	Node74	625.0300	622.2100	618.9800	0.0000	0.0000	100.0000
35	Node75	611.7300	611.7200	602.9200	0.0000	0.0000	100.0000
36	Node80	613.8400	613.8400	597.8900	0.0000	0.0000	100.0000
37	Node81	611.3000	611.2900	595.1800	0.0000	0.0000	100.0000
38	Node82	611.6700	611.6600	594.6700	0.0000	0.0000	100.0000
39	Node83	642.6000	642.6000	639.6000	0.0000	0.0000	100.0000
40	Node84	639.7400	633.2900	631.5400	0.0000	0.0000	100.0000
41	Node86	621.1000	616.4900	613.4900	0.0000	0.0000	100.0000
42	Node87	622.5000	622.5000	606.0000	0.0000	0.0000	100.0000
43	Node89	639.1000	638.6000	637.1000	0.0000	0.0000	100.0000
44	Node92	636.3000	634.7100	633.2100	0.0000	0.0000	100.0000
45	Node94	635.3000	634.8000	633.3000	0.0000	0.0000	100.0000
46	Node99	639.7000	637.7000	637.7000	0.0000	0.0000	100.0000
47	Node100	634.1900	633.8300	632.3300	0.0000	0.0000	100.0000
48	Node101	634.8000	634.0000	632.0000	0.0000	0.0000	100.0000
49	Node103	634.8400	633.4400	631.4400	0.0000	0.0000	100.0000
50	Node108	633.9000	633.2900	630.5000	0.0000	0.0000	100.0000
51	Node30.1	629.1600	621.1400	619.1400	0.0000	0.0000	100.0000
52	Node30.2	630.2500	622.3100	620.3100	0.0000	0.0000	100.0000
53	Node120	639.6000	638.0000	638.0000	0.0000	0.0000	100.0000
54	Node124	632.4600	615.4000	613.4000	0.0000	0.0000	100.0000
55	Node125	634.3200	631.0000	628.5000	0.0000	0.0000	100.0000
56	Node130	624.3400	618.8100	615.6100	0.0000	0.0000	100.0000
57	Node132	624.3400	616.6100	615.6100	0.0000	0.0000	100.0000

==========
| Table E3b - Junction Data |
==========

Inp Num	Junction Name	X Coord.	Y Coord.	Type of Manhole	Type of Inlet	Maximum Capacity	Pavement Shape	Pavement Slope
1	Node11	0.0000	0.0000	F	Normal		0	0.0000
2	Node12	0.0000	0.0000	No P	Normal		0	0.0000
3	Node20	0.0000	0.0000	F	Normal		0	0.0000
4	Node21	0.0000	0.0000	F	Normal		0	0.0000
5	Node22	0.0000	0.0000		Normal		0	0.0000
6	Node23	0.0000	0.0000		Normal		0	0.0000
7	Node24	0.0000	0.0000		Normal		0	0.0000
8	Node25	0.0000	0.0000	F	Normal		0	0.0000
9	Node26	0.0000	0.0000	F	Normal		0	0.0000
10	Node27	0.0000	0.0000	F	Normal		0	0.0000
11	Node29	0.0000	0.0000	No P	Normal		0	0.0000
12	Node30	0.0000	0.0000	F	Normal		0	0.0000
13	Node31	0.0000	0.0000	F	Normal		0	0.0000
14	Node33	0.0000	0.0000	F	Normal		0	0.0000
15	Node34	0.0000	0.0000		Normal		0	0.0000
16	Node35	0.0000	0.0000		Normal		0	0.0000
17	Node36	0.0000	0.0000		Normal		0	0.0000
18	Node37	0.0000	0.0000		Normal		0	0.0000
19	Node38	0.0000	0.0000	No P	Normal		0	0.0000
20	Node39	0.0000	0.0000		Normal		0	0.0000
21	Node41	0.0000	0.0000	No P	Normal		0	0.0000
22	Node43	0.0000	0.0000	F	Normal		0	0.0000
23	Node44	0.0000	0.0000	F	Normal		0	0.0000
24	Node45	0.0000	0.0000	No P	Normal		0	0.0000
25	Node46	0.0000	0.0000	F	Normal		0	0.0000
26	Node47	0.0000	0.0000	No P	Normal		0	0.0000
27	Node48	0.0000	0.0000	No P	Normal		0	0.0000
28	Node63	0.0000	0.0000	F	Normal		0	0.0000
29	Node65	0.0000	0.0000	F	Normal		0	0.0000
30	Node66	0.0000	0.0000	F	Normal		0	0.0000
31	Node69	0.0000	0.0000	No P	Normal		0	0.0000
32	Node70	0.0000	0.0000	F	Normal		0	0.0000
33	Node71	0.0000	0.0000	No P	Normal		0	0.0000
34	Node74	0.0000	0.0000	No P	Normal		0	0.0000
35	Node75	0.0000	0.0000	No P	Normal		0	0.0000
36	Node80	0.0000	0.0000	No P	Normal		0	0.0000
37	Node81	0.0000	0.0000	No P	Normal		0	0.0000
38	Node82	0.0000	0.0000	No P	Normal		0	0.0000
39	Node83	0.0000	0.0000	No P	Normal		0	0.0000
40	Node84	0.0000	0.0000	No P	Normal		0	0.0000
41	Node86	0.0000	0.0000	F	Normal		0	0.0000
42	Node87	0.0000	0.0000	No P	Normal		0	0.0000
43	Node89	0.0000	0.0000	F	Normal		0	0.0000
44	Node92	0.0000	0.0000	F	Normal		0	0.0000
45	Node94	0.0000	0.0000	F	Normal		0	0.0000
46	Node99	0.0000	0.0000	F	Normal		0	0.0000
47	Node100	0.0000	0.0000	F	Normal		0	0.0000
48	Node101	0.0000	0.0000	No P	Normal		0	0.0000
49	Node103	0.0000	0.0000	No P	Normal		0	0.0000
50	Node108	0.0000	0.0000	F	Normal		0	0.0000
51	Node30.1	0.0000	0.0000	F	Normal		0	0.0000
52	Node30.2	0.0000	0.0000	F	Normal		0	0.0000
53	Node120	0.0000	0.0000	F	Normal		0	0.0000
54	Node124	0.0000	0.0000	No P	Normal		0	0.0000
55	Node125	0.0000	0.0000	No P	Normal		0	0.0000
56	Node130	0.0000	0.0000	No P	Normal		0	0.0000
57	Node132	0.0000	0.0000	No P	Normal		0	0.0000

==========
| Table E4 - Conduit Connectivity |
==========

Input Number	Conduit Name	Upstream Node	Downstream Node	Upstream Elevation	Downstream Elevation	
1	Link12	Node20	Node21	634.8000	634.4500	No Design
2	Link13	Node21	Node84	633.1600	631.5400	No Design
3	Link14	Node22	Node23	630.1100	628.8600	No Design
4	Link15	Node23	Node24	628.8600	628.0300	No Design
5	Link16	Node24	Node25	628.0300	626.3500	No Design
6	Link17	Node26	Node25	626.4200	626.3500	No Design
7	Link18	Node26	Node27	626.4200	623.6900	No Design
8	Link22	Node31	Node124	616.0000	613.4000	No Design
9	Link23	Node33	Node34	610.5630	608.4300	No Design
10	Link24	Node34	Node35	608.4300	608.4000	No Design
11	Link25	Node35	Node36	608.4000	607.4000	No Design
12	Link26	Node36	Node37	607.4000	606.4600	No Design
13	Link27	Node37	Node38	606.4600	605.4500	No Design
14	Link28	Node38	Node39	605.4500	604.4400	No Design
15	Link31	Node44	Node45	636.1400	636.0400	No Design
16	Link32	Node46	Node47	592.7400	572.0000	No Design
17	Link33	Node48	Node47	593.3000	572.0000	No Design
18	Link47	Node66	Node24	631.9700	628.3300	No Design
19	Link53	Node45	Node69	636.0400	636.0000	No Design
20	Link54	Node69	Node70	636.0000	633.4300	No Design
21	Link55	Node70	Node63	633.4300	631.0000	No Design
22	Link56	Node41	Node71	630.2000	622.0000	No Design
23	Link68	Node71	Node74	622.0000	618.9800	No Design
24	Link69	Node74	Node11	618.9800	617.2000	No Design
25	Link70	Node12	Node130	617.2100	615.6100	No Design
26	Link72	Node39	Node75	604.4400	602.9220	No Design
27	Link73	Node75	Node80	602.9200	597.8900	No Design
28	Link74	Node80	Node81	597.8900	595.1800	No Design
29	Link75	Node81	Node82	595.1800	594.6700	No Design
30	Link76	Node82	Node46	594.6700	592.7400	No Design
31	Link77	Node65	Node83	640.0000	639.6000	No Design
32	Link78	Node83	Node22	639.6000	636.3500	No Design
33	Link82	Node27	Node86	623.6900	613.4900	No Design
34	Link83	Node86	Node29	613.4900	612.7800	No Design
35	Link84	Node29	Node87	612.7800	606.0000	No Design
36	Link85	Node87	Node48	606.0000	593.3000	No Design
37	Link90	Node94	Node108	633.3000	630.5000	No Design
38	Link93	Node92	Node100	633.2100	632.3300	No Design
39	Link98	Node100	Node101	632.3300	632.0000	No Design
40	Link104	Node101	Node103	632.0000	631.4400	No Design
41	Link105	Node103	Node108	631.4400	631.2900	No Design
42	Link106	Node108	Node125	630.5000	628.5000	No Design
43	Link21.1	Node30.1	Node31	619.1400	616.0000	No Design
44	Link21.2	Node30.2	Node30.1	620.3100	619.1400	No Design
45	Link118	Node89	Node43	637.1000	636.4600	No Design
46	Link126	Node30	Node30.2	621.4800	620.3100	No Design
47	Link127	Node132	Node33	615.6100	610.5600	No Design
48	214.1	Node11	Node12	617.7000	617.2100	No Design
49	272.1	Node43	Node44	636.4600	636.1400	No Design
50	283.1	Node63	Node41	631.0100	630.2200	No Design
51	336.1	Node84	Node22	631.5400	630.5100	No Design

Storage Junction Data

STORAGE JUNCTION NUMBER OR NAME	JUNCTION TYPE	MAXIMUM OR CONSTANT SURFACE AREA (FT2)	PEAK OR CONSTANT VOLUME (CUBIC FEET)	CROWN ELEVATION (FT)	DEPTH STARTS FROM
Node65	Stage/Area	50965.2000	114339.2685	642.0000	Node Invert
Node99	Stage/Area	43560.0000	65156.9320	639.7000	Node Invert
Node120	Stage/Area	65340.0000	59372.3585	639.6000	Node Invert
Node130	Stage/Area	43560.0000	361361.9813	624.3400	Node Invert

Variable storage data for node | Node65

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	638.0000	0.0000	435.6000	0.0000	0.0100	0.0000
2	639.0000	1.0000	10890.0000	4501.1550	0.2500	0.1033
3	640.0000	2.0000	29185.2000	23801.9281	0.6700	0.5464
4	641.0000	3.0000	50965.2000	63374.0685	1.1700	1.4549
5	642.0000	4.0000	50965.2000	114339.2685	1.1700	2.6249

Variable storage data for node | Node99

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	637.7000	0.0000	4.3560	0.0000	0.0001	0.0000
2	637.7100	0.0100	2178.0000	7.5991	0.0500	0.0002
3	638.0000	0.3000	12196.8000	1895.3728	0.2800	0.0435
4	638.2000	0.5000	22651.2000	5326.6343	0.5200	0.1223
5	638.7000	1.0000	43560.0000	21596.9320	1.0000	0.4958
6	639.7000	2.0000	43560.0000	65156.9320	1.0000	1.4958

Variable storage data for node | Node120

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	638.0000	0.0000	43.5600	0.0000	0.0010	0.0000
2	639.0000	1.0000	32670.0000	11302.0536	0.7500	0.2595
3	640.0000	2.0000	65340.0000	59372.3585	1.5000	1.3630

Variable storage data for node | Node130

```
*==================================*
 Data     Elevation    Depth          Area          Volume          Area          Volume
Point         ft         ft          ft^2            ft^3          acres          ac-ft
=====    =========   ======   ==========   ============   ===========   ============
   1      615.6100   0.0000      43.5600         0.0000        0.0010         0.0000
   2      616.1100   0.5000   32670.0000      5651.0268        0.7500         0.1297
   3      616.6100   1.0000   43560.0000     24643.1813        1.0000         0.5657
   4      624.3400   8.7300   43560.0000    361361.9813        1.0000         8.2957


*==========================================*
|            Orifice Data                  |
*==========================================*

         Conduit            From             To                Area     Depth      Discharge   Height Above
            Name         Junction        Junction      Type     (ft2)     (ft)     Coefficient  Junction (ft)
---------------- --------------- ---------------      ----     -----     -----    -----------  -------------
       Restrict1         Node124          Node37 Circ Side      2.18      0.00          0.600          6.600
       Restrict2         Node125          Node26 Circ Side      2.18      0.00          0.600          1.500
      Restrict10         Node130         Node132 Circ Side      7.81      0.00          0.600          0.000

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE              1
      CONDUIT NAME..........................        Restrict1
      Upstream node.........................          Node124
      Downstream node.......................           Node37
      PIPE DIAMETER.......................                1.67
      PIPE LENGTH.........................             4394.62
      MANNINGS ROUGHNESS..................               0.0026
      INVERT ELEVATION AT UPSTREAM END.....            620.0000
      INVERT ELEVATION AT DOWNSTREAM END...            619.9900

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE              2
      CONDUIT NAME..........................        Restrict2
      Upstream node.........................          Node125
      Downstream node.......................           Node26
      PIPE DIAMETER.......................                1.67
      PIPE LENGTH.........................             4394.62
      MANNINGS ROUGHNESS..................               0.0026
      INVERT ELEVATION AT UPSTREAM END.....            630.0000
      INVERT ELEVATION AT DOWNSTREAM END...            629.9900

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE              3
      CONDUIT NAME..........................       Restrict10
      Upstream node.........................          Node130
      Downstream node.......................          Node132
      PIPE DIAMETER.......................                3.15
      PIPE LENGTH.........................             6046.02
      MANNINGS ROUGHNESS..................               0.0034
      INVERT ELEVATION AT UPSTREAM END.....            615.6100
      INVERT ELEVATION AT DOWNSTREAM END...            615.6000

Note: For a Bottom-outlet orifice the invert elevation of the downstream node will be
      adjusted to accomodate the equivalent conduit.  Conduit grades are not affected.


*==========================================*
|                Weir Data                 |
*==========================================*

            Weir            From             To            Crest      Weir         Weir   Discharge         Weir
            Name         Junction        Junction  Type  Height(ft)   Top(ft)  Length(ft) Coefficient        Power
---------------- --------------- ---------------  ----  ----------   -------  ---------- -----------  -----------
          Link 5          Node11          Node12     1        3.16    182.80      300.00       3.0000       1.5000
          WEIR30          Node43          Node44     1        1.94    163.54      300.00       3.0000       1.5000
          WEIR46          Node63          Node41     1        2.37    169.00       50.00       3.0000       1.5000
        Link97.1          Node99          Node21     2        0.56    162.30       10.00       3.0000       1.5000
         WEIR119         Node120          Node20     2        1.30    162.00        5.00       3.0000       1.5000


*==============================================*
|          FREE OUTFALL DATA (DATA GROUP I1)   |
|         BOUNDARY CONDITION ON DATA GROUP J1  |
*==============================================*

Outfall at Junction....Node47           has boundary condition number...         1

===> Warning !!  Outfall Junction Node47           has two or more connecting conduits.


*==========================================*
|               Weir Outfall Data          |
|      Boundary Condition on data group J1 |
*==========================================*



*==============================================*
|        INTERNAL CONNECTIVITY INFORMATION     |
*==============================================*

         CONDUIT         JUNCTION         JUNCTION
---------------- ---------------- ----------------
       Restrict1          Node124           Node37
       Restrict2          Node125           Node26
      Restrict10          Node130          Node132
          Link 5           Node11           Node12
          WEIR30           Node43           Node44
          WEIR46           Node63           Node41
        Link97.1           Node99           Node21
         WEIR119          Node120           Node20
        FREE # 1           Node47         BOUNDARY

*==================================================*
|        Boundary Condition Information            |
|                 Data Groups J1-J4                |
*==================================================*
```

```
BC NUMBER..         1 has no control water surface.

*==================================================*
|             XP Note Field Summary                |
*==================================================*



*================================*
|   Conduit Convergence Criteria  |
*================================*

          Conduit        Full     Conduit
             Name        Flow       Slope
-----------------  ----------  ----------
           Link12      5.7493      0.0011
           Link13     12.3889      0.0052
           Link14     43.7477      0.0037
           Link15     36.6850      0.0026
           Link16     37.2836      0.0027
           Link17     26.7696      0.0014
           Link18     55.5441      0.0059
           Link22     21.4313      0.0076
           Link23     59.7442      0.0068
           Link24     14.5486      0.0004
           Link25     41.3740      0.0033
           Link26     39.9177      0.0031
           Link27     34.5795      0.0031
           Link28     40.1573      0.0031
           Link31      4.6303      0.0017
           Link32    451.1614      0.0519
           Link33    381.7717      0.0819
           Link47     29.5450      0.0674
           Link53      1.7213      0.0012
           Link54      1.9517      0.0103
           Link55    328.6757      0.0176
           Link56     78.4186      0.0269
           Link68     93.5685      0.0075
           Link69   1818.6510      0.0068
           Link70    872.4818      0.0036
           Link72    137.3690      0.0361
           Link73  56825.7885      0.0689
           Link74  37318.0904      0.0266
           Link75  29495.4038      0.0098
           Link76  40618.1464      0.0482
           Link77     20.0104      0.0067
           Link78   1059.8133      0.0100
           Link82    110.5183      0.0234
           Link83     54.8977      0.0058
           Link84   4900.7542      0.0242
           Link85  34130.3174      0.0270
           Link90     12.0431      0.0112
           Link93      8.0696      0.0050
           Link98     10.0638      0.0106
          Link104     12.3507      0.0035
          Link105      8.6239      0.0017
          Link106     43.5723      0.0096
         Link21.1     32.3690      0.0174
         Link21.2     27.9430      0.0130
          Link118      6.4373      0.0032
          Link126     12.9749      0.0130
          Link127    214.6192      0.0132
            214.1     15.9283      0.0169
            272.1     11.3797      0.0100
            283.1      2.7121      0.0197
            336.1     24.1586      0.0198
        Restrict1     13.5485      0.0000
        Restrict2     13.5485      0.0000
       Restrict10     66.7783      0.0000

*================================*
|    Initial Model Condition      |
| Initial Time =      0.08 hours  |
*================================*

      Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
         Node11/   0.00 /   617.20           Node12/   0.00 /   617.21           Node20/   0.00 /   634.80
         Node21/   0.00 /   633.16           Node22/   0.00 /   630.11           Node23/   0.00 /   628.86
         Node24/   0.00 /   628.03           Node25/   0.00 /   626.35           Node26/   0.00 /   626.42
         Node27/   0.00 /   623.69           Node29/   0.00 /   612.78           Node30/   0.00 /   621.48
         Node31/   0.00 /   616.00           Node33/   0.00 /   610.56           Node34/   0.00 /   608.43
         Node35/   0.00 /   608.40           Node36/   0.00 /   607.40           Node37/   0.00 /   606.46
         Node38/   0.00 /   605.45           Node39/   0.00 /   604.44           Node41/   0.00 /   630.20
         Node43/   0.00 /   636.46           Node44/   0.00 /   636.14           Node45/   0.00 /   636.04
         Node46/   0.00 /   592.74           Node47/   0.00 /   572.00           Node48/   0.00 /   593.30
         Node63/   0.00 /   631.00           Node65/   0.00 /   638.00           Node66/   0.00 /   631.97
         Node69/   0.00 /   636.00           Node70/   0.00 /   633.43           Node71/   0.00 /   622.00
         Node74/   0.00 /   618.98           Node75/   0.00 /   602.92           Node80/   0.00 /   597.89
         Node81/   0.00 /   595.18           Node82/   0.00 /   594.67           Node83/   0.00 /   639.60
         Node84/   0.00 /   631.54           Node86/   0.00 /   613.49           Node87/   0.00 /   606.00
         Node89/   0.00 /   637.10           Node92/   0.00 /   633.21           Node94/   0.00 /   633.30
         Node99/   0.00 /   637.70          Node100/   0.00 /   632.33          Node101/   0.00 /   632.00
        Node103/   0.00 /   631.44          Node108/   0.00 /   630.50        Node30.1/   0.00 /   619.14
       Node30.2/   0.00 /   620.31          Node120/   0.00 /   638.00          Node124/   0.00 /   613.40
        Node125/   0.00 /   628.50          Node130/   0.00 /   615.61          Node132/   0.00 /   615.60

        Conduit/       FLOW   ===> "*" Conduit uses the normal flow option.
         Link12/       0.00           Link13/       0.00           Link14/       0.00
         Link15/       0.00           Link16/       0.00           Link17/       0.00
         Link18/       0.00           Link22/       0.00           Link23/       0.00
         Link24/       0.00           Link25/       0.00           Link26/       0.00
         Link27/       0.00           Link28/       0.00           Link31/       0.00
         Link32/       0.00           Link33/       0.00           Link47/       0.00
```

```
      Link53/       0.00          Link54/       0.00          Link55/       0.00
      Link56/       0.00          Link68/       0.00          Link69/       0.00
      Link70/       0.00          Link72/       0.00          Link73/       0.00
      Link74/       0.00          Link75/       0.00          Link76/       0.00
      Link77/       0.00          Link78/       0.00          Link82/       0.00
      Link83/       0.00          Link84/       0.00          Link85/       0.00
      Link90/       0.00          Link93/       0.00          Link98/       0.00
     Link104/       0.00         Link105/       0.00         Link106/       0.00
    Link21.1/       0.00        Link21.2/       0.00         Link118/       0.00
     Link126/       0.00         Link127/       0.00           214.1/       0.00
       272.1/       0.00           283.1/       0.00           336.1/       0.00
   Restrict1/       0.00       Restrict2/       0.00      Restrict10/       0.00
      Link 5/       0.00          WEIR30/       0.00          WEIR46/       0.00
    Link97.1/       0.00         WEIR119/       0.00        FREE # 1/       0.00

     Conduit/   Velocity
      Link12/       0.00          Link13/       0.00          Link14/       0.00
      Link15/       0.00          Link16/       0.00          Link17/       0.00
      Link18/       0.00          Link22/       0.00          Link23/       0.00
      Link24/       0.00          Link25/       0.00          Link26/       0.00
      Link27/       0.00          Link28/       0.00          Link31/       0.00
      Link32/       0.00          Link33/       0.00          Link47/       0.00
      Link53/       0.00          Link54/       0.00          Link55/       0.00
      Link56/       0.00          Link68/       0.00          Link69/       0.00
      Link70/       0.00          Link72/       0.00          Link73/       0.00
      Link74/       0.00          Link75/       0.00          Link76/       0.00
      Link77/       0.00          Link78/       0.00          Link82/       0.00
      Link83/       0.00          Link84/       0.00          Link85/       0.00
      Link90/       0.00          Link93/       0.00          Link98/       0.00
     Link104/       0.00         Link105/       0.00         Link106/       0.00
    Link21.1/       0.00        Link21.2/       0.00         Link118/       0.00
     Link126/       0.00         Link127/       0.00           214.1/       0.00
       272.1/       0.00           283.1/       0.00           336.1/       0.00
   Restrict1/       0.00       Restrict2/       0.00      Restrict10/       0.00

     Conduit/ Cross Sectional Area
      Link12/       0.00          Link13/       0.00          Link14/       0.00
      Link15/       0.00          Link16/       0.00          Link17/       0.00
      Link18/       0.00          Link22/       0.00          Link23/       0.00
      Link24/       0.00          Link25/       0.00          Link26/       0.00
      Link27/       0.00          Link28/       0.00          Link31/       0.00
      Link32/       0.00          Link33/       0.00          Link47/       0.00
      Link53/       0.00          Link54/       0.00          Link55/       0.00
      Link56/       0.00          Link68/       0.00          Link69/       0.00
      Link70/       0.00          Link72/       0.00          Link73/       0.00
      Link74/       0.00          Link75/       0.00          Link76/       0.00
      Link77/       0.00          Link78/       0.00          Link82/       0.00
      Link83/       0.00          Link84/       0.00          Link85/       0.00
      Link90/       0.00          Link93/       0.00          Link98/       0.00
     Link104/       0.00         Link105/       0.00         Link106/       0.00
    Link21.1/       0.00        Link21.2/       0.00         Link118/       0.00
     Link126/       0.00         Link127/       0.00           214.1/       0.00
       272.1/       0.00           283.1/       0.00           336.1/       0.00
   Restrict1/       0.00       Restrict2/       0.00      Restrict10/       0.00

     Conduit/ Hydraulic Radius
      Link12/       0.00          Link13/       0.00          Link14/       0.00
      Link15/       0.00          Link16/       0.00          Link17/       0.00
      Link18/       0.00          Link22/       0.00          Link23/       0.00
      Link24/       0.00          Link25/       0.00          Link26/       0.00
      Link27/       0.00          Link28/       0.00          Link31/       0.00
      Link32/       0.00          Link33/       0.00          Link47/       0.00
      Link53/       0.00          Link54/       0.00          Link55/       0.00
      Link56/       0.00          Link68/       0.00          Link69/       0.00
      Link70/       0.00          Link72/       0.00          Link73/       0.00
      Link74/       0.00          Link75/       0.00          Link76/       0.00
      Link77/       0.00          Link78/       0.00          Link82/       0.00
      Link83/       0.00          Link84/       0.00          Link85/       0.00
      Link90/       0.00          Link93/       0.00          Link98/       0.00
     Link104/       0.00         Link105/       0.00         Link106/       0.00
    Link21.1/       0.00        Link21.2/       0.00         Link118/       0.00
     Link126/       0.00         Link127/       0.00           214.1/       0.00
       272.1/       0.00           283.1/       0.00           336.1/       0.00
   Restrict1/       0.00       Restrict2/       0.00      Restrict10/       0.00

     Conduit/ Upstream/ Downstream Elevation
      Link12/   633.16/   633.16          Link13/   631.54/   631.54          Link14/   628.86/   628.86
      Link15/   628.03/   628.03          Link16/   626.35/   626.35          Link17/   626.35/   626.35
      Link18/   623.69/   623.69          Link22/   613.40/   613.40          Link23/   608.43/   608.43
      Link24/   608.40/   608.40          Link25/   607.40/   607.40          Link26/   606.46/   606.46
      Link27/   605.45/   605.45          Link28/   604.44/   604.44          Link31/   636.04/   636.04
      Link32/   572.00/   572.00          Link33/   572.00/   572.00          Link47/   628.03/   628.03
      Link53/   636.00/   636.00          Link54/   633.43/   633.43          Link55/   631.00/   631.00
      Link56/   622.00/   622.00          Link68/   618.98/   618.98          Link69/   617.20/   617.20
      Link70/   615.61/   615.61          Link72/   602.92/   602.92          Link73/   597.89/   597.89
      Link74/   595.18/   595.18          Link75/   594.67/   594.67          Link76/   592.74/   592.74
      Link77/   639.60/   639.60          Link78/   630.11/   630.11          Link82/   613.49/   613.49
      Link83/   612.78/   612.78          Link84/   606.00/   606.00          Link85/   593.30/   593.30
      Link90/   630.50/   630.50          Link93/   632.33/   632.33          Link98/   632.00/   632.00
     Link104/   631.44/   631.44         Link105/   630.50/   630.50         Link106/   628.50/   628.50
    Link21.1/   616.00/   616.00        Link21.2/   619.14/   619.14         Link118/   636.46/   636.46
     Link126/   620.31/   620.31         Link127/   610.56/   610.56           214.1/   617.21/   617.21
       272.1/   636.14/   636.14           283.1/   630.20/   630.20           336.1/   630.11/   630.11
   Restrict1/   606.46/   606.46       Restrict2/   626.42/   626.42      Restrict10/   615.60/   615.60

Cycle        500      Time         41 Hrs - 40.00 Min

     Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
      Node11/   0.50 /   617.70          Node12/   0.00 /   617.21          Node20/   0.00 /   634.80
      Node21/   0.00 /   633.16          Node22/   0.02 /   630.13          Node23/   0.02 /   628.88
      Node24/   0.02 /   628.05          Node25/   0.09 /   626.44          Node26/   0.02 /   626.44
      Node27/   0.01 /   623.70          Node29/   0.01 /   612.79          Node30/   0.00 /   621.48
      Node31/   4.02 /   620.02          Node33/   0.01 /   610.57          Node34/   0.01 /   608.44
      Node35/   0.00 /   608.40          Node36/   0.00 /   607.40          Node37/   0.01 /   606.47
      Node38/   0.01 /   605.46          Node39/   0.00 /   604.44          Node41/   0.00 /   630.20
      Node43/   0.00 /   636.46          Node44/   0.00 /   636.14          Node45/   0.00 /   636.04
```

```
 Node46/   0.00 /   592.74          Node47/   0.00 /   572.00          Node48/   0.01 /   593.31
 Node63/   0.01 /   631.01          Node65/   2.02 /   640.02          Node66/   0.00 /   631.97
 Node69/   0.00 /   636.00          Node70/   0.00 /   633.43          Node71/   0.00 /   622.00
 Node74/   0.00 /   618.98          Node75/   0.00 /   602.92          Node80/   0.01 /   597.90
 Node81/   0.00 /   595.18          Node82/   0.00 /   594.67          Node83/   0.00 /   639.60
 Node84/   0.00 /   631.54          Node86/   0.02 /   613.51          Node87/   0.01 /   606.01
 Node89/   0.00 /   637.10          Node92/   0.00 /   633.21          Node94/   0.00 /   633.30
 Node99/   0.51 /   638.21         Node100/   0.00 /   632.33         Node101/   0.00 /   632.00
Node103/   0.00 /   631.44         Node108/   0.00 /   630.50        Node30.1/   0.88 /   620.02
Node30.2/  0.00 /   620.31         Node120/   1.44 /   639.44         Node124/   6.62*/   620.02
Node125/   1.52 /   630.02         Node130/   0.01 /   615.62         Node132/   0.02 /   615.62

 Conduit/       FLOW   ===> "*" Conduit uses the normal flow option.
 Link12/        0.00          Link13/       0.00          Link14/       0.01*         Link15/       0.01
 Link16/        0.01*         Link17/      -0.01          Link18/       0.01          Link22/       0.00
 Link23/        0.00*         Link24/       0.00          Link25/       0.00*         Link26/       0.00*
 Link27/        0.00*         Link28/       0.00          Link31/       0.00          Link32/       0.00*
 Link33/        0.01          Link47/       0.00*         Link53/       0.00          Link54/       0.00*
 Link55/        0.00*         Link56/       0.00*         Link68/       0.00*         Link69/       0.00*
 Link70/        0.00*         Link72/       0.00          Link73/       0.00*         Link74/       0.00
 Link75/        0.00*         Link76/       0.00          Link77/       0.01          Link78/       0.01
 Link82/        0.01*         Link83/       0.01          Link84/       0.01          Link85/       0.01
 Link90/        0.00*         Link93/       0.00          Link98/       0.00*         Link104/      0.00*
Link105/        0.00         Link106/       0.00*        Link21.1/      0.00         Link21.2/      0.00*
Link118/        0.00         Link126/       0.00*        Link127/       0.00           214.1/       0.00*
  272.1/        0.00           283.1/       0.00          336.1/       0.00         Restrict1/      0.00
Restrict2/      0.00       Restrict10/       0.00         Link 5/       0.00           WEIR30/       0.00
 WEIR46/        0.00         Link97.1/       0.00        WEIR119/       0.00         FREE # 1/       0.01


 *==================================================*
 | Table E5 - Junction Time Limitation Summary      |
 |            (0.10 or 0.25)* Depth * Area          |
 | Time step = ------------------------------       |
 |                  Sum of Flow                     |
 *==================================================*
 |  The time this junction was the limiting junction |
 |                 is listed in the third column.   |
 *==================================================*

        Junction     Time(.10)  Time(.25)  Time(sec)
-----------------    ---------  ---------  ---------
          Node11       59.9307   149.8267  1200.0000
          Node12      109.9064   274.7661   300.0000
          Node20      290.1887   725.4718     0.0000
          Node21      279.9603   699.9008     0.0000
          Node22      249.8516   624.6289     0.0000
          Node23      123.5014   308.7536     0.0000
          Node24      196.6675   491.6687     0.0000
          Node25       74.2368   185.5920     0.0000
          Node26      184.5856   461.4641     0.0000
          Node27      323.6831   809.2078     0.0000
          Node29      326.4106   816.0265     0.0000
          Node30       36.1073    90.2683   900.0000
          Node31        7.7846    19.4616  1500.0000
          Node33       60.1385   150.3462  2100.0000
          Node34       49.5285   123.8213  3300.0000
          Node35      102.4078   256.0195   300.0000
          Node36       85.2569   213.1421   300.0000
          Node37      109.4139   273.5348     0.0000
          Node38      114.6814   286.7035     0.0000
          Node39      505.6390  1264.0974     0.0000
          Node41      214.6468   536.6169     0.0000
          Node43       68.0350   170.0875   300.0000
          Node44      272.2090   680.5226     0.0000
          Node45      372.0216   930.0541     0.0000
          Node46      186.2734   465.6836     0.0000
          Node47     3000.0000  3000.0000     0.0000
          Node48       65.3815   163.4538     0.0000
          Node63       38.3260    95.8149  1500.0000
          Node65       99.2292   248.0731     0.0000
          Node66       36.2671    90.6678     0.0000
          Node69      218.1726   545.4315     0.0000
          Node70       93.9848   234.9621     0.0000
          Node71      192.5434   481.3584   300.0000
          Node74      105.1350   262.8374     0.0000
          Node75      310.8204   777.0510     0.0000
          Node80      346.7405   866.8513     0.0000
          Node81      258.2459   645.6147     0.0000
          Node82       60.1386   150.3464 155700.000
          Node83      503.0368  1257.5919     0.0000
          Node84      477.8447  1194.6118     0.0000
          Node86       29.3650    73.4124   300.0000
          Node87       68.6523   171.6307     0.0000
          Node89       90.6596   226.6491     0.0000
          Node92      143.9958   359.9896     0.0000
          Node94      158.4001   396.0003     0.0000
          Node99      239.4917   598.7293     0.0000
         Node100      145.5456   363.8641     0.0000
         Node101      126.0047   315.0117     0.0000
         Node103      169.0610   422.6524     0.0000
         Node108       55.4769   138.6923  1200.0000
        Node30.1       28.3873    70.9682   300.0000
        Node30.2       20.2695    50.6738  2100.0000
         Node120      167.1462   417.8656     0.0000
         Node124       15.1157    37.7892   600.0000
         Node125       32.8512    82.1281   300.0000
         Node130       91.2260   228.0649   300.0000
         Node132      238.3086   595.7716     0.0000
The junction requiring the smallest time step was...Node82


 *=========================================================*
 |       Table E5a - Conduit Explicit Condition Summary    |
 |       Courant   =         Conduit Length                |
 |       Time step = --------------------------------      |
```

```
|                    Velocity + sqrt(g*depth)                |
|                                                            |
|                 Conduit Implicit Condition Summary         |
|       Courant   =         Conduit Length                   |
|       Time step = ------------------------------           |
|                              Velocity                      |
*============================================================*
|  The 3rd column is the Explicit time step times the        |
|      minimum courant time step factor                      |
|                                                            |
|  Minimum Conduit Time Step in seconds in the 4th column    |
|  in the list. Maximum possible is 10 * maximum time step   |
|                                                            |
|  The 5th column is the maximum change at any time step     |
|  during the simulation. The 6th column is the wobble       |
|  value which is an indicator of the flow stability.        |
|                                                            |
|  You should use this section to find those conduits that   |
|  are slowing your model down.  Use modify conduits to      |
|  alter the length of the slow conduits to make your        |
|  simulation faster, or change the conduit name to          |
|  "CHME?????" where ????? are any characters, this will     |
|  lengthen the conduit based on the model time step,        |
|  not the value listed in modify conduits.                  |
*============================================================*
```

Conduit	Time(exp)	Expl*Cmin	Time(imp)	Time(min)	Max Qchange	Wobble	Type of Soln
Link12	38.8576	38.8576	117.7555	20.0000	0.0013	1.1071	Normal Soln
Link13	24.2378	24.2378	52.3721	0.0000	0.0054	1.9836	Normal Soln
Link14	27.5050	27.5050	61.0085	0.0000	0.0086	0.7669	Normal Soln
Link15	26.8647	26.8647	64.9586	0.0000	-0.0930	1.0300	Normal Soln
Link16	43.4452	43.4452	111.9900	0.0000	0.2419	1.7335	Normal Soln
Link17	3.4802	3.4802	8.8293	0.0000	-0.2640	2.6876	Normal Soln
Link18	26.5887	26.5887	52.4526	0.0000	0.2692	1.7521	Normal Soln
Link22	17.3915	17.3915	105.7611	0.0000	-0.1240	3.4280	Normal Soln
Link23	14.5896	14.5896	40.1079	0.0000	-0.0753	1.8258	Normal Soln
Link24	3.4614	3.4614	10.0038	0.0000	-0.0778	7.6540	Normal Soln
Link25	14.5413	14.5413	41.1959	0.0000	-0.0803	2.6584	Normal Soln
Link26	15.1765	15.1765	41.5446	0.0000	-0.0849	2.7613	Normal Soln
Link27	16.2677	16.2677	41.9932	0.0000	-0.0852	3.2879	Normal Soln
Link28	18.0649	18.0649	39.6491	0.0000	-0.0845	2.8801	Normal Soln
Link31	5.0338	5.0338	10.2706	0.0000	0.0229	3.5953	Normal Soln
Link32	14.8119	14.8119	18.9553	0.0000	0.0899	0.3825	Normal Soln
Link33	9.0109	9.0109	11.3954	0.0000	0.0854	0.3499	Normal Soln
Link47	2.4409	2.4409	3.3744	25.0000	0.2847	1.0936	Normal Soln
Link53	4.9135	4.9135	12.8502	0.0000	0.0225	9.6688	Normal Soln
Link54	50.1181	50.1181	146.9701	0.0000	0.0267	8.4918	Normal Soln
Link55	23.3255	23.3255	86.0368	0.0000	0.0280	0.0504	Normal Soln
Link56	56.2369	56.2369	149.6912	0.0000	0.1619	0.3827	Normal Soln
Link68	53.7550	53.7550	121.5524	0.0000	0.0658	0.3296	Normal Soln
Link69	41.4931	41.4931	181.9228	0.0000	-4.9605	0.3225	Normal Soln
Link70	64.6228	64.6228	178.0453	0.0000	0.1426	0.2936	Normal Soln
Link72	1.6900	1.6900	2.2904	540.0000	-0.0849	0.8423	Normal Soln
Link73	6.2516	6.2516	9.5815	0.0000	-0.0986	0.0020	Normal Soln
Link74	8.2083	8.2083	14.0037	0.0000	-0.0927	0.0031	Normal Soln
Link75	6.3522	6.3522	16.8339	0.0000	-0.0753	0.0039	Normal Soln
Link76	2.7968	2.7968	4.2623	1655.0000	-0.0708	0.0028	Normal Soln
Link77	5.0995	5.0995	8.9870	0.0000	0.0069	0.7274	Normal Soln
Link78	84.4072	84.4072	280.6690	0.0000	0.0103	0.0137	Normal Soln
Link82	19.5491	19.5491	30.3172	0.0000	0.3004	0.8804	Normal Soln
Link83	6.6227	6.6227	11.5483	0.0000	0.2699	1.7725	Normal Soln
Link84	25.9898	25.9898	44.0293	0.0000	0.1613	0.0199	Normal Soln
Link85	43.5661	43.5661	73.9536	0.0000	0.1246	0.0028	Normal Soln
Link90	17.4373	17.4373	38.3074	0.0000	0.0215	1.1038	Normal Soln
Link93	15.5766	15.5766	33.5973	0.0000	0.0169	1.7903	Normal Soln
Link98	2.6845	2.6845	5.5772	0.0000	0.0158	1.5614	Normal Soln
Link104	15.4032	15.4032	40.8248	0.0000	0.0156	1.3993	Normal Soln
Link105	8.5683	8.5683	23.1175	0.0000	0.0163	2.4164	Normal Soln
Link106	13.8927	13.8927	38.7150	0.0000	0.0306	0.8606	Normal Soln
Link21.1	10.3428	10.3428	33.3945	0.0000	0.0447	1.7449	Normal Soln
Link21.2	6.5796	6.5796	17.3978	0.0000	0.0896	4.6438	Normal Soln
Link118	16.9186	16.9186	42.3636	0.0000	0.0446	2.5887	Normal Soln
Link126	6.2215	6.2215	11.8921	0.0000	0.0180	1.6341	Normal Soln
Link127	68.1322	68.1322	198.6334	0.0000	0.0416	0.4689	Normal Soln
214.1	1.5407	1.5407	3.0837	60.0000	0.0649	3.9034	Normal Soln
272.1	2.6188	2.6188	5.2451	0.0000	0.0225	1.4635	Normal Soln
283.1	2.6441	2.6441	6.5483	0.0000	0.0480	3.5981	Normal Soln
336.1	3.3730	3.3730	5.1586	580.0000	0.0071	1.0172	Normal Soln
Restrict1	362.2282	362.2282	1069.6445	0.0000	0.0115	1.3497	Normal Soln
Restrict2	272.1177	272.1177	729.2824	0.0000	0.0199	1.9645	Normal Soln
Restrict10	333.9349	333.9349	900.5386	0.0000	0.0457	1.4678	Normal Soln

```
The conduit with the smallest time step limitation was..Link76
The conduit with the largest wobble was................Link53
The conduit with the largest flow change in any
consecutive time step..................................Link69

 ************************************************
 *      End of time step DO-loop in Runoff      *
 ************************************************

 Final Date (Mo/Day/Year)   =             1/ 2/2014
 Total number of time steps =                  1513
 Final Julian Date          =               2014002
 Final time of day          =                    0. seconds.
 Final time of day          =                 0.00   hours.
 Final running time         =               24.0000   hours.
 Final running time         =                1.0000    days.

 ****************************************************
 *     Extrapolation Summary for Watersheds         *
 * Explains the number of time steps and iterations *
 * used in the solution of the subcatchments.       *
 * # Steps ==> Total Number of Extrapolated Steps   *
 * # Calls ==> Total Number of OVERLND Calls        *
 ****************************************************
```

Subcatchment	# Steps	# Calls	Subcatchment	# Steps	# Calls			
Node89#1	0	0	Node63#1	0	0	Node11#1	0	0
Node33#1	0	0	Node30#1	0	0	Node46#1	0	0
Node65#1	0	0	Node120#1	0	0	Node99#1	0	0
Node66#1	0	0	Node24#1	0	0	Node25#1	0	0
Node94#1	0	0	Node92#1	0	0	Node48#1	0	0

```
##########################################################
# Rainfall input summary from Runoff Continuity Check   #
##########################################################
```

Total rainfall read for gage # 1 is 2.6400 in
Total rainfall duration for gage # 1 is 114.29 minutes

```
************************************************************
* Table R5. CONTINUITY CHECK FOR SURFACE WATER             *
*       Any continuity error can be fixed by lowering the  *
*       wet and transition time step. The transition time  *
*       should not be much greater than the wet time step. *
************************************************************
```

	cubic feet	Inches over Total Basin
Total Precipitation (Rain plus Snow)	3.268830E+06	2.640
Total Infiltration	1.620276E+06	1.309
Total Evaporation	9.826929E+03	0.008
Surface Runoff from Watersheds	1.641422E+06	1.326
Total Water remaining in Surface Storage	0.000000E+00	0.000
Infiltration over the Pervious Area...	1.620276E+06	1.309

Infiltration + Evaporation + Surface Runoff + Snow removal + Water remaining in Surface Storage + Water remaining in Snow Cover.....	3.271525E+06	2.642
Total Precipitation + Initial Storage.	3.268830E+06	2.640

The error in continuity is calculated as

```
**************************************
* Precipitation + Initial Snow Cover  *
*      - Infiltration -               *
*Evaporation - Snow removal -          *
*Surface Runoff from Watersheds -      *
*Water in Surface Storage -            *
*Water remaining in Snow Cover         *
*-------------------------------------*
* Precipitation + Initial Snow Cover  *
**************************************
```

Percent Continuity Error..... -0.0825

```
****************************************************
* Table R6. Continuity Check for Channel/Pipes     *
*           You should have zero continuity error  *
*           if you are not using runoff hydraulics *
****************************************************
```

	cubic feet	Inches over Total Basin
Initial Channel/Pipe Storage.....	0.000000E+00	0.000
Final Channel/Pipe Storage.....	0.000000E+00	0.000
Surface Runoff from Watersheds.....	1.641422E+06	1.326
Groundwater Subsurface Inflow or Diversion..	0.000000E+00	0.000
Evaporation Loss from Channels.....	0.000000E+00	0.000
Groundwater Flow Diverted Out of Network....	0.000000E+00	0.000
Channel/Pipe/Inlet Outflow.....	1.641422E+06	1.326
Initial Storage + Inflow.....	1.641422E+06	1.326
Final Storage + Outflow + Diverted GW.....	1.641422E+06	1.326

```
*****************************************
* Final Storage + Outflow + Evaporation  - *
* Watershed Runoff - Groundwater Inflow  - *
*     Initial Channel/Pipe Storage         *
*     ----------------------------------   *
*  Final Storage + Outflow  + Evaporation  *
*****************************************
```

Percent Continuity Error..... 0.0000

```
##################################################
# Table R9. Summary Statistics for Subcatchments #
##################################################
```

Note: Total Runoff Depth includes pervious & impervious areas.
Pervious and Impervious Runoff Depth is only the runoff from those two areas.
For catchments receiving redirected flow, this flow will only be shown if the flow is not directed directly to the outlet. Flow that is getting redirected is also listed with the original subcatchment.

Subcatchment.....	Node89#1	Node63#1	Node11#1	Node33#1	Node30#1	Node46#1
Area (acres).....	5.90000	5.00000	107.90000	37.80000	9.00000	30.10000
Percent Impervious.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Rainfall (in)....	2.64000	2.64000	2.64000	2.64000	2.64000	2.64000
Max Intensity (in/hr)..	4.71240	4.71240	4.71240	4.71240	4.71240	4.71240
Pervious Area						
Total Runoff Depth (in)	1.41884	1.41050	1.32013	1.26582	1.35876	1.54684
Peak Runoff Rate (cfs).	8.36443	6.82124	111.31492	37.92617	10.42217	36.24971
Total Impervious Area						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area with depression storage						

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Impervious Area without depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Total Area

Total Runoff Depth (in)	1.41884	1.41050	1.32013	1.26582	1.35876	1.54684
Peak Runoff Rate (cfs).	8.36443	6.82124	111.31492	37.92617	10.42217	36.24971

Rational Formula

Pervious Tc. (mins)....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Imp. Intensity (in/hr).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Subcatchment.....	Node65#1	Node120#1	Node99#1	Node66#1	Node24#1	Node25#1
Area (acres).....	16.10000	32.00000	32.10000	10.00000	19.70000	5.40000
Percent Impervious.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Rainfall (in)....	2.64000	2.64000	2.64000	2.64000	2.64000	2.64000
Max Intensity (in/hr)..	4.71240	4.71240	4.71240	4.71240	4.71240	4.71240

Pervious Area

Total Runoff Depth (in)	1.42561	1.19934	1.20094	1.41461	1.57507	0.92670
Peak Runoff Rate (cfs).	19.78136	28.36865	20.06800	15.47619	23.88004	3.86299

Total Impervious Area

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Impervious Area with depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Impervious Area without depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Total Area

Total Runoff Depth (in)	1.42561	1.19934	1.20094	1.41461	1.57507	0.92670
Peak Runoff Rate (cfs).	19.78136	28.36865	20.06800	15.47619	23.88004	3.86299

Rational Formula

Pervious Tc. (mins)....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Imp. Intensity (in/hr).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Subcatchment.....	Node94#1	Node92#1	Node48#1
Area (acres).....	5.00000	5.50000	19.60000
Percent Impervious.....	0.00000	0.00000	0.00000
Total Rainfall (in)....	2.64000	2.64000	2.64000
Max Intensity (in/hr)..	4.71240	4.71240	4.71240

Pervious Area

Total Runoff Depth (in)	1.42053	1.42053	1.15836
Peak Runoff Rate (cfs).	6.59348	7.25282	18.56712

Total Impervious Area

Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000

Impervious Area with depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000

Impervious Area without depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000

Total Area

Total Runoff Depth (in)	1.42053	1.42053	1.15836
Peak Runoff Rate (cfs).	6.59348	7.25282	18.56712

Rational Formula

Pervious Tc. (mins)....	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000

```
Pervious C ............          0.00000          0.00000          0.00000
Impervious Tc. (mins)..          0.00000          0.00000          0.00000
Imp. Intensity (in/hr).          0.00000          0.00000          0.00000
Impervious C ..........          0.00000          0.00000          0.00000
Partial Area (Ha)......          0.00000          0.00000          0.00000
Partial Area Tc........          0.00000          0.00000          0.00000
Partial Area Intensity.          0.00000          0.00000          0.00000

===> Runoff simulation ended normally.

*==================================================*
|  Table E6. Final Model Condition                 |
|            This table is used for steady state   |
|            flow comparison and is the information|
|            saved to the hot-restart file.        |
|            Final Time =    48.083 hours         |
*==================================================*

Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
         Node11/   0.50 /   617.70/          Node12/   0.00 /   617.21/          Node20/   0.00 /   634.80/
         Node21/   0.00 /   633.16/          Node22/   0.01 /   630.12/          Node23/   0.02 /   628.88/
         Node24/   0.02 /   628.05/          Node25/   0.09 /   626.44/          Node26/   0.02 /   626.44/
         Node27/   0.01 /   623.70/          Node29/   0.01 /   612.79/          Node30/   0.00 /   621.48/
         Node31/   4.02 /   620.02/          Node33/   0.00 /   610.56/          Node34/   0.01 /   608.44/
         Node35/   0.00 /   608.40/          Node36/   0.00 /   607.40/          Node37/   0.00 /   606.46/
         Node38/   0.00 /   605.45/          Node39/   0.00 /   604.44/          Node41/   0.00 /   630.20/
         Node43/   0.00 /   636.46/          Node44/   0.00 /   636.14/          Node45/   0.00 /   636.04/
         Node46/   0.00 /   592.74/          Node47/   0.00 /   572.00/          Node48/   0.00 /   593.30/
         Node63/   0.01 /   631.01/          Node65/   2.02 /   640.02/          Node66/   0.00 /   631.97/
         Node69/   0.00 /   636.00/          Node70/   0.00 /   633.43/          Node71/   0.00 /   622.00/
         Node74/   0.00 /   618.98/          Node75/   0.00 /   602.92/          Node80/   0.00 /   597.89/
         Node81/   0.00 /   595.18/          Node82/   0.00 /   594.67/          Node83/   0.00 /   639.60/
         Node84/   0.00 /   631.54/          Node86/   0.01 /   613.50/          Node87/   0.01 /   606.01/
         Node89/   0.00 /   637.10/          Node92/   0.00 /   633.21/          Node94/   0.00 /   633.30/
         Node99/   0.40 /   638.10/         Node100/   0.00 /   632.33/         Node101/   0.00 /   632.00/
        Node103/   0.00 /   631.44/         Node108/   0.00 /   630.50/        Node30.1/   0.88 /   620.02/
       Node30.2/   0.00 /   620.31/         Node120/   1.33 /   639.33/         Node124/   6.62*/   620.02/
        Node125/   1.52 /   630.02/         Node130/   0.00 /   615.61/         Node132/   0.02 /   615.62/

  Conduit/       Flow   ===> "*" Conduit uses the normal flow option.
         Link12/       0.00 /          Link13/       0.00 /          Link14/       0.01*/
         Link15/       0.01 /          Link16/       0.01*/          Link17/      -0.01 /
         Link18/       0.01 /          Link22/       0.00 /          Link23/       0.00*/
         Link24/       0.00 /          Link25/       0.00*/          Link26/       0.00*/
         Link27/       0.00*/          Link28/       0.00 /          Link31/       0.00 /
         Link32/       0.00 /          Link33/       0.01 /          Link47/       0.00*/
         Link53/       0.00 /          Link54/       0.00*/          Link55/       0.00*/
         Link56/       0.00*/          Link68/       0.00*/          Link69/       0.00*/
         Link70/       0.00*/          Link72/       0.00 /          Link73/       0.00*/
         Link74/       0.00 /          Link75/       0.00*/          Link76/       0.00 /
         Link77/       0.00 /          Link78/       0.01 /          Link82/       0.01*/
         Link83/       0.01 /          Link84/       0.01 /          Link85/       0.01 /
         Link90/       0.00*/          Link93/       0.00 /          Link98/       0.00*/
        Link104/       0.00*/         Link105/       0.00 /         Link106/       0.00*/
       Link21.1/       0.00 /        Link21.2/       0.00*/         Link118/       0.00 /
        Link126/       0.00*/         Link127/       0.00 /           214.1/       0.00*/
          272.1/       0.00 /           283.1/       0.00 /           336.1/       0.00 /
      Restrict1/       0.00 /       Restrict2/       0.00 /      Restrict10/       0.00 /
         Link 5/       0.00 /          WEIR30/       0.00 /          WEIR46/       0.00 /
       Link97.1/       0.00 /         WEIR119/       0.00 /        FREE # 1/       0.01 /

        Conduit/   Velocity
         Link12/       0.09 /          Link13/       0.21 /          Link14/       0.47 /
         Link15/       0.41 /          Link16/       0.29 /          Link17/      -0.08 /
         Link18/       0.51 /          Link22/       0.00 /          Link23/       0.32 /
         Link24/       0.11 /          Link25/       0.30 /          Link26/       0.26 /
         Link27/       0.27 /          Link28/       0.27 /          Link31/       0.00 /
         Link32/       0.25 /          Link33/       1.30 /          Link47/       0.00 /
         Link53/       0.00 /          Link54/       0.00 /          Link55/       0.00 /
         Link56/       0.00 /          Link68/       0.00 /          Link69/       0.00 /
         Link70/       0.00 /          Link72/       0.77 /          Link73/       0.15 /
         Link74/       0.12 /          Link75/       0.05 /          Link76/       0.14 /
         Link77/       0.51 /          Link78/       0.07 /          Link82/       0.90 /
         Link83/       0.52 /          Link84/       0.21 /          Link85/       0.19 /
         Link90/       0.00 /          Link93/       0.00 /          Link98/       0.00 /
        Link104/       0.00 /         Link105/       0.00 /         Link106/       0.00 /
       Link21.1/       0.00 /        Link21.2/       0.00 /         Link118/       0.00 /
        Link126/       0.00 /         Link127/       0.13 /           214.1/       0.00 /
          272.1/       0.00 /           283.1/       0.00 /           336.1/       0.44 /
      Restrict1/       0.06 /       Restrict2/       0.06 /      Restrict10/       0.00 /

        Conduit/      Width
         Link12/       0.69 /          Link13/       0.69 /          Link14/       1.18 /
         Link15/       1.18 /          Link16/       1.18 /          Link17/       1.18 /
         Link18/       1.18 /          Link22/       0.01 /          Link23/       1.18 /
         Link24/       1.18 /          Link25/       1.18 /          Link26/       1.18 /
         Link27/       1.18 /          Link28/       1.18 /          Link31/       0.59 /
         Link32/       4.00 /          Link33/       1.57 /          Link47/       0.59 /
         Link53/       0.00 /          Link54/       4.00 /          Link55/       0.01 /
         Link56/       4.00 /          Link68/       0.00 /          Link69/       0.38 /
         Link70/       0.01 /          Link72/       1.18 /          Link73/       0.03 /
         Link74/       0.02 /          Link75/       0.04 /          Link76/       0.02 /
         Link77/       0.78 /          Link78/      20.11 /          Link82/       1.18 /
         Link83/       1.18 /          Link84/       0.19 /          Link85/       0.08 /
         Link90/       0.59 /          Link93/       0.59 /          Link98/       0.59 /
        Link104/       0.78 /         Link105/       0.78 /         Link106/       1.13 /
       Link21.1/       1.79 /        Link21.2/       0.90 /         Link118/       0.59 /
        Link126/       0.59 /         Link127/       0.17 /           214.1/       0.78 /
          272.1/       0.59 /           283.1/       0.39 /           336.1/       0.69 /
      Restrict1/       0.65 /       Restrict2/       0.65 /      Restrict10/       1.24 /

       Junction/        EGL
         Node11/       0.50 /          Node12/       0.00 /          Node20/       0.00 /
         Node21/       1.29 /          Node22/       6.24 /          Node23/       0.02 /
         Node24/       0.02 /          Node25/       0.09 /          Node26/       3.57 /
         Node27/       0.01 /          Node29/       0.01 /          Node30/       0.00 /
```

```
   Node31/       4.02 /          Node33/       0.00 /          Node34/       0.01 /
   Node35/       0.00 /          Node36/       0.00 /          Node37/      13.53 /
   Node38/       0.01 /          Node39/       0.00 /          Node41/       0.02 /
   Node43/       0.00 /          Node44/       0.00 /          Node45/       0.00 /
   Node46/       0.00 /          Node47/       0.03 /          Node48/       0.01 /
   Node63/       0.01 /          Node65/       2.02 /          Node66/       0.00 /
   Node69/       0.00 /          Node70/       0.00 /          Node71/       0.00 /
   Node74/       0.00 /          Node75/       0.01 /          Node80/       0.00 /
   Node81/       0.00 /          Node82/       0.00 /          Node83/       0.01 /
   Node84/       0.00 /          Node86/       0.03 /          Node87/       0.01 /
   Node89/       0.00 /          Node92/       0.00 /          Node94/       0.00 /
   Node99/       0.40 /         Node100/       0.00 /         Node101/       0.00 /
  Node103/       0.00 /         Node108/       0.79 /        Node30.1/       0.88 /
 Node30.2/       0.00 /         Node120/       1.33 /         Node124/       6.62 /
  Node125/       1.52 /         Node130/       0.00 /         Node132/       0.02 /

 Junction/  Freeboard
   Node11/       5.55 /          Node12/       7.76 /          Node20/       2.50 /
   Node21/       5.10 /          Node22/       9.23 /          Node23/       7.03 /
   Node24/       7.29 /          Node25/       7.67 /          Node26/       7.88 /
   Node27/      11.74 /          Node29/       7.42 /          Node30/       9.95 /
   Node31/       7.07 /          Node33/       8.76 /          Node34/      10.24 /
   Node35/      13.25 /          Node36/      26.21 /          Node37/      26.00 /
   Node38/      21.33 /          Node39/       7.20 /          Node41/       3.17 /
   Node43/       2.04 /          Node44/       1.85 /          Node45/       1.96 /
   Node46/      15.26 /          Node47/      38.00 /          Node48/      24.70 /
   Node63/       2.62 /          Node65/       1.98 /          Node66/       2.80 /
   Node69/       2.10 /          Node70/       2.67 /          Node71/       2.70 /
   Node74/       6.05 /          Node75/       8.81 /          Node80/      15.95 /
   Node81/      16.12 /          Node82/      17.00 /          Node83/       3.00 /
   Node84/       8.20 /          Node86/       7.60 /          Node87/      16.49 /
   Node89/       2.00 /          Node92/       3.09 /          Node94/       2.00 /
   Node99/       1.60 /         Node100/       1.86 /         Node101/       2.80 /
  Node103/       3.40 /         Node108/       3.40 /        Node30.1/       9.14 /
 Node30.2/       9.94 /         Node120/       0.27 /         Node124/      12.44 /
  Node125/       4.30 /         Node130/       8.73 /         Node132/       8.72 /

 Junction/ Max Volume
   Node11/      41.96 /          Node12/      30.65 /          Node20/      11.30 /
   Node21/      18.54 /          Node22/      16.23 /          Node23/      18.21 /
   Node24/      27.75 /          Node25/      31.16 /          Node26/      28.68 /
   Node27/      17.49 /          Node29/      11.55 /          Node30/      24.63 /
   Node31/      80.92 /          Node33/      70.46 /          Node34/      77.14 /
   Node35/      72.76 /          Node36/      65.81 /          Node37/      58.10 /
   Node38/      39.18 /          Node39/      16.56 /          Node41/       6.14 /
   Node43/      13.45 /          Node44/      14.62 /          Node45/       9.45 /
   Node46/      12.32 /          Node47/      14.22 /          Node48/      14.23 /
   Node63/      31.88 /          Node65/   53878.86 /          Node66/       9.68 /
   Node69/       6.41 /          Node70/       8.20 /          Node71/      14.21 /
   Node74/      19.77 /          Node75/      12.64 /          Node80/      20.30 /
   Node81/      14.07 /          Node82/      19.17 /          Node83/       3.44 /
   Node84/      11.11 /          Node86/      24.49 /          Node87/      12.35 /
   Node89/      19.68 /          Node92/      14.33 /          Node94/      12.43 /
   Node99/   65157.15 /         Node100/      18.31 /         Node101/      21.07 /
  Node103/      26.38 /         Node108/      37.14 /        Node30.1/      44.50 /
 Node30.2/      31.36 /         Node120/   59372.95 /         Node124/     108.26 /
  Node125/      60.16 /         Node130/  156637.55 /         Node132/       9.15 /

 Junction/Total Fldng
   Node11/       0.00 /          Node12/       0.00 /          Node20/       0.00 /
   Node21/       0.00 /          Node22/       0.00 /          Node23/       0.00 /
   Node24/       0.00 /          Node25/       0.00 /          Node26/       0.00 /
   Node27/       0.00 /          Node29/       0.00 /          Node30/       0.00 /
   Node31/       0.00 /          Node33/       0.00 /          Node34/       0.00 /
   Node35/       0.00 /          Node36/       0.00 /          Node37/       0.00 /
   Node38/       0.00 /          Node39/       0.00 /          Node41/       0.00 /
   Node43/       0.00 /          Node44/       0.00 /          Node45/       0.00 /
   Node46/       0.00 /          Node47/       0.00 /          Node48/       0.00 /
   Node63/       0.00 /          Node65/       0.00 /          Node66/       0.00 /
   Node69/       0.00 /          Node70/       0.00 /          Node71/       0.00 /
   Node74/       0.00 /          Node75/       0.00 /          Node80/       0.00 /
   Node81/       0.00 /          Node82/       0.00 /          Node83/       0.00 /
   Node84/       0.00 /          Node86/       0.00 /          Node87/       0.00 /
   Node89/       0.00 /          Node92/       0.00 /          Node94/       0.00 /
   Node99/       0.00 /         Node100/       0.00 /         Node101/       0.00 /
  Node103/       0.00 /         Node108/       0.00 /        Node30.1/       0.00 /
 Node30.2/       0.00 /         Node120/       0.00 /         Node124/       0.00 /
  Node125/       0.00 /         Node130/       0.00 /         Node132/       0.00 /

  Conduit/ Cross Sectional Area
   Link12/       0.00 /          Link13/       0.00 /          Link14/       0.01 /
   Link15/       0.01 /          Link16/       0.02 /          Link17/       0.06 /
   Link18/       0.01 /          Link22/       3.16 /          Link23/       0.00 /
   Link24/       0.00 /          Link25/       0.00 /          Link26/       0.00 /
   Link27/       0.00 /          Link28/       0.00 /          Link31/       0.00 /
   Link32/       0.00 /          Link33/       0.00 /          Link47/       0.00 /
   Link53/       0.00 /          Link54/       0.00 /          Link55/       0.00 /
   Link56/       0.00 /          Link68/       0.00 /          Link69/       0.10 /
   Link70/       0.00 /          Link72/       0.00 /          Link73/       0.01 /
   Link74/       0.01 /          Link75/       0.02 /          Link76/       0.01 /
   Link77/       0.01 /          Link78/       0.07 /          Link82/       0.01 /
   Link83/       0.01 /          Link84/       0.03 /          Link85/       0.03 /
   Link90/       0.00 /          Link93/       0.00 /          Link98/       0.00 /
  Link104/       0.00 /         Link105/       0.00 /         Link106/       0.31 /
 Link21.1/       1.51 /        Link21.2/       0.13 /         Link118/       0.00 /
  Link126/       0.00 /         Link127/       0.00 /           214.1/       0.00 /
    272.1/       0.00 /           283.1/       0.00 /           336.1/       0.00 /
Restrict1/       0.01 /       Restrict2/       0.01 /      Restrict10/       0.00 /

  Conduit/  Final Volume
   Link12/       0.02 /          Link13/       0.01 /          Link14/       3.82 /
   Link15/       4.07 /          Link16/      11.48 /          Link17/       3.21 /
   Link18/       5.19 /          Link22/    1075.88 /          Link23/       0.43 /
   Link24/       0.31 /          Link25/       0.46 /          Link26/       0.54 /
   Link27/       1.05 /          Link28/       1.09 /          Link31/       0.00 /
   Link32/       1.44 /          Link33/       1.16 /          Link47/       0.00 /
```

```
         Link53/       0.00 /          Link54/       0.00 /          Link55/       0.08 /
         Link56/       0.01 /          Link68/       0.00 /          Link69/      24.93 /
         Link70/       0.30 /          Link72/       0.05 /          Link73/       0.44 /
         Link74/       0.77 /          Link75/       0.97 /          Link76/       0.25 /
         Link77/       0.58 /          Link78/      23.92 /          Link82/       2.81 /
         Link83/       1.38 /          Link84/       7.81 /          Link85/      14.36 /
         Link90/       0.00 /          Link93/       0.00 /          Link98/       0.00 /
        Link104/       0.00 /         Link105/       0.00 /         Link106/      64.80 /
       Link21.1/     271.35 /        Link21.2/      11.91 /         Link118/       0.00 /
        Link126/       0.00 /         Link127/       1.28 /           214.1/       0.00 /
          272.1/       0.00 /           283.1/       0.00 /           336.1/       0.00 /
      Restrict1/      29.28 /       Restrict2/      29.11 /      Restrict10/      29.70 /

        Conduit/ Hydraulic Radius
         Link12/       0.00 /          Link13/       0.00 /          Link14/       0.02 /
         Link15/       0.02 /          Link16/       0.02 /          Link17/       0.05 /
         Link18/       0.02 /          Link22/       0.50 /          Link23/       0.01 /
         Link24/       0.01 /          Link25/       0.01 /          Link26/       0.01 /
         Link27/       0.01 /          Link28/       0.01 /          Link31/       0.00 /
         Link32/       0.00 /          Link33/       0.01 /          Link47/       0.00 /
         Link53/       0.00 /          Link54/       0.00 /          Link55/       0.00 /
         Link56/       0.00 /          Link68/       0.00 /          Link69/       0.02 /
         Link70/       0.00 /          Link72/       0.01 /          Link73/       0.00 /
         Link74/       0.00 /          Link75/       0.00 /          Link76/       0.00 /
         Link77/       0.02 /          Link78/       0.00 /          Link82/       0.01 /
         Link83/       0.02 /          Link84/       0.00 /          Link85/       0.00 /
         Link90/       0.00 /          Link93/       0.00 /          Link98/       0.00 /
        Link104/       0.01 /         Link105/       0.01 /         Link106/       0.08 /
       Link21.1/       0.46 /        Link21.2/       0.05 /         Link118/       0.00 /
        Link126/       0.00 /         Link127/       0.00 /           214.1/       0.01 /
          272.1/       0.00 /           283.1/       0.00 /           336.1/       0.00 /
      Restrict1/       0.01 /       Restrict2/       0.01 /      Restrict10/       0.01 /

        Conduit/ Upstream/ Downstream Elevation
         Link12/   634.80/   634.45          Link13/   633.16/   631.54          Link14/   630.12/   628.88/
         Link15/   628.88/   628.05          Link16/   628.05/   626.44          Link17/   626.44/   626.44/
         Link18/   626.44/   623.70          Link22/   620.02/   620.02          Link23/   610.56/   608.44/
         Link24/   608.44/   608.40          Link25/   608.40/   607.40          Link26/   607.40/   606.46/
         Link27/   606.46/   605.45          Link28/   605.45/   604.44          Link31/   636.14/   636.04/
         Link32/   592.74/   572.00          Link33/   593.30/   572.00          Link47/   628.05/   628.05/
         Link53/   636.04/   636.00          Link54/   633.43/   633.43          Link55/   633.43/   631.01/
         Link56/   630.20/   622.00          Link68/   622.00/   618.98          Link69/   618.98/   617.70/
         Link70/   617.21/   615.61          Link72/   604.44/   602.92          Link73/   602.92/   597.89/
         Link74/   597.89/   595.18          Link75/   595.18/   594.67          Link76/   594.67/   592.74/
         Link77/   640.02/   639.60          Link78/   639.60/   636.35          Link82/   623.70/   613.50/
         Link83/   613.50/   612.79          Link84/   612.79/   606.01          Link85/   606.01/   593.30/
         Link90/   630.50/   630.50          Link93/   633.21/   632.33          Link98/   632.00/   632.00/
        Link104/   632.00/   631.44         Link105/   631.44/   631.29         Link106/   630.50/   630.02/
       Link21.1/   620.02/   620.02        Link21.2/   620.31/   620.02         Link118/   637.10/   636.46/
        Link126/   620.31/   620.31         Link127/   615.62/   610.56           214.1/   617.70/   617.21/
          272.1/   636.46/   636.14           283.1/   631.01/   630.22           336.1/   631.54/   630.51/
      Restrict1/   620.02/   619.99       Restrict2/   630.02/   629.99      Restrict10/   615.61/   615.62/


*=========================================================*
|         Table E7 -  Iteration Summary                   |
*=========================================================*

Total number of time steps simulated...........        576
Total number of passes in the simulation........      41737
Total number of time steps during simulation....      27714
Ratio of actual # of time steps / NTCYC.........     48.115
Average number of iterations per time step......      1.506
Average  time step size(seconds)................      6.235
Smallest time step size(seconds)................      1.538
Largest  time step size(seconds)................    300.000
Average minimum Conduit Courant time step (sec).     10.848
Average minimum implicit time step (sec)........      6.280
Average minimum junction time step (sec)........      6.280
Average Courant Factor Tf.......................      6.280
Number of times omega reduced...................       3786


*=========================================================*
|     Table E8 - Junction Time Step Limitation Summary    |
*=========================================================*
|   Not Convr = Number of times this junction did not     |
|               converge during the simulation.           |
|   Avg Convr = Average junction iterations.              |
|   Conv err  = Mean convergence error.                   |
|   Omega Cng = Change of omega during iterations         |
|   Max Itern = Maximum number of iterations              |
*=========================================================*
```

Junction	Not Convr	Avg Convr	Total Itt	Omega Cng	Max Itern	Ittrn >10	Ittrn >25	Ittrn >40
Node11	0	1.75	48590	15	144	26	7	6
Node12	0	1.76	48697	4	11	2	0	0
Node20	0	1.76	48648	0	4	0	0	0
Node21	0	1.95	53966	0	5	0	0	0
Node22	11	7.06	195668	583	501	589	573	556
Node23	0	2.26	62645	52	416	54	51	48
Node24	0	1.82	50422	22	371	22	16	11
Node25	0	1.61	44688	15	8	0	0	0
Node26	0	1.79	49656	12	13	1	0	0
Node27	0	1.70	47192	15	8	0	0	0
Node29	0	1.69	46745	11	19	2	0	0
Node30	0	1.39	38626	17	304	16	14	14
Node31	153	5.62	155634	436	501	1182	277	203
Node33	0	1.61	44544	7	129	1	1	1
Node34	0	1.67	46322	7	127	3	3	2
Node35	0	1.86	51563	2	461	2	2	2
Node36	0	1.65	45763	0	6	0	0	0
Node37	0	1.80	49945	0	6	0	0	0
Node38	0	1.48	40885	0	6	0	0	0
Node39	2	9.57	265247	621	501	619	615	607
Node41	7	3.76	104122	166	501	175	174	172

Node43	0	1.26	34984	1	21	1	0	0
Node44	0	1.32	36444	1	30	2	1	0
Node45	0	1.41	38968	1	13	1	0	0
Node46	0	1.49	41266	0	19	1	0	0
Node47	1	2.61	72273	110	501	111	109	107
Node48	0	1.72	47593	8	295	8	7	6
Node63	21	3.12	86595	125	501	151	141	140
Node65	0	1.33	36987	0	4	0	0	0
Node66	0	1.18	32614	86	25	5	1	0
Node69	0	1.44	39817	0	6	0	0	0
Node70	0	1.38	38248	0	6	0	0	0
Node71	0	1.31	36299	0	10	1	0	0
Node74	0	1.45	40251	3	33	16	5	0
Node75	1	6.36	176299	386	501	373	371	368
Node80	0	1.45	40234	0	6	0	0	0
Node81	1	1.68	46519	0	501	1	1	1
Node82	0	1.66	46109	1	8	0	0	0
Node83	0	1.47	40757	0	5	0	0	0
Node84	8	7.85	217422	753	501	739	700	681
Node86	0	1.80	49805	11	9	0	0	0
Node87	0	1.67	46211	6	22	2	0	0
Node89	0	1.22	33870	1	7	0	0	0
Node92	0	1.22	33942	0	10	1	0	0
Node94	0	1.36	37690	15	259	15	14	14
Node99	0	1.00	27714	0	1	0	0	0
Node100	5	1.86	51501	60	501	63	63	60
Node101	5	1.87	51902	56	501	59	56	56
Node103	0	1.45	40323	0	7	0	0	0
Node108	0	2.14	59294	92	498	92	89	85
Node30.1	0	2.39	66231	35	313	176	33	6
Node30.2	0	1.90	52572	47	328	122	39	28
Node120	0	1.00	27721	0	8	0	0	0
Node124	0	1.89	52481	3	45	44	1	1
Node125	0	1.51	41714	0	8	0	0	0
Node130	0	1.79	49713	0	5	0	0	0
Node132	0	1.88	52113	0	6	0	0	0

Total number of iterations for all junctions.. 3464044

Minimum number of possible iterations..... 1579698

Efficiency of the simulation..... 2.19

Excellent Efficiency

```
*=========================================================*
| Extran Efficiency is an indicator of the efficiency of  |
| the simulation.  Ideal efficiency is one iteration per  |
| time step.  Altering the underrelaxation parameter,     |
| lowering the time step, increasing the flow and head    |
| tolerance are good ways of improving the efficiency,    |
| another is lowering the internal time step. The lower the|
| efficiency generally the faster your model will run.    |
| If your efficiency is less than 1.5 then you may try    |
| increasing your time step so that your overall simulation|
| is faster.  Ideal efficiency would be around 2.0        |
|                                                         |
| Good Efficiency      < 1.5           mean iterations    |
| Excellent Efficiency < 2.5 and > 1.5 mean iterations    |
| Good      Efficiency < 4.0 and > 2.5 mean iterations    |
| Fair      Efficiency < 7.5 and > 4.0 mean iterations    |
| Poor Efficiency      > 7.5           mean iterations    |
*=========================================================*
```

```
*=====================================================*
|        Table E9 - JUNCTION SUMMARY STATISTICS       |
| The Maximum area is only the area of the node, it   |
| does not include the area of the surrounding conduits|
*=====================================================*
```

Junction Name	Ground Elevation feet	Uppermost PipeCrown Elevation feet	Maximum Junction Elevation feet	Time of Occurence Hr.	Min.	Feet of Surcharge at Max Elevation	Freeboard of node feet	Maximum Junction Area ft^2	Maximum Gutter Depth feet	Maximum Gutter Width feet	Maximum Gutter Velocity ft/s
Node11	623.2500	620.4300	620.5391	1	6	0.1091	2.7109	12.5660	0.0000	0.0000	0.0000
Node12	624.9700	620.4100	619.6491	2	18	0.0000	5.3209	12.5660	0.0000	0.0000	0.0000
Node20	637.3000	636.5500	635.6989	3	55	0.0000	1.6011	12.5660	0.0000	0.0000	0.0000
Node21	638.2600	636.2000	634.6356	3	10	0.0000	3.6244	12.5660	0.0000	0.0000	0.0000
Node22	639.3500	639.3500	631.4019	2	49	0.0000	7.9481	12.5660	0.0000	0.0000	0.0000
Node23	635.9100	631.8600	630.3090	2	41	0.0000	5.6010	12.5660	0.0000	0.0000	0.0000
Node24	635.3400	631.0300	630.2381	1	8	0.0000	5.1019	12.5660	0.0000	0.0000	0.0000
Node25	634.1030	629.3500	628.8295	1	9	0.0000	5.2735	12.5660	0.0000	0.0000	0.0000
Node26	634.3200	629.4200	628.7022	1	9	0.0000	5.6178	12.5660	0.0000	0.0000	0.0000
Node27	635.4400	626.6900	625.0818	1	9	0.0000	10.3582	12.5660	0.0000	0.0000	0.0000
Node29	620.2110	620.2110	613.6990	1	10	0.0000	6.5120	12.5660	0.0000	0.0000	0.0000
Node30	631.4300	622.9800	623.4402	1	10	0.4602	7.9898	12.5660	0.0000	0.0000	0.0000
Node31	627.0900	618.0000	622.4399	1	15	4.4399	4.6501	12.5660	0.0000	0.0000	0.0000
Node33	619.3200	613.5630	616.1675	2	45	2.6045	3.1525	12.5660	0.0000	0.0000	0.0000
Node34	618.6800	611.4300	614.5690	2	42	3.1390	4.1110	12.5660	0.0000	0.0000	0.0000
Node35	621.6500	611.4000	614.1906	2	41	2.7906	7.4594	12.5660	0.0000	0.0000	0.0000
Node36	633.6100	610.4000	612.6375	2	36	2.2375	20.9725	12.5660	0.0000	0.0000	0.0000
Node37	632.4600	609.4600	611.0833	2	29	1.6233	21.3767	12.5660	0.0000	0.0000	0.0000
Node38	626.7800	608.4500	608.5681	2	29	0.1181	18.2119	12.5660	0.0000	0.0000	0.0000
Node39	611.6440	607.4400	605.7580	2	30	0.0000	5.8860	12.5660	0.0000	0.0000	0.0000
Node41	633.3700	631.2200	630.6889	0	52	0.0000	2.6811	12.5660	0.0000	0.0000	0.0000
Node43	638.5000	637.9600	637.5303	0	50	0.0000	0.9697	12.5660	0.0000	0.0000	0.0000

Node44	637.9900	637.6400	637.3031	0	50	0.0000	0.6869	12.5660	0.0000	0.0000	0.0000
Node45	638.0000	637.5400	636.7923	0	50	0.0000	1.2077	12.5660	0.0000	0.0000	0.0000
Node46	608.0000	610.3500	593.7203	1	20	0.0000	14.2797	12.5660	0.0000	0.0000	0.0000
Node47	610.0000	576.0000	573.1313	1	10	0.0000	36.8687	12.5660	0.0000	0.0000	0.0000
Node48	618.0000	609.8000	594.4321	1	10	0.0000	23.5679	12.5660	0.0000	0.0000	0.0000
Node63	633.6300	633.6300	633.5369	0	51	0.0000	0.0931	12.5660	0.0000	0.0000	0.0000
Node65	642.0000	642.0000	640.8045	2	4	0.0000	1.1955	46233.630	0.0000	0.0000	0.0000
Node66	634.7700	633.4700	632.7404	0	40	0.0000	2.0296	12.5660	0.0000	0.0000	0.0000
Node69	638.1000	636.5000	636.5103	0	51	0.0103	1.5897	12.5660	0.0000	0.0000	0.0000
Node70	636.1000	636.0600	634.0827	0	51	0.0000	2.0173	12.5660	0.0000	0.0000	0.0000
Node71	624.7000	624.2400	623.1310	0	52	0.0000	1.5690	12.5660	0.0000	0.0000	0.0000
Node74	625.0300	622.2100	620.5534	1	4	0.0000	4.4766	12.5660	0.0000	0.0000	0.0000
Node75	611.7300	611.7200	603.9262	2	30	0.0000	7.8038	12.5660	0.0000	0.0000	0.0000
Node80	613.8400	613.8400	599.5051	2	30	0.0000	14.3349	12.5660	0.0000	0.0000	0.0000
Node81	611.3000	611.2900	596.2995	2	34	0.0000	15.0005	12.5660	0.0000	0.0000	0.0000
Node82	611.6700	611.6600	596.1955	2	36	0.0000	15.4745	12.5660	0.0000	0.0000	0.0000
Node83	642.6000	642.6000	639.8738	2	7	0.0000	2.7262	12.5660	0.0000	0.0000	0.0000
Node84	639.7400	633.2900	632.4243	3	10	0.0000	7.3157	12.5660	0.0000	0.0000	0.0000
Node86	621.1000	616.4900	615.4390	1	9	0.0000	5.6610	12.5660	0.0000	0.0000	0.0000
Node87	622.5000	622.5000	606.9825	1	10	0.0000	15.5175	12.5660	0.0000	0.0000	0.0000
Node89	639.1000	638.6000	638.6657	0	50	0.0657	0.4343	12.5660	0.0000	0.0000	0.0000
Node92	636.3000	634.7100	634.3506	1	4	0.0000	1.9494	12.5660	0.0000	0.0000	0.0000
Node94	635.3000	634.8000	634.2890	1	3	0.0000	1.0110	12.5660	0.0000	0.0000	0.0000
Node99	639.7000	637.7000	640.2006	3	11	2.5006	0.0000	43560.000	0.0000	0.0000	0.0000
Node100	634.1900	633.8300	633.7869	1	4	0.0000	0.4031	12.5660	0.0000	0.0000	0.0000
Node101	634.8000	634.0000	633.6767	1	4	0.0000	1.1233	12.5660	0.0000	0.0000	0.0000
Node103	634.8400	633.4400	633.5390	1	4	0.0990	1.3010	12.5660	0.0000	0.0000	0.0000
Node108	633.9000	633.2900	633.4558	1	3	0.1658	0.4442	12.5660	0.0000	0.0000	0.0000
Node30.1	629.1600	621.1400	622.6814	1	15	1.5414	6.4786	12.5660	0.0000	0.0000	0.0000
Node30.2	630.2500	622.3100	622.8056	1	14	0.4956	7.4444	12.5660	0.0000	0.0000	0.0000
Node120	639.6000	638.0000	640.9680	2	54	2.9680	0.0000	65340.000	0.0000	0.0000	0.0000
Node124	632.4600	615.4000	622.0156	1	17	6.6156	10.4444	12.5660	0.0000	0.0000	0.0000
Node125	634.3200	631.0000	633.2872	1	3	2.2872	1.0328	12.5660	0.0000	0.0000	0.0000
Node130	624.3400	618.8100	619.6402	2	19	0.8302	4.6998	43560.000	0.0000	0.0000	0.0000
Node132	624.3400	616.6100	616.3281	2	24	0.0000	8.0119	12.5660	0.0000	0.0000	0.0000

```
*====================================================*
|        Table E10 - CONDUIT SUMMARY STATISTICS      |
| Note: The peak flow may be less than the design flow |
| and the conduit may still surcharge because of the |
| downstream boundary conditions.                    |
|                                                    |
| * denotes an open conduit that has been overtopped |
|   this is a potential source of severe errors      |
*====================================================*
```

Conduit Name	Design Flow (cfs)	Conduit Design Velocity (ft/s)	Maximum Vertical Depth (in)	Maximum Computed Flow (cfs)	Time of Occurence Hr.	Time of Occurence Min.	Maximum Computed Velocity (ft/s)	Time of Occurence Hr.	Time of Occurence Min.	Ratio of Max. to Design Flow	Maximum Water Elev at Upstream (ft)	Pipe Ends Dwnstrm (ft)	Ratio d/D US	Ratio d/D DS	
Link12	5.7493	2.3903	21.0000	3.1824	3	56	2.6499	3	56	0.5535	635.6989	635.0973	0.514	0.370	
Link13	12.3889	5.1507	21.0000	12.2871	3	10	5.9387	3	11	0.9918	634.6356	632.4243	0.843	0.505	
Link14	43.7477	6.1890	36.0000	16.5159	2	50	5.5906	2	52	0.3775	631.4019	630.3090	0.431	0.483	
Link15	36.6850	5.1899	36.0000	16.5503	2	50	4.9583	3	6	0.4511	630.3090	630.2381	0.483	0.736	
Link16	37.2836	5.2745	36.0000	31.5400	1	9	5.6393	1	57	0.8459	630.2381	628.8295	0.736	0.826	
Link17	26.7696	3.7871	36.0000	-35.4422	1	10	-5.7817	1	33	-1.3240	628.8295	628.7022	0.803	0.784	
Link18	55.5441	7.8579	36.0000	48.5399	1	9	8.8086	1	10	0.8739	628.7022	625.0818	0.761	0.464	
Link22	21.4313	6.8218	24.0000	10.3235	1	1	3.2431	1	1	0.4817	622.4399	622.0156	3.220	4.308	
Link23	59.7442	8.4521	36.0000	52.6887	3	32	7.7833	1	10	0.8819	616.1675	614.5690	1.868	2.046	
Link24	14.5486	2.0582	36.0000	52.6931	3	32	7.4123	3	32	3.6219	614.5690	614.1906	2.046	1.930	
Link25	41.3740	5.8532	36.0000	52.6958	3	32	7.4188	3	32	1.2736	614.1906	612.6375	1.930	1.746	
Link26	39.9177	5.6472	36.0000	52.6991	3	32	7.4290	3	32	1.3202	612.6375	611.0833	1.746	1.541	
Link27	34.5795	4.8920	36.0000	54.8117	2	29	7.7156	2	29	1.5851	611.0833	608.5681	1.541	1.039	
Link28	40.1573	5.6811	36.0000	54.8118	2	30	8.2776	3	30	1.3649	608.5681	605.7580	1.039	0.439	
Link31	4.6303	2.6202	18.0000	8.3055	0	50	5.8864	0	50	1.7937	637.3031	636.7923	0.775	0.502	
Link32	451.1614	28.1976	48.0000	83.6308	1	20	21.1226	1	21	0.1854	593.7203	573.1313	0.245	0.283	
Link33	381.7717	30.3804	48.0000	66.7261	1	10	22.8196	1	10	0.1748	594.4321	573.1313	0.283	0.283	
Link47	29.5450	16.7191	18.0000	15.4464	0	40	16.0029	0	30	0.5228	632.7404	630.2381	0.514	1.272	
Link53	1.7213	0.9287	6.0008	8.3052	0	50	2.5698	0	50	4.8251	636.7923	636.5103	1.504	1.021	*
Link54	1.9517	1.2011	7.8319	8.2866	0	51	1.7022	0	51	4.2458	636.5103	634.0827	0.782	1.000	*
Link55	328.6757	8.6186	31.5600	8.2764	0	51	1.6308	0	30	0.0252	634.0827	633.5369	0.248	0.965	
Link56	78.4186	4.1273	13.5710	15.0038	0	52	2.0402	1	56	0.1913	630.6889	623.1310	0.432	1.000	*
Link68	93.5685	3.8759	26.8800	15.4185	1	55	3.2956	1	55	0.1648	623.1310	620.5534	0.505	0.702	
Link69	1818.651	5.8352	38.7603	-69.5454	1	58	1.4552	0	35	-0.0382	620.5534	620.5391	0.487	1.034	*
Link70	872.4818	4.5482	38.4069	122.2831	1	8	2.5391	1	5	0.1402	619.6491	619.6402	0.762	1.259	*
Link72	137.3690	19.4337	36.0000	54.8119	2	30	18.3375	2	30	0.3990	605.7580	604.2399	0.439	0.439	
Link73	56825.79	51.6051	143.0400	54.8119	2	30	7.6208	4	32	0.0010	603.9262	599.5051	0.084	0.135	
Link74	37318.09	37.1859	191.4000	54.8121	2	30	7.2839	2	31	0.0015	599.5051	596.2995	0.101	0.070	
Link75	29495.40	24.1735	209.5200	54.8103	2	30	3.0890	2	24	0.0019	596.2995	596.1955	0.064	0.087	
Link76	40618.15	48.9919	211.3200	54.8074	2	30	9.3848	2	29	0.0013	596.1955	593.7203	0.087	0.056	
Link77	20.0104	6.3695	24.0000	7.2799	2	4	6.6766	2	4	0.3638	640.8045	639.8738	0.402	0.137	
Link78	1059.813	5.4349	36.0000	7.2623	2	7	1.1583	2	7	0.0069	639.8738	636.4986	0.091	0.050	
Link82	110.5183	15.6351	36.0000	48.5335	1	9	14.3818	1	9	0.4391	625.0818	615.4390	0.464	0.650	
Link83	54.8977	7.7664	36.0000	48.5361	1	9	10.6511	1	10	0.8841	615.4390	613.6990	0.650	0.306	
Link84	4900.754	21.9785	89.1720	48.5306	1	10	6.3594	1	10	0.0099	613.6990	606.9825	0.124	0.132	
Link85	34130.32	31.7780	198.0000	48.5116	1	10	6.3578	1	10	0.0014	606.9825	594.4321	0.060	0.069	
Link90	12.0431	6.8150	18.0000	6.5121	0	54	6.5296	0	50	0.5407	634.2890	633.4558	0.659	1.971	
Link93	8.0696	4.5665	18.0000	7.1900	1	55	5.2141	1	55	0.8910	634.3506	633.7869	0.760	0.971	
Link98	10.0638	5.6949	18.0000	7.1884	1	55	5.5591	1	55	0.7143	633.7869	633.6767	0.971	1.118	
Link104	12.3507	3.9313	24.0000	7.1873	1	55	3.9703	1	55	0.5819	633.6767	633.5390	0.838	1.050	
Link105	8.6239	2.7451	24.0000	7.2635	1	7	3.8530	1	56	0.8423	633.5390	633.4558	1.050	1.083	
Link106	43.5723	8.8765	30.0000	13.4517	0	51	5.4053	0	46	0.3087	633.4558	633.2872	1.182	1.915	
Link21.1	32.3690	10.3034	24.0000	10.3350	1	1	5.5589	0	34	0.3193	622.6815	622.4399	1.771	3.220	
Link21.2	27.9430	8.8945	24.0000	10.3466	1	1	6.0531	0	37	0.3703	622.8056	622.6814	1.248	1.771	
Link118	6.4373	3.6428	18.0000	8.3064	0	50	4.7235	0	50	1.2903	638.6657	637.5303	1.044	0.714	
Link126	12.9749	7.3423	18.0000	10.3702	1	0	7.5692	0	49	0.7993	623.4402	622.8056	1.307	1.664	
Link127	214.6192	3.6031	12.0031	48.1960	2	24	1.9312	6	21	0.2246	616.3281	616.1675	0.718	5.606	*
214.1	15.9283	5.0701	24.0000	29.4464	1	58	9.5133	1	58	1.8487	620.5391	619.6491	1.420	1.220	
272.1	11.3797	6.4396	18.0000	8.3049	0	50	6.1037	0	50	0.7298	637.5303	637.3031	0.714	0.775	
283.1	2.7121	3.4532	12.0000	4.8165	0	50	6.1090	0	51	1.7759	633.5369	631.1249	2.527	0.905	
336.1	24.1586	10.0440	21.0000	12.2872	3	10	10.0807	3	11	0.5086	632.4243	631.4019	0.505	0.510	
Restrict1	13.5485	0.4815	19.9924	9.1433	1	23	4.1342	1	22	0.6749	622.0156	621.1301	1.210	0.684	
Restrict2	13.5485	0.4815	19.9924	13.3084	1	7	6.1531	1	7	0.9823	633.2872	631.3566	1.973	0.820	
Restrict10	66.7783	0.4815	37.8409	48.2003	2	22	6.7150	2	22	0.7218	619.6402	616.3281	1.278	0.231	
Link 5	Undefnd	Undefnd	Undefn	68.2009	1	6									

WEIR30	Undefnd	Undefnd	Undefn	0.0000	0	0
WEIR46	Undefnd	Undefnd	Undefn	10.2298	0	51
Link97.1	Undefnd	Undefnd	Undefn	9.1705	3	11
WEIR119	Undefnd	Undefnd	Undefn	3.1837	2	54
FREE # 1	Undefnd	Undefnd	Undefn	145.6242	1	12

==========
| Table E11. Area assumptions used in the analysis|
| Subcritical and Critical flow assumptions from |
| Subroutine Head. See Figure 17-1 in the |
| manual for further information. |
==========

Conduit Name	Duration of Dry Flow(min)	Duration of Sub-Critical Flow(min)	Durat. of Upstream Critical Flow(min)	Durat. of Downstream Critical Flow(min)	Maximum Hydraulic Radius-m	Maximum X-Sect Area(ft^2)	Maximum Vel*D (ft^2/s)
Link12	69.1192	0.0000	0.0000	2810.8808	0.4354	1.0191	2.0482
Link13	70.3109	2809.6891	0.0000	0.0000	0.5224	1.6688	7.0067
Link14	60.6154	2819.3846	0.0000	0.0000	0.6829	3.1389	7.6329
Link15	24.0244	2855.9756	0.0000	0.0000	0.8808	4.3155	7.3254
Link16	15.0000	2865.0000	0.0000	0.0000	0.9015	5.9067	13.0928
Link17	20.6098	2859.3902	0.0000	0.0000	0.9115	6.0056	13.6114
Link18	20.7317	2859.2683	0.0000	0.0000	0.8882	4.4269	16.1686
Link22	20.2439	2859.7561	0.0000	0.0000	0.5944	3.2330	23.0550
Link23	20.2439	2859.7561	0.0000	0.0000	0.8965	7.2496	43.0436
Link24	20.2439	2859.7561	0.0000	0.0000	0.9116	7.3860	43.6334
Link25	20.4878	2859.5122	0.0000	0.0000	0.9121	7.4055	40.2905
Link26	20.9756	2859.0244	0.0000	0.0000	0.9122	7.4092	35.9061
Link27	21.7073	2858.2927	0.0000	0.0000	0.9104	7.1484	29.8645
Link28	24.3902	2855.6098	0.0000	0.0000	0.8853	4.9445	17.9248
Link31	2599.7734	280.2266	0.0000	0.0000	0.4468	1.1661	5.6291
Link32	20.0000	2860.0000	0.0000	0.0000	0.6622	4.1407	21.7548
Link33	15.0000	2865.0000	0.0000	0.0000	0.6512	2.9232	25.8214
Link47	2725.9270	144.6828	0.0000	9.3902	0.3884	1.2732	16.2799
Link53	20.4878	2859.5122	0.0000	0.0000	0.4868	2.6123	1.6200
Link54	525.8582	2354.1418	0.0000	0.0000	0.3334	5.7214	0.9878
Link55	401.5989	2478.4011	0.0000	0.0000	0.4061	15.4622	2.3733
Link56	188.5185	2691.4815	0.0000	0.0000	0.3291	13.5712	1.6432
Link68	20.0000	2860.0000	0.0000	0.0000	0.5223	6.6746	3.8896
Link69	20.1220	2859.8780	0.0000	0.0000	1.2246	140.7091	1.4405
Link70	23.1707	2856.8293	0.0000	0.0000	1.1255	194.8397	4.7930
Link72	26.6055	2021.5520	0.0000	831.8425	0.6874	2.9890	24.1683
Link73	28.8073	2851.1927	0.0000	0.0000	0.4831	12.1269	9.9727
Link74	30.4041	2849.5959	0.0000	0.0000	0.7396	5.7894	9.9580
Link75	31.4050	2848.5950	0.0000	0.0000	0.7604	21.3264	4.0819
Link76	31.7769	2848.2231	0.0000	0.0000	0.6669	4.1849	11.3676
Link77	60.6667	2819.3333	0.0000	0.0000	0.4041	0.6658	3.5986
Link78	60.6923	0.0000	0.0000	2819.3077	0.2239	4.8577	0.2444
Link82	20.7317	2859.2683	0.0000	0.0000	0.7283	4.0062	24.0198
Link83	21.0976	2858.9024	0.0000	0.0000	0.8292	3.2283	15.2724
Link84	21.9512	2858.0488	0.0000	0.0000	0.5842	7.9597	6.0456
Link85	22.5610	2857.4390	0.0000	0.0000	0.5533	8.3572	6.7189
Link90	2613.7847	266.2153	0.0000	0.0000	0.4285	1.4986	9.0325
Link93	20.0000	2860.0000	0.0000	0.0000	0.4504	1.5934	5.6899
Link98	2607.7907	272.2093	0.0000	0.0000	0.4533	1.7990	5.9317
Link104	2568.2653	311.7347	0.0000	0.0000	0.6016	3.0118	4.5296
Link105	20.0000	23.0100	0.0000	2836.9900	0.6084	3.2366	4.4586
Link106	2464.3131	415.6869	0.0000	0.0000	0.7470	5.0408	10.7471
Link21.1	20.1220	2859.8780	0.0000	0.0000	0.5976	3.2342	15.4099
Link21.2	2615.2469	264.7531	0.0000	0.0000	0.5976	3.2241	9.1656
Link118	15.0000	2865.0000	0.0000	0.0000	0.4530	1.5710	6.2210
Link126	2636.5698	243.4302	0.0000	0.0000	0.4482	1.8131	12.2716
Link127	37.3361	2842.6639	0.0000	0.0000	0.6391	308.3028	1.5742
214.1	1310.9724	1569.0276	0.0000	0.0000	0.6046	3.2926	20.9380
272.1	20.0000	2860.0000	0.0000	0.0000	0.4474	1.4088	6.8094
283.1	15.0000	0.0000	0.0000	2865.0000	0.3034	0.7699	10.4799
336.1	71.9948	101.9055	0.0000	2706.0997	0.4399	1.2186	8.9118
Restrict1	37.8689	0.0000	0.0000	2842.1311	0.5006	1.9264	6.4271
Restrict2	28.7615	0.0000	0.0000	2851.2385	0.5004	2.0502	13.6263
Restrict10	23.1707	2856.8293	0.0000	0.0000	0.9051	4.2964	15.9726

==========
| Table E12. Mean Conduit Flow Information |
==========

Conduit Name	Mean Flow (cfs)	Total Flow (ft^3)	Mean Percent Change	Low Flow Weightng	Mean Froude Number	Mean Hydraulic Radius	Mean Cross Area	Mean Conduit Roughness
Link12	0.4103	70905.004	0.0000	0.9501	0.6043	0.2020	0.4317	0.0120
Link13	1.0452	180617.45	0.0000	0.9476	1.1365	0.2149	0.5677	0.0120
Link14	1.3868	239636.26	0.0000	0.9624	0.7276	0.2684	0.8852	0.0120
Link15	1.3859	239491.40	0.0000	0.9985	0.5962	0.3350	1.2748	0.0120
Link16	2.3350	403488.73	0.0000	0.9997	0.6286	0.3598	1.5052	0.0120
Link17	-2.4406	-421732.5	0.0000	0.9995	0.5049	0.3934	1.6646	0.0120
Link18	2.7534	475789.80	0.0000	0.9995	1.1218	0.3264	1.3056	0.0120
Link22	0.2529	43708.412	0.0000	0.9997	0.0321	0.4965	3.1445	0.0120
Link23	4.2492	734257.72	0.0000	0.9997	0.8970	0.3081	2.1870	0.0120
Link24	4.2492	734266.37	0.0000	0.9996	0.4766	0.3368	2.3795	0.0120
Link25	4.2493	734277.08	0.0000	0.9996	0.7330	0.3170	2.2878	0.0120
Link26	4.2496	734328.74	0.0000	0.9994	0.7112	0.3188	2.3109	0.0120
Link27	4.4991	777444.44	0.0000	0.9988	0.6819	0.3269	2.3460	0.0140

Link28	4.4994	777499.67	0.0000	0.9977	1.0503	0.3353	2.1193	0.0120
Link31	0.1760	30404.888	0.0000	0.3390	0.2780	0.0633	0.1418	0.0120
Link32	5.4782	946630.50	0.0000	0.9997	2.5138	0.2056	1.1134	0.0120
Link33	3.2314	558391.60	0.0000	0.9997	3.9725	0.1967	0.6287	0.0140
Link47	0.2966	51255.179	0.0000	0.1798	0.3651	0.0515	0.1148	0.0120
Link53	0.1759	30403.885	0.0000	0.6223	0.1381	0.0552	0.3158	0.0250
Link54	0.1761	30421.898	0.0000	0.9011	0.1708	0.0401	0.4488	0.0400
Link55	0.1764	30474.795	0.0000	0.9253	0.1412	0.0540	0.6196	0.0250
Link56	0.3254	56231.421	0.0000	0.9659	0.2125	0.0420	0.7003	0.0400
Link68	0.3279	56658.568	0.0000	0.9997	0.2250	0.0753	0.5109	0.0250
Link69	0.3431	59291.510	0.0001	0.9997	0.0149	0.1088	7.5509	0.0250
Link70	3.3369	576624.51	0.0000	0.9988	0.0492	0.2324	19.6122	0.0250
Link72	4.4994	777502.73	0.0000	0.9960	3.1504	0.2499	0.9368	0.0120
Link73	4.4996	777524.53	0.0000	0.9953	1.0102	0.1787	2.1993	0.0250
Link74	4.4996	777527.99	0.0000	0.9940	0.9718	0.2695	2.3683	0.0250
Link75	4.4996	777528.01	0.0000	0.9931	0.3968	0.2577	5.6403	0.0250
Link76	4.4996	777524.36	0.0000	0.9927	1.4582	0.2418	1.8362	0.0250
Link77	0.3413	58980.857	0.0000	0.9623	1.7484	0.1214	0.2330	0.0120
Link78	0.3416	59034.754	0.0000	0.9623	0.7659	0.0547	1.3628	0.0400
Link82	2.7537	475833.93	0.0000	0.9995	1.8482	0.2466	0.7985	0.0120
Link83	2.7537	475832.38	0.0000	0.9994	1.3088	0.3086	1.1521	0.0120
Link84	2.7539	475874.98	0.0000	0.9992	0.8240	0.1800	1.9116	0.0250
Link85	2.7545	475983.05	0.0000	0.9990	0.8206	0.1683	1.8693	0.0250
Link90	0.1491	25772.828	0.0000	0.3269	0.3895	0.0515	0.1051	0.0120
Link93	0.1641	28356.401	0.0000	0.3307	0.4733	0.0618	0.1336	0.0120
Link98	0.1641	28356.815	0.0000	0.3329	0.4556	0.0574	0.1291	0.0140
Link104	0.1641	28359.112	0.0000	0.3641	0.2447	0.0730	0.1898	0.0140
Link105	0.1640	28345.030	0.0000	0.4316	0.4708	0.0774	0.2153	0.0140
Link106	0.3132	54126.509	0.0000	0.4273	0.1101	0.1486	0.6507	0.0120
Link21.1	0.2564	44306.421	0.0000	0.9997	0.0582	0.4958	2.3546	0.0120
Link21.2	0.2571	44422.190	0.0000	0.3253	0.1111	0.1405	0.5180	0.0120
Link118	0.1760	30412.969	0.0000	0.3564	0.4481	0.0629	0.1565	0.0120
Link126	0.2569	44391.970	0.0000	0.2995	0.3352	0.0633	0.1743	0.0120
Link127	3.2536	562226.26	0.0000	0.9878	0.3454	0.1835	21.9396	0.0250
214.1	2.2744	393022.99	0.0000	0.7433	0.5931	0.1364	0.6956	0.0240
272.1	0.1760	30406.757	0.0000	0.3543	0.6909	0.0576	0.1220	0.0120
283.1	0.1943	33578.925	0.0000	0.6561	1.2484	0.0486	0.1249	0.0240
336.1	1.0455	180654.30	0.0000	0.9446	2.3020	0.1636	0.3359	0.0120
Restrict1	0.2494	43100.189	0.0000	0.9874	0.3902	0.1344	0.3540	0.0026
Restrict2	0.3127	54031.617	0.0000	0.9953	0.4040	0.1369	0.3751	0.0026
Restrict10	3.2897	568460.79	0.0000	0.9988	0.5135	0.3482	2.2041	0.0034
Link 5	1.0481	181111.57						
WEIR30	0.0000	0.0000						
WEIR46	0.1308	22596.908						
Link97.1	0.6348	109701.46						
WEIR119	0.4101	70870.633						
FREE # 1	8.7097	1505039.8						

```
*==============================================================*
| Table E13. Channel losses(H), headwater depth (HW), tailwater |
| depth (TW), critical and normal depth (Yc and Yn).            |
| Use this section for culvert comparisons                      |
*==============================================================*
```

Conduit Name	Maximum Flow	Head Loss	Friction Loss	Critical Depth	Normal Depth	HW Elevat	TW Elevat	
Link12	3.1817	0.0000	0.4329	0.6473	0.9298	635.6988	635.0973	Max Flow

Link13	12.2868	0.0000	1.7015	1.3056	1.4229	634.6355	632.4243	Max Flow
Link14	16.5152	0.0000	1.1542	1.2977	1.2770	631.4019	630.3009	Max Flow
Link15	16.5475	0.0000	0.7551	1.2991	1.4127	630.3009	629.5845	Max Flow
Link16	31.5068	0.0000	1.6356	1.8197	2.1163	630.2348	628.8272	Max Flow
Link17	-0.0053	0.0000	0.1369	0.0042	0.0080	626.4350	626.4368	Max Flow
Link18	48.5109	0.0000	2.7382	2.2673	2.1720	628.6997	625.0816	Max Flow
Link22	10.2400	0.0000	0.6869	1.1449	0.9738	622.1600	621.5831	Max Flow
Link23	52.5765	0.0000	1.9506	2.3553	2.1857	615.7363	614.1017	Max Flow
Link24	52.5807	0.0000	0.3875	2.3554	3.0000	614.1021	613.7134	Max Flow
Link25	52.5836	0.0000	1.5999	2.3554	3.0000	613.7138	612.1123	Max Flow
Link26	52.5873	0.0000	1.6201	2.3555	3.0000	612.1126	610.4909	Max Flow
Link27	54.8116	0.0000	2.5124	2.4027	3.0000	611.0833	608.5681	Max Flow
Link28	54.8118	0.0000	2.0666	2.4027	3.0000	608.5681	605.7580	Max Flow
Link31	8.2955	0.0000	0.3988	1.1149	1.5000	637.3024	636.7919	Max Flow
Link32	83.5623	0.0000	20.1307	2.3840	0.9548	593.7197	573.0821	Max Flow
Link33	66.7238	0.0000	21.2831	2.4655	1.1313	594.4321	573.1313	Max Flow
Link47	15.4464	0.0000	4.1010	1.4090	0.7702	632.7404	629.6035	Max Flow
Link53	8.2930	0.0000	0.1610	0.5804	1.0325	636.7919	636.5097	Max Flow
Link54	8.2646	0.0000	2.4758	0.3653	0.5067	636.5097	634.0817	Max Flow
Link55	8.2426	0.0000	0.9219	0.6844	0.6506	634.0817	633.5364	Max Flow
Link56	14.8971	0.0000	4.5493	0.4565	0.4870	630.6874	623.1256	Max Flow
Link68	15.3594	0.0000	2.9744	1.0258	1.1223	623.1256	620.1125	Max Flow
Link69	19.3863	0.0000	0.7636	1.1020	1.2211	620.5266	620.4546	Max Flow
Link70	120.9443	0.0000	1.5737	1.5692	1.8078	619.0227	617.8370	Max Flow
Link72	54.8117	0.0000	1.5180	2.4027	1.3179	605.7580	604.2399	Max Flow
Link73	54.8117	0.0000	3.8899	1.4330	1.0044	603.9262	599.5051	Max Flow
Link74	54.8116	0.0000	2.2899	1.8350	1.4934	599.5051	596.2992	Max Flow
Link75	54.8096	0.0000	0.3561	0.8746	0.8860	596.2992	596.1948	Max Flow
Link76	54.8066	0.0000	1.7153	1.9077	1.4393	596.1948	593.5761	Max Flow
Link77	7.2791	0.0000	0.5837	0.9581	0.8339	640.8045	639.8735	Max Flow
Link78	7.2558	0.0000	2.3239	0.1486	0.2369	639.8736	636.4986	Max Flow
Link82	48.5264	0.0000	8.9744	2.2676	1.3909	625.0816	615.4388	Max Flow
Link83	48.5336	0.0000	1.1681	2.2678	2.1940	615.4388	613.6990	Max Flow
Link84	48.5298	0.0000	6.7241	1.0941	0.9158	613.6990	606.9823	Max Flow
Link85	48.4844	0.0000	12.6045	1.1898	0.9334	606.9823	594.4321	Max Flow
Link90	6.5091	0.0000	2.6632	0.9863	0.7857	634.1016	631.8809	Max Flow
Link93	7.1886	0.0000	0.9005	1.0378	1.1040	634.3122	633.3503	Max Flow
Link98	7.1848	0.0000	0.2967	1.0375	0.9376	633.3502	633.1141	Max Flow
Link104	7.1803	0.0000	0.5242	0.9510	1.0951	633.1141	632.6089	Max Flow
Link105	7.1728	0.0000	0.2657	0.9505	1.3936	632.6088	632.2405	Max Flow
Link106	13.2469	0.0000	0.8919	1.2229	0.9447	631.8781	631.9230	Max Flow
Link21.1	10.2564	0.0000	3.0020	1.1459	0.7730	622.4689	622.1600	Max Flow
Link21.2	10.2676	0.0000	1.1221	1.1465	0.8386	622.6360	622.4688	Max Flow
Link118	8.3040	0.0000	1.0483	1.1155	1.5000	638.6657	637.5298	Max Flow
Link126	10.3214	0.0000	1.1253	1.2349	1.0107	623.0610	622.3566	Max Flow
Link127	48.1951	0.0000	0.2536	0.7048	0.7180	616.3281	616.0081	Max Flow
214.1	29.1952	0.0000	1.6383	1.8469	2.0000	620.4546	618.8153	Max Flow
272.1	8.2981	0.0000	0.2271	1.1151	0.9511	637.5298	637.3025	Max Flow
283.1	4.8160	0.0000	2.4115	0.9049	1.0000	633.5364	631.1249	Max Flow
336.1	12.2864	0.0000	1.0300	1.3055	0.8839	632.4243	631.3939	Max Flow
Restrict1	9.1000	0.0000	0.7114	1.1374	1.6660	621.8948	621.1274	Max Flow
Restrict2	13.0102	0.0000	1.5221	1.3531	1.6660	632.6656	631.3431	Max Flow
Restrict10	48.1915	0.0000	2.0681	2.2321	3.1534	619.6401	616.3281	Max Flow

```
*=========================================================*
| Table E13a. CULVERT ANALYSIS CLASSIFICATION,            |
| and the time the culvert was in a particular            |
| classification during the simulation.  The time is      |
| in minutes.  The Dynamic Wave Equation is used for      |
| all conduit analysis but the culvert flow classification |
| condition is based on the HW and TW depths.             |
*=========================================================*
```

Conduit Name	Mild Slope Critical D Outlet Control	Mild Slope TW Control Outlet Control	Steep Slope TW Insignf Entrance Control	Slug Flow Outlet/ Entrance Control	Mild Slope TW > D Outlet Control	Mild Slope TW <= D Outlet Control	Outlet Control	Inlet Control	Inlet Configuration
Link12	700.0000	2115.0000	65.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link13	500.0000	960.0000	1420.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link14	0.0000	2325.0000	425.0000	0.0000	0.0000	0.0000	130.0000	0.0000	None
Link15	0.0000	2860.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link16	5.0000	2860.0000	15.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link17	0.0000	2860.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link18	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link22	0.0000	0.0000	30.0000	5.0000	0.0000	2845.0000	0.0000	0.0000	None
Link23	0.0000	0.0000	2660.0000	35.0000	0.0000	135.0000	50.0000	0.0000	None
Link24	20.0000	2640.0000	20.0000	0.0000	200.0000	0.0000	0.0000	0.0000	None
Link25	25.0000	2630.0000	20.0000	0.0000	205.0000	0.0000	0.0000	0.0000	None
Link26	10.0000	2650.0000	20.0000	0.0000	200.0000	0.0000	0.0000	0.0000	None
Link27	10.0000	2760.0000	20.0000	0.0000	90.0000	0.0000	0.0000	0.0000	None
Link28	1065.0000	1790.0000	25.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link31	135.0000	140.0000	2605.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link32	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link33	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link47	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link53	160.0000	835.0000	1885.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link54	0.0000	2345.0000	530.0000	0.0000	5.0000	0.0000	0.0000	0.0000	None
Link55	0.0000	2355.0000	475.0000	0.0000	0.0000	0.0000	50.0000	0.0000	None
Link56	5.0000	2675.0000	190.0000	0.0000	10.0000	0.0000	0.0000	0.0000	None
Link68	10.0000	2850.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link69	0.0000	2830.0000	20.0000	0.0000	30.0000	0.0000	0.0000	0.0000	None
Link70	35.0000	2765.0000	20.0000	0.0000	60.0000	0.0000	0.0000	0.0000	None
Link72	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link73	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link74	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link75	0.0000	2850.0000	30.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link76	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link77	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link78	420.0000	2400.0000	60.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link82	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link83	0.0000	0.0000	2775.0000	0.0000	0.0000	0.0000	105.0000	0.0000	None
Link84	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link85	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link90	0.0000	0.0000	2875.0000	0.0000	0.0000	0.0000	5.0000	0.0000	None

Link93	35.0000	120.0000	2725.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link98	0.0000	0.0000	2755.0000	5.0000	0.0000	0.0000	120.0000	0.0000	None
Link104	5.0000	300.0000	2570.0000	0.0000	5.0000	0.0000	0.0000	0.0000	None
Link105	140.0000	275.0000	2460.0000	0.0000	5.0000	0.0000	0.0000	0.0000	None
Link106	0.0000	0.0000	2725.0000	110.0000	0.0000	5.0000	40.0000	0.0000	None
Link21.1	0.0000	0.0000	35.0000	2755.0000	0.0000	90.0000	0.0000	0.0000	None
Link21.2	0.0000	0.0000	2675.0000	130.0000	0.0000	25.0000	50.0000	0.0000	None
Link118	155.0000	150.0000	2575.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link126	0.0000	0.0000	2825.0000	15.0000	0.0000	0.0000	40.0000	0.0000	None
Link127	480.0000	2245.0000	35.0000	0.0000	120.0000	0.0000	0.0000	0.0000	None
214.1	45.0000	1485.0000	1220.0000	35.0000	90.0000	0.0000	5.0000	0.0000	None
272.1	0.0000	0.0000	2755.0000	0.0000	0.0000	0.0000	125.0000	0.0000	None
283.1	150.0000	855.0000	1765.0000	0.0000	0.0000	0.0000	110.0000	0.0000	None
336.1	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Restrict1	795.0000	2050.0000	35.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Restrict2	505.0000	2335.0000	25.0000	0.0000	0.0000	0.0000	15.0000	0.0000	None
Restrict10	660.0000	1545.0000	20.0000	655.0000	0.0000	0.0000	0.0000	0.0000	None

```
*=====================================*
|    Kinematic Wave Approximations    |
|  Time in Minutes for Each Condition |
*=====================================*
```

Conduit Name	Duration of Normal Flow	Slope Criteria	Super-Critical	Roll Waves
Link12	0.0000	0.0000	2.4093	0.0000
Link13	0.0000	0.0000	652.3860	0.0000
Link14	2596.2945	2812.3057	0.0000	0.0000
Link15	23.9398	170.9632	0.0000	0.0000
Link16	2641.8459	2853.8073	5.0000	0.0000
Link17	0.0000	0.0000	0.0000	0.0000
Link18	0.0000	0.0000	1002.8397	0.0000
Link22	8.5355	1727.2181	2.8049	0.0000
Link23	2583.1288	2855.8537	1100.2620	0.0000
Link24	0.0000	0.0000	4.9094	0.0000
Link25	2585.2832	2636.6772	357.3150	0.0000
Link26	2520.3551	2647.2388	74.6813	0.0000
Link27	2518.8626	2524.9474	4.2721	0.0000
Link28	0.0000	0.0000	360.2032	0.0000
Link31	0.0000	0.0000	53.2969	0.0000
Link32	2369.2484	2702.7669	2860.0000	0.0000
Link33	147.5525	147.5525	2864.7561	0.0000
Link47	2830.1375	2855.6098	123.1180	0.0000
Link53	0.0000	0.0000	2.0732	0.0000
Link54	2855.2439	2856.0976	0.8537	0.0000
Link55	2859.5122	2859.5122	0.0000	0.0000
Link56	2859.6341	2859.6341	0.0000	0.0000
Link68	2824.9462	2825.0309	0.9756	0.0000
Link69	2742.9879	2856.8737	0.1220	0.0000
Link70	2625.7532	2814.9482	5.5460	0.0000
Link72	32.5217	33.2534	2851.6514	0.0000
Link73	2847.8099	2850.5084	693.4836	0.0000
Link74	0.0000	0.0000	719.2187	0.0000
Link75	2455.9119	2847.4793	0.0000	0.0000
Link76	3.0165	3.1405	2845.4545	0.0000
Link77	0.0000	0.0000	2819.1795	0.0000
Link78	0.0000	0.0000	2.8362	0.0000
Link82	2855.7317	2856.2195	2859.2683	0.0000
Link83	0.0000	0.0000	1968.5366	0.0000
Link84	262.1694	262.6008	184.7936	0.0000
Link85	2106.5148	2653.5816	255.7699	0.0000
Link90	2805.3558	2851.9266	194.7221	0.0000
Link93	0.5168	10.0595	0.3659	0.0000
Link98	2716.0955	2856.5854	2752.1923	0.0000
Link104	2733.1180	2851.1468	44.6963	0.0000
Link105	0.0538	14.8781	2.1951	0.0000
Link106	2715.2437	2858.9024	0.9756	0.0000
Link21.1	6.6364	1753.0305	17.4190	0.0000
Link21.2	2651.6145	2825.8000	23.6585	0.0000
Link118	0.1220	0.6098	5.0000	0.0000
Link126	2733.7360	2837.1545	2758.9715	0.0000
Link127	798.2889	812.6639	0.0000	0.0000
214.1	2637.3995	2714.0730	1443.0498	0.0000
272.1	109.8295	246.1004	2822.4202	0.0000
283.1	2.9213	2.9213	104.5357	0.0000
336.1	42.6126	112.7799	2801.5067	0.0000
Restrict1	0.0000	0.0000	0.0000	0.0000
Restrict2	0.0000	0.0000	0.0000	0.0000
Restrict10	0.0000	0.0000	190.4505	0.0000

```
*=========================================================*
| Table E14 - Natural Channel Overbank Flow Information   |
*=========================================================*
```

Conduit Name	<---- Maximum Velocity -----> Left Velocity	Center Velocity	Right Velocity	<------ Maximum Flow -------> Left Flow	Center Flow	Right Flow	<------ Maximum Area ------> Left Area	Center Area	Right Area	<--- Max. Storage Volume ---> Left Area	Center Area	Right Area	Maximum Depth
Link53	0.0000	7.5821	0.0000	0.0000	8.3052	0.0000	0.0000	1.0954	0.0000	0.0000	36.1472	0.0000	0.3543
Link55	0.0000	0.5353	0.0000	0.0000	8.2764	0.0000	0.0000	15.4618	0.0000	0.0000	2133.7304	0.0000	1.6839
Link68	0.0000	2.3115	0.0000	0.0000	15.4185	0.0000	0.0000	6.6703	0.0000	0.0000	2668.1357	0.0000	1.3329
Link69	0.0000	0.4946	0.0000	0.0000	69.5454	0.0000	0.0000	140.6217	0.0000	0.0000	36561.632	0.0000	2.4331
Link70	0.1524	0.3788	0.0000	5.2287	117.0543	0.0000	34.3132	309.0300	0.0000	15440.924	139063.51	0.0000	3.9787
Link73	0.0000	4.7455	0.0000	0.0000	54.8119	0.0000	0.0000	11.5502	0.0000	0.0000	843.1633	0.0000	1.3552
Link74	0.0000	9.7536	0.0000	0.0000	54.8121	0.0000	0.0000	5.6197	0.0000	0.0000	573.2056	0.0000	1.3858

Link75	0.0000	2.5977	0.0000	0.0000	54.8103	0.0000	0.0000	21.0995	0.0000	0.0000	1097.1763	0.0000
1.3367												
Link76	0.0000	13.9376	0.0000	0.0000	54.8074	0.0000	0.0000	3.9324	0.0000	0.0000	157.2942	0.0000
1.2315												
Link84	0.0000	6.1163	0.0000	0.0000	48.5306	0.0000	0.0000	7.9346	0.0000	0.0000	2221.6893	0.0000
0.9505												
Link85	0.0000	6.1450	0.0000	0.0000	48.5116	0.0000	0.0000	7.8945	0.0000	0.0000	3710.4268	0.0000
1.0558												
Link127	0.0000	0.2964	0.0000	0.0000	48.1960	0.0000	0.0000	162.6084	0.0000	0.0000	62279.030	0.0000
1.5589												

===
| Table E14a - Natural Channel Encroachment Information |
===

Conduit Name	Left Bank	Centre Channel	Right Bank	Total	Left Station	Right Station	Left Bank	Centre Channel	Right Bank	Total	Left Station	Right Station	Reduction Left	Reduction Right	Depth Incr.	Method
	<------- Existing Conveyance Condition ------->						<----- Encroachment Conveyance Condition ----->						<- % Volume -->		<-- Encroachment Data -->	
Link53	0.0000	24.812	0.0000	24.812	-3.4145	1.1536	0.0000	24.812	0.0000	24.812	-3.4145	1.1536	0.0000	0.0000	0.0000	None
Link55	0.0000	766.06	0.0000	766.06	-11.028	8.9707	0.0000	766.06	0.0000	766.06	-11.028	8.9707	0.0000	0.0000	0.0000	None
Link68	0.0000	281.46	0.0000	281.46	-3.4789	7.2733	0.0000	281.46	0.0000	281.46	-3.4789	7.2733	0.0000	0.0000	0.0000	None
Link69	0.0000	6934.3	0.0000	6934.3	-44.330	141.37	0.0000	6934.3	0.0000	6934.3	-44.330	141.37	0.0000	0.0000	0.0000	None
Link70	1290.2	28882.4	0.0000	30172.6	-132.40	92.197	1290.2	28882.4	0.0000	30172.6	-132.40	92.197	0.0000	0.0000	0.0000	None
Link73	0.0000	409.38	0.0000	409.38	-5.8107	19.000	0.0000	409.38	0.0000	409.38	-5.8107	19.000	0.0000	0.0000	0.0000	None
Link74	0.0000	251.86	0.0000	251.86	-4.7668	3.3434	0.0000	251.86	0.0000	251.86	-4.7668	3.3434	0.0000	0.0000	0.0000	None
Link75	0.0000	1139.1	0.0000	1139.1	-17.503	6.6514	0.0000	1139.1	0.0000	1139.1	-17.503	6.6514	0.0000	0.0000	0.0000	None
Link76	0.0000	160.88	0.0000	160.88	-7.7555	-1.3254	0.0000	160.88	0.0000	160.88	-7.7555	-1.3254	0.0000	0.0000	0.0000	None
Link84	0.0000	336.07	0.0000	336.07	-7.3889	5.3855	0.0000	336.07	0.0000	336.07	-7.3889	5.3855	0.0000	0.0000	0.0000	None
Link85	0.0000	331.85	0.0000	331.85	-4.8171	8.2021	0.0000	331.85	0.0000	331.85	-4.8171	8.2021	0.0000	0.0000	0.0000	None
Link127	0.0000	8153.7	0.0000	8153.7	-175.36	34.401	0.0000	8153.7	0.0000	8153.7	-175.36	34.401	0.0000	0.0000	0.0000	None

==================================
| Table E14b - Floodplain Mapping |
==================================

Conduit Name	Upstream WS Elev.	Downstream WS Elev.	Channel Length	Center Station	<----- Left Offsets Natural	Left Offsets Encroach	------> Bank	<----- Right Offsets Natural	Right Offsets Encroach	------> Bank	<- Channel Widths-> Total	Encroach.
Link53	636.7923	636.5103	33.0000	0.0000	3.4145	3.4145	21.2000	1.1536	1.1536	17.8000	4.5681	4.5681
Link55	634.0827	633.5369	138.0000	0.0000	11.0275	11.0275	23.6000	8.9707	8.9707	9.4000	19.9982	19.9982
Link68	623.1310	620.5534	400.0000	0.0000	3.4789	3.4789	67.2000	7.2733	7.2733	30.6000	10.7522	10.7522
Link69	620.5534	620.5391	260.0000	0.0000	44.3300	44.3300	126.4000	141.3689	141.3689	174.6000	185.6989	185.6989
Link70	619.6491	619.6402	450.0000	0.0000	132.3957	132.3957	64.2000	92.1969	92.1969	121.3000	224.5926	224.5926
Link73	603.9262	599.5051	73.0000	0.0000	5.8107	5.8107	92.8000	19.0004	19.0004	88.6000	24.8111	24.8111
Link74	599.5051	596.2995	102.0000	0.0000	4.7668	4.7668	93.3000	3.3434	3.3434	33.4000	8.1102	8.1102
Link75	596.2995	596.1955	52.0000	0.0000	17.5025	17.5025	92.5000	6.6514	6.6514	48.8000	24.1540	24.1540
Link76	596.1955	593.7203	40.0000	-4.6000	3.1555	3.1555	41.9000	3.2746	3.2746	65.0000	6.4301	6.4301
Link84	613.6990	606.9825	280.0000	0.0000	7.3889	7.3889	30.6000	5.3855	5.3855	26.8000	12.7744	12.7744
Link85	606.9825	594.4321	470.0000	0.0000	4.8171	4.8171	68.1000	8.2021	8.2021	109.0000	13.0192	13.0192
Link127	616.3281	616.1675	383.0000	0.0000	175.3552	175.3552	245.8000	34.4014	34.4014	65.5000	209.7566	209.7566

===
| Table E15 - SPREADSHEET INFO LIST |
| Conduit Flow and Junction Depth Information for use in |
| spreadsheets. The maximum values in this table are the |
| true maximum values because they sample every time step.|
| The values in the review results may only be the |
| maximum of a subset of all the time steps in the run. |
| Note: These flows are only the flows in a single barrel.|
===

Conduit Name	Maximum Flow (cfs)	Total Flow (ft^3)	Maximum Velocity (ft/s)	Maximum Volume (ft^3)	##	Junction Name	Invert Elevation (ft)	Maximum Elevation (ft)
Link12	3.1824	70905.0039	2.6499	317.9185	##	Node11	617.2000	620.5391
Link13	12.2871	180617.4547	5.9387	283.3003	##	Node12	617.2100	619.6491
Link14	16.5159	239636.2562	5.5906	1070.2551	##	Node20	634.8000	635.6989
Link15	16.5503	239491.3982	4.9583	1388.5621	##	Node21	633.1600	634.6356
Link16	31.5400	403488.7283	5.6393	3722.7663	##	Node22	630.1100	631.4019

Link17	35.4422	421732.5003	5.7817	305.9945	##	Node23	628.8600	630.3090
Link18	48.5399	475789.7997	8.8086	1041.9426	##	Node24	628.0300	630.2381
Link22	10.3235	43708.4116	3.2431	1090.5866	##	Node25	626.3500	628.8295
Link23	52.6887	734257.7187	7.7833	2228.7733	##	Node26	626.4200	628.7022
Link24	52.6931	734266.3674	7.4123	545.4782	##	Node27	623.6900	625.0818
Link25	52.6958	734277.0849	7.4188	2256.7463	##	Node29	612.7800	613.6990
Link26	52.6991	734328.7363	7.4290	2269.1845	##	Node30	621.4800	623.4402
Link27	54.8117	777444.4417	7.7156	2318.2003	##	Node31	616.0000	622.4399
Link28	54.8118	777499.6704	8.2776	1616.8617	##	Node33	610.5600	616.1675
Link31	8.3055	30404.8879	5.8864	70.3932	##	Node34	608.4300	614.5690
Link32	83.6308	946630.5033	21.1226	89.8560	##	Node35	608.4000	614.1906
Link33	66.7261	558391.6011	22.8196	40.3667	##	Node36	607.4000	612.6375
Link47	15.4464	51255.1793	16.0029	35.2644	##	Node37	606.4600	611.0833
Link53	8.3052	30403.8847	2.5698	36.1472	##	Node38	605.4500	608.5681
Link54	8.2866	30421.8983	1.7022	361.9642	##	Node39	604.4400	605.7580
Link55	8.2764	30474.7953	1.6308	2133.7304	##	Node41	630.2000	630.6889
Link56	15.0038	56231.4211	2.0402	563.7952	##	Node43	636.4600	637.5303
Link68	15.4185	56658.5683	3.2956	1388.9806	##	Node44	636.1400	637.3031
Link69	-69.5454	59291.5104	1.4552	40380.1920	##	Node45	636.0400	636.7923
Link70	122.2831	576624.5058	2.5391	154504.4291	##	Node46	592.7400	593.7203
Link72	54.8119	777502.7307	18.3375	108.9927	##	Node47	572.0000	573.1313
Link73	54.8119	777524.5342	7.6208	270.6541	##	Node48	593.3000	594.4321
Link74	54.8121	777527.9896	7.2839	236.7789	##	Node63	631.0000	633.5369
Link75	54.8103	777528.0111	3.0890	1097.1763	##	Node65	638.0000	640.8045
Link76	54.8074	777524.3590	9.3848	78.4417	##	Node66	631.9700	632.7404
Link77	7.2799	58980.8569	6.6766	27.3163	##	Node69	636.0000	636.5103
Link78	7.2623	59034.7539	1.1583	72.1188	##	Node70	633.4300	634.0827
Link82	48.5335	475833.9304	14.3818	333.6808	##	Node71	622.0000	623.1310
Link83	48.5361	475832.3825	10.6511	397.0570	##	Node74	618.9800	620.5534
Link84	48.5306	475874.9782	6.3594	318.6423	##	Node75	602.9200	603.9262
Link85	48.5116	475983.0466	6.3578	325.8115	##	Node80	597.8900	599.5051
Link90	6.5121	25772.8281	6.5296	407.5029	##	Node81	595.1800	596.2995
Link93	7.1900	28356.4007	5.2141	276.5184	##	Node82	594.6700	596.1955
Link98	7.1884	28356.8149	5.5591	56.2372	##	Node83	639.6000	639.8738
Link104	7.1873	28359.1124	3.9703	486.1499	##	Node84	631.5400	632.4243
Link105	7.2635	28345.0298	3.8530	286.7372	##	Node86	613.4900	615.4390
Link106	13.4517	54126.5092	5.4053	1026.7977	##	Node87	606.0000	606.9825
Link21.1	10.3350	44306.4210	5.5589	573.4754	##	Node89	637.1000	638.6657
Link21.2	10.3466	44422.1895	6.0531	284.1306	##	Node92	633.2100	634.3506
Link118	8.3064	30412.9693	4.7235	314.1537	##	Node94	633.3000	634.2890
Link126	10.3702	44391.9703	7.5692	160.4867	##	Node99	637.7000	640.2006
Link127	48.1960	562226.2646	1.9312	62279.0296	##	Node100	632.3300	633.7869
214.1	29.4464	393022.9859	9.5133	182.1418	##	Node101	632.0000	633.6767
272.1	8.3049	30406.7568	6.1037	45.0571	##	Node103	631.4400	633.5390
283.1	4.8165	33578.9247	6.1090	30.7947	##	Node108	630.5000	633.4558
336.1	12.2872	180654.3040	10.0807	54.3742	##	Node30.1	619.1400	622.6814
Restrict1	9.1433	43100.1891	4.1342	8457.6674	##	Node30.2	620.3100	622.8056
Restrict2	13.3084	54031.6170	6.1531	8965.6443	##	Node120	638.0000	640.9680
Restrict10	48.2003	568460.7913	6.7150	25974.9061	##	Node124	613.4000	622.0156
Link 5	68.2009	181111.5651	0.0000	0.0000	##	Node125	628.5000	633.2872
WEIR30	0.0000	0.0000	0.0000	0.0000	##	Node130	615.6100	619.6402
WEIR46	10.2298	22596.9080	0.0000	0.0000	##	Node132	615.6000	616.3281
Link97.1	9.1705	109701.4578	0.0000	0.0000	##			

```
        WEIR119      3.1837  70870.6332        0.0000        0.0000   ##

       FREE # 1    145.6242 1505039.832        0.0000        0.0000   ##
```

```
*====================================================*
|     Table E15a - SPREADSHEET REACH LIST            |
| Peak flow and Total Flow listed by Reach or those  |
|      conduits or diversions having the same        |
|      upstream and downstream nodes.                |
*====================================================*
```

Upstream Node	Downstream Node	Maximum Flow (cfs)	Total Flow (ft^3)
Node20	Node21	3.1824	70905.0039
Node21	Node84	12.2871	180617.455
Node22	Node23	16.5159	239636.256
Node23	Node24	16.5503	239491.398
Node24	Node25	31.5400	403488.728
Node26	Node25	35.4422	421732.500
Node26	Node27	48.5399	475789.800
Node31	Node124	10.3235	43708.4116
Node33	Node34	52.6887	734257.719
Node34	Node35	52.6931	734266.367
Node35	Node36	52.6958	734277.085
Node36	Node37	52.6991	734328.736
Node37	Node38	54.8117	777444.442
Node38	Node39	54.8118	777499.670
Node44	Node45	8.3055	30404.8879
Node46	Node47	83.6308	946630.503
Node48	Node47	66.7261	558391.601
Node66	Node24	15.4464	51255.1793
Node45	Node69	8.3052	30403.8847
Node69	Node70	8.2866	30421.8983
Node70	Node63	8.2764	30474.7953
Node41	Node71	15.0038	56231.4211
Node71	Node74	15.4185	56658.5683
Node74	Node11	-69.5454	59291.5104
Node12	Node130	122.2831	576624.506
Node39	Node75	54.8119	777502.731
Node75	Node80	54.8119	777524.534
Node80	Node81	54.8121	777527.990
Node81	Node82	54.8103	777528.011
Node82	Node46	54.8074	777524.359
Node65	Node83	7.2799	58980.8569
Node83	Node22	7.2623	59034.7539
Node27	Node86	48.5335	475833.930
Node86	Node29	48.5361	475832.382
Node29	Node87	48.5306	475874.978
Node87	Node48	48.5116	475983.047
Node94	Node108	6.5121	25772.8281
Node92	Node100	7.1900	28356.4007
Node100	Node101	7.1884	28356.8149
Node101	Node103	7.1873	28359.1124
Node103	Node108	7.2635	28345.0298
Node108	Node125	13.4517	54126.5092
Node30.1	Node31	10.3350	44306.4210
Node30.2	Node30.1	10.3466	44422.1895
Node89	Node43	8.3064	30412.9693

Node30	Node30.2	10.3702	44391.9703
Node132	Node33	48.1960	562226.265
Node11	Node12	58.8928	393022.986
Node43	Node44	8.3049	30406.7568
Node63	Node41	4.8165	33578.9247
Node84	Node22	12.2872	180654.304
Node124	Node37	9.1433	43100.1891
Node125	Node26	13.3084	54031.6170
Node130	Node132	48.2003	568460.791
Node11	Node12	68.2009	181111.565
Node63	Node41	10.2298	22596.9080
Node99	Node21	9.1705	109701.458
Node120	Node20	3.1837	70870.6332

```
##########################################################
# Table E16. New Conduit Information Section            #
#            Conduit Invert (IE) Elevation and Conduit  #
#            Maximum Water Surface (WS) Elevations      #
##########################################################
```

Conduit Name	Upstream Node	Downstream Node	IE Up	IE Dn	WS Up	WS Dn	Conduit Type
Link12	Node20	Node21	634.8000	634.4500	635.6989	635.0973	Circular
Link13	Node21	Node84	633.1600	631.5400	634.6356	632.4243	Circular
Link14	Node22	Node23	630.1100	628.8600	631.4019	630.3090	Circular
Link15	Node23	Node24	628.8600	628.0300	630.3090	630.2381	Circular
Link16	Node24	Node25	628.0300	626.3500	630.2381	628.8295	Circular
Link17	Node26	Node25	626.4200	626.3500	628.7022	628.8295	Circular
Link18	Node26	Node27	626.4200	623.6900	628.7022	625.0818	Circular
Link22	Node31	Node124	616.0000	613.4000	622.4399	622.0156	Circular
Link23	Node33	Node34	610.5630	608.4300	616.1675	614.5690	Circular
Link24	Node34	Node35	608.4300	608.4000	614.5690	614.1906	Circular
Link25	Node35	Node36	608.4000	607.4000	614.1906	612.6375	Circular
Link26	Node36	Node37	607.4000	606.4600	612.6375	611.0833	Circular
Link27	Node37	Node38	606.4600	605.4500	611.0833	608.5681	Circular
Link28	Node38	Node39	605.4500	604.4400	608.5681	605.7580	Circular
Link31	Node44	Node45	636.1400	636.0400	637.3031	636.7923	Circular
Link32	Node46	Node47	592.7400	572.0000	593.7203	573.1313	Rectangle
Link33	Node48	Node47	593.3000	572.0000	594.4321	573.1313	Circular
Link47	Node66	Node24	631.9700	628.3300	632.7404	630.2381	Circular
Link53	Node45	Node69	636.0400	636.0000	636.7923	636.5103	Natural
Link54	Node69	Node70	636.0000	633.4300	636.5103	634.0827	Trapezoid
Link55	Node70	Node63	633.4300	631.0000	634.0827	633.5369	Natural
Link56	Node41	Node71	630.2000	622.0000	630.6889	623.1310	Trapezoid
Link68	Node71	Node74	622.0000	618.9800	623.1310	620.5534	Natural
Link69	Node74	Node11	618.9800	617.2000	620.5534	620.5391	Natural
Link70	Node12	Node130	617.2100	615.6100	619.6491	619.6402	Natural
Link72	Node39	Node75	604.4400	602.9220	605.7580	604.2399	Circular
Link73	Node75	Node80	602.9200	597.8900	603.9262	599.5051	Natural
Link74	Node80	Node81	597.8900	595.1800	599.5051	596.2995	Natural
Link75	Node81	Node82	595.1800	594.6700	596.2995	596.1955	Natural
Link76	Node82	Node46	594.6700	592.7400	596.1955	593.7203	Natural
Link77	Node65	Node83	640.0000	639.6000	640.8045	639.8738	Circular
Link78	Node83	Node22	639.6000	636.3500	639.8738	636.4986	Trapezoid
Link82	Node27	Node86	623.6900	613.4900	625.0818	615.4390	Circular
Link83	Node86	Node29	613.4900	612.7800	615.4390	613.6990	Circular
Link84	Node29	Node87	612.7800	606.0000	613.6990	606.9825	Natural
Link85	Node87	Node48	606.0000	593.3000	606.9825	594.4321	Natural

Link90	Node94	Node108	633.3000	630.5000	634.2890	633.4558	Circular
Link93	Node92	Node100	633.2100	632.3300	634.3506	633.7869	Circular
Link98	Node100	Node101	632.3300	632.0000	633.7869	633.6767	Circular
Link104	Node101	Node103	632.0000	631.4400	633.6767	633.5390	Circular
Link105	Node103	Node108	631.4400	631.2900	633.5390	633.4558	Circular
Link106	Node108	Node125	630.5000	628.5000	633.4558	633.2872	Circular
Link21.1	Node30.1	Node31	619.1400	616.0000	622.6815	622.4399	Circular
Link21.2	Node30.2	Node30.1	620.3100	619.1400	622.8056	622.6814	Circular
Link118	Node89	Node43	637.1000	636.4600	638.6657	637.5303	Circular
Link126	Node30	Node30.2	621.4800	620.3100	623.4402	622.8056	Circular
Link127	Node132	Node33	615.6100	610.5600	616.3281	616.1675	Natural
214.1	Node11	Node12	617.7000	617.2100	620.5391	619.6491	Circular
272.1	Node43	Node44	636.4600	636.1400	637.5303	637.3031	Circular
283.1	Node63	Node41	631.0100	630.2200	633.5369	631.1249	Circular
336.1	Node84	Node22	631.5400	630.5100	632.4243	631.4019	Circular
Restrict1	Node124	Node37	620.0000	619.9900	622.0156	621.1301	Circ Orif
Restrict2	Node125	Node26	630.0000	629.9900	633.2872	631.3566	Circ Orif
Restrict10	Node130	Node132	615.6100	615.6000	619.6402	616.3281	Circ Orif

```
*==========================================================================*
|    Table E18 - Junction Continuity Error.   Division by Volume added 11/96  |
|                                                                            |
|  Continuity Error = Net Flow + Beginning Volume - Ending Volume            |
|                     ------------------------------------------------       |
|                     Total Flow + (Beginning Volume + Ending Volume)/2      |
|                                                                            |
|  Net Flow   = Node Inflow - Node Outflow                                   |
|  Total Flow = absolute (Inflow + Outflow)                                  |
|  Intermediate column is a judgement on the node continuity error.          |
|                                                                            |
|  Excellent  < 1 percent    Great  1 to  2 percent  Good  2 to  5 percent   |
|  Fair  5 to 10  percent    Poor  10 to 25 percent  Bad  25 to 50 percent   |
|  Terrible > 50  percent                                                    |
*==========================================================================*
```

Junction Name	<------Continuity Error -------> Volume	% of Node	% of Inflow	Remaining Volume	Beginning Volume	Net Flow Thru Node	Total Flow Thru Node	Failed to Converge
Node11	1855.9154	0.1613	0.1130	48.0882	0.0000	1904.0036	1150477.280	0
Node12	-2561.6660	-0.2226	0.1560	0.4948	0.0000	-2561.1712	1150759.057	0
Node20	-35.2812	-0.0249	0.0021	0.0063	0.0000	-35.2749	141775.6371	0
Node21	-12.4923	-0.0035	0.0008	0.0087	0.0000	-12.4836	361223.9163	0
Node22	37.8063	0.0079	0.0023	7.5580	0.0000	45.3643	479325.3141	11
Node23	143.4624	0.0299	0.0087	4.2502	0.0000	147.7126	479127.6544	0
Node24	-146.2957	-0.0181	0.0089	13.8554	0.0000	-132.4403	806883.3741	0
Node25	-104.2579	-0.0124	0.0063	13.6400	0.0000	-90.6179	843389.3137	0
Node26	-54.5184	-0.0057	0.0033	9.8722	0.0000	-44.6462	951553.9170	0
Node27	-81.3431	-0.0085	0.0050	3.9765	0.0000	-77.3666	951623.7301	0
Node29	-51.0791	-0.0054	0.0031	4.0834	0.0000	-46.9957	951707.3607	0
Node30	0.5352	0.0006	0.0000	0.0005	0.0000	0.5357	88784.9655	0
Node31	-199.9169	-0.2261	0.0122	786.1184	0.0000	586.2015	88014.8327	153
Node33	1694.9695	0.1153	0.1032	0.9915	0.0000	1695.9610	1470195.036	0
Node34	-2.1984	-0.0001	0.0001	0.5784	0.0000	-1.6200	1468524.086	0
Node35	-24.5850	-0.0017	0.0015	0.3677	0.0000	-24.2173	1468543.452	0
Node36	-42.8195	-0.0029	0.0026	0.6258	0.0000	-42.1937	1468605.821	0
Node37	-25.8388	-0.0017	0.0016	7.7602	0.0000	-18.0785	1554873.367	0
Node38	-56.1932	-0.0036	0.0034	0.9865	0.0000	-55.2067	1554944.112	0
Node39	-14.2012	-0.0009	0.0009	0.4140	0.0000	-13.7873	1555002.401	2
Node41	-59.9943	-0.0534	0.0037	0.0083	0.0000	-59.9860	112407.2538	7
Node43	-2.2722	-0.0037	0.0001	0.0015	0.0000	-2.2707	60819.7261	0
Node44	-2.0740	-0.0034	0.0001	0.0005	0.0000	-2.0735	60811.6447	0
Node45	-1.9550	-0.0032	0.0001	0.0007	0.0000	-1.9544	60808.7726	0
Node46	-89.9687	-0.0048	0.0055	0.7823	0.0000	-89.1865	1893175.563	0

Node47	-19.2950	-0.0006	0.0012	1.0392	0.0000	-18.2558	3010061.936	1
Node48	-39.9539	-0.0036	0.0024	6.8791	0.0000	-33.0749	1116795.737	0
Node63	-100.4826	-0.0895	0.0061	0.2593	0.0000	-100.2232	112254.5091	21
Node65	-68.5011	-0.0443	0.0042	24410.2318	0.0000	24341.7308	142310.3360	0
Node66	352.0036	0.3422	0.0214	0.0003	0.0000	352.0039	102860.5019	0
Node69	-21.9404	-0.0361	0.0013	0.0014	0.0000	-21.9390	60825.7830	0
Node70	-55.8786	-0.0918	0.0034	0.1343	0.0000	-55.7444	60896.6936	0
Node71	-434.7972	-0.3852	0.0265	0.0120	0.0000	-434.7852	112889.9894	0
Node74	-2731.0241	-2.3549	0.1663	41.8090	0.0000	-2689.2151	115950.0787	0
Node75	-4.0816	-0.0003	0.0002	0.3376	0.0000	-3.7440	1555027.265	1
Node80	-12.0318	-0.0008	0.0007	0.6098	0.0000	-11.4220	1555052.524	0
Node81	-8.5715	-0.0006	0.0005	1.0166	0.0000	-7.5549	1555056.001	1
Node82	8.1307	0.0005	0.0005	0.8670	0.0000	8.9977	1555052.370	0
Node83	-60.4044	-0.0512	0.0037	5.5885	0.0000	-54.8159	118015.6108	0
Node84	-35.2005	-0.0097	0.0021	0.0039	0.0000	-35.1966	361271.7587	8
Node86	-13.2744	-0.0014	0.0008	2.6214	0.0000	-10.6530	951666.3129	0
Node87	-121.5661	-0.0128	0.0074	9.9782	0.0000	-111.5879	951858.0247	0
Node89	-12.6820	-0.0209	0.0008	0.0013	0.0000	-12.6807	60806.4472	0
Node92	-12.1864	-0.0215	0.0007	0.0011	0.0000	-12.1852	56702.5719	0
Node94	-5.3464	-0.0104	0.0003	0.0013	0.0000	-5.3451	51542.0747	0
Node99	-22.7105	-0.0090	0.0014	3421.1450	0.0000	3398.4344	249630.4462	0
Node100	-2.1784	-0.0038	0.0001	0.0010	0.0000	-2.1774	56713.2155	5
Node101	-5.4591	-0.0096	0.0003	0.0010	0.0000	-5.4582	56715.9272	5
Node103	11.1614	0.0197	0.0007	0.0015	0.0000	11.1628	56704.1421	0
Node108	-118.4838	-0.1094	0.0072	108.1939	0.0000	-10.2899	108244.3671	0
Node30.1	-117.0599	-0.1318	0.0071	226.8584	0.0000	109.7985	88728.6106	0
Node30.2	-32.8270	-0.0370	0.0020	19.9107	0.0000	-12.9163	88814.1598	0
Node120	-69.5670	-0.0313	0.0042	23738.0344	0.0000	23668.4674	210181.7231	0
Node124	-27.5613	-0.0316	0.0017	629.6507	0.0000	602.0894	86808.6007	0
Node125	-43.8599	-0.0405	0.0027	134.0037	0.0000	90.1438	108158.1262	0
Node130	5282.2048	0.4613	0.3217	26.2897	0.0000	5308.4945	1145085.297	0
Node132	6204.6878	0.5487	0.3778	26.2256	0.0000	6230.9134	1130687.056	0

The total continuity error was 7825.0 cubic feet
The remaining total volume was 53716. cubic feet
Your mean node continuity error was Excellent
Your worst node continuity error was Excellent

```
*==================================================*
|  Table E19 - Junction Inflow & Outflow Listing    |
|              Units are either ft^3 or m^3         |
|              depending on the units in your model.|
*==================================================*
```

Junction Name	Constant Inflow to Node	User Inflow to Node	Interface Inflow to Node	DWF Inlow to Node	Inflow through Outfall	RNF Layer Inflow to Node	Inflow from 2D Layer	Outflow from Node	Evaporation from Node	Basin Infil.
Node11	0.0000	0.0000	0.0000	0.0000	0.0000	516709.8509	0.0000	0.0000	0.0000	0.0000
Node24	0.0000	0.0000	0.0000	0.0000	0.0000	112571.5717	0.0000	0.0000	0.0000	0.0000
Node25	0.0000	0.0000	0.0000	0.0000	0.0000	18160.9892	0.0000	0.0000	0.0000	0.0000
Node30	0.0000	0.0000	0.0000	0.0000	0.0000	44317.7169	0.0000	0.0000	0.0000	0.0000
Node33	0.0000	0.0000	0.0000	0.0000	0.0000	173590.6351	0.0000	0.0000	0.0000	0.0000
Node46	0.0000	0.0000	0.0000	0.0000	0.0000	168864.3734	0.0000	0.0000	0.0000	0.0000
Node47	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.5050E+06	0.0000	0.0000
Node48	0.0000	0.0000	0.0000	0.0000	0.0000	82346.4634	0.0000	0.0000	0.0000	0.0000
Node63	0.0000	0.0000	0.0000	0.0000	0.0000	25431.2106	0.0000	0.0000	0.0000	0.0000
Node65	0.0000	0.0000	0.0000	0.0000	0.0000	83169.0994	0.0000	0.0000	0.0000	0.0000
Node66	0.0000	0.0000	0.0000	0.0000	0.0000	49465.2152	0.0000	0.0000	0.0000	0.0000

Node89	0.0000	0.0000	0.0000	0.0000	0.0000	30088.0639	0.0000	0.0000	0.0000
0.0000									
Node92	0.0000	0.0000	0.0000	0.0000	0.0000	28200.0770	0.0000	0.0000	0.0000
0.0000									
Node94	0.0000	0.0000	0.0000	0.0000	0.0000	25636.4337	0.0000	0.0000	0.0000
0.0000									
Node99	0.0000	0.0000	0.0000	0.0000	0.0000	139930.1586	0.0000	-489.4301	0.0000
26820.4206									
Node120	0.0000	0.0000	0.0000	0.0000	0.0000	139262.6226	0.0000	0.0000	0.0000
44766.2148									
Node130	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2815.3869									

```
*====================================================*
| Table E20 - Junction Flooding and Volume Listing.   |
|             The maximum volume is the total volume  |
|             in the node including the volume in the |
|             flooded storage area. This is the max   |
|             volume at any time. The volume in the   |
|             flooded storage area is the total volume|
|             above the ground elevation, where the   |
|             flooded pond storage area starts.       |
| The fourth column is instantaneous, the fifth is the|
| sum of the flooded volume over the entire simulation|
| Units are either ft^3 or m^3 depending on the units.|
*====================================================*
```

Junction Name	Surcharged Time (min)	Flooded Time(min)	Out of 1D-System (Flooded Volume)	Maximum Volume	Passed to 2D cell OR Volume Stored in allowed Flood Pond of 1D-System
Node11	65.4848	0.0000	0.0000	41.9588	0.0000
Node12	0.0000	0.0000	0.0000	30.6497	0.0000
Node20	0.0000	0.0000	0.0000	11.2953	0.0000
Node21	0.0000	0.0000	0.0000	18.5418	0.0000
Node22	0.0000	0.0000	0.0000	16.2339	0.0000
Node23	0.0000	0.0000	0.0000	18.2080	0.0000
Node24	0.0000	0.0000	0.0000	27.7474	0.0000
Node25	0.0000	0.0000	0.0000	31.1572	0.0000
Node26	0.0000	0.0000	0.0000	28.6780	0.0000
Node27	0.0000	0.0000	0.0000	17.4888	0.0000
Node29	0.0000	0.0000	0.0000	11.5483	0.0000
Node30	23.6245	0.0000	0.0000	24.6313	0.0000
Node31	2842.8689	0.0000	0.0000	80.9237	0.0000
Node33	181.5230	0.0000	0.0000	70.4637	0.0000
Node34	202.3717	0.0000	0.0000	77.1431	0.0000
Node35	200.2158	0.0000	0.0000	72.7645	0.0000
Node36	202.0835	0.0000	0.0000	65.8143	0.0000
Node37	203.0430	0.0000	0.0000	58.0970	0.0000
Node38	91.5925	0.0000	0.0000	39.1825	0.0000
Node39	0.0000	0.0000	0.0000	16.5621	0.0000
Node41	0.0000	0.0000	0.0000	6.1439	0.0000
Node43	0.0000	0.0000	0.0000	13.4494	0.0000
Node44	0.0000	0.0000	0.0000	14.6155	0.0000
Node45	0.0000	0.0000	0.0000	9.4539	0.0000
Node46	0.0000	0.0000	0.0000	12.3181	0.0000
Node47	0.0000	0.0000	0.0000	14.2161	0.0000
Node48	0.0000	0.0000	0.0000	14.2263	0.0000
Node63	0.0000	0.0000	0.0000	31.8790	0.0000
Node65	0.0000	0.0000	0.0000	53878.8609	0.0000
Node66	0.0000	0.0000	0.0000	9.6811	0.0000
Node69	10.9110	0.0000	0.0000	6.4131	0.0000
Node70	0.0000	0.0000	0.0000	8.2018	0.0000
Node71	0.0000	0.0000	0.0000	14.2116	0.0000
Node74	0.0000	0.0000	0.0000	19.7714	0.0000
Node75	0.0000	0.0000	0.0000	12.6439	0.0000
Node80	0.0000	0.0000	0.0000	20.2952	0.0000
Node81	0.0000	0.0000	0.0000	14.0680	0.0000

Node82	0.0000	0.0000	0.0000	19.1699	0.0000
Node83	0.0000	0.0000	0.0000	3.4401	0.0000
Node84	0.0000	0.0000	0.0000	11.1123	0.0000
Node86	0.0000	0.0000	0.0000	24.4917	0.0000
Node87	0.0000	0.0000	0.0000	12.3464	0.0000
Node89	9.3782	0.0000	0.0000	19.6751	0.0000
Node92	0.0000	0.0000	0.0000	14.3328	0.0000
Node94	0.0000	0.0000	0.0000	12.4280	0.0000
Node99	2855.0000	0.0000	0.0000	65157.1480	0.0000
Node100	0.0000	0.0000	0.0000	18.3068	0.0000
Node101	0.0000	0.0000	0.0000	21.0695	0.0000
Node103	3.3659	0.0000	0.0000	26.3767	0.0000
Node108	4.4473	0.0000	0.0000	37.1431	0.0000
Node30.1	94.0280	0.0000	0.0000	44.5019	0.0000
Node30.2	28.3290	0.0000	0.0000	31.3600	0.0000
Node120	2860.0000	0.0000	0.0000	59372.9523	0.0000
Node124	2846.9008	0.0000	0.0000	108.2642	0.0000
Node125	105.4652	0.0000	0.0000	60.1566	0.0000
Node130	118.7928	0.0000	0.0000	156637.5484	0.0000
Node132	0.0000	0.0000	0.0000	9.1497	0.0000

```
*==================================*
| Simulation Specific Information  |
*==================================*
Number of Input Conduits..........        51 Number of Simulated Conduits......        60
Number of Natural Channels........        12 Number of Junctions...............        57
Number of Storage Junctions.......         4 Number of Weirs..................         5
Number of Orifices................         3 Number of Pumps..................         0
Number of Free Outfalls...........         1 Number of Tide Gate Outfalls......         0


*=========================================================*
| Average % Change in Junction or Conduit is defined as:  |
| Conduit  % Change ==> 100.0 ( Q(n+1) - Q(n) ) / Qfull   |
| Junction % Change ==> 100.0 ( Y(n+1) - Y(n) ) / Yfull   |
*=========================================================*

The Conduit with the largest average change was..Link69     with     0.000 percent
The Junction with the largest average change was.Node24     with     0.035 percent
The Conduit with the largest sinuosity was.......Link53     with     9.669


*==================================================================*
| Table E21. Continuity balance at the end of the simulation       |
|            Junction Inflow, Outflow or Street Flooding           |
| Error = Inflow  + Initial Volume - Outflow - Final   Volume      |
*==================================================================*
```

Inflow Junction	Inflow Volume,ft^3	Average Inflow, cfs
Node11	517051.2184	2.9922
Node24	112648.0683	0.6519
Node25	18168.0850	0.1051
Node30	44392.9953	0.2569
Node33	173711.0523	1.0053
Node46	169020.7010	0.9781
Node48	82421.0892	0.4770
Node63	25603.8811	0.1482
Node65	83329.4790	0.4822
Node66	51605.3226	0.2986
Node89	30393.4780	0.1759
Node92	28346.1713	0.1640
Node94	25769.2466	0.1491
Node99	139928.9885	0.8098
Node120	139311.0899	0.8062
Node47	-1.505E+06	-8.7097

Outflow Junction	Outflow Volume,ft^3	Average Outflow, cfs

```
---------------  ------------   ------------
         Node47   1.50504E+06         8.7097


*=====================================================*

| Initial system volume        =         0.0000 Cu Ft |

| Total system inflow volume   =   1.637744E+06 Cu Ft |

| Inflow + Initial volume      =   1.637744E+06 Cu Ft |

*=====================================================*

| Total system outflow         =   1.505040E+06 Cu Ft |

| Volume left (Final volume)   =     53716.1784 Cu Ft |

| Evaporation                  =         0.0000 Cu Ft |

| Basin Infiltration           =     74402.0223 Cu Ft |

| Outflow + Final Volume       =   1.633158E+06 Cu Ft |

*=====================================================*


*==============================================*
| Total Model Continuity Error                 |
| Error in Continuity, Percent =         0.2800 |
| Error in Continuity, ft^3    =       4586.449 |
| + Error means a continuity loss, - a gain    |
*==============================================*


####################################################
# Table E22. Numerical Model judgement section    #
####################################################

Overall error was (minimum of Table E18 & E21)              0.2800 percent


Worst nodal error was in node Node132          with         0.5488 percent


Of the total inflow this loss was                           0.3789 percent


Your overall continuity error was                  Excellent


                                                  Excellent Efficiency


Efficiency of the simulation                        2.19


Most Number of Non Convergences at one Node      153.


Total Number Non Convergences at all Nodes       215.


Total Number of Nodes with Non Convergences       11.




##########################################################
# Table E23. New Basin Design Information               #
#            Maximum Hydraulic Grade Line,              #
#            Out Conduit Sizes and Maximum Flow         #
##########################################################

A) Resize d/s Pipes based on given HGL
B) Resize Basin based on given HGL
C) Resize d/s Pipes and Basin based on HGL and max discharge
D) Resize d/s pipes based on given max discharge

   Basin Name    Type    Max.HGL   Conduit         Depth   Width   Barrels   Max.Flow
                           (ft)                     (ft)    (ft)             (ft^3/s)
--------------- ------  --------- --------------- ------- ------- --------- ---------

===> Hydraulic model simulation ended normally.
===> XP-SWMM Simulation ended normally.


===> Your input file was named  : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Proposed\Proposed1B_10yr 2hr.DAT


===> Your output file was named : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Proposed\Proposed1B_10yr 2hr.out


*==============================================================*
```

```
|             SWWM Simulation Date and Time Summary            |
*==============================================================*
| Starting Date... April       6, 2015  Time...   15:23: 9:90  |
|   Ending Date... April       6, 2015  Time...   15:23:34:24  |
|  Elapsed Time...    0.40567 minutes or     24.34000 seconds  |
*==============================================================*
```

```
Current Directory:   N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Stud
Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


Input File : port\Loc_Drain_Study\XPSWMM model\Proposed\Proposed1B_50yr 2hr.XP

          *==============================================*
          |                   xpswmm                     |
          |     Storm and Wastewater Management Model    |
          |         Developed by XP Solutions Inc.       |
          |==============================================|
          |                                              |
          | Last Update      : Jan., 2013                |
          | Interface Version: 2012                      |
          | Engine Version   : 12.0                      |
          | Data File Version: 12.6                      |
          |                                              |
          |                                              |
          *==============================================*

Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


*====================================================*
|       Input and Output file names by Layer         |
*====================================================*

 Input File  to Layer #     1 JOT.US


 Output File to Layer #     1 JOT.US


 Input File  to Layer #     2 JOT.US


 Output File to Layer #     2 JOT.US


*==========================================================*
|   Special command line arguments in XP-SWMM2000. This    |
|   now includes program defaults. $Keywords are the program|
|   defaults.  Other Keywords are from the SWMMCOM.CFG file.|
|   or the command line or any cfg file on the command line.|
|   Examples include these in the file xpswm.bat under the  |
|   section :solve or in the windows version XPSWMM32 in the|
|   file solve.bat                                          |
|                                                           |
|   Note: the cfg file should be in the subdirectory swmxp  |
|         or defined by the set variable in the xpswm.bat   |
|         file.  Some examples of the command lines possible|
|         are shown below:                                  |
|                                                           |
|   swmmd swmmcom.cfg                                       |
|   swmmd my.cfg                                            |
|   swmmd nokeys nconv5 perv extranwq                       |
*==========================================================*

 $powerstation                        0.0000         1         2
 $perv                                0.0000         0         4
 $oldegg                              0.0000         0         7
 $as                                  0.0000         0        11
 $noflat                              0.0000         0        21
 $oldomega                            0.0000         0        24
 $oldvol                              0.0000         1        28
 $implicit                            0.0000         1        29
 $oldhot                              0.0000         1        31
 $oldscs                              0.0000         0        33
 $flood                               0.0000         1        40
 $nokeys                              0.0000         0        42
 $pzero                               0.0000         0        55
 $oldvol2                             0.0000         2        59
 $storage2                            0.0000         3        62
 $oldhot1                             0.0000         1        63
 $pumpwt                              0.0000         1        70
 $ecloss                              0.0000         1        77
 $exout                               0.0000         0        97
 $spatial = 0.90                      0.9000         5       124
 $djref = -1.0                       -0.1000         3       143
 $weirlen = 50                       50.0000         1       153
 $oldbnd                              0.0000         1       154
 $nogrelev                            0.0000         1       161
 $ncmid                               0.0000         0       164
 $new_nl_97                           0.0000         2       290
 SCSIADEPTH=ON                        0.0000         1       293
 $best97                              0.0000         1       294
 $newbound                            0.0000         1       295
 $q_tol = 0.01                        0.0001         1       316
 $new_storage                         0.0000         1       322
 $old_iteration                       0.0000         1       333
 MINLEN=5                             5.0000         1       346
 $review_elevation                    0.0000         1       383
 $use_half_volume                     0.0000         1       385
 VERT_WALLS=ON                        0.0000         1       389
 $min_ts = 1.0                        1.0000         1       407
 $design_restart = on                 0.0000         1       412
 $zero_value=1.e-05                   0.0000         1       415
 SUBCATCHMENT_RES=ON                  0.0000         1       419
 $relax_depth = on                    0.0000         1       427
 $saveallpts = on                     0.0000         1       434
 $channel_geometry=1                  0.0000         1       456

 *==========================================================*
```

```
| Parameter Values on the Tapes Common Block.These are the |
| values read from the data file and dynamically allocated |
| by the model for this simulation.                        |
*==========================================================*

 Number of Subcatchments in the Runoff Block (NW)....    15
 Number of Channel/Pipes in the Runoff Block (NG)....     0
 Runoff Water quality constituents (NRQ)............     0
 Runoff Land Uses per Subcatchment (NLU)............     0
 Number of Elements in the Transport Block (NET).....     0
 Number of Storage Junctions in Transport (NTSE).....     0
 Number of Input Hydrographs in Transport (NTH)......     0
 Number of Elements in the Extran Block (NEE)........    60
 Number of Groundwater Subcatchments in Runoff (NGW).     0
 Number of Interface locations for all Blocks (NIE)..    60
 Number of Pumps in Extran (NEP).....................     0
 Number of Orifices in Extran (NEO)..................     3
 Number of Tide Gates/Free Outfalls in Extran (NTG)..     1
 Number of Extran Weirs (NEW)........................     5
 Number of scs hydrograph points.....................  1513
 Number of Extran printout locations (NPO)...........     0
 Number of Tide elements in Extran (NTE)............     1
 Number of Natural channels (NNC)....................    12
 Number of Storage junctions in Extran (NVSE)........     4
 Number of Time history data points in Extran(NTVAL).     0
 Number of Variable storage elements in Extran (NVST)     5
 Number of Input Hydrographs in Extran (NEH).........     0
 Number of Particle sizes in Transport Block (NPS)...     0
 Number of User defined conduits (NHW)...............    15
 Number of Connecting conduits in Extran (NECC)......    20
 Number of Upstream elements in Transport (NTCC).....    10
 Number of Storage/treatment plants (NSTU)...........     1
 Number of Values for R1 lines in Transport (NR1)....     0
 Number of Nodes to be allowed for (NNOD)............    60
 Number of Plugs in a Storage Treatment Unit.........     1


#########################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
#    Last Updated Jan., 2013 by XP Solutions          #

*==========================================================*
|          RUNOFF TABLES IN THE OUTPUT FILE.               |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,      |
|  for example: search for Table R3 to check continuity.   |
|  This output file can be imported into a Word Processor  |
|  and printed on US letter or A4 paper using portrait     |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                          |
| Table R1  - Physical Hydrology Data                      |
| Table R2  - Infiltration data                            |
| Table R3  - Raingage and Infiltration Database Names     |
| Table R4  - Groundwater Data                             |
| Table R5  - Continuity Check for Surface Water           |
| Table R6  - Continuity Check for Channels/Pipes          |
| Table R7  - Continuity Check for Subsurface Water        |
| Table R8  - Infiltration/Inflow Continuity Check         |
| Table R9  - Summary Statistics for Subcatchments         |
| Table R10 - Sensitivity anlysis for Subcatchments        |
*==========================================================*

                    A1

###########################################
#             RUNOFF JOB CONTROL          #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                0
 Runoff graph plot control....                                0
 Runoff output print control..                                0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                     60.0
 Dry time step length (seconds)......                  86400.0
 Wet/Dry time step length (seconds)...                    60.0
 Simulation length is......                               24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ........................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..         21
 KINC   - Rainfall values(pairs) per line..         10
 KPRINT - Print rainfall(0-Yes,1-No).......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
```

```
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval...........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00


#######################################
# Rainfall input summary from Runoff #
#######################################

 Total rainfall for gage #     1 is    3.8200 inches

   ############################
   #        Data Group F1     #
   # Evaporation Rate (in/day) #
   ############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100


  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################

                                                                                                  Deprs Deprs Prcnt
                                                                    Per-                         -sion -sion  Zero
      Subcatchment            Channel      Width    Area      cent  Slope  "n"   "n"  Storge Strge Deten
  Number          Name        or inlet      (ft)    (ac)     Imperv ft/ft Imprv  Perv Imprv  Perv -tion
  ====== =============== =============== ======== ========   ====== ===== ===== ===== ===== ===== =====
      1         Node89#1           Node89 200.00    5.9000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
      2         Node63#1           Node63 300.00    5.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
      3         Node11#1           Node11 1000.0    107.90      0.00 0.020 0.020 0.020 0.000 0.000  0.00
      4         Node33#1           Node33 400.00    37.800      0.00 0.010 0.020 0.020 0.000 0.000  0.00
      5         Node30#1           Node30 450.00    9.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
      6         Node46#1           Node46 600.00    30.100      0.00 0.015 0.020 0.020 0.000 0.000  0.00
      7         Node65#1           Node65 450.00    16.100      0.00 0.023 0.020 0.020 0.000 0.000  0.00
      8        Node120#1          Node120 700.00    32.000      0.00 0.020 0.020 0.020 0.000 0.000  0.00
      9         Node99#1           Node99 700.00    32.100      0.00 0.020 0.020 0.020 0.000 0.000  0.00
     10         Node66#1           Node66 150.00    10.000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     11         Node24#1           Node24 950.00    19.700      0.00 0.040 0.020 0.020 0.000 0.000  0.00
     12         Node25#1           Node25 300.00    5.4000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     13         Node94#1           Node94 300.00    5.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     14         Node92#1           Node92 200.00    5.5000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     15         Node48#1           Node48 600.00    19.600      0.00 0.014 0.020 0.020 0.000 0.000  0.00

#######################################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                             #
#                     Infiltration or Time of Concentration Data                                     #
#                                                                                                    #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)             Infl #4(#8)  #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction  #
# SBUH                ->   Comp CN          Time Conc                  N/A                      N/A  #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                      N/A  #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume  #
# Proportional        ->  Constant                N/A                  N/A                      N/A  #
# Initial/Cont Loss   ->   Initial         Continuing                  N/A                      N/A  #
# Initial/Proportional ->  Initial           Constant                  N/A                      N/A  #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                 Exponent  #
# Rational Formula     -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance  #
#                                 (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)             #
#                     Rational Formula Tc Method: 1 = Constant                                       #
#                                                 2 = Friend's Equation                              #
#                                                 3 = Kinematic Wave                                 #
#                                                 4 = Alameda Method                                 #
#                                                 5 = Izzard's Formula                               #
#                                                 6 = Kerby's Equation                               #
#                                                 7 = Kirpich's Equation                             #
#                                                 8 = Bransby Williams Equation                      #
#                                                 9 = Federal Aviation Authority Equation            #
#######################################################################################################

     Subcatchment           Infl      Infl      Infl      Infl      Infl      Infl      Infl      Infl
  Number     Name            # 1       # 2       # 3       # 4       # 5       # 6       # 7       # 8
  ===============        ========= ========= ========= ========= ========= ========= ========= =========
    1         Node89#1    87.0000    0.3183  484.0000    0.2000
    2         Node63#1    87.0000    0.3617  484.0000    0.2000
    3         Node11#1    85.5000    0.6700  484.0000    0.2000
    4         Node33#1    84.7000    0.6350  484.0000    0.2000
    5         Node30#1    86.0000    0.5333  484.0000    0.2000
    6         Node46#1    88.5000    0.7083  484.0000    0.2000
    7         Node65#1    87.0000    0.5283  484.0000    0.2000
    8        Node120#1    83.7000    0.7500  484.0000    0.2000
    9         Node99#1    83.7000    1.5200  484.0000    0.2000
   10         Node66#1    87.0000    0.1450  484.0000    0.2000
   11         Node24#1    89.0000    0.7383  484.0000    0.2000
   12         Node25#1    79.0000    0.6200  484.0000    0.2000
   13         Node94#1    87.0000    0.4167  484.0000    0.2000
   14         Node92#1    87.0000    0.4167  484.0000    0.2000
   15         Node48#1    83.0000    0.5633  484.0000    0.2000


#############################################################
#     Table R3.  SUBCATCHMENT  DATA                        #
#                Rainfall and Infiltration Database Names  #
#############################################################

      Subcatchment         Gage  Infiltration        Routing
  Number          Name       No       Type              Type
  ====== =============== ======= ============ ====================
      1         Node89#1      1   SCS Method       SCS curvilinear
      2         Node63#1      1   SCS Method       SCS curvilinear
```

```
     3         Node11#1      1   SCS Method       SCS curvilinear
     4         Node33#1      1   SCS Method       SCS curvilinear
     5         Node30#1      1   SCS Method       SCS curvilinear
     6         Node46#1      1   SCS Method       SCS curvilinear
     7         Node65#1      1   SCS Method       SCS curvilinear
     8        Node120#1      1   SCS Method       SCS curvilinear
     9         Node99#1      1   SCS Method       SCS curvilinear
    10         Node66#1      1   SCS Method       SCS curvilinear
    11         Node24#1      1   SCS Method       SCS curvilinear
    12         Node25#1      1   SCS Method       SCS curvilinear
    13         Node94#1      1   SCS Method       SCS curvilinear
    14         Node92#1      1   SCS Method       SCS curvilinear
    15         Node48#1      1   SCS Method       SCS curvilinear

Total Number of Subcatchments...             15
Total Tributary Area (acres)....         341.10
Impervious Area (acres).........           0.00
Pervious Area (acres)...........         341.10
Total Width (feet)..............        7300.00
Impervious Area (%).............           0.00


 ##################################################
 #          S U B C A T C H M E N T  D A T A      #
 #   Default, Ratio values for subcatchment data  #
 #   Used with the calibrate node in the runoff.  #
 # 1 - width     2 - area       3 - impervious %  #
 # 4 - slope     5 - imp "n"    6 - perv "n"      #
 # 7 - imp ds    8 - perv ds    9 - 1st infil     #
 #10 - 2nd infil               11 - 3rd infil     #
 ##################################################

Column           1         2         3         4         5         6         7         8         9        10        11
Default     0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
Ratio       1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000

*******************************************************
*     Arrangement of Subcatchments and Channel/Pipes    *
*******************************************************


    Inlet
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


*********************************************************
* Hydrographs will be stored for the following  15 INLETS *
*********************************************************
Node89    Node63    Node11    Node33    Node30    Node46
Node65    Node120   Node99    Node66    Node24    Node25
Node94    Node92    Node48


***********************************************
*  Quality Simulation not included in this run *
***********************************************




***************************************************
*  Precipitation Interface File Summary           *
*  Number of precipitation station....        1   *
***************************************************

Location Station Number
-------- --------------
       1.             1

XXX End of Header Section XXX

#########################################################
#    Entry made to the HYDRAULIC Layer of XP-SWMM     #
#    Last Updated in Jan., 2013 by XP Solutions       #

#########################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
```

```
#    Last Updated Jan., 2013 by XP Solutions          #

*=========================================================*
|         RUNOFF TABLES IN THE OUTPUT FILE.               |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,      |
|  for example: search for Table R3 to check continuity.   |
|  This output file can be imported into a Word Processor  |
|  and printed on US letter or A4 paper using portrait     |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                          |
| Table R1  - Physical Hydrology Data                      |
| Table R2  - Infiltration data                            |
| Table R3  - Raingage and Infiltration Database Names     |
| Table R4  - Groundwater Data                             |
| Table R5  - Continuity Check for Surface Water           |
| Table R6  - Continuity Check for Channels/Pipes          |
| Table R7  - Continuity Check for Subsurface Water        |
| Table R8  - Infiltration/Inflow Continuity Check         |
| Table R9  - Summary Statistics for Subcatchments         |
| Table R10 - Sensitivity anlysis for Subcatchments        |
*=========================================================*

                    A1

###########################################
#          RUNOFF JOB CONTROL             #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                0
 Runoff graph plot control....                                0
 Runoff output print control..                                0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                      60.0
 Dry time step length (seconds)......                  86400.0
 Wet/Dry time step length (seconds)...                     60.0
 Simulation length is......                                24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ............................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..        21
 KINC   - Rainfall values(pairs) per line..        10
 KPRINT - Print rainfall(0-Yes,1-No).......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval..........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00


#######################################
# Rainfall input summary from Runoff #
#######################################

 Total rainfall for gage #     1 is    3.8200 inches

   ##############################
   #        Data Group F1       #
   # Evaporation Rate (in/day) #
   ##############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100


  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################
```

Number	Subcatchment Name	Channel or inlet	Width (ft)	Area (ac)	Per-cent Imperv	Slope ft/ft	"n" Imprv	"n" Perv	Deprs -sion Storge	Deprs -sion Strge Perv	Prcnt Zero Deten -tion
1	Node89#1	Node89	200.00	5.9000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
2	Node63#1	Node63	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
3	Node11#1	Node11	1000.0	107.90	0.00	0.020	0.020	0.020	0.000	0.000	0.00
4	Node33#1	Node33	400.00	37.800	0.00	0.010	0.020	0.020	0.000	0.000	0.00
5	Node30#1	Node30	450.00	9.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
6	Node46#1	Node46	600.00	30.100	0.00	0.015	0.020	0.020	0.000	0.000	0.00

7	Node65#1	Node65	450.00	16.100	0.00	0.023	0.020	0.020	0.000	0.000	0.00
8	Node120#1	Node120	700.00	32.000	0.00	0.020	0.020	0.020	0.000	0.000	0.00
9	Node99#1	Node99	700.00	32.100	0.00	0.020	0.020	0.020	0.000	0.000	0.00
10	Node66#1	Node66	150.00	10.000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
11	Node24#1	Node24	950.00	19.700	0.00	0.040	0.020	0.020	0.000	0.000	0.00
12	Node25#1	Node25	300.00	5.4000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
13	Node94#1	Node94	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
14	Node92#1	Node92	200.00	5.5000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
15	Node48#1	Node48	600.00	19.600	0.00	0.014	0.020	0.020	0.000	0.000	0.00

```
##########################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                 #
#                     Infiltration or Time of Concentration Data                         #
#                                                                                        #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)              Infl #4(#8)  #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction  #
# SBUH                ->   Comp CN          Time Conc                N/A                      N/A  #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                    N/A  #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume  #
# Proportional        ->  Constant                N/A                 N/A                      N/A  #
# Initial/Cont Loss   ->   Initial         Continuing                 N/A                      N/A  #
# Initial/Proportional ->  Initial           Constant                 N/A                      N/A  #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                 Exponent  #
# Rational Formula    -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance  #
#                                 (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)            #
#                     Rational Formula Tc Method: 1 = Constant                                       #
#                                                 2 = Friend's Equation                              #
#                                                 3 = Kinematic Wave                                 #
#                                                 4 = Alameda Method                                 #
#                                                 5 = Izzard's Formula                               #
#                                                 6 = Kerby's Equation                               #
#                                                 7 = Kirpich's Equation                             #
#                                                 8 = Bransby Williams Equation                      #
#                                                 9 = Federal Aviation Authority Equation            #
##########################################################################################
```

Subcatchment Number	Name	Infl # 1	Infl # 2	Infl # 3	Infl # 4	Infl # 5	Infl # 6	Infl # 7	Infl # 8
1	Node89#1	87.0000	0.3183	484.0000	0.2000				
2	Node63#1	87.0000	0.3617	484.0000	0.2000				
3	Node11#1	85.5000	0.6700	484.0000	0.2000				
4	Node33#1	84.7000	0.6350	484.0000	0.2000				
5	Node30#1	86.0000	0.5333	484.0000	0.2000				
6	Node46#1	88.5000	0.7083	484.0000	0.2000				
7	Node65#1	87.0000	0.5283	484.0000	0.2000				
8	Node120#1	83.7000	0.7500	484.0000	0.2000				
9	Node99#1	83.7000	1.5200	484.0000	0.2000				
10	Node66#1	87.0000	0.1450	484.0000	0.2000				
11	Node24#1	89.0000	0.7383	484.0000	0.2000				
12	Node25#1	79.0000	0.6200	484.0000	0.2000				
13	Node94#1	87.0000	0.4167	484.0000	0.2000				
14	Node92#1	87.0000	0.4167	484.0000	0.2000				
15	Node48#1	83.0000	0.5633	484.0000	0.2000				

```
#############################################################
#     Table R3.  SUBCATCHMENT  DATA                         #
#                Rainfall and Infiltration Database Names  #
#############################################################
```

Subcatchment Number	Name	Gage No	Infiltration Type	Routing Type
1	Node89#1	1	SCS Method	SCS curvilinear
2	Node63#1	1	SCS Method	SCS curvilinear
3	Node11#1	1	SCS Method	SCS curvilinear
4	Node33#1	1	SCS Method	SCS curvilinear
5	Node30#1	1	SCS Method	SCS curvilinear
6	Node46#1	1	SCS Method	SCS curvilinear
7	Node65#1	1	SCS Method	SCS curvilinear
8	Node120#1	1	SCS Method	SCS curvilinear
9	Node99#1	1	SCS Method	SCS curvilinear
10	Node66#1	1	SCS Method	SCS curvilinear
11	Node24#1	1	SCS Method	SCS curvilinear
12	Node25#1	1	SCS Method	SCS curvilinear
13	Node94#1	1	SCS Method	SCS curvilinear
14	Node92#1	1	SCS Method	SCS curvilinear
15	Node48#1	1	SCS Method	SCS curvilinear

```
Total Number of Subcatchments...              15
Total Tributary Area (acres)....          341.10
Impervious Area (acres).........            0.00
Pervious Area (acres)...........          341.10
Total Width (feet)..............         7300.00
Impervious Area (%).............            0.00
```

```
 ##################################################
 #          S U B C A T C H M E N T  D A T A      #
 #   Default, Ratio values for subcatchment data  #
 #   Used with the calibrate node in the runoff.  #
 # 1 - width     2 - area       3 - impervious %  #
 # 4 - slope     5 - imp "n"    6 - perv "n"      #
 # 7 - imp ds    8 - perv ds    9 - 1st infil     #
 #10 - 2nd infil               11 - 3rd infil     #
 ##################################################
```

Column	1	2	3	4	5	6	7	8	9	10	11
Default	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Ratio	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

```
*******************************************************
*     Arrangement of Subcatchments and Channel/Pipes  *
*******************************************************
```

```
    Inlet
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


************************************************************
* Hydrographs will be stored for the following  15 INLETS *
************************************************************
Node89    Node63    Node11    Node33    Node30    Node46
Node65    Node120   Node99    Node66    Node24    Node25
Node94    Node92    Node48


************************************************
*  Quality Simulation not included in this run *
************************************************



**************************************************
*  Precipitation Interface File Summary          *
*  Number of precipitation station....        1   *
**************************************************

Location Station Number
-------- --------------
       1.             1


    A1


*==========================================================*
|        HYDRAULICS TABLES IN THE OUTPUT FILE               |
|  These are the more important tables in the output file.  |
|  You can use your editor to find the table numbers,       |
|  for example: search for Table E20 to check continuity.   |
|  This output file can be imported into a Word Processor   |
|  and printed on US letter or A4 paper using portrait      |
|  mode, courier font, a size of 8 pt. and margins of 0.75  |
|                                                           |
| Table E1   - Basic Conduit Data                           |
| Table E2   - Conduit Factor Data                          |
| Table E3a  - Junction Data                                |
| Table E3b  - Junction Data                                |
| Table E4   - Conduit Connectivity Data                    |
| Table E4a  - Dry Weather Flow Data                        |
| Table E4b  - Real Time Control Data                       |
| Table E5   - Junction Time Step Limitation Summary        |
| Table E5a  - Conduit Explicit Condition Summary           |
| Table E6   - Final Model Condition                        |
| Table E7   - Iteration Summary                            |
| Table E8   - Junction Time Step Limitation Summary        |
| Table E9   - Junction  Summary  Statistics                |
| Table E10  - Conduit   Summary  Statistics                |
| Table E11  - Area assumptions used in the analysis        |
| Table E12  - Mean conduit information                     |
| Table E13  - Channel losses(H) and culvert info           |
| Table E13a - Culvert Analysis Classification              |
| Table E14  - Natural Channel Overbank Flow Information    |
| Table E14a - Natural Channel Encroachment Information     |
| Table E14b - Floodplain Mapping                           |
| Table E15  - Spreadsheet Info List                        |
| Table E15a - Spreadsheet Reach List                       |
| Table E16  - New Conduit Output Section                   |
| Table E17  - Pump Operation                               |
| Table E18  - Junction Continuity Error                    |
| Table E19  - Junction Inflow & Outflow Listing            |
| Table E20  - Junction Flooding and Volume List            |
| Table E21  - Continuity balance at simulation end         |
| Table E22  - Model Judgement Section                      |
*==========================================================*

Time Control from Hydraulics Job Control
```

```
Year.........    2014 Month.......       1
Day..........       1 Hour........       0
Minute.......       0 Second......       0


Control information for simulation
----------------------------------

Integration cycles................       576
Length of integration step is......    300.00 seconds
Simulation length..................     48.00 hours
Do not create equiv. pipes(NEQUAL).         0
Use U.S. customary units for I/O...         0
Printing starts in cycle...........         1
Intermediate printout intervals of.       500 cycles
Intermediate printout intervals of.   2500.00 minutes
Summary printout intervals of......       500 cycles
Summary printout time interval of..   2500.00 minutes
Hot start file parameter (REDO)....         0
Initial time.......................      0.00 hours

Iteration variables: Flow Tolerance.   0.00010
                     Head Tolerance.   0.00050
    Minimum depth (m or ft).........   0.00001
    Underrelaxation parameter........  0.85000
    Time weighting parameter........   0.85000
    Conduit roughness factor........   1.00000
    Flow adjustment factor..........   1.00000
    Initial Condition Smoothing.....         0
    Courant Time Step Factor........   1.00000
    Default Expansion/Contraction K.   0.00000
    Default Entrance/Exit K.........   0.00000
    Routing Method..................   Dynamic Wave
Default surface area of junctions...     12.57 square feet.
Minimum Junction/Conduit Depth......   0.00001 feet.
Ponding Area Coefficient............   5000.00
Ponding Area Exponent...............    1.0000
Minimum Orifice Length..............   1000.00 feet.
NJSW input hydrograph junctions.....     0
     or user defined hydrographs....

*==========================================================*
|               Flap Gate Conduit Information              |
|               ----------------------------               |
| Positive Flap Gate - Flow only allowed from the upstream |
|                      to the downstream junction          |
| Negative Flap Gate - Flow only allowed from the          |
|                      downstream to the upstream junction |
*==========================================================*

   Conduit   Type of Flap Gate
   -------   -----------------
Link12      Positive Flap Gate

        Natural Cross-Section information for Channel Link53
        ====================================================
         Cross-Section ID (from X1 card) :     1.0 Channel sequence number :     1

  Left Overbank Length   :     33.0 ft                Maximum Elevation        :   636.86 ft.
  Main Channel Length    :     33.0 ft                Maximum Depth            :     0.50 ft.
  Right Overbank Length  :     33.0 ft                Maximum Section Area     :   1.8534 ft^2
                                                      Maximum hydraulic radius :     0.30 ft.
  Manning N :      0.025  to Station         -21.2    Max topwidth             :     6.04 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 6.17E+00 ft
    "    "  :      0.025  Beyond station      17.8    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :   1.8534 ft^2

        Natural Cross-Section information for Channel Link55
        ====================================================
         Cross-Section ID (from X1 card) :     2.0 Channel sequence number :     2

  Left Overbank Length   :    138.0 ft                Maximum Elevation        :   633.71 ft.
  Main Channel Length    :    138.0 ft                Maximum Depth            :     2.63 ft.
  Right Overbank Length  :    138.0 ft                Maximum Section Area     :  38.1355 ft^2
                                                      Maximum hydraulic radius :     1.14 ft.
  Manning N :      0.025  to Station         -23.6    Max topwidth             :    33.00 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.34E+01 ft
    "    "  :      0.025  Beyond station       9.4    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  38.1355 ft^2

        Natural Cross-Section information for Channel Link68
        ====================================================
         Cross-Section ID (from X1 card) :     3.0 Channel sequence number :     3

  Left Overbank Length   :    400.0 ft                Maximum Elevation        :   621.54 ft.
  Main Channel Length    :    400.0 ft                Maximum Depth            :     2.24 ft.
  Right Overbank Length  :    400.0 ft                Maximum Section Area     :  24.1409 ft^2
                                                      Maximum hydraulic radius :     0.65 ft.
  Manning N :      0.025  to Station         -67.2    Max topwidth             :    36.52 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.71E+01 ft
    "    "  :      0.025  Beyond station      30.6    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  24.1409 ft^2

        Natural Cross-Section information for Channel Link69
        ====================================================
         Cross-Section ID (from X1 card) :     4.0 Channel sequence number :     4

  Left Overbank Length   :    258.0 ft                Maximum Elevation        :   621.55 ft.
  Main Channel Length    :    260.0 ft                Maximum Depth            :     3.23 ft.
  Right Overbank Length  :    262.0 ft                Maximum Section Area     : 311.6711 ft^2
                                                      Maximum hydraulic radius :     1.29 ft.
  Manning N :      0.025  to Station        -126.4    Max topwidth             :   240.74 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 2.41E+02 ft
```

```
  "    "  :      0.025  Beyond station     174.6    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 311.6711 ft^2

      Natural Cross-Section information for Channel Link70
      ====================================================
       Cross-Section ID (from X1 card) :     5.0 Channel sequence number :     5

Left Overbank Length   :    450.0 ft                Maximum Elevation        :   619.53 ft.
Main Channel Length    :    450.0 ft                Maximum Depth            :     3.20 ft.
Right Overbank Length  :    450.0 ft                Maximum Section Area     : 191.8283 ft^2
                                                    Maximum hydraulic radius :     1.45 ft.
Manning N :      0.025  to Station         -64.2    Max topwidth             :   131.68 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.32E+02 ft
  "    "  :      0.025  Beyond station     121.3    Max left bank area       :     0.02 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 191.8040 ft^2

      Natural Cross-Section information for Channel Link73
      ====================================================
       Cross-Section ID (from X1 card) :     6.0 Channel sequence number :     6

Left Overbank Length   :     40.0 ft                Maximum Elevation        :   613.47 ft.
Main Channel Length    :     73.0 ft                Maximum Depth            :    11.92 ft.
Right Overbank Length  :    100.0 ft                Maximum Section Area     : 1101.166 ft^2
                                                    Maximum hydraulic radius :     6.02 ft.
Manning N :      0.025  to Station         -92.8    Max topwidth             :   181.40 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
  "    "  :      0.025  Beyond station      88.6    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1101.166 ft^2

      Natural Cross-Section information for Channel Link74
      ====================================================
       Cross-Section ID (from X1 card) :     7.0 Channel sequence number :     7

Left Overbank Length   :    102.0 ft                Maximum Elevation        :   613.84 ft.
Main Channel Length    :    102.0 ft                Maximum Depth            :    15.95 ft.
Right Overbank Length  :    102.0 ft                Maximum Section Area     : 1003.556 ft^2
                                                    Maximum hydraulic radius :     7.52 ft.
Manning N :      0.025  to Station         -93.3    Max topwidth             :   126.70 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.33E+02 ft
  "    "  :      0.025  Beyond station      33.4    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1003.556 ft^2

      Natural Cross-Section information for Channel Link75
      ====================================================
       Cross-Section ID (from X1 card) :     8.0 Channel sequence number :     8

Left Overbank Length   :     52.0 ft                Maximum Elevation        :   612.13 ft.
Main Channel Length    :     52.0 ft                Maximum Depth            :    17.46 ft.
Right Overbank Length  :     52.0 ft                Maximum Section Area     : 1220.157 ft^2
                                                    Maximum hydraulic radius :     8.32 ft.
Manning N :      0.025  to Station         -92.5    Max topwidth             :   141.30 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.47E+02 ft
  "    "  :      0.025  Beyond station      48.8    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1220.157 ft^2

      Natural Cross-Section information for Channel Link76
      ====================================================
       Cross-Section ID (from X1 card) :     9.0 Channel sequence number :     9

Left Overbank Length   :     40.0 ft                Maximum Elevation        :   609.77 ft.
Main Channel Length    :     40.0 ft                Maximum Depth            :    17.61 ft.
Right Overbank Length  :     40.0 ft                Maximum Section Area     : 829.0790 ft^2
                                                    Maximum hydraulic radius :     7.27 ft.
Manning N :      0.025  to Station         -46.5    Max topwidth             :   106.90 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.14E+02 ft
  "    "  :      0.025  Beyond station      60.4    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 829.0790 ft^2

      Natural Cross-Section information for Channel Link84
      ====================================================
       Cross-Section ID (from X1 card) :    10.0 Channel sequence number :    10

Left Overbank Length   :    270.0 ft                Maximum Elevation        :   618.53 ft.
Main Channel Length    :    280.0 ft                Maximum Depth            :     7.43 ft.
Right Overbank Length  :    290.0 ft                Maximum Section Area     : 222.9791 ft^2
                                                    Maximum hydraulic radius :     3.66 ft.
Manning N :      0.025  to Station         -30.6    Max topwidth             :    57.40 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 6.09E+01 ft
  "    "  :      0.025  Beyond station      26.8    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 222.9791 ft^2

      Natural Cross-Section information for Channel Link85
      ====================================================
       Cross-Section ID (from X1 card) :    11.0 Channel sequence number :    11

Left Overbank Length   :    450.0 ft                Maximum Elevation        :   616.00 ft.
Main Channel Length    :    470.0 ft                Maximum Depth            :    16.50 ft.
Right Overbank Length  :    490.0 ft                Maximum Section Area     : 1074.025 ft^2
                                                    Maximum hydraulic radius :     5.87 ft.
Manning N :      0.025  to Station         -68.1    Max topwidth             :   177.10 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
  "    "  :      0.025  Beyond station     109.0    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1074.025 ft^2

      Natural Cross-Section information for Channel Link127
      =====================================================
       Cross-Section ID (from X1 card) :    12.0 Channel sequence number :    12
```

```
  Left Overbank Length   :    383.0 ft                Maximum Elevation        :   616.61 ft.
  Main Channel Length    :    383.0 ft                Maximum Depth            :     1.00 ft.
  Right Overbank Length  :    383.0 ft                Maximum Section Area     :  59.5650 ft^2
                                                      Maximum hydraulic radius :     0.38 ft.
  Manning N :      0.025  to Station        -245.8    Max topwidth             :   155.24 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.55E+02 ft
    "    "  :      0.025  Beyond station      65.5    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  59.5650 ft^2
```

==========
|Table E1 - Conduit Data|
==========

Inp Num	Conduit Name	Length (ft)	Conduit Class	Area (ft^2)	Manning Coef.	Max Width (ft)	Depth (ft)	Trapezoid Side Slopes	Hazen Williams c-factor
1	Link12	312.0000	Circular	2.4053	0.0120	1.7500	1.7500		
2	Link13	311.0000	Circular	2.4053	0.0120	1.7500	1.7500		
3	Link14	341.0000	Circular	7.0686	0.0120	3.0000	3.0000		
4	Link15	322.0000	Circular	7.0686	0.0120	3.0000	3.0000		
5	Link16	631.0000	Circular	7.0686	0.0120	3.0000	3.0000		
6	Link17	51.0000	Circular	7.0686	0.0120	3.0000	3.0000		
7	Link18	462.0000	Circular	7.0686	0.0120	3.0000	3.0000		
8	Link22	340.0000	Circular	3.1416	0.0120	2.0000	2.0000		
9	Link23	312.0000	Circular	7.0686	0.0120	3.0000	3.0000		
10	Link24	74.0000	Circular	7.0686	0.0120	3.0000	3.0000		
11	Link25	305.0000	Circular	7.0686	0.0120	3.0000	3.0000		
12	Link26	308.0000	Circular	7.0686	0.0120	3.0000	3.0000		
13	Link27	324.0000	Circular	7.0686	0.0140	3.0000	3.0000		
14	Link28	327.0000	Circular	7.0686	0.0120	3.0000	3.0000		
15	Link31	60.4000	Circular	1.7671	0.0120	1.5000	1.5000		
16	Link32	400.0000	Rectangle	16.0000	0.0120	4.0000	4.0000		
17	Link33	260.0000	Circular	12.5664	0.0140	4.0000	4.0000		
18	Link47	54.0000	Circular	1.7671	0.0120	1.5000	1.5000		
19	Link53	33.0000	Natural	1.8534	0.0250	6.0429	0.5000		
20	Link54	250.0000	Trapezoid	1.6250	0.0400	4.0000	0.2500	10.0000	10.0000
21	Link55	138.0000	Natural	38.1355	0.0250	33.0000	2.6300		
22	Link56	305.0000	Trapezoid	19.0000	0.0400	4.0000	1.0000	15.0000	15.0000
23	Link68	400.0000	Natural	24.1409	0.0250	36.5247	2.2400		
24	Link69	260.0000	Natural	311.6711	0.0250	240.7429	3.2300		
25	Link70	450.0000	Natural	191.8283	0.0250	131.6760	3.2000		
26	Link72	42.0000	Circular	7.0686	0.0120	3.0000	3.0000		
27	Link73	73.0000	Natural	1101.1655	0.0250	181.4000	11.9200		
28	Link74	102.0000	Natural	1003.5558	0.0250	126.7000	15.9500		
29	Link75	52.0000	Natural	1220.1569	0.0250	141.3000	17.4600		
30	Link76	40.0000	Natural	829.0790	0.0250	106.9000	17.6100		
31	Link77	60.0000	Circular	3.1416	0.0120	2.0000	2.0000		
32	Link78	325.0000	Trapezoid	195.0000	0.0400	20.0000	3.0000	15.0000	15.0000
33	Link82	436.0000	Circular	7.0686	0.0120	3.0000	3.0000		
34	Link83	123.0000	Circular	7.0686	0.0120	3.0000	3.0000		
35	Link84	280.0000	Natural	222.9791	0.0250	57.4000	7.4310		
36	Link85	470.0000	Natural	1074.0250	0.0250	177.1000	16.5000		
37	Link90	250.0000	Circular	1.7671	0.0120	1.5000	1.5000		
38	Link93	175.0000	Circular	1.7671	0.0120	1.5000	1.5000		
39	Link98	31.0000	Circular	1.7671	0.0140	1.5000	1.5000		
40	Link104	162.0000	Circular	3.1416	0.0140	2.0000	2.0000		
41	Link105	89.0000	Circular	3.1416	0.0140	2.0000	2.0000		
42	Link106	208.0000	Circular	4.9087	0.0120	2.5000	2.5000		
43	Link21.1	180.0000	Circular	3.1416	0.0120	2.0000	2.0000		
44	Link21.2	90.0000	Circular	3.1416	0.0120	2.0000	2.0000		
45	Link118	200.0000	Circular	1.7671	0.0120	1.5000	1.5000		
46	Link126	90.0000	Circular	1.7671	0.0120	1.5000	1.5000		
47	Link127	383.0000	Natural	59.5650	0.0250	155.2386	1.0000		
48	214.1	29.0000	Circular	3.1416	0.0240	2.0000	2.0000		
49	272.1	32.0000	Circular	1.7671	0.0120	1.5000	1.5000		
50	283.1	40.0000	Circular	0.7854	0.0240	1.0000	1.0000		
51	336.1	52.0000	Circular	2.4053	0.0120	1.7500	1.7500		

Total length of all conduits .... 11044.4000 feet

==========
|Table E2 - Conduit Factor Data|
==========

Conduit Name	Number of Barrels	Entrance Loss Coef	Exit Loss Coef	Exp/Contc Coefficnt	Weighting Parameter	Low Flow Roughness Factor	Depth at Which n Changes	Sediment Depth	Flow Routing
Link31	1.0000	0.0000	0.0000	0.0000	0.6500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
Link56	1.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
214.1	2.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave

```
*==================================================*
| If there are messages about (sqrt(g*d)*dt/dx), or |
| the sqrt(wave celerity)*time step/conduit length  |
| in the output file all it means is that the       |
| program will lower the internal time step to      |
| satisfy this condition (explicit condition).      |
| You control the actual internal time step by      |
| using the minimum courant time step factor in the |
| HYDRAULICS job control.  The message put in words |
| states that the smallest conduit with the fastest |
| velocity will control the time step selection.    |
| You have further control by using the modify      |
| conduit option in the HYDRAULICS Job Control.     |
*==================================================*
```

Conduit Name	Courant Ratio	
Link12	7.22	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link13	7.24	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link14	8.65	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link15	9.16	===> Warning ! (sqrt(wave celerity)*time step/conduit length)

```
          Link16        4.67  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link17       57.81  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link18        6.38  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link22        7.08  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link23        9.45  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link24       39.85  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link25        9.67  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link26        9.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link27        9.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link28        9.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link31       34.52  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link32        8.51  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link33       13.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link47       38.61  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link53       28.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link54        2.89  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link55       13.26  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link56        4.17  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link68        3.46  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link69        7.45  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link70        4.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link72       70.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link73       57.46  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link74       46.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link75       96.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link76      119.30  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link77       40.12  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link78        6.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link82        6.76  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link83       23.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link84       11.98  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link85        8.92  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link90        8.34  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link93       11.91  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link98       67.26  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link104       14.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link105       27.05  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link106       12.94  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link21.1       13.37  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link21.2       26.75  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link118       10.42  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link126       23.17  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link127        2.75  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
           214.1       83.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
           272.1       65.15  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
           283.1       42.56  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
           336.1       43.31  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)

 *==================*
 |  Conduit Volume  |
 *==================*

 Full pipe or full open conduit volume
 Input full depth volume............    1.1669E+06 cubic feet

 ===> Warning !! The upstream and downstream junctions for the following conduits
                 have been reversed to correspond to the positive flow and decreasing
                 slope convention.  A negative flow in the output thus means
                 the flow was from your original upstream junction to your original
                 downstream junction.  Any initial flow has been multiplied by -1.

                 1.  Conduit #...Link17      has been changed.

 ===> ERROR !!!  Conduit Link73           has caused ZCROWN  of Junction Node75     to lie above the specified ground elev of     614.84
611.73

 ===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node81     to lie above the specified ground elev of     612.64
611.30

 ===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.13
611.67

 ===> ERROR !!!  Conduit Link76           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.28
611.67


 *====================================================*
 |           Table E3a - Junction Data                |
 *====================================================*

 Inp         Junction     Ground     Crown    Invert     Qinst  Initial  Interface
 Num             Name  Elevation Elevation Elevation       cfs Depth-ft   Flow (%)
 ---  ---------------  --------- --------- --------- -------- --------  ---------
   1           Node11   623.2500  620.4300  617.2000   0.0000   0.0000   100.0000
   2           Node12   624.9700  620.4100  617.2100   0.0000   0.0000   100.0000
   3           Node20   637.3000  636.5500  634.8000   0.0000   0.0000   100.0000
   4           Node21   638.2600  636.2000  633.1600   0.0000   0.0000   100.0000
   5           Node22   639.3500  639.3500  630.1100   0.0000   0.0000   100.0000
   6           Node23   635.9100  631.8600  628.8600   0.0000   0.0000   100.0000
   7           Node24   635.3400  631.0300  628.0300   0.0000   0.0000   100.0000
   8           Node25   634.1030  629.3500  626.3500   0.0000   0.0000   100.0000
   9           Node26   634.3200  629.4200  626.4200   0.0000   0.0000   100.0000
  10           Node27   635.4400  626.6900  623.6900   0.0000   0.0000   100.0000
  11           Node29   620.2110  620.2110  612.7800   0.0000   0.0000   100.0000
  12           Node30   631.4300  622.9800  621.4800   0.0000   0.0000   100.0000
  13           Node31   627.0900  618.0000  616.0000   0.0000   0.0000   100.0000
  14           Node33   619.3200  613.5630  610.5600   0.0000   0.0000   100.0000
  15           Node34   618.6800  611.4300  608.4300   0.0000   0.0000   100.0000
  16           Node35   621.6500  611.4000  608.4000   0.0000   0.0000   100.0000
  17           Node36   633.6100  610.4000  607.4000   0.0000   0.0000   100.0000
  18           Node37   632.4600  609.4600  606.4600   0.0000   0.0000   100.0000
  19           Node38   626.7800  608.4500  605.4500   0.0000   0.0000   100.0000
  20           Node39   611.6440  607.4400  604.4400   0.0000   0.0000   100.0000
  21           Node41   633.3700  631.2200  630.2000   0.0000   0.0000   100.0000
  22           Node43   638.5000  637.9600  636.4600   0.0000   0.0000   100.0000
  23           Node44   637.9900  637.6400  636.1400   0.0000   0.0000   100.0000
```

24	Node45	638.0000	637.5400	636.0400	0.0000	0.0000	100.0000
25	Node46	608.0000	610.3500	592.7400	0.0000	0.0000	100.0000
26	Node47	610.0000	576.0000	572.0000	0.0000	0.0000	100.0000
27	Node48	618.0000	609.8000	593.3000	0.0000	0.0000	100.0000
28	Node63	633.6300	633.6300	631.0000	0.0000	0.0000	100.0000
29	Node65	642.0000	642.0000	638.0000	0.0000	0.0000	100.0000
30	Node66	634.7700	633.4700	631.9700	0.0000	0.0000	100.0000
31	Node69	638.1000	636.5000	636.0000	0.0000	0.0000	100.0000
32	Node70	636.1000	636.0600	633.4300	0.0000	0.0000	100.0000
33	Node71	624.7000	624.2400	622.0000	0.0000	0.0000	100.0000
34	Node74	625.0300	622.2100	618.9800	0.0000	0.0000	100.0000
35	Node75	611.7300	611.7200	602.9200	0.0000	0.0000	100.0000
36	Node80	613.8400	613.8400	597.8900	0.0000	0.0000	100.0000
37	Node81	611.3000	611.2900	595.1800	0.0000	0.0000	100.0000
38	Node82	611.6700	611.6600	594.6700	0.0000	0.0000	100.0000
39	Node83	642.6000	642.6000	639.6000	0.0000	0.0000	100.0000
40	Node84	639.7400	633.2900	631.5400	0.0000	0.0000	100.0000
41	Node86	621.1000	616.4900	613.4900	0.0000	0.0000	100.0000
42	Node87	622.5000	622.5000	606.0000	0.0000	0.0000	100.0000
43	Node89	639.1000	638.6000	637.1000	0.0000	0.0000	100.0000
44	Node92	636.3000	634.7100	633.2100	0.0000	0.0000	100.0000
45	Node94	635.3000	634.8000	633.3000	0.0000	0.0000	100.0000
46	Node99	639.7000	637.7000	637.7000	0.0000	0.0000	100.0000
47	Node100	634.1900	633.8300	632.3300	0.0000	0.0000	100.0000
48	Node101	634.8000	634.0000	632.0000	0.0000	0.0000	100.0000
49	Node103	634.8400	633.4400	631.4400	0.0000	0.0000	100.0000
50	Node108	633.9000	633.2900	630.5000	0.0000	0.0000	100.0000
51	Node30.1	629.1600	621.1400	619.1400	0.0000	0.0000	100.0000
52	Node30.2	630.2500	622.3100	620.3100	0.0000	0.0000	100.0000
53	Node120	639.6000	638.0000	638.0000	0.0000	0.0000	100.0000
54	Node124	632.4600	615.4000	613.4000	0.0000	0.0000	100.0000
55	Node125	634.3200	631.0000	628.5000	0.0000	0.0000	100.0000
56	Node130	624.3400	618.8100	615.6100	0.0000	0.0000	100.0000
57	Node132	624.3400	616.6100	615.6100	0.0000	0.0000	100.0000

==========
| Table E3b - Junction Data |
==========

Inp Num	Junction Name	X Coord.	Y Coord.	Type of Manhole	Type of Inlet	Maximum Capacity	Pavement Shape	Pavement Slope
1	Node11	0.0000	0.0000	F	Normal		0	0.0000
2	Node12	0.0000	0.0000	No P	Normal		0	0.0000
3	Node20	0.0000	0.0000	F	Normal		0	0.0000
4	Node21	0.0000	0.0000	F	Normal		0	0.0000
5	Node22	0.0000	0.0000		Normal		0	0.0000
6	Node23	0.0000	0.0000		Normal		0	0.0000
7	Node24	0.0000	0.0000		Normal		0	0.0000
8	Node25	0.0000	0.0000	F	Normal		0	0.0000
9	Node26	0.0000	0.0000	F	Normal		0	0.0000
10	Node27	0.0000	0.0000	F	Normal		0	0.0000
11	Node29	0.0000	0.0000	No P	Normal		0	0.0000
12	Node30	0.0000	0.0000	F	Normal		0	0.0000
13	Node31	0.0000	0.0000	F	Normal		0	0.0000
14	Node33	0.0000	0.0000	F	Normal		0	0.0000
15	Node34	0.0000	0.0000		Normal		0	0.0000
16	Node35	0.0000	0.0000		Normal		0	0.0000
17	Node36	0.0000	0.0000		Normal		0	0.0000
18	Node37	0.0000	0.0000		Normal		0	0.0000
19	Node38	0.0000	0.0000	No P	Normal		0	0.0000
20	Node39	0.0000	0.0000		Normal		0	0.0000
21	Node41	0.0000	0.0000	No P	Normal		0	0.0000
22	Node43	0.0000	0.0000	F	Normal		0	0.0000
23	Node44	0.0000	0.0000	F	Normal		0	0.0000
24	Node45	0.0000	0.0000	No P	Normal		0	0.0000
25	Node46	0.0000	0.0000	F	Normal		0	0.0000
26	Node47	0.0000	0.0000	No P	Normal		0	0.0000
27	Node48	0.0000	0.0000	No P	Normal		0	0.0000
28	Node63	0.0000	0.0000	F	Normal		0	0.0000
29	Node65	0.0000	0.0000	F	Normal		0	0.0000
30	Node66	0.0000	0.0000	F	Normal		0	0.0000
31	Node69	0.0000	0.0000	No P	Normal		0	0.0000
32	Node70	0.0000	0.0000	F	Normal		0	0.0000
33	Node71	0.0000	0.0000	No P	Normal		0	0.0000
34	Node74	0.0000	0.0000	No P	Normal		0	0.0000
35	Node75	0.0000	0.0000	No P	Normal		0	0.0000
36	Node80	0.0000	0.0000	No P	Normal		0	0.0000
37	Node81	0.0000	0.0000	No P	Normal		0	0.0000
38	Node82	0.0000	0.0000	No P	Normal		0	0.0000
39	Node83	0.0000	0.0000	No P	Normal		0	0.0000
40	Node84	0.0000	0.0000	No P	Normal		0	0.0000
41	Node86	0.0000	0.0000	F	Normal		0	0.0000
42	Node87	0.0000	0.0000	No P	Normal		0	0.0000
43	Node89	0.0000	0.0000	F	Normal		0	0.0000
44	Node92	0.0000	0.0000	F	Normal		0	0.0000
45	Node94	0.0000	0.0000	F	Normal		0	0.0000
46	Node99	0.0000	0.0000	F	Normal		0	0.0000
47	Node100	0.0000	0.0000	F	Normal		0	0.0000
48	Node101	0.0000	0.0000	No P	Normal		0	0.0000
49	Node103	0.0000	0.0000	No P	Normal		0	0.0000
50	Node108	0.0000	0.0000	F	Normal		0	0.0000
51	Node30.1	0.0000	0.0000	F	Normal		0	0.0000
52	Node30.2	0.0000	0.0000	F	Normal		0	0.0000
53	Node120	0.0000	0.0000	F	Normal		0	0.0000
54	Node124	0.0000	0.0000	No P	Normal		0	0.0000
55	Node125	0.0000	0.0000	No P	Normal		0	0.0000
56	Node130	0.0000	0.0000	No P	Normal		0	0.0000
57	Node132	0.0000	0.0000	No P	Normal		0	0.0000

==========
| Table E4 - Conduit Connectivity |
==========

Input Number	Conduit Name	Upstream Node	Downstream Node	Upstream Elevation	Downstream Elevation	
1	Link12	Node20	Node21	634.8000	634.4500	No Design
2	Link13	Node21	Node84	633.1600	631.5400	No Design
3	Link14	Node22	Node23	630.1100	628.8600	No Design
4	Link15	Node23	Node24	628.8600	628.0300	No Design
5	Link16	Node24	Node25	628.0300	626.3500	No Design
6	Link17	Node26	Node25	626.4200	626.3500	No Design
7	Link18	Node26	Node27	626.4200	623.6900	No Design
8	Link22	Node31	Node124	616.0000	613.4000	No Design
9	Link23	Node33	Node34	610.5630	608.4300	No Design
10	Link24	Node34	Node35	608.4300	608.4000	No Design
11	Link25	Node35	Node36	608.4000	607.4000	No Design
12	Link26	Node36	Node37	607.4000	606.4600	No Design
13	Link27	Node37	Node38	606.4600	605.4500	No Design
14	Link28	Node38	Node39	605.4500	604.4400	No Design
15	Link31	Node44	Node45	636.1400	636.0400	No Design
16	Link32	Node46	Node47	592.7400	572.0000	No Design
17	Link33	Node48	Node47	593.3000	572.0000	No Design
18	Link47	Node66	Node24	631.9700	628.3300	No Design
19	Link53	Node45	Node69	636.0400	636.0000	No Design
20	Link54	Node69	Node70	636.0000	633.4300	No Design
21	Link55	Node70	Node63	633.4300	631.0000	No Design
22	Link56	Node41	Node71	630.2000	622.0000	No Design
23	Link68	Node71	Node74	622.0000	618.9800	No Design
24	Link69	Node74	Node11	618.9800	617.2000	No Design
25	Link70	Node12	Node130	617.2100	615.6100	No Design
26	Link72	Node39	Node75	604.4400	602.9220	No Design
27	Link73	Node75	Node80	602.9200	597.8900	No Design
28	Link74	Node80	Node81	597.8900	595.1800	No Design
29	Link75	Node81	Node82	595.1800	594.6700	No Design
30	Link76	Node82	Node46	594.6700	592.7400	No Design
31	Link77	Node65	Node83	640.0000	639.6000	No Design
32	Link78	Node83	Node22	639.6000	636.3500	No Design
33	Link82	Node27	Node86	623.6900	613.4900	No Design
34	Link83	Node86	Node29	613.4900	612.7800	No Design
35	Link84	Node29	Node87	612.7800	606.0000	No Design
36	Link85	Node87	Node48	606.0000	593.3000	No Design
37	Link90	Node94	Node108	633.3000	630.5000	No Design
38	Link93	Node92	Node100	633.2100	632.3300	No Design
39	Link98	Node100	Node101	632.3300	632.0000	No Design
40	Link104	Node101	Node103	632.0000	631.4400	No Design
41	Link105	Node103	Node108	631.4400	631.2900	No Design
42	Link106	Node108	Node125	630.5000	628.5000	No Design
43	Link21.1	Node30.1	Node31	619.1400	616.0000	No Design
44	Link21.2	Node30.2	Node30.1	620.3100	619.1400	No Design
45	Link118	Node89	Node43	637.1000	636.4600	No Design
46	Link126	Node30	Node30.2	621.4800	620.3100	No Design
47	Link127	Node132	Node33	615.6100	610.5600	No Design
48	214.1	Node11	Node12	617.7000	617.2100	No Design
49	272.1	Node43	Node44	636.4600	636.1400	No Design
50	283.1	Node63	Node41	631.0100	630.2200	No Design
51	336.1	Node84	Node22	631.5400	630.5100	No Design

==========
| Storage Junction Data |
==========

STORAGE JUNCTION NUMBER OR NAME	JUNCTION TYPE	MAXIMUM OR CONSTANT SURFACE AREA (FT2)	PEAK OR CONSTANT VOLUME (CUBIC FEET)	CROWN ELEVATION (FT)	DEPTH STARTS FROM
Node65	Stage/Area	50965.2000	114339.2685	642.0000	Node Invert
Node99	Stage/Area	43560.0000	65156.9320	639.7000	Node Invert
Node120	Stage/Area	65340.0000	59372.3585	639.6000	Node Invert
Node130	Stage/Area	43560.0000	361361.9813	624.3400	Node Invert

==========
| Variable storage data for node | Node65
==========

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	638.0000	0.0000	435.6000	0.0000	0.0100	0.0000
2	639.0000	1.0000	10890.0000	4501.1550	0.2500	0.1033
3	640.0000	2.0000	29185.2000	23801.9281	0.6700	0.5464
4	641.0000	3.0000	50965.2000	63374.0685	1.1700	1.4549
5	642.0000	4.0000	50965.2000	114339.2685	1.1700	2.6249

==========
| Variable storage data for node | Node99
==========

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	637.7000	0.0000	4.3560	0.0000	0.0001	0.0000
2	637.7100	0.0100	2178.0000	7.5991	0.0500	0.0002
3	638.0000	0.3000	12196.8000	1895.3728	0.2800	0.0435
4	638.2000	0.5000	22651.2000	5326.6343	0.5200	0.1223
5	638.7000	1.0000	43560.0000	21596.9320	1.0000	0.4958
6	639.7000	2.0000	43560.0000	65156.9320	1.0000	1.4958

==========
| Variable storage data for node | Node120
==========

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	638.0000	0.0000	43.5600	0.0000	0.0010	0.0000
2	639.0000	1.0000	32670.0000	11302.0536	0.7500	0.2595
3	640.0000	2.0000	65340.0000	59372.3585	1.5000	1.3630

==========
| Variable storage data for node | Node130

```
      *=================================*
       Data     Elevation    Depth          Area          Volume          Area          Volume
      Point         ft         ft          ft^2            ft^3          acres           ac-ft
      =====     =========   ======   ===========   ============   ===========   ============
         1       615.6100   0.0000      43.5600         0.0000        0.0010          0.0000
         2       616.1100   0.5000   32670.0000      5651.0268        0.7500          0.1297
         3       616.6100   1.0000   43560.0000     24643.1813        1.0000          0.5657
         4       624.3400   8.7300   43560.0000    361361.9813        1.0000          8.2957


*==========================================*
|            Orifice Data                  |
*==========================================*

         Conduit            From             To                Area     Depth      Discharge   Height Above
            Name        Junction        Junction      Type     (ft2)      (ft)     Coefficient  Junction (ft)
---------------- --------------- ---------------      ----     -----     -----    -----------  -------------
       Restrict1         Node124          Node37 Circ Side      2.18      0.00          0.600          6.600
       Restrict2         Node125          Node26 Circ Side      2.18      0.00          0.600          1.500
      Restrict10         Node130         Node132 Circ Side      7.81      0.00          0.600          0.000

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE              1
      CONDUIT NAME..........................        Restrict1
      Upstream node.........................          Node124
      Downstream node.......................           Node37
      PIPE DIAMETER.......................                1.67
      PIPE LENGTH.........................             4394.62
      MANNINGS ROUGHNESS..................               0.0026
      INVERT ELEVATION AT UPSTREAM END.....            620.0000
      INVERT ELEVATION AT DOWNSTREAM END...            619.9900

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE              2
      CONDUIT NAME..........................        Restrict2
      Upstream node.........................          Node125
      Downstream node.......................           Node26
      PIPE DIAMETER.......................                1.67
      PIPE LENGTH.........................             4394.62
      MANNINGS ROUGHNESS..................               0.0026
      INVERT ELEVATION AT UPSTREAM END.....            630.0000
      INVERT ELEVATION AT DOWNSTREAM END...            629.9900

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE              3
      CONDUIT NAME..........................       Restrict10
      Upstream node.........................          Node130
      Downstream node.......................          Node132
      PIPE DIAMETER.......................                3.15
      PIPE LENGTH.........................             6046.02
      MANNINGS ROUGHNESS..................               0.0034
      INVERT ELEVATION AT UPSTREAM END.....            615.6100
      INVERT ELEVATION AT DOWNSTREAM END...            615.6000

Note: For a Bottom-outlet orifice the invert elevation of the downstream node will be
      adjusted to accomodate the equivalent conduit.  Conduit grades are not affected.


*==========================================*
|                Weir Data                 |
*==========================================*

            Weir            From             To            Crest      Weir         Weir   Discharge         Weir
            Name        Junction        Junction  Type  Height(ft)   Top(ft)  Length(ft) Coefficient        Power
---------------- --------------- ---------------  ----  ----------   -------  ---------- -----------  -----------
          Link 5         Node11          Node12     1        3.16    182.80      300.00       3.0000       1.5000
          WEIR30         Node43          Node44     1        1.94    163.54      300.00       3.0000       1.5000
          WEIR46         Node63          Node41     1        2.37    169.00       50.00       3.0000       1.5000
        Link97.1         Node99          Node21     2        0.56    162.30       10.00       3.0000       1.5000
         WEIR119        Node120          Node20     2        1.30    162.00        5.00       3.0000       1.5000


*==============================================*
|          FREE OUTFALL DATA (DATA GROUP I1)   |
|         BOUNDARY CONDITION ON DATA GROUP J1  |
*==============================================*

Outfall at Junction....Node47           has boundary condition number...         1

===> Warning !!  Outfall Junction Node47           has two or more connecting conduits.


*==========================================*
|              Weir Outfall Data           |
|      Boundary Condition on data group J1 |
*==========================================*



*==============================================*
|        INTERNAL CONNECTIVITY INFORMATION     |
*==============================================*

         CONDUIT         JUNCTION         JUNCTION
---------------- --------------- ---------------
       Restrict1         Node124          Node37
       Restrict2         Node125          Node26
      Restrict10         Node130         Node132
          Link 5          Node11          Node12
          WEIR30          Node43          Node44
          WEIR46          Node63          Node41
        Link97.1          Node99          Node21
         WEIR119         Node120          Node20
        FREE # 1          Node47        BOUNDARY

*==================================================*
|        Boundary Condition Information            |
|                 Data Groups J1-J4                |
*==================================================*
```

```
BC NUMBER..         1 has no control water surface.

*==================================================*
|             XP Note Field Summary                |
*==================================================*



*================================*
|   Conduit Convergence Criteria  |
*================================*

          Conduit        Full     Conduit
             Name        Flow       Slope
-----------------  ----------  ----------
           Link12      5.7493      0.0011
           Link13     12.3889      0.0052
           Link14     43.7477      0.0037
           Link15     36.6850      0.0026
           Link16     37.2836      0.0027
           Link17     26.7696      0.0014
           Link18     55.5441      0.0059
           Link22     21.4313      0.0076
           Link23     59.7442      0.0068
           Link24     14.5486      0.0004
           Link25     41.3740      0.0033
           Link26     39.9177      0.0031
           Link27     34.5795      0.0031
           Link28     40.1573      0.0031
           Link31      4.6303      0.0017
           Link32    451.1614      0.0519
           Link33    381.7717      0.0819
           Link47     29.5450      0.0674
           Link53      1.7213      0.0012
           Link54      1.9517      0.0103
           Link55    328.6757      0.0176
           Link56     78.4186      0.0269
           Link68     93.5685      0.0075
           Link69   1818.6510      0.0068
           Link70    872.4818      0.0036
           Link72    137.3690      0.0361
           Link73  56825.7885      0.0689
           Link74  37318.0904      0.0266
           Link75  29495.4038      0.0098
           Link76  40618.1464      0.0482
           Link77     20.0104      0.0067
           Link78   1059.8133      0.0100
           Link82    110.5183      0.0234
           Link83     54.8977      0.0058
           Link84   4900.7542      0.0242
           Link85  34130.3174      0.0270
           Link90     12.0431      0.0112
           Link93      8.0696      0.0050
           Link98     10.0638      0.0106
          Link104     12.3507      0.0035
          Link105      8.6239      0.0017
          Link106     43.5723      0.0096
         Link21.1     32.3690      0.0174
         Link21.2     27.9430      0.0130
          Link118      6.4373      0.0032
          Link126     12.9749      0.0130
          Link127    214.6192      0.0132
            214.1     15.9283      0.0169
            272.1     11.3797      0.0100
            283.1      2.7121      0.0197
            336.1     24.1586      0.0198
        Restrict1     13.5485      0.0000
        Restrict2     13.5485      0.0000
       Restrict10     66.7783      0.0000

*================================*
|    Initial Model Condition      |
| Initial Time =      0.08 hours  |
*================================*

      Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
         Node11/   0.00 /   617.20           Node12/   0.00 /   617.21           Node20/   0.00 /   634.80
         Node21/   0.00 /   633.16           Node22/   0.00 /   630.11           Node23/   0.00 /   628.86
         Node24/   0.00 /   628.03           Node25/   0.00 /   626.35           Node26/   0.00 /   626.42
         Node27/   0.00 /   623.69           Node29/   0.00 /   612.78           Node30/   0.00 /   621.48
         Node31/   0.00 /   616.00           Node33/   0.00 /   610.56           Node34/   0.00 /   608.43
         Node35/   0.00 /   608.40           Node36/   0.00 /   607.40           Node37/   0.00 /   606.46
         Node38/   0.00 /   605.45           Node39/   0.00 /   604.44           Node41/   0.00 /   630.20
         Node43/   0.00 /   636.46           Node44/   0.00 /   636.14           Node45/   0.00 /   636.04
         Node46/   0.00 /   592.74           Node47/   0.00 /   572.00           Node48/   0.00 /   593.30
         Node63/   0.00 /   631.00           Node65/   0.00 /   638.00           Node66/   0.00 /   631.97
         Node69/   0.00 /   636.00           Node70/   0.00 /   633.43           Node71/   0.00 /   622.00
         Node74/   0.00 /   618.98           Node75/   0.00 /   602.92           Node80/   0.00 /   597.89
         Node81/   0.00 /   595.18           Node82/   0.00 /   594.67           Node83/   0.00 /   639.60
         Node84/   0.00 /   631.54           Node86/   0.00 /   613.49           Node87/   0.00 /   606.00
         Node89/   0.00 /   637.10           Node92/   0.00 /   633.21           Node94/   0.00 /   633.30
         Node99/   0.00 /   637.70          Node100/   0.00 /   632.33          Node101/   0.00 /   632.00
        Node103/   0.00 /   631.44          Node108/   0.00 /   630.50        Node30.1/   0.00 /   619.14
       Node30.2/   0.00 /   620.31          Node120/   0.00 /   638.00          Node124/   0.00 /   613.40
        Node125/   0.00 /   628.50          Node130/   0.00 /   615.61          Node132/   0.00 /   615.60

        Conduit/       FLOW   ===> "*" Conduit uses the normal flow option.
         Link12/       0.00           Link13/       0.00           Link14/       0.00
         Link15/       0.00           Link16/       0.00           Link17/       0.00
         Link18/       0.00           Link22/       0.00           Link23/       0.00
         Link24/       0.00           Link25/       0.00           Link26/       0.00
         Link27/       0.00           Link28/       0.00           Link31/       0.00
         Link32/       0.00           Link33/       0.00           Link47/       0.00
```

```
      Link53/       0.00          Link54/       0.00          Link55/       0.00
      Link56/       0.00          Link68/       0.00          Link69/       0.00
      Link70/       0.00          Link72/       0.00          Link73/       0.00
      Link74/       0.00          Link75/       0.00          Link76/       0.00
      Link77/       0.00          Link78/       0.00          Link82/       0.00
      Link83/       0.00          Link84/       0.00          Link85/       0.00
      Link90/       0.00          Link93/       0.00          Link98/       0.00
     Link104/       0.00         Link105/       0.00         Link106/       0.00
    Link21.1/       0.00        Link21.2/       0.00         Link118/       0.00
     Link126/       0.00         Link127/       0.00           214.1/       0.00
       272.1/       0.00           283.1/       0.00           336.1/       0.00
   Restrict1/       0.00       Restrict2/       0.00      Restrict10/       0.00
      Link 5/       0.00          WEIR30/       0.00          WEIR46/       0.00
    Link97.1/       0.00         WEIR119/       0.00        FREE # 1/       0.00

     Conduit/   Velocity
      Link12/       0.00          Link13/       0.00          Link14/       0.00
      Link15/       0.00          Link16/       0.00          Link17/       0.00
      Link18/       0.00          Link22/       0.00          Link23/       0.00
      Link24/       0.00          Link25/       0.00          Link26/       0.00
      Link27/       0.00          Link28/       0.00          Link31/       0.00
      Link32/       0.00          Link33/       0.00          Link47/       0.00
      Link53/       0.00          Link54/       0.00          Link55/       0.00
      Link56/       0.00          Link68/       0.00          Link69/       0.00
      Link70/       0.00          Link72/       0.00          Link73/       0.00
      Link74/       0.00          Link75/       0.00          Link76/       0.00
      Link77/       0.00          Link78/       0.00          Link82/       0.00
      Link83/       0.00          Link84/       0.00          Link85/       0.00
      Link90/       0.00          Link93/       0.00          Link98/       0.00
     Link104/       0.00         Link105/       0.00         Link106/       0.00
    Link21.1/       0.00        Link21.2/       0.00         Link118/       0.00
     Link126/       0.00         Link127/       0.00           214.1/       0.00
       272.1/       0.00           283.1/       0.00           336.1/       0.00
   Restrict1/       0.00       Restrict2/       0.00      Restrict10/       0.00

     Conduit/ Cross Sectional Area
      Link12/       0.00          Link13/       0.00          Link14/       0.00
      Link15/       0.00          Link16/       0.00          Link17/       0.00
      Link18/       0.00          Link22/       0.00          Link23/       0.00
      Link24/       0.00          Link25/       0.00          Link26/       0.00
      Link27/       0.00          Link28/       0.00          Link31/       0.00
      Link32/       0.00          Link33/       0.00          Link47/       0.00
      Link53/       0.00          Link54/       0.00          Link55/       0.00
      Link56/       0.00          Link68/       0.00          Link69/       0.00
      Link70/       0.00          Link72/       0.00          Link73/       0.00
      Link74/       0.00          Link75/       0.00          Link76/       0.00
      Link77/       0.00          Link78/       0.00          Link82/       0.00
      Link83/       0.00          Link84/       0.00          Link85/       0.00
      Link90/       0.00          Link93/       0.00          Link98/       0.00
     Link104/       0.00         Link105/       0.00         Link106/       0.00
    Link21.1/       0.00        Link21.2/       0.00         Link118/       0.00
     Link126/       0.00         Link127/       0.00           214.1/       0.00
       272.1/       0.00           283.1/       0.00           336.1/       0.00
   Restrict1/       0.00       Restrict2/       0.00      Restrict10/       0.00

     Conduit/ Hydraulic Radius
      Link12/       0.00          Link13/       0.00          Link14/       0.00
      Link15/       0.00          Link16/       0.00          Link17/       0.00
      Link18/       0.00          Link22/       0.00          Link23/       0.00
      Link24/       0.00          Link25/       0.00          Link26/       0.00
      Link27/       0.00          Link28/       0.00          Link31/       0.00
      Link32/       0.00          Link33/       0.00          Link47/       0.00
      Link53/       0.00          Link54/       0.00          Link55/       0.00
      Link56/       0.00          Link68/       0.00          Link69/       0.00
      Link70/       0.00          Link72/       0.00          Link73/       0.00
      Link74/       0.00          Link75/       0.00          Link76/       0.00
      Link77/       0.00          Link78/       0.00          Link82/       0.00
      Link83/       0.00          Link84/       0.00          Link85/       0.00
      Link90/       0.00          Link93/       0.00          Link98/       0.00
     Link104/       0.00         Link105/       0.00         Link106/       0.00
    Link21.1/       0.00        Link21.2/       0.00         Link118/       0.00
     Link126/       0.00         Link127/       0.00           214.1/       0.00
       272.1/       0.00           283.1/       0.00           336.1/       0.00
   Restrict1/       0.00       Restrict2/       0.00      Restrict10/       0.00

     Conduit/ Upstream/ Downstream Elevation
      Link12/   633.16/   633.16          Link13/   631.54/   631.54          Link14/   628.86/   628.86
      Link15/   628.03/   628.03          Link16/   626.35/   626.35          Link17/   626.35/   626.35
      Link18/   623.69/   623.69          Link22/   613.40/   613.40          Link23/   608.43/   608.43
      Link24/   608.40/   608.40          Link25/   607.40/   607.40          Link26/   606.46/   606.46
      Link27/   605.45/   605.45          Link28/   604.44/   604.44          Link31/   636.04/   636.04
      Link32/   572.00/   572.00          Link33/   572.00/   572.00          Link47/   628.03/   628.03
      Link53/   636.00/   636.00          Link54/   633.43/   633.43          Link55/   631.00/   631.00
      Link56/   622.00/   622.00          Link68/   618.98/   618.98          Link69/   617.20/   617.20
      Link70/   615.61/   615.61          Link72/   602.92/   602.92          Link73/   597.89/   597.89
      Link74/   595.18/   595.18          Link75/   594.67/   594.67          Link76/   592.74/   592.74
      Link77/   639.60/   639.60          Link78/   630.11/   630.11          Link82/   613.49/   613.49
      Link83/   612.78/   612.78          Link84/   606.00/   606.00          Link85/   593.30/   593.30
      Link90/   630.50/   630.50          Link93/   632.33/   632.33          Link98/   632.00/   632.00
     Link104/   631.44/   631.44         Link105/   630.50/   630.50         Link106/   628.50/   628.50
    Link21.1/   616.00/   616.00        Link21.2/   619.14/   619.14         Link118/   636.46/   636.46
     Link126/   620.31/   620.31         Link127/   610.56/   610.56           214.1/   617.21/   617.21
       272.1/   636.14/   636.14           283.1/   630.20/   630.20           336.1/   630.11/   630.11
   Restrict1/   606.46/   606.46       Restrict2/   626.42/   626.42      Restrict10/   615.60/   615.60

Cycle        500      Time         41 Hrs - 40.00 Min

     Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
      Node11/   0.50 /   617.70          Node12/   0.00 /   617.21          Node20/   0.00 /   634.80
      Node21/   0.00 /   633.16          Node22/   0.02 /   630.13          Node23/   0.02 /   628.88
      Node24/   0.02 /   628.05          Node25/   0.09 /   626.44          Node26/   0.02 /   626.44
      Node27/   0.01 /   623.70          Node29/   0.01 /   612.79          Node30/   0.00 /   621.48
      Node31/   4.02 /   620.02          Node33/   0.01 /   610.57          Node34/   0.01 /   608.44
      Node35/   0.00 /   608.40          Node36/   0.00 /   607.40          Node37/   0.01 /   606.47
      Node38/   0.01 /   605.46          Node39/   0.00 /   604.44          Node41/   0.00 /   630.20
      Node43/   0.00 /   636.46          Node44/   0.00 /   636.14          Node45/   0.00 /   636.04
```

Node46/	0.00 /	592.74	Node47/	0.00 /	572.00	Node48/	0.01 /	593.31
Node63/	0.01 /	631.01	Node65/	2.02 /	640.02	Node66/	0.00 /	631.97
Node69/	0.00 /	636.00	Node70/	0.00 /	633.43	Node71/	0.00 /	622.00
Node74/	0.00 /	618.98	Node75/	0.00 /	602.92	Node80/	0.01 /	597.90
Node81/	0.00 /	595.18	Node82/	0.01 /	594.68	Node83/	0.00 /	639.60
Node84/	0.00 /	631.54	Node86/	0.02 /	613.51	Node87/	0.01 /	606.01
Node89/	0.00 /	637.10	Node92/	0.00 /	633.21	Node94/	0.00 /	633.30
Node99/	0.28 /	637.98	Node100/	0.00 /	632.33	Node101/	0.00 /	632.00
Node103/	0.00 /	631.44	Node108/	0.00 /	630.50	Node30.1/	0.88 /	620.02
Node30.2/	0.00 /	620.31	Node120/	1.11 /	639.11	Node124/	6.62*/	620.02
Node125/	1.52 /	630.02	Node130/	0.01 /	615.62	Node132/	0.02 /	615.62

Conduit/ FLOW ===> "*" Conduit uses the normal flow option.

Link12/	0.00	Link13/	0.00	Link14/	0.01*	Link15/	0.01
Link16/	0.01*	Link17/	-0.01	Link18/	0.01	Link22/	0.00
Link23/	0.00*	Link24/	0.00	Link25/	0.00*	Link26/	0.00*
Link27/	0.00*	Link28/	0.00	Link31/	0.00	Link32/	0.00
Link33/	0.01	Link47/	0.00*	Link53/	0.00	Link54/	0.00*
Link55/	0.00*	Link56/	0.00*	Link68/	0.00*	Link69/	0.00*
Link70/	0.00*	Link72/	0.00	Link73/	0.00*	Link74/	0.00
Link75/	0.00*	Link76/	0.00	Link77/	0.01	Link78/	0.01
Link82/	0.01*	Link83/	0.01	Link84/	0.01	Link85/	0.01
Link90/	0.00*	Link93/	0.00	Link98/	0.00*	Link104/	0.00*
Link105/	0.00	Link106/	0.00*	Link21.1/	0.00	Link21.2/	0.00*
Link118/	0.00	Link126/	0.00*	Link127/	0.00	214.1/	0.00*
272.1/	0.00	283.1/	0.00	336.1/	0.00	Restrict1/	0.00
Restrict2/	0.00	Restrict10/	0.00	Link 5/	0.00	WEIR30/	0.00
WEIR46/	0.00	Link97.1/	0.00	WEIR119/	0.00	FREE # 1/	0.01

```
*==================================================*
| Table E5 - Junction Time Limitation Summary      |
|            (0.10 or 0.25)* Depth * Area          |
| Time step = ------------------------------       |
|                  Sum of Flow                     |
*==================================================*
|  The time this junction was the limiting junction |
|                 is listed in the third column.    |
*==================================================*
```

Junction	Time(.10)	Time(.25)	Time(sec)
Node11	37.0606	92.6516	900.0000
Node12	83.4299	208.5747	0.0000
Node20	35.1613	87.9033	600.0000
Node21	23.3648	58.4120	300.0000
Node22	9.7324	24.3311	600.0000
Node23	13.4511	33.6278	0.0000
Node24	23.0192	57.5480	0.0000
Node25	46.5503	116.3757	0.0000
Node26	24.2345	60.5862	0.0000
Node27	242.0281	605.0703	0.0000
Node29	143.0674	357.6686	0.0000
Node30	8.0553	20.1382	2100.0000
Node31	0.8604	2.1511	2100.0000
Node33	36.0909	90.2274	11700.0000
Node34	38.8089	97.0222	3000.0000
Node35	31.2780	78.1949	1500.0000
Node36	49.5063	123.7657	600.0000
Node37	47.8290	119.5725	300.0000
Node38	48.6436	121.6091	0.0000
Node39	147.5609	368.9022	0.0000
Node41	286.6385	716.5963	0.0000
Node43	66.5916	166.4790	0.0000
Node44	183.1802	457.9504	0.0000
Node45	281.8500	704.6249	0.0000
Node46	118.7756	296.9391	0.0000
Node47	3000.0000	3000.0000	0.0000
Node48	181.9046	454.7614	0.0000
Node63	21.3714	53.4284	600.0000
Node65	75.9711	189.9277	0.0000
Node66	0.3482	0.8705	600.0000
Node69	183.0611	457.6527	0.0000
Node70	88.6393	221.5982	0.0000
Node71	214.0563	535.1407	0.0000
Node74	54.1235	135.3086	0.0000
Node75	111.1972	277.9930	0.0000
Node80	70.4429	176.1072	0.0000
Node81	176.8857	442.2142	0.0000
Node82	90.0486	225.1215	143400.000
Node83	273.9970	684.9926	0.0000
Node84	26.0098	65.0245	600.0000
Node86	15.3871	38.4678	300.0000
Node87	83.6461	209.1152	0.0000
Node89	86.4156	216.0389	0.0000
Node92	28.1114	70.2785	0.0000
Node94	22.5946	56.4866	0.0000
Node99	88.2876	220.7190	0.0000
Node100	74.8766	187.1916	0.0000
Node101	31.5682	78.9204	300.0000
Node103	79.1740	197.9350	0.0000
Node108	29.8239	74.5598	0.0000
Node30.1	4.8283	12.0708	0.0000
Node30.2	11.3613	28.4034	300.0000
Node120	104.1406	260.3516	0.0000
Node124	14.9250	37.3124	0.0000
Node125	16.0303	40.0758	600.0000
Node130	46.8393	117.0984	0.0000
Node132	46.9378	117.3444	2400.0000

The junction requiring the smallest time step was...Node82

```
*=========================================================*
|       Table E5a - Conduit Explicit Condition Summary     |
|       Courant   =         Conduit Length                 |
|       Time step = --------------------------------       |
```

```
|                    Velocity + sqrt(g*depth)                |
|                                                            |
|                 Conduit Implicit Condition Summary         |
|       Courant   =         Conduit Length                   |
|       Time step = -------------------------------          |
|                                Velocity                    |
*============================================================*
|  The 3rd column is the Explicit time step times the        |
|      minimum courant time step factor                      |
|                                                            |
|  Minimum Conduit Time Step in seconds in the 4th column    |
|  in the list. Maximum possible is 10 * maximum time step   |
|                                                            |
|  The 5th column is the maximum change at any time step     |
|  during the simulation. The 6th column is the wobble       |
|  value which is an indicator of the flow stability.        |
|                                                            |
|  You should use this section to find those conduits that   |
|  are slowing your model down.  Use modify conduits to      |
|  alter the length of the slow conduits to make your        |
|  simulation faster, or change the conduit name to          |
|  "CHME?????" where ????? are any characters, this will     |
|  lengthen the conduit based on the model time step,        |
|  not the value listed in modify conduits.                  |
*============================================================*
```

Conduit	Time(exp)	Expl*Cmin	Time(imp)	Time(min)	Max Qchange	Wobble	Type of Soln
Link12	15.2085	15.2085	41.7548	20.0000	-0.0235	7.9777	Normal Soln
Link13	12.1630	12.1630	29.2686	0.0000	-0.0590	4.9638	Normal Soln
Link14	17.8485	17.8485	53.2908	0.0000	-0.0786	2.1845	Normal Soln
Link15	16.6465	16.6465	55.7174	0.0000	-2.8003	3.1655	Normal Soln
Link16	26.6348	26.6348	78.2606	0.0000	6.0721	3.5189	Normal Soln
Link17	2.2846	2.2846	5.8886	0.0000	-4.6086	5.3039	Normal Soln
Link18	18.8806	18.8806	40.7735	0.0000	1.5340	2.8728	Normal Soln
Link22	13.3013	13.3013	55.0949	0.0000	-0.2219	4.9908	Normal Soln
Link23	12.2739	12.2739	36.7596	0.0000	-0.0946	5.7487	Normal Soln
Link24	2.9113	2.9113	8.7147	0.0000	-0.1065	23.1983	Normal Soln
Link25	12.2164	12.2164	35.8672	0.0000	-0.1157	7.8774	Normal Soln
Link26	12.9010	12.9010	36.1241	0.0000	-0.0966	8.1204	Normal Soln
Link27	14.0096	14.0096	36.6069	0.0000	-0.0913	9.4459	Normal Soln
Link28	15.7303	15.7303	34.7864	0.0000	-0.0940	7.6652	Normal Soln
Link31	4.4719	4.4719	8.9993	0.0000	0.0400	4.9714	Normal Soln
Link32	13.1778	13.1778	17.0276	0.0000	0.2488	0.9164	Normal Soln
Link33	7.8663	7.8663	9.9287	0.0000	-0.1395	0.5720	Normal Soln
Link47	2.1952	2.1952	2.9252	20.0000	0.0539	4.1667	Normal Soln
Link53	4.4328	4.4328	11.2407	0.0000	0.0808	13.3233	Normal Soln
Link54	46.8446	46.8446	135.0251	0.0000	0.0348	11.4828	Normal Soln
Link55	22.0319	22.0319	76.5450	0.0000	0.0447	0.0682	Normal Soln
Link56	51.1151	51.1151	131.7277	0.0000	0.2254	0.5838	Normal Soln
Link68	50.5671	50.5671	115.4441	0.0000	0.1121	0.4997	Normal Soln
Link69	32.3737	32.3737	201.1359	0.0000	-3.4155	0.5560	Normal Soln
Link70	46.1901	46.1901	162.2180	0.0000	0.6541	0.8961	Normal Soln
Link72	1.6278	1.6278	2.2080	870.0000	-0.0918	2.2928	Normal Soln
Link73	6.2197	6.2197	9.5756	0.0000	-0.1195	0.0055	Normal Soln
Link74	7.9390	7.9390	13.4454	0.0000	-0.1005	0.0083	Normal Soln
Link75	6.1295	6.1295	15.8045	0.0000	-0.0968	0.0104	Normal Soln
Link76	2.7090	2.7090	4.0866	1940.0000	-0.0954	0.0075	Normal Soln
Link77	3.8998	3.8998	6.5901	0.0000	0.0190	1.6982	Normal Soln
Link78	67.1079	67.1079	209.7643	0.0000	0.0265	0.0320	Normal Soln
Link82	17.1372	17.1372	26.9001	0.0000	0.7347	1.4265	Normal Soln
Link83	5.6457	5.6457	9.7987	0.0000	-0.0889	2.8803	Normal Soln
Link84	22.4704	22.4704	37.5320	0.0000	0.1122	0.0321	Normal Soln
Link85	38.5420	38.5420	63.7558	0.0000	-0.1200	0.0046	Normal Soln
Link90	15.6711	15.6711	35.6115	0.0000	0.0269	2.1589	Normal Soln
Link93	10.4753	10.4753	25.2960	0.0000	0.0279	3.4598	Normal Soln
Link98	2.1573	2.1573	4.6570	0.0000	0.0293	3.9398	Normal Soln
Link104	12.8484	12.8484	35.6790	0.0000	-0.0444	3.0930	Normal Soln
Link105	7.0567	7.0567	19.1722	0.0000	-0.0522	5.1472	Normal Soln
Link106	12.4763	12.4763	33.5668	0.0000	-0.0955	1.8714	Normal Soln
Link21.1	7.2295	7.2295	30.6909	0.0000	0.3518	2.7044	Normal Soln
Link21.2	3.9097	3.9097	15.3057	0.0000	0.1251	5.1112	Normal Soln
Link118	12.8702	12.8702	31.5824	0.0000	0.0370	3.5546	Normal Soln
Link126	3.2233	3.2233	8.7199	0.0000	0.0361	3.5234	Normal Soln
Link127	55.0857	55.0857	198.6941	0.0000	-0.1397	535.0760	Normal Soln
214.1	1.5476	1.5476	3.1801	30.0000	-0.0761	6.2146	Normal Soln
272.1	2.3953	2.3953	4.8746	0.0000	0.0366	2.0114	Normal Soln
283.1	2.6051	2.6051	6.4532	0.0000	-0.0431	3.6440	Normal Soln
336.1	2.4961	2.4961	4.5421	0.0000	-0.1313	3.2385	Normal Soln
Restrict1	200.9563	200.9563	483.8162	0.0000	0.0286	3.0524	Normal Soln
Restrict2	232.5250	232.5250	575.4265	0.0000	0.0331	2.6957	Normal Soln
Restrict10	268.6110	268.6110	685.9250	0.0000	0.0748	3.2948	Normal Soln

```
The conduit with the smallest time step limitation was..Link76
The conduit with the largest wobble was................Link127
The conduit with the largest flow change in any
consecutive time step..................................Link16

 ************************************************
 *      End of time step DO-loop in Runoff      *
 ************************************************

 Final Date (Mo/Day/Year)   =             1/ 2/2014
 Total number of time steps =                  1513
 Final Julian Date          =               2014002
 Final time of day          =                    0. seconds.
 Final time of day          =                 0.00   hours.
 Final running time         =               24.0000   hours.
 Final running time         =                1.0000    days.

 ****************************************************
 *     Extrapolation Summary for Watersheds         *
 * Explains the number of time steps and iterations *
 * used in the solution of the subcatchments.       *
 * # Steps ==> Total Number of Extrapolated Steps   *
 * # Calls ==> Total Number of OVERLND Calls        *
 ****************************************************
```

Subcatchment	# Steps	# Calls	Subcatchment	# Steps	# Calls			
Node89#1	0	0	Node63#1	0	0	Node11#1	0	0
Node33#1	0	0	Node30#1	0	0	Node46#1	0	0
Node65#1	0	0	Node120#1	0	0	Node99#1	0	0
Node66#1	0	0	Node24#1	0	0	Node25#1	0	0
Node94#1	0	0	Node92#1	0	0	Node48#1	0	0

```
##########################################################
# Rainfall input summary from Runoff Continuity Check   #
##########################################################
```

Total rainfall read for gage # 1 is 3.8200 in
Total rainfall duration for gage # 1 is 114.29 minutes

```
************************************************************
* Table R5. CONTINUITY CHECK FOR SURFACE WATER             *
*       Any continuity error can be fixed by lowering the  *
*       wet and transition time step. The transition time  *
*       should not be much greater than the wet time step. *
************************************************************
```

	cubic feet	Inches over Total Basin
Total Precipitation (Rain plus Snow)	4.729897E+06	3.820
Total Infiltration	1.825008E+06	1.474
Total Evaporation	9.826929E+03	0.008
Surface Runoff from Watersheds	2.899722E+06	2.342
Total Water remaining in Surface Storage	0.000000E+00	0.000
Infiltration over the Pervious Area...	1.825008E+06	1.474

Infiltration + Evaporation + Surface Runoff + Snow removal + Water remaining in Surface Storage + Water remaining in Snow Cover.....	4.734557E+06	3.824
Total Precipitation + Initial Storage.	4.729897E+06	3.820

```
The error in continuity is calculated as
****************************************
* Precipitation + Initial Snow Cover  *
*      - Infiltration -               *
*Evaporation - Snow removal -          *
*Surface Runoff from Watersheds -      *
*Water in Surface Storage -            *
*Water remaining in Snow Cover         *
*--------------------------------------*
* Precipitation + Initial Snow Cover  *
****************************************
```

Percent Continuity Error..... -0.0985

```
****************************************************
* Table R6. Continuity Check for Channel/Pipes     *
*           You should have zero continuity error  *
*           if you are not using runoff hydraulics *
****************************************************
```

	cubic feet	Inches over Total Basin
Initial Channel/Pipe Storage.....	0.000000E+00	0.000
Final Channel/Pipe Storage.....	0.000000E+00	0.000
Surface Runoff from Watersheds.....	2.899722E+06	2.342
Groundwater Subsurface Inflow or Diversion..	0.000000E+00	0.000
Evaporation Loss from Channels.....	0.000000E+00	0.000
Groundwater Flow Diverted Out of Network....	0.000000E+00	0.000
Channel/Pipe/Inlet Outflow.....	2.899722E+06	2.342
Initial Storage + Inflow.....	2.899722E+06	2.342
Final Storage + Outflow + Diverted GW.....	2.899722E+06	2.342

```
*****************************************
* Final Storage + Outflow + Evaporation  - *
* Watershed Runoff - Groundwater Inflow  - *
*     Initial Channel/Pipe Storage         *
*     ----------------------------------   *
*  Final Storage + Outflow  + Evaporation  *
*****************************************
```

Percent Continuity Error..... 0.0000

```
##################################################
# Table R9. Summary Statistics for Subcatchments #
##################################################
```

Note: Total Runoff Depth includes pervious & impervious areas.
Pervious and Impervious Runoff Depth is only the runoff from those two areas.
For catchments receiving redirected flow, this flow will only be shown if the flow is not directed directly to the outlet. Flow that is getting redirected is also listed with the original subcatchment.

Subcatchment.....	Node89#1	Node63#1	Node11#1	Node33#1	Node30#1	Node46#1
Area (acres).....	5.90000	5.00000	107.90000	37.80000	9.00000	30.10000
Percent Impervious.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Rainfall (in)....	3.82000	3.82000	3.82000	3.82000	3.82000	3.82000
Max Intensity (in/hr)..	6.81870	6.81870	6.81870	6.81870	6.81870	6.81870
Pervious Area						
Total Runoff Depth (in)	2.45881	2.44437	2.33714	2.26706	2.38841	2.62489
Peak Runoff Rate (cfs).	14.94302	12.21648	202.96210	70.08498	18.94980	63.14458
Total Impervious Area						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area with depression storage						

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Impervious Area without depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Total Area

Total Runoff Depth (in)	2.45881	2.44437	2.33714	2.26706	2.38841	2.62489
Peak Runoff Rate (cfs).	14.94302	12.21648	202.96210	70.08498	18.94980	63.14458

Rational Formula

Pervious Tc. (mins)....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Imp. Intensity (in/hr).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Subcatchment.....	Node65#1	Node120#1	Node99#1	Node66#1	Node24#1	Node25#1
Area (acres).....	16.10000	32.00000	32.10000	10.00000	19.70000	5.40000
Percent Impervious.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Rainfall (in)....	3.82000	3.82000	3.82000	3.82000	3.82000	3.82000
Max Intensity (in/hr)..	6.81870	6.81870	6.81870	6.81870	6.81870	6.81870

Pervious Area

Total Runoff Depth (in)	2.47055	2.17964	2.18259	2.45150	2.65430	1.81127
Peak Runoff Rate (cfs).	35.36448	53.06838	36.93468	28.63904	41.26456	7.81583

Total Impervious Area

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Impervious Area with depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Impervious Area without depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Total Area

Total Runoff Depth (in)	2.47055	2.17964	2.18259	2.45150	2.65430	1.81127
Peak Runoff Rate (cfs).	35.36448	53.06838	36.93468	28.63904	41.26456	7.81583

Rational Formula

Pervious Tc. (mins)....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Imp. Intensity (in/hr).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Subcatchment.....	Node94#1	Node92#1	Node48#1
Area (acres).....	5.00000	5.50000	19.60000
Percent Impervious.....	0.00000	0.00000	0.00000
Total Rainfall (in)....	3.82000	3.82000	3.82000
Max Intensity (in/hr)..	6.81870	6.81870	6.81870

Pervious Area

Total Runoff Depth (in)	2.46199	2.46199	2.12721
Peak Runoff Rate (cfs).	11.83902	13.02292	35.27000

Total Impervious Area

Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000

Impervious Area with depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000

Impervious Area without depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000

Total Area

Total Runoff Depth (in)	2.46199	2.46199	2.12721
Peak Runoff Rate (cfs).	11.83902	13.02292	35.27000

Rational Formula

Pervious Tc. (mins)....	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000

```
Pervious C ............          0.00000          0.00000          0.00000
Impervious Tc. (mins)..          0.00000          0.00000          0.00000
Imp. Intensity (in/hr).          0.00000          0.00000          0.00000
Impervious C ..........          0.00000          0.00000          0.00000
Partial Area (Ha)......          0.00000          0.00000          0.00000
Partial Area Tc........          0.00000          0.00000          0.00000
Partial Area Intensity.          0.00000          0.00000          0.00000

===> Runoff simulation ended normally.

*==================================================*
|  Table E6. Final Model Condition                 |
|            This table is used for steady state   |
|            flow comparison and is the information|
|            saved to the hot-restart file.        |
|            Final Time =    48.083 hours         |
*==================================================*

Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
         Node11/   0.50 /   617.70/          Node12/   0.00 /   617.21/          Node20/   0.00 /   634.80/
         Node21/   0.00 /   633.16/          Node22/   0.01 /   630.12/          Node23/   0.02 /   628.88/
         Node24/   0.02 /   628.05/          Node25/   0.09 /   626.44/          Node26/   0.02 /   626.44/
         Node27/   0.01 /   623.70/          Node29/   0.01 /   612.79/          Node30/   0.00 /   621.48/
         Node31/   4.02 /   620.02/          Node33/   0.00 /   610.56/          Node34/   0.01 /   608.44/
         Node35/   0.00 /   608.40/          Node36/   0.00 /   607.40/          Node37/   0.00 /   606.46/
         Node38/   0.01 /   605.46/          Node39/   0.00 /   604.44/          Node41/   0.00 /   630.20/
         Node43/   0.00 /   636.46/          Node44/   0.00 /   636.14/          Node45/   0.00 /   636.04/
         Node46/   0.00 /   592.74/          Node47/   0.00 /   572.00/          Node48/   0.00 /   593.30/
         Node63/   0.01 /   631.01/          Node65/   2.02 /   640.02/          Node66/   0.00 /   631.97/
         Node69/   0.00 /   636.00/          Node70/   0.00 /   633.43/          Node71/   0.00 /   622.00/
         Node74/   0.00 /   618.98/          Node75/   0.00 /   602.92/          Node80/   0.00 /   597.89/
         Node81/   0.00 /   595.18/          Node82/   0.00 /   594.67/          Node83/   0.00 /   639.60/
         Node84/   0.00 /   631.54/          Node86/   0.01 /   613.50/          Node87/   0.01 /   606.01/
         Node89/   0.00 /   637.10/          Node92/   0.00 /   633.21/          Node94/   0.00 /   633.30/
         Node99/   0.17 /   637.87/         Node100/   0.00 /   632.33/         Node101/   0.00 /   632.00/
        Node103/   0.00 /   631.44/         Node108/   0.00 /   630.50/        Node30.1/   0.88 /   620.02/
       Node30.2/   0.00 /   620.31/         Node120/   1.00 /   639.00/         Node124/   6.62*/   620.02/
        Node125/   1.52 /   630.02/         Node130/   0.01 /   615.62/         Node132/   0.02 /   615.62/

  Conduit/       Flow   ===> "*" Conduit uses the normal flow option.
         Link12/       0.00 /          Link13/       0.00 /          Link14/       0.01*/
         Link15/       0.01 /          Link16/       0.01*/          Link17/      -0.01 /
         Link18/       0.01 /          Link22/       0.00 /          Link23/       0.00*/
         Link24/       0.00 /          Link25/       0.00*/          Link26/       0.00*/
         Link27/       0.00*/          Link28/       0.00 /          Link31/       0.00 /
         Link32/       0.00 /          Link33/       0.01 /          Link47/       0.00*/
         Link53/       0.00 /          Link54/       0.00*/          Link55/       0.00*/
         Link56/       0.00*/          Link68/       0.00*/          Link69/       0.00*/
         Link70/       0.00*/          Link72/       0.00 /          Link73/       0.00*/
         Link74/       0.00 /          Link75/       0.00*/          Link76/       0.00 /
         Link77/       0.01 /          Link78/       0.01 /          Link82/       0.01*/
         Link83/       0.01 /          Link84/       0.01 /          Link85/       0.01 /
         Link90/       0.00*/          Link93/       0.00 /          Link98/       0.00*/
        Link104/       0.00*/         Link105/       0.00 /         Link106/       0.00*/
       Link21.1/       0.00 /        Link21.2/       0.00*/         Link118/       0.00 /
        Link126/       0.00*/         Link127/       0.00 /           214.1/       0.00*/
          272.1/       0.00 /           283.1/       0.00 /           336.1/       0.00 /
      Restrict1/       0.00 /       Restrict2/       0.00 /      Restrict10/       0.00 /
         Link 5/       0.00 /          WEIR30/       0.00 /          WEIR46/       0.00 /
       Link97.1/       0.00 /         WEIR119/       0.00 /        FREE # 1/       0.01 /

        Conduit/   Velocity
         Link12/       0.00 /          Link13/       0.00 /          Link14/       0.47 /
         Link15/       0.42 /          Link16/       0.29 /          Link17/      -0.09 /
         Link18/       0.52 /          Link22/       0.00 /          Link23/       0.32 /
         Link24/       0.11 /          Link25/       0.30 /          Link26/       0.27 /
         Link27/       0.28 /          Link28/       0.27 /          Link31/       0.00 /
         Link32/       0.26 /          Link33/       1.31 /          Link47/       0.00 /
         Link53/       0.00 /          Link54/       0.00 /          Link55/       0.00 /
         Link56/       0.00 /          Link68/       0.00 /          Link69/       0.00 /
         Link70/       0.00 /          Link72/       0.79 /          Link73/       0.16 /
         Link74/       0.12 /          Link75/       0.05 /          Link76/       0.15 /
         Link77/       0.52 /          Link78/       0.07 /          Link82/       0.90 /
         Link83/       0.52 /          Link84/       0.21 /          Link85/       0.19 /
         Link90/       0.00 /          Link93/       0.00 /          Link98/       0.00 /
        Link104/       0.00 /         Link105/       0.00 /         Link106/       0.00 /
       Link21.1/       0.00 /        Link21.2/       0.00 /         Link118/       0.00 /
        Link126/       0.00 /         Link127/       0.14 /           214.1/       0.19 /
          272.1/       0.00 /           283.1/       0.00 /           336.1/       0.00 /
      Restrict1/       0.06 /       Restrict2/       0.06 /      Restrict10/       0.00 /

        Conduit/      Width
         Link12/       0.69 /          Link13/       0.69 /          Link14/       1.18 /
         Link15/       1.18 /          Link16/       1.18 /          Link17/       1.18 /
         Link18/       1.18 /          Link22/       0.01 /          Link23/       1.18 /
         Link24/       1.18 /          Link25/       1.18 /          Link26/       1.18 /
         Link27/       1.18 /          Link28/       1.18 /          Link31/       0.59 /
         Link32/       4.00 /          Link33/       1.57 /          Link47/       0.59 /
         Link53/       0.00 /          Link54/       4.00 /          Link55/       0.01 /
         Link56/       4.00 /          Link68/       0.00 /          Link69/       0.38 /
         Link70/       0.01 /          Link72/       1.18 /          Link73/       0.03 /
         Link74/       0.03 /          Link75/       0.04 /          Link76/       0.02 /
         Link77/       0.78 /          Link78/      20.11 /          Link82/       1.18 /
         Link83/       1.18 /          Link84/       0.19 /          Link85/       0.09 /
         Link90/       0.59 /          Link93/       0.59 /          Link98/       0.59 /
        Link104/       0.78 /         Link105/       0.78 /         Link106/       1.13 /
       Link21.1/       1.79 /        Link21.2/       0.90 /         Link118/       0.59 /
        Link126/       0.59 /         Link127/       0.19 /           214.1/       0.78 /
          272.1/       0.59 /           283.1/       0.39 /           336.1/       0.69 /
      Restrict1/       0.65 /       Restrict2/       0.65 /      Restrict10/       1.24 /

       Junction/        EGL
         Node11/       0.50 /          Node12/       0.00 /          Node20/       0.00 /
         Node21/       1.29 /          Node22/       6.24 /          Node23/       0.02 /
         Node24/       0.02 /          Node25/       0.09 /          Node26/       3.57 /
         Node27/       0.01 /          Node29/       0.01 /          Node30/       0.00 /
```

```
  Node31/       4.02 /          Node33/       0.00 /          Node34/       0.01 /
  Node35/       0.00 /          Node36/       0.00 /          Node37/      13.53 /
  Node38/       0.01 /          Node39/       0.00 /          Node41/       0.02 /
  Node43/       0.00 /          Node44/       0.00 /          Node45/       0.00 /
  Node46/       0.00 /          Node47/       0.03 /          Node48/       0.01 /
  Node63/       0.01 /          Node65/       2.02 /          Node66/       0.00 /
  Node69/       0.00 /          Node70/       0.00 /          Node71/       0.00 /
  Node74/       0.00 /          Node75/       0.01 /          Node80/       0.01 /
  Node81/       0.00 /          Node82/       0.00 /          Node83/       0.01 /
  Node84/       0.00 /          Node86/       0.03 /          Node87/       0.01 /
  Node89/       0.00 /          Node92/       0.00 /          Node94/       0.00 /
  Node99/       0.17 /         Node100/       0.00 /         Node101/       0.00 /
 Node103/       0.00 /         Node108/       0.79 /         Node30.1/      0.88 /
Node30.2/       0.00 /         Node120/       1.00 /         Node124/       6.62 /
 Node125/       1.52 /         Node130/       0.01 /         Node132/       0.02 /

Junction/  Freeboard
  Node11/       5.55 /          Node12/       7.76 /          Node20/       2.50 /
  Node21/       5.10 /          Node22/       9.23 /          Node23/       7.03 /
  Node24/       7.29 /          Node25/       7.67 /          Node26/       7.88 /
  Node27/      11.74 /          Node29/       7.42 /          Node30/       9.95 /
  Node31/       7.07 /          Node33/       8.76 /          Node34/      10.24 /
  Node35/      13.25 /          Node36/      26.21 /          Node37/      26.00 /
  Node38/      21.32 /          Node39/       7.20 /          Node41/       3.17 /
  Node43/       2.04 /          Node44/       1.85 /          Node45/       1.96 /
  Node46/      15.26 /          Node47/      38.00 /          Node48/      24.70 /
  Node63/       2.62 /          Node65/       1.98 /          Node66/       2.80 /
  Node69/       2.10 /          Node70/       2.67 /          Node71/       2.70 /
  Node74/       6.05 /          Node75/       8.81 /          Node80/      15.95 /
  Node81/      16.12 /          Node82/      17.00 /          Node83/       3.00 /
  Node84/       8.20 /          Node86/       7.60 /          Node87/      16.49 /
  Node89/       2.00 /          Node92/       3.09 /          Node94/       2.00 /
  Node99/       1.83 /         Node100/       1.86 /         Node101/       2.80 /
 Node103/       3.40 /         Node108/       3.40 /         Node30.1/      9.14 /
Node30.2/       9.94 /         Node120/       0.60 /         Node124/      12.44 /
 Node125/       4.30 /         Node130/       8.72 /         Node132/       8.72 /

Junction/ Max Volume
  Node11/      55.98 /          Node12/      55.77 /          Node20/  117674.29 /
  Node21/   29057.46 /          Node22/      80.89 /          Node23/      92.00 /
  Node24/      98.13 /          Node25/      72.87 /          Node26/      67.39 /
  Node27/      23.32 /          Node29/      14.19 /          Node30/     133.52 /
  Node31/    1014.39 /          Node33/    5361.71 /          Node34/     118.17 /
  Node35/     112.08 /          Node36/      98.03 /          Node37/      83.55 /
  Node38/      52.81 /          Node39/      18.20 /          Node41/       7.42 /
  Node43/      17.38 /          Node44/      18.03 /          Node45/      10.70 /
  Node46/      15.99 /          Node47/      18.39 /          Node48/      18.40 /
  Node63/      32.84 /          Node65/   74877.64 /          Node66/   11532.68 /
  Node69/       7.38 /          Node70/       9.20 /          Node71/      16.46 /
  Node74/      33.63 /          Node75/      13.34 /          Node80/      21.62 /
  Node81/      15.17 /          Node82/      20.21 /          Node83/       5.44 /
  Node84/      65.54 /          Node86/      33.28 /          Node87/      15.23 /
  Node89/    4480.67 /          Node92/     802.92 /          Node94/    2742.86 /
  Node99/   65157.15 /         Node100/    6082.69 /         Node101/      34.47 /
 Node103/      38.24 /         Node108/    2892.07 /         Node30.1/     117.18 /
Node30.2/     110.42 /         Node120/   59372.95 /         Node124/     171.65 /
 Node125/      73.13 /         Node130/  244154.12 /         Node132/      57.38 /

Junction/Total Fldng
  Node11/       0.00 /          Node12/       0.00 /          Node20/  132497.60 /
  Node21/   31788.13 /          Node22/       0.00 /          Node23/       4.74 /
  Node24/      13.10 /          Node25/       0.00 /          Node26/       0.00 /
  Node27/       0.00 /          Node29/       0.00 /          Node30/       2.69 /
  Node31/     898.38 /          Node33/  425690.98 /          Node34/       0.00 /
  Node35/       0.00 /          Node36/       0.00 /          Node37/       0.00 /
  Node38/       0.00 /          Node39/       0.00 /          Node41/       0.00 /
  Node43/       0.00 /          Node44/       0.00 /          Node45/       0.00 /
  Node46/       0.00 /          Node47/       0.00 /          Node48/       0.00 /
  Node63/       0.00 /          Node65/       0.00 /          Node66/   12425.90 /
  Node69/       0.00 /          Node70/       0.00 /          Node71/       0.00 /
  Node74/       0.00 /          Node75/       0.00 /          Node80/       0.00 /
  Node81/       0.00 /          Node82/       0.00 /          Node83/       0.00 /
  Node84/       0.00 /          Node86/       0.00 /          Node87/       0.00 /
  Node89/    4952.04 /          Node92/     861.30 /          Node94/    3076.09 /
  Node99/       0.00 /         Node100/    6345.89 /         Node101/       0.00 /
 Node103/       0.00 /         Node108/    3003.40 /         Node30.1/      0.00 /
Node30.2/       0.00 /         Node120/       0.00 /         Node124/       0.00 /
 Node125/       0.00 /         Node130/       0.00 /         Node132/       0.00 /

 Conduit/ Cross Sectional Area
  Link12/       0.00 /          Link13/       0.00 /          Link14/       0.01 /
  Link15/       0.01 /          Link16/       0.02 /          Link17/       0.06 /
  Link18/       0.01 /          Link22/       3.19 /          Link23/       0.00 /
  Link24/       0.01 /          Link25/       0.00 /          Link26/       0.00 /
  Link27/       0.00 /          Link28/       0.00 /          Link31/       0.00 /
  Link32/       0.00 /          Link33/       0.00 /          Link47/       0.00 /
  Link53/       0.00 /          Link54/       0.00 /          Link55/       0.00 /
  Link56/       0.00 /          Link68/       0.00 /          Link69/       0.10 /
  Link70/       0.00 /          Link72/       0.00 /          Link73/       0.01 /
  Link74/       0.01 /          Link75/       0.02 /          Link76/       0.01 /
  Link77/       0.01 /          Link78/       0.07 /          Link82/       0.01 /
  Link83/       0.01 /          Link84/       0.03 /          Link85/       0.03 /
  Link90/       0.00 /          Link93/       0.00 /          Link98/       0.00 /
 Link104/       0.00 /         Link105/       0.00 /         Link106/       0.31 /
Link21.1/       1.51 /        Link21.2/       0.13 /         Link118/       0.00 /
 Link126/       0.00 /         Link127/       0.00 /           214.1/       0.00 /
   272.1/       0.00 /           283.1/       0.00 /           336.1/       0.00 /
Restrict1/      0.01 /       Restrict2/       0.01 /      Restrict10/       0.01 /

 Conduit/  Final Volume
  Link12/       0.00 /          Link13/       0.00 /          Link14/       3.86 /
  Link15/       4.12 /          Link16/      11.57 /          Link17/       3.21 /
  Link18/       5.25 /          Link22/    1082.95 /          Link23/       0.53 /
  Link24/       0.37 /          Link25/       0.57 /          Link26/       0.66 /
  Link27/       1.18 /          Link28/       1.23 /          Link31/       0.00 /
  Link32/       1.60 /          Link33/       1.18 /          Link47/       0.00 /
```

```
         Link53/       0.00 /          Link54/       0.00 /          Link55/       0.08 /
         Link56/       0.01 /          Link68/       0.00 /          Link69/      24.93 /
         Link70/       0.38 /          Link72/       0.05 /          Link73/       0.48 /
         Link74/       0.83 /          Link75/       1.04 /          Link76/       0.27 /
         Link77/       0.58 /          Link78/      24.16 /          Link82/       2.84 /
         Link83/       1.39 /          Link84/       7.87 /          Link85/      14.46 /
         Link90/       0.00 /          Link93/       0.00 /          Link98/       0.00 /
        Link104/       0.00 /         Link105/       0.00 /         Link106/      64.80 /
       Link21.1/     271.62 /        Link21.2/      11.93 /         Link118/       0.00 /
        Link126/       0.00 /         Link127/       1.48 /           214.1/       0.00 /
          272.1/       0.00 /           283.1/       0.00 /           336.1/       0.00 /
      Restrict1/      29.26 /       Restrict2/      29.13 /      Restrict10/      36.95 /

        Conduit/ Hydraulic Radius
         Link12/       0.00 /          Link13/       0.00 /          Link14/       0.02 /
         Link15/       0.02 /          Link16/       0.02 /          Link17/       0.05 /
         Link18/       0.02 /          Link22/       0.50 /          Link23/       0.01 /
         Link24/       0.01 /          Link25/       0.01 /          Link26/       0.01 /
         Link27/       0.01 /          Link28/       0.01 /          Link31/       0.00 /
         Link32/       0.00 /          Link33/       0.01 /          Link47/       0.00 /
         Link53/       0.00 /          Link54/       0.00 /          Link55/       0.00 /
         Link56/       0.00 /          Link68/       0.00 /          Link69/       0.02 /
         Link70/       0.00 /          Link72/       0.01 /          Link73/       0.00 /
         Link74/       0.00 /          Link75/       0.00 /          Link76/       0.00 /
         Link77/       0.02 /          Link78/       0.00 /          Link82/       0.01 /
         Link83/       0.02 /          Link84/       0.00 /          Link85/       0.00 /
         Link90/       0.00 /          Link93/       0.00 /          Link98/       0.00 /
        Link104/       0.01 /         Link105/       0.01 /         Link106/       0.08 /
       Link21.1/       0.46 /        Link21.2/       0.05 /         Link118/       0.00 /
        Link126/       0.00 /         Link127/       0.00 /           214.1/       0.01 /
          272.1/       0.00 /           283.1/       0.00 /           336.1/       0.00 /
      Restrict1/       0.01 /       Restrict2/       0.01 /      Restrict10/       0.01 /

        Conduit/ Upstream/ Downstream Elevation
         Link12/   634.80/   634.45          Link13/   633.16/   631.54          Link14/   630.12/   628.88/
         Link15/   628.88/   628.05          Link16/   628.05/   626.44          Link17/   626.44/   626.44/
         Link18/   626.44/   623.70          Link22/   620.02/   620.02          Link23/   610.56/   608.44/
         Link24/   608.44/   608.40          Link25/   608.40/   607.40          Link26/   607.40/   606.46/
         Link27/   606.46/   605.46          Link28/   605.46/   604.44          Link31/   636.14/   636.04/
         Link32/   592.74/   572.00          Link33/   593.30/   572.00          Link47/   628.05/   628.05/
         Link53/   636.04/   636.00          Link54/   633.43/   633.43          Link55/   633.43/   631.01/
         Link56/   630.20/   622.00          Link68/   622.00/   618.98          Link69/   618.98/   617.70/
         Link70/   617.21/   615.62          Link72/   604.44/   602.92          Link73/   602.92/   597.89/
         Link74/   597.89/   595.18          Link75/   595.18/   594.67          Link76/   594.67/   592.74/
         Link77/   640.02/   639.60          Link78/   639.60/   636.35          Link82/   623.70/   613.50/
         Link83/   613.50/   612.79          Link84/   612.79/   606.01          Link85/   606.01/   593.30/
         Link90/   630.50/   630.50          Link93/   633.21/   632.33          Link98/   632.00/   632.00/
        Link104/   632.00/   631.44         Link105/   631.44/   631.29         Link106/   630.50/   630.02/
       Link21.1/   620.02/   620.02        Link21.2/   620.31/   620.02         Link118/   637.10/   636.46/
        Link126/   620.31/   620.31         Link127/   615.62/   610.56           214.1/   617.70/   617.21/
          272.1/   636.46/   636.14           283.1/   631.01/   630.22           336.1/   631.54/   630.51/
      Restrict1/   620.02/   619.99       Restrict2/   630.02/   629.99      Restrict10/   615.62/   615.62/


*=========================================================*
|          Table E7 -  Iteration Summary                  |
*=========================================================*

Total number of time steps simulated...........        576
Total number of passes in the simulation........     303676
Total number of time steps during simulation....      33639
Ratio of actual # of time steps / NTCYC.........     58.401
Average number of iterations per time step......      9.027
Average  time step size(seconds)................      5.137
Smallest time step size(seconds)................      1.000
Largest  time step size(seconds)................    300.000
Average minimum Conduit Courant time step (sec).      9.997
Average minimum implicit time step (sec)........      5.171
Average minimum junction time step (sec)........      5.171
Average Courant Factor Tf.......................      5.171
Number of times omega reduced...................      20998


*=========================================================*
|     Table E8 - Junction Time Step Limitation Summary    |
*=========================================================*
|   Not Convr = Number of times this junction did not     |
|               converge during the simulation.           |
|   Avg Convr = Average junction iterations.              |
|   Conv err  = Mean convergence error.                   |
|   Omega Cng = Change of omega during iterations         |
|   Max Itern = Maximum number of iterations              |
*=========================================================*
```

Junction	Not Convr	Avg Convr	Total Itt	Omega Cng	Max Itern	Ittrn >10	Ittrn >25	Ittrn >40
Node11	0	2.71	91222	4972	65	95	31	12
Node12	0	2.84	95503	4992	9	0	0	0
Node20	0	1.64	55190	0	42	1	1	1
Node21	0	1.71	57626	0	47	4	1	1
Node22	1	21.40	719894	1730	501	1715	1703	1695
Node23	0	1.54	51960	13	409	15	9	9
Node24	0	1.60	53947	28	499	21	11	8
Node25	0	1.29	43313	8	30	5	1	0
Node26	0	1.39	46729	4	24	5	0	0
Node27	0	1.34	45220	2	31	3	1	0
Node29	0	1.28	42905	3	9	0	0	0
Node30	0	1.44	48307	27	319	27	26	26
Node31	94	4.03	135708	520	501	1225	189	137
Node33	2	15.78	530898	1106	501	1204	1154	1084
Node34	0	2.22	74729	33	406	32	28	27
Node35	0	2.12	71197	4	14	2	0	0
Node36	0	1.77	59490	4	10	1	0	0
Node37	0	2.02	68118	19	496	18	17	16
Node38	0	1.61	54159	0	6	0	0	0
Node39	2	20.53	690747	2304	501	2198	2095	2053
Node41	5	3.22	108267	163	501	169	167	164

Node43	0	1.31	44052	24	303	18	16	14
Node44	0	1.31	44086	26	264	20	14	14
Node45	0	1.29	43560	3	33	2	1	0
Node46	0	1.57	52970	2	19	1	0	0
Node47	0	3.60	121215	254	461	252	244	234
Node48	0	1.40	47109	24	322	21	20	17
Node63	15	2.72	91633	132	501	145	135	135
Node65	0	1.29	43438	0	5	0	0	0
Node66	1	1.25	42082	33	501	18	8	7
Node69	0	1.29	43323	0	12	1	0	0
Node70	0	1.28	43139	0	14	1	0	0
Node71	0	1.28	43004	1	28	1	1	0
Node74	0	2.14	71937	7	51	86	19	5
Node75	1	14.32	481844	1452	501	1410	1383	1370
Node80	0	1.54	51709	0	6	0	0	0
Node81	0	1.85	62247	0	7	0	0	0
Node82	0	1.72	57757	2	7	0	0	0
Node83	0	1.42	47868	0	6	0	0	0
Node84	2	20.29	682551	1638	501	1631	1623	1619
Node86	0	1.30	43818	1	26	1	1	0
Node87	0	1.33	44774	0	19	2	0	0
Node89	0	1.20	40335	7	500	2	2	2
Node92	1	1.22	40987	3	501	2	1	1
Node94	0	1.24	41726	6	275	6	4	4
Node99	0	1.35	45519	0	93	1	1	1
Node100	2	1.46	49224	23	501	21	19	18
Node101	6	1.56	52522	19	501	22	22	22
Node103	2	1.45	48913	11	501	8	7	7
Node108	2	1.73	58313	59	501	57	52	48
Node30.1	0	2.24	75266	39	280	173	28	1
Node30.2	0	1.83	61406	58	298	122	44	37
Node120	0	1.36	45885	0	83	2	1	1
Node124	0	1.82	61071	10	26	42	1	0
Node125	0	1.35	45561	0	17	2	0	0
Node130	0	2.12	71450	0	5	0	0	0
Node132	1	16.23	545853	1232	501	1260	1167	1096

Total number of iterations for all junctions.. 6633276

Minimum number of possible iterations..... 1917423

Efficiency of the simulation..... 3.46

Good Efficiency

```
*=========================================================*
| Extran Efficiency is an indicator of the efficiency of  |
| the simulation.  Ideal efficiency is one iteration per  |
| time step.  Altering the underrelaxation parameter,     |
| lowering the time step, increasing the flow and head    |
| tolerance are good ways of improving the efficiency,    |
| another is lowering the internal time step. The lower the|
| efficiency generally the faster your model will run.    |
| If your efficiency is less than 1.5 then you may try    |
| increasing your time step so that your overall simulation|
| is faster.  Ideal efficiency would be around 2.0        |
|                                                         |
| Good Efficiency      < 1.5           mean iterations    |
| Excellent Efficiency < 2.5 and > 1.5 mean iterations    |
| Good      Efficiency < 4.0 and > 2.5 mean iterations    |
| Fair      Efficiency < 7.5 and > 4.0 mean iterations    |
| Poor Efficiency      > 7.5           mean iterations    |
*=========================================================*
```

```
*=====================================================*
|        Table E9 - JUNCTION SUMMARY STATISTICS       |
| The Maximum area is only the area of the node, it   |
| does not include the area of the surrounding conduits|
*=====================================================*
```

Junction Name	Ground Elevation feet	Uppermost PipeCrown Elevation feet	Maximum Junction Elevation feet	Time of Occurence Hr.	Min.	Feet of Surcharge at Max Elevation	Freeboard of node feet	Maximum Junction Area ft^2	Maximum Gutter Depth feet	Maximum Gutter Width feet	Maximum Gutter Velocity ft/s
Node11	623.2500	620.4300	621.6552	2	27	1.2252	1.5948	12.5660	0.0000	0.0000	0.0000
Node12	624.9700	620.4100	621.6483	2	27	1.2383	3.3217	12.5660	0.0000	0.0000	0.0000
Node20	637.3000	636.5500	640.4998	3	41	3.9498	0.0000	122642.87	0.0000	0.0000	0.0000
Node21	638.2600	636.2000	640.1767	2	43	3.9767	0.0000	33993.376	0.0000	0.0000	0.0000
Node22	639.3500	639.3500	636.5475	1	38	0.0000	2.8025	12.5660	0.0000	0.0000	0.0000
Node23	635.9100	631.8600	636.1811	1	38	4.3211	0.0000	12.5660	0.0000	0.0000	0.0000
Node24	635.3400	631.0300	635.8389	1	36	4.8089	0.0000	12.5660	0.0000	0.0000	0.0000
Node25	634.1030	629.3500	632.1487	1	26	2.7987	1.9543	12.5660	0.0000	0.0000	0.0000
Node26	634.3200	629.4200	631.7826	1	26	2.3626	2.5374	12.5660	0.0000	0.0000	0.0000
Node27	635.4400	626.6900	625.5457	1	27	0.0000	9.8943	12.5660	0.0000	0.0000	0.0000
Node29	620.2110	620.2110	613.9093	1	27	0.0000	6.3017	12.5660	0.0000	0.0000	0.0000
Node30	631.4300	622.9800	631.4304	1	56	8.4504	0.0000	5008.4897	0.0000	0.0000	0.0000
Node31	627.0900	618.0000	627.2513	1	0	9.2513	0.0000	5875.0284	0.0000	0.0000	0.0000
Node33	619.3200	613.5630	620.0380	3	5	6.4750	0.0000	10251.635	0.0000	0.0000	0.0000
Node34	618.6800	611.4300	617.8339	3	0	6.4039	0.8461	12.5660	0.0000	0.0000	0.0000
Node35	621.6500	611.4000	617.3201	2	46	5.9201	4.3299	12.5660	0.0000	0.0000	0.0000
Node36	633.6100	610.4000	615.2007	2	46	4.8007	18.4093	12.5660	0.0000	0.0000	0.0000
Node37	632.4600	609.4600	613.1088	2	26	3.6488	19.3512	12.5660	0.0000	0.0000	0.0000
Node38	626.7800	608.4500	609.6522	2	26	1.2022	17.1278	12.5660	0.0000	0.0000	0.0000
Node39	611.6440	607.4400	605.8885	2	26	0.0000	5.7555	12.5660	0.0000	0.0000	0.0000
Node41	633.3700	631.2200	630.7901	0	51	0.0000	2.5799	12.5660	0.0000	0.0000	0.0000
Node43	638.5000	637.9600	637.8432	1	2	0.0000	0.6568	12.5660	0.0000	0.0000	0.0000

Node44	637.9900	637.6400	637.5750	1	2	0.0000	0.4150	12.5660	0.0000	0.0000	0.0000
Node45	638.0000	637.5400	636.8912	1	2	0.0000	1.1088	12.5660	0.0000	0.0000	0.0000
Node46	608.0000	610.3500	594.0125	1	10	0.0000	13.9875	12.5660	0.0000	0.0000	0.0000
Node47	610.0000	576.0000	573.4631	1	10	0.0000	36.5369	12.5660	0.0000	0.0000	0.0000
Node48	618.0000	609.8000	594.7642	1	10	0.0000	23.2358	12.5660	0.0000	0.0000	0.0000
Node63	633.6300	633.6300	633.6137	0	50	0.0000	0.0163	12.5660	0.0000	0.0000	0.0000
Node65	642.0000	642.0000	641.2257	1	36	0.0000	0.7743	50965.200	0.0000	0.0000	0.0000
Node66	634.7700	633.4700	635.9638	1	43	2.4938	0.0000	16497.499	0.0000	0.0000	0.0000
Node69	638.1000	636.5000	636.5876	1	3	0.0876	1.5124	12.5660	0.0000	0.0000	0.0000
Node70	636.1000	636.0600	634.1621	1	4	0.0000	1.9379	12.5660	0.0000	0.0000	0.0000
Node71	624.7000	624.2400	623.3103	0	46	0.0000	1.3897	12.5660	0.0000	0.0000	0.0000
Node74	625.0300	622.2100	621.6559	2	27	0.0000	3.3741	12.5660	0.0000	0.0000	0.0000
Node75	611.7300	611.7200	603.9813	2	26	0.0000	7.7487	12.5660	0.0000	0.0000	0.0000
Node80	613.8400	613.8400	599.6103	2	26	0.0000	14.2297	12.5660	0.0000	0.0000	0.0000
Node81	611.3000	611.2900	596.3872	2	47	0.0000	14.9128	12.5660	0.0000	0.0000	0.0000
Node82	611.6700	611.6600	596.2782	2	47	0.0000	15.3918	12.5660	0.0000	0.0000	0.0000
Node83	642.6000	642.6000	640.0326	1	39	0.0000	2.5674	12.5660	0.0000	0.0000	0.0000
Node84	639.7400	633.2900	636.7555	2	12	3.4655	2.9845	12.5660	0.0000	0.0000	0.0000
Node86	621.1000	616.4900	616.1387	1	27	0.0000	4.9613	12.5660	0.0000	0.0000	0.0000
Node87	622.5000	622.5000	607.2118	1	28	0.0000	15.2882	12.5660	0.0000	0.0000	0.0000
Node89	639.1000	638.6000	639.7372	1	2	1.1372	0.0000	9455.5428	0.0000	0.0000	0.0000
Node92	636.3000	634.7100	636.4422	1	4	1.7322	0.0000	5764.0862	0.0000	0.0000	0.0000
Node94	635.3000	634.8000	635.7341	1	10	0.9341	0.0000	7717.7248	0.0000	0.0000	0.0000
Node99	639.7000	637.7000	640.5215	2	7	2.8215	0.0000	43560.000	0.0000	0.0000	0.0000
Node100	634.1900	633.8300	634.9838	1	18	1.1538	0.0000	11059.315	0.0000	0.0000	0.0000
Node101	634.8000	634.0000	634.7429	1	18	0.7429	0.0571	12.5660	0.0000	0.0000	0.0000
Node103	634.8400	633.4400	634.4834	1	24	1.0434	0.3566	12.5660	0.0000	0.0000	0.0000
Node108	633.9000	633.2900	634.3510	1	26	1.0610	0.0000	7849.3430	0.0000	0.0000	0.0000
Node30.1	629.1600	621.1400	628.4651	1	56	7.3251	0.6949	12.5660	0.0000	0.0000	0.0000
Node30.2	630.2500	622.3100	629.0968	1	56	6.7868	1.1532	12.5660	0.0000	0.0000	0.0000
Node120	639.6000	638.0000	642.1451	2	39	4.1451	0.0000	65340.000	0.0000	0.0000	0.0000
Node124	632.4600	615.4000	627.0596	1	56	11.6596	5.4004	12.5660	0.0000	0.0000	0.0000
Node125	634.3200	631.0000	634.3200	0	46	3.3200	0.0000	12.5660	0.0000	0.0000	0.0000
Node130	624.3400	618.8100	621.6493	2	29	2.8393	2.6907	43560.000	0.0000	0.0000	0.0000
Node132	624.3400	616.6100	620.1664	3	5	3.5564	4.1736	12.5660	0.0000	0.0000	0.0000

==========
| Table E10 - CONDUIT SUMMARY STATISTICS |
| Note: The peak flow may be less than the design flow |
| and the conduit may still surcharge because of the |
| downstream boundary conditions. |
| |
| * denotes an open conduit that has been overtopped |
| this is a potential source of severe errors |
==========

Conduit Name	Design Flow (cfs)	Conduit Design Velocity (ft/s)	Maximum Vertical Depth (in)	Maximum Computed Flow (cfs)	Time of Occurence Hr.	Min.	Maximum Computed Velocity (ft/s)	Time of Occurence Hr.	Min.	Ratio of Max. to Design Flow	Maximum Water Elev at Pipe Ends Upstream (ft)	Dwnstrm (ft)	Ratio d/D US	DS	
Link12	5.7493	2.3903	21.0000	18.2520	5	35	7.4950	5	35	3.1747	640.4998	640.1767	3.257	3.272	
Link13	12.3889	5.1507	21.0000	25.9322	3	0	10.6304	3	41	2.0932	640.1767	636.7555	4.010	2.980	
Link14	43.7477	6.1890	36.0000	36.3988	2	33	6.4008	3	6	0.8320	636.5475	636.1812	2.146	2.440	
Link15	36.6850	5.1899	36.0000	36.7532	2	21	5.7797	3	17	1.0019	636.1811	635.8389	2.440	2.603	
Link16	37.2836	5.2745	36.0000	57.5421	2	11	8.0762	2	11	1.5434	635.8389	632.1487	2.603	1.933	
Link17	26.7696	3.7871	36.0000	-61.5779	1	25	-8.6609	1	25	-2.3003	632.1487	631.7826	1.910	1.811	
Link18	55.5441	7.8579	36.0000	77.6635	1	27	11.3334	1	26	1.3982	631.7826	625.5457	1.788	0.619	
Link22	21.4313	6.8218	24.0000	19.9836	1	6	6.1795	1	6	0.9325	627.2513	627.0599	5.626	6.830	
Link23	59.7442	8.4521	36.0000	62.1664	3	20	8.6765	3	20	1.0405	620.0380	617.8339	3.158	3.135	
Link24	14.5486	2.0582	36.0000	62.0907	3	20	8.6686	3	20	4.2678	617.8342	617.3201	3.135	2.973	
Link25	41.3740	5.8532	36.0000	62.0818	3	21	8.6774	3	21	1.5005	617.3191	615.2011	2.973	2.600	
Link26	39.9177	5.6472	36.0000	62.0834	3	21	8.6998	3	21	1.5553	615.2007	613.1090	2.600	2.216	
Link27	34.5795	4.8920	36.0000	64.3787	2	26	9.0425	2	26	1.8618	613.1088	609.6522	2.216	1.401	
Link28	40.1573	5.6811	36.0000	64.5018	2	26	9.6048	2	26	1.6062	609.6523	605.8885	1.401	0.483	
Link31	4.6303	2.6202	18.0000	11.2070	1	2	6.7132	1	2	2.4203	637.5750	636.8912	0.957	0.567	
Link32	451.1614	28.1976	48.0000	121.3780	1	10	23.4944	1	10	0.2690	594.0125	573.4631	0.318	0.366	
Link33	381.7717	30.3804	48.0000	109.1651	1	10	26.1961	1	11	0.2859	594.7642	573.4631	0.366	0.366	
Link47	29.5450	16.7191	18.0000	28.5382	0	30	22.1265	0	18	0.9659	635.9638	635.8389	2.663	5.006	
Link53	1.7213	0.9287	6.0007	11.2070	1	2	2.9367	1	2	6.5109	636.8912	636.5876	1.702	1.175	*
Link54	1.9517	1.2011	8.7741	11.2054	1	3	1.8516	1	3	5.7413	636.5876	634.1621	0.804	1.001	*
Link55	328.6757	8.6186	31.5600	11.2044	1	4	1.8029	1	10	0.0341	634.1621	633.6137	0.278	0.994	
Link56	78.4186	4.1273	15.7233	22.8904	0	51	2.3173	0	51	0.2919	630.7901	623.3103	0.450	1.000	*
Link68	93.5685	3.8759	26.8824	23.2672	0	46	3.5879	0	46	0.2487	623.3103	621.6559	0.585	1.194	*
Link69	1818.651	5.8352	38.7630	-87.4037	0	46	1.3940	0	36	-0.0481	621.6559	621.6552	0.828	1.379	*
Link70	872.4818	4.5482	38.4029	206.4312	1	2	2.9141	1	56	0.2366	621.6483	621.6493	1.387	1.887	*
Link72	137.3690	19.4337	36.0000	64.5836	2	26	19.1314	2	26	0.4701	605.8885	604.3692	0.483	0.482	
Link73	56825.79	51.6051	143.0400	64.5599	2	26	7.6347	2	26	0.0011	603.9813	599.6103	0.089	0.144	
Link74	37318.09	37.1859	191.4000	64.5342	2	27	7.6356	2	27	0.0017	599.6103	596.3872	0.108	0.076	
Link75	29495.40	24.1735	209.5200	64.5208	2	27	3.2923	2	22	0.0022	596.3872	596.2782	0.069	0.092	
Link76	40618.15	48.9919	211.3200	64.5094	2	27	9.7899	1	12	0.0016	596.2782	594.0125	0.091	0.072	
Link77	20.0104	6.3695	24.0000	16.9937	1	36	9.1072	1	36	0.8492	641.2257	640.0326	0.613	0.216	
Link78	1059.813	5.4349	36.0000	16.9438	1	39	1.5494	1	39	0.0160	640.0326	636.6101	0.144	0.087	
Link82	110.5183	15.6351	36.0000	77.6631	1	27	16.2092	1	27	0.7027	625.5457	616.1387	0.619	0.883	
Link83	54.8977	7.7664	36.0000	77.6632	1	27	12.5533	1	28	1.4147	616.1387	613.9093	0.883	0.376	
Link84	4900.754	21.9785	89.1720	77.6630	1	27	7.4609	1	27	0.0158	613.9093	607.2118	0.152	0.163	
Link85	34130.32	31.7780	198.0000	77.6619	1	28	7.3729	1	41	0.0023	607.2118	594.7642	0.073	0.089	
Link90	12.0431	6.8150	18.0000	10.8911	0	45	7.0539	0	40	0.9043	635.7341	634.3510	1.623	2.567	
Link93	8.0696	4.5665	18.0000	12.5087	0	46	7.0346	0	46	1.5501	636.4422	634.9838	2.155	1.769	
Link98	10.0638	5.6949	18.0000	12.4097	0	45	6.8187	0	46	1.2331	634.9838	634.7429	1.769	1.829	
Link104	12.3507	3.9313	24.0000	12.2877	0	45	4.5423	0	45	0.9949	634.7429	634.4834	1.371	1.522	
Link105	8.6239	2.7451	24.0000	11.9925	0	44	4.6702	0	44	1.3906	634.4834	634.3510	1.522	1.530	
Link106	43.5723	8.8765	30.0000	21.7292	0	44	6.2262	0	40	0.4987	634.3510	634.3200	1.540	2.328	
Link21.1	32.3690	10.3034	24.0000	19.7719	1	56	6.1503	1	56	0.6108	628.4651	627.2513	4.663	5.626	
Link21.2	27.9430	8.8945	24.0000	19.6916	1	56	6.4543	0	33	0.7047	629.0968	628.4651	4.393	4.663	
Link118	6.4373	3.6428	18.0000	11.2070	1	2	6.3373	1	2	1.7409	639.7372	637.8432	1.758	0.922	
Link126	12.9749	7.3423	18.0000	19.5316	1	56	10.6765	1	56	1.5053	631.4304	629.0968	6.634	5.858	
Link127	214.6192	3.6031	12.0082	674.6897	2	45	1.9312	9	11	3.1437	625.0473	620.0380	9.431	9.472	*
214.1	15.9283	5.0701	24.0000	29.4198	0	48	9.4670	0	48	1.8470	621.6552	621.6483	1.978	2.219	
272.1	11.3797	6.4396	18.0000	11.2070	1	2	6.5655	1	2	0.9848	637.8432	637.5750	0.922	0.957	
283.1	2.7121	3.4532	12.0000	4.8911	0	50	6.1987	0	50	1.8034	633.6137	631.1294	2.604	0.909	
336.1	24.1586	10.0440	21.0000	25.9413	3	23	11.4496	5	16	1.0738	636.7555	636.5475	2.980	3.450	
Restrict1	13.5485	0.4815	19.9924	20.0031	1	6	9.0939	1	6	1.4764	627.0599	621.5537	4.238	0.939	
Restrict2	13.5485	0.4815	19.9924	16.7374	1	8	7.8457	0	54	1.2354	634.3200	631.7826	2.593	1.076	
Restrict10	66.7783	0.4815	37.8409	68.7478	2	57	8.9960	1	51	1.0295	621.6493	620.1664	1.915	1.448	
Link 5	Undefnd	Undefnd	Undefn	175.6414	1	20									

WEIR30	Undefnd	Undefnd	Undefn	0.0000	0	0
WEIR46	Undefnd	Undefnd	Undefn	18.0429	0	50
Link97.1	Undefnd	Undefnd	Undefn	102.0292	2	7
WEIR119	Undefnd	Undefnd	Undefn	71.2648	2	49
FREE # 1	Undefnd	Undefnd	Undefn	230.5427	1	10

==========
| Table E11. Area assumptions used in the analysis|
| Subcritical and Critical flow assumptions from |
| Subroutine Head. See Figure 17-1 in the |
| manual for further information. |
==========

Conduit Name	Duration of Dry Flow(min)	Duration of Sub-Critical Flow(min)	Durat. of Upstream Critical Flow(min)	Durat. of Downstream Critical Flow(min)	Maximum Hydraulic Radius-m	Maximum X-Sect Area(ft^2)	Maximum Vel*D (ft^2/s)
Link12	57.1693	363.9373	0.0000	2458.8934	0.5283	2.4859	27.8868
Link13	55.2381	2824.7619	0.0000	0.0000	0.5239	2.4864	47.5039
Link14	32.2993	2847.7007	0.0000	0.0000	0.9063	7.2808	28.4666
Link15	18.3333	2861.6667	0.0000	0.0000	0.9126	7.4070	30.2364
Link16	15.0000	2865.0000	0.0000	0.0000	0.9121	7.2937	53.1590
Link17	15.8333	2864.1667	0.0000	0.0000	0.9109	7.3582	48.3207
Link18	15.8333	2864.1667	0.0000	0.0000	0.8951	5.8014	40.8840
Link22	20.2833	2859.7167	0.0000	0.0000	0.5974	3.2454	70.6018
Link23	15.8333	2864.1667	0.0000	0.0000	0.8965	7.2519	75.5208
Link24	15.8333	2864.1667	0.0000	0.0000	0.9117	7.3857	73.5138
Link25	15.8333	2864.1667	0.0000	0.0000	0.9126	7.4055	66.8943
Link26	17.5000	2862.5000	0.0000	0.0000	0.9122	7.4068	57.4102
Link27	17.5000	2862.5000	0.0000	0.0000	0.9105	7.2577	45.8323
Link28	17.5000	2862.5000	0.0000	0.0000	0.8854	5.1610	25.6373
Link31	2589.1213	290.8787	0.0000	0.0000	0.4496	1.3722	7.6676
Link32	17.5000	2862.5000	0.0000	0.0000	0.7844	5.4667	32.1220
Link33	15.0000	2865.0000	0.0000	0.0000	0.8011	4.1657	38.3204
Link47	2729.4865	146.3468	0.0000	4.1667	0.4483	1.8194	34.0907
Link53	15.8333	2864.1667	0.0000	0.0000	0.5586	3.1453	2.1116
Link54	520.8333	2359.1667	0.0000	0.0000	0.3746	7.0091	1.2217
Link55	396.5741	2483.4259	0.0000	0.0000	0.4389	16.8498	2.9899
Link56	165.7407	2714.2593	0.0000	0.0000	0.3848	17.8919	2.1853
Link68	17.5000	2862.5000	0.0000	0.0000	0.5999	16.8662	4.9916
Link69	17.5000	2862.5000	0.0000	0.0000	2.1208	377.5320	1.6459
Link70	21.0500	2858.9500	0.0000	0.0000	2.7866	456.1627	6.2818
Link72	20.2167	1916.7616	0.0000	943.0218	0.7328	3.3769	27.1516
Link73	20.8167	2859.1833	0.0000	0.0000	0.4913	14.3007	10.5119
Link74	22.5833	2857.4167	0.0000	0.0000	0.7884	6.5093	11.0065
Link75	28.0741	2851.9259	0.0000	0.0000	0.8126	23.3886	4.5479
Link76	28.7037	2851.2963	0.0000	0.0000	0.7024	5.3070	13.6283
Link77	49.6739	2830.3261	0.0000	0.0000	0.5302	1.1743	7.5375
Link78	49.7011	0.0000	0.0000	2830.2989	0.3348	8.7058	0.5366
Link82	15.8333	2864.1667	0.0000	0.0000	0.8500	5.5663	36.4939
Link83	18.3333	2861.6667	0.0000	0.0000	0.8803	4.3496	23.7059
Link84	20.0000	2860.0000	0.0000	0.0000	0.7422	10.8455	8.7319
Link85	20.0500	2859.9500	0.0000	0.0000	0.6901	12.1666	9.6515
Link90	2607.9212	272.0788	0.0000	0.0000	0.4482	1.8179	15.3224
Link93	15.8333	2864.1667	0.0000	0.0000	0.4554	1.8149	17.7777
Link98	2602.1520	277.8480	0.0000	0.0000	0.4562	1.8429	13.0109
Link104	2564.1575	315.8425	0.0000	0.0000	0.6084	3.2883	7.8640
Link105	17.5000	72.2329	0.0000	2790.2671	0.6083	3.2930	8.2609
Link106	2458.5189	421.4811	0.0000	0.0000	0.7470	5.0453	15.6177
Link21.1	20.0667	2859.9333	0.0000	0.0000	0.5976	3.2343	59.7442
Link21.2	2604.0018	275.9982	0.0000	0.0000	0.5976	3.2240	51.7046
Link118	15.0000	2865.0000	0.0000	0.0000	0.4559	1.7394	12.7095
Link126	2631.3798	248.6202	0.0000	0.0000	0.4544	1.8392	93.3207
Link127	33.9416	2843.9414	2.1170	0.0000	7.9446	1345.4917	1.6508
214.1	1301.2215	1578.7785	0.0000	0.0000	0.6043	3.2222	21.4997
272.1	15.8333	2864.1667	0.0000	0.0000	0.4562	1.7216	9.2417
283.1	15.0000	0.0000	0.0000	2865.0000	0.3034	0.7714	10.8877
336.1	50.9536	131.2747	0.0000	2697.7717	0.5324	2.5211	39.7110
Restrict1	33.4307	0.0000	0.0000	2846.5693	0.5003	2.1653	30.1555
Restrict2	26.0370	89.3495	0.0000	2764.6134	0.4987	2.2276	21.4293
Restrict10	21.2833	2858.7167	0.0000	0.0000	0.9550	8.0209	38.5519

==========
| Table E12. Mean Conduit Flow Information |
==========

Conduit Name	Mean Flow (cfs)	Total Flow (ft^3)	Mean Percent Change	Low Flow Weightng	Mean Froude Number	Mean Hydraulic Radius	Mean Cross Area	Mean Conduit Roughness
Link12	1.1775	203477.57	0.0000	0.8007	0.5057	0.1983	0.9881	0.0120
Link13	2.5340	437873.50	0.0000	0.7987	1.1240	0.2036	1.0327	0.0120
Link14	3.2292	558003.19	0.0000	0.9848	0.6527	0.3765	2.2016	0.0120
Link15	3.2287	557919.51	0.0000	0.9997	0.5630	0.3986	2.4287	0.0120
Link16	4.8535	838679.30	0.0001	0.9998	0.5933	0.4038	2.4485	0.0120
Link17	-5.0571	-873867.6	0.0001	0.9998	0.5007	0.4254	2.4169	0.0120
Link18	5.5920	966296.86	0.0000	0.9998	1.1387	0.3740	2.0571	0.0120
Link22	0.4479	77403.811	0.0000	0.9990	0.0512	0.4943	3.1330	0.0120
Link23	8.7478	1511626.9	0.0000	0.9998	0.7694	0.4158	3.4812	0.0120
Link24	8.7477	1511600.4	0.0000	0.9998	0.4785	0.4355	3.5945	0.0120
Link25	8.7475	1511573.5	0.0000	0.9998	0.6779	0.4210	3.5330	0.0120
Link26	8.7479	1511643.6	0.0000	0.9997	0.7032	0.4220	3.5384	0.0120
Link27	9.1879	1587663.8	0.0000	0.9997	0.7462	0.4266	3.5555	0.0140

Link28	9.1889	1587841.3	0.0000	0.9997	1.1905	0.4265	3.3490	0.0120
Link31	0.3054	52766.605	0.0000	0.3144	0.2729	0.0631	0.1745	0.0120
Link32	10.8504	1874956.8	0.0000	0.9997	3.1979	0.3097	1.7562	0.0120
Link33	6.4695	1117929.3	0.0000	0.9998	4.2033	0.2559	0.9959	0.0140
Link47	0.5263	90943.872	0.0000	0.1617	0.1363	0.0686	0.2887	0.0120
Link53	0.3054	52765.739	0.0000	0.6869	0.1425	0.0638	0.3949	0.0250
Link54	0.3055	52792.947	0.0000	0.9189	0.1716	0.0445	0.5934	0.0400
Link55	0.3059	52856.861	0.0000	0.9389	0.1481	0.0566	0.7023	0.0250
Link56	0.5637	97414.459	0.0000	0.9756	0.1975	0.0466	0.9209	0.0400
Link68	0.5707	98615.552	0.0000	0.9997	0.1656	0.0939	1.0930	0.0250
Link69	0.5920	102293.26	0.0001	0.9997	0.0107	0.2418	38.6022	0.0250
Link70	5.8792	1015930.5	0.0001	0.9977	0.0505	0.6692	80.1569	0.0250
Link72	9.1892	1587901.8	0.0000	0.9988	3.2805	0.3706	1.5536	0.0120
Link73	9.1897	1587978.2	0.0000	0.9982	1.0807	0.2560	3.7856	0.0250
Link74	9.1895	1587950.4	0.0000	0.9951	1.0295	0.3986	3.9093	0.0250
Link75	9.1896	1587970.8	0.0000	0.9883	0.4279	0.3966	9.1837	0.0250
Link76	9.1898	1587990.9	0.0000	0.9877	1.5018	0.3557	3.0364	0.0250
Link77	0.6947	120052.05	0.0000	0.9689	1.7716	0.1472	0.3342	0.0120
Link78	0.6955	120185.48	0.0000	0.9688	0.7461	0.0723	1.9727	0.0400
Link82	5.5924	966373.87	0.0000	0.9998	1.8524	0.3141	1.3006	0.0120
Link83	5.5925	966380.25	0.0000	0.9997	1.3993	0.3682	1.7847	0.0120
Link84	5.5929	966452.99	0.0000	0.9996	0.8373	0.2433	2.9881	0.0250
Link85	5.5933	966526.99	0.0000	0.9995	0.8305	0.2335	2.9648	0.0250
Link90	0.2578	44539.551	0.0000	0.2951	0.3056	0.0539	0.1743	0.0120
Link93	0.2842	49104.650	0.0000	0.2988	0.4014	0.0589	0.1971	0.0120
Link98	0.2834	48974.661	0.0000	0.3014	0.3805	0.0553	0.1937	0.0140
Link104	0.2835	48980.375	0.0000	0.3442	0.2139	0.0746	0.3272	0.0140
Link105	0.2832	48941.577	0.0000	0.4639	0.5880	0.0768	0.3338	0.0140
Link106	0.5406	93416.430	0.0000	0.4560	0.0893	0.1498	0.8046	0.0120
Link21.1	0.4510	77928.396	0.0000	0.9994	0.0809	0.4932	2.3504	0.0120
Link21.2	0.4517	78053.437	0.0000	0.3002	0.1048	0.1386	0.5711	0.0120
Link118	0.3053	52762.888	0.0000	0.3325	0.4620	0.0600	0.1880	0.0120
Link126	0.4516	78027.883	0.0000	0.2697	0.2439	0.0619	0.2089	0.0120
Link127	6.1113	1056025.3	0.0000	0.9835	0.2540	1.4761	239.1043	0.0250
214.1	1.2379	213904.63	0.0000	0.7869	0.2947	0.2053	1.1232	0.0240
272.1	0.3054	52768.475	0.0000	0.3299	0.6933	0.0602	0.1643	0.0120
283.1	0.2149	37127.260	0.0000	0.7159	1.3892	0.0455	0.1179	0.0240
336.1	2.5336	437803.07	0.0000	0.7960	1.9899	0.2193	0.9158	0.0120
Restrict1	0.4397	75980.107	0.0000	0.9839	0.4055	0.1318	0.3722	0.0026
Restrict2	0.5220	90195.521	0.0000	0.9898	0.4407	0.1306	0.3672	0.0026
Restrict10	5.7795	998706.15	0.0000	0.9974	0.4210	0.4589	3.4670	0.0034
Link 5	4.6412	801992.37						
WEIR30	0.0000	0.0000						
WEIR46	0.3483	60190.318						
Link97.1	1.3533	233853.08						
WEIR119	1.1865	205033.51						
FREE # 1	17.3201	2992918.1						

```
*==============================================================*
| Table E13. Channel losses(H), headwater depth (HW), tailwater |
| depth (TW), critical and normal depth (Yc and Yn).            |
| Use this section for culvert comparisons                      |
*==============================================================*
```

Conduit Name	Maximum Flow	Head Loss	Friction Loss	Critical Depth	Normal Depth	HW Elevat	TW Elevat	
Link12	18.1979	0.0000	3.4204	1.5489	1.7500	640.0386	636.6146	Max Flow

Link13	25.9272	0.0000	6.8325	1.7833	1.7500	639.9781	633.2147	Max Flow
Link14	36.2518	0.0000	0.8254	1.9569	2.0844	633.2807	632.4892	Max Flow
Link15	36.5022	0.0000	0.7848	1.9638	2.4482	632.4891	631.7089	Max Flow
Link16	57.4520	0.0000	3.9257	2.4523	3.0000	635.0543	631.1099	Max Flow
Link17	-0.0054	0.0000	0.3661	0.0042	0.0081	626.4352	626.4370	Max Flow
Link18	77.6448	0.0000	5.5828	2.7448	3.0000	631.7811	625.5453	Max Flow
Link22	19.9582	0.0000	2.1277	1.6041	1.5283	627.2047	625.0765	Max Flow
Link23	60.7422	0.0000	2.1507	2.5141	2.5081	619.4562	617.3071	Max Flow
Link24	60.7656	0.0000	0.5106	2.5146	3.0000	617.3094	616.7972	Max Flow
Link25	60.7792	0.0000	2.1104	2.5148	3.0000	616.7972	614.6849	Max Flow
Link26	60.7980	0.0000	2.1425	2.5152	3.0000	614.6864	612.5414	Max Flow
Link27	62.9736	0.0000	3.3060	2.5500	3.0000	612.7895	609.4772	Max Flow
Link28	63.0484	0.0000	2.7772	2.5512	3.0000	609.4774	605.8673	Max Flow
Link31	11.1997	0.0000	0.5570	1.2780	1.5000	637.5739	636.8910	Max Flow
Link32	121.3251	0.0000	19.9023	3.0569	1.2415	594.0121	573.4627	Max Flow
Link33	109.1127	0.0000	21.2742	3.1568	1.4627	594.7640	573.4627	Max Flow
Link47	28.4936	0.0000	3.6127	1.5000	1.1847	633.2710	629.9943	Max Flow
Link53	11.2003	0.0000	0.1751	0.6664	1.2191	636.8910	636.5876	Max Flow
Link54	11.2036	0.0000	2.3012	0.4321	0.5990	636.5876	634.1621	Max Flow
Link55	11.2043	0.0000	1.0280	0.7747	0.7319	634.1621	633.5926	Max Flow
Link56	22.8279	0.0000	6.7980	0.5607	0.5890	630.7894	623.2982	Max Flow
Link68	22.7774	0.0000	2.7925	1.2001	1.2976	623.2983	620.6458	Max Flow
Link69	5.2945	0.0000	0.6102	0.6536	0.7435	619.7557	619.7197	Max Flow
Link70	204.0008	0.0000	1.4618	1.7947	2.0723	619.4157	618.9037	Max Flow
Link72	63.0798	0.0000	1.5201	2.5517	1.4274	605.8673	604.3494	Max Flow
Link73	63.0984	0.0000	4.1360	1.4764	1.0500	603.9730	599.5948	Max Flow
Link74	63.1383	0.0000	2.3083	1.9510	1.5762	599.5949	596.3768	Max Flow
Link75	63.1677	0.0000	0.3881	0.9394	0.9478	596.3769	596.2661	Max Flow
Link76	63.1953	0.0000	1.7963	2.0454	1.4995	596.2661	593.6613	Max Flow
Link77	16.9769	0.0000	0.7561	1.4843	1.4152	641.2251	640.0307	Max Flow
Link78	16.9433	0.0000	2.4314	0.2601	0.3814	640.0326	636.6101	Max Flow
Link82	77.6387	0.0000	9.2774	2.7447	1.8549	625.5453	616.1378	Max Flow
Link83	77.6422	0.0000	1.5164	2.7448	3.0000	616.1378	613.9092	Max Flow
Link84	77.6460	0.0000	6.6472	1.3841	1.1232	613.9092	607.2117	Max Flow
Link85	77.6524	0.0000	12.3583	1.4768	1.1857	607.2117	594.7033	Max Flow
Link90	10.8824	0.0000	2.7144	1.2640	1.1171	634.6807	632.5786	Max Flow
Link93	12.3488	0.0000	2.0197	1.3267	1.5000	636.0983	634.0587	Max Flow
Link98	12.3088	0.0000	0.4509	1.3254	1.5000	634.0587	633.5981	Max Flow
Link104	12.1919	0.0000	0.5752	1.2542	1.6176	633.5982	633.0014	Max Flow
Link105	11.9829	0.0000	0.3338	1.2429	2.0000	633.0014	632.5786	Max Flow
Link106	21.0342	0.0000	0.9394	1.5575	1.2245	632.5787	632.3886	Max Flow
Link21.1	18.8554	0.0000	2.9953	1.5614	1.0964	628.2630	627.2504	Max Flow
Link21.2	18.8569	0.0000	1.0395	1.5615	1.2039	628.7730	628.2631	Max Flow
Link118	11.1979	0.0000	1.8894	1.2779	1.5000	639.7326	637.8413	Max Flow
Link126	18.8590	0.0000	2.3121	1.6673	1.5000	631.1001	628.7730	Max Flow
Link127	50.8731	0.0000	0.0808	0.7122	0.7247	616.3350	616.1315	Max Flow
214.1	28.5919	0.0000	1.5471	1.8388	2.0000	620.5738	619.0303	Max Flow
272.1	11.1988	0.0000	0.2689	1.2780	1.2090	637.8417	637.5739	Max Flow
283.1	4.8909	0.0000	2.4841	0.9094	1.0000	633.6136	631.1294	Max Flow
336.1	25.9406	0.0000	1.1460	1.7500	1.7500	633.2719	632.1199	Max Flow
Restrict1	19.9815	0.0000	3.4856	1.5633	1.6660	625.0765	621.5533	Max Flow
Restrict2	16.6514	0.0000	2.8632	1.4905	1.6660	633.9759	631.6118	Max Flow
Restrict10	68.4126	0.0000	3.2570	2.6358	3.1534	621.4622	618.3554	Max Flow

```
*=========================================================*
| Table E13a. CULVERT ANALYSIS CLASSIFICATION,            |
| and the time the culvert was in a particular            |
| classification during the simulation.  The time is      |
| in minutes.  The Dynamic Wave Equation is used for      |
| all conduit analysis but the culvert flow classification |
| condition is based on the HW and TW depths.             |
*=========================================================*
```

Conduit Name	Mild Slope Critical D Outlet Control	Mild Slope TW Control Outlet Control	Steep Slope TW Insignf Entrance Control	Slug Flow Outlet/ Entrance Control	Mild Slope TW > D Outlet Control	Mild Slope TW <= D Outlet Control	Outlet Control	Inlet Control	Inlet Configuration
Link12	340.0000	1135.0000	1040.0000	5.0000	265.0000	60.0000	35.0000	0.0000	None
Link13	320.0000	1075.0000	1140.0000	10.0000	50.0000	45.0000	240.0000	0.0000	None
Link14	0.0000	2625.0000	35.0000	5.0000	70.0000	35.0000	110.0000	0.0000	None
Link15	0.0000	2750.0000	15.0000	0.0000	115.0000	0.0000	0.0000	0.0000	None
Link16	5.0000	2760.0000	15.0000	0.0000	100.0000	0.0000	0.0000	0.0000	None
Link17	0.0000	2765.0000	15.0000	0.0000	100.0000	0.0000	0.0000	0.0000	None
Link18	40.0000	0.0000	2775.0000	0.0000	0.0000	0.0000	65.0000	0.0000	None
Link22	0.0000	0.0000	25.0000	0.0000	0.0000	2850.0000	5.0000	0.0000	None
Link23	0.0000	0.0000	2445.0000	20.0000	0.0000	385.0000	30.0000	0.0000	None
Link24	20.0000	2420.0000	15.0000	0.0000	425.0000	0.0000	0.0000	0.0000	None
Link25	20.0000	2420.0000	15.0000	0.0000	425.0000	0.0000	0.0000	0.0000	None
Link26	15.0000	2425.0000	15.0000	0.0000	425.0000	0.0000	0.0000	0.0000	None
Link27	10.0000	2470.0000	15.0000	0.0000	385.0000	0.0000	0.0000	0.0000	None
Link28	1240.0000	1625.0000	15.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link31	145.0000	150.0000	2585.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link32	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link33	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link47	0.0000	0.0000	2785.0000	5.0000	0.0000	85.0000	5.0000	0.0000	None
Link53	160.0000	845.0000	1875.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link54	0.0000	2335.0000	520.0000	0.0000	25.0000	0.0000	0.0000	0.0000	None
Link55	0.0000	2360.0000	430.0000	0.0000	0.0000	0.0000	90.0000	0.0000	None
Link56	0.0000	2705.0000	170.0000	0.0000	5.0000	0.0000	0.0000	0.0000	None
Link68	25.0000	2800.0000	15.0000	0.0000	40.0000	0.0000	0.0000	0.0000	None
Link69	0.0000	2760.0000	15.0000	0.0000	105.0000	0.0000	0.0000	0.0000	None
Link70	30.0000	2685.0000	20.0000	0.0000	145.0000	0.0000	0.0000	0.0000	None
Link72	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link73	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link74	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link75	0.0000	2855.0000	25.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link76	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link77	0.0000	0.0000	2835.0000	0.0000	0.0000	0.0000	45.0000	0.0000	None
Link78	535.0000	2300.0000	45.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link82	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link83	105.0000	0.0000	2645.0000	0.0000	0.0000	0.0000	130.0000	0.0000	None
Link84	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link85	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link90	0.0000	0.0000	2815.0000	5.0000	0.0000	0.0000	60.0000	0.0000	None

Link93	20.0000	115.0000	2675.0000	10.0000	50.0000	10.0000	0.0000	0.0000	None
Link98	0.0000	5.0000	2750.0000	0.0000	10.0000	60.0000	55.0000	0.0000	None
Link104	5.0000	245.0000	2565.0000	0.0000	65.0000	0.0000	0.0000	0.0000	None
Link105	160.0000	205.0000	2450.0000	0.0000	65.0000	0.0000	0.0000	0.0000	None
Link106	0.0000	0.0000	2715.0000	65.0000	0.0000	65.0000	35.0000	0.0000	None
Link21.1	0.0000	0.0000	30.0000	2735.0000	0.0000	115.0000	0.0000	0.0000	None
Link21.2	0.0000	0.0000	2660.0000	115.0000	0.0000	65.0000	40.0000	0.0000	None
Link118	100.0000	160.0000	2575.0000	0.0000	0.0000	0.0000	45.0000	0.0000	None
Link126	0.0000	0.0000	2780.0000	5.0000	25.0000	30.0000	40.0000	0.0000	None
Link127	475.0000	1970.0000	30.0000	355.0000	50.0000	0.0000	0.0000	0.0000	None
214.1	20.0000	1260.0000	1290.0000	60.0000	30.0000	215.0000	5.0000	0.0000	None
272.1	0.0000	0.0000	2750.0000	0.0000	0.0000	0.0000	130.0000	0.0000	None
283.1	180.0000	805.0000	1770.0000	0.0000	0.0000	0.0000	125.0000	0.0000	None
336.1	0.0000	0.0000	2505.0000	10.0000	0.0000	90.0000	275.0000	0.0000	None
Restrict1	845.0000	1970.0000	30.0000	0.0000	0.0000	0.0000	35.0000	0.0000	None
Restrict2	135.0000	2650.0000	25.0000	0.0000	30.0000	0.0000	40.0000	0.0000	None
Restrict10	495.0000	1635.0000	20.0000	485.0000	200.0000	0.0000	45.0000	0.0000	None

```
*=====================================*
|    Kinematic Wave Approximations    |
|  Time in Minutes for Each Condition |
*=====================================*
```

Conduit Name	Duration of Normal Flow	Slope Criteria	Super-Critical	Roll Waves
Link12	2.6053	73.3041	2.2751	0.0000
Link13	0.0000	46.9327	301.5149	0.0000
Link14	2437.5435	2820.9771	0.0000	0.0000
Link15	74.3214	354.6420	0.0000	0.0000
Link16	2447.9226	2546.9582	0.8333	0.0000
Link17	0.0000	0.0000	0.0000	0.0000
Link18	0.0000	0.0000	457.0322	0.0000
Link22	6.4897	1705.3989	1.6167	0.0000
Link23	2400.4057	2768.4935	885.0702	0.0000
Link24	0.0000	0.0000	3.2833	0.0000
Link25	2388.4542	2429.2758	190.4630	0.0000
Link26	2357.2299	2439.6964	11.3148	0.0000
Link27	2348.5368	2354.4547	3.9296	0.0000
Link28	0.0000	0.0000	543.0761	0.0000
Link31	0.0000	0.0000	94.8217	0.0000
Link32	169.2120	172.1725	2864.1667	0.0000
Link33	423.5896	423.6938	2865.0000	0.0000
Link47	2736.3613	2861.6622	40.6746	0.0000
Link53	0.0000	0.0000	1.7333	0.0000
Link54	2857.0667	2857.2167	1.6667	0.0000
Link55	2862.5000	2862.5000	0.0000	0.0000
Link56	2860.8333	2860.8333	1.6667	0.0000
Link68	2833.2880	2835.0634	4.0833	0.0000
Link69	2593.9589	2842.4971	0.0000	0.0000
Link70	2457.1590	2823.7831	4.9185	0.0000
Link72	42.2042	52.9883	2862.5000	0.0000
Link73	2850.7778	2850.7778	863.2655	0.0000
Link74	0.0000	0.0000	891.5754	0.0000
Link75	2285.6430	2850.4815	0.0000	0.0000
Link76	3.3498	3.5688	2848.7597	0.0000
Link77	0.0000	0.0000	2830.2174	0.0000
Link78	0.0000	0.0000	1.9859	0.0000
Link82	2859.6833	2860.8333	2864.1667	0.0000
Link83	0.0000	0.0000	1012.4667	0.0000
Link84	425.0762	426.1762	418.0792	0.0000
Link85	1743.8905	2564.3451	425.8842	0.0000
Link90	2762.6503	2855.2667	148.1680	0.0000
Link93	0.3834	37.0649	0.8333	0.0000
Link98	2711.7031	2848.1446	2719.2020	0.0000
Link104	2728.6218	2848.3092	44.8176	0.0000
Link105	0.3839	62.5445	3.2667	0.0000
Link106	2707.5476	2860.0000	2.5000	0.0000
Link21.1	4.2895	1752.9371	16.5085	0.0000
Link21.2	2643.4895	2829.9975	20.6696	0.0000
Link118	0.0000	0.0000	0.0000	0.0000
Link126	2722.2979	2803.0650	93.9491	0.0000
Link127	620.2236	711.4691	0.0000	0.0000
214.1	2474.1287	2802.8177	1156.5244	0.0000
272.1	109.5438	251.1339	2792.3431	0.0000
283.1	2.5405	2.5405	119.6634	0.0000
336.1	75.6086	182.3989	2732.7568	0.0000
Restrict1	0.0000	0.0000	21.2050	0.0000
Restrict2	0.0000	0.0000	25.9186	0.0000
Restrict10	0.0000	0.0000	54.1066	0.0000

```
*=======================================================*
| Table E14 - Natural Channel Overbank Flow Information  |
*=======================================================*
```

Conduit Name	<---- Maximum Velocity -----> Left Velocity	Center Velocity	Right Velocity	<------ Maximum Flow -------> Left Flow	Center Flow	Right Flow	<------ Maximum Area ------> Left Area	Center Area	Right Area	<--- Max. Storage Volume ---> Left Area	Center Area	Right Area	Maximum Depth
Link53	0.0000	14.0040	0.0000	0.0000	11.2070	0.0000	0.0000	0.8003	0.0000	0.0000	26.4089	0.0000	0.2857
Link55	0.0000	0.6654	0.0001	0.0000	11.2044	0.0000	0.0000	16.8389	0.0000	0.0000	2323.7640	0.0000	1.7511
Link68	0.0000	1.3828	0.0000	0.0000	23.2672	0.0000	0.0000	16.8266	0.0000	0.0000	6730.6588	0.0000	2.0021
Link69	0.0000	0.1634	0.0587	0.0000	86.9887	0.4150	0.0000	532.2122	7.0742	0.0000	138375.18	1853.4367	4.1116
Link70	0.2488	0.6907	0.0000	6.4661	199.9651	0.0000	25.9925	289.5057	0.0000	11696.634	130277.56	0.0000	3.8534
Link73	0.0000	4.5697	0.0000	0.0000	64.5599	0.0000	0.0000	14.1278	0.0000	0.0000	1031.3312	0.0000	1.4539
Link74	0.0000	10.3047	0.0000	0.0000	64.5342	0.0000	0.0000	6.2626	0.0000	0.0000	638.7844	0.0000	1.4629

Link75	0.0000	2.7691	0.0000	0.0000	64.5208	0.0000	0.0000	23.3002	0.0000	0.0000	1211.6120	0.0000
1.4260												
Link76	0.0000	12.2293	0.0000	0.0000	64.5094	0.0000	0.0000	5.2750	0.0000	0.0000	210.9994	0.0000
1.4242												
Link84	0.0000	7.1666	0.0000	0.0000	77.6630	0.0000	0.0000	10.8368	0.0000	0.0000	3034.2991	0.0000
1.1711												
Link85	0.0000	6.4255	0.0000	0.0000	77.6619	0.0000	0.0000	12.0865	0.0000	0.0000	5680.6625	0.0000
1.3487												
Link127	0.0000	6.0133	0.0000	0.0000	674.6897	0.0000	0.0000	112.2002	0.0000	0.0000	42972.674	0.0000
1.3048												

==========
| Table E14a - Natural Channel Encroachment Information |
==========

Conduit Name	Existing Conveyance Condition Left Bank	Centre Channel	Right Bank	Total	Left Station	Right Station	Encroachment Conveyance Condition Left Bank	Centre Channel	Right Bank	Total	Left Station	Right Station	% Volume Reduction Left	Right	Encroachment Depth Incr.	Method
Link53	0.0000	15.989	0.0000	15.989	-3.1058	0.9303	0.0000	15.989	0.0000	15.989	-3.1058	0.9303	0.0000	0.0000	0.0000	None
Link55	0.0000	860.01	.16E-09	860.01	-11.414	9.4000	0.0000	860.01	.16E-09	860.01	-11.414	9.4000	0.0000	0.0000	0.0000	None
Link68	0.0000	757.47	0.0000	757.47	-5.1495	19.811	0.0000	757.47	0.0000	757.47	-5.1495	19.811	0.0000	0.0000	0.0000	None
Link69	0.0000	50996.6	243.30	51239.9	-84.981	190.65	0.0000	50996.6	243.30	51239.9	-84.981	190.65	0.0000	0.0000	0.0000	None
Link70	841.17	26013.3	0.0000	26854.4	-128.90	91.233	841.17	26013.3	0.0000	26854.4	-128.90	91.233	0.0000	0.0000	0.0000	None
Link73	0.0000	535.83	0.0000	535.83	-6.0870	21.339	0.0000	535.83	0.0000	535.83	-6.0870	21.339	0.0000	0.0000	0.0000	None
Link74	0.0000	290.99	0.0000	290.99	-5.0321	3.5295	0.0000	290.99	0.0000	290.99	-5.0321	3.5295	0.0000	0.0000	0.0000	None
Link75	0.0000	1310.3	0.0000	1310.3	-17.987	7.0957	0.0000	1310.3	0.0000	1310.3	-17.987	7.0957	0.0000	0.0000	0.0000	None
Link76	0.0000	236.95	0.0000	236.95	-8.3191	-0.8130	0.0000	236.95	0.0000	236.95	-8.3191	-0.8130	0.0000	0.0000	0.0000	None
Link84	0.0000	539.97	0.0000	539.97	-7.5077	6.0260	0.0000	539.97	0.0000	539.97	-7.5077	6.0260	0.0000	0.0000	0.0000	None
Link85	0.0000	596.68	0.0000	596.68	-5.3003	10.311	0.0000	596.68	0.0000	596.68	-5.3003	10.311	0.0000	0.0000	0.0000	None
Link127	0.0000	4743.9	0.0000	4743.9	-153.81	33.127	0.0000	4743.9	0.0000	4743.9	-153.81	33.127	0.0000	0.0000	0.0000	None

==========
| Table E14b - Floodplain Mapping |
==========

Conduit Name	Upstream WS Elev.	Downstream WS Elev.	Channel Length	Center Station	Left Offsets Natural	Encroach	Right Offsets Natural	Encroach	Channel Widths Bank	Total	Encroach. Bank
Link53	636.8912	636.5876	33.0000	0.0000	3.1058	3.1058	21.2000	0.9303	0.9303	17.8000	4.0362	4.0362
Link55	634.1621	633.6137	138.0000	0.0000	11.4140	11.4140	23.6000	9.4000	9.4000	9.4000	20.8140	20.8140
Link68	623.3103	621.6559	400.0000	0.0000	5.1495	5.1495	67.2000	19.8105	19.8105	30.6000	24.9600	24.9600
Link69	621.6559	621.6552	260.0000	0.0000	84.9806	84.9806	126.4000	190.6486	190.6486	174.6000	275.6292	275.6292
Link70	621.6483	621.6493	450.0000	0.0000	128.8963	128.8963	64.2000	91.2331	91.2331	121.3000	220.1294	220.1294
Link73	603.9813	599.6103	73.0000	0.0000	6.0870	6.0870	92.8000	21.3390	21.3390	88.6000	27.4260	27.4260
Link74	599.6103	596.3872	102.0000	0.0000	5.0321	5.0321	93.3000	3.5295	3.5295	33.4000	8.5616	8.5616
Link75	596.3872	596.2782	52.0000	0.0000	17.9873	17.9873	92.5000	7.0957	7.0957	48.8000	25.0829	25.0829
Link76	596.2782	594.0125	40.0000	-4.6000	3.7191	3.7191	41.9000	3.7870	3.7870	65.0000	7.5060	7.5060
Link84	613.9093	607.2118	280.0000	0.0000	7.5077	7.5077	30.6000	6.0260	6.0260	26.8000	13.5337	13.5337
Link85	607.2118	594.7642	470.0000	0.0000	5.3003	5.3003	68.1000	10.3105	10.3105	109.0000	15.6109	15.6109
Link127	625.0473	620.0380	383.0000	0.0000	153.8132	153.8132	245.8000	33.1271	33.1271	65.5000	186.9403	186.9403

==========
| Table E15 - SPREADSHEET INFO LIST |
| Conduit Flow and Junction Depth Information for use in spreadsheets. The maximum values in this table are the true maximum values because they sample every time step. The values in the review results may only be the maximum of a subset of all the time steps in the run. Note: These flows are only the flows in a single barrel. |
==========

Conduit Name	Maximum Flow (cfs)	Total Flow (ft^3)	Maximum Velocity (ft/s)	Maximum Volume (ft^3)	##	Junction Name	Invert Elevation (ft)	Maximum Elevation (ft)
Link12	18.2520	203477.5658	7.4950	783.2822	##	Node11	617.2000	621.6552
Link13	25.9322	437873.4982	10.6304	774.9428	##	Node12	617.2100	621.6483
Link14	36.3988	558003.1922	6.4008	2484.3523	##	Node20	634.8000	640.4998
Link15	36.7532	557919.5130	5.7797	2378.4187	##	Node21	633.1600	640.1767
Link16	57.5421	838679.2969	8.0762	4564.8688	##	Node22	630.1100	636.5475

Link17	61.5779	873867.6090	8.6609	369.7141	##	Node23	628.8600	636.1811
Link18	77.6635	966296.8617	11.3334	1821.3360	##	Node24	628.0300	635.8389
Link22	19.9836	77403.8108	6.1795	1102.0924	##	Node25	626.3500	632.1487
Link23	62.1664	1511626.863	8.6765	2233.1227	##	Node26	626.4200	631.7826
Link24	62.0907	1511600.408	8.6686	546.2781	##	Node27	623.6900	625.5457
Link25	62.0818	1511573.482	8.6774	2246.9711	##	Node29	612.7800	613.9093
Link26	62.0834	1511643.553	8.6998	2267.2517	##	Node30	621.4800	631.4304
Link27	64.3787	1587663.789	9.0425	2373.4608	##	Node31	616.0000	627.2513
Link28	64.5018	1587841.306	9.6048	1686.7128	##	Node33	610.5600	620.0380
Link31	11.2070	52766.6046	6.7132	82.8514	##	Node34	608.4300	617.8339
Link32	121.3780	1874956.835	23.4944	154.1733	##	Node35	608.4000	617.3201
Link33	109.1651	1117929.277	26.1961	74.3570	##	Node36	607.4000	615.2007
Link47	28.5382	90943.8722	22.1265	97.8587	##	Node37	606.4600	613.1088
Link53	11.2070	52765.7391	2.9367	26.4089	##	Node38	605.4500	609.6522
Link54	11.2054	52792.9466	1.8516	499.1727	##	Node39	604.4400	605.8885
Link55	11.2044	52856.8615	1.8029	2323.7640	##	Node41	630.2000	630.7901
Link56	22.8904	97414.4594	2.3173	861.1377	##	Node43	636.4600	637.8432
Link68	23.2672	98615.5522	3.5879	10476.3308	##	Node44	636.1400	637.5750
Link69	-87.4037	102293.2557	1.3940	140228.6216	##	Node45	636.0400	636.8912
Link70	206.4312	1015930.508	2.9141	141974.1953	##	Node46	592.7400	594.0125
Link72	64.5836	1587901.817	19.1314	130.9782	##	Node47	572.0000	573.4631
Link73	64.5599	1587978.188	7.6347	349.5445	##	Node48	593.3000	594.7642
Link74	64.5342	1587950.368	7.6356	282.2742	##	Node63	631.0000	633.6137
Link75	64.5208	1587970.782	3.2923	1211.6120	##	Node65	638.0000	641.2257
Link76	64.5094	1587990.925	9.7899	136.7918	##	Node66	631.9700	635.9638
Link77	16.9937	120052.0501	9.1072	70.3698	##	Node69	636.0000	636.5876
Link78	16.9438	120185.4755	1.5494	226.4160	##	Node70	633.4300	634.1621
Link82	77.6631	966373.8719	16.2092	629.8526	##	Node71	622.0000	623.3103
Link83	77.6632	966380.2541	12.5533	534.8920	##	Node74	618.9800	621.6559
Link84	77.6630	966452.9907	7.4609	542.0781	##	Node75	602.9200	603.9813
Link85	77.6619	966526.9866	7.3729	650.5004	##	Node80	597.8900	599.6103
Link90	10.8911	44539.5509	7.0539	445.9597	##	Node81	595.1800	596.3872
Link93	12.5087	49104.6500	7.0346	319.2870	##	Node82	594.6700	596.2782
Link98	12.4097	48974.6614	6.8187	56.7893	##	Node83	639.6000	640.0326
Link104	12.2877	48980.3747	4.5423	522.3476	##	Node84	631.5400	636.7555
Link105	11.9925	48941.5766	4.6702	286.3228	##	Node86	613.4900	616.1387
Link106	21.7292	93416.4296	6.2262	1029.0245	##	Node87	606.0000	607.2118
Link21.1	19.7719	77928.3959	6.1503	582.1374	##	Node89	637.1000	639.7372
Link21.2	19.6916	78053.4368	6.4543	289.1541	##	Node92	633.2100	636.4422
Link118	11.2070	52762.8877	6.3373	347.7604	##	Node94	633.3000	635.7341
Link126	19.5316	78027.8828	10.6765	163.7432	##	Node99	637.7000	640.5215
Link127	674.6897	1056025.268	1.9312	42972.6735	##	Node100	632.3300	634.9838
214.1	29.4198	213904.6264	9.4670	178.3526	##	Node101	632.0000	634.7429
272.1	11.2070	52768.4750	6.5655	55.0613	##	Node103	631.4400	634.4834
283.1	4.8911	37127.2600	6.1987	30.8578	##	Node108	630.5000	634.3510
336.1	25.9413	437803.0741	11.4496	131.0394	##	Node30.1	619.1400	628.4651
Restrict1	20.0031	75980.1066	9.0939	9515.6480	##	Node30.2	620.3100	629.0968
Restrict2	16.7374	90195.5209	7.8457	9907.0723	##	Node120	638.0000	642.1451
Restrict10	68.7478	998706.1496	8.9960	49500.5802	##	Node124	613.4000	627.0596
Link 5	175.6414	801992.3743	0.0000	0.0000	##	Node125	628.5000	634.3200
WEIR30	0.0000	0.0000	0.0000	0.0000	##	Node130	615.6100	621.6493
WEIR46	18.0429	60190.3176	0.0000	0.0000	##	Node132	615.6000	620.1664
Link97.1	102.0292	233853.0792	0.0000	0.0000	##			

```
        WEIR119     71.2648 205033.5137        0.0000        0.0000   ##

       FREE # 1    230.5427 2992918.108        0.0000        0.0000   ##
```

```
*====================================================*
|     Table E15a - SPREADSHEET REACH LIST            |
| Peak flow and Total Flow listed by Reach or those  |
|      conduits or diversions having the same        |
|      upstream and downstream nodes.                |
*====================================================*
```

Upstream Node	Downstream Node	Maximum Flow (cfs)	Total Flow (ft^3)
Node20	Node21	18.2520	203477.566
Node21	Node84	25.9322	437873.498
Node22	Node23	36.3988	558003.192
Node23	Node24	36.7532	557919.513
Node24	Node25	57.5421	838679.297
Node26	Node25	61.5779	873867.609
Node26	Node27	77.6635	966296.862
Node31	Node124	19.9836	77403.8108
Node33	Node34	62.1664	1511626.86
Node34	Node35	62.0907	1511600.41
Node35	Node36	62.0818	1511573.48
Node36	Node37	62.0834	1511643.55
Node37	Node38	64.3787	1587663.79
Node38	Node39	64.5018	1587841.31
Node44	Node45	11.2070	52766.6046
Node46	Node47	121.3780	1874956.83
Node48	Node47	109.1651	1117929.28
Node66	Node24	28.5382	90943.8722
Node45	Node69	11.2070	52765.7391
Node69	Node70	11.2054	52792.9466
Node70	Node63	11.2044	52856.8615
Node41	Node71	22.8904	97414.4594
Node71	Node74	23.2672	98615.5522
Node74	Node11	-87.4037	102293.256
Node12	Node130	206.4312	1015930.51
Node39	Node75	64.5836	1587901.82
Node75	Node80	64.5599	1587978.19
Node80	Node81	64.5342	1587950.37
Node81	Node82	64.5208	1587970.78
Node82	Node46	64.5094	1587990.93
Node65	Node83	16.9937	120052.050
Node83	Node22	16.9438	120185.475
Node27	Node86	77.6631	966373.872
Node86	Node29	77.6632	966380.254
Node29	Node87	77.6630	966452.991
Node87	Node48	77.6619	966526.987
Node94	Node108	10.8911	44539.5509
Node92	Node100	12.5087	49104.6500
Node100	Node101	12.4097	48974.6614
Node101	Node103	12.2877	48980.3747
Node103	Node108	11.9925	48941.5766
Node108	Node125	21.7292	93416.4296
Node30.1	Node31	19.7719	77928.3959
Node30.2	Node30.1	19.6916	78053.4368
Node89	Node43	11.2070	52762.8877

Node30	Node30.2	19.5316	78027.8828
Node132	Node33	674.6897	1056025.27
Node11	Node12	58.8397	213904.626
Node43	Node44	11.2070	52768.4750
Node63	Node41	4.8911	37127.2600
Node84	Node22	25.9413	437803.074
Node124	Node37	20.0031	75980.1066
Node125	Node26	16.7374	90195.5209
Node130	Node132	68.7478	998706.150
Node11	Node12	175.6414	801992.374
Node63	Node41	18.0429	60190.3176
Node99	Node21	102.0292	233853.079
Node120	Node20	71.2648	205033.514

```
#########################################################
# Table E16. New Conduit Information Section            #
#            Conduit Invert (IE) Elevation and Conduit  #
#            Maximum Water Surface (WS) Elevations      #
#########################################################
```

Conduit Name	Upstream Node	Downstream Node	IE Up	IE Dn	WS Up	WS Dn	Conduit Type
Link12	Node20	Node21	634.8000	634.4500	640.4998	640.1767	Circular
Link13	Node21	Node84	633.1600	631.5400	640.1767	636.7555	Circular
Link14	Node22	Node23	630.1100	628.8600	636.5475	636.1812	Circular
Link15	Node23	Node24	628.8600	628.0300	636.1811	635.8389	Circular
Link16	Node24	Node25	628.0300	626.3500	635.8389	632.1487	Circular
Link17	Node26	Node25	626.4200	626.3500	631.7826	632.1487	Circular
Link18	Node26	Node27	626.4200	623.6900	631.7826	625.5457	Circular
Link22	Node31	Node124	616.0000	613.4000	627.2513	627.0599	Circular
Link23	Node33	Node34	610.5630	608.4300	620.0380	617.8339	Circular
Link24	Node34	Node35	608.4300	608.4000	617.8342	617.3201	Circular
Link25	Node35	Node36	608.4000	607.4000	617.3191	615.2011	Circular
Link26	Node36	Node37	607.4000	606.4600	615.2007	613.1090	Circular
Link27	Node37	Node38	606.4600	605.4500	613.1088	609.6522	Circular
Link28	Node38	Node39	605.4500	604.4400	609.6523	605.8885	Circular
Link31	Node44	Node45	636.1400	636.0400	637.5750	636.8912	Circular
Link32	Node46	Node47	592.7400	572.0000	594.0125	573.4631	Rectangle
Link33	Node48	Node47	593.3000	572.0000	594.7642	573.4631	Circular
Link47	Node66	Node24	631.9700	628.3300	635.9638	635.8389	Circular
Link53	Node45	Node69	636.0400	636.0000	636.8912	636.5876	Natural
Link54	Node69	Node70	636.0000	633.4300	636.5876	634.1621	Trapezoid
Link55	Node70	Node63	633.4300	631.0000	634.1621	633.6137	Natural
Link56	Node41	Node71	630.2000	622.0000	630.7901	623.3103	Trapezoid
Link68	Node71	Node74	622.0000	618.9800	623.3103	621.6559	Natural
Link69	Node74	Node11	618.9800	617.2000	621.6559	621.6552	Natural
Link70	Node12	Node130	617.2100	615.6100	621.6483	621.6493	Natural
Link72	Node39	Node75	604.4400	602.9220	605.8885	604.3692	Circular
Link73	Node75	Node80	602.9200	597.8900	603.9813	599.6103	Natural
Link74	Node80	Node81	597.8900	595.1800	599.6103	596.3872	Natural
Link75	Node81	Node82	595.1800	594.6700	596.3872	596.2782	Natural
Link76	Node82	Node46	594.6700	592.7400	596.2782	594.0125	Natural
Link77	Node65	Node83	640.0000	639.6000	641.2257	640.0326	Circular
Link78	Node83	Node22	639.6000	636.3500	640.0326	636.6101	Trapezoid
Link82	Node27	Node86	623.6900	613.4900	625.5457	616.1387	Circular
Link83	Node86	Node29	613.4900	612.7800	616.1387	613.9093	Circular
Link84	Node29	Node87	612.7800	606.0000	613.9093	607.2118	Natural
Link85	Node87	Node48	606.0000	593.3000	607.2118	594.7642	Natural

Link90	Node94	Node108	633.3000	630.5000	635.7341	634.3510	Circular
Link93	Node92	Node100	633.2100	632.3300	636.4422	634.9838	Circular
Link98	Node100	Node101	632.3300	632.0000	634.9838	634.7429	Circular
Link104	Node101	Node103	632.0000	631.4400	634.7429	634.4834	Circular
Link105	Node103	Node108	631.4400	631.2900	634.4834	634.3510	Circular
Link106	Node108	Node125	630.5000	628.5000	634.3510	634.3200	Circular
Link21.1	Node30.1	Node31	619.1400	616.0000	628.4651	627.2513	Circular
Link21.2	Node30.2	Node30.1	620.3100	619.1400	629.0968	628.4651	Circular
Link118	Node89	Node43	637.1000	636.4600	639.7372	637.8432	Circular
Link126	Node30	Node30.2	621.4800	620.3100	631.4304	629.0968	Circular
Link127	Node132	Node33	615.6100	610.5600	625.0473	620.0380	Natural
214.1	Node11	Node12	617.7000	617.2100	621.6552	621.6483	Circular
272.1	Node43	Node44	636.4600	636.1400	637.8432	637.5750	Circular
283.1	Node63	Node41	631.0100	630.2200	633.6137	631.1294	Circular
336.1	Node84	Node22	631.5400	630.5100	636.7555	636.5475	Circular
Restrict1	Node124	Node37	620.0000	619.9900	627.0599	621.5537	Circ Orif
Restrict2	Node125	Node26	630.0000	629.9900	634.3200	631.7826	Circ Orif
Restrict10	Node130	Node132	615.6100	615.6000	621.6493	620.1664	Circ Orif

```
*==========================================================================*
|    Table E18 - Junction Continuity Error.   Division by Volume added 11/96  |
|                                                                            |
|  Continuity Error = Net Flow + Beginning Volume - Ending Volume            |
|                     ------------------------------------------------       |
|                     Total Flow + (Beginning Volume + Ending Volume)/2      |
|                                                                            |
|  Net Flow   = Node Inflow - Node Outflow                                   |
|  Total Flow = absolute (Inflow + Outflow)                                  |
|  Intermediate column is a judgement on the node continuity error.          |
|                                                                            |
|  Excellent  < 1 percent    Great  1 to  2 percent  Good  2 to  5 percent   |
|  Fair  5 to 10  percent    Poor  10 to 25 percent  Bad  25 to 50 percent   |
|  Terrible > 50  percent                                                    |
*==========================================================================*
```

Junction Name	<------Continuity Error -------> Volume	% of Node	% of Inflow	Remaining Volume	Beginning Volume	Net Flow Thru Node	Total Flow Thru Node	Failed to Converge
Node11	2852.3874	0.1403	0.0984	48.0905	0.0000	2900.4779	2033543.496	0
Node12	80.9660	0.0040	0.0028	0.6383	0.0000	81.6044	2031827.509	0
Node20	1597.6712	0.3911	0.0551	0.0018	0.0000	1597.6730	408511.0795	0
Node21	-500.9969	-0.0572	0.0173	0.0034	0.0000	-500.9935	875204.1432	0
Node22	-49.1035	-0.0044	0.0017	7.6390	0.0000	-41.4645	1115991.742	1
Node23	-29.3605	-0.0026	0.0010	4.2977	0.0000	-25.0627	1115922.705	0
Node24	-166.9196	-0.0100	0.0058	13.9316	0.0000	-152.9879	1677371.308	0
Node25	21.3821	0.0012	0.0007	13.6978	0.0000	35.0800	1748055.643	0
Node26	-2240.6100	-0.1161	0.0773	9.9046	0.0000	-2230.7054	1930359.992	0
Node27	-85.8856	-0.0044	0.0030	4.0195	0.0000	-81.8662	1932670.734	0
Node29	-91.7559	-0.0047	0.0032	4.1171	0.0000	-87.6388	1932833.245	0
Node30	-2.4827	-0.0016	0.0001	0.0005	0.0000	-2.4822	156055.3352	0
Node31	-272.1395	-0.1748	0.0094	786.2137	0.0000	514.0742	155332.2067	94
Node33	-137985.786	-4.7933	4.7584	1.1448	0.0000	-137984.641	2878749.880	2
Node34	-40.6290	-0.0013	0.0014	0.6974	0.0000	-39.9316	3023227.271	0
Node35	-67.8320	-0.0022	0.0023	0.4505	0.0000	-67.3815	3023173.890	0
Node36	-91.9481	-0.0030	0.0032	0.7454	0.0000	-91.2027	3023217.035	0
Node37	-50.7701	-0.0016	0.0018	7.8853	0.0000	-42.8848	3175287.449	0
Node38	-187.0092	-0.0059	0.0064	1.1040	0.0000	-185.9053	3175505.095	0
Node39	-91.7502	-0.0029	0.0032	0.4638	0.0000	-91.2864	3175743.122	2
Node41	-97.2621	-0.0499	0.0034	0.0090	0.0000	-97.2531	194732.0370	5
Node43	-9.3109	-0.0088	0.0003	0.0015	0.0000	-9.3094	105531.3627	0
Node44	-2.2499	-0.0021	0.0001	0.0005	0.0000	-2.2494	105535.0796	0
Node45	-1.6049	-0.0015	0.0001	0.0007	0.0000	-1.6043	105532.3437	0
Node46	-192.2446	-0.0051	0.0066	0.8367	0.0000	-191.4079	3749757.672	0

Node47	-32.4397	-0.0005	0.0011	1.0895	0.0000	-31.3501	5985804.220	0
Node48	-58.8218	-0.0026	0.0020	6.9444	0.0000	-51.8774	2235808.484	0
Node63	-111.9087	-0.0575	0.0039	0.2593	0.0000	-111.6494	194538.8900	15
Node65	-73.4435	-0.0265	0.0025	24416.8797	0.0000	24343.4362	264456.0812	0
Node66	-1129.0907	-0.6268	0.0389	0.0003	0.0000	-1129.0905	180130.0235	1
Node69	-28.3821	-0.0269	0.0010	0.0014	0.0000	-28.3807	105558.6857	0
Node70	-65.8559	-0.0623	0.0023	0.1342	0.0000	-65.7216	105649.8081	0
Node71	-1210.0826	-0.6173	0.0417	0.0128	0.0000	-1210.0698	196030.0116	0
Node74	-3434.9736	-1.7095	0.1185	41.8115	0.0000	-3393.1621	200908.8079	0
Node75	-8.6252	-0.0003	0.0003	0.3662	0.0000	-8.2590	3175880.005	1
Node80	-32.0536	-0.0010	0.0011	0.6595	0.0000	-31.3941	3175928.556	0
Node81	-41.1665	-0.0013	0.0014	1.0989	0.0000	-40.0676	3175921.150	0
Node82	-33.1280	-0.0010	0.0011	0.9378	0.0000	-32.1902	3175961.707	0
Node83	-140.7935	-0.0586	0.0049	5.6472	0.0000	-135.1463	240237.5256	0
Node84	84.7811	0.0097	0.0029	0.0020	0.0000	84.7831	875676.5724	2
Node86	-22.5381	-0.0012	0.0008	2.6494	0.0000	-19.8886	1932754.126	0
Node87	-88.2782	-0.0046	0.0030	10.0663	0.0000	-78.2119	1932979.977	0
Node89	-94.3545	-0.0895	0.0033	0.0013	0.0000	-94.3532	105428.4680	0
Node92	15.7277	0.0160	0.0005	0.0011	0.0000	15.7289	98226.0197	1
Node94	116.9375	0.1311	0.0040	0.0013	0.0000	116.9388	89195.3415	0
Node99	3.1062	0.0006	0.0001	667.5296	0.0000	670.6358	488157.0792	0
Node100	129.9760	0.1325	0.0045	0.0010	0.0000	129.9770	98079.3114	2
Node101	-9.4942	-0.0097	0.0003	0.0010	0.0000	-9.4932	97955.0361	6
Node103	40.8784	0.0417	0.0014	0.0015	0.0000	40.8799	97921.9512	2
Node108	-54.0570	-0.0289	0.0019	108.1949	0.0000	54.1379	186897.5571	2
Node30.1	-114.7594	-0.0735	0.0040	226.9828	0.0000	112.2234	155981.8328	0
Node30.2	-43.8380	-0.0281	0.0015	19.9358	0.0000	-23.9022	156081.3196	0
Node120	-75.1498	-0.0162	0.0026	11385.3661	0.0000	11310.2163	458206.5485	0
Node124	792.9902	0.5159	0.0273	629.6460	0.0000	1422.6363	153383.9174	0
Node125	3028.5477	1.6488	0.1044	134.0100	0.0000	3212.9667	183611.9505	0
Node130	13603.8081	0.6752	0.4691	30.0967	0.0000	13633.9048	2014636.658	0
Node132	-54573.3133	-2.6560	1.8819	29.8441	0.0000	-54543.4692	2054731.417	1

The total continuity error was -1.81365E+05 cubic feet
The remaining total volume was 38626. cubic feet
Your mean node continuity error was Excellent
Your worst node continuity error was Good

```
*==================================================*
|  Table E19 - Junction Inflow & Outflow Listing    |
|              Units are either ft^3 or m^3         |
|              depending on the units in your model.|
*==================================================*
```

Junction Name	Constant Inflow to Node	User Inflow to Node	Interface Inflow to Node	DWF Inlow to Node	Inflow through Outfall	RNF Layer Inflow to Node	Inflow from 2D Layer	Outflow from Node	Evaporation from Node	Basin Infil.
Node11	0.0000	0.0000	0.0000	0.0000	0.0000	915105.3111	0.0000	0.0000	0.0000	0.0000
Node24	0.0000	0.0000	0.0000	0.0000	0.0000	189779.7315	0.0000	0.0000	0.0000	0.0000
Node25	0.0000	0.0000	0.0000	0.0000	0.0000	35502.9689	0.0000	0.0000	0.0000	0.0000
Node30	0.0000	0.0000	0.0000	0.0000	0.0000	77977.7492	0.0000	0.0000	0.0000	0.0000
Node33	0.0000	0.0000	0.0000	0.0000	0.0000	311010.3072	0.0000	0.0000	0.0000	0.0000
Node46	0.0000	0.0000	0.0000	0.0000	0.0000	286713.8947	0.0000	0.0000	0.0000	0.0000
Node47	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.9929E+06	0.0000	0.0000
Node48	0.0000	0.0000	0.0000	0.0000	0.0000	151293.1293	0.0000	0.0000	0.0000	0.0000
Node63	0.0000	0.0000	0.0000	0.0000	0.0000	44252.4922	0.0000	0.0000	0.0000	0.0000
Node65	0.0000	0.0000	0.0000	0.0000	0.0000	144297.6549	0.0000	0.0000	0.0000	0.0000
Node66	0.0000	0.0000	0.0000	0.0000	0.0000	86712.3142	0.0000	0.0000	0.0000	0.0000

Node89	0.0000	0.0000	0.0000	0.0000	0.0000	52457.7963	0.0000	0.0000	0.0000
0.0000									
Node92	0.0000	0.0000	0.0000	0.0000	0.0000	49027.0209	0.0000	0.0000	0.0000
0.0000									
Node94	0.0000	0.0000	0.0000	0.0000	0.0000	44570.0190	0.0000	0.0000	0.0000
0.0000									
Node99	0.0000	0.0000	0.0000	0.0000	0.0000	254305.9254	0.0000	0.0000	0.0000
19951.1565									
Node120	0.0000	0.0000	0.0000	0.0000	0.0000	253143.5208	0.0000	0.0000	0.0000
36872.6423									
Node125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	50.4091	0.0000
0.0000									
Node130	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3443.5360									

```
*=====================================================*
| Table E20 - Junction Flooding and Volume Listing.   |
|             The maximum volume is the total volume  |
|             in the node including the volume in the |
|             flooded storage area. This is the max   |
|             volume at any time. The volume in the   |
|             flooded storage area is the total volume|
|             above the ground elevation, where the   |
|             flooded pond storage area starts.       |
| The fourth column is instantaneous, the fifth is the|
| sum of the flooded volume over the entire simulation|
| Units are either ft^3 or m^3 depending on the units.|
*=====================================================*
```

Junction Name	Surcharged Time (min)	Flooded Time(min)	Out of 1D-System (Flooded Volume)	Maximum Volume	Passed to 2D cell OR Volume Stored in allowed Flood Pond of 1D-System
Node11	207.4189	0.0000	0.0000	55.9840	0.0000
Node12	176.3965	0.0000	0.0000	55.7722	0.0000
Node20	353.5372	344.3974	0.0000	117674.2880	132497.5997
Node21	323.3554	205.1252	0.0000	29057.4626	31788.1340
Node22	0.0000	0.0000	0.0000	80.8939	0.0000
Node23	109.6163	31.9672	0.0000	91.9982	4.7358
Node24	116.2288	48.2877	0.0000	98.1266	13.1038
Node25	95.7031	0.0000	0.0000	72.8663	0.0000
Node26	92.7327	0.0000	0.0000	67.3865	0.0000
Node27	0.0000	0.0000	0.0000	23.3192	0.0000
Node29	0.0000	0.0000	0.0000	14.1910	0.0000
Node30	60.5766	0.2646	0.0000	133.5214	2.6873
Node31	2847.1168	13.9407	0.0000	1014.3853	898.3751
Node33	408.2105	89.9214	0.0000	5361.7130	425690.9776
Node34	423.9313	0.0000	0.0000	118.1735	0.0000
Node35	422.5177	0.0000	0.0000	112.0837	0.0000
Node36	423.2698	0.0000	0.0000	98.0281	0.0000
Node37	422.9464	0.0000	0.0000	83.5516	0.0000
Node38	381.5488	0.0000	0.0000	52.8055	0.0000
Node39	0.0000	0.0000	0.0000	18.2021	0.0000
Node41	0.0000	0.0000	0.0000	7.4153	0.0000
Node43	0.0000	0.0000	0.0000	17.3809	0.0000
Node44	0.0000	0.0000	0.0000	18.0317	0.0000
Node45	0.0000	0.0000	0.0000	10.6957	0.0000
Node46	0.0000	0.0000	0.0000	15.9904	0.0000
Node47	0.0000	0.0000	0.0000	18.3850	0.0000
Node48	0.0000	0.0000	0.0000	18.3992	0.0000
Node63	0.0000	0.0000	0.0000	32.8434	0.0000
Node65	0.0000	0.0000	0.0000	74877.6393	0.0000
Node66	88.9117	84.4765	0.0000	11532.6834	12425.8998
Node69	59.5493	0.0000	0.0000	7.3838	0.0000
Node70	0.0000	0.0000	0.0000	9.2002	0.0000
Node71	0.0000	0.0000	0.0000	16.4649	0.0000
Node74	0.0000	0.0000	0.0000	33.6251	0.0000
Node75	0.0000	0.0000	0.0000	13.3359	0.0000
Node80	0.0000	0.0000	0.0000	21.6172	0.0000

Node81	0.0000	0.0000	0.0000	15.1701	0.0000
Node82	0.0000	0.0000	0.0000	20.2091	0.0000
Node83	0.0000	0.0000	0.0000	5.4365	0.0000
Node84	124.6582	0.0000	0.0000	65.5375	0.0000
Node86	0.0000	0.0000	0.0000	33.2831	0.0000
Node87	0.0000	0.0000	0.0000	15.2272	0.0000
Node89	59.6063	57.9460	0.0000	4480.6748	4952.0436
Node92	70.0910	32.3394	0.0000	802.9151	861.3030
Node94	52.3785	51.8342	0.0000	2742.8568	3076.0906
Node99	2855.0000	0.0000	0.0000	65157.1480	0.0000
Node100	71.5345	67.4097	0.0000	6082.6880	6345.8905
Node101	64.4059	0.0000	0.0000	34.4668	0.0000
Node103	67.7373	0.0000	0.0000	38.2432	0.0000
Node108	67.6280	62.1644	0.0000	2892.0674	3003.3969
Node30.1	117.7007	0.0000	0.0000	117.1786	0.0000
Node30.2	65.9200	0.0000	0.0000	110.4177	0.0000
Node120	2863.3333	0.0000	0.0000	59372.9523	0.0000
Node124	2850.5185	0.0000	0.0000	171.6507	0.0000
Node125	114.8706	0.2446	50.4091	73.1341	0.0000
Node130	284.5214	0.0000	0.0000	244154.1227	0.0000
Node132	338.5843	0.0000	0.0000	57.3808	0.0000

```
*==================================*
| Simulation Specific Information  |
*==================================*
Number of Input Conduits..........        51 Number of Simulated Conduits......        60
Number of Natural Channels........        12 Number of Junctions...............        57
Number of Storage Junctions.......         4 Number of Weirs..................         5
Number of Orifices................         3 Number of Pumps..................         0
Number of Free Outfalls...........         1 Number of Tide Gate Outfalls......         0

*=========================================================*
| Average % Change in Junction or Conduit is defined as:  |
| Conduit  % Change ==> 100.0 ( Q(n+1) - Q(n) ) / Qfull   |
| Junction % Change ==> 100.0 ( Y(n+1) - Y(n) ) / Yfull   |
*=========================================================*

The Conduit with the largest average change was..Link 5     with     0.000 percent
The Junction with the largest average change was.Node25     with     0.091 percent
The Conduit with the largest sinuosity was.......Link127    with   535.076

*=================================================================*
| Table E21. Continuity balance at the end of the simulation      |
|            Junction Inflow, Outflow or Street Flooding          |
| Error = Inflow  + Initial Volume - Outflow - Final   Volume     |
*=================================================================*
```

Inflow Junction	Inflow Volume,ft^3	Average Inflow, cfs
Node11	915353.2401	5.2972
Node24	189828.6258	1.0985
Node25	35508.7373	0.2055
Node30	78027.4524	0.4515
Node33	311097.7500	1.8003
Node46	286809.9119	1.6598
Node48	151352.2208	0.8759
Node63	44364.4510	0.2567
Node65	144404.0311	0.8357
Node66	89186.1513	0.5161
Node89	52665.5803	0.3048
Node92	49121.3697	0.2843
Node94	44655.7906	0.2584
Node99	254304.0000	1.4717
Node120	253173.0347	1.4651
Node47	-2.993E+06	-17.3201
Node125	-50.4091	-0.0003

```
       Outflow      Outflow          Average
       Junction  Volume,ft^3    Outflow, cfs
---------------  ------------   ------------
         Node47   2.99292E+06        17.3201

        Node125       50.4091         0.0003


*=====================================================*

| Initial system volume        =         0.0000 Cu Ft |

| Total system inflow volume   =   2.896150E+06 Cu Ft |

| Inflow + Initial volume      =   2.896150E+06 Cu Ft |

*=====================================================*

| Total system outflow         =   2.992969E+06 Cu Ft |

| Volume left (Final volume)   =     38626.0685 Cu Ft |

| Evaporation                  =         0.0000 Cu Ft |

| Basin Infiltration           =     60267.3348 Cu Ft |

| Outflow + Final Volume       =   3.091862E+06 Cu Ft |

*=====================================================*


*==============================================*
| Total Model Continuity Error                 |
| Error in Continuity, Percent =        -6.7577 |
| Error in Continuity, ft^3    =    -195712.085 |
| + Error means a continuity loss, - a gain    |
*==============================================*


####################################################
# Table E22. Numerical Model judgement section    #
####################################################

Overall error was (minimum of Table E18 & E21)             -6.2623 percent


Worst nodal error was in node Node33           with        -4.7933 percent


Of the total inflow this loss was                           4.7645 percent


Your overall continuity error was                  Fair


                                                  Good Efficiency


Efficiency of the simulation                        3.46


Most Number of Non Convergences at one Node       94.


Total Number Non Convergences at all Nodes       137.


Total Number of Nodes with Non Convergences       15.




##########################################################
# Table E23. New Basin Design Information               #
#            Maximum Hydraulic Grade Line,              #
#            Out Conduit Sizes and Maximum Flow         #
##########################################################

A) Resize d/s Pipes based on given HGL
B) Resize Basin based on given HGL
C) Resize d/s Pipes and Basin based on HGL and max discharge
D) Resize d/s pipes based on given max discharge

   Basin Name    Type    Max.HGL   Conduit         Depth   Width   Barrels   Max.Flow
                           (ft)                     (ft)    (ft)             (ft^3/s)
--------------- ------  --------- --------------- ------- ------- --------- ---------

===> Hydraulic model simulation ended normally.
===> XP-SWMM Simulation ended normally.


===> Your input file was named  : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Proposed\Proposed1B_50yr 2hr.DAT
```

```
===> Your output file was named : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Proposed\Proposed1B_50yr 2hr.out


*==============================================================*
|              SWMM Simulation Date and Time Summary            |
*==============================================================*
| Starting Date... April       6, 2015  Time...   15:27:34: 0  |
|   Ending Date... April       6, 2015  Time...   15:28:24:35  |
|  Elapsed Time...    0.83917 minutes or     50.35000 seconds  |
*==============================================================*
```

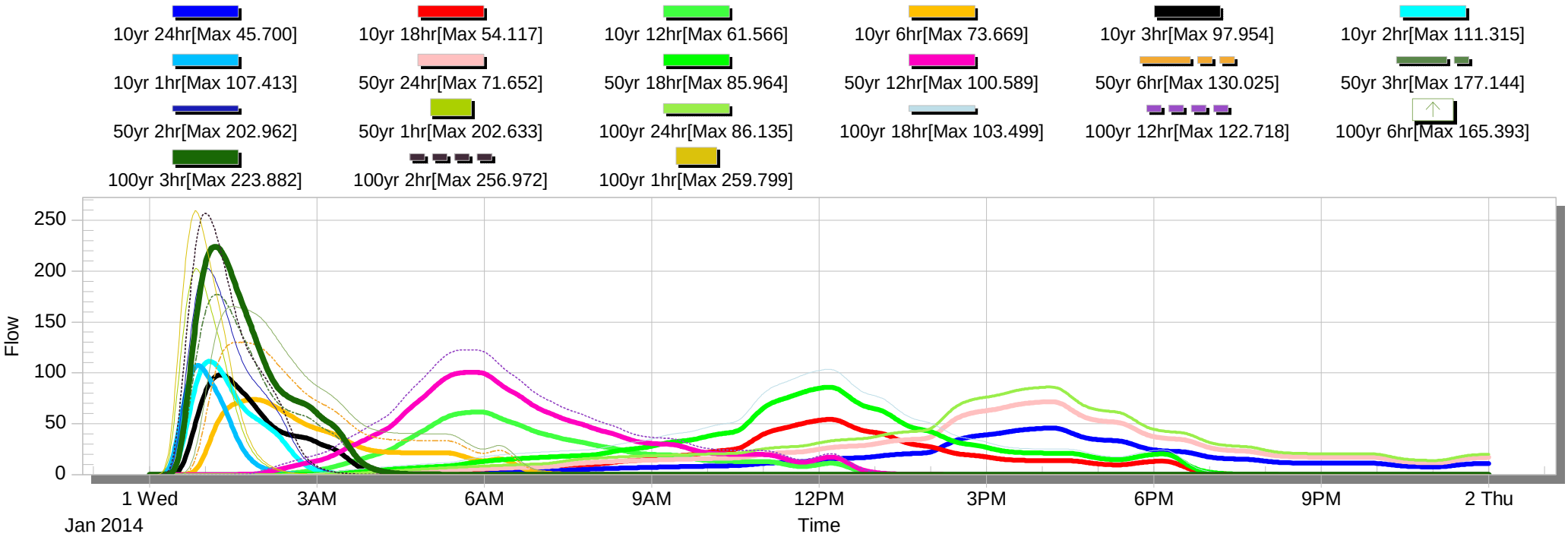
XP-SWMM

PROPOSED ALTERNATIVE 2 ANALYSIS

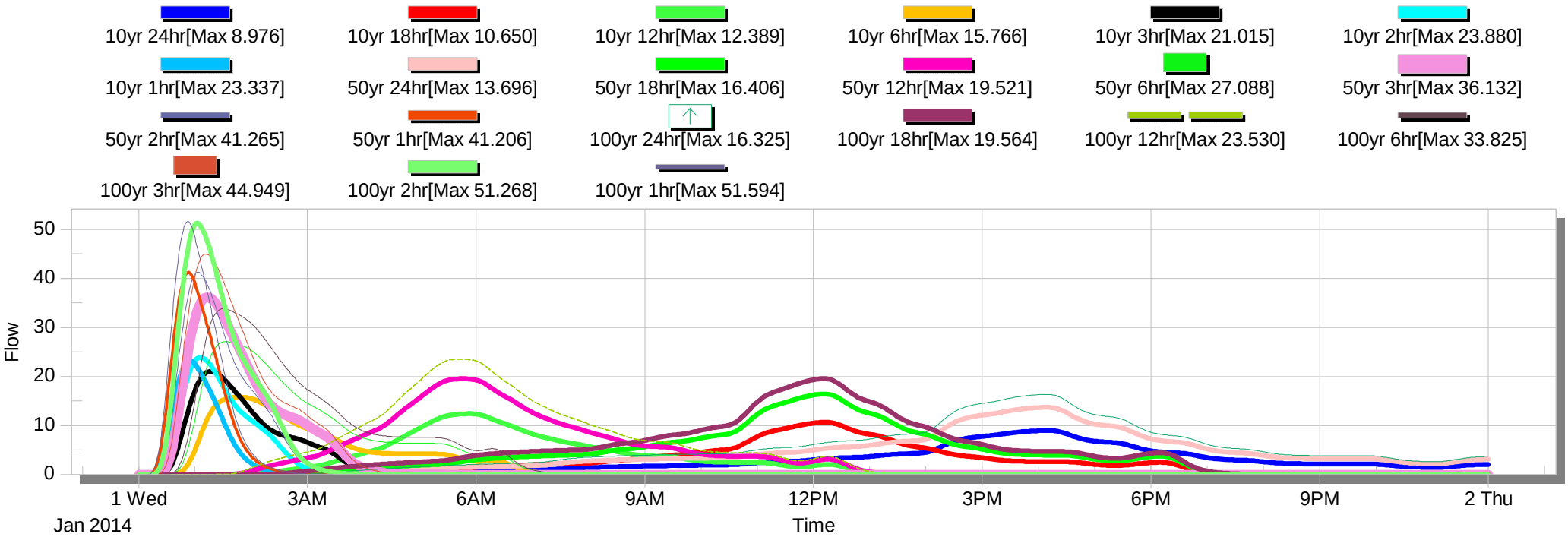
PROPOSED ALTERNATIVE 2

PEAK FLOW RATES BY TRIBUTARY AREA

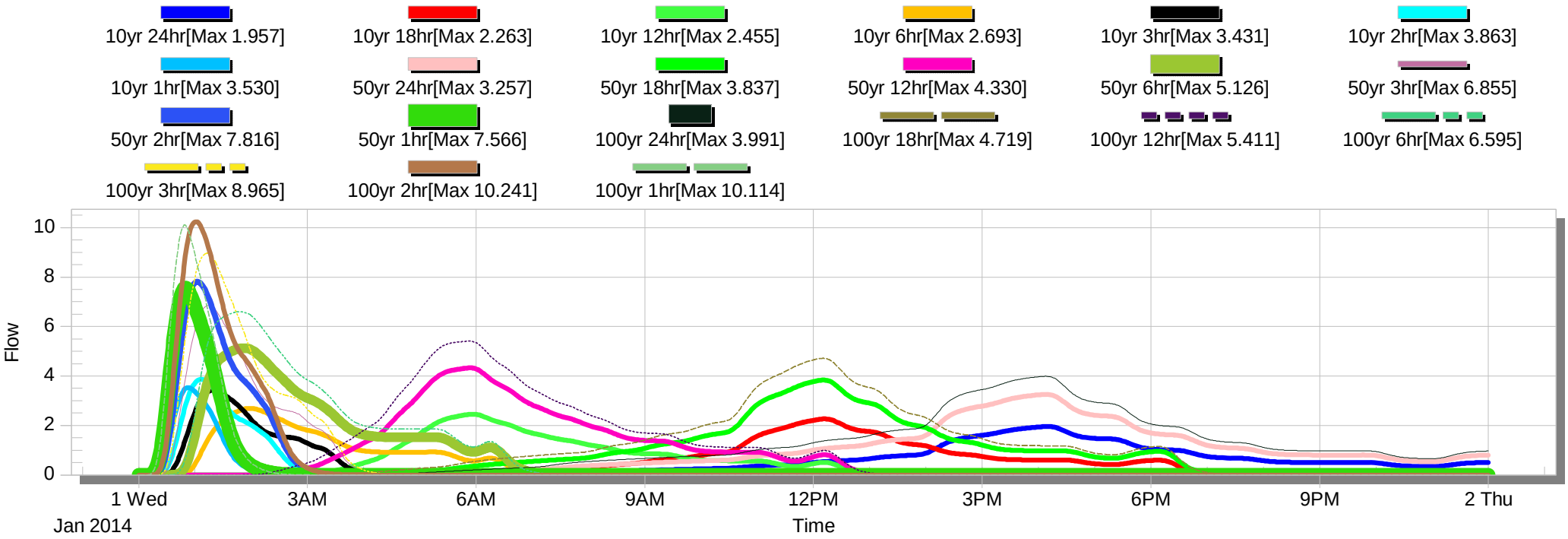
Node - Node11



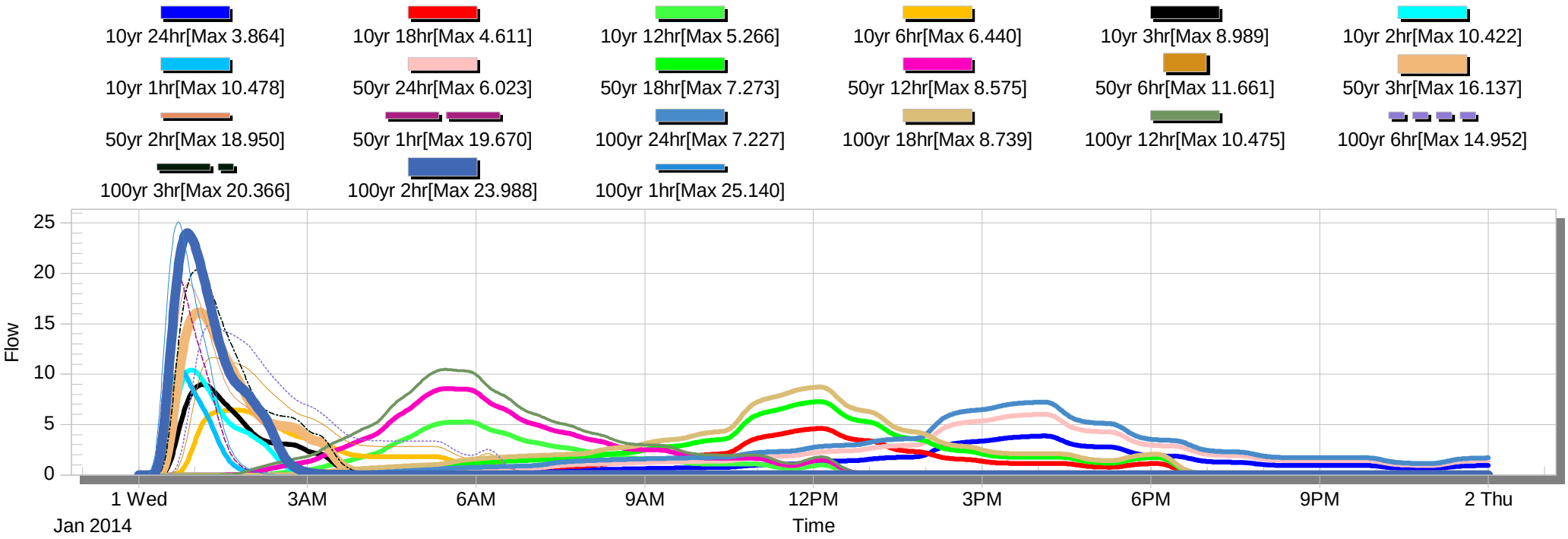
Node - Node24



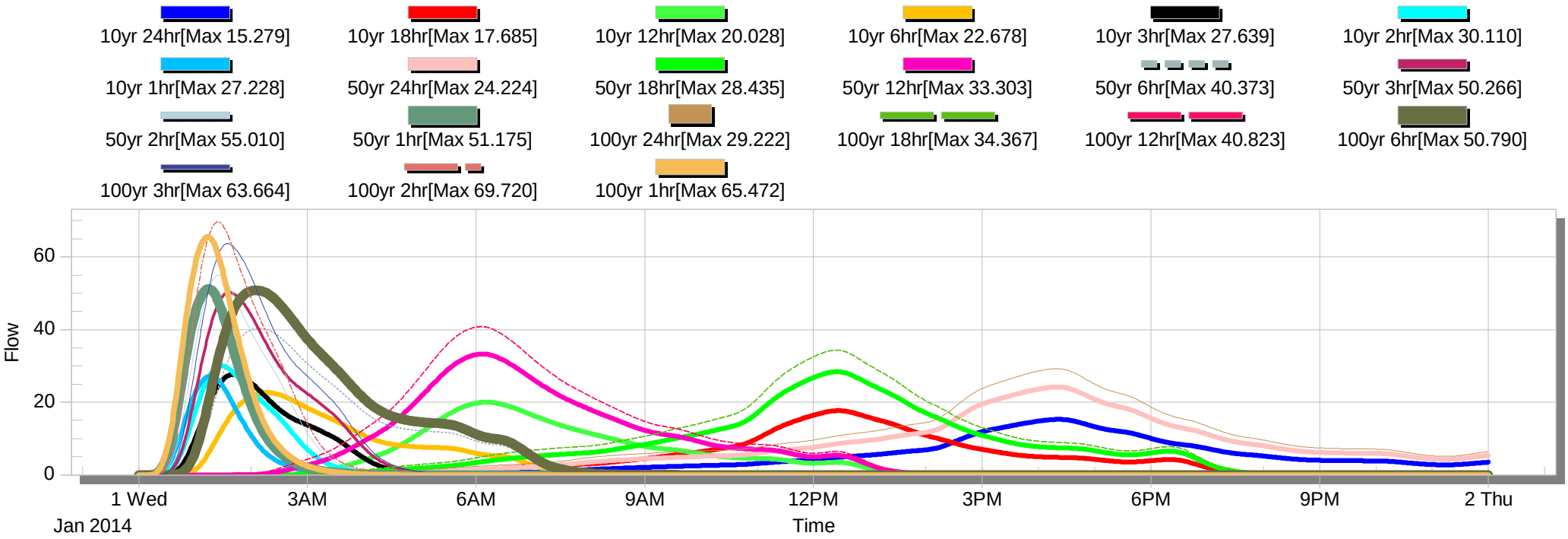
Node - Node25



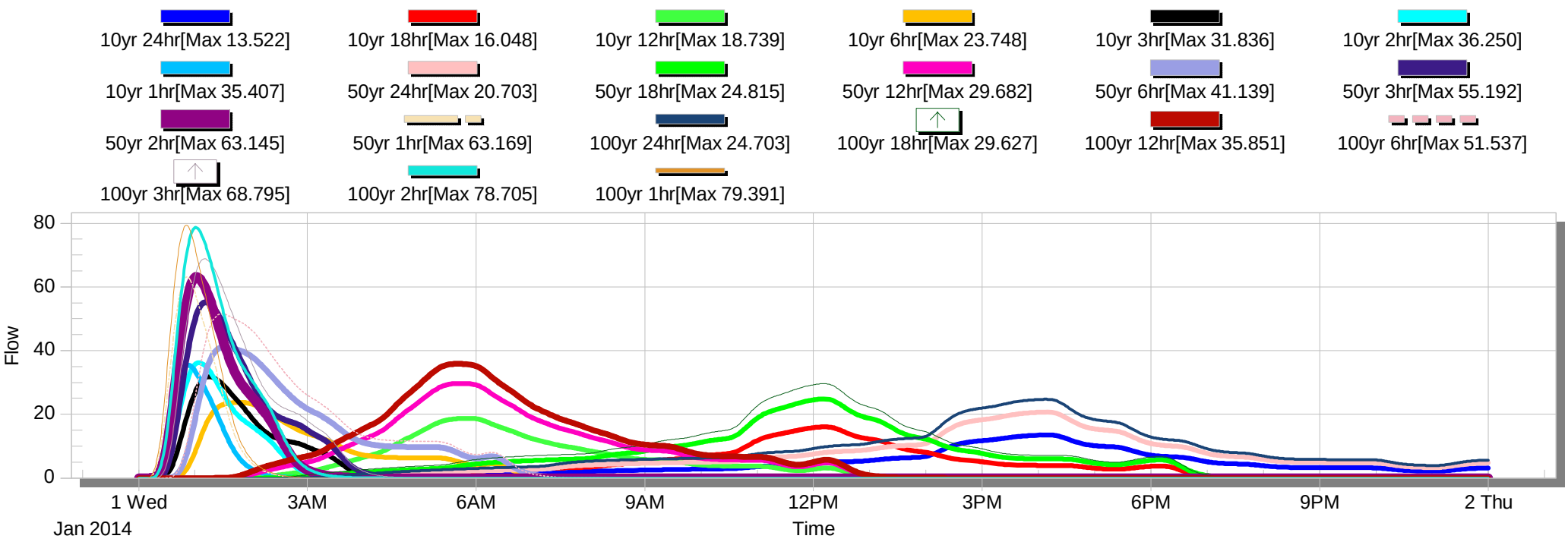
Node - Node30



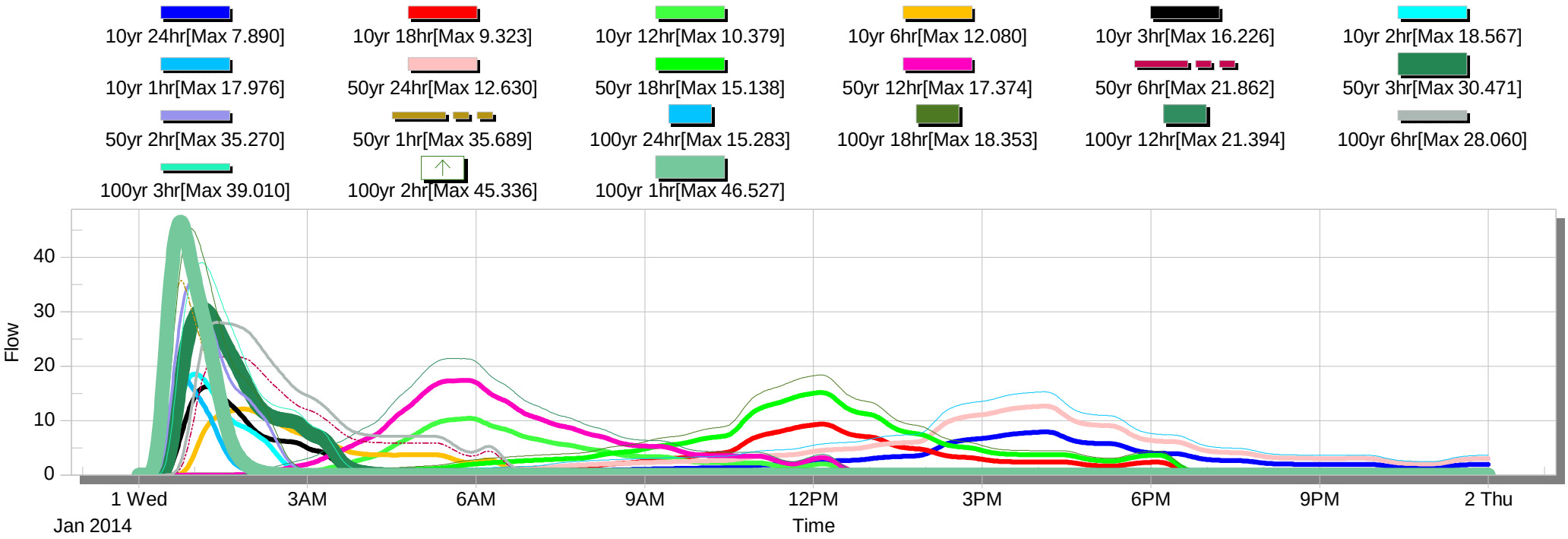
Node - Node33



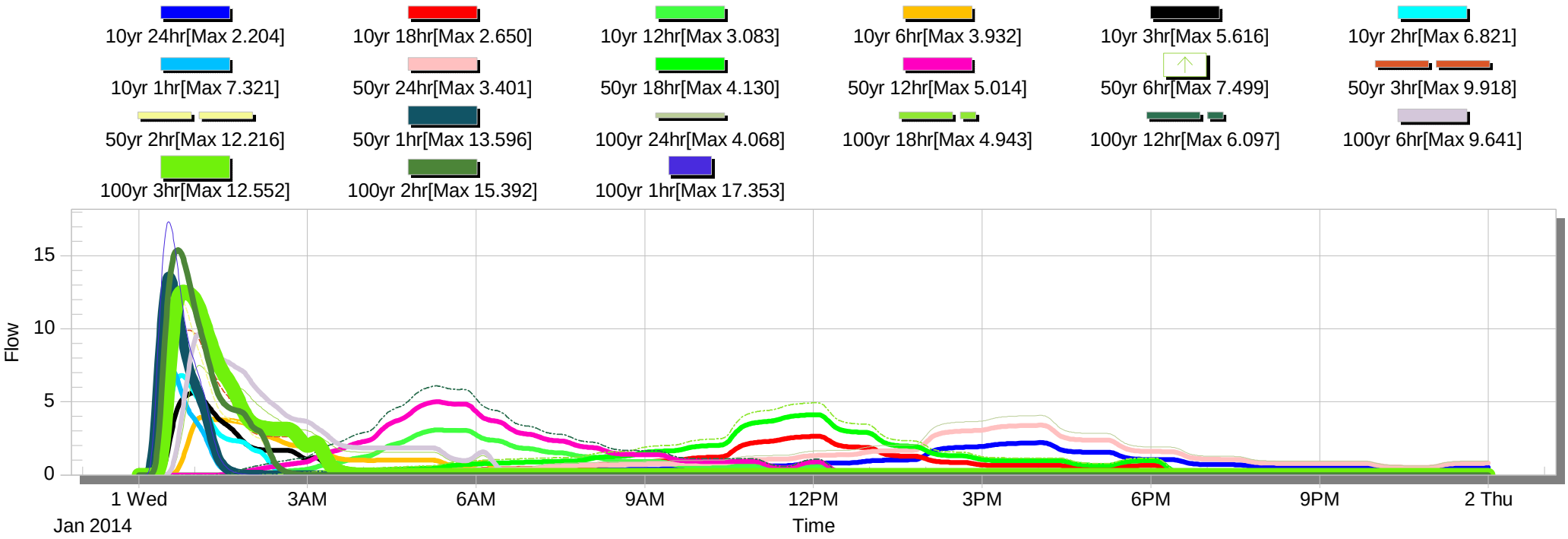
Node - Node46



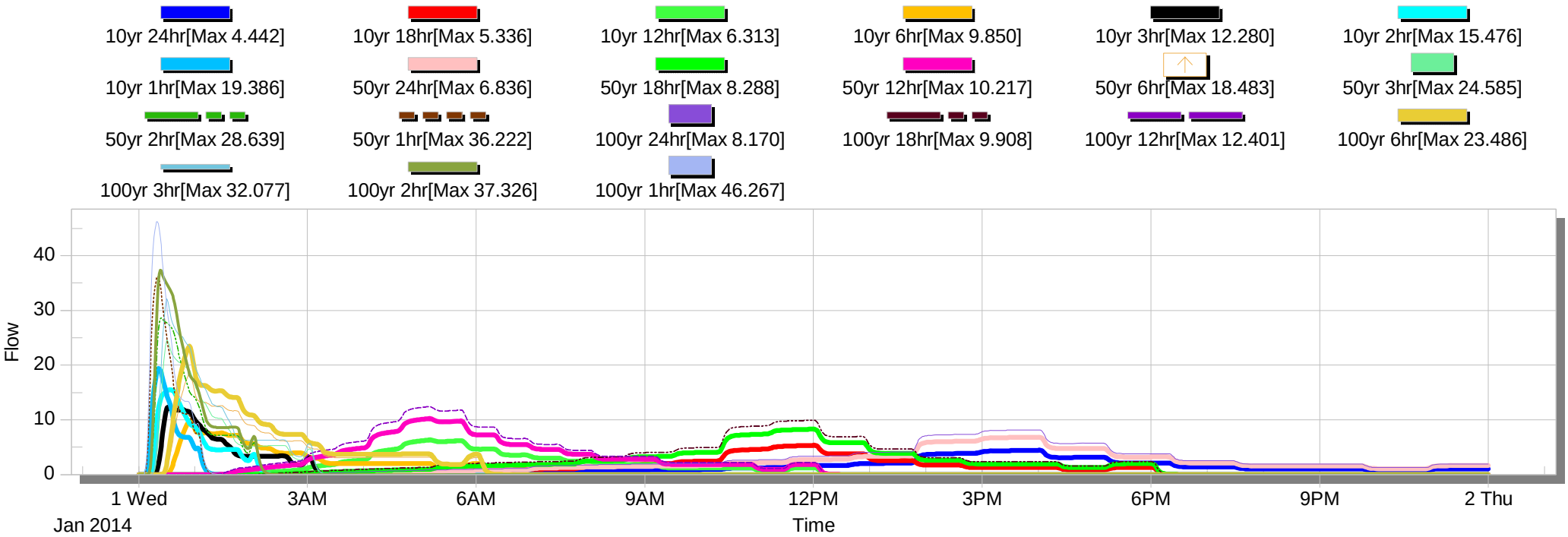
Node - Node48



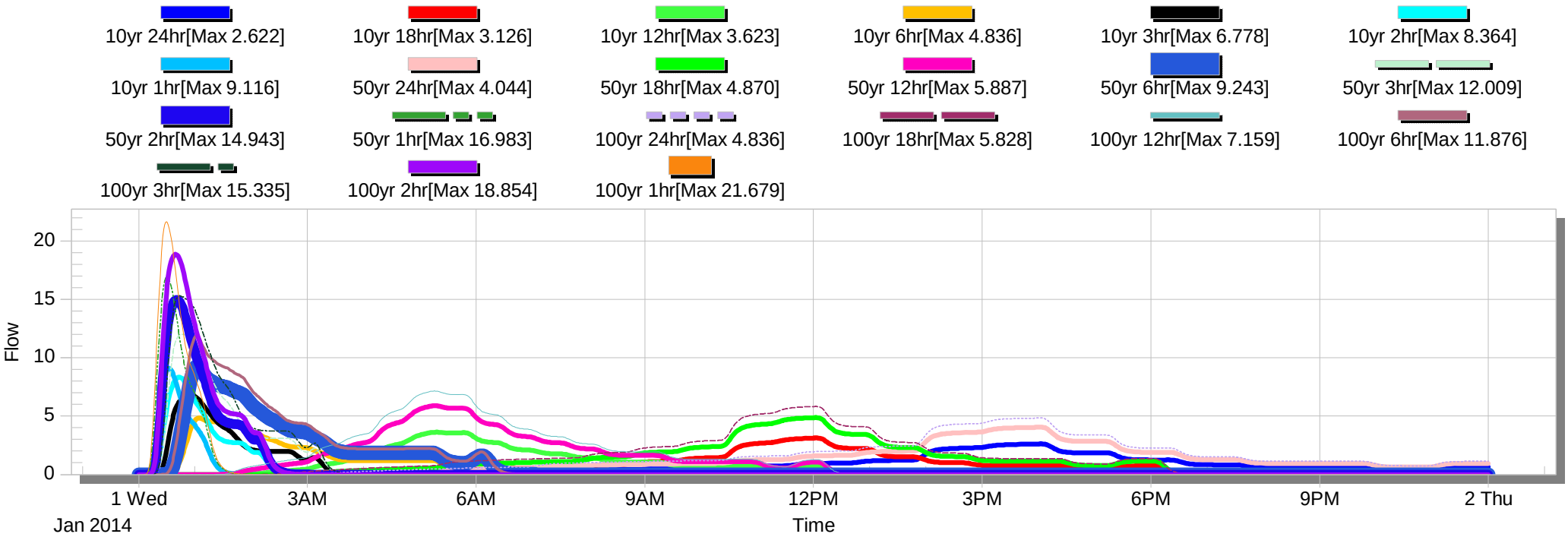
Node - Node63



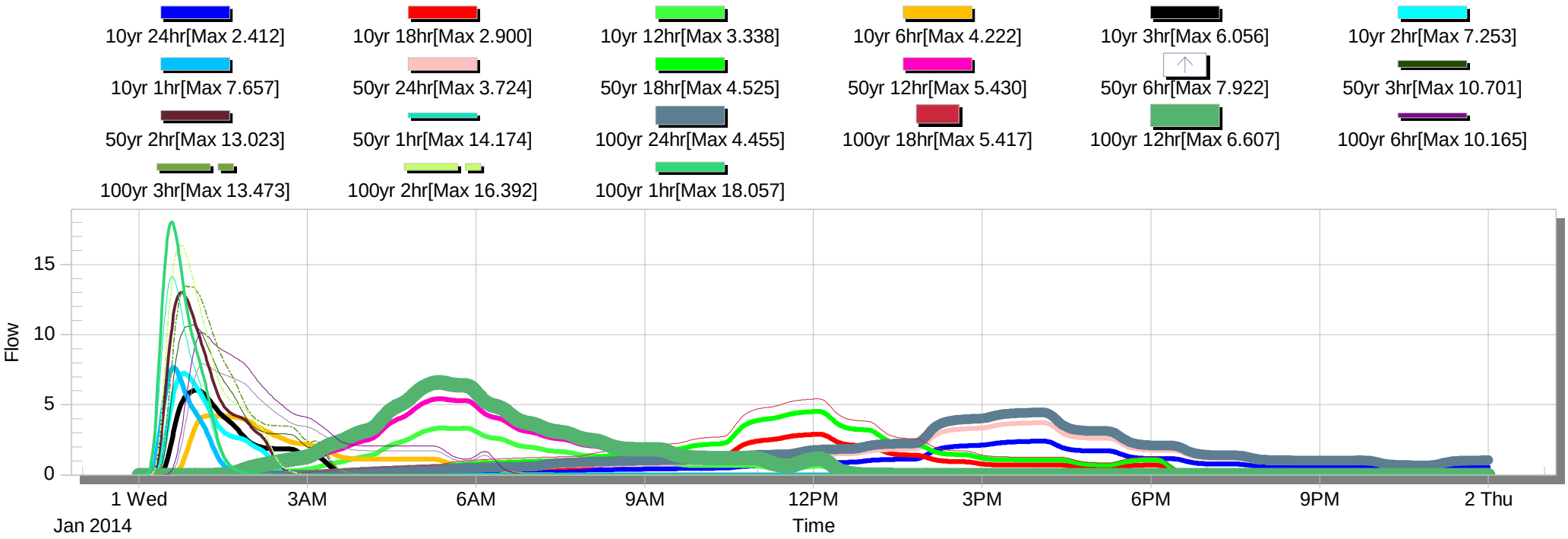
Node - Node66



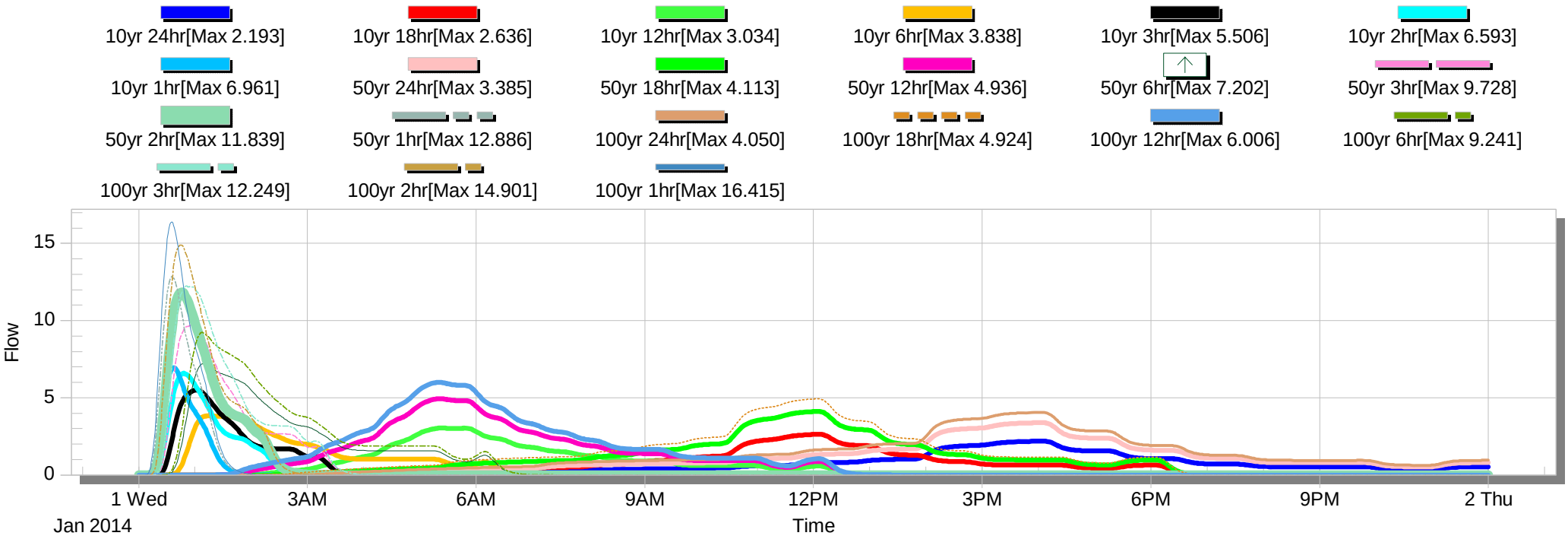
Node - Node89



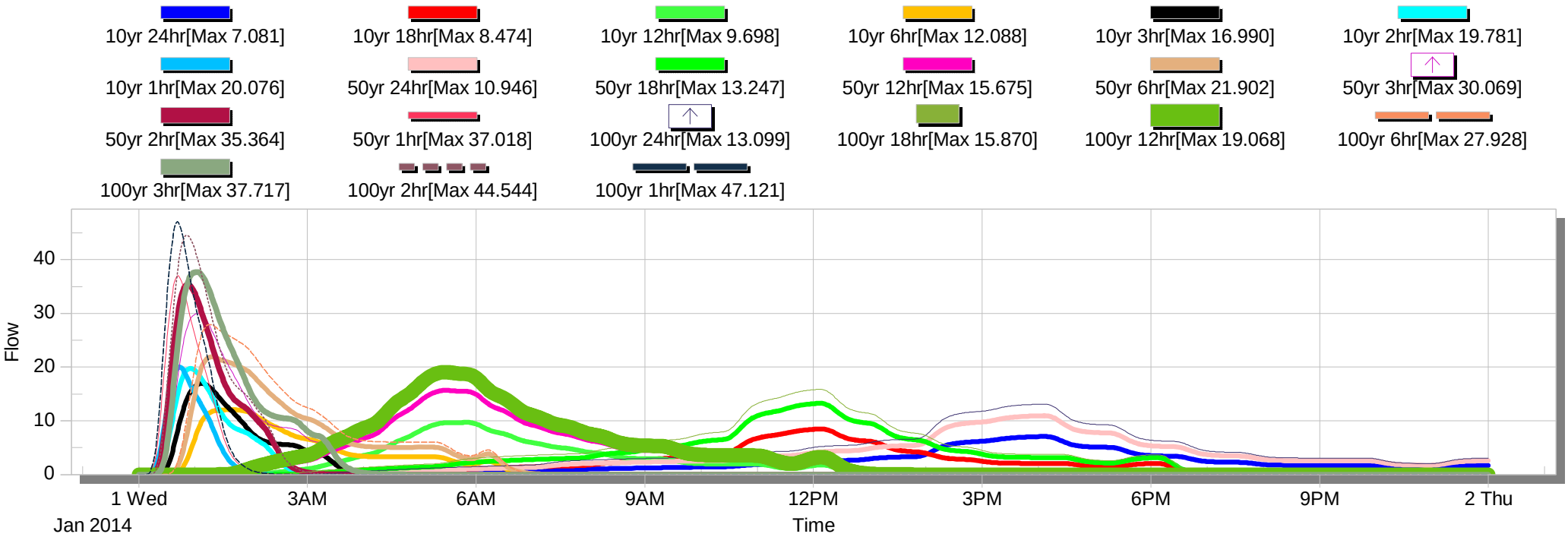
Node - Node92



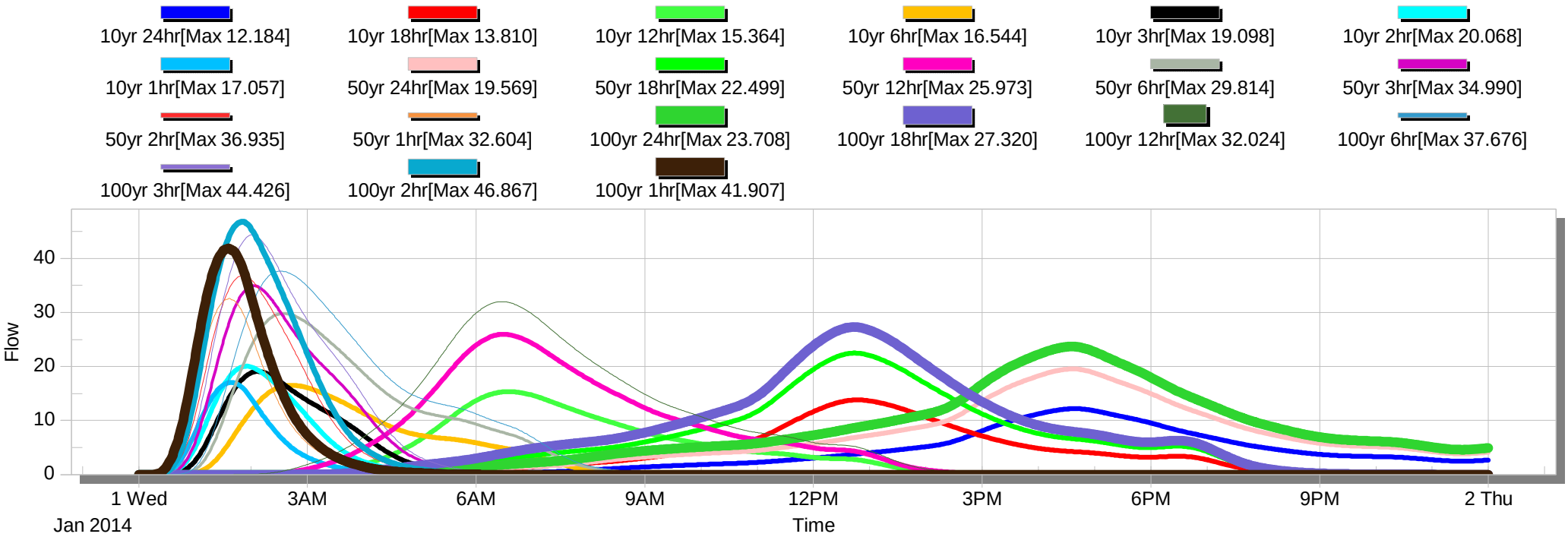
Node - Node94



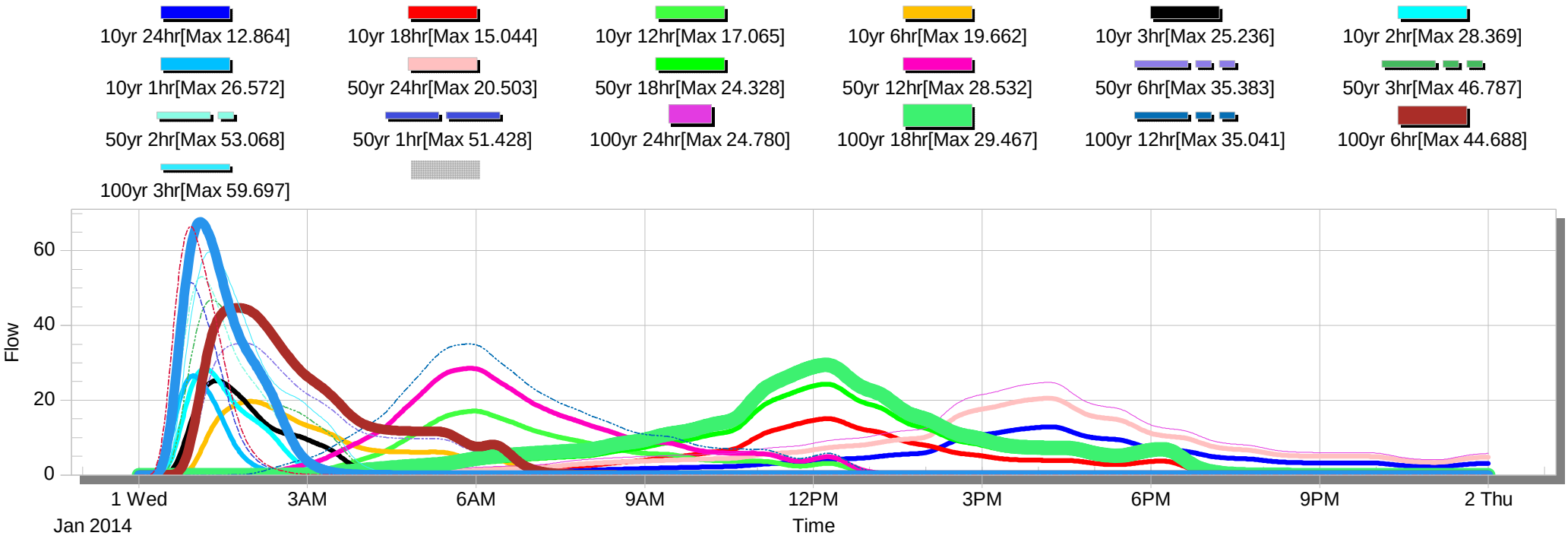
Node - Node65



Node - Node99



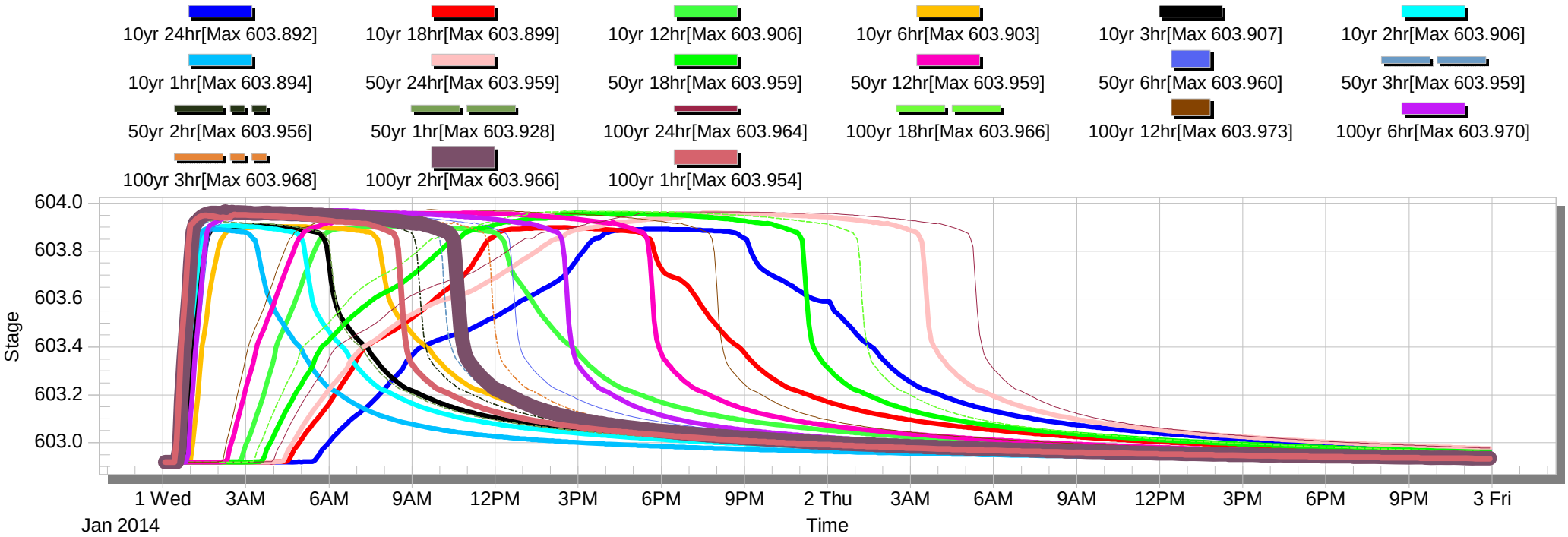
Node - Node120



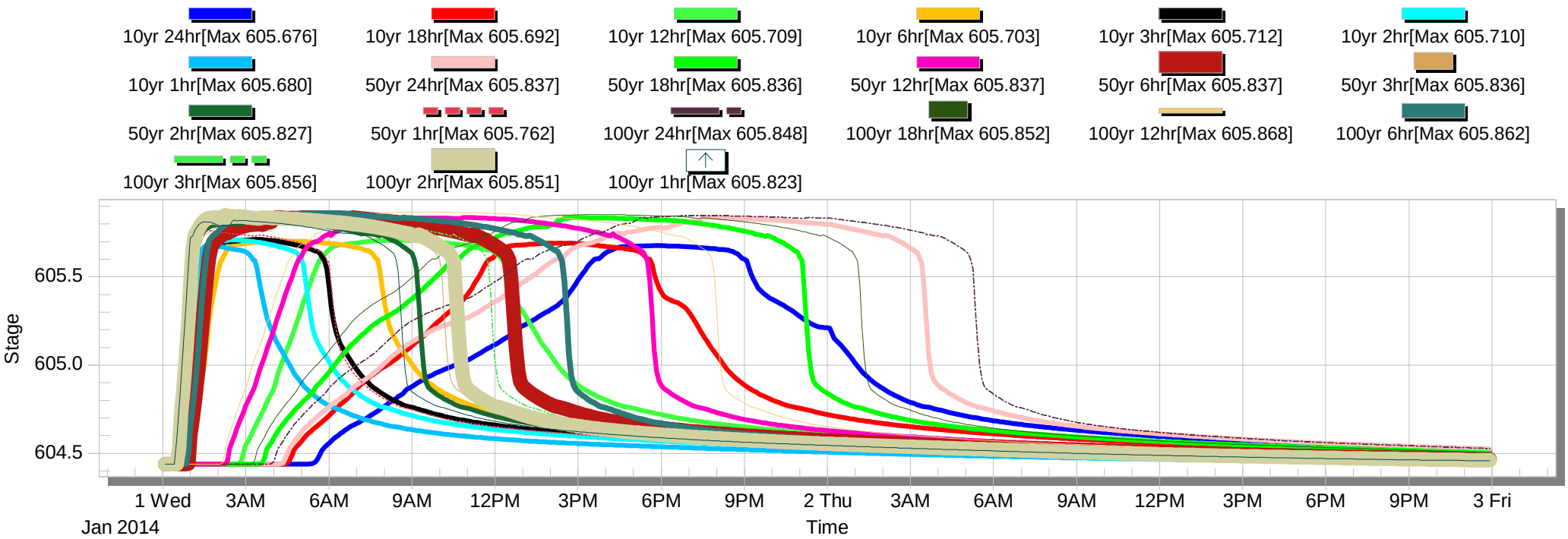
PROPOSED ALTERNATIVE 2

HIGH WATER LEVEL AT EACH NODE

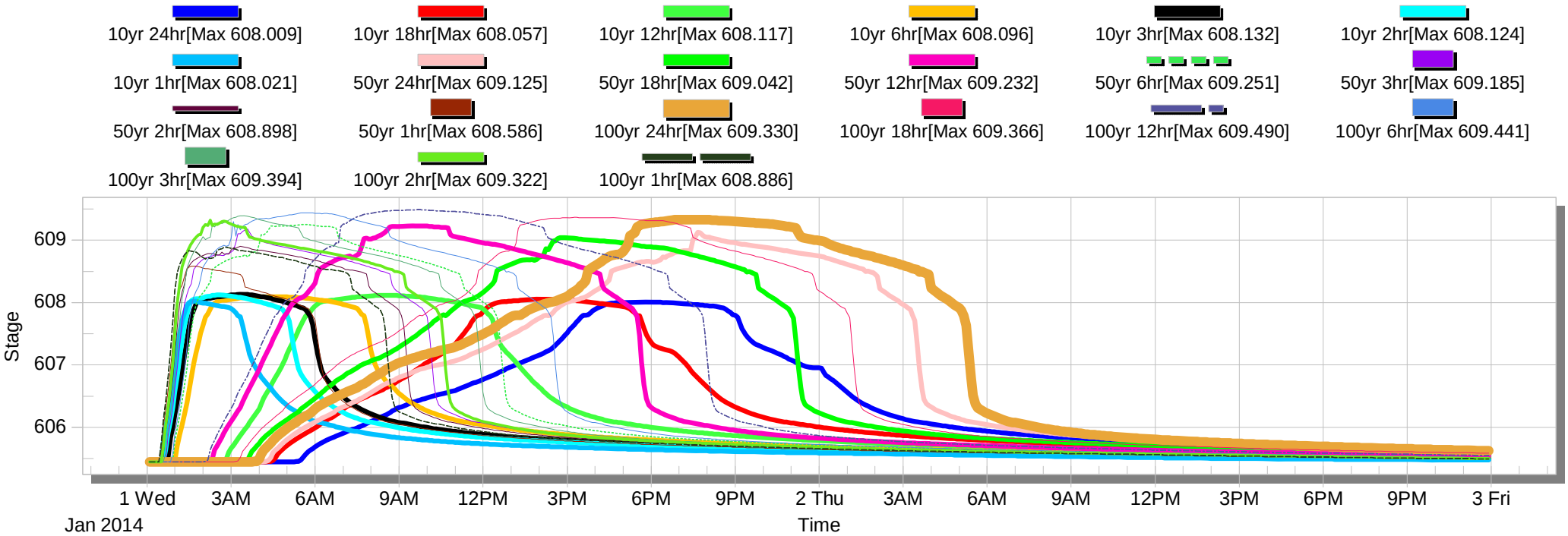
Node - Node75



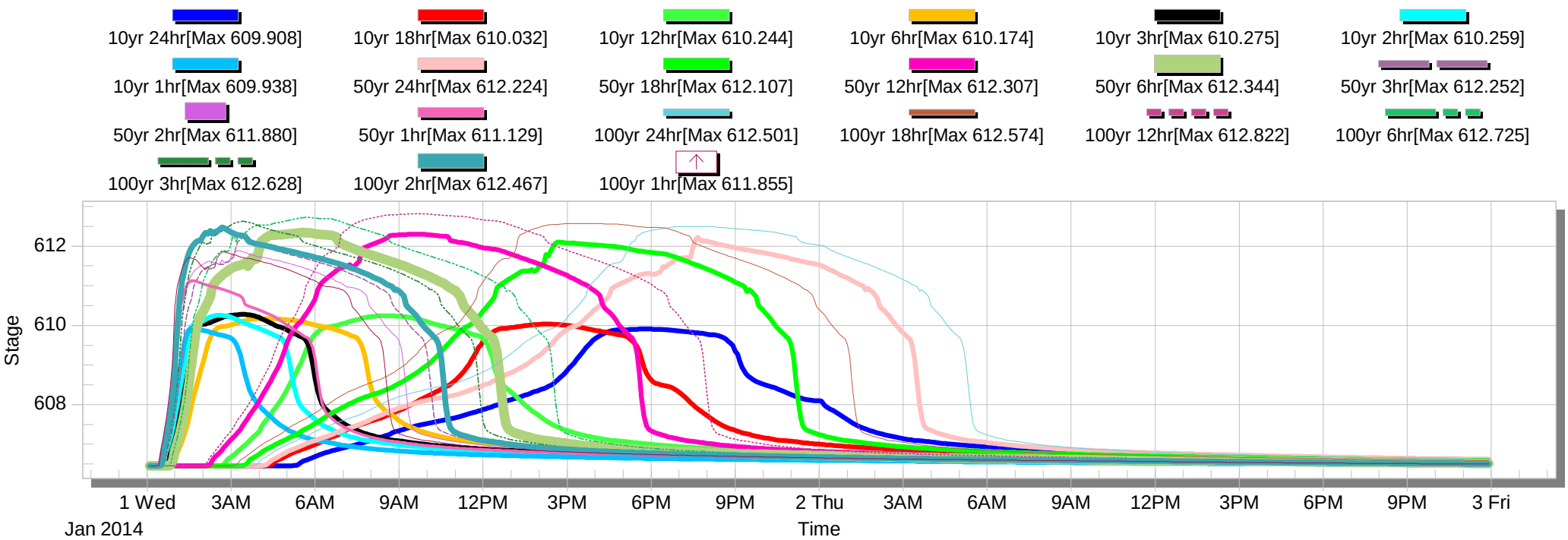
Node - Node39



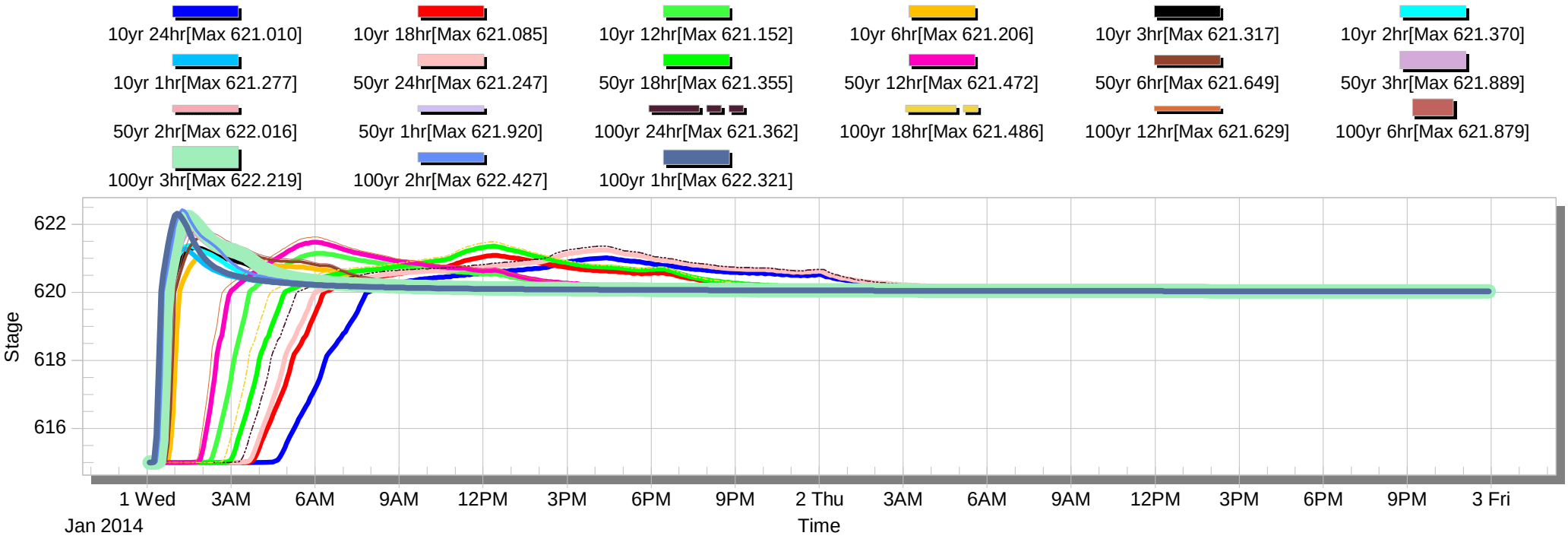
Node - Node38



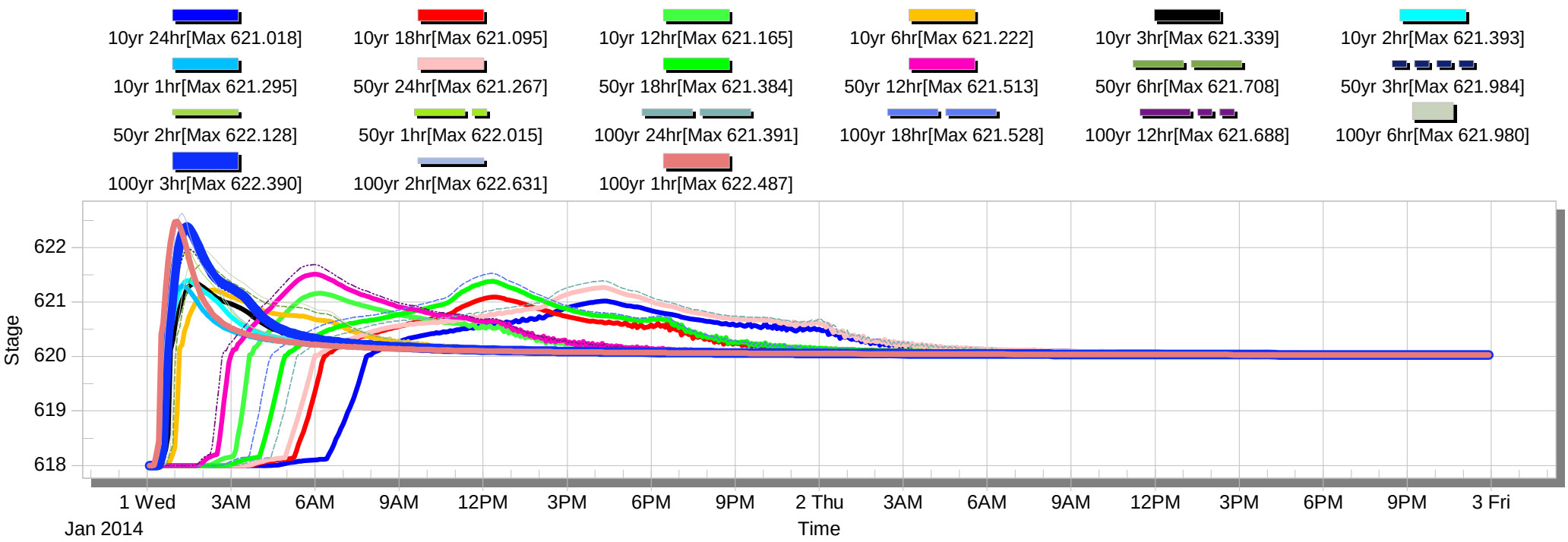
Node - Node37



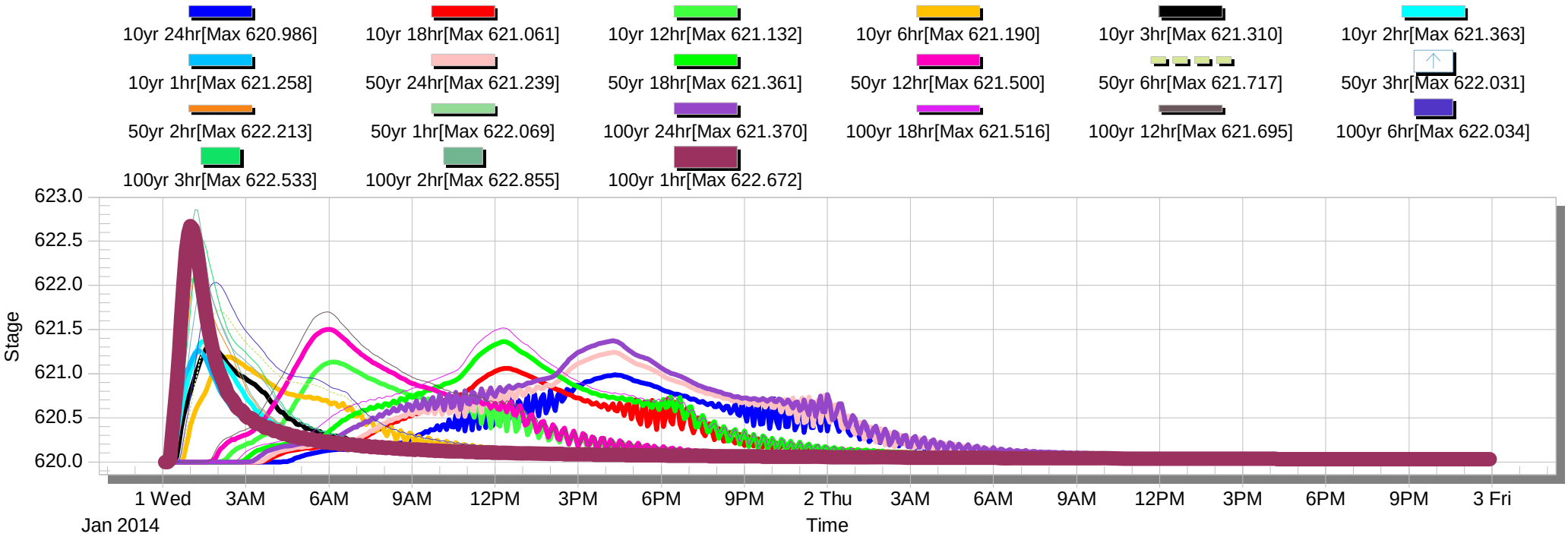
Node - Node133



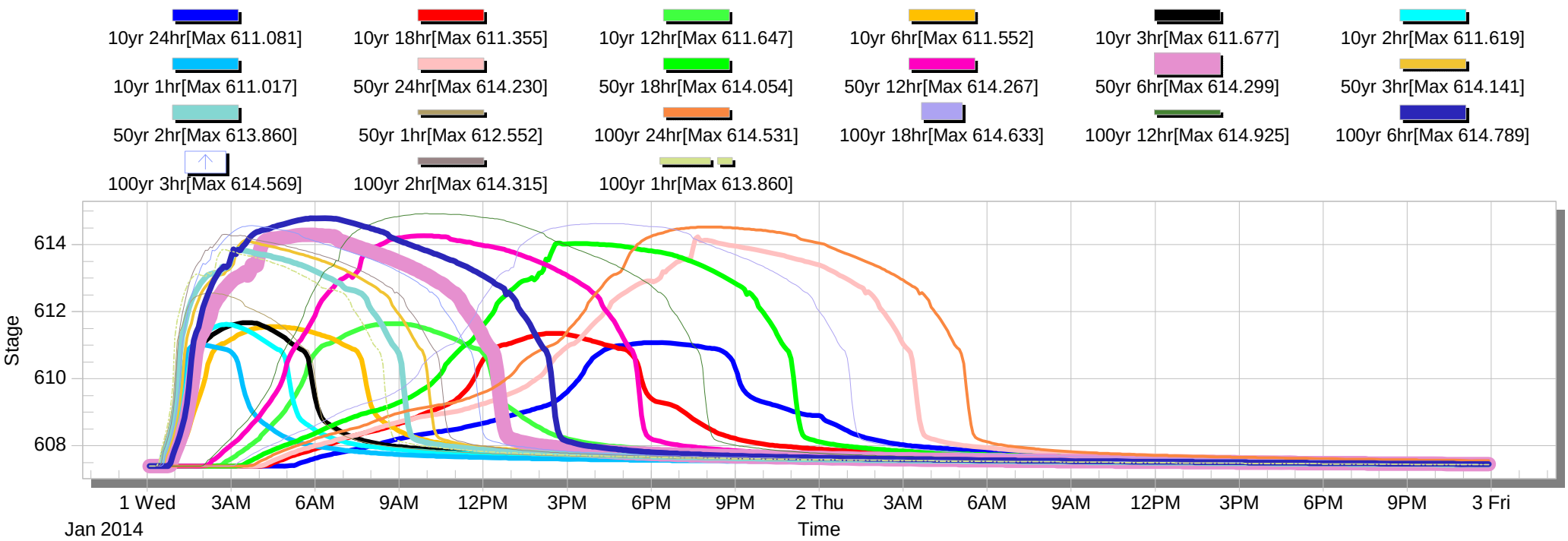
Node - Node124



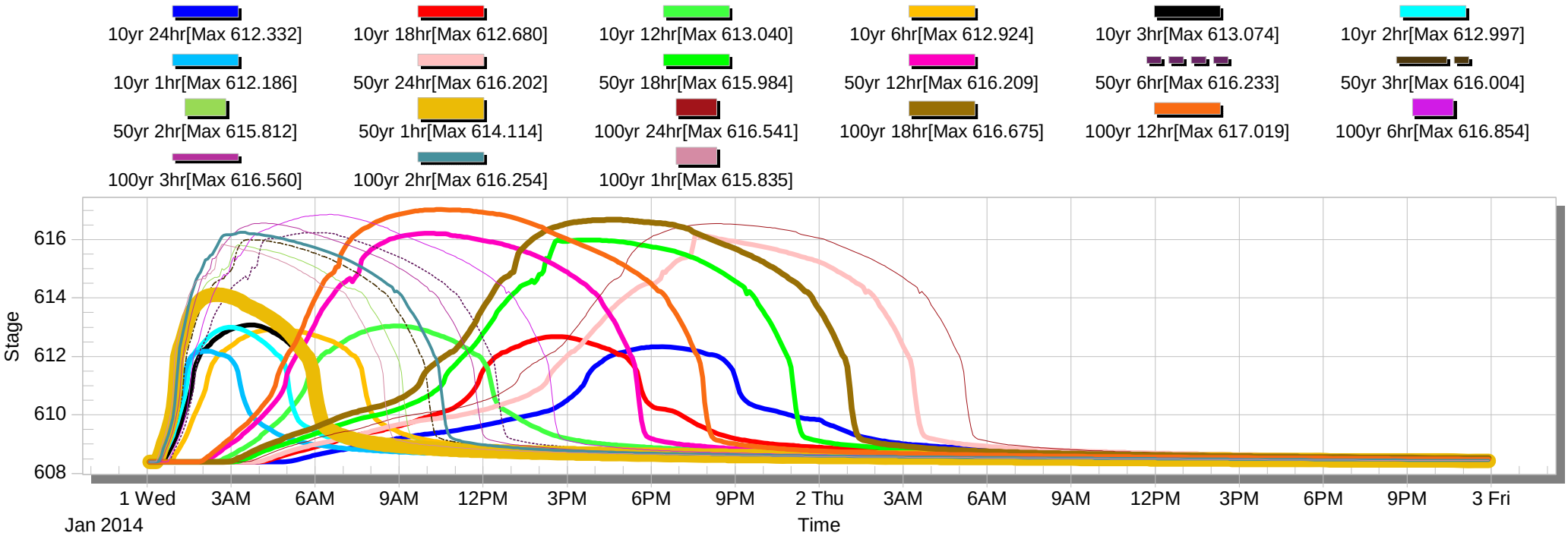
Node - Node30



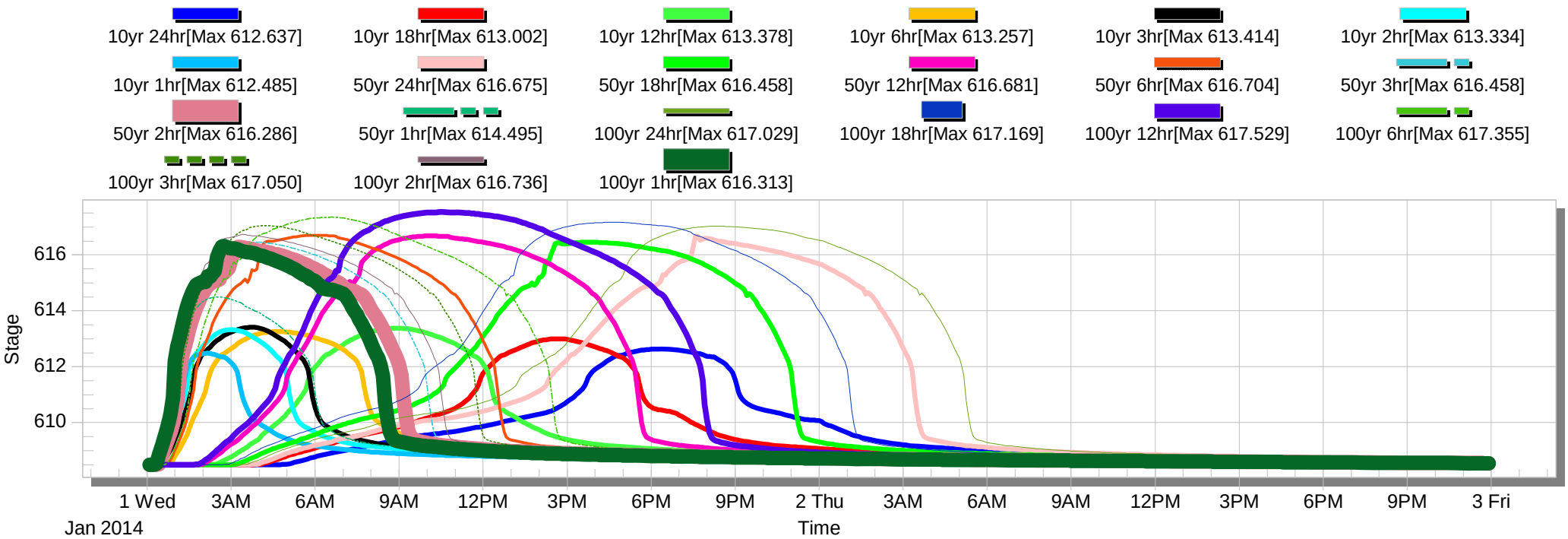
Node - Node36



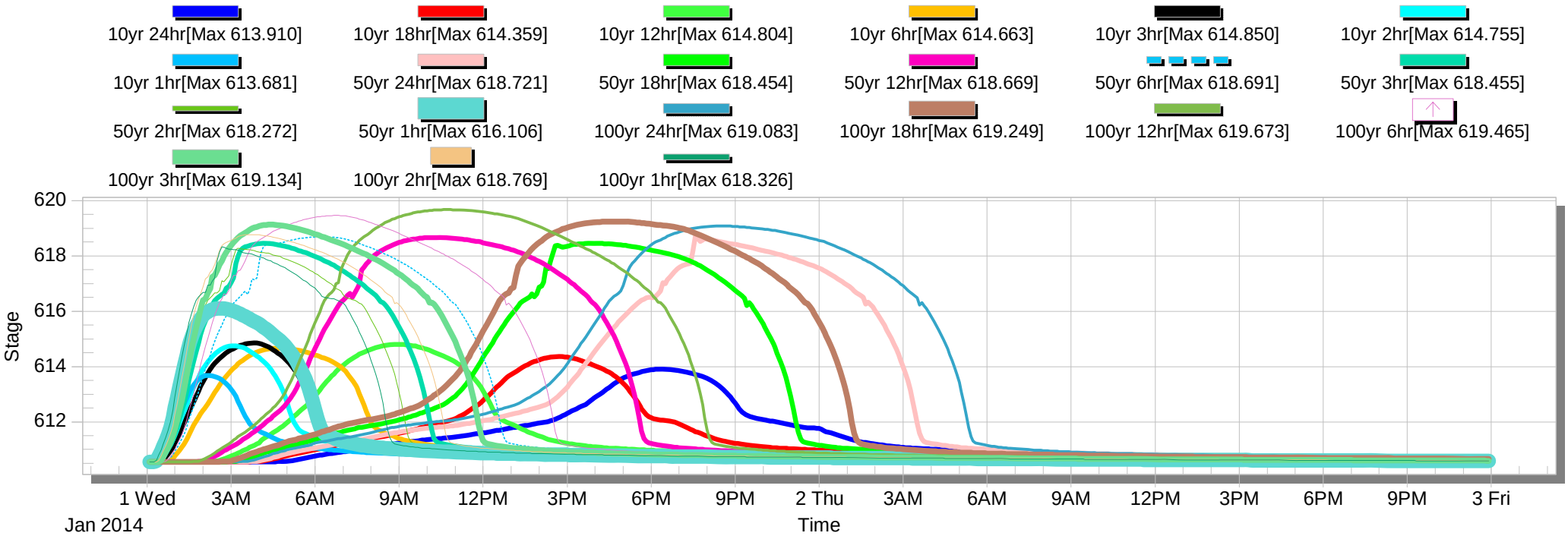
Node - Node35



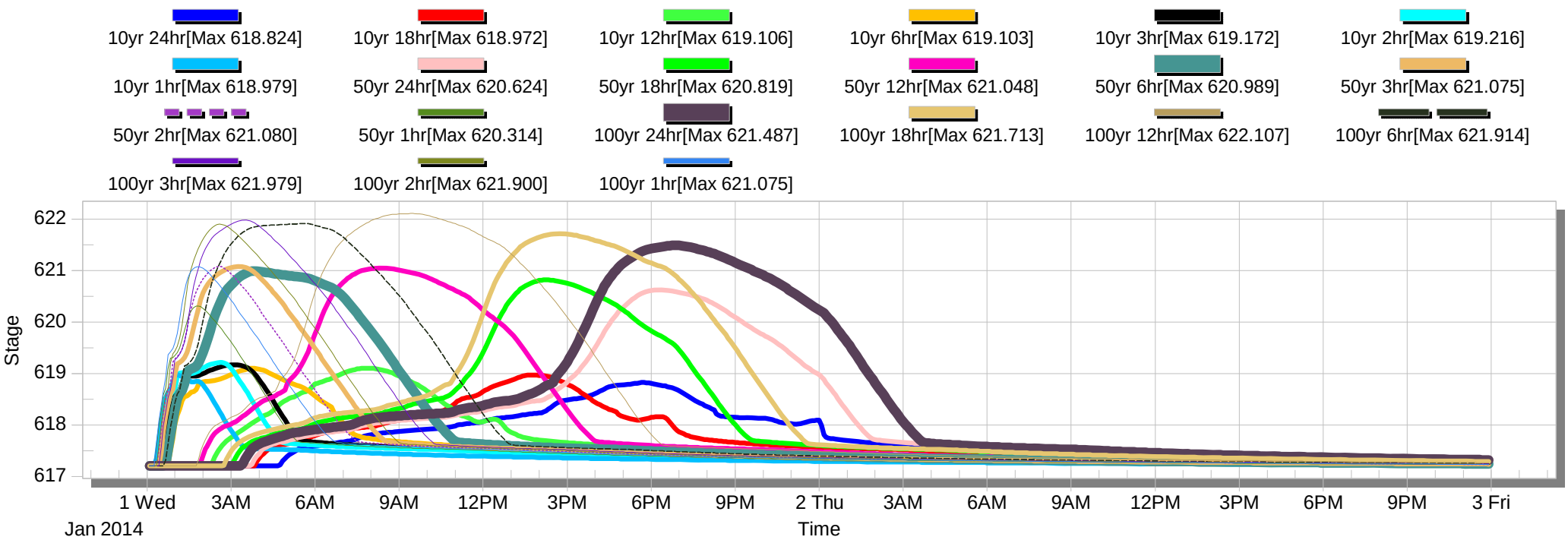
Node - Node34



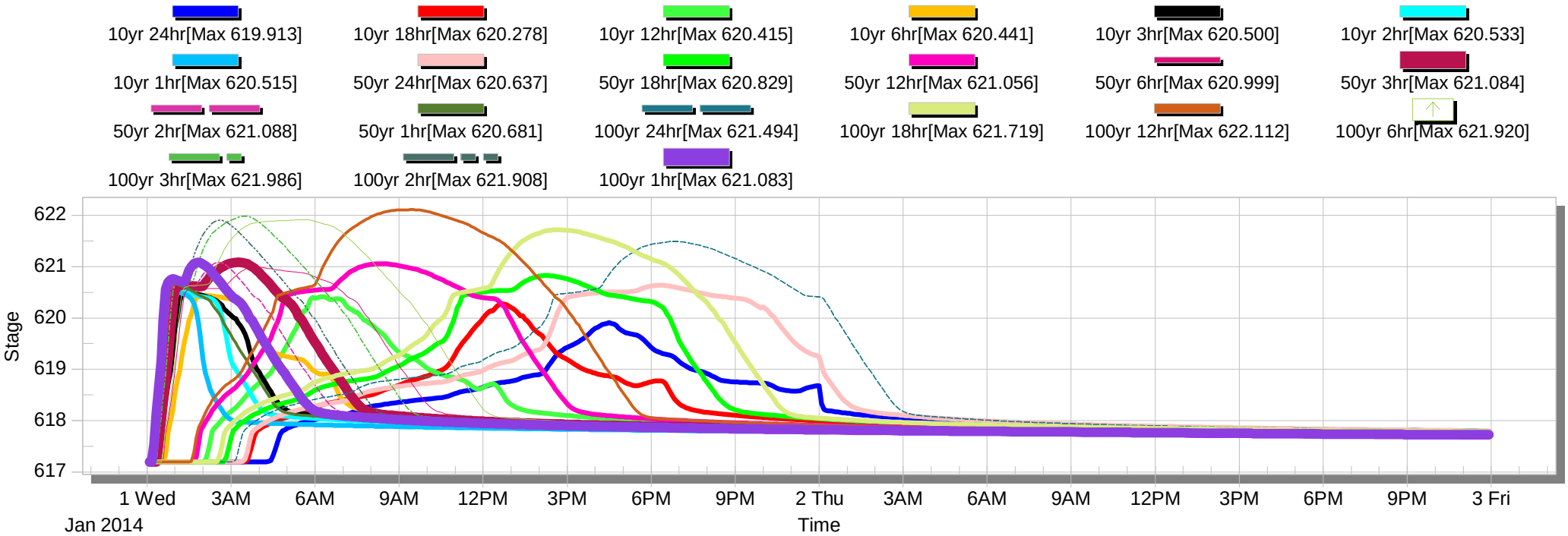
Node - Node33



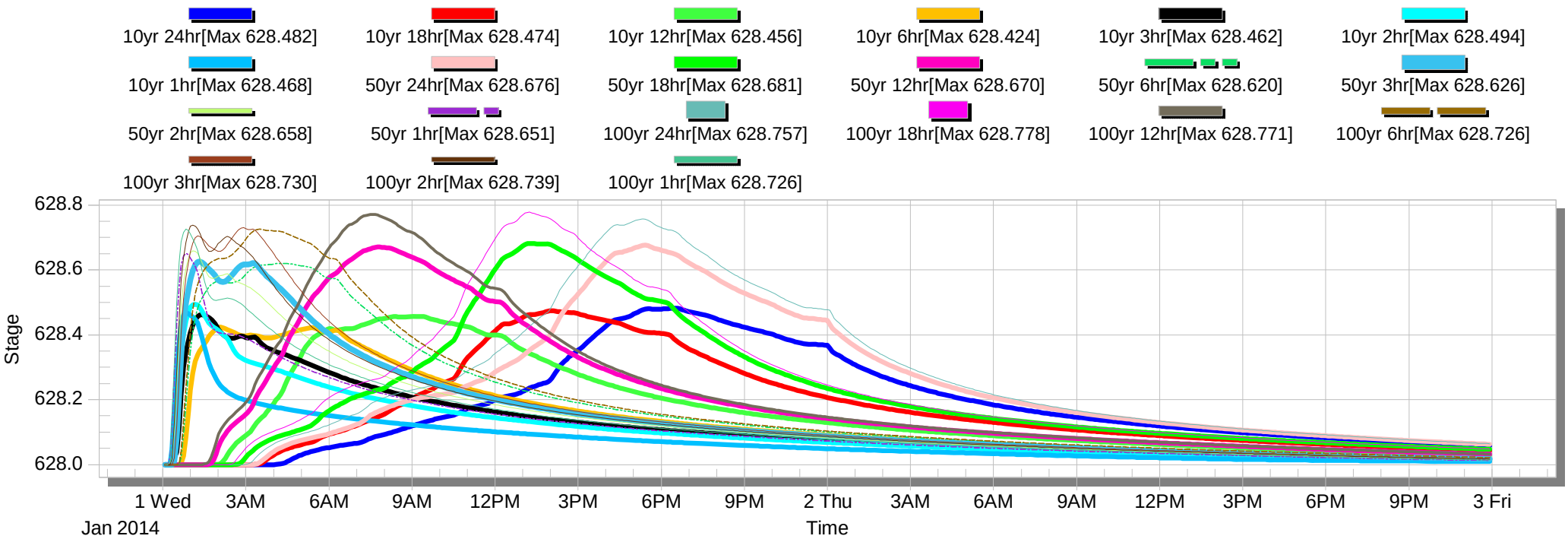
Node - Node12



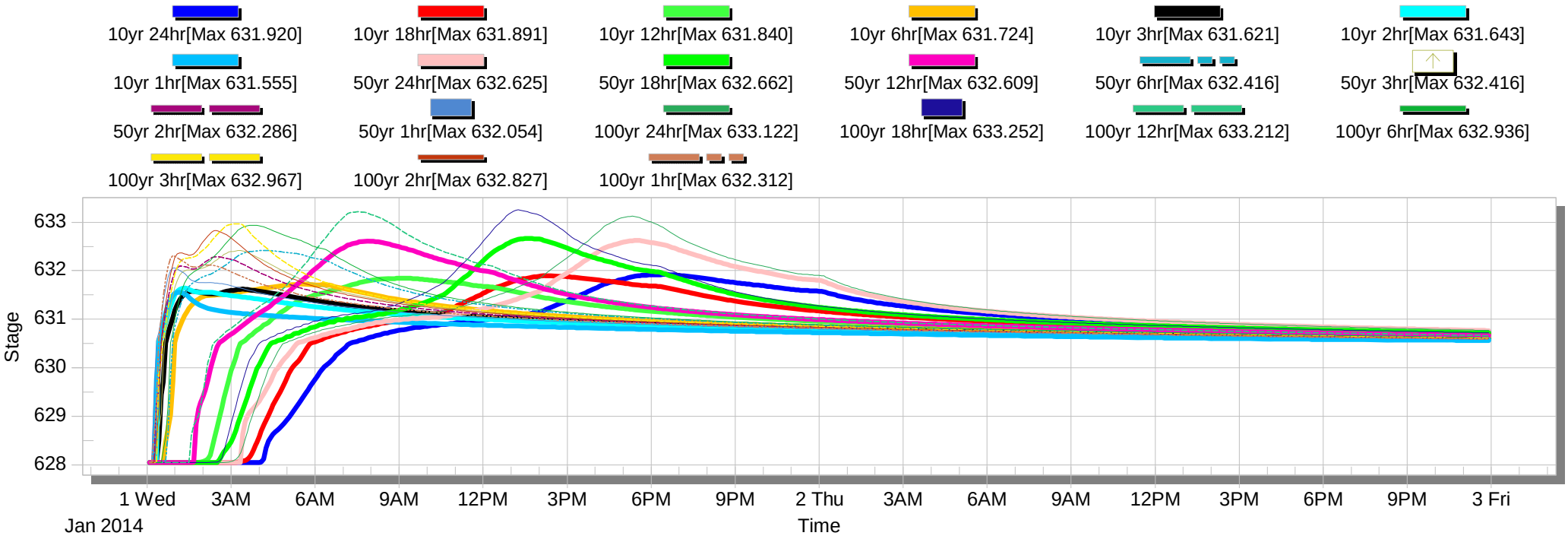
Node - Node11



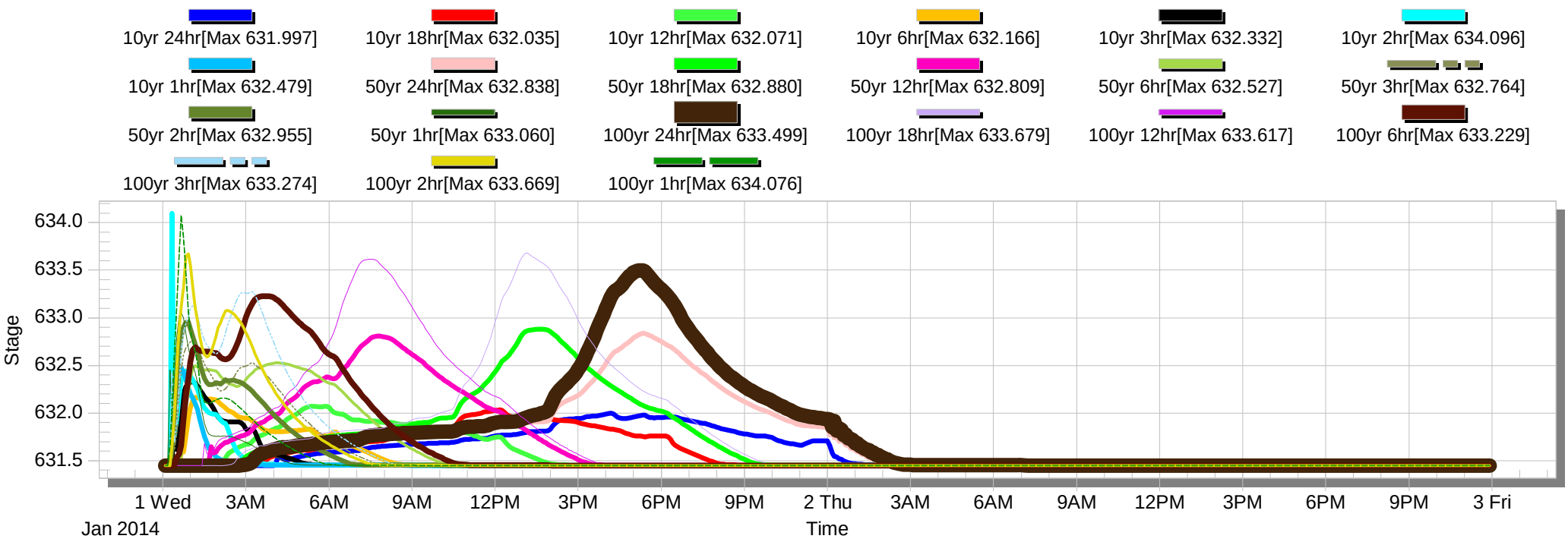
Node - Node41



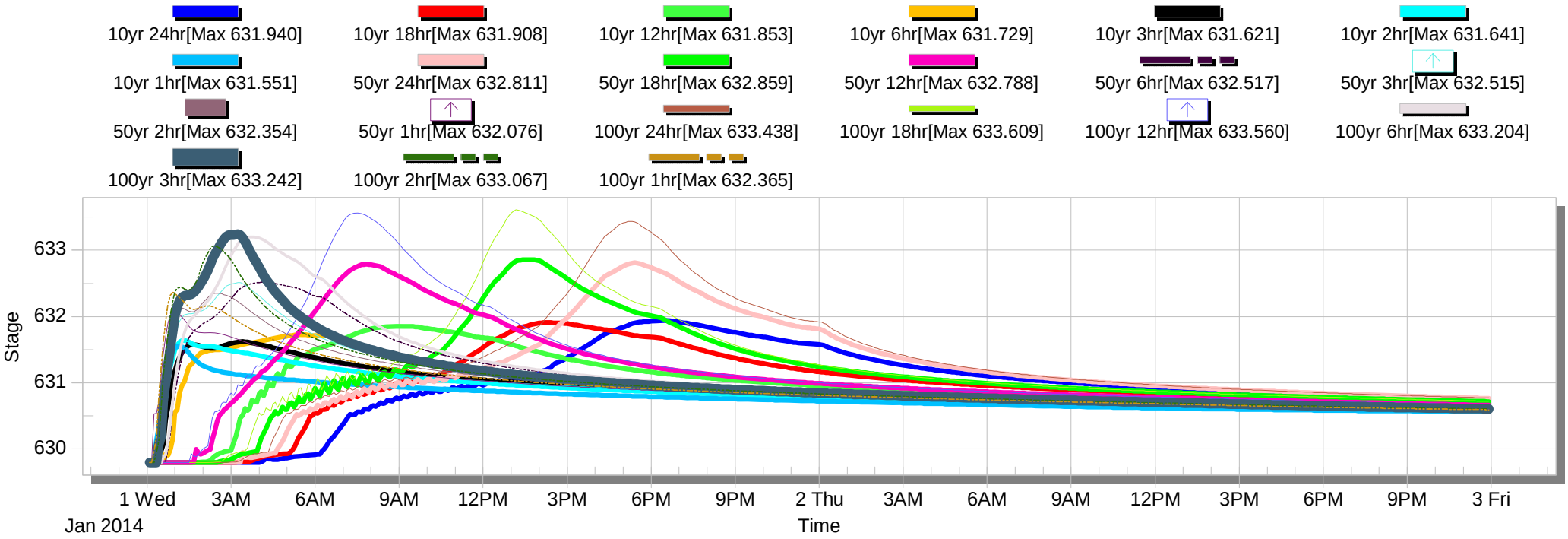
Node - Node135



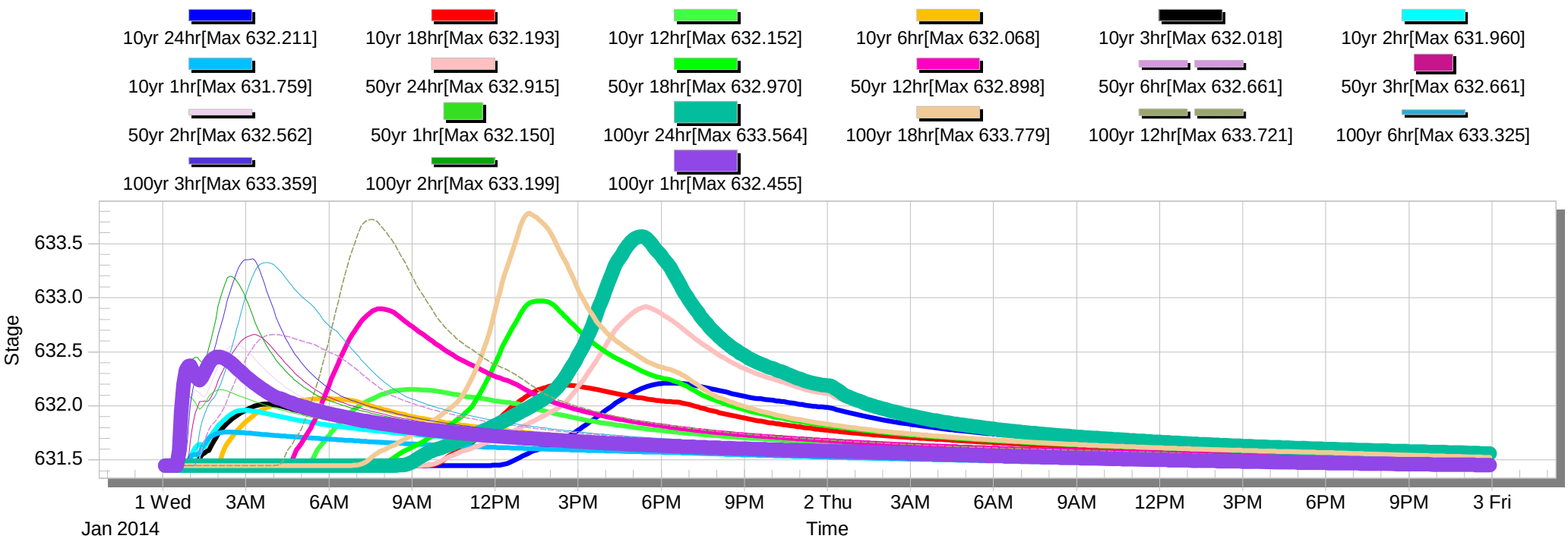
Node - Node43



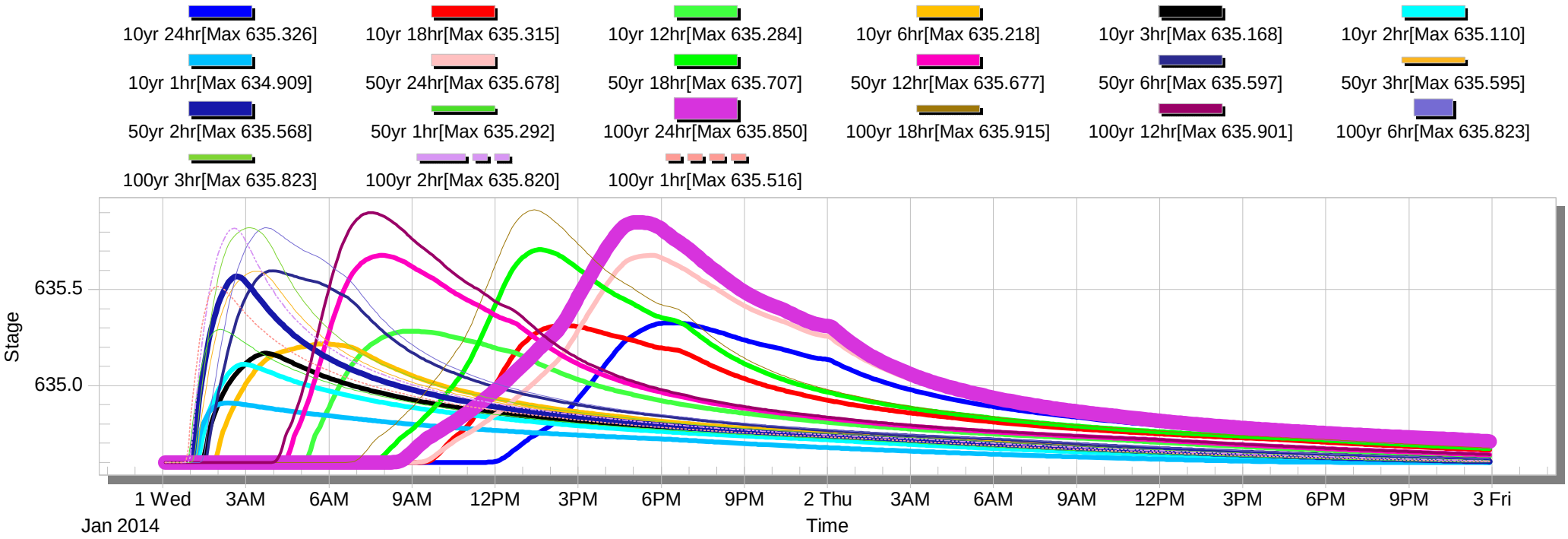
Node - Node128



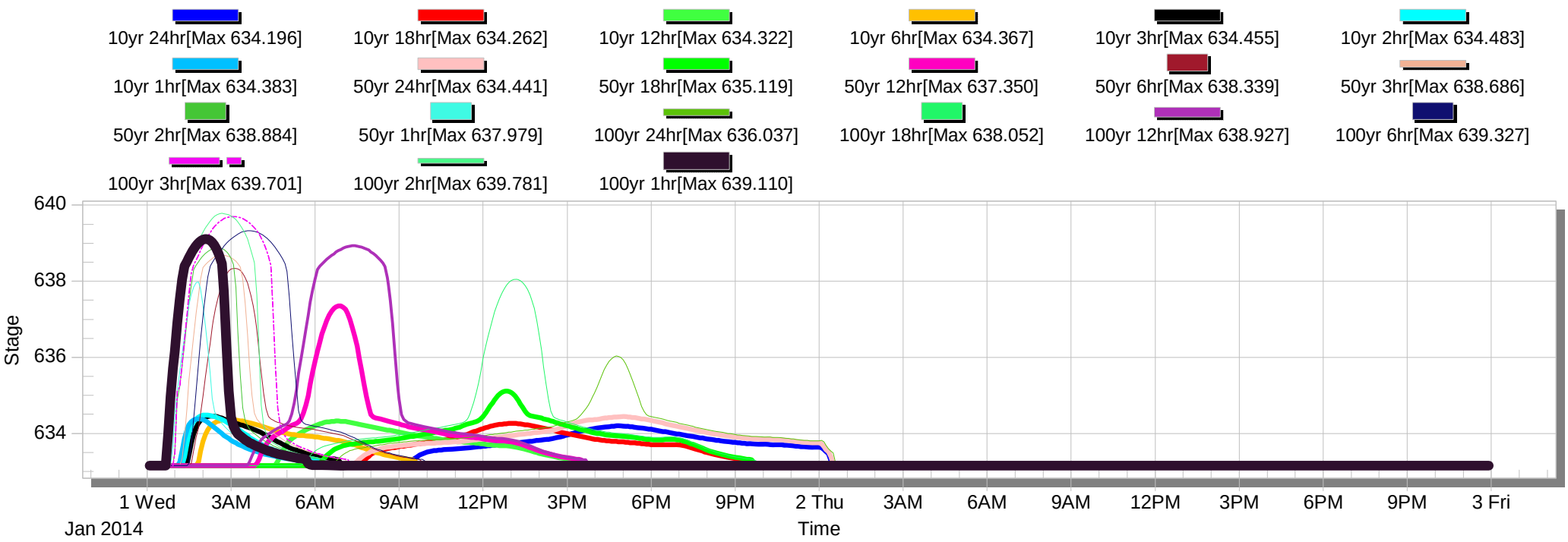
Node - Node121



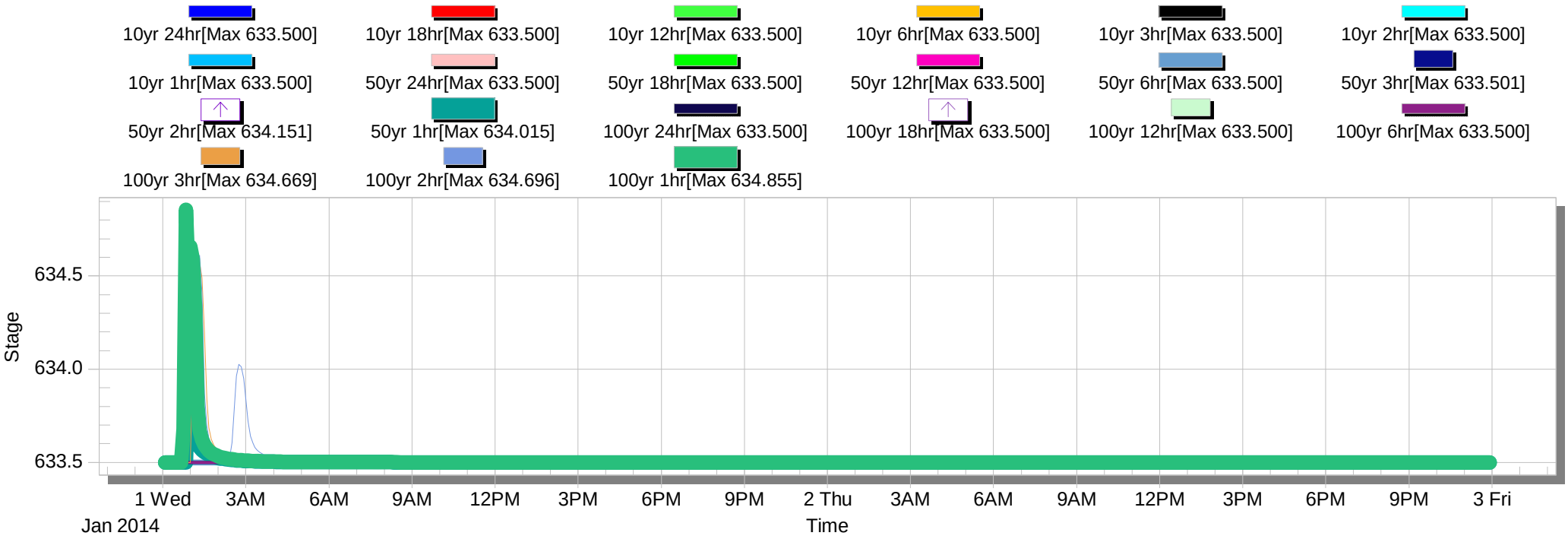
Node - Node20



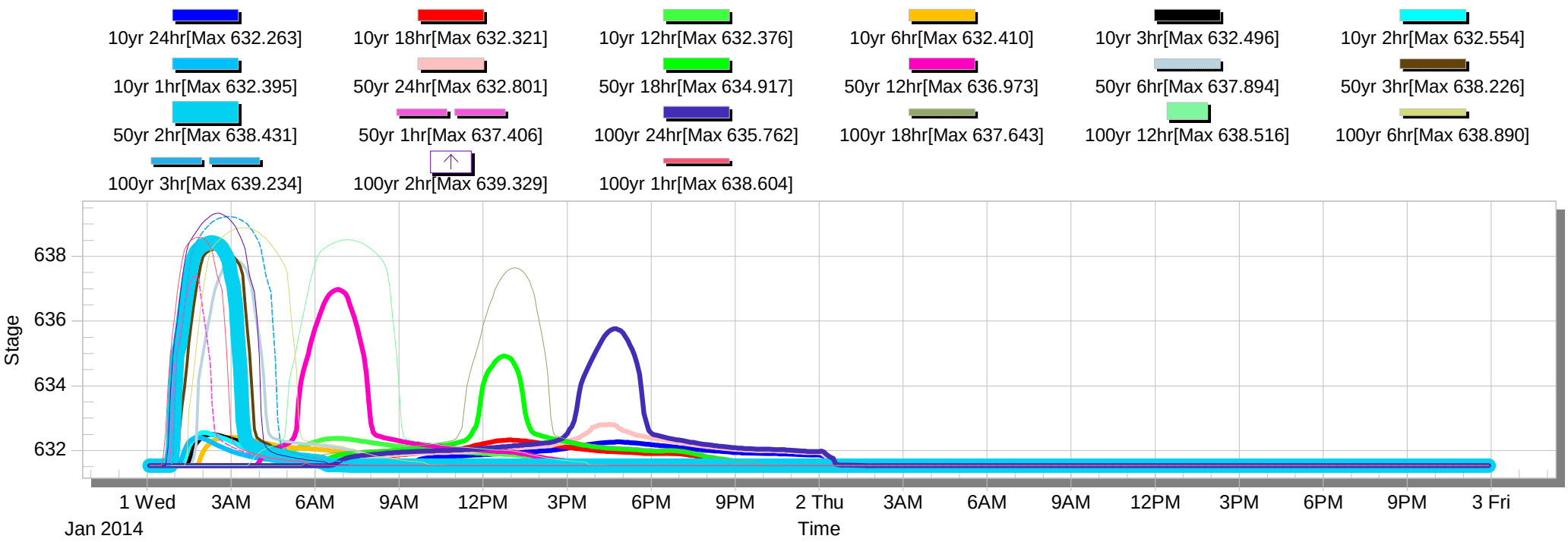
Node - Node21



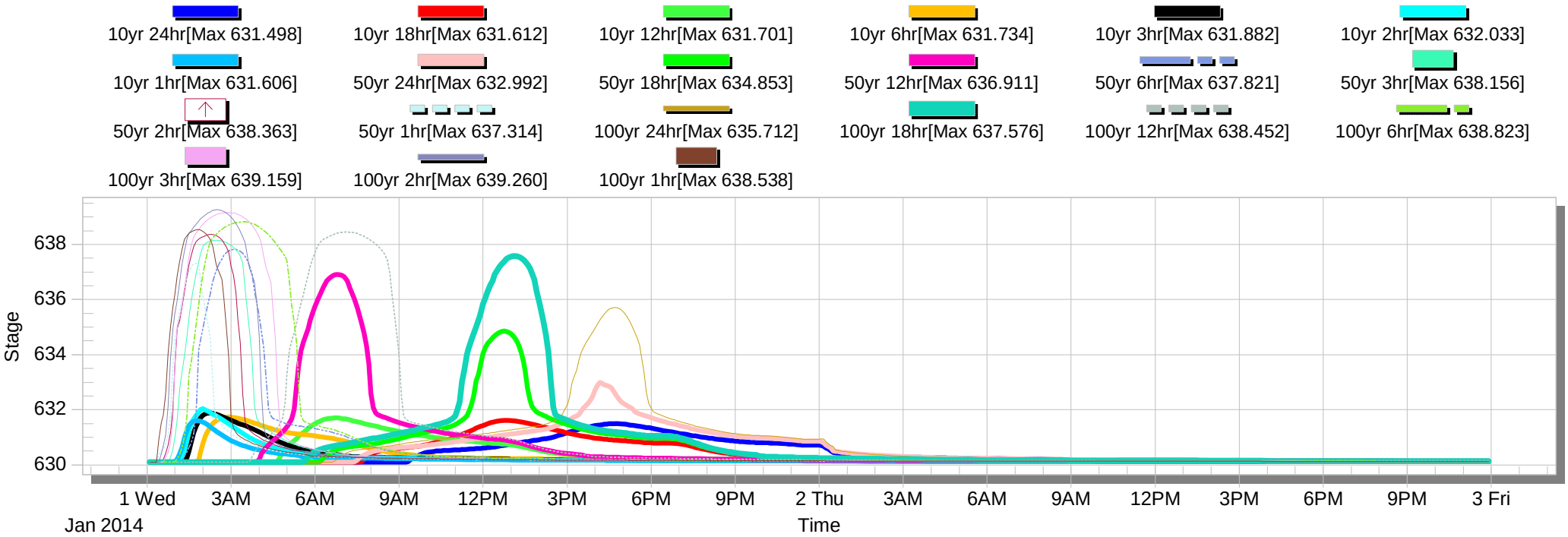
Node - Node122



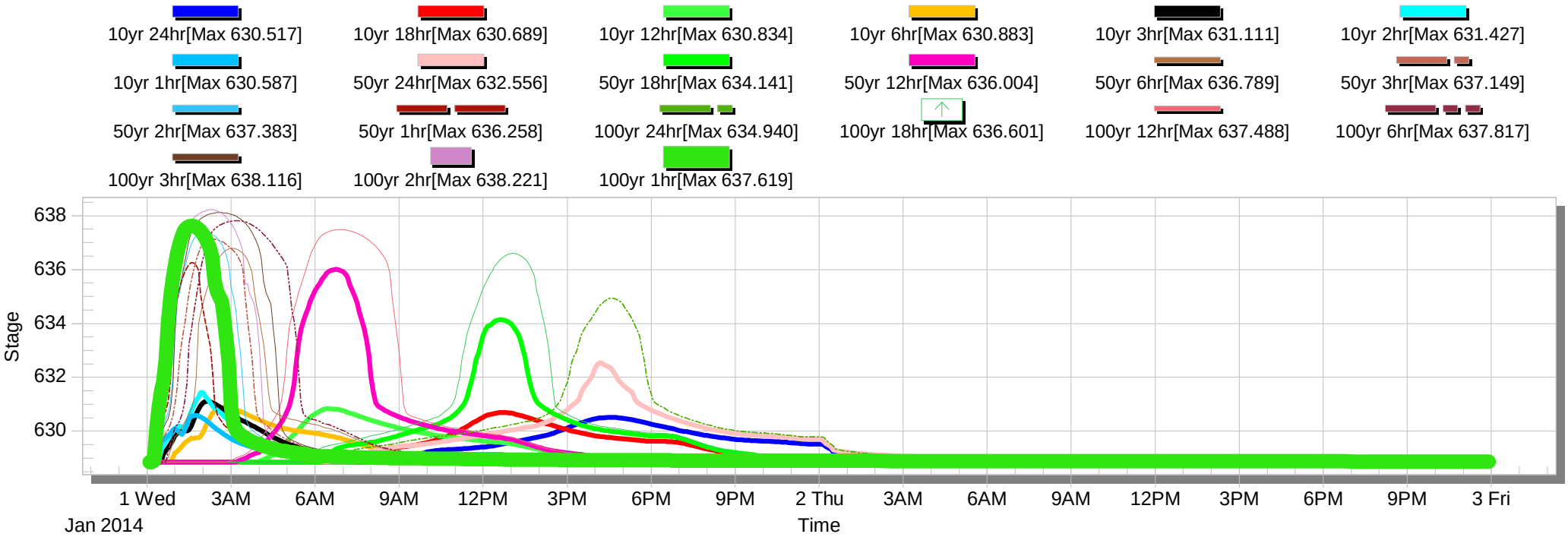
Node - Node84



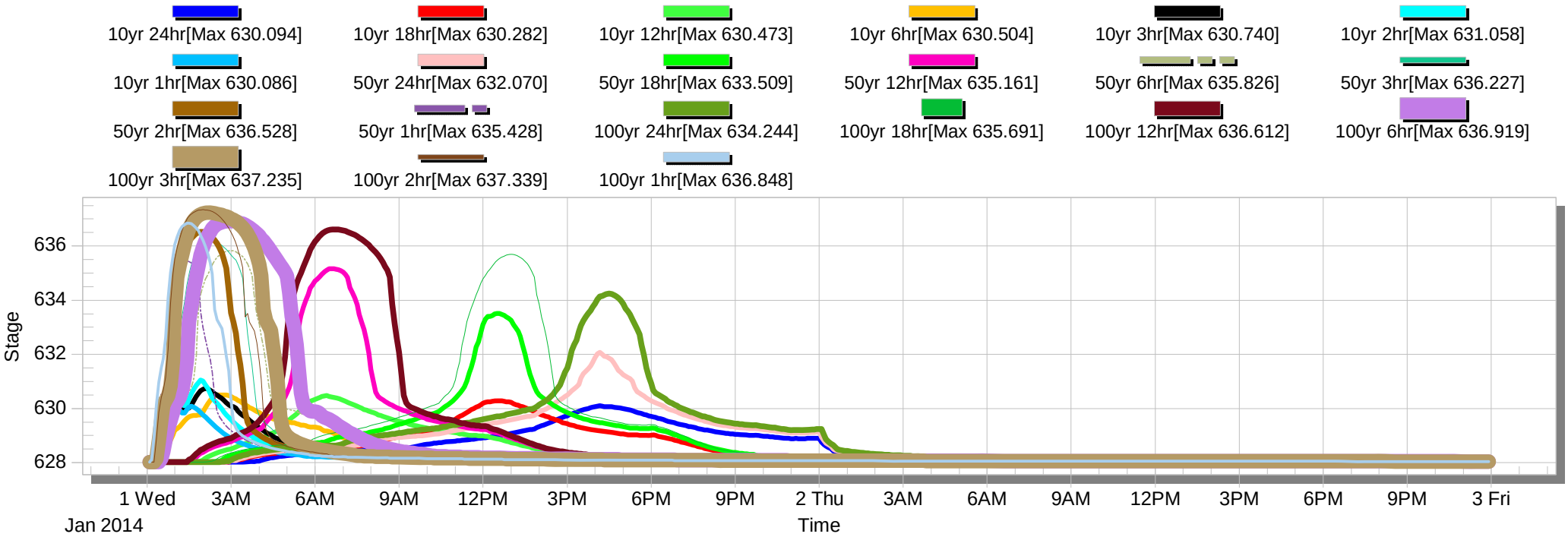
Node - Node22



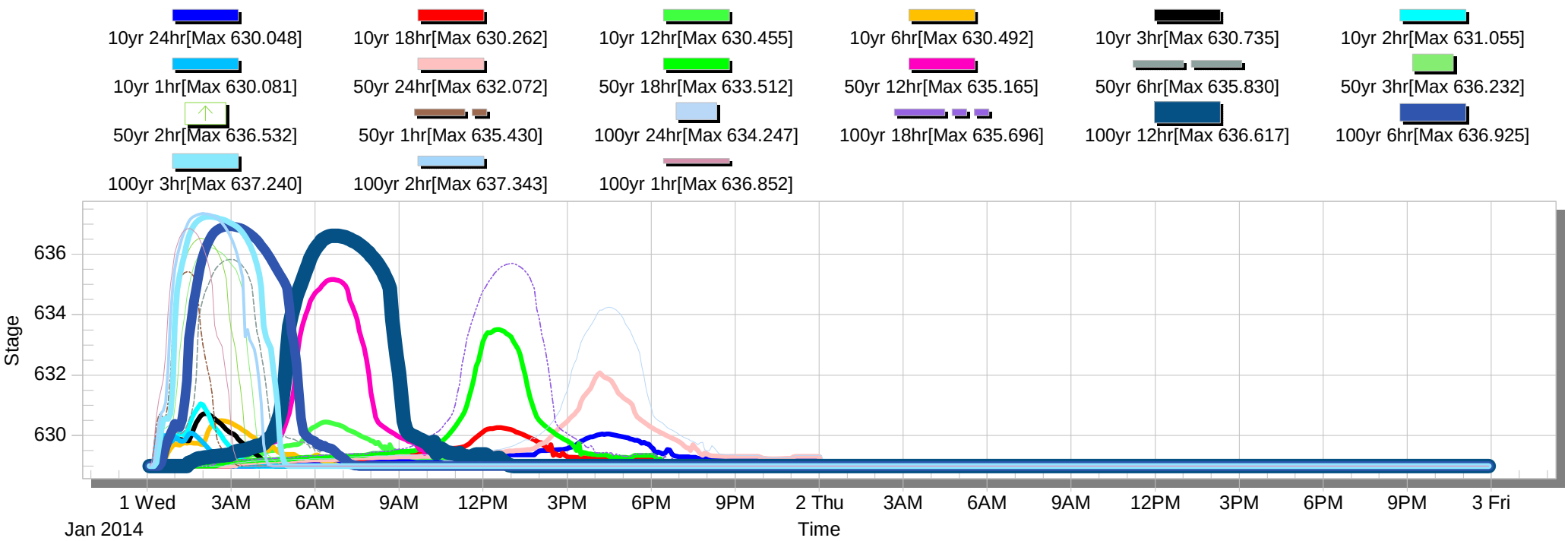
Node - Node23



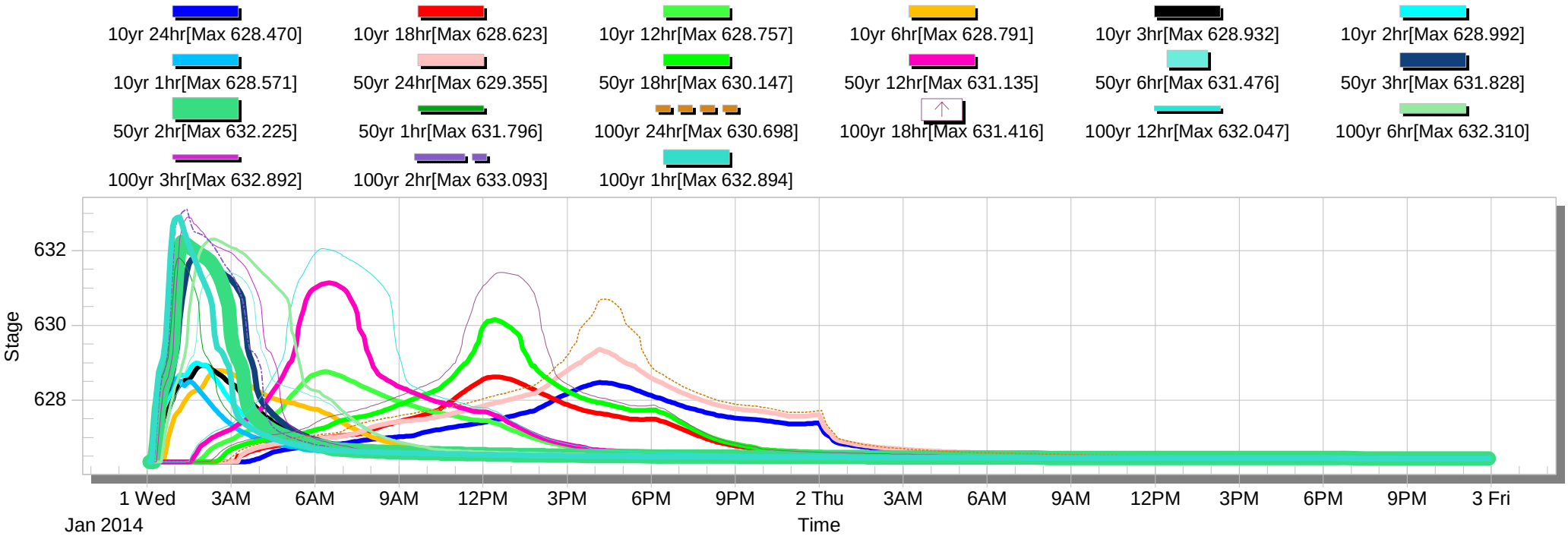
Node - Node24



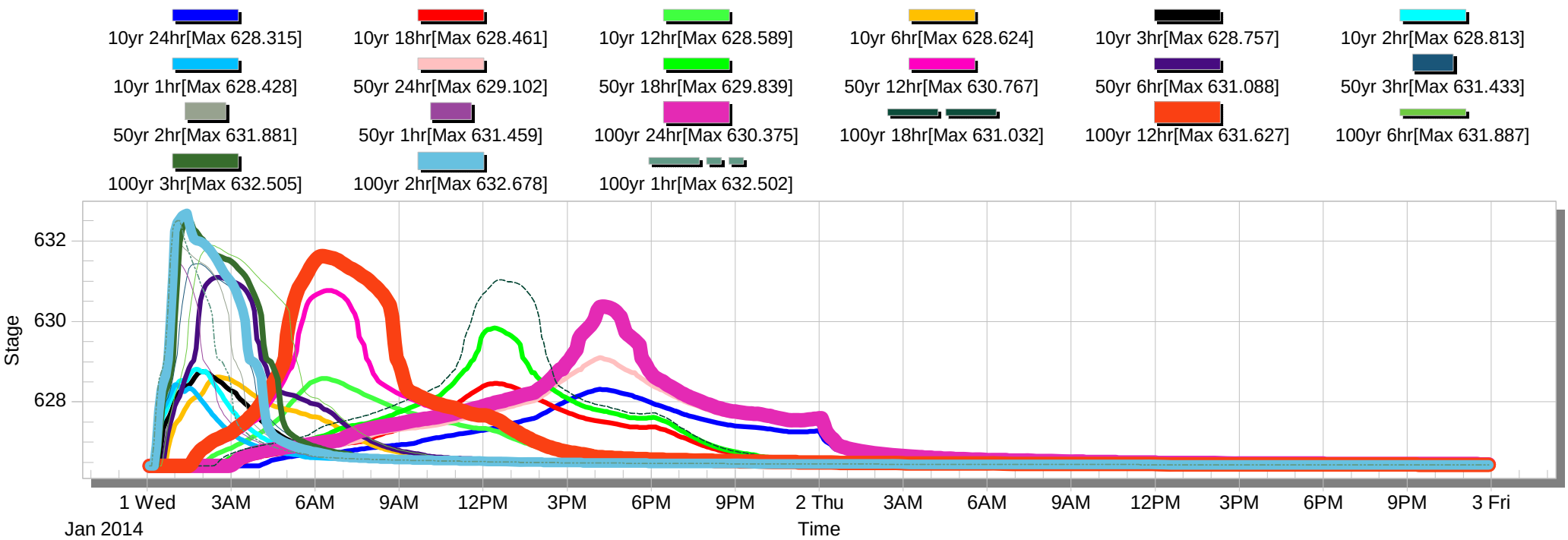
Node - Node66



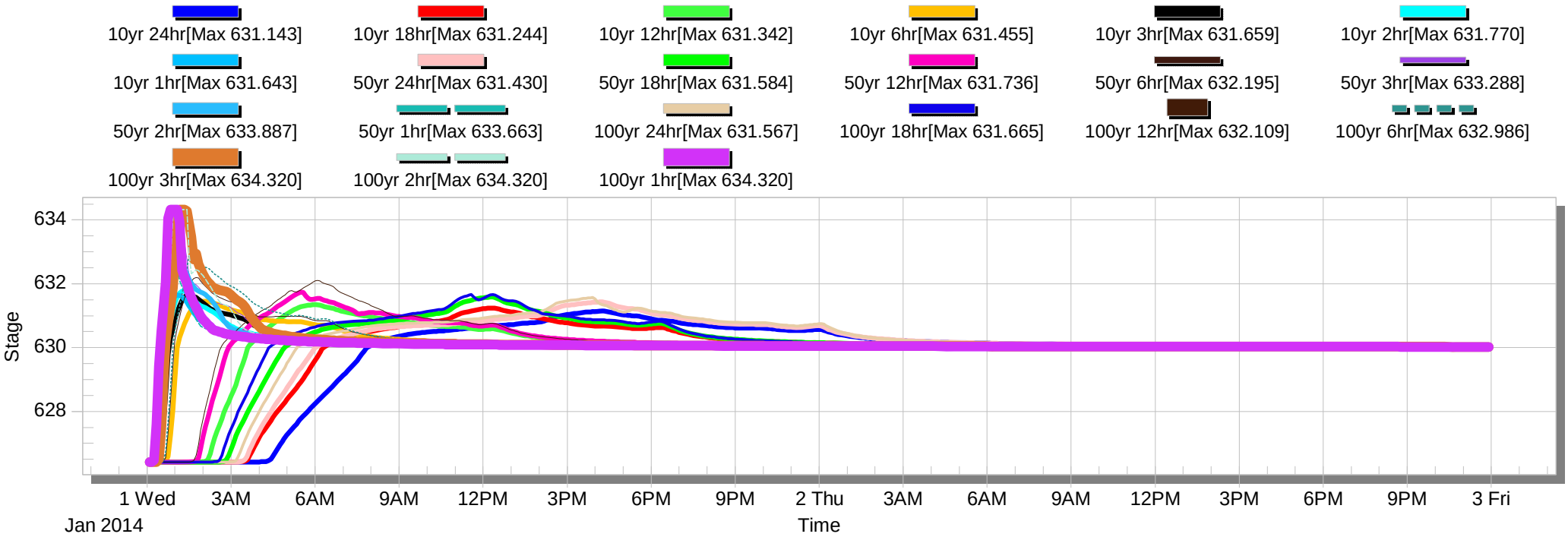
Node - Node25



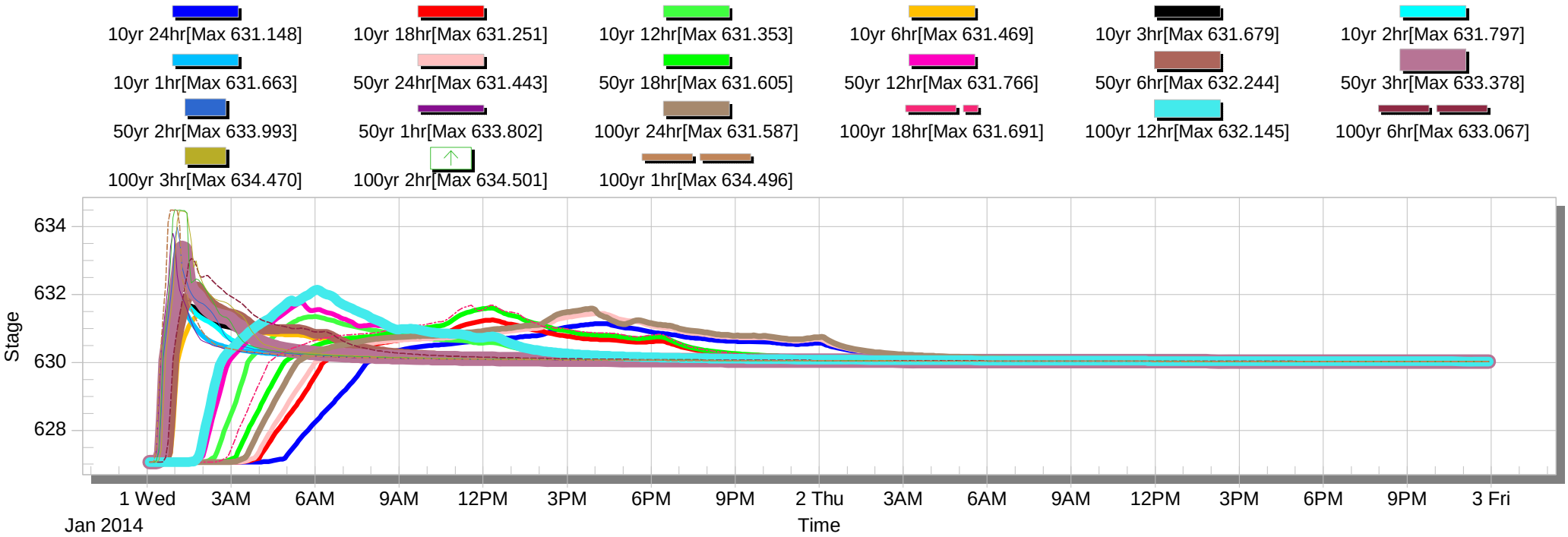
Node - Node26



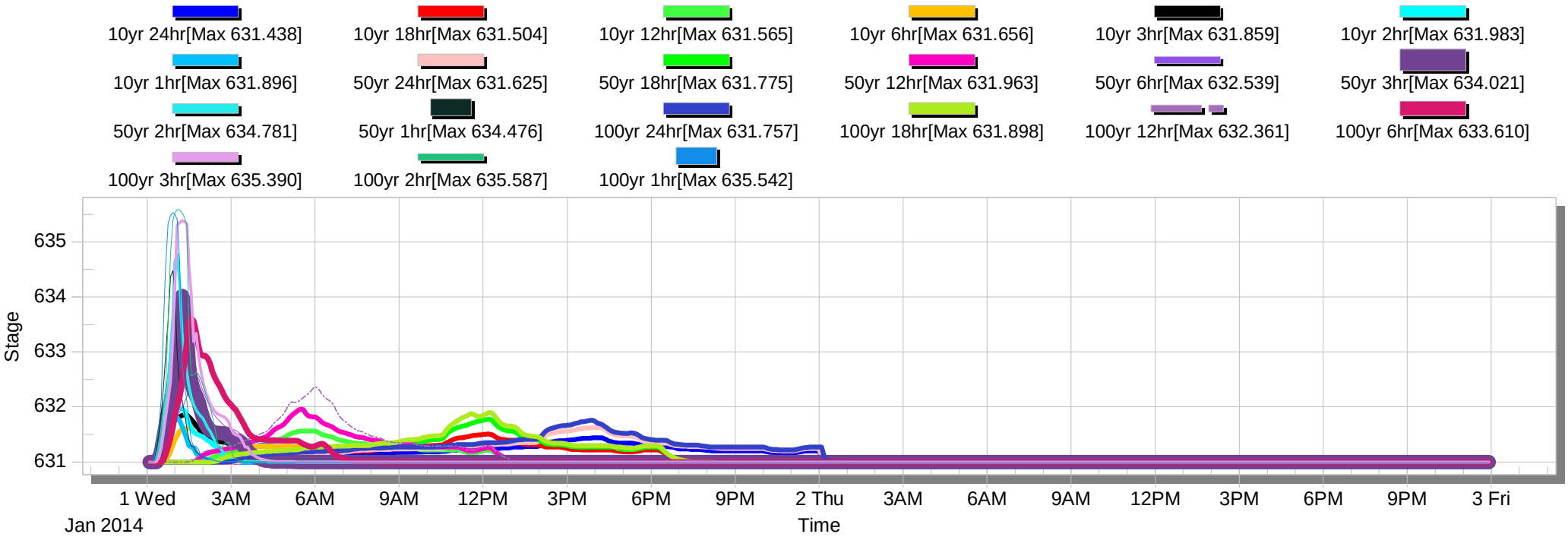
Node - Node134



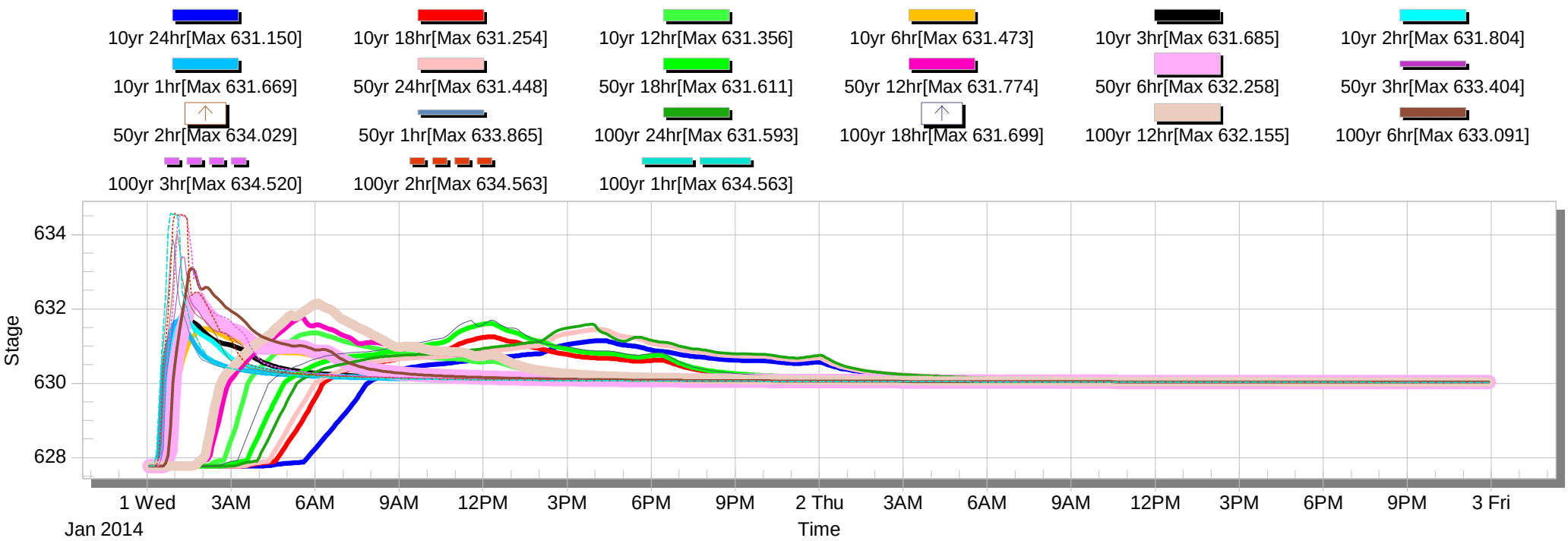
Node - Node108



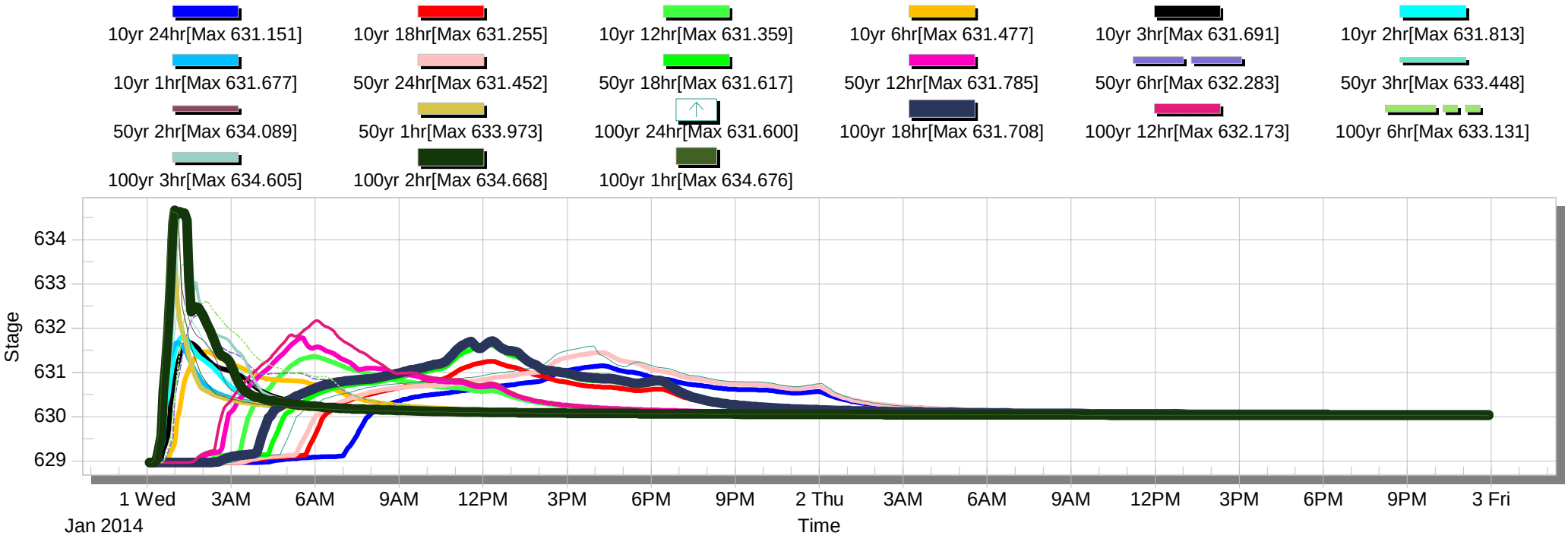
Node - Node94



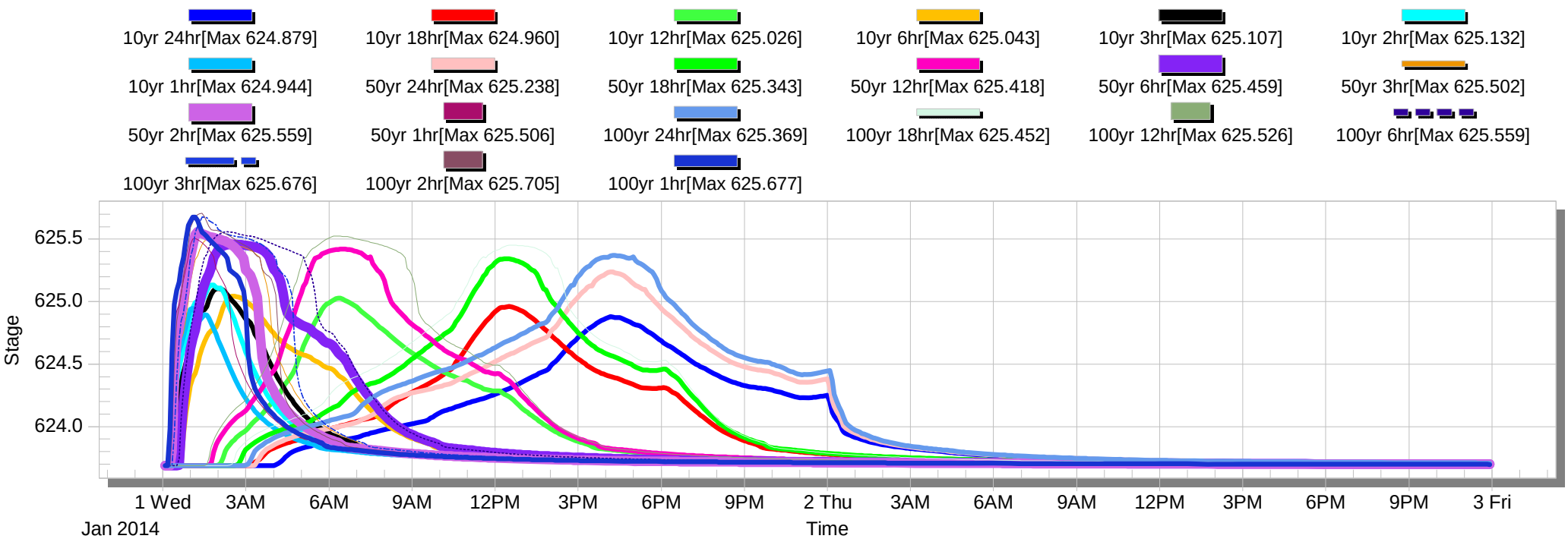
Node - Node123



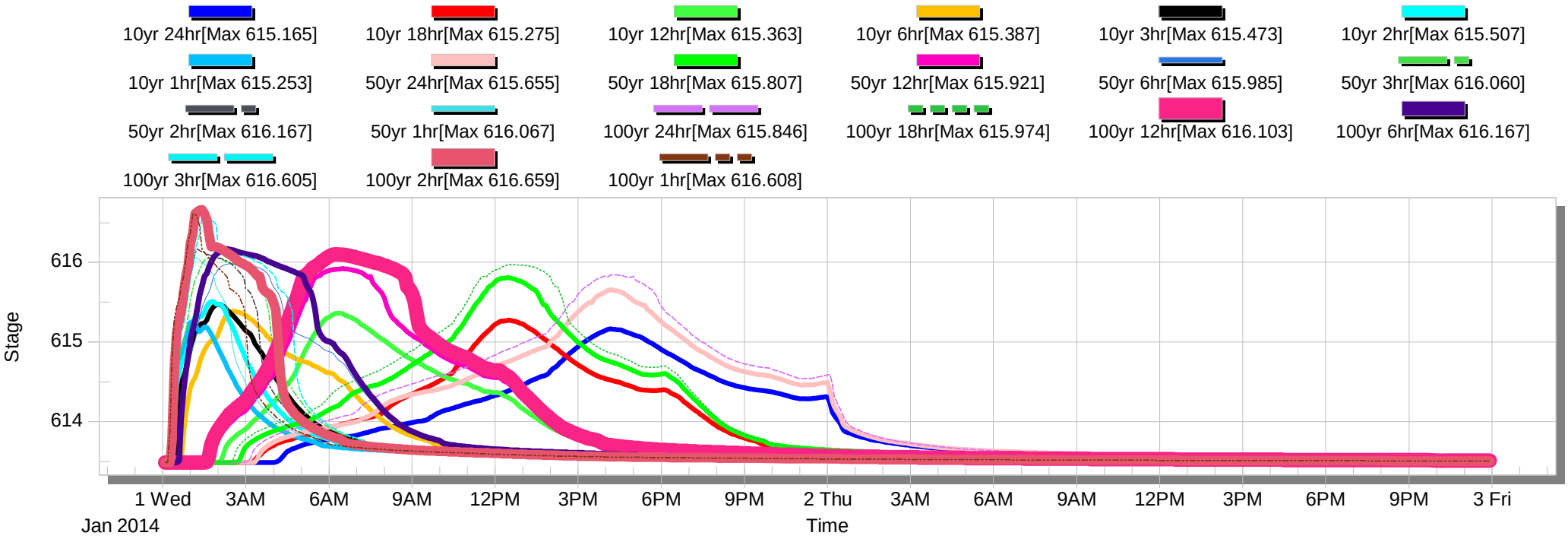
Node - Node100



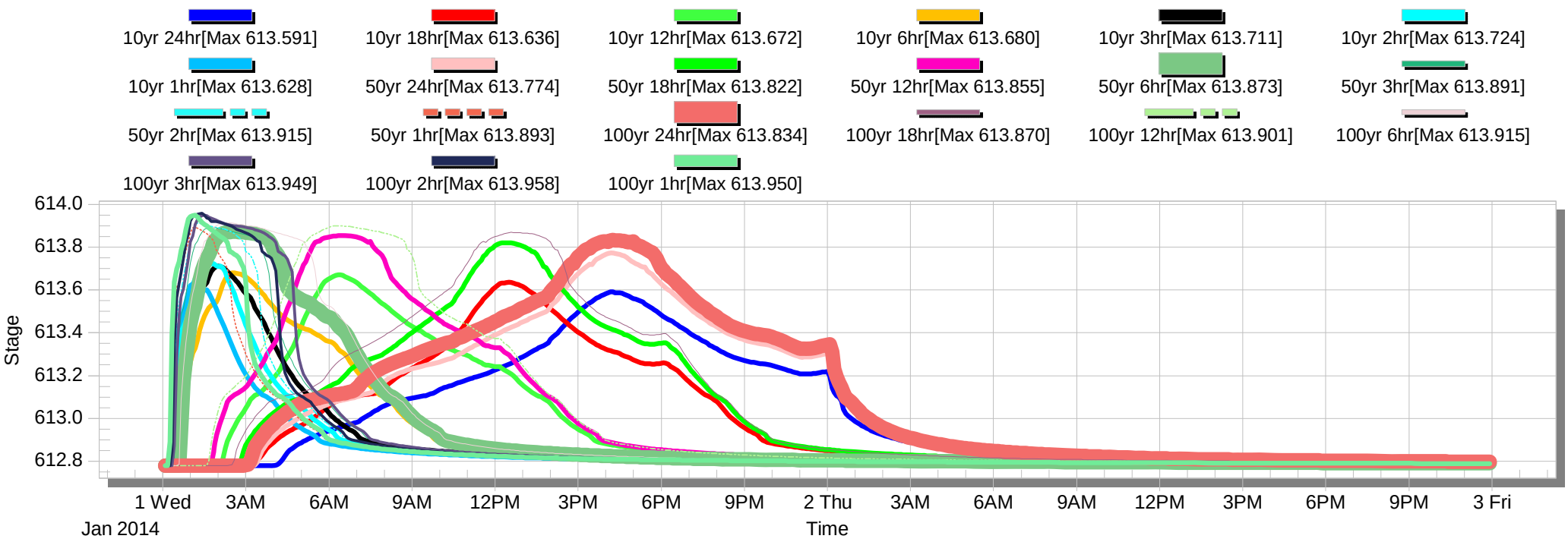
Node - Node27



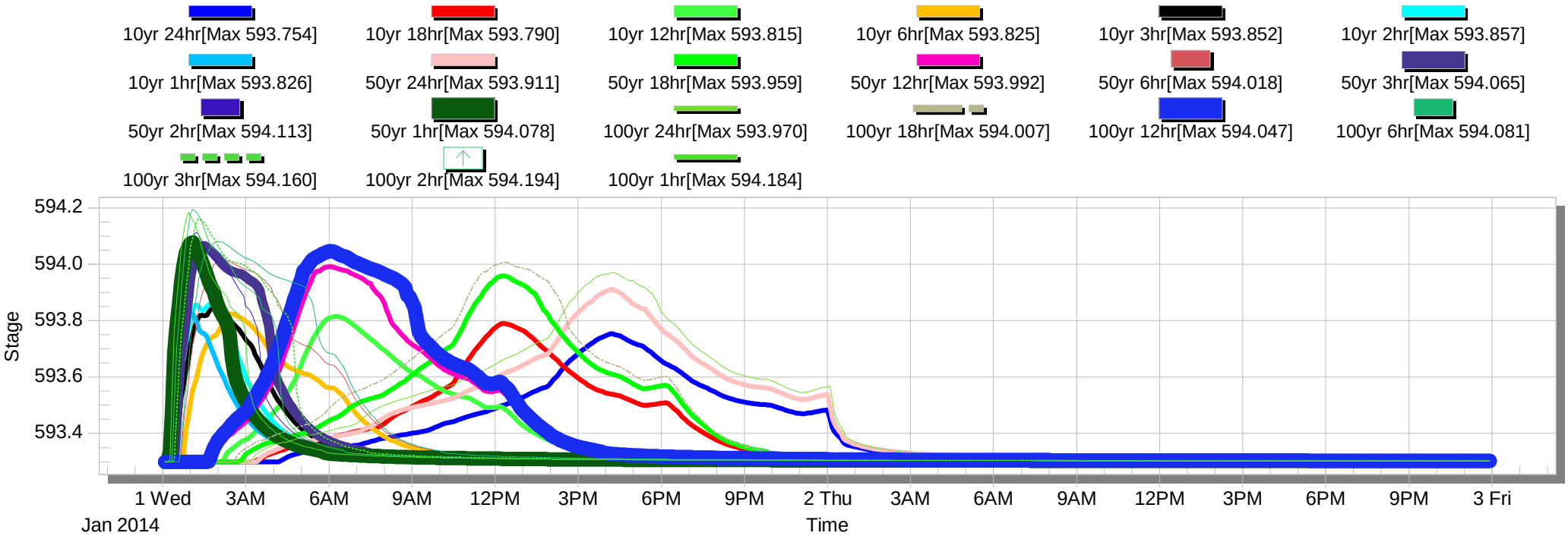
Node - Node86



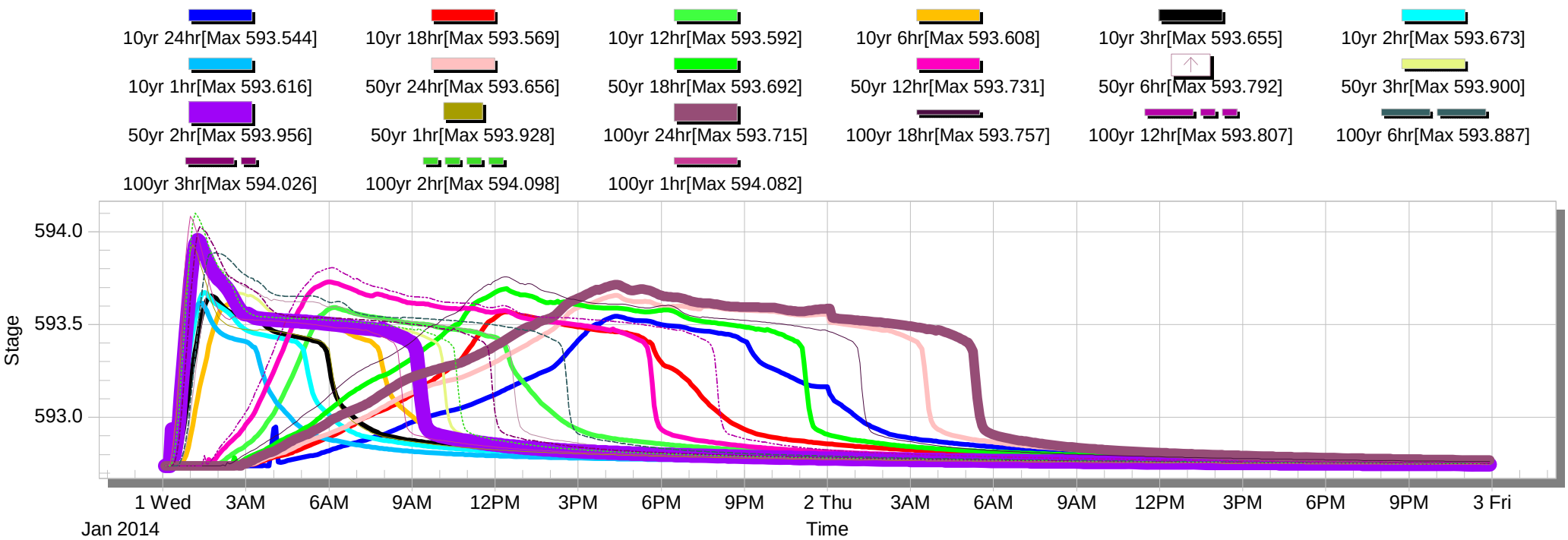
Node - Node29



Node - Node48



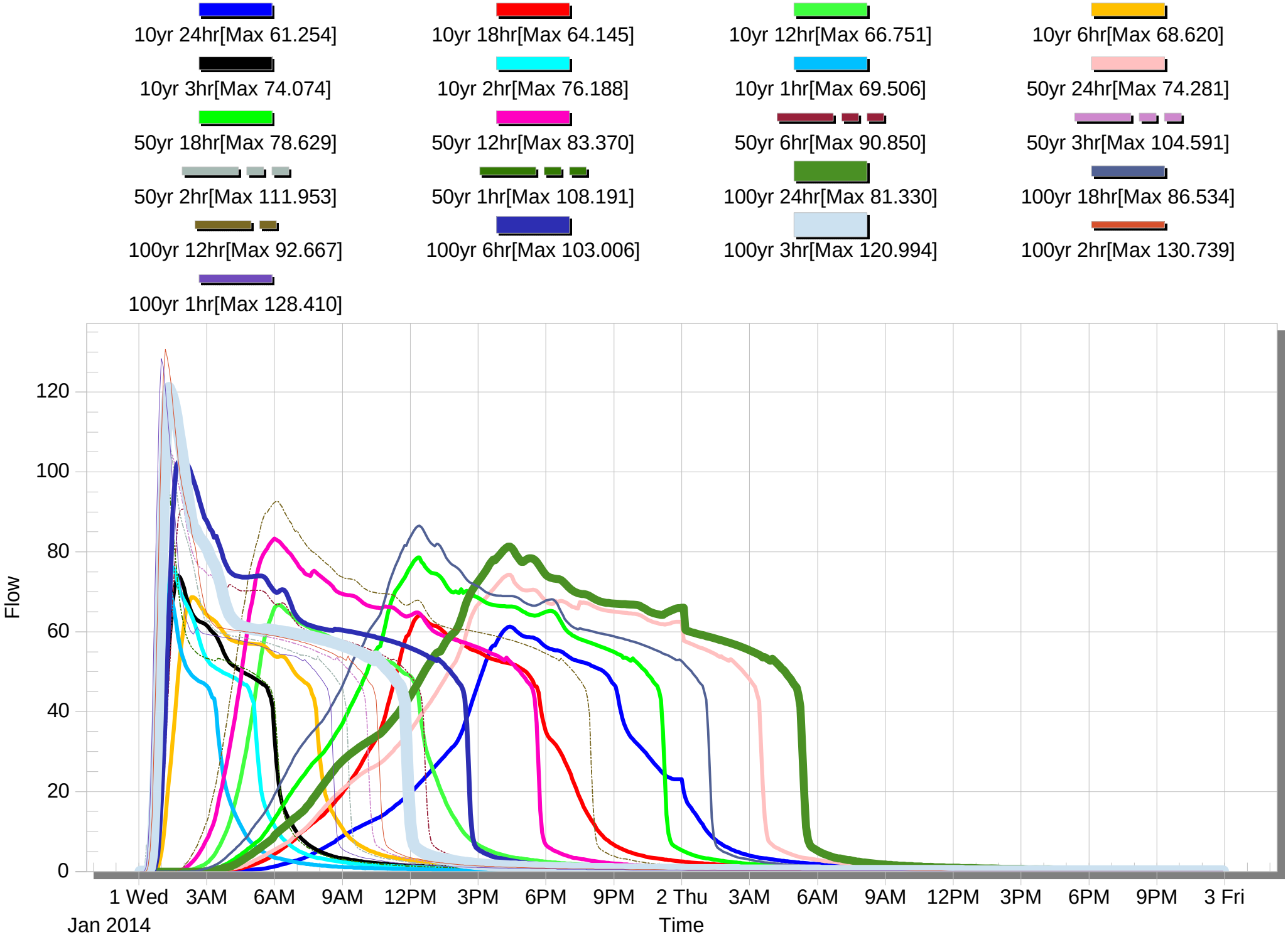
Node - Node46



PROPOSED ALTERNATIVE 2

RELEASE RATES (NORTH)

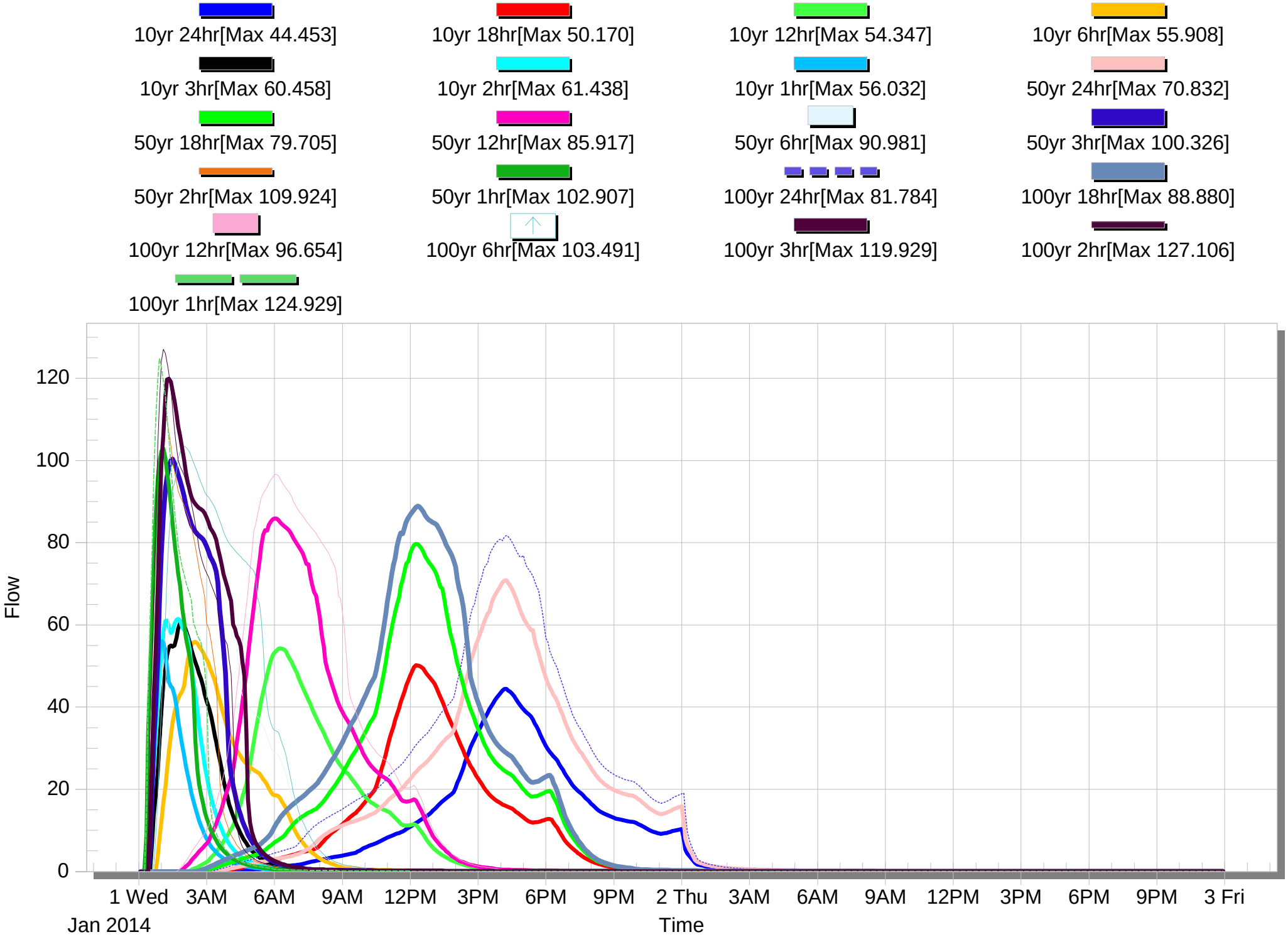
Conduit Link32 from Node46 to Node47



PROPOSED ALTERNATIVE 2

RELEASE RATES (SOUTH)

Conduit Link33 from Node48 to Node47



PROPOSED ALTERNATIVE 2

XPSWMM OUTPUT REPORT

```
Current Directory:   N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Stud
Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


Input File : Loc_Drain_Study\XPSWMM model\Proposed\Proposed2_Final_10yr 2hr.XP

          *==============================================*
          |                   xpswmm                     |
          |     Storm and Wastewater Management Model    |
          |        Developed by XP Solutions Inc.        |
          |==============================================|
          |                                              |
          | Last Update      : Jan., 2013                |
          | Interface Version: 2012                      |
          | Engine Version   : 12.0                      |
          | Data File Version: 12.6                      |
          |                                              |
          |                                              |
          *==============================================*

Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


*====================================================*
|       Input and Output file names by Layer         |
*====================================================*

 Input File  to Layer #     1 JOT.US


 Output File to Layer #     1 JOT.US


 Input File  to Layer #     2 JOT.US


 Output File to Layer #     2 JOT.US


*==========================================================*
|   Special command line arguments in XP-SWMM2000. This    |
|   now includes program defaults. $Keywords are the program|
|   defaults.  Other Keywords are from the SWMMCOM.CFG file.|
|   or the command line or any cfg file on the command line.|
|   Examples include these in the file xpswm.bat under the  |
|   section :solve or in the windows version XPSWMM32 in the|
|   file solve.bat                                          |
|                                                           |
|   Note: the cfg file should be in the subdirectory swmxp  |
|         or defined by the set variable in the xpswm.bat   |
|         file.  Some examples of the command lines possible|
|         are shown below:                                  |
|                                                           |
|   swmmd swmmcom.cfg                                       |
|   swmmd my.cfg                                            |
|   swmmd nokeys nconv5 perv extranwq                       |
*==========================================================*

 $powerstation                        0.0000         1         2
 $perv                                0.0000         0         4
 $oldegg                              0.0000         0         7
 $as                                  0.0000         0        11
 $noflat                              0.0000         0        21
 $oldomega                            0.0000         0        24
 $oldvol                              0.0000         1        28
 $implicit                            0.0000         1        29
 $oldhot                              0.0000         1        31
 $oldscs                              0.0000         0        33
 $flood                               0.0000         1        40
 $nokeys                              0.0000         0        42
 $pzero                               0.0000         0        55
 $oldvol2                             0.0000         2        59
 $storage2                            0.0000         3        62
 $oldhot1                             0.0000         1        63
 $pumpwt                              0.0000         1        70
 $ecloss                              0.0000         1        77
 $exout                               0.0000         0        97
 $spatial = 0.90                      0.9000         5       124
 $djref = -1.0                       -0.1000         3       143
 $weirlen = 50                       50.0000         1       153
 $oldbnd                              0.0000         1       154
 $nogrelev                            0.0000         1       161
 $ncmid                               0.0000         0       164
 $new_nl_97                           0.0000         2       290
 SCSIADEPTH=ON                        0.0000         1       293
 $best97                              0.0000         1       294
 $newbound                            0.0000         1       295
 $q_tol = 0.01                        0.0001         1       316
 $new_storage                         0.0000         1       322
 $old_iteration                       0.0000         1       333
 MINLEN=5                             5.0000         1       346
 $review_elevation                    0.0000         1       383
 $use_half_volume                     0.0000         1       385
 VERT_WALLS=ON                        0.0000         1       389
 $min_ts = 1.0                        1.0000         1       407
 $design_restart = on                 0.0000         1       412
 $zero_value=1.e-05                   0.0000         1       415
 SUBCATCHMENT_RES=ON                  0.0000         1       419
 $relax_depth = on                    0.0000         1       427
 $saveallpts = on                     0.0000         1       434
 $channel_geometry=1                  0.0000         1       456

 *==========================================================*
```

```
| Parameter Values on the Tapes Common Block.These are the |
| values read from the data file and dynamically allocated |
| by the model for this simulation.                        |
*==========================================================*

 Number of Subcatchments in the Runoff Block (NW)....    15
 Number of Channel/Pipes in the Runoff Block (NG)....     0
 Runoff Water quality constituents (NRQ)............     0
 Runoff Land Uses per Subcatchment (NLU)............     0
 Number of Elements in the Transport Block (NET).....     0
 Number of Storage Junctions in Transport (NTSE).....     0
 Number of Input Hydrographs in Transport (NTH)......     0
 Number of Elements in the Extran Block (NEE)........    58
 Number of Groundwater Subcatchments in Runoff (NGW).     0
 Number of Interface locations for all Blocks (NIE)..    58
 Number of Pumps in Extran (NEP).....................     0
 Number of Orifices in Extran (NEO)..................     4
 Number of Tide Gates/Free Outfalls in Extran (NTG)..     1
 Number of Extran Weirs (NEW)........................     5
 Number of scs hydrograph points.....................  1513
 Number of Extran printout locations (NPO)...........     0
 Number of Tide elements in Extran (NTE)............     1
 Number of Natural channels (NNC)....................    10
 Number of Storage junctions in Extran (NVSE)........     4
 Number of Time history data points in Extran(NTVAL).     0
 Number of Variable storage elements in Extran (NVST)     5
 Number of Input Hydrographs in Extran (NEH).........     0
 Number of Particle sizes in Transport Block (NPS)...     0
 Number of User defined conduits (NHW)...............    15
 Number of Connecting conduits in Extran (NECC)......    20
 Number of Upstream elements in Transport (NTCC).....    10
 Number of Storage/treatment plants (NSTU)...........     1
 Number of Values for R1 lines in Transport (NR1)....     0
 Number of Nodes to be allowed for (NNOD)............    58
 Number of Plugs in a Storage Treatment Unit.........     1


#########################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
#    Last Updated Jan., 2013 by XP Solutions          #

*==========================================================*
|          RUNOFF TABLES IN THE OUTPUT FILE.               |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,      |
|  for example: search for Table R3 to check continuity.   |
|  This output file can be imported into a Word Processor  |
|  and printed on US letter or A4 paper using portrait     |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                          |
| Table R1  - Physical Hydrology Data                      |
| Table R2  - Infiltration data                            |
| Table R3  - Raingage and Infiltration Database Names     |
| Table R4  - Groundwater Data                             |
| Table R5  - Continuity Check for Surface Water           |
| Table R6  - Continuity Check for Channels/Pipes          |
| Table R7  - Continuity Check for Subsurface Water        |
| Table R8  - Infiltration/Inflow Continuity Check         |
| Table R9  - Summary Statistics for Subcatchments         |
| Table R10 - Sensitivity anlysis for Subcatchments        |
*==========================================================*

                    A1

###########################################
#             RUNOFF JOB CONTROL          #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                 0
 Runoff graph plot control....                                 0
 Runoff output print control..                                 0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                     60.0
 Dry time step length (seconds)......                  86400.0
 Wet/Dry time step length (seconds)...                    60.0
 Simulation length is......                               24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ........................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..         21
 KINC   - Rainfall values(pairs) per line..         10
 KPRINT - Print rainfall(0-Yes,1-No).......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
```

```
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval...........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00


#######################################
# Rainfall input summary from Runoff #
#######################################

 Total rainfall for gage #     1 is    2.6400 inches

   ############################
   #        Data Group F1     #
   # Evaporation Rate (in/day) #
   ############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100


  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################

                                                                                                  Deprs Deprs Prcnt
                                                                    Per-                         -sion -sion  Zero
      Subcatchment            Channel      Width    Area      cent  Slope  "n"   "n"  Storge Strge Deten
  Number          Name        or inlet      (ft)    (ac)     Imperv ft/ft Imprv  Perv Imprv  Perv -tion
  ====== =============== =============== ======== ========   ====== ===== ===== ===== ===== ===== =====
      1         Node63#1           Node63 300.00    5.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
      2        Node120#1          Node120 700.00    32.000      0.00 0.020 0.020 0.020 0.000 0.000  0.00
      3         Node89#1           Node89 200.00    5.9000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
      4         Node11#1           Node11 1000.0    107.90      0.00 0.020 0.020 0.020 0.000 0.000  0.00
      5         Node33#1           Node33 400.00    37.800      0.00 0.010 0.020 0.020 0.000 0.000  0.00
      6         Node30#1           Node30 450.00    9.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
      7         Node46#1           Node46 600.00    30.100      0.00 0.015 0.020 0.020 0.000 0.000  0.00
      8         Node65#1           Node65 450.00    16.100      0.00 0.023 0.020 0.020 0.000 0.000  0.00
      9         Node99#1           Node99 700.00    32.100      0.00 0.020 0.020 0.020 0.000 0.000  0.00
     10         Node92#1           Node92 200.00    5.5000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     11         Node94#1           Node94 300.00    5.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     12         Node66#1           Node66 150.00    10.000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     13         Node24#1           Node24 950.00    19.700      0.00 0.040 0.020 0.020 0.000 0.000  0.00
     14         Node25#1           Node25 300.00    5.4000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     15         Node48#1           Node48 600.00    19.600      0.00 0.014 0.020 0.020 0.000 0.000  0.00


#######################################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                             #
#                     Infiltration or Time of Concentration Data                                      #
#                                                                                                     #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)             Infl #4(#8)  #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction  #
# SBUH                ->   Comp CN          Time Conc                 N/A                      N/A  #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                     N/A  #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume  #
# Proportional        ->  Constant               N/A                 N/A                      N/A  #
# Initial/Cont Loss   ->   Initial         Continuing                N/A                      N/A  #
# Initial/Proportional ->  Initial           Constant                N/A                      N/A  #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                Exponent  #
# Rational Formula    -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance  #
#                                (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)              #
#                     Rational Formula Tc Method: 1 = Constant                                        #
#                                                 2 = Friend's Equation                               #
#                                                 3 = Kinematic Wave                                  #
#                                                 4 = Alameda Method                                  #
#                                                 5 = Izzard's Formula                                #
#                                                 6 = Kerby's Equation                                #
#                                                 7 = Kirpich's Equation                              #
#                                                 8 = Bransby Williams Equation                       #
#                                                 9 = Federal Aviation Authority Equation             #
#######################################################################################################

     Subcatchment           Infl      Infl      Infl      Infl      Infl      Infl      Infl      Infl
  Number     Name            # 1       # 2       # 3       # 4       # 5       # 6       # 7       # 8
  ===============        ========= ========= ========= ========= ========= ========= ========= =========
    1         Node63#1    87.0000    0.3617  484.0000    0.2000
    2        Node120#1    83.7000    0.7500  484.0000    0.2000
    3         Node89#1    87.0000    0.3183  484.0000    0.2000
    4         Node11#1    85.5000    0.6700  484.0000    0.2000
    5         Node33#1    84.7000    1.0833  484.0000    0.2000
    6         Node30#1    86.0000    0.5333  484.0000    0.2000
    7         Node46#1    88.5000    0.7083  484.0000    0.2000
    8         Node65#1    87.0000    0.5283  484.0000    0.2000
    9         Node99#1    83.7000    1.5200  484.0000    0.2000
   10         Node92#1    87.0000    0.4167  484.0000    0.2000
   11         Node94#1    87.0000    0.4167  484.0000    0.2000
   12         Node66#1    87.0000    0.1450  484.0000    0.2000
   13         Node24#1    89.0000    0.7383  484.0000    0.2000
   14         Node25#1    79.0000    0.6200  484.0000    0.2000
   15         Node48#1    83.0000    0.5633  484.0000    0.2000


#############################################################
#     Table R3.  SUBCATCHMENT  DATA                        #
#                Rainfall and Infiltration Database Names  #
#############################################################

      Subcatchment         Gage  Infiltration        Routing
  Number          Name       No       Type              Type
  ====== =============== ======= ============ ====================
      1         Node63#1      1   SCS Method       SCS curvilinear
      2        Node120#1      1   SCS Method       SCS curvilinear
```

```
     3         Node89#1      1   SCS Method       SCS curvilinear
     4         Node11#1      1   SCS Method       SCS curvilinear
     5         Node33#1      1   SCS Method       SCS curvilinear
     6         Node30#1      1   SCS Method       SCS curvilinear
     7         Node46#1      1   SCS Method       SCS curvilinear
     8         Node65#1      1   SCS Method       SCS curvilinear
     9         Node99#1      1   SCS Method       SCS curvilinear
    10         Node92#1      1   SCS Method       SCS curvilinear
    11         Node94#1      1   SCS Method       SCS curvilinear
    12         Node66#1      1   SCS Method       SCS curvilinear
    13         Node24#1      1   SCS Method       SCS curvilinear
    14         Node25#1      1   SCS Method       SCS curvilinear
    15         Node48#1      1   SCS Method       SCS curvilinear

Total Number of Subcatchments...             15
Total Tributary Area (acres)....         341.10
Impervious Area (acres).........           0.00
Pervious Area (acres)...........         341.10
Total Width (feet)..............        7300.00
Impervious Area (%).............           0.00


 ##################################################
 #          S U B C A T C H M E N T  D A T A      #
 #   Default, Ratio values for subcatchment data  #
 #   Used with the calibrate node in the runoff.  #
 # 1 - width     2 - area       3 - impervious %  #
 # 4 - slope     5 - imp "n"    6 - perv "n"      #
 # 7 - imp ds    8 - perv ds    9 - 1st infil     #
 #10 - 2nd infil               11 - 3rd infil     #
 ##################################################

Column           1         2         3         4         5         6         7         8         9        10        11
Default     0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
Ratio       1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000

*******************************************************
*     Arrangement of Subcatchments and Channel/Pipes    *
*******************************************************


    Inlet
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


*********************************************************
* Hydrographs will be stored for the following  15 INLETS *
*********************************************************
Node63    Node120   Node89    Node11    Node33    Node30
Node46    Node65    Node99    Node92    Node94    Node66
Node24    Node25    Node48


************************************************
*  Quality Simulation not included in this run *
************************************************



***************************************************
*  Precipitation Interface File Summary           *
*  Number of precipitation station....        1   *
***************************************************

Location Station Number
-------- --------------
       1.             1

XXX End of Header Section XXX

#########################################################
#    Entry made to the HYDRAULIC Layer of XP-SWMM     #
#    Last Updated in Jan., 2013 by XP Solutions       #

#########################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
```

```
#    Last Updated Jan., 2013 by XP Solutions          #

*=========================================================*
|         RUNOFF TABLES IN THE OUTPUT FILE.               |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,      |
|  for example: search for Table R3 to check continuity.   |
|  This output file can be imported into a Word Processor  |
|  and printed on US letter or A4 paper using portrait     |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                          |
| Table R1  - Physical Hydrology Data                      |
| Table R2  - Infiltration data                            |
| Table R3  - Raingage and Infiltration Database Names     |
| Table R4  - Groundwater Data                             |
| Table R5  - Continuity Check for Surface Water           |
| Table R6  - Continuity Check for Channels/Pipes          |
| Table R7  - Continuity Check for Subsurface Water        |
| Table R8  - Infiltration/Inflow Continuity Check         |
| Table R9  - Summary Statistics for Subcatchments         |
| Table R10 - Sensitivity anlysis for Subcatchments        |
*=========================================================*

                    A1

###########################################
#          RUNOFF JOB CONTROL             #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                0
 Runoff graph plot control....                                0
 Runoff output print control..                                0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                      60.0
 Dry time step length (seconds)......                  86400.0
 Wet/Dry time step length (seconds)...                     60.0
 Simulation length is......                                24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ............................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..        21
 KINC   - Rainfall values(pairs) per line..        10
 KPRINT - Print rainfall(0-Yes,1-No).......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval..........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00


#######################################
# Rainfall input summary from Runoff #
#######################################

 Total rainfall for gage #     1 is    2.6400 inches

   ##############################
   #        Data Group F1       #
   # Evaporation Rate (in/day) #
   ##############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100


  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################

                                                                                   Deprs Deprs Prcnt
                                                          Per-                     -sion -sion  Zero
      Subcatchment            Channel      Width    Area      cent  Slope  "n"   "n"  Storge Strge Deten
 Number          Name         or inlet      (ft)    (ac)     Imperv ft/ft Imprv  Perv Imprv  Perv -tion
 ====== =============== =============== ======== ========   ====== ===== ===== ===== ===== ===== =====
     1         Node63#1           Node63 300.00    5.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     2        Node120#1          Node120 700.00    32.000      0.00 0.020 0.020 0.020 0.000 0.000  0.00
     3         Node89#1           Node89 200.00    5.9000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     4         Node11#1           Node11 1000.0    107.90      0.00 0.020 0.020 0.020 0.000 0.000  0.00
     5         Node33#1           Node33 400.00    37.800      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     6         Node30#1           Node30 450.00    9.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
```

7	Node46#1	Node46	600.00	30.100	0.00	0.015	0.020	0.020	0.000	0.000	0.00
8	Node65#1	Node65	450.00	16.100	0.00	0.023	0.020	0.020	0.000	0.000	0.00
9	Node99#1	Node99	700.00	32.100	0.00	0.020	0.020	0.020	0.000	0.000	0.00
10	Node92#1	Node92	200.00	5.5000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
11	Node94#1	Node94	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
12	Node66#1	Node66	150.00	10.000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
13	Node24#1	Node24	950.00	19.700	0.00	0.040	0.020	0.020	0.000	0.000	0.00
14	Node25#1	Node25	300.00	5.4000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
15	Node48#1	Node48	600.00	19.600	0.00	0.014	0.020	0.020	0.000	0.000	0.00

```
##############################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                     #
#                     Infiltration or Time of Concentration Data                              #
#                                                                                             #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)             Infl #4(#8)  #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction  #
# SBUH                ->   Comp CN          Time Conc                N/A                      N/A  #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                    N/A  #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume  #
# Proportional        ->  Constant                N/A                 N/A                      N/A  #
# Initial/Cont Loss   ->   Initial         Continuing                 N/A                      N/A  #
# Initial/Proportional ->  Initial           Constant                 N/A                      N/A  #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                 Exponent  #
# Rational Formula    -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance  #
#                              (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)              #
#                     Rational Formula Tc Method: 1 = Constant                                     #
#                                                 2 = Friend's Equation                            #
#                                                 3 = Kinematic Wave                               #
#                                                 4 = Alameda Method                               #
#                                                 5 = Izzard's Formula                             #
#                                                 6 = Kerby's Equation                             #
#                                                 7 = Kirpich's Equation                           #
#                                                 8 = Bransby Williams Equation                    #
#                                                 9 = Federal Aviation Authority Equation          #
##############################################################################################
```

Subcatchment Number	Name	Infl # 1	Infl # 2	Infl # 3	Infl # 4	Infl # 5	Infl # 6	Infl # 7	Infl # 8
1	Node63#1	87.0000	0.3617	484.0000	0.2000				
2	Node120#1	83.7000	0.7500	484.0000	0.2000				
3	Node89#1	87.0000	0.3183	484.0000	0.2000				
4	Node11#1	85.5000	0.6700	484.0000	0.2000				
5	Node33#1	84.7000	1.0833	484.0000	0.2000				
6	Node30#1	86.0000	0.5333	484.0000	0.2000				
7	Node46#1	88.5000	0.7083	484.0000	0.2000				
8	Node65#1	87.0000	0.5283	484.0000	0.2000				
9	Node99#1	83.7000	1.5200	484.0000	0.2000				
10	Node92#1	87.0000	0.4167	484.0000	0.2000				
11	Node94#1	87.0000	0.4167	484.0000	0.2000				
12	Node66#1	87.0000	0.1450	484.0000	0.2000				
13	Node24#1	89.0000	0.7383	484.0000	0.2000				
14	Node25#1	79.0000	0.6200	484.0000	0.2000				
15	Node48#1	83.0000	0.5633	484.0000	0.2000				

```
##############################################################
#     Table R3.  SUBCATCHMENT  DATA                         #
#                Rainfall and Infiltration Database Names  #
##############################################################
```

Subcatchment Number	Name	Gage No	Infiltration Type	Routing Type
1	Node63#1	1	SCS Method	SCS curvilinear
2	Node120#1	1	SCS Method	SCS curvilinear
3	Node89#1	1	SCS Method	SCS curvilinear
4	Node11#1	1	SCS Method	SCS curvilinear
5	Node33#1	1	SCS Method	SCS curvilinear
6	Node30#1	1	SCS Method	SCS curvilinear
7	Node46#1	1	SCS Method	SCS curvilinear
8	Node65#1	1	SCS Method	SCS curvilinear
9	Node99#1	1	SCS Method	SCS curvilinear
10	Node92#1	1	SCS Method	SCS curvilinear
11	Node94#1	1	SCS Method	SCS curvilinear
12	Node66#1	1	SCS Method	SCS curvilinear
13	Node24#1	1	SCS Method	SCS curvilinear
14	Node25#1	1	SCS Method	SCS curvilinear
15	Node48#1	1	SCS Method	SCS curvilinear

```
Total Number of Subcatchments...              15
Total Tributary Area (acres)....          341.10
Impervious Area (acres).........            0.00
Pervious Area (acres)...........          341.10
Total Width (feet)..............         7300.00
Impervious Area (%).............            0.00
```

```
 ####################################################
 #          S U B C A T C H M E N T  D A T A       #
 #   Default, Ratio values for subcatchment data   #
 #   Used with the calibrate node in the runoff.   #
 # 1 - width     2 - area       3 - impervious %   #
 # 4 - slope     5 - imp "n"    6 - perv "n"       #
 # 7 - imp ds    8 - perv ds    9 - 1st infil      #
 #10 - 2nd infil               11 - 3rd infil      #
 ####################################################
```

Column	1	2	3	4	5	6	7	8	9	10	11
Default	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Ratio	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

```
*******************************************************
*     Arrangement of Subcatchments and Channel/Pipes    *
*******************************************************
```

```
    Inlet
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


************************************************************
* Hydrographs will be stored for the following  15 INLETS *
************************************************************
Node63    Node120   Node89    Node11    Node33    Node30
Node46    Node65    Node99    Node92    Node94    Node66
Node24    Node25    Node48


************************************************
*  Quality Simulation not included in this run *
************************************************



*****************************************************
*  Precipitation Interface File Summary             *
*  Number of precipitation station....          1   *
*****************************************************

Location Station Number
-------- --------------
       1.             1


    A1


*==========================================================*
|        HYDRAULICS TABLES IN THE OUTPUT FILE               |
|  These are the more important tables in the output file.  |
|  You can use your editor to find the table numbers,       |
|  for example: search for Table E20 to check continuity.   |
|  This output file can be imported into a Word Processor   |
|  and printed on US letter or A4 paper using portrait      |
|  mode, courier font, a size of 8 pt. and margins of 0.75  |
|                                                           |
| Table E1   - Basic Conduit Data                           |
| Table E2   - Conduit Factor Data                          |
| Table E3a  - Junction Data                                |
| Table E3b  - Junction Data                                |
| Table E4   - Conduit Connectivity Data                    |
| Table E4a  - Dry Weather Flow Data                        |
| Table E4b  - Real Time Control Data                       |
| Table E5   - Junction Time Step Limitation Summary        |
| Table E5a  - Conduit Explicit Condition Summary           |
| Table E6   - Final Model Condition                        |
| Table E7   - Iteration Summary                            |
| Table E8   - Junction Time Step Limitation Summary        |
| Table E9   - Junction  Summary  Statistics                |
| Table E10  - Conduit   Summary  Statistics                |
| Table E11  - Area assumptions used in the analysis        |
| Table E12  - Mean conduit information                     |
| Table E13  - Channel losses(H) and culvert info           |
| Table E13a - Culvert Analysis Classification              |
| Table E14  - Natural Channel Overbank Flow Information    |
| Table E14a - Natural Channel Encroachment Information     |
| Table E14b - Floodplain Mapping                           |
| Table E15  - Spreadsheet Info List                        |
| Table E15a - Spreadsheet Reach List                       |
| Table E16  - New Conduit Output Section                   |
| Table E17  - Pump Operation                               |
| Table E18  - Junction Continuity Error                    |
| Table E19  - Junction Inflow & Outflow Listing            |
| Table E20  - Junction Flooding and Volume List            |
| Table E21  - Continuity balance at simulation end         |
| Table E22  - Model Judgement Section                      |
*==========================================================*

Time Control from Hydraulics Job Control
```

```
Year.........    2014 Month.......       1
Day..........       1 Hour........       0
Minute.......       0 Second......       0


Control information for simulation
----------------------------------

Integration cycles................       576
Length of integration step is......    300.00 seconds
Simulation length..................     48.00 hours
Do not create equiv. pipes(NEQUAL).         0
Use U.S. customary units for I/O...         0
Printing starts in cycle...........         1
Intermediate printout intervals of.       500 cycles
Intermediate printout intervals of.   2500.00 minutes
Summary printout intervals of......       500 cycles
Summary printout time interval of..   2500.00 minutes
Hot start file parameter (REDO)....         0
Initial time.......................      0.00 hours

Iteration variables: Flow Tolerance.   0.00010
                     Head Tolerance.   0.00050
    Minimum depth (m or ft).........   0.00001
    Underrelaxation parameter........  0.85000
    Time weighting parameter........   0.85000
    Conduit roughness factor........   1.00000
    Flow adjustment factor..........   1.00000
    Initial Condition Smoothing.....         0
    Courant Time Step Factor........   1.00000
    Default Expansion/Contraction K.   0.00000
    Default Entrance/Exit K.........   0.00000
    Routing Method..................   Dynamic Wave
Default surface area of junctions...     12.57 square feet.
Minimum Junction/Conduit Depth......   0.00001 feet.
Ponding Area Coefficient............   5000.00
Ponding Area Exponent...............    1.0000
Minimum Orifice Length..............   1000.00 feet.
NJSW input hydrograph junctions.....     0
     or user defined hydrographs....

        Natural Cross-Section information for Channel Link68
        ====================================================
         Cross-Section ID (from X1 card) :     1.0 Channel sequence number :     1

  Left Overbank Length   :    400.0 ft                Maximum Elevation        :   622.00 ft.
  Main Channel Length    :    400.0 ft                Maximum Depth            :     2.70 ft.
  Right Overbank Length  :    400.0 ft                Maximum Section Area     :  45.1725 ft^2
                                                      Maximum hydraulic radius :     0.46 ft.
  Manning N :      0.025  to Station         -67.2    Max topwidth             :    97.80 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 9.85E+01 ft
    "    "  :      0.025  Beyond station      30.6    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  45.1725 ft^2

        Natural Cross-Section information for Channel Link69
        ====================================================
         Cross-Section ID (from X1 card) :     2.0 Channel sequence number :     2

  Left Overbank Length   :    258.0 ft                Maximum Elevation        :   624.37 ft.
  Main Channel Length    :    260.0 ft                Maximum Depth            :     6.05 ft.
  Right Overbank Length  :    262.0 ft                Maximum Section Area     : 1075.528 ft^2
                                                      Maximum hydraulic radius :     3.57 ft.
  Manning N :      0.025  to Station        -126.4    Max topwidth             :   301.00 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.01E+02 ft
    "    "  :      0.025  Beyond station     174.6    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1075.528 ft^2

        Natural Cross-Section information for Channel Link70
        ====================================================
         Cross-Section ID (from X1 card) :     3.0 Channel sequence number :     3

  Left Overbank Length   :    450.0 ft                Maximum Elevation        :   624.09 ft.
  Main Channel Length    :    450.0 ft                Maximum Depth            :     7.76 ft.
  Right Overbank Length  :    450.0 ft                Maximum Section Area     : 955.4430 ft^2
                                                      Maximum hydraulic radius :     5.13 ft.
  Manning N :      0.025  to Station         -64.2    Max topwidth             :   185.50 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.86E+02 ft
    "    "  :      0.025  Beyond station     121.3    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 955.4430 ft^2

        Natural Cross-Section information for Channel Link71
        ====================================================
         Cross-Section ID (from X1 card) :     4.0 Channel sequence number :     4

  Left Overbank Length   :    383.0 ft                Maximum Elevation        :   624.37 ft.
  Main Channel Length    :    383.0 ft                Maximum Depth            :     8.76 ft.
  Right Overbank Length  :    383.0 ft                Maximum Section Area     : 2270.844 ft^2
                                                      Maximum hydraulic radius :     7.27 ft.
  Manning N :      0.025  to Station        -245.8    Max topwidth             :   311.30 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.12E+02 ft
    "    "  :      0.025  Beyond station      65.5    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 2270.844 ft^2

        Natural Cross-Section information for Channel Link73
        ====================================================
         Cross-Section ID (from X1 card) :     5.0 Channel sequence number :     5

  Left Overbank Length   :     40.0 ft                Maximum Elevation        :   613.47 ft.
  Main Channel Length    :     73.0 ft                Maximum Depth            :    11.92 ft.
  Right Overbank Length  :    100.0 ft                Maximum Section Area     : 1101.166 ft^2
                                                      Maximum hydraulic radius :     6.02 ft.
  Manning N :      0.025  to Station         -92.8    Max topwidth             :   181.40 ft.
```

```
   "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
   "    "  :      0.025  Beyond station      88.6    Max left bank area       :     0.00 ft^2
                                                     Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1101.166 ft^2

        Natural Cross-Section information for Channel Link74
        ====================================================
         Cross-Section ID (from X1 card) :     6.0 Channel sequence number :     6

  Left Overbank Length   :    102.0 ft                Maximum Elevation        :   613.84 ft.
  Main Channel Length    :    102.0 ft                Maximum Depth            :    15.95 ft.
  Right Overbank Length  :    102.0 ft                Maximum Section Area     : 1003.556 ft^2
                                                      Maximum hydraulic radius :     7.52 ft.
  Manning N :      0.025  to Station         -93.3    Max topwidth             :   126.70 ft.
   "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.33E+02 ft
   "    "  :      0.025  Beyond station      33.4    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1003.556 ft^2

        Natural Cross-Section information for Channel Link75
        ====================================================
         Cross-Section ID (from X1 card) :     7.0 Channel sequence number :     7

  Left Overbank Length   :     52.0 ft                Maximum Elevation        :   612.13 ft.
  Main Channel Length    :     52.0 ft                Maximum Depth            :    17.46 ft.
  Right Overbank Length  :     52.0 ft                Maximum Section Area     : 1220.157 ft^2
                                                      Maximum hydraulic radius :     8.32 ft.
  Manning N :      0.025  to Station         -92.5    Max topwidth             :   141.30 ft.
   "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.47E+02 ft
   "    "  :      0.025  Beyond station      48.8    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1220.157 ft^2

        Natural Cross-Section information for Channel Link76
        ====================================================
         Cross-Section ID (from X1 card) :     8.0 Channel sequence number :     8

  Left Overbank Length   :     40.0 ft                Maximum Elevation        :   609.77 ft.
  Main Channel Length    :     40.0 ft                Maximum Depth            :    17.61 ft.
  Right Overbank Length  :     40.0 ft                Maximum Section Area     : 829.0790 ft^2
                                                      Maximum hydraulic radius :     7.27 ft.
  Manning N :      0.025  to Station         -46.5    Max topwidth             :   106.90 ft.
   "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.14E+02 ft
   "    "  :      0.025  Beyond station      60.4    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 829.0790 ft^2

        Natural Cross-Section information for Channel Link84
        ====================================================
         Cross-Section ID (from X1 card) :     9.0 Channel sequence number :     9

  Left Overbank Length   :    270.0 ft                Maximum Elevation        :   618.53 ft.
  Main Channel Length    :    280.0 ft                Maximum Depth            :     7.43 ft.
  Right Overbank Length  :    290.0 ft                Maximum Section Area     : 222.9791 ft^2
                                                      Maximum hydraulic radius :     3.66 ft.
  Manning N :      0.025  to Station         -30.6    Max topwidth             :    57.40 ft.
   "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 6.09E+01 ft
   "    "  :      0.025  Beyond station      26.8    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 222.9791 ft^2

        Natural Cross-Section information for Channel Link85
        ====================================================
         Cross-Section ID (from X1 card) :    10.0 Channel sequence number :    10

  Left Overbank Length   :    450.0 ft                Maximum Elevation        :   616.00 ft.
  Main Channel Length    :    470.0 ft                Maximum Depth            :    16.50 ft.
  Right Overbank Length  :    490.0 ft                Maximum Section Area     : 1074.025 ft^2
                                                      Maximum hydraulic radius :     5.87 ft.
  Manning N :      0.025  to Station         -68.1    Max topwidth             :   177.10 ft.
   "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
   "    "  :      0.025  Beyond station     109.0    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1074.025 ft^2

*==================================================*
|          Table E1 - Conduit Data                 |
*==================================================*
```

Inp Num	Conduit Name	Length (ft)	Conduit Class	Area (ft^2)	Manning Coef.	Max Width (ft)	Depth (ft)	Trapezoid Side Slopes	Hazen Williams c-factor
1	Link13	311.0000	Circular	7.0686	0.0120	3.0000	3.0000		
2	Link14	341.0000	Circular	7.0686	0.0120	3.0000	3.0000		
3	Link15	322.0000	Circular	7.0686	0.0120	3.0000	3.0000		
4	Link16	631.0000	Circular	7.0686	0.0120	3.0000	3.0000		
5	Link17	51.0000	Circular	7.0686	0.0120	3.0000	3.0000		
6	Link18	462.0000	Circular	7.0686	0.0120	3.0000	3.0000		
7	Link23	312.0000	Circular	7.0686	0.0120	3.0000	3.0000		
8	Link24	74.0000	Circular	7.0686	0.0120	3.0000	3.0000		
9	Link25	305.0000	Circular	7.0686	0.0120	3.0000	3.0000		
10	Link26	308.0000	Circular	7.0686	0.0120	3.0000	3.0000		
11	Link27	324.0000	Circular	7.0686	0.0140	3.0000	3.0000		
12	Link28	327.0000	Circular	7.0686	0.0120	3.0000	3.0000		
13	Link32	400.0000	Rectangle	16.0000	0.0120	4.0000	4.0000		
14	Link33	260.0000	Rectangle	24.0000	0.0140	6.0000	4.0000		
15	Link47	54.0000	Circular	7.0686	0.0120	3.0000	3.0000		
16	Link56	610.0000	Trapezoid	19.0000	0.0400	4.0000	1.0000	15.0000	15.0000
17	Link68	400.0000	Natural	45.1725	0.0250	97.8000	2.7000		
18	Link69	260.0000	Natural	1075.5285	0.0250	301.0000	6.0500		
19	Link70	450.0000	Natural	955.4430	0.0250	185.5000	7.7600		
20	Link71	383.0000	Natural	2270.8440	0.0250	311.3000	8.7600		
21	Link72	42.0000	Circular	7.0686	0.0120	3.0000	3.0000		
22	Link73	73.0000	Natural	1101.1655	0.0250	181.4000	11.9200		
23	Link74	102.0000	Natural	1003.5558	0.0250	126.7000	15.9500		

24	Link75	52.0000	Natural	1220.1569	0.0250	141.3000	17.4600		
25	Link76	40.0000	Natural	829.0790	0.0250	106.9000	17.6100		
26	Link77	60.0000	Circular	3.1416	0.0120	2.0000	2.0000		
27	Link78	325.0000	Trapezoid	195.0000	0.0400	20.0000	3.0000	15.0000	15.0000
28	Link79	52.0000	Circular	7.0686	0.0120	3.0000	3.0000		
29	Link82	436.0000	Circular	7.0686	0.0120	3.0000	3.0000		
30	Link83	123.0000	Circular	7.0686	0.0120	3.0000	3.0000		
31	Link84	280.0000	Natural	222.9791	0.0250	57.4000	7.4310		
32	Link85	470.0000	Natural	1074.0250	0.0250	177.1000	16.5000		
33	Link90	250.0000	Circular	2.4053	0.0120	1.7500	1.7500		
34	Link93	150.0000	Circular	1.7671	0.0120	1.5000	1.5000		
35	Link118	200.0000	Trapezoid	58.5000	0.0120	30.0000	1.5000	6.0000	6.0000
36	Link120	630.0000	Circular	7.0686	0.0120	3.0000	3.0000		
37	Link121	330.0000	Circular	7.0686	0.0120	3.0000	3.0000		
38	Link123	1065.0000	Circular	7.0686	0.0120	3.0000	3.0000		
39	Link124	150.0000	Circular	7.0686	0.0120	3.0000	3.0000		
40	Link125	160.0000	Circular	7.0686	0.0120	3.0000	3.0000		
41	Link126	270.0000	Circular	7.0686	0.0120	3.0000	3.0000		
42	Link127	355.0000	Circular	7.0686	0.0120	3.0000	3.0000		
43	Link130	300.0000	Circular	7.0686	0.0120	3.0000	3.0000		
44	Link131	310.0000	Circular	3.1416	0.0120	2.0000	2.0000		
45	Link132	350.0000	Circular	7.0686	0.0120	3.0000	3.0000		
46	Link133	330.0000	Circular	3.1416	0.0120	2.0000	2.0000		
47	214.1	29.0000	Circular	3.1416	0.0240	2.0000	2.0000		
48	283.1	40.0000	Circular	0.7854	0.0240	1.0000	1.0000		

Total length of all conduits .... 13559.0000 feet

==========
| Table E2 - Conduit Factor Data |
==========

Conduit Name	Number of Barrels	Entrance Loss Coef	Exit Loss Coef	Exp/Contc Coefficnt	Time Weighting Parameter	Low Flow Roughness Factor	Depth at Which n Changes	Sediment Depth	Flow Routing
Link56	1.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
214.1	2.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave

==========
| If there are messages about (sqrt(g*d)*dt/dx), or |
| the sqrt(wave celerity)*time step/conduit length |
| in the output file all it means is that the |
| program will lower the internal time step to |
| satisfy this condition (explicit condition). |
| You control the actual internal time step by |
| using the minimum courant time step factor in the |
| HYDRAULICS job control. The message put in words |
| states that the smallest conduit with the fastest |
| velocity will control the time step selection. |
| You have further control by using the modify |
| conduit option in the HYDRAULICS Job Control. |
==========

Conduit Name	Courant Ratio	
Link13	9.48	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link14	8.65	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link15	9.16	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link16	4.67	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link17	57.81	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link18	6.38	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link23	9.45	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link24	39.85	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link25	9.67	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link26	9.57	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link27	9.10	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link28	9.02	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link32	8.51	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link33	13.10	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link47	54.60	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link56	2.09	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link68	2.89	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link69	12.38	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link70	8.59	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link71	12.00	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link72	70.20	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link73	57.46	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link74	46.97	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link75	96.20	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link76	119.30	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link77	40.12	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link78	6.97	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link79	56.70	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link82	6.76	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link83	23.97	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link84	11.98	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link85	8.92	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link90	9.01	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link93	13.90	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link118	9.40	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link120	4.68	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link121	8.94	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link123	2.77	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link124	19.66	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link125	18.43	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link126	10.92	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link127	8.31	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link130	9.83	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link131	7.77	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link132	8.42	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link133	7.30	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
214.1	83.02	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
283.1	42.56	===> Warning ! (sqrt(wave celerity)*time step/conduit length)

```
*==================*
|  Conduit Volume  |
*==================*

Full pipe or full open conduit volume
Input full depth volume............    2.6036E+06 cubic feet

===> Warning !! The upstream and downstream junctions for the following conduits
                have been reversed to correspond to the positive flow and decreasing
                slope convention.  A negative flow in the output thus means
                the flow was from your original upstream junction to your original
                downstream junction.  Any initial flow has been multiplied by -1.

                1.  Conduit #...Link17      has been changed.

===> ERROR !!!  Conduit Link73           has caused ZCROWN  of Junction Node75     to lie above the specified ground elev of     614.84
611.73

===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node81     to lie above the specified ground elev of     612.64
611.30

===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.13
611.67

===> ERROR !!!  Conduit Link76           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.28
611.67
```

==========
|Table E3a - Junction Data|
==========

Inp Num	Junction Name	Ground Elevation	Crown Elevation	Invert Elevation	Qinst cfs	Initial Depth-ft	Interface Flow (%)
1	Node11	623.2500	623.2500	617.2000	0.0000	0.0000	100.0000
2	Node12	624.9700	624.9700	617.2100	0.0000	0.0000	100.0000
3	Node20	638.4000	637.6000	634.6000	0.0000	0.0000	100.0000
4	Node21	639.0000	636.1600	633.1600	0.0000	0.0000	100.0000
5	Node22	639.3500	639.3500	630.1100	0.0000	0.0000	100.0000
6	Node23	635.9100	631.8600	628.8600	0.0000	0.0000	100.0000
7	Node24	635.3400	631.3300	628.0300	0.0000	0.0000	100.0000
8	Node25	634.1030	629.3500	626.3500	0.0000	0.0000	100.0000
9	Node26	634.3200	629.4200	626.4200	0.0000	0.0000	100.0000
10	Node27	635.4400	626.6900	623.6900	0.0000	0.0000	100.0000
11	Node29	620.2110	620.2110	612.7800	0.0000	0.0000	100.0000
12	Node30	631.4300	623.0000	620.0000	0.0000	0.0000	100.0000
13	Node33	619.3200	619.3200	610.5600	0.0000	0.0000	100.0000
14	Node34	618.6800	611.5000	608.5000	0.0000	0.0000	100.0000
15	Node35	621.6500	611.4000	608.4000	0.0000	0.0000	100.0000
16	Node36	633.6100	610.4000	607.4000	0.0000	0.0000	100.0000
17	Node37	632.4600	609.4600	606.4600	0.0000	0.0000	100.0000
18	Node38	626.7800	608.4500	605.4500	0.0000	0.0000	100.0000
19	Node39	611.6440	607.4400	604.4400	0.0000	0.0000	100.0000
20	Node41	633.3700	631.2200	628.0000	0.0000	0.0000	100.0000
21	Node43	638.5000	636.0000	631.4500	0.0000	0.0000	100.0000
22	Node46	608.0000	610.3500	592.7400	0.0000	0.0000	100.0000
23	Node47	610.0000	576.0000	572.0000	0.0000	0.0000	100.0000
24	Node48	618.0000	609.8000	593.3000	0.0000	0.0000	100.0000
25	Node63	633.6300	632.0100	631.0000	0.0000	0.0000	100.0000
26	Node65	642.0000	642.0000	638.0000	0.0000	0.0000	100.0000
27	Node66	634.7700	632.0000	629.0000	0.0000	0.0000	100.0000
28	Node71	624.7000	624.7000	622.0000	0.0000	0.0000	100.0000
29	Node74	625.0300	625.0300	618.9800	0.0000	0.0000	100.0000
30	Node75	611.7300	611.7200	602.9200	0.0000	0.0000	100.0000
31	Node79	624.3700	623.3700	615.6100	0.0000	0.0000	100.0000
32	Node80	613.8400	613.8400	597.8900	0.0000	0.0000	100.0000
33	Node81	611.3000	611.2900	595.1800	0.0000	0.0000	100.0000
34	Node82	611.6700	611.6600	594.6700	0.0000	0.0000	100.0000
35	Node83	642.6000	642.6000	639.6000	0.0000	0.0000	100.0000
36	Node84	639.7400	634.5400	631.5400	0.0000	0.0000	100.0000
37	Node86	621.1000	616.4900	613.4900	0.0000	0.0000	100.0000
38	Node87	622.5000	622.5000	606.0000	0.0000	0.0000	100.0000
39	Node89	639.1000	638.6000	637.1000	0.0000	0.0000	100.0000
40	Node92	636.3000	634.5000	633.0000	0.0000	0.0000	100.0000
41	Node94	635.3000	632.7500	631.0000	0.0000	0.0000	100.0000
42	Node99	639.7000	637.7000	637.7000	0.0000	0.0000	100.0000
43	Node100	639.0600	632.5000	628.9700	0.0000	0.0000	100.0000
44	Node108	636.5000	630.0700	627.0700	0.0000	0.0000	100.0000
45	Node120	639.6000	638.0000	638.0000	0.0000	0.0000	100.0000
46	Node121	639.1000	634.4500	631.4500	0.0000	0.0000	100.0000
47	Node122	639.2000	636.5000	633.5000	0.0000	0.0000	100.0000
48	Node123	638.0000	630.7800	627.7800	0.0000	0.0000	100.0000
49	Node124	627.5000	621.0000	618.0000	0.0000	0.0000	100.0000
50	Node127	640.1000	635.0000	633.0000	0.0000	0.0000	100.0000
51	Node128	641.4000	632.8000	629.8000	0.0000	0.0000	100.0000
52	Node132	624.4000	624.3700	615.6100	0.0000	0.0000	100.0000
53	Node133	632.3400	618.0000	615.0000	0.0000	0.0000	100.0000
54	Node134	634.3200	629.4200	626.4200	0.0000	0.0000	100.0000
55	Node135	633.3700	631.0500	628.0500	0.0000	0.0000	100.0000

==========
|Table E3b - Junction Data|
==========

Inp Num	Junction Name	X Coord.	Y Coord.	Type of Manhole	Type of Inlet	Maximum Capacity	Pavement Shape	Pavement Slope
1	Node11	0.0000	0.0000	F	Normal		0	0.0000
2	Node12	0.0000	0.0000	No P	Normal		0	0.0000
3	Node20	0.0000	0.0000	F	Normal		0	0.0000
4	Node21	0.0000	0.0000	F	Normal		0	0.0000
5	Node22	0.0000	0.0000		Normal		0	0.0000
6	Node23	0.0000	0.0000		Normal		0	0.0000
7	Node24	0.0000	0.0000		Normal		0	0.0000

8	Node25	0.0000	0.0000	F	Normal	0	0.0000
9	Node26	0.0000	0.0000	F	Normal	0	0.0000
10	Node27	0.0000	0.0000	F	Normal	0	0.0000
11	Node29	0.0000	0.0000	No P	Normal	0	0.0000
12	Node30	0.0000	0.0000	F	Normal	0	0.0000
13	Node33	0.0000	0.0000	F	Normal	0	0.0000
14	Node34	0.0000	0.0000		Normal	0	0.0000
15	Node35	0.0000	0.0000		Normal	0	0.0000
16	Node36	0.0000	0.0000		Normal	0	0.0000
17	Node37	0.0000	0.0000		Normal	0	0.0000
18	Node38	0.0000	0.0000	No P	Normal	0	0.0000
19	Node39	0.0000	0.0000		Normal	0	0.0000
20	Node41	0.0000	0.0000	No P	Normal	0	0.0000
21	Node43	0.0000	0.0000	F	Normal	0	0.0000
22	Node46	0.0000	0.0000	F	Normal	0	0.0000
23	Node47	0.0000	0.0000	No P	Normal	0	0.0000
24	Node48	0.0000	0.0000	No P	Normal	0	0.0000
25	Node63	0.0000	0.0000	F	Normal	0	0.0000
26	Node65	0.0000	0.0000	F	Normal	0	0.0000
27	Node66	0.0000	0.0000	F	Normal	0	0.0000
28	Node71	0.0000	0.0000	No P	Normal	0	0.0000
29	Node74	0.0000	0.0000	No P	Normal	0	0.0000
30	Node75	0.0000	0.0000	No P	Normal	0	0.0000
31	Node79	0.0000	0.0000	F	Normal	0	0.0000
32	Node80	0.0000	0.0000	No P	Normal	0	0.0000
33	Node81	0.0000	0.0000	No P	Normal	0	0.0000
34	Node82	0.0000	0.0000	No P	Normal	0	0.0000
35	Node83	0.0000	0.0000	No P	Normal	0	0.0000
36	Node84	0.0000	0.0000	No P	Normal	0	0.0000
37	Node86	0.0000	0.0000	F	Normal	0	0.0000
38	Node87	0.0000	0.0000	No P	Normal	0	0.0000
39	Node89	0.0000	0.0000	F	Normal	0	0.0000
40	Node92	0.0000	0.0000	F	Normal	0	0.0000
41	Node94	0.0000	0.0000	F	Normal	0	0.0000
42	Node99	0.0000	0.0000	F	Normal	0	0.0000
43	Node100	0.0000	0.0000	F	Normal	0	0.0000
44	Node108	0.0000	0.0000	F	Normal	0	0.0000
45	Node120	0.0000	0.0000	F	Normal	0	0.0000
46	Node121	0.0000	0.0000	No P	Normal	0	0.0000
47	Node122	0.0000	0.0000	F	Normal	0	0.0000
48	Node123	0.0000	0.0000	No P	Normal	0	0.0000
49	Node124	0.0000	0.0000	No P	Normal	0	0.0000
50	Node127	0.0000	0.0000	No P	Normal	0	0.0000
51	Node128	0.0000	0.0000	No P	Normal	0	0.0000
52	Node132	0.0000	0.0000	No P	Normal	0	0.0000
53	Node133	0.0000	0.0000	No P	Normal	0	0.0000
54	Node134	0.0000	0.0000	No P	Normal	0	0.0000
55	Node135	0.0000	0.0000	No P	Normal	0	0.0000

==========
|Table E4 - Conduit Connectivity|
==========

Input Number	Conduit Name	Upstream Node	Downstream Node	Upstream Elevation	Downstream Elevation	
1	Link13	Node21	Node84	633.1600	631.5400	No Design
2	Link14	Node22	Node23	630.1100	628.8600	No Design
3	Link15	Node23	Node24	628.8600	628.0300	No Design
4	Link16	Node24	Node25	628.0300	626.3500	No Design
5	Link17	Node26	Node25	626.4200	626.3500	No Design
6	Link18	Node26	Node27	626.4200	623.6900	No Design
7	Link23	Node33	Node34	610.5630	608.5000	No Design
8	Link24	Node34	Node35	608.5000	608.4000	No Design
9	Link25	Node35	Node36	608.4000	607.4000	No Design
10	Link26	Node36	Node37	607.4000	606.4600	No Design
11	Link27	Node37	Node38	606.4600	605.4500	No Design
12	Link28	Node38	Node39	605.4500	604.4400	No Design
13	Link32	Node46	Node47	592.7400	572.0000	No Design
14	Link33	Node48	Node47	593.3000	572.0000	No Design
15	Link47	Node66	Node24	629.0000	628.3300	No Design
16	Link56	Node41	Node71	628.0000	622.0000	No Design
17	Link68	Node71	Node74	622.0000	618.9800	No Design
18	Link69	Node74	Node11	618.9800	617.2000	No Design
19	Link70	Node12	Node79	617.2100	615.6100	No Design
20	Link71	Node132	Node33	615.6100	610.5600	No Design
21	Link72	Node39	Node75	604.4400	602.9220	No Design
22	Link73	Node75	Node80	602.9200	597.8900	No Design
23	Link74	Node80	Node81	597.8900	595.1800	No Design
24	Link75	Node81	Node82	595.1800	594.6700	No Design
25	Link76	Node82	Node46	594.6700	592.7400	No Design
26	Link77	Node65	Node83	640.0000	639.6000	No Design
27	Link78	Node83	Node22	639.6000	636.3500	No Design
28	Link79	Node84	Node22	631.5400	630.5100	No Design
29	Link82	Node27	Node86	623.6900	613.4900	No Design
30	Link83	Node86	Node29	613.4900	612.7800	No Design
31	Link84	Node29	Node87	612.7800	606.0000	No Design
32	Link85	Node87	Node48	606.0000	593.3000	No Design
33	Link90	Node94	Node108	631.0000	628.0000	No Design
34	Link93	Node92	Node100	633.0000	631.0000	No Design
35	Link118	Node89	Node43	637.1000	634.5000	No Design
36	Link120	Node20	Node121	634.6000	631.4500	No Design
37	Link121	Node121	Node128	631.4500	629.8000	No Design
38	Link123	Node122	Node100	633.5000	628.9700	No Design
39	Link124	Node108	Node134	627.0700	626.4200	No Design
40	Link125	Node123	Node108	627.7800	627.0700	No Design
41	Link126	Node100	Node123	628.9700	627.7800	No Design
42	Link127	Node30	Node124	620.0000	618.0000	No Design
43	Link130	Node124	Node133	618.0000	615.0000	No Design
44	Link131	Node127	Node43	633.0000	631.4500	No Design
45	Link132	Node128	Node135	629.8000	628.0500	No Design
46	Link133	Node43	Node128	631.4500	629.8000	No Design
47	214.1	Node11	Node12	617.7000	617.2100	No Design
48	283.1	Node63	Node41	631.0100	630.2200	No Design

```
*==========================================*
|          Storage Junction Data           |
*==========================================*

                              MAXIMUM OR          PEAK OR        CROWN      DEPTH
STORAGE JUNCTION  JUNCTION  CONSTANT SURFACE   CONSTANT VOLUME  ELEVATION   STARTS
  NUMBER OR NAME      TYPE     AREA (FT2)        (CUBIC FEET)      (FT)       FROM
  --------------  --------  ----------------   ---------------  --------- -----------
         Node65 Stage/Area       50965.2000       114339.2685    642.0000 Node Invert
         Node79 Stage/Area       87120.0000       669705.4795    624.3700 Node Invert
         Node99 Stage/Area       43560.0000        65156.9320    639.7000 Node Invert
        Node120 Stage/Area       65340.0000        59372.3585    639.6000 Node Invert

      *==================================*
      |   Variable storage data for node | Node65
      *==================================*
       Data     Elevation    Depth           Area          Volume          Area          Volume
      Point         ft         ft           ft^2            ft^3         acres           ac-ft
      =====     =========    ======   ===========   ============   ===========   ============
         1       638.0000    0.0000      435.6000         0.0000        0.0100         0.0000
         2       639.0000    1.0000    10890.0000      4501.1550        0.2500         0.1033
         3       640.0000    2.0000    29185.2000     23801.9281        0.6700         0.5464
         4       641.0000    3.0000    50965.2000     63374.0685        1.1700         1.4549
         5       642.0000    4.0000    50965.2000    114339.2685        1.1700         2.6249

      *==================================*
      |   Variable storage data for node | Node79
      *==================================*
       Data     Elevation    Depth           Area          Volume          Area          Volume
      Point         ft         ft           ft^2            ft^3         acres           ac-ft
      =====     =========    ======   ===========   ============   ===========   ============
         1       615.6100    0.0000       43.5600         0.0000        0.0010         0.0000
         2       616.1100    0.5000    21780.0000      3799.5605        0.5000         0.0872
         3       616.6100    1.0000    39639.6000     18933.1469        0.9100         0.4346
         4       617.6100    2.0000    87120.0000     80774.2795        2.0000         1.8543
         5       624.3700    8.7600    87120.0000    669705.4795        2.0000        15.3743

      *==================================*
      |   Variable storage data for node | Node99
      *==================================*
       Data     Elevation    Depth           Area          Volume          Area          Volume
      Point         ft         ft           ft^2            ft^3         acres           ac-ft
      =====     =========    ======   ===========   ============   ===========   ============
         1       637.7000    0.0000        4.3560         0.0000        0.0001         0.0000
         2       637.7100    0.0100     2178.0000         7.5991        0.0500         0.0002
         3       638.0000    0.3000    12196.8000      1895.3728        0.2800         0.0435
         4       638.2000    0.5000    22651.2000      5326.6343        0.5200         0.1223
         5       638.7000    1.0000    43560.0000     21596.9320        1.0000         0.4958
         6       639.7000    2.0000    43560.0000     65156.9320        1.0000         1.4958

      *==================================*
      |   Variable storage data for node | Node120
      *==================================*
       Data     Elevation    Depth           Area          Volume          Area          Volume
      Point         ft         ft           ft^2            ft^3         acres           ac-ft
      =====     =========    ======   ===========   ============   ===========   ============
         1       638.0000    0.0000       43.5600         0.0000        0.0010         0.0000
         2       639.0000    1.0000    32670.0000     11302.0536        0.7500         0.2595
         3       640.0000    2.0000    65340.0000     59372.3585        1.5000         1.3630


*==========================================*
|             Orifice Data                 |
*==========================================*

         Conduit            From             To                Area     Depth      Discharge   Height Above
            Name         Junction        Junction      Type    (ft2)     (ft)     Coefficient  Junction (ft)
---------------- --------------- ---------------     ----    -----     -----    -----------  -------------
       Restrict5          Node79         Node132 Circ Side     7.07      0.00          0.600          0.000
       restric11         Node133          Node37 Circ Side     4.91      0.00          0.600          5.000
       Restrict2         Node134          Node26 Circ Side     3.14      0.00          0.600          3.580
       Restrict3         Node135          Node41 Circ Side     4.90      0.00          0.600          2.450

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE                1
      CONDUIT NAME..........................        Restrict5
      Upstream node.........................           Node79
      Downstream node.......................         Node132
      PIPE DIAMETER.........................            3.00
      PIPE LENGTH...........................         5897.41
      MANNINGS ROUGHNESS....................          0.0033
      INVERT ELEVATION AT UPSTREAM END.....         615.6100
      INVERT ELEVATION AT DOWNSTREAM END...         615.6000

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE                2
      CONDUIT NAME..........................       restric11
      Upstream node.........................         Node133
      Downstream node.......................          Node37
      PIPE DIAMETER.........................            2.50
      PIPE LENGTH...........................         5382.56
      MANNINGS ROUGHNESS....................          0.0031
      INVERT ELEVATION AT UPSTREAM END.....         620.0000
      INVERT ELEVATION AT DOWNSTREAM END...         619.9900

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE                3
      CONDUIT NAME..........................        Restrict2
      Upstream node.........................         Node134
      Downstream node.......................          Node26
      PIPE DIAMETER.........................            2.00
      PIPE LENGTH...........................         4814.37
      MANNINGS ROUGHNESS....................          0.0028
      INVERT ELEVATION AT UPSTREAM END.....         630.0000
      INVERT ELEVATION AT DOWNSTREAM END...         629.9900

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE                4
      CONDUIT NAME..........................        Restrict3
```

```
Upstream node..........................         Node135
Downstream node........................          Node41
PIPE DIAMETER.......................               2.50
PIPE LENGTH.........................            5380.91
MANNINGS ROUGHNESS..................              0.0031
INVERT ELEVATION AT UPSTREAM END.....           630.5000
INVERT ELEVATION AT DOWNSTREAM END...           630.4900

Note: For a Bottom-outlet orifice the invert elevation of the downstream node will be
      adjusted to accomodate the equivalent conduit.  Conduit grades are not affected.

*==========================================*
|                Weir Data                 |
*==========================================*
```

Weir Name	From Junction	To Junction	Type	Crest Height(ft)	Weir Top(ft)	Weir Length(ft)	Discharge Coefficient	Weir Power
Link 5	Node11	Node12	1	3.16	182.80	300.00	3.0000	1.5000
WEIR46	Node63	Node41	1	2.37	169.00	50.00	3.0000	1.5000
Link97.1	Node99	Node21	1	0.56	162.30	300.00	3.0000	1.5000
WEIR119	Node120	Node20	2	1.30	162.00	5.00	3.0000	1.5000
Weir122	Node21	Node122	1	6.54	166.84	50.00	3.0000	1.5000

```
*==============================================*
|          FREE OUTFALL DATA (DATA GROUP I1)     |
|         BOUNDARY CONDITION ON DATA GROUP J1    |
*==============================================*

Outfall at Junction....Node47           has boundary condition number...         1

===> Warning !!  Outfall Junction Node47           has two or more connecting conduits.

*==========================================*
|               Weir Outfall Data            |
|      Boundary Condition on data group J1   |
*==========================================*


*==============================================*
|        INTERNAL CONNECTIVITY INFORMATION     |
*==============================================*
```

CONDUIT	JUNCTION	JUNCTION
Restrict5	Node79	Node132
restric11	Node133	Node37
Restrict2	Node134	Node26
Restrict3	Node135	Node41
Link 5	Node11	Node12
WEIR46	Node63	Node41
Link97.1	Node99	Node21
WEIR119	Node120	Node20
Weir122	Node21	Node122
FREE # 1	Node47	BOUNDARY

```
*==================================================*
|        Boundary Condition Information            |
|                 Data Groups J1-J4                |
*==================================================*


BC NUMBER..         1 has no control water surface.

*==================================================*
|             XP Note Field Summary                |
*==================================================*



*==================================*
|   Conduit Convergence Criteria   |
*==================================*
```

Conduit Name	Full Flow	Conduit Slope
Link13	52.1501	0.0052
Link14	43.7477	0.0037
Link15	36.6850	0.0026
Link16	37.2836	0.0027
Link17	26.7696	0.0014
Link18	55.5441	0.0059
Link23	58.7557	0.0066
Link24	26.5621	0.0014
Link25	41.3740	0.0033
Link26	39.9177	0.0031
Link27	34.5795	0.0031
Link28	40.1573	0.0031
Link32	451.1614	0.0519
Link33	823.3655	0.0819
Link47	80.4856	0.0124
Link56	47.4322	0.0098
Link68	138.7842	0.0075
Link69	12349.6692	0.0068
Link70	10078.6135	0.0036
Link71	58179.1079	0.0132
Link72	137.3690	0.0361
Link73	56825.7885	0.0689
Link74	37318.0904	0.0266
Link75	29495.4038	0.0098

```
         Link76  40618.1464      0.0482
         Link77     20.0104      0.0067
         Link78   1059.8133      0.0100
         Link79    101.6938      0.0198
         Link82    110.5183      0.0234
         Link83     54.8977      0.0058
         Link84   4900.7542      0.0242
         Link85  34130.3174      0.0270
         Link90     18.8038      0.0120
         Link93     13.1401      0.0133
        Link118    939.1777      0.0130
        Link120     51.0931      0.0050
        Link121     51.0931      0.0050
        Link123     47.1250      0.0043
        Link124     47.5651      0.0043
        Link125     48.1334      0.0044
        Link126     47.9699      0.0044
        Link127     54.2348      0.0056
        Link130     72.2566      0.0100
        Link131     17.3295      0.0050
        Link132     51.0931      0.0050
        Link133     17.3295      0.0050
          214.1     15.9283      0.0169
          283.1      2.7121      0.0197
      Restrict5     58.9652      0.0000
      restric11     37.3449      0.0000
      Restrict2     21.3788      0.0000
      Restrict3     37.2878      0.0000

*================================*
|    Initial Model Condition     |
| Initial Time =      0.08 hours |
*================================*

      Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
         Node11/   0.00 /   617.20           Node12/   0.00 /   617.21           Node20/   0.00 /   634.60
         Node21/   0.00 /   633.16           Node22/   0.00 /   630.11           Node23/   0.00 /   628.86
         Node24/   0.00 /   628.03           Node25/   0.00 /   626.35           Node26/   0.00 /   626.42
         Node27/   0.00 /   623.69           Node29/   0.00 /   612.78           Node30/   0.00 /   620.00
         Node33/   0.00 /   610.56           Node34/   0.00 /   608.50           Node35/   0.00 /   608.40
         Node36/   0.00 /   607.40           Node37/   0.00 /   606.46           Node38/   0.00 /   605.45
         Node39/   0.00 /   604.44           Node41/   0.00 /   628.00           Node43/   0.00 /   631.45
         Node46/   0.00 /   592.74           Node47/   0.00 /   572.00           Node48/   0.00 /   593.30
         Node63/   0.00 /   631.00           Node65/   0.00 /   638.00           Node66/   0.00 /   629.00
         Node71/   0.00 /   622.00           Node74/   0.00 /   618.98           Node75/   0.00 /   602.92
         Node79/   0.00 /   615.61           Node80/   0.00 /   597.89           Node81/   0.00 /   595.18
         Node82/   0.00 /   594.67           Node83/   0.00 /   639.60           Node84/   0.00 /   631.54
         Node86/   0.00 /   613.49           Node87/   0.00 /   606.00           Node89/   0.00 /   637.10
         Node92/   0.00 /   633.00           Node94/   0.00 /   631.00           Node99/   0.00 /   637.70
        Node100/   0.00 /   628.97          Node108/   0.00 /   627.07          Node120/   0.00 /   638.00
        Node121/   0.00 /   631.45          Node122/   0.00 /   633.50          Node123/   0.00 /   627.78
        Node124/   0.00 /   618.00          Node127/   0.00 /   633.00          Node128/   0.00 /   629.80
        Node132/   0.00 /   615.60          Node133/   0.00 /   615.00          Node134/   0.00 /   626.42
        Node135/   0.00 /   628.05

        Conduit/       FLOW   ===> "*" Conduit uses the normal flow option.
         Link13/       0.00           Link14/       0.00           Link15/       0.00
         Link16/       0.00           Link17/       0.00           Link18/       0.00
         Link23/       0.00           Link24/       0.00           Link25/       0.00
         Link26/       0.00           Link27/       0.00           Link28/       0.00
         Link32/       0.00           Link33/       0.00           Link47/       0.00
         Link56/       0.00           Link68/       0.00           Link69/       0.00
         Link70/       0.00           Link71/       0.00           Link72/       0.00
         Link73/       0.00           Link74/       0.00           Link75/       0.00
         Link76/       0.00           Link77/       0.00           Link78/       0.00
         Link79/       0.00           Link82/       0.00           Link83/       0.00
         Link84/       0.00           Link85/       0.00           Link90/       0.00
         Link93/       0.00          Link118/       0.00          Link120/       0.00
        Link121/       0.00          Link123/       0.00          Link124/       0.00
        Link125/       0.00          Link126/       0.00          Link127/       0.00
        Link130/       0.00          Link131/       0.00          Link132/       0.00
        Link133/       0.00            214.1/       0.00            283.1/       0.00
      Restrict5/       0.00        restric11/       0.00        Restrict2/       0.00
      Restrict3/       0.00           Link 5/       0.00           WEIR46/       0.00
       Link97.1/       0.00          WEIR119/       0.00          Weir122/       0.00
       FREE # 1/       0.00

        Conduit/   Velocity
         Link13/       0.00           Link14/       0.00           Link15/       0.00
         Link16/       0.00           Link17/       0.00           Link18/       0.00
         Link23/       0.00           Link24/       0.00           Link25/       0.00
         Link26/       0.00           Link27/       0.00           Link28/       0.00
         Link32/       0.00           Link33/       0.00           Link47/       0.00
         Link56/       0.00           Link68/       0.00           Link69/       0.00
         Link70/       0.00           Link71/       0.00           Link72/       0.00
         Link73/       0.00           Link74/       0.00           Link75/       0.00
         Link76/       0.00           Link77/       0.00           Link78/       0.00
         Link79/       0.00           Link82/       0.00           Link83/       0.00
         Link84/       0.00           Link85/       0.00           Link90/       0.00
         Link93/       0.00          Link118/       0.00          Link120/       0.00
        Link121/       0.00          Link123/       0.00          Link124/       0.00
        Link125/       0.00          Link126/       0.00          Link127/       0.00
        Link130/       0.00          Link131/       0.00          Link132/       0.00
        Link133/       0.00            214.1/       0.00            283.1/       0.00
      Restrict5/       0.00        restric11/       0.00        Restrict2/       0.00
      Restrict3/       0.00

        Conduit/ Cross Sectional Area
         Link13/       0.00           Link14/       0.00           Link15/       0.00
         Link16/       0.00           Link17/       0.00           Link18/       0.00
         Link23/       0.00           Link24/       0.00           Link25/       0.00
         Link26/       0.00           Link27/       0.00           Link28/       0.00
         Link32/       0.00           Link33/       0.00           Link47/       0.00
         Link56/       0.00           Link68/       0.00           Link69/       0.00
         Link70/       0.00           Link71/       0.00           Link72/       0.00
         Link73/       0.00           Link74/       0.00           Link75/       0.00
```

```
        Link76/       0.00          Link77/       0.00          Link78/       0.00
        Link79/       0.00          Link82/       0.00          Link83/       0.00
        Link84/       0.00          Link85/       0.00          Link90/       0.00
        Link93/       0.00         Link118/       0.00         Link120/       0.00
       Link121/       0.00         Link123/       0.00         Link124/       0.00
       Link125/       0.00         Link126/       0.00         Link127/       0.00
       Link130/       0.00         Link131/       0.00         Link132/       0.00
       Link133/       0.00           214.1/       0.00           283.1/       0.00
     Restrict5/       0.00       restric11/       0.00       Restrict2/       0.00
     Restrict3/       0.00

       Conduit/ Hydraulic Radius
        Link13/       0.00          Link14/       0.00          Link15/       0.00
        Link16/       0.00          Link17/       0.00          Link18/       0.00
        Link23/       0.00          Link24/       0.00          Link25/       0.00
        Link26/       0.00          Link27/       0.00          Link28/       0.00
        Link32/       0.00          Link33/       0.00          Link47/       0.00
        Link56/       0.00          Link68/       0.00          Link69/       0.00
        Link70/       0.00          Link71/       0.00          Link72/       0.00
        Link73/       0.00          Link74/       0.00          Link75/       0.00
        Link76/       0.00          Link77/       0.00          Link78/       0.00
        Link79/       0.00          Link82/       0.00          Link83/       0.00
        Link84/       0.00          Link85/       0.00          Link90/       0.00
        Link93/       0.00         Link118/       0.00         Link120/       0.00
       Link121/       0.00         Link123/       0.00         Link124/       0.00
       Link125/       0.00         Link126/       0.00         Link127/       0.00
       Link130/       0.00         Link131/       0.00         Link132/       0.00
       Link133/       0.00           214.1/       0.00           283.1/       0.00
     Restrict5/       0.00       restric11/       0.00       Restrict2/       0.00
     Restrict3/       0.00

       Conduit/ Upstream/ Downstream Elevation
        Link13/   631.54/   631.54         Link14/   628.86/   628.86         Link15/   628.03/   628.03
        Link16/   626.35/   626.35         Link17/   626.35/   626.35         Link18/   623.69/   623.69
        Link23/   608.50/   608.50         Link24/   608.40/   608.40         Link25/   607.40/   607.40
        Link26/   606.46/   606.46         Link27/   605.45/   605.45         Link28/   604.44/   604.44
        Link32/   572.00/   572.00         Link33/   572.00/   572.00         Link47/   628.03/   628.03
        Link56/   622.00/   622.00         Link68/   618.98/   618.98         Link69/   617.20/   617.20
        Link70/   615.61/   615.61         Link71/   610.56/   610.56         Link72/   602.92/   602.92
        Link73/   597.89/   597.89         Link74/   595.18/   595.18         Link75/   594.67/   594.67
        Link76/   592.74/   592.74         Link77/   639.60/   639.60         Link78/   630.11/   630.11
        Link79/   630.11/   630.11         Link82/   613.49/   613.49         Link83/   612.78/   612.78
        Link84/   606.00/   606.00         Link85/   593.30/   593.30         Link90/   627.07/   627.07
        Link93/   628.97/   628.97        Link118/   631.45/   631.45        Link120/   631.45/   631.45
       Link121/   629.80/   629.80        Link123/   628.97/   628.97        Link124/   626.42/   626.42
       Link125/   627.07/   627.07        Link126/   627.78/   627.78        Link127/   618.00/   618.00
       Link130/   615.00/   615.00        Link131/   631.45/   631.45        Link132/   628.05/   628.05
       Link133/   629.80/   629.80          214.1/   617.21/   617.21          283.1/   628.00/   628.00
     Restrict5/   615.60/   615.60      restric11/   606.46/   606.46      Restrict2/   626.42/   626.42
     Restrict3/   628.00/   628.00

Cycle        500      Time         41 Hrs - 40.00 Min

     Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
        Node11/   0.53 /   617.73          Node12/   0.03 /   617.24          Node20/   0.01 /   634.61
        Node21/   0.00 /   633.16          Node22/   0.02 /   630.13          Node23/   0.02 /   628.88
        Node24/   0.02 /   628.05          Node25/   0.09 /   626.44          Node26/   0.02 /   626.44
        Node27/   0.01 /   623.70          Node29/   0.01 /   612.79          Node30/   0.03 /   620.03
        Node33/   0.04 /   610.60          Node34/   0.07 /   608.57          Node35/   0.05 /   608.45
        Node36/   0.05 /   607.45          Node37/   0.06 /   606.52          Node38/   0.06 /   605.51
        Node39/   0.03 /   604.47          Node41/   0.02 /   628.02          Node43/   0.00 /   631.45
        Node46/   0.01 /   592.75          Node47/   0.00 /   572.00          Node48/   0.00 /   593.30
        Node63/   0.01 /   631.01          Node65/   2.02 /   640.02          Node66/   0.00 /   629.00
        Node71/   0.11 /   622.11          Node74/   0.06 /   619.04          Node75/   0.02 /   602.94
        Node79/   0.13 /   615.74          Node80/   0.04 /   597.93          Node81/   0.01 /   595.19
        Node82/   0.03 /   594.70          Node83/   0.00 /   639.60          Node84/   0.00 /   631.54
        Node86/   0.02 /   613.51          Node87/   0.01 /   606.01          Node89/   0.00 /   637.10
        Node92/   0.00 /   633.00          Node94/   0.00 /   631.00          Node99/   0.00 /   637.70
       Node100/   1.06 /   630.03         Node108/   2.96 /   630.03         Node120/   1.54*/   639.54
       Node121/   0.02 /   631.47         Node122/   0.00 /   633.50         Node123/   2.25 /   630.03
       Node124/   2.03 /   620.03         Node127/   0.00 /   633.00         Node128/   0.82 /   630.62
       Node132/   0.03 /   615.63         Node133/   5.03*/   620.03         Node134/   3.61*/   630.03
       Node135/   2.57 /   630.62

       Conduit/       FLOW   ===> "*" Conduit uses the normal flow option.
        Link13/       0.00          Link14/       0.01*         Link15/       0.01          Link16/       0.01*
        Link17/      -0.01          Link18/       0.01          Link23/       0.03*         Link24/       0.03
        Link25/       0.03*         Link26/       0.03*         Link27/       0.03*         Link28/       0.03
        Link32/       0.03          Link33/       0.01          Link47/       0.00*         Link56/       0.02*
        Link68/       0.02          Link69/       0.02*         Link70/       0.02*         Link71/       0.03*
        Link72/       0.03          Link73/       0.03*         Link74/       0.03          Link75/       0.03*
        Link76/       0.03          Link77/       0.01          Link78/       0.01          Link79/       0.00
        Link82/       0.01*         Link83/       0.01          Link84/       0.01          Link85/       0.01
        Link90/       0.00*         Link93/       0.00         Link118/       0.00         Link120/       0.01*
       Link121/       0.01*        Link123/       0.00         Link124/       0.00         Link125/       0.00
       Link126/       0.00         Link127/       0.00         Link130/       0.00         Link131/       0.00*
       Link132/       0.01         Link133/       0.00*          214.1/       0.02           283.1/       0.00
     Restrict5/       0.03       restric11/       0.00       Restrict2/       0.00       Restrict3/       0.02
        Link 5/       0.00          WEIR46/       0.00        Link97.1/       0.00         WEIR119/       0.01
       Weir122/       0.00         FREE # 1/       0.04


  *==================================================*
  | Table E5 - Junction Time Limitation Summary      |
  |          (0.10 or 0.25)* Depth * Area            |
  | Time step = ------------------------------       |
  |                 Sum of Flow                      |
  *==================================================*
  |  The time this junction was the limiting junction |
  |               is listed in the third column.     |
  *==================================================*

          Junction     Time(.10)  Time(.25)  Time(sec)
-----------------     ---------  ---------  ---------
            Node11       61.1023   152.7556  6900.0000
            Node12      122.8945   307.2364     0.0000
```

Node20	404.3159	1010.7898	0.0000
Node21	89.3129	223.2822	0.0000
Node22	76.1401	190.3503	0.0000
Node23	265.9780	664.9450	0.0000
Node24	179.8499	449.6246	300.0000
Node25	74.4144	186.0360	0.0000
Node26	233.3230	583.3076	0.0000
Node27	471.7615	1179.4037	0.0000
Node29	468.6924	1171.7311	0.0000
Node30	206.9493	517.3733	0.0000
Node33	103.0911	257.7278	157500.000
Node34	97.8107	244.5268	1800.0000
Node35	61.9648	154.9120	300.0000
Node36	99.6503	249.1257	0.0000
Node37	135.8847	339.7117	0.0000
Node38	291.5772	728.9429	0.0000
Node39	387.0818	967.7046	0.0000
Node41	272.7466	681.8665	0.0000
Node43	16.3181	40.7953	300.0000
Node46	220.8802	552.2004	0.0000
Node47	3000.0000	3000.0000	0.0000
Node48	408.1642	1020.4106	0.0000
Node63	33.6870	84.2175	1200.0000
Node65	99.3347	248.3367	0.0000
Node66	113.9474	284.8686	1500.0000
Node71	552.5792	1381.4480	0.0000
Node74	140.4157	351.0393	600.0000
Node75	233.6108	584.0271	0.0000
Node79	126.8532	317.1331	300.0000
Node80	249.3999	623.4998	0.0000
Node81	256.9329	642.3323	0.0000
Node82	113.8452	284.6130	0.0000
Node83	503.2278	1258.0694	0.0000
Node84	310.8602	777.1506	0.0000
Node86	23.1578	57.8944	300.0000
Node87	54.1038	135.2596	0.0000
Node89	1223.7207	3000.0000	0.0000
Node92	143.9944	359.9860	0.0000
Node94	158.4001	396.0003	0.0000
Node99	319.0813	797.7032	0.0000
Node100	43.9827	109.9568	300.0000
Node108	22.5483	56.3707	300.0000
Node120	167.1160	417.7901	0.0000
Node121	407.6413	1019.1033	0.0000
Node122	3000.0000	3000.0000	0.0000
Node123	33.8232	84.5580	600.0000
Node124	145.3696	363.4240	0.0000
Node127	244.6508	611.6271	0.0000
Node128	203.1455	507.8637	0.0000
Node132	317.8961	794.7403	0.0000
Node133	7.0556	17.6391	600.0000
Node134	50.5256	126.3141	0.0000
Node135	160.3550	400.8874	0.0000

The junction requiring the smallest time step was...Node33

```
*=========================================================*
|       Table E5a - Conduit Explicit Condition Summary     |
|       Courant   =         Conduit Length                 |
|       Time step = -------------------------------        |
|                     Velocity + sqrt(g*depth)             |
|                                                          |
|                  Conduit Implicit Condition Summary      |
|       Courant   =         Conduit Length                 |
|       Time step = -------------------------------        |
|                              Velocity                    |
*=========================================================*
|  The 3rd column is the Explicit time step times the      |
|      minimum courant time step factor                    |
|                                                          |
|  Minimum Conduit Time Step in seconds in the 4th column  |
|  in the list. Maximum possible is 10 * maximum time step |
|                                                          |
|  The 5th column is the maximum change at any time step   |
|  during the simulation. The 6th column is the wobble     |
|  value which is an indicator of the flow stability.      |
|                                                          |
|  You should use this section to find those conduits that |
|  are slowing your model down.  Use modify conduits to    |
|  alter the length of the slow conduits to make your      |
|  simulation faster, or change the conduit name to        |
|  "CHME?????" where ????? are any characters, this will   |
|  lengthen the conduit based on the model time step,      |
|  not the value listed in modify conduits.                |
*=========================================================*
```

Conduit	Time(exp)	Expl*Cmin	Time(imp)	Time(min)	Max Qchange	Wobble	Type of Soln
Link13	23.3999	23.3999	45.9757	20.0000	0.0235	0.7553	Normal Soln
Link14	23.5546	23.5546	56.6641	0.0000	0.0294	1.2498	Normal Soln
Link15	22.9596	22.9596	62.5201	0.0000	-0.1186	1.6375	Normal Soln
Link16	39.9352	39.9352	102.5707	0.0000	0.4383	2.4469	Normal Soln
Link17	3.1791	3.1791	7.3956	0.0000	-0.4625	3.5618	Normal Soln
Link18	26.0751	26.0751	51.6230	0.0000	0.4831	1.9072	Normal Soln
Link23	16.0951	16.0951	40.1082	0.0000	-0.0400	1.7289	Normal Soln
Link24	3.8190	3.8190	10.6663	0.0000	-0.0406	3.8563	Normal Soln
Link25	15.9959	15.9959	43.9376	0.0000	-0.0407	2.4580	Normal Soln
Link26	16.6154	16.6154	44.4452	0.0000	-0.0407	2.5140	Normal Soln
Link27	17.6559	17.6559	44.4373	0.0000	0.0419	3.0022	Normal Soln
Link28	18.7245	18.7245	39.9555	0.0000	0.0426	2.5652	Normal Soln
Link32	15.3924	15.3924	19.5056	0.0000	0.0630	0.3402	Normal Soln
Link33	11.4614	11.4614	14.6854	0.0000	0.0940	0.1577	Normal Soln
Link47	3.9102	3.9102	6.6280	10.0000	0.3861	0.4362	Normal Soln
Link56	130.8538	130.8538	441.1660	0.0000	0.0223	0.3910	Normal Soln
Link68	60.2985	60.2985	140.9707	0.0000	0.0226	0.1334	Normal Soln
Link69	43.0494	43.0494	140.1835	0.0000	-0.4018	0.0540	Normal Soln

```
          Link70    64.4828    64.4828   181.0606     0.0000       0.2946   0.0242  Normal Soln
          Link71    69.2742    69.2742   249.1466     0.0000       0.0528   0.0015  Normal Soln
          Link72     1.7206     1.7206     2.3316  1330.0000       0.0418   0.7503  Normal Soln
          Link73     6.2642     6.2642     9.5798     0.0000      -0.0502   0.0018  Normal Soln
          Link74     8.3361     8.3361    14.2644     0.0000      -0.0484   0.0028  Normal Soln
          Link75     6.4591     6.4591    17.2537     0.0000       0.0423   0.0035  Normal Soln
          Link76     2.8379     2.8379     4.3305  1400.0000       0.0426   0.0025  Normal Soln
          Link77     5.0992     5.0992     8.9864     0.0000       0.0069   0.7275  Normal Soln
          Link78    84.4031    84.4031   280.6548     0.0000       0.0103   0.0137  Normal Soln
          Link79     3.2764     3.2764     5.5646     0.0000       0.0258   0.3880  Normal Soln
          Link82    19.2165    19.2165    29.8019     0.0000       0.5233   0.9578  Normal Soln
          Link83     6.4872     6.4872    11.2829     0.0000       0.5250   1.9288  Normal Soln
          Link84    25.7465    25.7465    44.1682     0.0000       0.2406   0.0216  Normal Soln
          Link85    45.0870    45.0870    81.4081     0.0000       0.1524   0.0031  Normal Soln
          Link90    16.7054    16.7054    49.6998     0.0000       0.0154   0.8581  Normal Soln
          Link93    11.8618    11.8618    19.7470     0.0000       0.0236   1.0966  Normal Soln
         Link118    41.7671    41.7671    67.6435     0.0000       9.6139   0.0329  Normal Soln
         Link120    77.9350    77.9350   156.3056     0.0000       0.0012   0.1262  Normal Soln
         Link121    32.2591    32.2591   115.6334     0.0000       0.0034   0.1533  Normal Soln
         Link123  3000.0000  3000.0000  3000.0000     0.0000       0.0000   0.0000  Normal Soln
         Link124    10.2894    10.2894    85.0964     0.0000      -0.2023   1.3109  Normal Soln
         Link125    12.2351    12.2351    70.7098     0.0000       0.1163   1.1608  Normal Soln
         Link126    22.2409    22.2409    87.9636     0.0000       0.2855   1.0112  Normal Soln
         Link127    26.2258    26.2258    87.0561     0.0000       0.0400   0.5251  Normal Soln
         Link130    19.4572    19.4572   148.1136     0.0000       0.2698   0.9283  Normal Soln
         Link131    29.3521    29.3521   233.6080     0.0000      -0.4061   0.4235  Normal Soln
         Link132    28.7874    28.7874   157.5584     0.0000      -0.4614   1.1090  Normal Soln
         Link133    24.7511    24.7511    64.7006     0.0000      11.2919   2.8024  Normal Soln
           214.1     1.5436     1.5436     3.0478   115.0000       0.0669   3.8701  Normal Soln
           283.1     2.7023     2.7023     6.6899     5.0000       0.0480   3.5296  Normal Soln
       Restrict5   347.0038   347.0038   941.5046     0.0000       0.0301   1.4545  Normal Soln
       restric11   578.4392   578.4392  1980.7412     0.0000       0.0073   0.3762  Normal Soln
       Restrict2   436.3797   436.3797  1349.6071     0.0000       0.0136   0.9288  Normal Soln
       Restrict3   643.7998   643.7998  2308.6514     0.0000       0.0053   0.2566  Normal Soln
The conduit with the smallest time step limitation was..Link76
The conduit with the largest wobble was................214.1
The conduit with the largest flow change in any
consecutive time step..................................Link133

 ************************************************
 *      End of time step DO-loop in Runoff      *
 ************************************************

 Final Date (Mo/Day/Year)   =             1/ 2/2014
 Total number of time steps =                  1513
 Final Julian Date          =               2014002
 Final time of day          =                    0. seconds.
 Final time of day          =                 0.00   hours.
 Final running time         =               24.0000   hours.
 Final running time         =                1.0000    days.

 ****************************************************
 *     Extrapolation Summary for Watersheds         *
 * Explains the number of time steps and iterations *
 * used in the solution of the subcatchments.       *
 * # Steps ==> Total Number of Extrapolated Steps   *
 * # Calls ==> Total Number of OVERLND Calls        *
 ****************************************************

 Subcatchment   # Steps   # Calls Subcatchment   # Steps   # Calls
 -------------  -------  -------- -------------  -------  --------
 Node63#1             0         0 Node120#1            0         0 Node89#1             0         0
 Node11#1             0         0 Node33#1             0         0 Node30#1             0         0
 Node46#1             0         0 Node65#1             0         0 Node99#1             0         0
 Node92#1             0         0 Node94#1             0         0 Node66#1             0         0
 Node24#1             0         0 Node25#1             0         0 Node48#1             0         0


##########################################################
# Rainfall input summary from Runoff Continuity Check   #
##########################################################

 Total rainfall read for gage #         1 is       2.6400 in
 Total rainfall duration for gage #     1 is       114.29 minutes

 ***********************************************************
 * Table R5. CONTINUITY CHECK FOR SURFACE WATER            *
 *       Any continuity error can be fixed by lowering the  *
 *       wet and transition time step. The transition time  *
 *       should not be much greater than the wet time step. *
 ***********************************************************
                                                                  Inches over
                                                   cubic feet    Total Basin
 Total Precipitation (Rain plus Snow)              3.268830E+06      2.640
 Total Infiltration                                1.620276E+06          1.309
 Total Evaporation                                 9.826929E+03          0.008
 Surface Runoff from Watersheds                    1.641556E+06          1.326
 Total Water remaining in Surface Storage          0.000000E+00          0.000
 Infiltration over the Pervious Area...            1.620276E+06          1.309
                         --------
 Infiltration + Evaporation +
 Surface Runoff + Snow removal +
 Water remaining in Surface Storage +
 Water remaining in Snow Cover.........            3.271659E+06          2.642
 Total Precipitation + Initial Storage.            3.268830E+06          2.640


 The error in continuity is calculated as
 ****************************************
 * Precipitation + Initial Snow Cover  *
 *      - Infiltration -               *
 *Evaporation - Snow removal -          *
 *Surface Runoff from Watersheds -      *
 *Water in Surface Storage -            *
 *Water remaining in Snow Cover         *
 *--------------------------------------*
```

```
* Precipitation + Initial Snow Cover  *
***************************************
Percent Continuity Error..............                          -0.0866


****************************************************
* Table R6. Continuity Check for Channel/Pipes     *
*           You should have zero continuity error  *
*           if you are not using runoff hydraulics *
****************************************************
                                                        Inches over
                                              cubic feet  Total Basin
Initial Channel/Pipe Storage...............  0.000000E+00     0.000
Final Channel/Pipe Storage.................  0.000000E+00     0.000
Surface Runoff from Watersheds.............  1.641556E+06     1.326
Groundwater Subsurface Inflow or Diversion..  0.000000E+00     0.000
Evaporation Loss from Channels.............  0.000000E+00     0.000
Groundwater Flow Diverted Out of Network....  0.000000E+00     0.000
Channel/Pipe/Inlet Outflow.................  1.641556E+06     1.326
Initial Storage + Inflow...................  1.641556E+06     1.326
Final Storage + Outflow + Diverted GW.......  1.641556E+06     1.326
*****************************************
* Final Storage + Outflow + Evaporation  - *
* Watershed Runoff - Groundwater Inflow  - *
*     Initial Channel/Pipe Storage         *
*     ----------------------------------   *
*  Final Storage + Outflow  + Evaporation  *
*****************************************
Percent Continuity Error...................                     0.0000

        ##################################################
        # Table R9. Summary Statistics for Subcatchments #
        ##################################################

Note: Total Runoff Depth includes pervious & impervious areas.
      Pervious and Impervious Runoff Depth is only the runoff from those two areas.
      For catchments receiving redirected flow, this flow will only be shown if the flow is not
      directed directly to the outlet. Flow that is getting redirected is also listed with
      the original subcatchment.
```

Subcatchment.....	Node63#1	Node120#1	Node89#1	Node11#1	Node33#1	Node30#1
Area (acres).....	5.00000	32.00000	5.90000	107.90000	37.80000	9.00000
Percent Impervious.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Rainfall (in)....	2.64000	2.64000	2.64000	2.64000	2.64000	2.64000
Max Intensity (in/hr)..	4.71240	4.71240	4.71240	4.71240	4.71240	4.71240
Pervious Area						
Total Runoff Depth (in)	1.41050	1.19934	1.41884	1.32013	1.26680	1.35876
Peak Runoff Rate (cfs).	6.82124	28.36865	8.36443	111.31492	30.10991	10.42217
Total Impervious Area						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area with depression storage						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area without depression storage						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Area						
Total Runoff Depth (in)	1.41050	1.19934	1.41884	1.32013	1.26680	1.35876
Peak Runoff Rate (cfs).	6.82124	28.36865	8.36443	111.31492	30.10991	10.42217
Rational Formula						
Pervious Tc. (mins)....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Imp. Intensity (in/hr).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Subcatchment.....	Node46#1	Node65#1	Node99#1	Node92#1	Node94#1	Node66#1
Area (acres).....	30.10000	16.10000	32.10000	5.50000	5.00000	10.00000
Percent Impervious.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Rainfall (in)....	2.64000	2.64000	2.64000	2.64000	2.64000	2.64000
Max Intensity (in/hr)..	4.71240	4.71240	4.71240	4.71240	4.71240	4.71240
Pervious Area						
Total Runoff Depth (in)	1.54684	1.42561	1.20094	1.42053	1.42053	1.41461
Peak Runoff Rate (cfs).	36.24971	19.78136	20.06800	7.25282	6.59348	15.47619
Total Impervious Area						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area with depression storage						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

```
Impervious Area without depression storage
------------------------------------------
Total Runoff Depth (in)          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Peak Runoff Rate (cfs).          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000

Total Area
----------
Total Runoff Depth (in)          1.54684          1.42561          1.20094          1.42053          1.42053          1.41461
Peak Runoff Rate (cfs).         36.24971         19.78136         20.06800          7.25282          6.59348         15.47619

Rational Formula
----------------
Pervious Tc. (mins)....          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Perv. Intensity (in/hr)          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Pervious C ............          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Impervious Tc. (mins)..          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Imp. Intensity (in/hr).          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Impervious C ..........          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Partial Area (Ha)......          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Partial Area Tc........          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Partial Area Intensity.          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000


Subcatchment...........         Node24#1         Node25#1         Node48#1
Area (acres)...........         19.70000          5.40000         19.60000
Percent Impervious.....          0.00000          0.00000          0.00000
Total Rainfall (in)....          2.64000          2.64000          2.64000
Max Intensity (in/hr)..          4.71240          4.71240          4.71240

Pervious Area
-------------
Total Runoff Depth (in)          1.57507          0.92670          1.15836
Peak Runoff Rate (cfs).         23.88004          3.86299         18.56712

Total Impervious Area
---------------------
Total Runoff Depth (in)          0.00000          0.00000          0.00000
Peak Runoff Rate (cfs).          0.00000          0.00000          0.00000

Impervious Area with depression storage
---------------------------------------
Total Runoff Depth (in)          0.00000          0.00000          0.00000
Peak Runoff Rate (cfs).          0.00000          0.00000          0.00000

Impervious Area without depression storage
------------------------------------------
Total Runoff Depth (in)          0.00000          0.00000          0.00000
Peak Runoff Rate (cfs).          0.00000          0.00000          0.00000

Total Area
----------
Total Runoff Depth (in)          1.57507          0.92670          1.15836
Peak Runoff Rate (cfs).         23.88004          3.86299         18.56712

Rational Formula
----------------
Pervious Tc. (mins)....          0.00000          0.00000          0.00000
Perv. Intensity (in/hr)          0.00000          0.00000          0.00000
Pervious C ............          0.00000          0.00000          0.00000
Impervious Tc. (mins)..          0.00000          0.00000          0.00000
Imp. Intensity (in/hr).          0.00000          0.00000          0.00000
Impervious C ..........          0.00000          0.00000          0.00000
Partial Area (Ha)......          0.00000          0.00000          0.00000
Partial Area Tc........          0.00000          0.00000          0.00000
Partial Area Intensity.          0.00000          0.00000          0.00000

===> Runoff simulation ended normally.

*==================================================*
|  Table E6. Final Model Condition                 |
|            This table is used for steady state   |
|            flow comparison and is the information|
|            saved to the hot-restart file.        |
|            Final Time =    48.083 hours         |
*==================================================*

Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
         Node11/   0.52 /   617.72/          Node12/   0.02 /   617.23/          Node20/   0.00 /   634.60/
         Node21/   0.00 /   633.16/          Node22/   0.01 /   630.12/          Node23/   0.02 /   628.88/
         Node24/   0.02 /   628.05/          Node25/   0.09 /   626.44/          Node26/   0.02 /   626.44/
         Node27/   0.01 /   623.70/          Node29/   0.01 /   612.79/          Node30/   0.03 /   620.03/
         Node33/   0.02 /   610.58/          Node34/   0.04 /   608.54/          Node35/   0.03 /   608.43/
         Node36/   0.03 /   607.43/          Node37/   0.03 /   606.49/          Node38/   0.04 /   605.49/
         Node39/   0.01 /   604.45/          Node41/   0.01 /   628.01/          Node43/   0.00 /   631.45/
         Node46/   0.01 /   592.75/          Node47/   0.00 /   572.00/          Node48/   0.00 /   593.30/
         Node63/   0.01 /   631.01/          Node65/   2.02 /   640.02/          Node66/   0.00 /   629.00/
         Node71/   0.07 /   622.07/          Node74/   0.03 /   619.01/          Node75/   0.01 /   602.93/
         Node79/   0.09 /   615.70/          Node80/   0.02 /   597.91/          Node81/   0.01 /   595.19/
         Node82/   0.02 /   594.69/          Node83/   0.00 /   639.60/          Node84/   0.00 /   631.54/
         Node86/   0.02 /   613.51/          Node87/   0.01 /   606.01/          Node89/   0.00 /   637.10/
         Node92/   0.00 /   633.00/          Node94/   0.00 /   631.00/          Node99/   0.00 /   637.70/
        Node100/   1.06 /   630.03/         Node108/   2.96 /   630.03/         Node120/   1.45 /   639.45/
        Node121/   0.00 /   631.45/         Node122/   0.00 /   633.50/         Node123/   2.25 /   630.03/
        Node124/   2.03 /   620.03/         Node127/   0.00 /   633.00/         Node128/   0.78 /   630.58/
        Node132/   0.02 /   615.62/         Node133/   5.03*/   620.03/         Node134/   3.61*/   630.03/
        Node135/   2.53 /   630.58/

  Conduit/       Flow   ===> "*" Conduit uses the normal flow option.
         Link13/       0.00 /          Link14/       0.01*/          Link15/       0.01 /
         Link16/       0.01*/          Link17/      -0.01 /          Link18/       0.01 /
         Link23/       0.01*/          Link24/       0.01 /          Link25/       0.01*/
         Link26/       0.01*/          Link27/       0.01*/          Link28/       0.01 /
         Link32/       0.02 /          Link33/       0.01 /          Link47/       0.00*/
         Link56/       0.01*/          Link68/       0.01 /          Link69/       0.01*/
         Link70/       0.01*/          Link71/       0.01*/          Link72/       0.02 /
         Link73/       0.02*/          Link74/       0.02 /          Link75/       0.02*/
```

```
   Link76/       0.02 /          Link77/       0.00 /          Link78/       0.01 /
   Link79/       0.00 /          Link82/       0.01*/          Link83/       0.01 /
   Link84/       0.01 /          Link85/       0.01 /          Link90/       0.00*/
   Link93/       0.00 /         Link118/       0.00 /         Link120/       0.00*/
  Link121/       0.00*/         Link123/       0.00 /         Link124/       0.00 /
  Link125/       0.00 /         Link126/       0.00 /         Link127/       0.00 /
  Link130/       0.00 /         Link131/       0.00*/         Link132/       0.00 /
  Link133/       0.00*/           214.1/       0.01 /           283.1/       0.00 /
Restrict5/       0.01 /       restric11/       0.00 /       Restrict2/       0.00 /
Restrict3/       0.01 /          Link 5/       0.00 /          WEIR46/       0.00 /
 Link97.1/       0.00 /         WEIR119/       0.00 /         Weir122/       0.00 /
 FREE # 1/       0.02 /

  Conduit/   Velocity
   Link13/       0.00 /          Link14/       0.46 /          Link15/       0.41 /
   Link16/       0.29 /          Link17/      -0.08 /          Link18/       0.53 /
   Link23/       0.69 /          Link24/       0.42 /          Link25/       0.59 /
   Link26/       0.57 /          Link27/       0.54 /          Link28/       0.53 /
   Link32/       0.69 /          Link33/       0.44 /          Link47/       0.00 /
   Link56/       0.13 /          Link68/       0.42 /          Link69/       0.08 /
   Link70/       0.13 /          Link71/       0.21 /          Link72/       1.34 /
   Link73/       0.46 /          Link74/       0.37 /          Link75/       0.15 /
   Link76/       0.44 /          Link77/       0.51 /          Link78/       0.07 /
   Link79/       0.00 /          Link82/       0.92 /          Link83/       0.53 /
   Link84/       0.22 /          Link85/       0.18 /          Link90/       0.00 /
   Link93/       0.00 /         Link118/       0.00 /         Link120/       0.28 /
  Link121/       0.00 /         Link123/       0.00 /         Link124/       0.00 /
  Link125/       0.00 /         Link126/       0.00 /         Link127/       0.00 /
  Link130/       0.00 /         Link131/       0.00 /         Link132/       0.00 /
  Link133/       0.00 /           214.1/       0.52 /           283.1/       0.00 /
Restrict5/       0.18 /       restric11/       0.08 /       Restrict2/       0.08 /
Restrict3/       0.20 /

  Conduit/      Width
   Link13/       1.18 /          Link14/       1.18 /          Link15/       1.18 /
   Link16/       1.18 /          Link17/       1.18 /          Link18/       1.18 /
   Link23/       1.18 /          Link24/       1.18 /          Link25/       1.18 /
   Link26/       1.18 /          Link27/       1.18 /          Link28/       1.18 /
   Link32/       4.00 /          Link33/       6.00 /          Link47/       1.18 /
   Link56/       4.53 /          Link68/       0.46 /          Link69/       0.63 /
   Link70/       0.53 /          Link71/       0.35 /          Link72/       1.18 /
   Link73/       0.14 /          Link74/       0.13 /          Link75/       0.21 /
   Link76/       0.10 /          Link77/       0.78 /          Link78/      20.11 /
   Link79/       1.18 /          Link82/       1.18 /          Link83/       1.18 /
   Link84/       0.19 /          Link85/       0.10 /          Link90/       0.66 /
   Link93/       0.59 /         Link118/      30.00 /         Link120/       1.18 /
  Link121/       1.32 /         Link123/       1.34 /         Link124/       1.10 /
  Link125/       1.32 /         Link126/       2.84 /         Link127/       1.34 /
  Link130/       0.29 /         Link131/       0.78 /         Link132/       2.58 /
  Link133/       0.90 /           214.1/       0.78 /           283.1/       0.39 /
Restrict5/       1.18 /       restric11/       0.98 /       Restrict2/       0.78 /
Restrict3/       0.98 /

 Junction/        EGL
   Node11/       0.52 /          Node12/       0.03 /          Node20/       0.00 /
   Node21/       0.00 /          Node22/       6.24 /          Node23/       0.02 /
   Node24/       0.02 /          Node25/       0.09 /          Node26/       3.57 /
   Node27/       0.01 /          Node29/       0.01 /          Node30/       0.03 /
   Node33/       0.03 /          Node34/       0.05 /          Node35/       0.03 /
   Node36/       0.03 /          Node37/      13.53 /          Node38/       0.04 /
   Node39/       0.02 /          Node41/       2.50 /          Node43/       0.00 /
   Node46/       0.01 /          Node47/       0.01 /          Node48/       0.00 /
   Node63/       0.01 /          Node65/       2.02 /          Node66/       0.00 /
   Node71/       0.07 /          Node74/       0.04 /          Node75/       0.04 /
   Node79/       0.09 /          Node80/       0.03 /          Node81/       0.01 /
   Node82/       0.02 /          Node83/       0.01 /          Node84/       0.00 /
   Node86/       0.03 /          Node87/       0.01 /          Node89/       0.00 /
   Node92/       0.00 /          Node94/       0.00 /          Node99/       0.00 /
  Node100/       2.03 /         Node108/       2.96 /         Node120/       1.45 /
  Node121/       0.00 /         Node122/       0.00 /         Node123/       2.25 /
  Node124/       2.03 /         Node127/       0.00 /         Node128/       0.78 /
  Node132/       0.02 /         Node133/       5.03 /         Node134/       3.61 /
  Node135/       2.53 /

 Junction/  Freeboard
   Node11/       5.53 /          Node12/       7.74 /          Node20/       3.80 /
   Node21/       5.84 /          Node22/       9.23 /          Node23/       7.03 /
   Node24/       7.29 /          Node25/       7.67 /          Node26/       7.88 /
   Node27/      11.74 /          Node29/       7.42 /          Node30/      11.40 /
   Node33/       8.74 /          Node34/      10.14 /          Node35/      13.22 /
   Node36/      26.18 /          Node37/      25.97 /          Node38/      21.29 /
   Node39/       7.19 /          Node41/       5.36 /          Node43/       7.05 /
   Node46/      15.25 /          Node47/      38.00 /          Node48/      24.70 /
   Node63/       2.62 /          Node65/       1.98 /          Node66/       5.77 /
   Node71/       2.63 /          Node74/       6.02 /          Node75/       8.80 /
   Node79/       8.67 /          Node80/      15.93 /          Node81/      16.11 /
   Node82/      16.98 /          Node83/       3.00 /          Node84/       8.20 /
   Node86/       7.59 /          Node87/      16.49 /          Node89/       2.00 /
   Node92/       3.30 /          Node94/       4.30 /          Node99/       2.00 /
  Node100/       9.03 /         Node108/       6.47 /         Node120/       0.15 /
  Node121/       7.65 /         Node122/       5.70 /         Node123/       7.97 /
  Node124/       7.47 /         Node127/       7.10 /         Node128/      10.82 /
  Node132/       8.78 /         Node133/      12.31 /         Node134/       4.29 /
  Node135/       2.79 /

 Junction/ Max Volume
   Node11/      41.88 /          Node12/      25.22 /          Node20/       6.41 /
   Node21/      16.63 /          Node22/      24.17 /          Node23/      32.41 /
   Node24/      38.08 /          Node25/      33.28 /          Node26/      30.11 /
   Node27/      18.14 /          Node29/      11.86 /          Node30/      17.15 /
   Node33/      52.72 /          Node34/      60.74 /          Node35/      57.77 /
   Node36/      53.02 /          Node37/      47.73 /          Node38/      33.61 /
   Node39/      15.96 /          Node41/       6.21 /          Node43/      33.28 /
   Node46/      11.73 /          Node47/      11.25 /          Node48/       7.01 /
   Node63/      30.51 /          Node65/   53882.15 /          Node66/      25.86 /
   Node71/      11.58 /          Node74/      19.61 /          Node75/      12.39 /
```

```
   Node79/  218126.59 /          Node80/      19.80 /          Node81/      13.65 /
   Node82/      18.79 /          Node83/       3.44 /          Node84/      12.75 /
   Node86/      25.38 /          Node87/      14.56 /          Node89/       1.21 /
   Node92/       9.95 /          Node94/      12.37 /          Node99/    8819.42 /
  Node100/      35.78 /         Node108/      59.45 /         Node120/   59372.95 /
  Node121/       6.41 /         Node122/       0.00 /         Node123/      50.62 /
  Node124/      42.67 /         Node127/       5.49 /         Node128/      23.13 /
  Node132/       8.95 /         Node133/      80.05 /         Node134/      67.31 /
  Node135/      45.15 /

 Junction/Total Fldng
   Node11/       0.00 /          Node12/       0.00 /          Node20/       0.00 /
   Node21/       0.00 /          Node22/       0.00 /          Node23/       0.00 /
   Node24/       0.00 /          Node25/       0.00 /          Node26/       0.00 /
   Node27/       0.00 /          Node29/       0.00 /          Node30/       0.00 /
   Node33/       0.00 /          Node34/       0.00 /          Node35/       0.00 /
   Node36/       0.00 /          Node37/       0.00 /          Node38/       0.00 /
   Node39/       0.00 /          Node41/       0.00 /          Node43/       0.00 /
   Node46/       0.00 /          Node47/       0.00 /          Node48/       0.00 /
   Node63/       0.00 /          Node65/       0.00 /          Node66/       0.00 /
   Node71/       0.00 /          Node74/       0.00 /          Node75/       0.00 /
   Node79/       0.00 /          Node80/       0.00 /          Node81/       0.00 /
   Node82/       0.00 /          Node83/       0.00 /          Node84/       0.00 /
   Node86/       0.00 /          Node87/       0.00 /          Node89/       0.00 /
   Node92/       0.00 /          Node94/       0.00 /          Node99/       0.00 /
  Node100/       0.00 /         Node108/       0.00 /         Node120/       0.00 /
  Node121/       0.00 /         Node122/       0.00 /         Node123/       0.00 /
  Node124/       0.00 /         Node127/       0.00 /         Node128/       0.00 /
  Node132/       0.00 /         Node133/       0.00 /         Node134/       0.00 /
  Node135/       0.00 /

  Conduit/ Cross Sectional Area
   Link13/       0.00 /          Link14/       0.01 /          Link15/       0.01 /
   Link16/       0.02 /          Link17/       0.06 /          Link18/       0.01 /
   Link23/       0.02 /          Link24/       0.03 /          Link25/       0.02 /
   Link26/       0.02 /          Link27/       0.03 /          Link28/       0.03 /
   Link32/       0.02 /          Link33/       0.01 /          Link47/       0.00 /
   Link56/       0.08 /          Link68/       0.02 /          Link69/       0.13 /
   Link70/       0.08 /          Link71/       0.06 /          Link72/       0.01 /
   Link73/       0.03 /          Link74/       0.04 /          Link75/       0.10 /
   Link76/       0.03 /          Link77/       0.01 /          Link78/       0.07 /
   Link79/       0.00 /          Link82/       0.01 /          Link83/       0.01 /
   Link84/       0.03 /          Link85/       0.03 /          Link90/       0.25 /
   Link93/       0.00 /         Link118/       0.00 /         Link120/       0.00 /
  Link121/       0.15 /         Link123/       0.22 /         Link124/       7.06 /
  Link125/       6.90 /         Link126/       2.57 /         Link127/       0.53 /
  Link130/       6.90 /         Link131/       0.00 /         Link132/       1.95 /
  Link133/       0.11 /           214.1/       0.01 /           283.1/       0.00 /
Restrict5/       0.06 /       restric11/       0.02 /       Restrict2/       0.01 /
Restrict3/       0.05 /

  Conduit/  Final Volume
   Link13/       0.00 /          Link14/       3.82 /          Link15/       4.07 /
   Link16/      11.52 /          Link17/       3.25 /          Link18/       5.59 /
   Link23/       5.84 /          Link24/       2.30 /          Link25/       6.80 /
   Link26/       7.20 /          Link27/       8.89 /          Link28/       9.23 /
   Link32/       8.74 /          Link33/       3.83 /          Link47/       0.00 /
   Link56/      48.67 /          Link68/       9.84 /          Link69/      34.87 /
   Link70/      37.01 /          Link71/      23.36 /          Link72/       0.47 /
   Link73/       2.40 /          Link74/       4.18 /          Link75/       5.22 /
   Link76/       1.37 /          Link77/       0.58 /          Link78/      23.92 /
   Link79/       0.00 /          Link82/       3.05 /          Link83/       1.49 /
   Link84/       8.04 /          Link85/      16.37 /          Link90/      63.01 /
   Link93/       0.00 /         Link118/       0.00 /         Link120/       0.03 /
  Link121/      48.35 /         Link123/     236.90 /         Link124/    1059.43 /
  Link125/    1103.72 /         Link126/     693.75 /         Link127/     187.61 /
  Link130/    2069.27 /         Link131/       0.00 /         Link132/     683.88 /
  Link133/      37.51 /           214.1/       0.59 /           283.1/       0.00 /
Restrict5/     377.30 /       restric11/      90.23 /       Restrict2/      60.41 /
Restrict3/     260.84 /

  Conduit/ Hydraulic Radius
   Link13/       0.01 /          Link14/       0.02 /          Link15/       0.02 /
   Link16/       0.02 /          Link17/       0.06 /          Link18/       0.02 /
   Link23/       0.02 /          Link24/       0.03 /          Link25/       0.02 /
   Link26/       0.03 /          Link27/       0.03 /          Link28/       0.03 /
   Link32/       0.01 /          Link33/       0.00 /          Link47/       0.00 /
   Link56/       0.02 /          Link68/       0.03 /          Link69/       0.04 /
   Link70/       0.01 /          Link71/       0.01 /          Link72/       0.02 /
   Link73/       0.01 /          Link74/       0.01 /          Link75/       0.01 /
   Link76/       0.01 /          Link77/       0.02 /          Link78/       0.00 /
   Link79/       0.01 /          Link82/       0.01 /          Link83/       0.02 /
   Link84/       0.00 /          Link85/       0.00 /          Link90/       0.05 /
   Link93/       0.00 /         Link118/       0.00 /         Link120/       0.01 /
  Link121/       0.05 /         Link123/       0.07 /         Link124/       0.78 /
  Link125/       0.80 /         Link126/       0.62 /         Link127/       0.11 /
  Link130/       0.76 /         Link131/       0.00 /         Link132/       0.50 /
  Link133/       0.05 /           214.1/       0.02 /           283.1/       0.00 /
Restrict5/       0.06 /       restric11/       0.02 /       Restrict2/       0.02 /
Restrict3/       0.05 /

  Conduit/ Upstream/ Downstream Elevation
   Link13/   633.16/   631.54          Link14/   630.12/   628.88          Link15/   628.88/   628.05/
   Link16/   628.05/   626.44          Link17/   626.44/   626.44          Link18/   626.44/   623.70/
   Link23/   610.58/   608.54          Link24/   608.54/   608.43          Link25/   608.43/   607.43/
   Link26/   607.43/   606.49          Link27/   606.49/   605.49          Link28/   605.49/   604.45/
   Link32/   592.75/   572.00          Link33/   593.30/   572.00          Link47/   628.05/   628.05/
   Link56/   628.01/   622.07          Link68/   622.07/   619.01          Link69/   619.01/   617.72/
   Link70/   617.23/   615.70          Link71/   615.62/   610.58          Link72/   604.45/   602.93/
   Link73/   602.93/   597.91          Link74/   597.91/   595.19          Link75/   595.19/   594.69/
   Link76/   594.69/   592.75          Link77/   640.02/   639.60          Link78/   639.60/   636.35/
   Link79/   631.54/   630.51          Link82/   623.70/   613.51          Link83/   613.51/   612.79/
   Link84/   612.79/   606.01          Link85/   606.01/   593.30          Link90/   631.00/   630.03/
   Link93/   633.00/   631.00         Link118/   631.45/   631.45         Link120/   634.60/   631.45/
  Link121/   631.45/   630.58         Link123/   633.50/   630.03         Link124/   630.03/   630.03/
  Link125/   630.03/   630.03         Link126/   630.03/   630.03         Link127/   620.03/   620.03/
```

```
        Link130/   620.03/   620.03         Link131/   631.45/   631.45         Link132/   630.58/   630.58/
        Link133/   631.45/   630.58           214.1/   617.72/   617.23           283.1/   631.01/   630.22/
      Restrict5/   615.70/   615.62       restric11/   620.03/   619.99       Restrict2/   630.03/   629.99/
      Restrict3/   630.58/   630.50
```

==========
| Table E7 - Iteration Summary |
==========

```
Total number of time steps simulated...........        576
Total number of passes in the simulation........      41265
Total number of time steps during simulation....      32654
Ratio of actual # of time steps / NTCYC.........     56.691
Average number of iterations per time step......      1.264
Average  time step size(seconds)................      5.292
Smallest time step size(seconds)................      1.538
Largest  time step size(seconds)................    300.000
Average minimum Conduit Courant time step (sec).      9.264
Average minimum implicit time step (sec)........      5.317
Average minimum junction time step (sec)........      5.317
Average Courant Factor Tf.......................      5.317
Number of times omega reduced...................       2896
```

==========
| Table E8 - Junction Time Step Limitation Summary |
==========
| Not Convr = Number of times this junction did not converge during the simulation. |
| Avg Convr = Average junction iterations. |
| Conv err = Mean convergence error. |
| Omega Cng = Change of omega during iterations |
| Max Itern = Maximum number of iterations |
==========

Junction	Not Convr	Avg Convr	Total Itt	Omega Cng	Max Itern	Ittrn >10	Ittrn >25	Ittrn >40
Node11	0	1.73	56390	35	230	46	29	21
Node12	0	1.83	59857	17	231	17	15	14
Node20	0	1.50	48838	0	4	0	0	0
Node21	0	1.63	53165	0	11	1	0	0
Node22	3	2.33	76032	73	501	76	76	76
Node23	0	1.61	52442	1	23	3	0	0
Node24	0	1.93	63073	36	415	29	16	12
Node25	0	1.42	46500	11	370	6	2	1
Node26	0	1.53	49813	9	16	2	0	0
Node27	0	1.50	49139	12	10	1	0	0
Node29	0	1.44	46981	31	21	4	0	0
Node30	0	1.47	48085	1	29	21	12	0
Node33	0	1.52	49709	0	6	0	0	0
Node34	0	1.62	52968	2	105	2	2	2
Node35	0	1.65	53979	0	5	0	0	0
Node36	0	1.65	53937	0	5	0	0	0
Node37	0	1.80	58638	1	280	1	1	1
Node38	0	1.51	49362	1	239	1	1	1
Node39	1	8.70	284197	724	501	711	693	681
Node41	7	3.43	111852	159	501	169	164	162
Node43	1	1.26	41239	21	501	9	6	5
Node46	0	1.45	47431	1	31	2	1	0
Node47	0	1.76	57339	0	31	1	1	0
Node48	0	1.50	49051	38	21	2	0	0
Node63	33	3.06	99988	129	501	159	156	156
Node65	0	1.26	41102	0	4	0	0	0
Node66	0	1.44	46980	34	306	15	10	9
Node71	0	1.38	45056	0	14	1	0	0
Node74	0	1.51	49294	4	48	14	3	2
Node75	3	5.38	175802	339	501	337	337	335
Node79	0	1.65	53727	0	6	0	0	0
Node80	0	1.48	48367	0	6	0	0	0
Node81	0	1.73	56603	0	6	0	0	0
Node82	0	1.68	54971	0	6	0	0	0
Node83	0	1.40	45736	0	6	0	0	0
Node84	1	2.10	68714	79	501	78	77	76
Node86	0	1.58	51565	10	12	6	0	0
Node87	0	1.43	46680	17	12	3	0	0
Node89	0	1.23	40204	4	411	4	4	3
Node92	5	6.09	198966	433	501	435	430	426
Node94	0	1.52	49740	41	481	39	38	38
Node99	0	1.00	32733	0	80	1	1	1
Node100	5	7.70	251561	571	501	565	553	546
Node108	0	2.09	68285	25	307	35	17	17
Node120	0	1.00	32657	0	4	0	0	0
Node121	0	1.35	44231	0	24	1	0	0
Node122	0	1.00	32654	0	1	0	0	0
Node123	0	1.84	60090	3	23	23	0	0
Node124	0	1.96	64019	6	34	47	21	0
Node127	0	1.01	32889	7	27	4	1	0
Node128	0	1.53	49871	11	29	4	1	0
Node132	0	1.64	53439	0	6	0	0	0
Node133	0	1.64	53537	2	97	8	1	1
Node134	0	1.72	56243	1	70	2	1	1
Node135	0	1.45	47354	7	98	8	3	1

```
Total number of iterations for all junctions..   3613075


Minimum number of possible iterations.........   1795970


Efficiency of the simulation..................      2.01
```

Excellent Efficiency

```
*=========================================================*
| Extran Efficiency is an indicator of the efficiency of   |
| the simulation.  Ideal efficiency is one iteration per   |
| time step.  Altering the underrelaxation parameter,      |
| lowering the time step, increasing the flow and head     |
| tolerance are good ways of improving the efficiency,     |
| another is lowering the internal time step. The lower the|
| efficiency generally the faster your model will run.     |
| If your efficiency is less than 1.5 then you may try     |
| increasing your time step so that your overall simulation|
| is faster.  Ideal efficiency would be around 2.0         |
|                                                          |
| Good Efficiency      < 1.5           mean iterations     |
| Excellent Efficiency < 2.5 and > 1.5 mean iterations     |
| Good      Efficiency < 4.0 and > 2.5 mean iterations     |
| Fair      Efficiency < 7.5 and > 4.0 mean iterations     |
| Poor Efficiency      > 7.5           mean iterations     |
*=========================================================*
```

```
*=====================================================*
|        Table E9 - JUNCTION SUMMARY STATISTICS        |
| The Maximum area is only the area of the node, it    |
| does not include the area of the surrounding conduits|
*=====================================================*
```

Junction Name	Ground Elevation feet	Uppermost PipeCrown Elevation feet	Maximum Junction Elevation feet	Time of Occurence Hr.	Min.	Feet of Surcharge at Max Elevation	Freeboard of node feet	Maximum Junction Area ft^2	Maximum Gutter Depth feet	Maximum Gutter Width feet	Maximum Gutter Velocity ft/s
Node11	623.2500	623.2500	620.5329	1	9	0.0000	2.7171	12.5660	0.0000	0.0000	0.0000
Node12	624.9700	624.9700	619.2171	2	35	0.0000	5.7529	12.5660	0.0000	0.0000	0.0000
Node20	638.4000	637.6000	635.1102	3	55	0.0000	3.2898	12.5660	0.0000	0.0000	0.0000
Node21	639.0000	636.1600	634.4838	2	7	0.0000	4.5162	12.5660	0.0000	0.0000	0.0000
Node22	639.3500	639.3500	632.0334	2	59	0.0000	7.3166	12.5660	0.0000	0.0000	0.0000
Node23	635.9100	631.8600	631.4391	2	57	0.0000	4.4709	12.5660	0.0000	0.0000	0.0000
Node24	635.3400	631.3300	631.0606	2	55	0.0000	4.2794	12.5660	0.0000	0.0000	0.0000
Node25	634.1030	629.3500	628.9981	1	48	0.0000	5.1049	12.5660	0.0000	0.0000	0.0000
Node26	634.3200	629.4200	628.8160	1	48	0.0000	5.5040	12.5660	0.0000	0.0000	0.0000
Node27	635.4400	626.6900	625.1336	1	48	0.0000	10.3064	12.5660	0.0000	0.0000	0.0000
Node29	620.2110	620.2110	613.7242	1	49	0.0000	6.4868	12.5660	0.0000	0.0000	0.0000
Node30	631.4300	623.0000	621.3651	1	27	0.0000	10.0649	12.5660	0.0000	0.0000	0.0000
Node33	619.3200	619.3200	614.7551	3	4	0.0000	4.5649	12.5660	0.0000	0.0000	0.0000
Node34	618.6800	611.5000	613.3337	3	59	1.8337	5.3463	12.5660	0.0000	0.0000	0.0000
Node35	621.6500	611.4000	612.9976	3	59	1.5976	8.6524	12.5660	0.0000	0.0000	0.0000
Node36	633.6100	610.4000	611.6191	2	50	1.2191	21.9909	12.5660	0.0000	0.0000	0.0000
Node37	632.4600	609.4600	610.2586	2	34	0.7986	22.2014	12.5660	0.0000	0.0000	0.0000
Node38	626.7800	608.4500	608.1243	2	35	0.0000	18.6557	12.5660	0.0000	0.0000	0.0000
Node39	611.6440	607.4400	605.7105	2	35	0.0000	5.9335	12.5660	0.0000	0.0000	0.0000
Node41	633.3700	631.2200	628.4938	1	10	0.0000	4.8762	12.5660	0.0000	0.0000	0.0000
Node43	638.5000	636.0000	634.0964	0	20	0.0000	4.4036	12.5660	0.0000	0.0000	0.0000
Node46	608.0000	610.3500	593.6733	1	31	0.0000	14.3267	12.5660	0.0000	0.0000	0.0000
Node47	610.0000	576.0000	572.8953	1	31	0.0000	37.1047	12.5660	0.0000	0.0000	0.0000
Node48	618.0000	609.8000	593.8576	1	43	0.0000	24.1424	12.5660	0.0000	0.0000	0.0000
Node63	633.6300	632.0100	633.4279	0	50	1.4179	0.2021	12.5660	0.0000	0.0000	0.0000
Node65	642.0000	642.0000	640.8046	2	4	0.0000	1.1954	46235.311	0.0000	0.0000	0.0000
Node66	634.7700	632.0000	631.0576	2	55	0.0000	3.7124	12.5660	0.0000	0.0000	0.0000
Node71	624.7000	624.7000	622.9218	1	12	0.0000	1.7782	12.5660	0.0000	0.0000	0.0000
Node74	625.0300	625.0300	620.5408	1	7	0.0000	4.4892	12.5660	0.0000	0.0000	0.0000
Node75	611.7300	611.7200	603.9063	2	35	0.0000	7.8237	12.5660	0.0000	0.0000	0.0000
Node79	624.3700	623.3700	619.1866	2	39	0.0000	5.1834	87120.000	0.0000	0.0000	0.0000
Node80	613.8400	613.8400	599.4657	2	35	0.0000	14.3743	12.5660	0.0000	0.0000	0.0000
Node81	611.3000	611.2900	596.2660	2	41	0.0000	15.0340	12.5660	0.0000	0.0000	0.0000
Node82	611.6700	611.6600	596.1655	2	45	0.0000	15.5045	12.5660	0.0000	0.0000	0.0000
Node83	642.6000	642.6000	639.8738	2	7	0.0000	2.7262	12.5660	0.0000	0.0000	0.0000
Node84	639.7400	634.5400	632.5549	2	0	0.0000	7.1851	12.5660	0.0000	0.0000	0.0000
Node86	621.1000	616.4900	615.5095	1	48	0.0000	5.5905	12.5660	0.0000	0.0000	0.0000
Node87	622.5000	622.5000	607.1584	1	49	0.0000	15.3416	12.5660	0.0000	0.0000	0.0000
Node89	639.1000	638.6000	637.2000	0	20	0.0000	1.9000	12.5660	0.0000	0.0000	0.0000
Node92	636.3000	634.5000	633.7919	1	55	0.0000	2.5081	12.5660	0.0000	0.0000	0.0000
Node94	635.3000	632.7500	631.9845	1	11	0.0000	3.3155	12.5660	0.0000	0.0000	0.0000
Node99	639.7000	637.7000	638.3388	2	1	0.6388	1.3612	27774.815	0.0000	0.0000	0.0000
Node100	639.0600	632.5000	631.8174	1	16	0.0000	7.2426	12.5660	0.0000	0.0000	0.0000
Node108	636.5000	630.0700	631.8013	1	16	1.7313	4.6987	12.5660	0.0000	0.0000	0.0000
Node120	639.6000	638.0000	640.9762	2	54	2.9762	0.0000	65340.000	0.0000	0.0000	0.0000
Node121	639.1000	634.4500	631.9601	3	56	0.0000	7.1399	12.5660	0.0000	0.0000	0.0000
Node122	639.2000	636.5000	633.5000	0	0	0.0000	5.7000	12.5660	0.0000	0.0000	0.0000
Node123	638.0000	630.7800	631.8085	1	16	1.0285	6.1915	12.5660	0.0000	0.0000	0.0000
Node124	627.5000	621.0000	621.3955	1	27	0.3955	6.1045	12.5660	0.0000	0.0000	0.0000
Node127	640.1000	635.0000	633.4369	0	20	0.0000	6.6631	12.5660	0.0000	0.0000	0.0000
Node128	641.4000	632.8000	631.6409	1	19	0.0000	9.7591	12.5660	0.0000	0.0000	0.0000
Node132	624.4000	624.3700	616.3123	2	45	0.0000	8.0877	12.5660	0.0000	0.0000	0.0000
Node133	632.3400	618.0000	621.3704	1	28	3.3704	10.9696	12.5660	0.0000	0.0000	0.0000
Node134	634.3200	629.4200	631.7766	1	17	2.3566	2.5434	12.5660	0.0000	0.0000	0.0000
Node135	633.3700	631.0500	631.6432	1	19	0.5932	1.7268	12.5660	0.0000	0.0000	0.0000

```
*=====================================================*
|        Table E10 - CONDUIT SUMMARY STATISTICS        |
| Note: The peak flow may be less than the design flow |
| and the conduit may still surcharge because of the   |
| downstream boundary conditions.                      |
|                                                      |
| * denotes an open conduit that has been overtopped   |
|   this is a potential source of severe errors        |
*=====================================================*
```

Conduit Name	Design Flow (cfs)	Conduit Design Velocity (ft/s)	Maximum Vertical Depth (in)	Maximum Computed Flow (cfs)	Time of Occurence Hr.	Min.	Maximum Computed Velocity (ft/s)	Time of Occurence Hr.	Min.	Ratio of Max. to Design Flow	Maximum Water Elev at Pipe Ends Upstream (ft)	Dwnstrm (ft)	Ratio d/D US	DS
Link13	52.1501	7.3777	36.0000	19.6952	2	6	6.7649	2	5	0.3777	634.4838	632.5549	0.441	0.338

Link14	43.7477	6.1890	36.0000	27.1203	2	5	6.0183	2	26	0.6199	632.0334	631.4391	0.641	0.860
Link15	36.6850	5.1899	36.0000	27.6519	2	4	5.1519	2	41	0.7538	631.4391	631.0606	0.860	1.010
Link16	37.2836	5.2745	36.0000	42.4549	2	4	6.1561	2	6	1.1387	631.0606	628.9981	1.010	0.883
Link17	26.7696	3.7871	36.0000	-44.5757	1	48	-6.8989	2	4	-1.6652	628.9981	628.8160	0.859	0.822
Link18	55.5441	7.8579	36.0000	51.7372	1	48	8.9502	1	49	0.9315	628.8160	625.1336	0.799	0.481
Link23	58.7557	8.3122	36.0000	49.2212	3	20	7.8327	1	23	0.8377	614.7551	613.3337	1.397	1.611
Link24	26.5621	3.7578	36.0000	49.2226	3	20	6.9378	3	20	1.8531	613.3337	612.9976	1.611	1.533
Link25	41.3740	5.8532	36.0000	49.2237	3	20	6.9417	3	20	1.1897	612.9976	611.6191	1.533	1.406
Link26	39.9177	5.6472	36.0000	49.2253	3	20	6.9304	3	18	1.2332	611.6191	610.2586	1.406	1.266
Link27	34.5795	4.8920	36.0000	51.3115	2	34	7.2912	2	34	1.4839	610.2586	608.1243	1.266	0.891
Link28	40.1573	5.6811	36.0000	51.3115	2	35	8.1842	2	36	1.2778	608.1243	605.7105	0.891	0.423
Link32	451.1614	28.1976	48.0000	76.2855	1	31	20.5201	1	31	0.1691	593.6733	572.8953	0.233	0.224
Link33	823.3655	34.3069	48.0000	61.4651	1	43	17.7058	1	9	0.0747	593.8576	572.8953	0.139	0.224
Link47	80.4856	11.3864	36.0000	15.4274	0	40	8.1778	0	30	0.1917	631.0576	631.0606	0.686	0.910
Link56	47.4322	2.4964	12.0000	9.2782	1	10	1.3830	1	8	0.1956	628.4938	622.9218	0.494	0.922
Link68	138.7842	3.0723	32.4000	9.2609	1	12	2.8844	0	52	0.0667	622.9218	620.5408	0.341	0.578
Link69	12349.67	11.4824	72.6000	-66.9727	1	58	1.8549	4	18	-0.0054	620.5408	620.5329	0.258	0.551
Link70	10078.61	10.5486	93.1200	119.3235	1	11	2.5086	1	7	0.0118	619.2171	619.1866	0.259	0.461
Link71	58179.11	25.6200	105.1200	42.2584	2	45	1.5428	10	2	0.0007	616.3123	614.7551	0.080	0.479
Link72	137.3690	19.4337	36.0000	51.3115	2	35	18.0136	2	36	0.3735	605.7105	604.1915	0.423	0.423
Link73	56825.79	51.6051	143.0400	51.3115	2	35	7.6217	4	52	0.0009	603.9063	599.4657	0.083	0.132
Link74	37318.09	37.1859	191.4000	51.3118	2	35	7.1508	2	36	0.0014	599.4657	596.2660	0.099	0.068
Link75	29495.40	24.1735	209.5200	51.3102	2	36	3.0139	2	25	0.0017	596.2660	596.1655	0.062	0.086
Link76	40618.15	48.9919	211.3200	51.3074	2	36	9.2369	2	36	0.0013	596.1655	593.6733	0.085	0.053
Link77	20.0104	6.3695	24.0000	7.2812	2	4	6.6771	2	4	0.3639	640.8046	639.8738	0.402	0.137
Link78	1059.813	5.4349	36.0000	7.2636	2	7	1.1584	2	7	0.0069	639.8738	636.4986	0.091	0.050
Link79	101.6938	14.3867	36.0000	19.7198	2	5	9.3454	2	42	0.1939	632.5549	632.0334	0.338	0.508
Link82	110.5183	15.6351	36.0000	51.7347	1	48	14.6374	1	48	0.4681	625.1336	615.5095	0.481	0.673
Link83	54.8977	7.7664	36.0000	51.7356	1	48	10.9048	1	49	0.9424	615.5095	613.7242	0.673	0.315
Link84	4900.754	21.9785	89.1720	51.7335	1	49	6.3416	1	49	0.0106	613.7242	607.1584	0.127	0.156
Link85	34130.32	31.7780	198.0000	51.7222	1	49	5.7736	1	49	0.0015	607.1584	593.8576	0.070	0.034
Link90	18.8038	7.8177	21.0000	6.5100	1	55	5.1471	0	33	0.3462	631.9845	631.8013	0.563	2.172
Link93	13.1401	7.4358	18.0000	7.1900	1	55	7.6004	1	55	0.5472	633.7919	631.8174	0.528	0.545
Link118	939.1777	16.0543	18.0000	9.6139	0	20	2.9567	0	20	0.0102	637.2000	634.6000	0.067	0.067
Link120	51.0931	7.2282	36.0000	3.2226	3	55	4.0313	3	56	0.0631	635.1102	631.9601	0.170	0.170
Link121	51.0931	7.2282	36.0000	3.2223	3	56	2.8538	3	59	0.0631	631.9601	631.6409	0.170	0.614
Link123	47.1250	6.6668	36.0000	0.0000	0	0	0.0000	0	0	0.0000	633.5000	631.8174	.0000	.0000
Link124	47.5651	6.7291	36.0000	12.7549	0	49	1.8013	0	49	0.2682	631.8014	631.7766	1.577	1.786
Link125	48.1334	6.8095	36.0000	6.8521	0	41	2.2837	0	29	0.1424	631.8085	631.8014	1.343	1.577
Link126	47.9699	6.7864	36.0000	7.5223	0	42	3.3086	0	33	0.1568	631.8174	631.8085	0.949	1.343
Link127	54.2348	7.6727	36.0000	10.2374	1	0	4.3144	0	38	0.1888	621.3651	621.3955	0.455	1.132
Link130	72.2566	10.2222	36.0000	9.9235	1	4	2.2479	0	37	0.1373	621.3955	621.3704	1.132	2.123
Link131	17.3295	5.5161	24.0000	-2.6535	0	20	2.3538	0	21	-0.1531	633.4369	634.0983	0.218	1.324
Link132	51.0931	7.2282	36.0000	9.8970	0	21	4.7729	0	21	0.1937	631.6409	631.6432	0.614	1.198
Link133	17.3295	5.5161	24.0000	16.8951	0	20	7.1204	0	21	0.9749	634.0983	631.6409	1.324	0.920
214.1	15.9283	5.0701	24.0000	29.8295	1	1	9.6623	1	0	1.8727	620.5329	619.2171	1.416	1.004
283.1	2.7121	3.4532	12.0000	4.7092	0	50	5.9797	0	50	1.7364	633.4279	631.1184	2.418	0.898
Restrict5	58.9652	0.4815	36.0036	42.2603	2	43	6.2641	2	41	0.7167	619.1866	616.3123	1.192	0.237
restric11	37.3449	0.4815	29.9916	7.0166	1	34	2.7177	1	40	0.1879	621.3704	620.8676	0.548	0.351
Restrict2	21.3788	0.4815	23.9939	9.9199	1	22	3.5742	1	27	0.4640	631.7766	631.1164	0.889	0.563
Restrict3	37.2878	0.4815	29.9733	4.7793	1	24	2.3308	1	30	0.1282	631.6432	631.2096	0.458	0.288
Link 5	Undefnd	Undefnd	Undefn	64.7014	1	9								
WEIR46	Undefnd	Undefnd	Undefn	2.0923	0	50								
Link97.1	Undefnd	Undefnd	Undefn	19.8962	2	1								
WEIR119	Undefnd	Undefnd	Undefn	3.2225	2	54								
Weir122	Undefnd	Undefnd	Undefn	0.0000	0	0								
FREE # 1	Undefnd	Undefnd	Undefn	135.8407	1	34								

==========
| Table E11. Area assumptions used in the analysis|
| Subcritical and Critical flow assumptions from |
| Subroutine Head. See Figure 17-1 in the |
| manual for further information. |
==========

Conduit Name	Duration of Dry Flow(min)	Duration of Sub-Critical Flow(min)	Durat. of Upstream Critical Flow(min)	Durat. of Downstream Critical Flow(min)	Maximum Hydraulic Radius-m	Maximum X-Sect Area(ft^2)	Maximum Vel*D (ft^2/s)
Link13	74.3005	2805.6995	0.0000	0.0000	0.6764	2.5352	7.8771
Link14	61.2051	2818.7949	0.0000	0.0000	0.8636	5.5986	12.1415
Link15	24.1304	2855.8696	0.0000	0.0000	0.9082	6.7786	11.7396
Link16	15.0000	2865.0000	0.0000	0.0000	0.9126	6.8040	16.7692
Link17	20.6522	2859.3478	0.0000	0.0000	0.9113	6.3253	17.1022
Link18	20.8696	2859.1304	0.0000	0.0000	0.8944	4.6432	17.1412
Link23	21.7391	2858.2609	0.0000	0.0000	0.8965	7.2485	31.2033
Link24	21.7391	2858.2609	0.0000	0.0000	0.9122	7.3993	32.5234
Link25	21.7391	2858.2609	0.0000	0.0000	0.9123	7.4085	30.3476
Link26	22.1739	2857.8261	0.0000	0.0000	0.9124	7.4102	27.4311
Link27	23.0435	2856.9565	0.0000	0.0000	0.9102	6.9344	23.5975
Link28	23.4783	2856.5217	0.0000	0.0000	0.8853	4.6170	16.1421
Link32	20.0000	2860.0000	0.0000	0.0000	0.6345	3.6569	18.7345
Link33	15.0000	2865.0000	0.0000	0.0000	0.4905	4.2814	12.4228
Link47	2658.0925	210.5504	0.0000	11.3571	0.8832	5.9413	8.2076
Link56	15.0000	2865.0000	0.0000	0.0000	0.3208	10.5589	0.9780
Link68	20.0000	2860.0000	0.0000	0.0000	0.4667	5.9441	3.0840
Link69	20.2174	2859.7826	0.0000	0.0000	1.2262	142.3352	1.5409
Link70	23.0435	2856.9565	0.0000	0.0000	0.8135	145.2434	4.7296
Link71	36.8317	2843.1683	0.0000	0.0000	0.4600	347.0718	0.9913
Link72	28.6107	1257.9740	0.0000	1593.4153	0.6693	2.8473	22.8764
Link73	30.3247	2849.6753	0.0000	0.0000	0.4801	11.3212	9.7477
Link74	34.4805	2845.5195	0.0000	0.0000	0.7213	5.5165	9.5152
Link75	37.1474	2842.8526	0.0000	0.0000	0.7405	20.5576	3.8847
Link76	38.1188	2841.8812	0.0000	0.0000	0.6537	3.9793	10.9644
Link77	60.6410	2819.3590	0.0000	0.0000	0.4042	0.6659	3.5992
Link78	60.7692	0.0000	0.0000	2819.2308	0.2239	4.8583	0.2445
Link79	74.4819	132.7963	0.0000	2672.7218	0.5837	2.8210	11.0434
Link82	20.8696	2859.1304	0.0000	0.0000	0.7459	4.1837	25.3000
Link83	20.8696	2859.1304	0.0000	0.0000	0.8423	3.3576	16.1381
Link84	21.7391	2858.2609	0.0000	0.0000	0.6142	9.2429	6.6631
Link85	21.7391	2858.2609	0.0000	0.0000	0.6124	5.9343	4.9467
Link90	2580.6040	286.5388	0.0000	12.8571	0.4661	1.8849	9.8535
Link93	20.0000	34.2472	0.0000	2825.7528	0.3874	0.9462	6.0135
Link118	1533.5117	0.0000	0.0000	1346.4883	0.0988	3.2025	0.2957

Link120	69.0722	2810.9278	0.0000	0.0000	0.3124	0.7994	2.0560
Link121	57.4860	2822.5140	0.0000	0.0000	0.7694	2.2502	3.1373
Link123	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Link124	20.0000	2860.0000	0.0000	0.0000	0.8994	7.2469	7.9036
Link125	20.2174	2859.7826	0.0000	0.0000	0.9006	7.2474	3.3493
Link126	20.0000	2860.0000	0.0000	0.0000	0.8965	7.0057	3.1562
Link127	20.0000	2860.0000	0.0000	0.0000	0.8519	5.1168	7.6059
Link130	20.0000	2860.0000	0.0000	0.0000	0.8965	7.2620	6.3063
Link131	2699.6264	180.3736	0.0000	0.0000	0.5711	1.6402	1.7571
Link132	20.0000	2860.0000	0.0000	0.0000	0.8736	5.8861	4.8003
Link133	1532.1795	1347.8205	0.0000	0.0000	0.5919	2.1106	6.2083
214.1	23.0435	2856.9565	0.0000	0.0000	0.6044	3.2188	20.9905
283.1	15.0000	0.0000	0.0000	2865.0000	0.3034	0.7676	9.9136
Restrict5	23.4783	2856.5217	0.0000	0.0000	0.8598	3.9261	13.4319
restric11	41.9835	0.0000	0.0000	2838.0165	0.6422	2.1105	3.0114
Restrict2	38.6139	0.0000	0.0000	2841.3861	0.5999	2.3543	5.0771
Restrict3	22.1739	0.0000	0.0000	2857.8261	0.5706	1.6476	2.1456

==========
| Table E12. Mean Conduit Flow Information |
==========

Conduit Name	Mean Flow (cfs)	Total Flow (ft^3)	Mean Percent Change	Low Flow Weightng	Mean Froude Number	Mean Hydraulic Radius	Mean Cross Area	Mean Conduit Roughness
Link13	0.7507	129716.18	0.0000	0.3618	0.6246	0.1257	0.4191	0.0120
Link14	1.0925	188784.33	0.0000	0.9715	0.6839	0.1915	0.7054	0.0120
Link15	1.0919	188682.73	0.0000	0.9992	0.5654	0.2393	1.0370	0.0120
Link16	2.0405	352592.98	0.0000	0.9998	0.5599	0.2502	1.1887	0.0120
Link17	-2.1455	-370748.2	0.0000	0.9997	0.3799	0.2882	1.2716	0.0120
Link18	2.4399	421611.88	0.0000	0.9996	1.0617	0.2349	1.0161	0.0120
Link23	4.7453	819982.84	0.0000	0.9995	0.8772	0.3371	2.1089	0.0120
Link24	4.7452	819979.05	0.0000	0.9995	0.5780	0.3696	2.3239	0.0120
Link25	4.7454	820003.60	0.0000	0.9995	0.7111	0.3497	2.2412	0.0120
Link26	4.7457	820048.45	0.0000	0.9995	0.7027	0.3530	2.2765	0.0120
Link27	4.9935	862881.68	0.0000	0.9993	0.6867	0.3668	2.3348	0.0140
Link28	4.9938	862929.30	0.0000	0.9981	1.0245	0.3859	2.0106	0.0120
Link32	5.9723	1032021.1	0.0000	0.9998	4.1270	0.2044	1.0692	0.0120
Link33	2.9175	504139.57	0.0000	0.9998	2.5883	0.1041	0.7151	0.0140
Link47	0.2965	51240.073	0.0000	0.2228	0.0546	0.1202	0.5220	0.0120
Link56	0.7781	134448.52	0.0000	0.9998	0.2907	0.1348	1.8252	0.0400
Link68	0.7789	134597.46	0.0000	0.9998	0.4593	0.1972	0.8675	0.0250
Link69	0.7818	135087.30	0.0000	0.9998	0.2429	0.2100	6.9826	0.0250
Link70	3.7955	655867.69	0.0000	0.9993	0.1934	0.2520	13.6745	0.0250
Link71	3.7326	645000.81	0.0000	0.9934	0.3338	0.1554	22.0225	0.0250
Link72	4.9938	862934.62	0.0000	0.9960	2.5576	0.2588	0.8934	0.0120
Link73	4.9939	862940.57	0.0000	0.9968	1.1236	0.1872	2.0608	0.0250
Link74	4.9939	862950.97	0.0000	0.9948	1.0880	0.2806	2.2672	0.0250
Link75	4.9939	862952.81	0.0000	0.9932	0.4437	0.2572	5.4329	0.0250
Link76	4.9939	862949.26	0.0000	0.9927	1.5524	0.2505	1.7589	0.0250
Link77	0.3414	58992.332	0.0000	0.9722	1.7335	0.1132	0.2099	0.0120
Link78	0.3417	59050.956	0.0000	0.9720	0.7834	0.0500	1.2354	0.0400
Link79	0.7508	129731.12	0.0000	0.3602	1.2581	0.0983	0.2805	0.0120
Link82	2.4401	421648.97	0.0000	0.9996	1.7476	0.1806	0.6224	0.0120
Link83	2.4400	421628.74	0.0000	0.9996	1.2370	0.2230	0.8796	0.0120
Link84	2.4402	421667.21	0.0000	0.9995	0.7105	0.1330	1.4931	0.0250
Link85	2.4405	421717.47	0.0000	0.9995	1.0033	0.1324	1.6462	0.0250
Link90	0.1488	25709.306	0.0000	0.3080	0.1160	0.0887	0.3412	0.0120
Link93	0.1640	28336.807	0.0000	0.3008	0.8481	0.0441	0.0781	0.0120
Link118	0.1924	33240.808	0.0001	0.7006	0.9243	0.0081	0.2498	0.0120
Link120	0.4463	77114.553	0.0000	0.9622	0.9008	0.1402	0.2838	0.0120
Link121	0.4463	77118.732	0.0000	0.9757	0.3811	0.2060	0.6125	0.0120
Link123	0.0000	0.0000	0.0000	0.0000	0.0000	0.0731	0.3028	0.0120
Link124	0.2966	51244.930	0.0000	0.9998	0.0128	0.7549	7.1146	0.0120
Link125	0.1546	26716.488	0.0000	0.9998	0.0093	0.8462	6.3852	0.0120
Link126	0.1609	27798.935	0.0000	0.9998	0.0157	0.7357	3.9181	0.0120

Link127	0.2574	44482.962	0.0000	0.9998	0.0580	0.3128	1.4907	0.0120
Link130	0.2502	43235.963	0.0000	0.9998	0.0162	0.8458	5.8915	0.0120
Link131	-0.0004	-68.7362	0.0000	0.1786	0.0051	0.0089	0.0127	0.0120
Link132	0.6300	108866.51	0.0000	0.9998	0.0521	0.6646	3.2239	0.0120
Link133	0.2031	35091.418	0.0001	0.7008	0.1087	0.1030	0.3115	0.0120
214.1	2.9335	506903.59	0.0000	0.9994	0.7644	0.2042	0.7244	0.0240
283.1	0.1325	22888.269	0.0000	0.2706	0.3581	0.0398	0.0845	0.0240
Restrict5	3.7384	645988.96	0.0000	0.9993	0.6883	0.4053	2.2176	0.0033
restric11	0.2478	42818.878	0.0000	0.9900	0.3594	0.1589	0.4225	0.0031
Restrict2	0.2944	50864.463	0.0000	0.9923	0.3724	0.1505	0.3987	0.0028
Restrict3	0.6295	108784.22	0.0000	0.9994	0.3787	0.3005	0.8285	0.0031
Link 5	0.8405	145242.98						
WEIR46	0.0159	2741.4315						
Link97.1	0.7571	130832.56						
WEIR119	0.4461	77083.114						
Weir122	0.0000	0.0000						
FREE # 1	8.8899	1536169.2						

Table E13. Channel losses(H), headwater depth (HW), tailwater depth (TW), critical and normal depth (Yc and Yn). Use this section for culvert comparisons

Conduit Name	Maximum Flow	Head Loss	Friction Loss	Critical Depth	Normal Depth	HW Elevat	TW Elevat	
Link13	19.6910	0.0000	1.5632	1.4229	1.2772	634.4827	632.5463	Max Flow
Link14	27.1181	0.0000	0.8830	1.6827	1.7097	631.9925	631.2881	Max Flow
Link15	27.6317	0.0000	0.4743	1.6989	1.9452	631.2872	630.8750	Max Flow
Link16	42.3309	0.0000	1.9490	2.1181	3.0000	630.8750	628.9480	Max Flow
Link17	-0.0053	0.0000	0.1804	0.0042	0.0080	626.4361	626.4379	Max Flow
Link18	51.6387	0.0000	2.7947	2.3353	2.2888	628.8131	625.1317	Max Flow
Link23	49.2211	0.0000	1.9769	2.2836	2.1020	614.7165	613.2773	Max Flow
Link24	49.2225	0.0000	0.3409	2.2837	3.0000	613.2774	612.9359	Max Flow
Link25	49.2235	0.0000	1.4065	2.2837	3.0000	612.9360	611.5280	Max Flow
Link26	49.2251	0.0000	1.4155	2.2837	3.0000	611.5282	610.1117	Max Flow
Link27	51.3115	0.0000	2.1863	2.3283	3.0000	610.2586	608.1243	Max Flow
Link28	51.3112	0.0000	1.7089	2.3283	3.0000	608.1243	605.7105	Max Flow
Link32	76.1879	0.0000	20.4353	2.2418	0.8945	593.6726	572.8945	Max Flow
Link33	61.4380	0.0000	21.2230	1.4814	0.5438	593.8575	572.8590	Max Flow
Link47	15.4244	0.0000	0.7123	1.2516	0.8885	629.9945	629.6006	Max Flow
Link56	9.2780	0.0000	3.8905	0.3618	0.4933	628.4938	622.9208	Max Flow
Link68	9.2515	0.0000	2.8156	0.8291	0.9203	622.9214	620.5272	Max Flow
Link69	12.7199	0.0000	0.3456	0.9226	1.0313	620.0156	620.0300	Max Flow
Link70	118.9993	0.0000	1.6118	1.5629	1.7908	619.0127	617.8081	Max Flow
Link71	42.2583	0.0000	0.3474	0.6671	0.7018	616.3123	614.6820	Max Flow
Link72	51.3111	0.0000	1.5180	2.3283	1.2695	605.7105	604.1915	Max Flow
Link73	51.3110	0.0000	4.0441	1.3900	0.9851	603.9063	599.4657	Max Flow
Link74	51.3109	0.0000	2.2821	1.7761	1.4586	599.4657	596.2655	Max Flow
Link75	51.3090	0.0000	0.3807	0.8474	0.8602	596.2655	596.1644	Max Flow
Link76	51.3056	0.0000	1.8354	1.8502	1.4142	596.1644	593.5308	Max Flow
Link77	7.2804	0.0000	0.5837	0.9582	0.8340	640.8046	639.8736	Max Flow
Link78	7.2572	0.0000	2.3238	0.1486	0.2369	639.8737	636.4986	Max Flow
Link79	19.7180	0.0000	0.9818	1.4239	0.8939	632.5463	631.9925	Max Flow
Link82	51.6213	0.0000	9.0050	2.3349	1.4417	625.1317	615.5069	Max Flow
Link83	51.6507	0.0000	1.1992	2.3355	2.3147	615.5069	613.7238	Max Flow
Link84	51.6865	0.0000	6.2232	1.1305	0.9383	613.7238	607.1583	Max Flow
Link85	51.7147	0.0000	8.6038	1.2363	0.9614	607.1583	593.8553	Max Flow
Link90	6.5071	0.0000	2.8501	0.9409	0.7100	631.8880	631.1843	Max Flow
Link93	7.1884	0.0000	1.9986	1.0377	0.7915	633.7919	631.7915	Max Flow
Link118	9.6139	0.0000	2.3476	0.1442	0.1000	637.2000	634.6000	Max Flow
Link120	3.2223	0.0000	3.1488	0.5566	0.5082	635.1102	631.9600	Max Flow
Link121	3.2211	0.0000	0.6791	0.5565	0.5081	631.9600	631.4907	Max Flow
Link123	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	Max Flow
Link124	12.4905	0.0000	0.2706	1.1210	1.0482	631.1827	631.1360	Max Flow
Link125	6.0250	0.0000	0.5086	0.7684	0.7165	631.1992	631.1827	Max Flow
Link126	6.2652	0.0000	1.0278	0.7839	0.7315	630.8662	630.8760	Max Flow
Link127	10.2143	0.0000	1.5943	1.0096	0.8807	621.0372	620.9136	Max Flow
Link130	9.9086	0.0000	0.9910	0.9941	0.7489	621.0845	621.0312	Max Flow
Link131	0.0693	0.0000	1.7318	0.0868	0.0882	633.0907	631.7708	Max Flow
Link132	7.5778	0.0000	0.2295	0.8655	0.7788	631.2600	631.2591	Max Flow
Link133	11.2919	0.0000	1.0535	1.2055	1.1768	634.0983	629.8000	Max Flow
214.1	29.3041	0.0000	1.6811	1.8483	2.0000	620.3698	618.6737	Max Flow
283.1	4.7089	0.0000	2.3093	0.8983	1.0000	633.4277	631.1183	Max Flow
Restrict5	42.2594	0.0000	1.7968	2.1162	3.0003	619.1828	616.3123	Max Flow
restric11	7.0148	0.0000	0.3042	0.8775	2.4993	621.3567	620.8674	Max Flow
Restrict2	9.8806	0.0000	0.4324	1.1242	1.9995	631.7243	631.1142	Max Flow
Restrict3	4.7785	0.0000	0.2623	0.7195	2.4978	631.6341	631.2095	Max Flow

Table E13a. CULVERT ANALYSIS CLASSIFICATION, and the time the culvert was in a particular classification during the simulation. The time is in minutes. The Dynamic Wave Equation is used for all conduit analysis but the culvert flow classification condition is based on the HW and TW depths.

Conduit Name	Mild Slope Critical D Outlet Control	Mild Slope TW Outlet Control	Steep Slope TW Insignf Entrance Control	Slug Flow Outlet/ Entrance Control	Mild Slope TW > D Outlet Control	Mild Slope TW <= D Outlet Control	Outlet Control	Inlet Control	Inlet Configuration
Link13	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link14	0.0000	2650.0000	165.0000	0.0000	0.0000	0.0000	65.0000	0.0000	None
Link15	0.0000	2855.0000	20.0000	0.0000	5.0000	0.0000	0.0000	0.0000	None
Link16	5.0000	2860.0000	15.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link17	0.0000	2860.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link18	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link23	0.0000	0.0000	2640.0000	125.0000	0.0000	0.0000	115.0000	0.0000	None
Link24	30.0000	2615.0000	20.0000	0.0000	215.0000	0.0000	0.0000	0.0000	None
Link25	25.0000	2625.0000	20.0000	0.0000	210.0000	0.0000	0.0000	0.0000	None
Link26	10.0000	2635.0000	20.0000	0.0000	215.0000	0.0000	0.0000	0.0000	None
Link27	10.0000	2850.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link28	2435.0000	425.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link32	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link33	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link47	0.0000	0.0000	2680.0000	165.0000	0.0000	0.0000	35.0000	0.0000	None
Link56	5.0000	2860.0000	15.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link68	325.0000	2535.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link69	0.0000	2860.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link70	30.0000	2830.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link71	0.0000	2845.0000	35.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link72	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link73	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link74	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link75	0.0000	2845.0000	35.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link76	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link77	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link78	565.0000	2255.0000	60.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link79	0.0000	0.0000	2805.0000	0.0000	0.0000	0.0000	75.0000	0.0000	None
Link82	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link83	0.0000	0.0000	2755.0000	0.0000	0.0000	0.0000	125.0000	0.0000	None
Link84	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link85	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link90	0.0000	0.0000	2780.0000	15.0000	0.0000	0.0000	85.0000	0.0000	None
Link93	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link118	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link120	0.0000	1495.0000	1385.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link121	0.0000	1500.0000	1250.0000	5.0000	0.0000	0.0000	125.0000	0.0000	None
Link123	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link124	0.0000	5.0000	20.0000	10.0000	2700.0000	145.0000	0.0000	0.0000	None
Link125	0.0000	1830.0000	25.0000	30.0000	875.0000	120.0000	0.0000	0.0000	None
Link126	5.0000	2710.0000	30.0000	135.0000	0.0000	0.0000	0.0000	0.0000	None
Link127	0.0000	0.0000	40.0000	2820.0000	0.0000	0.0000	20.0000	0.0000	None
Link130	0.0000	0.0000	35.0000	2755.0000	0.0000	90.0000	0.0000	0.0000	None
Link131	0.0000	175.0000	2700.0000	5.0000	0.0000	0.0000	0.0000	0.0000	None
Link132	0.0000	1460.0000	20.0000	1400.0000	0.0000	0.0000	0.0000	0.0000	None
Link133	0.0000	1195.0000	1575.0000	0.0000	0.0000	0.0000	110.0000	0.0000	None
214.1	70.0000	2395.0000	295.0000	70.0000	10.0000	0.0000	40.0000	0.0000	None
283.1	85.0000	110.0000	2635.0000	0.0000	0.0000	0.0000	50.0000	0.0000	None
Restrict5	2200.0000	660.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
restric11	635.0000	2205.0000	40.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Restrict2	680.0000	2165.0000	35.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Restrict3	720.0000	2140.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None

```
*=====================================*
|    Kinematic Wave Approximations    |
|  Time in Minutes for Each Condition |
*=====================================*
```

Conduit Name	Duration of Normal Flow	Slope Criteria	Super-Critical	Roll Waves
Link13	0.0000	0.0000	222.5684	0.0000
Link14	2670.3686	2813.8606	0.0000	0.0000
Link15	275.1959	442.4679	0.0000	0.0000
Link16	2709.6994	2800.9533	5.0000	0.0000
Link17	0.0000	0.0000	0.0000	0.0000
Link18	0.0000	0.0000	384.4913	0.0000
Link23	2524.2735	2850.2857	453.7770	0.0000
Link24	0.0000	0.0000	4.7662	0.0000
Link25	2513.7482	2617.2605	5.9805	0.0000
Link26	2444.1425	2629.3792	6.1110	0.0000
Link27	2443.0905	2452.8261	5.3883	0.0000
Link28	0.0000	0.0000	452.8048	0.0000
Link32	18.4256	19.6843	2859.1304	0.0000
Link33	1725.9362	2665.3922	2865.0000	0.0000
Link47	2660.9747	2852.1215	32.7622	0.0000
Link56	2859.5652	2859.5652	0.0000	0.0000
Link68	333.5141	333.8107	0.6522	0.0000
Link69	2754.5441	2855.5090	0.4348	0.0000
Link70	2596.5685	2812.8093	4.8758	0.0000
Link71	2843.1683	2843.1683	0.0000	0.0000
Link72	30.8422	44.7061	2855.6522	0.0000
Link73	2841.4851	2841.4851	1300.9535	0.0000
Link74	0.0000	0.0000	1399.5041	0.0000
Link75	2334.9311	2840.9901	0.0000	0.0000
Link76	13.7193	15.3342	2836.6116	0.0000
Link77	0.0000	0.0000	2819.0256	0.0000
Link78	0.0000	0.0000	2.8797	0.0000
Link79	3.4625	132.8482	2805.5181	0.0000
Link82	2855.6522	2856.0870	2859.1304	0.0000
Link83	0.0000	0.0000	1418.2609	0.0000
Link84	240.5673	241.0735	158.2378	0.0000
Link85	1.9565	1.9565	495.6522	0.0000
Link90	2734.6511	2847.1429	22.6752	0.0000
Link93	37.0605	40.6316	2860.0000	0.0000
Link118	0.0781	0.5129	2865.0000	0.0000
Link120	2692.6178	2693.3470	208.1667	0.0000
Link121	2790.4688	2803.8342	0.0000	0.0000
Link123	0.0000	0.0000	0.0000	0.0000

Link124	6.2702	2482.3956	0.4348	0.0000
Link125	10.1982	2240.1953	0.0000	0.0000
Link126	2.9722	2182.6773	2.8261	0.0000
Link127	6.1069	2290.2330	13.6650	0.0000
Link130	15.6759	2749.6039	2.3913	0.0000
Link131	2858.4783	2859.3478	0.0000	0.0000
Link132	1.0870	2857.4193	0.0000	0.0000
Link133	2772.4252	2858.9130	6.3043	0.0000
214.1	1392.6661	2300.6000	96.0265	0.0000
283.1	3.6782	3.6782	42.8349	0.0000
Restrict5	0.0000	0.0000	275.4633	0.0000
restric11	0.0000	0.0000	0.0000	0.0000
Restrict2	0.0000	0.0000	0.0000	0.0000
Restrict3	0.0000	0.0000	0.0000	0.0000

==========
| Table E14 - Natural Channel Overbank Flow Information |
==========

Conduit Name	<---- Maximum Velocity -----> Left Velocity	Center Velocity	Right Velocity	<------ Maximum Flow -------> Left Flow	Center Flow	Right Flow	<------ Maximum Area ------> Left Area	Center Area	Right Area	<--- Max. Storage Volume ---> Left Area	Center Area	Right Area	Maximum Depth
Link68	0.0000	1.5613	0.0000	0.0000	9.2609	0.0000	0.0000	5.9317	0.0000	0.0000	2372.6950	0.0000	1.2619
Link69	0.0000	0.4711	0.0000	0.0000	66.9727	0.0000	0.0000	142.1527	0.0000	0.0000	36959.703	0.0000	2.4413
Link70	0.0000	0.8219	0.0000	0.0000	119.3235	0.0000	0.0000	145.1874	0.0000	0.0000	65334.347	0.0000	2.8068
Link71	0.0000	0.1222	0.0000	0.0000	42.2584	0.0000	0.0000	345.8447	0.0000	0.0000	132458.53	0.0000	2.3113
Link73	0.0000	4.8990	0.0000	0.0000	51.3115	0.0000	0.0000	10.4739	0.0000	0.0000	764.5911	0.0000	1.3108
Link74	0.0000	9.5286	0.0000	0.0000	51.3118	0.0000	0.0000	5.3850	0.0000	0.0000	549.2720	0.0000	1.3566
Link75	0.0000	2.5386	0.0000	0.0000	51.3102	0.0000	0.0000	20.2117	0.0000	0.0000	1051.0100	0.0000	1.2997
Link76	0.0000	13.8822	0.0000	0.0000	51.3074	0.0000	0.0000	3.6959	0.0000	0.0000	147.8364	0.0000	1.1942
Link84	0.0000	5.6205	0.0000	0.0000	51.7335	0.0000	0.0000	9.2044	0.0000	0.0000	2577.2284	0.0000	1.0486
Link85	0.0000	9.3598	0.0000	0.0000	51.7222	0.0000	0.0000	5.5260	0.0000	0.0000	2597.2264	0.0000	0.8610

==========
| Table E14a - Natural Channel Encroachment Information |
==========

Conduit Name	<------- Existing Conveyance Condition -------> Left Bank	Centre Channel	Right Bank	Total	Left Station	Right Station	<----- Encroachment Conveyance Condition -----> Left Bank	Centre Channel	Right Bank	Total	Left Station	Right Station	<- % Volume --> Reduction Left	Right	<-- Encroachment Data --> Depth Incr.	Method
Link68	0.0000	241.98	0.0000	241.98	-3.3519	6.7039	0.0000	241.98	0.0000	241.98	-3.3519	6.7039	0.0000	0.0000	0.0000	None
Link69	0.0000	7044.5	0.0000	7044.5	-44.626	141.71	0.0000	7044.5	0.0000	7044.5	-44.626	141.71	0.0000	0.0000	0.0000	None
Link70	0.0000	10249.7	0.0000	10249.7	-28.742	83.177	0.0000	10249.7	0.0000	10249.7	-28.742	83.177	0.0000	0.0000	0.0000	None
Link71	0.0000	23807.3	0.0000	23807.3	-239.13	38.174	0.0000	23807.3	0.0000	23807.3	-239.13	38.174	0.0000	0.0000	0.0000	None
Link73	0.0000	359.20	0.0000	359.20	-5.6863	17.948	0.0000	359.20	0.0000	359.20	-5.6863	17.948	0.0000	0.0000	0.0000	None
Link74	0.0000	237.93	0.0000	237.93	-4.6662	3.2729	0.0000	237.93	0.0000	237.93	-4.6662	3.2729	0.0000	0.0000	0.0000	None
Link75	0.0000	1073.5	0.0000	1073.5	-17.247	6.4669	0.0000	1073.5	0.0000	1073.5	-17.247	6.4669	0.0000	0.0000	0.0000	None
Link76	0.0000	148.29	0.0000	148.29	-7.6462	-1.4248	0.0000	148.29	0.0000	148.29	-7.6462	-1.4248	0.0000	0.0000	0.0000	None
Link84	0.0000	421.66	0.0000	421.66	-7.4417	5.6703	0.0000	421.66	0.0000	421.66	-7.4417	5.6703	0.0000	0.0000	0.0000	None
Link85	0.0000	201.72	0.0000	201.72	-4.4957	6.7994	0.0000	201.72	0.0000	201.72	-4.4957	6.7994	0.0000	0.0000	0.0000	None

==========
| Table E14b - Floodplain Mapping |
==========

Conduit Name	Upstream WS Elev.	Downstream WS Elev.	Channel Length	Center Station	<----- Left Offsets ------> Natural	Encroach	Bank	<----- Right Offsets ------> Natural	Encroach	Bank	<- Channel Widths-> Total	Encroach.
Link68	622.9218	620.5408	400.0000	0.0000	3.3519	3.3519	67.2000	6.7039	6.7039	30.6000	10.0558	10.0558
Link69	620.5408	620.5329	260.0000	0.0000	44.6263	44.6263	126.4000	141.7121	141.7121	174.6000	186.3384	186.3384
Link70	619.2171	619.1866	450.0000	0.0000	28.7416	28.7416	64.2000	83.1774	83.1774	121.3000	111.9190	111.9190
Link71	616.3123	614.7551	383.0000	0.0000	239.1332	239.1332	245.8000	38.1739	38.1739	65.5000	277.3071	277.3071
Link73	603.9063	599.4657	73.0000	0.0000	5.6863	5.6863	92.8000	17.9475	17.9475	88.6000	23.6338	23.6338
Link74	599.4657	596.2660	102.0000	0.0000	4.6662	4.6662	93.3000	3.2729	3.2729	33.4000	7.9391	7.9391
Link75	596.2660	596.1655	52.0000	0.0000	17.2474	17.2474	92.5000	6.4669	6.4669	48.8000	23.7143	23.7143
Link76	596.1655	593.6733	40.0000	-4.6000	3.0462	3.0462	41.9000	3.1752	3.1752	65.0000	6.2214	6.2214
Link84	613.7242	607.1584	280.0000	0.0000	7.4417	7.4417	30.6000	5.6703	5.6703	26.8000	13.1120	13.1120

Link85	607.1584	593.8576	470.0000	0.0000	4.4957	4.4957	68.1000	6.7994	6.7994	109.0000	11.2950	11.2950

==========
| Table E15 - SPREADSHEET INFO LIST |
| Conduit Flow and Junction Depth Information for use in spreadsheets. The maximum values in this table are the true maximum values because they sample every time step. The values in the review results may only be the maximum of a subset of all the time steps in the run. Note: These flows are only the flows in a single barrel. |
==========

Conduit Name	Maximum Flow (cfs)	Total Flow (ft^3)	Maximum Velocity (ft/s)	Maximum Volume (ft^3)	##	Junction Name	Invert Elevation (ft)	Maximum Elevation (ft)
Link13	19.6952	129716.1831	6.7649	492.5670	##	Node11	617.2000	620.5329
Link14	27.1203	188784.3302	6.0183	1904.9416	##	Node12	617.2100	619.2171
Link15	27.6519	188682.7300	5.1519	2182.4124	##	Node20	634.6000	635.1102
Link16	42.4549	352592.9770	6.1561	4292.2465	##	Node21	633.1600	634.4838
Link17	44.5757	370748.2262	6.8989	322.1196	##	Node22	630.1100	632.0334
Link18	51.7372	421611.8762	8.9502	1131.2688	##	Node23	628.8600	631.4391
Link23	49.2212	819982.8425	7.8327	2232.6732	##	Node24	628.0300	631.0606
Link24	49.2226	819979.0516	6.9378	548.1381	##	Node25	626.3500	628.9981
Link25	49.2237	820003.5997	6.9417	2257.9355	##	Node26	626.4200	628.8160
Link26	49.2253	820048.4548	6.9304	2277.5422	##	Node27	623.6900	625.1336
Link27	51.3115	862881.6834	7.2912	2246.6437	##	Node29	612.7800	613.7242
Link28	51.3115	862929.2950	8.1842	1509.7488	##	Node30	620.0000	621.3651
Link32	76.2855	1032021.122	20.5201	63.0397	##	Node33	610.5600	614.7551
Link33	61.4651	504139.5661	17.7058	46.5308	##	Node34	608.5000	613.3337
Link47	15.4274	51240.0733	8.1778	320.4881	##	Node35	608.4000	612.9976
Link56	9.2782	134448.5210	1.3830	987.6650	##	Node36	607.4000	611.6191
Link68	9.2609	134597.4648	2.8844	1215.5843	##	Node37	606.4600	610.2586
Link69	-66.9727	135087.3048	1.8549	36959.7025	##	Node38	605.4500	608.1243
Link70	119.3235	655867.6892	2.5086	65334.3474	##	Node39	604.4400	605.7105
Link71	42.2584	645000.8065	1.5428	109928.1716	##	Node41	628.0000	628.4938
Link72	51.3115	862934.6156	18.0136	100.0059	##	Node43	631.4500	634.0964
Link73	51.3115	862940.5703	7.6217	239.4812	##	Node46	592.7400	593.6733
Link74	51.3118	862950.9747	7.1508	220.0938	##	Node47	572.0000	572.8953
Link75	51.3102	862952.8081	3.0139	1051.0100	##	Node48	593.3000	593.8576
Link76	51.3074	862949.2628	9.2369	69.8216	##	Node63	631.0000	633.4279
Link77	7.2812	58992.3320	6.6771	27.3227	##	Node65	638.0000	640.8046
Link78	7.2636	59050.9560	1.1584	72.1351	##	Node66	629.0000	631.0576
Link79	19.7198	129731.1159	9.3454	146.6853	##	Node71	622.0000	622.9218
Link82	51.7347	421648.9665	14.6374	360.1683	##	Node74	618.9800	620.5408
Link83	51.7356	421628.7396	10.9048	412.5206	##	Node75	602.9200	603.9063
Link84	51.7335	421667.2137	6.3416	439.2015	##	Node79	615.6100	619.1866
Link85	51.7222	421717.4677	5.7736	113.4232	##	Node80	597.8900	599.4657
Link90	6.5100	25709.3062	5.1471	562.2982	##	Node81	595.1800	596.2660
Link93	7.1900	28336.8068	7.6004	56.1584	##	Node82	594.6700	596.1655
Link118	9.6139	33240.8079	2.9567	30.5945	##	Node83	639.6000	639.8738
Link120	3.2226	77114.5535	4.0313	81.5318	##	Node84	631.5400	632.5549
Link121	3.2223	77118.7316	2.8538	742.5508	##	Node86	613.4900	615.5095
Link123	0.0000	0.0000	0.0000	1543.9954	##	Node87	606.0000	607.1584
Link124	12.7549	51244.9300	1.8013	1096.7680	##	Node89	637.1000	637.2000
Link125	6.8521	26716.4882	2.2837	1171.4385	##	Node92	633.0000	633.7919
Link126	7.5223	27798.9351	3.3086	1909.5967	##	Node94	631.0000	631.9845
Link127	10.2374	44482.9625	4.3144	1974.9515	##	Node99	637.7000	638.3388
Link130	9.9235	43235.9634	2.2479	2135.7397	##	Node100	628.9700	631.8174
Link131	-2.6535	-68.7362	2.3538	580.9596	##	Node108	627.0700	631.8013

Link132	9.8970	108866.5079	4.7729	2231.9629	##	Node120	638.0000	640.9762
Link133	16.8951	35091.4178	7.1204	694.8921	##	Node121	631.4500	631.9601
214.1	29.8295	506903.5949	9.6623	185.5941	##	Node122	633.5000	633.5000
283.1	4.7092	22888.2687	5.9797	30.7046	##	Node123	627.7800	631.8085
Restrict5	42.2603	645988.9574	6.2641	23149.8976	##	Node124	618.0000	621.3955
restric11	7.0166	42818.8776	2.7177	11349.0038	##	Node127	633.0000	633.4369
Restrict2	9.9199	50864.4627	3.5742	11333.7548	##	Node128	629.8000	631.6409
Restrict3	4.7793	108784.2240	2.3308	8857.7534	##	Node132	615.6000	616.3123
Link 5	64.7014	145242.9826	0.0000	0.0000	##	Node133	615.0000	621.3704
WEIR46	2.0923	2741.4315	0.0000	0.0000	##	Node134	626.4200	631.7766
Link97.1	19.8962	130832.5595	0.0000	0.0000	##	Node135	628.0500	631.6432
WEIR119	3.2225	77083.1141	0.0000	0.0000	##			
Weir122	0.0000	0.0000	0.0000	0.0000	##			
FREE # 1	135.8407	1536169.198	0.0000	0.0000	##			

```
*====================================================*
|     Table E15a - SPREADSHEET REACH LIST            |
| Peak flow and Total Flow listed by Reach or those  |
|      conduits or diversions having the same        |
|      upstream and downstream nodes.                |
*====================================================*
```

Upstream Node	Downstream Node	Maximum Flow (cfs)	Total Flow (ft^3)
Node21	Node84	19.6952	129716.183
Node22	Node23	27.1203	188784.330
Node23	Node24	27.6519	188682.730
Node24	Node25	42.4549	352592.977
Node26	Node25	44.5757	370748.226
Node26	Node27	51.7372	421611.876
Node33	Node34	49.2212	819982.842
Node34	Node35	49.2226	819979.052
Node35	Node36	49.2237	820003.600
Node36	Node37	49.2253	820048.455
Node37	Node38	51.3115	862881.683
Node38	Node39	51.3115	862929.295
Node46	Node47	76.2855	1032021.12
Node48	Node47	61.4651	504139.566
Node66	Node24	15.4274	51240.0733
Node41	Node71	9.2782	134448.521
Node71	Node74	9.2609	134597.465
Node74	Node11	-66.9727	135087.305
Node12	Node79	119.3235	655867.689
Node132	Node33	42.2584	645000.806
Node39	Node75	51.3115	862934.616
Node75	Node80	51.3115	862940.570
Node80	Node81	51.3118	862950.975
Node81	Node82	51.3102	862952.808
Node82	Node46	51.3074	862949.263
Node65	Node83	7.2812	58992.3320
Node83	Node22	7.2636	59050.9560
Node84	Node22	19.7198	129731.116
Node27	Node86	51.7347	421648.967
Node86	Node29	51.7356	421628.740
Node29	Node87	51.7335	421667.214
Node87	Node48	51.7222	421717.468
Node94	Node108	6.5100	25709.3062

Node92	Node100	7.1900	28336.8068
Node89	Node43	9.6139	33240.8079
Node20	Node121	3.2226	77114.5535
Node121	Node128	3.2223	77118.7316
Node108	Node134	12.7549	51244.9300
Node123	Node108	6.8521	26716.4882
Node100	Node123	7.5223	27798.9351
Node30	Node124	10.2374	44482.9625
Node124	Node133	9.9235	43235.9634
Node127	Node43	-2.6535	-68.7362
Node128	Node135	9.8970	108866.508
Node43	Node128	16.8951	35091.4178
Node11	Node12	59.6591	506903.595
Node63	Node41	4.7092	22888.2687
Node79	Node132	42.2603	645988.957
Node133	Node37	7.0166	42818.8776
Node134	Node26	9.9199	50864.4627
Node135	Node41	4.7793	108784.224
Node11	Node12	64.7014	145242.983
Node63	Node41	2.0923	2741.4315
Node99	Node21	19.8962	130832.560
Node120	Node20	3.2225	77083.1141

```
#########################################################
# Table E16. New Conduit Information Section            #
#            Conduit Invert (IE) Elevation and Conduit  #
#            Maximum Water Surface (WS) Elevations      #
#########################################################
```

Conduit Name	Upstream Node	Downstream Node	IE Up	IE Dn	WS Up	WS Dn	Conduit Type
Link13	Node21	Node84	633.1600	631.5400	634.4838	632.5549	Circular
Link14	Node22	Node23	630.1100	628.8600	632.0334	631.4391	Circular
Link15	Node23	Node24	628.8600	628.0300	631.4391	631.0606	Circular
Link16	Node24	Node25	628.0300	626.3500	631.0606	628.9981	Circular
Link17	Node26	Node25	626.4200	626.3500	628.8160	628.9981	Circular
Link18	Node26	Node27	626.4200	623.6900	628.8160	625.1336	Circular
Link23	Node33	Node34	610.5630	608.5000	614.7551	613.3337	Circular
Link24	Node34	Node35	608.5000	608.4000	613.3337	612.9976	Circular
Link25	Node35	Node36	608.4000	607.4000	612.9976	611.6191	Circular
Link26	Node36	Node37	607.4000	606.4600	611.6191	610.2586	Circular
Link27	Node37	Node38	606.4600	605.4500	610.2586	608.1243	Circular
Link28	Node38	Node39	605.4500	604.4400	608.1243	605.7105	Circular
Link32	Node46	Node47	592.7400	572.0000	593.6733	572.8953	Rectangle
Link33	Node48	Node47	593.3000	572.0000	593.8576	572.8953	Rectangle
Link47	Node66	Node24	629.0000	628.3300	631.0576	631.0606	Circular
Link56	Node41	Node71	628.0000	622.0000	628.4938	622.9218	Trapezoid
Link68	Node71	Node74	622.0000	618.9800	622.9218	620.5408	Natural
Link69	Node74	Node11	618.9800	617.2000	620.5408	620.5329	Natural
Link70	Node12	Node79	617.2100	615.6100	619.2171	619.1866	Natural
Link71	Node132	Node33	615.6100	610.5600	616.3123	614.7551	Natural
Link72	Node39	Node75	604.4400	602.9220	605.7105	604.1915	Circular
Link73	Node75	Node80	602.9200	597.8900	603.9063	599.4657	Natural
Link74	Node80	Node81	597.8900	595.1800	599.4657	596.2660	Natural
Link75	Node81	Node82	595.1800	594.6700	596.2660	596.1655	Natural
Link76	Node82	Node46	594.6700	592.7400	596.1655	593.6733	Natural
Link77	Node65	Node83	640.0000	639.6000	640.8046	639.8738	Circular
Link78	Node83	Node22	639.6000	636.3500	639.8738	636.4986	Trapezoid

Link79	Node84	Node22	631.5400	630.5100	632.5549	632.0334	Circular
Link82	Node27	Node86	623.6900	613.4900	625.1336	615.5095	Circular
Link83	Node86	Node29	613.4900	612.7800	615.5095	613.7242	Circular
Link84	Node29	Node87	612.7800	606.0000	613.7242	607.1584	Natural
Link85	Node87	Node48	606.0000	593.3000	607.1584	593.8576	Natural
Link90	Node94	Node108	631.0000	628.0000	631.9845	631.8013	Circular
Link93	Node92	Node100	633.0000	631.0000	633.7919	631.8174	Circular
Link118	Node89	Node43	637.1000	634.5000	637.2000	634.6000	Trapezoid
Link120	Node20	Node121	634.6000	631.4500	635.1102	631.9601	Circular
Link121	Node121	Node128	631.4500	629.8000	631.9601	631.6409	Circular
Link123	Node122	Node100	633.5000	628.9700	633.5000	631.8174	Circular
Link124	Node108	Node134	627.0700	626.4200	631.8014	631.7766	Circular
Link125	Node123	Node108	627.7800	627.0700	631.8085	631.8014	Circular
Link126	Node100	Node123	628.9700	627.7800	631.8174	631.8085	Circular
Link127	Node30	Node124	620.0000	618.0000	621.3651	621.3955	Circular
Link130	Node124	Node133	618.0000	615.0000	621.3955	621.3704	Circular
Link131	Node127	Node43	633.0000	631.4500	633.4369	634.0983	Circular
Link132	Node128	Node135	629.8000	628.0500	631.6409	631.6432	Circular
Link133	Node43	Node128	631.4500	629.8000	634.0983	631.6409	Circular
214.1	Node11	Node12	617.7000	617.2100	620.5329	619.2171	Circular
283.1	Node63	Node41	631.0100	630.2200	633.4279	631.1184	Circular
Restrict5	Node79	Node132	615.6100	615.6000	619.1866	616.3123	Circ Orif
restric11	Node133	Node37	620.0000	619.9900	621.3704	620.8676	Circ Orif
Restrict2	Node134	Node26	630.0000	629.9900	631.7766	631.1164	Circ Orif
Restrict3	Node135	Node41	630.5000	630.4900	631.6432	631.2096	Circ Orif

```
*==========================================================================*
|    Table E18 - Junction Continuity Error.   Division by Volume added 11/96  |
|                                                                            |
|  Continuity Error = Net Flow + Beginning Volume - Ending Volume            |
|                     ------------------------------------------------       |
|                     Total Flow + (Beginning Volume + Ending Volume)/2      |
|                                                                            |
|  Net Flow   = Node Inflow - Node Outflow                                   |
|  Total Flow = absolute (Inflow + Outflow)                                  |
|  Intermediate column is a judgement on the node continuity error.          |
|                                                                            |
|  Excellent  < 1 percent    Great  1 to  2 percent  Good  2 to  5 percent   |
|  Fair  5 to 10  percent    Poor  10 to 25 percent  Bad  25 to 50 percent   |
|  Terrible > 50  percent                                                    |
*==========================================================================*
```

Junction Name	<------Continuity Error -------> Volume	% of Node	% of Inflow	Remaining Volume	Beginning Volume	Net Flow Thru Node	Total Flow Thru Node	Failed to Converge
Node11	-365.6596	-0.0280	0.0223	61.7852	0.0000	-303.8745	1304301.858	0
Node12	-3820.7575	-0.2921	0.2327	34.3952	0.0000	-3786.3623	1308014.267	0
Node20	-35.1096	-0.0228	0.0021	0.0220	0.0000	-35.0876	154197.6676	0
Node21	1116.2123	0.4284	0.0680	0.0017	0.0000	1116.2140	260548.7426	0
Node22	-16.6529	-0.0044	0.0010	7.5563	0.0000	-9.0967	377566.4021	3
Node23	89.7582	0.0238	0.0055	4.2464	0.0000	94.0046	377467.0602	0
Node24	-83.1369	-0.0118	0.0051	13.9560	0.0000	-69.1809	705167.4234	0
Node25	-42.3619	-0.0057	0.0026	13.7810	0.0000	-28.5809	741509.7021	0
Node26	-46.2234	-0.0055	0.0028	17.6578	0.0000	-28.5655	843224.5650	0
Node27	-69.3254	-0.0082	0.0042	4.3013	0.0000	-65.0241	843260.8427	0
Node29	-56.1460	-0.0067	0.0034	4.4329	0.0000	-51.7131	843295.9533	0
Node30	-410.6631	-0.4612	0.0250	322.4145	0.0000	-88.2485	88878.8121	0
Node33	-1174.8364	-0.0717	0.0716	19.6536	0.0000	-1155.1828	1638808.382	0
Node34	-5.5745	-0.0003	0.0003	5.2937	0.0000	-0.2807	1639961.894	0
Node35	-40.1431	-0.0024	0.0024	4.7995	0.0000	-35.3436	1639982.651	0
Node36	-46.8639	-0.0029	0.0029	7.6674	0.0000	-39.1965	1640052.054	0
Node37	-47.6957	-0.0028	0.0029	29.9258	0.0000	-17.7699	1725749.016	0
Node38	-57.0224	-0.0033	0.0035	8.4063	0.0000	-48.6161	1725810.978	0

Node39	-15.2855	-0.0009	0.0009	3.6800	0.0000	-11.6055	1725863.911	1
Node41	-165.8503	-0.0617	0.0101	122.3729	0.0000	-43.4774	268862.4451	7
Node43	-496.1431	-0.7250	0.0302	62.6954	0.0000	-433.4478	68400.9619	1
Node46	-55.3542	-0.0027	0.0034	2.6956	0.0000	-52.6586	2063997.251	0
Node47	-19.6603	-0.0006	0.0012	3.2764	0.0000	-16.3839	3072329.886	0
Node48	-49.9021	-0.0049	0.0030	6.9220	0.0000	-42.9800	1008281.629	0
Node63	-13.3179	-0.0260	0.0008	0.1263	0.0000	-13.1916	51237.7471	33
Node65	-76.0474	-0.0492	0.0046	24410.2527	0.0000	24334.2053	142327.7140	0
Node66	358.8953	0.3489	0.0219	0.0003	0.0000	358.8956	102874.8197	0
Node71	-218.8218	-0.0813	0.0133	56.5713	0.0000	-162.2505	269045.9858	0
Node74	-615.0828	-0.2280	0.0375	59.2866	0.0000	-555.7962	269684.7696	0
Node75	-13.8325	-0.0008	0.0008	1.9555	0.0000	-11.8770	1725875.186	3
Node79	5507.0795	0.4230	0.3354	190.6637	0.0000	5697.7432	1301856.647	0
Node80	-17.0953	-0.0010	0.0010	3.3034	0.0000	-13.7918	1725891.545	0
Node81	-14.0190	-0.0008	0.0009	5.4833	0.0000	-8.5357	1725903.783	0
Node82	4.5928	0.0003	0.0003	4.6936	0.0000	9.2864	1725902.071	0
Node83	-65.0739	-0.0551	0.0040	5.5887	0.0000	-59.4852	118043.2880	0
Node84	-15.3258	-0.0059	0.0009	0.0020	0.0000	-15.3239	259447.2990	1
Node86	-7.4429	-0.0009	0.0005	2.8320	0.0000	-4.6109	843277.7061	0
Node87	-69.6578	-0.0083	0.0042	9.6090	0.0000	-60.0487	843384.6813	0
Node89	-390.2403	-0.6132	0.0238	0.0010	0.0000	-390.2393	63640.4815	0
Node92	9.1292	0.0161	0.0006	0.0011	0.0000	9.1303	56686.4471	5
Node94	-43.6252	-0.0847	0.0027	105.2162	0.0000	61.5910	51481.7065	0
Node99	-12.0565	-0.0045	0.0007	0.0000	0.0000	-12.0565	270761.5563	0
Node100	-384.6642	-0.6796	0.0234	924.3136	0.0000	539.6494	56135.7419	5
Node108	-37.4174	-0.0359	0.0023	1188.0741	0.0000	1150.6567	103670.7244	0
Node120	-73.9280	-0.0320	0.0045	28850.1271	0.0000	28776.1991	216397.0088	0
Node121	-87.9710	-0.0570	0.0054	81.2459	0.0000	-6.7251	154233.2851	0
Node122	-395.6613	0.0000	0.0241	395.6613	0.0000	0.0000	0.0000	0
Node123	19.5343	0.0355	0.0012	1051.0162	0.0000	1070.5505	54515.4233	0
Node124	-12.9628	-0.0147	0.0008	1257.1360	0.0000	1244.1732	87718.9259	0
Node127	18.0577	26.2707	0.0011	0.0016	0.0000	18.0593	68.7362	0
Node128	-260.2704	-0.1175	0.0159	788.2286	0.0000	527.9582	221076.6573	0
Node132	847.6596	0.0657	0.0516	135.7196	0.0000	983.3792	1290989.764	0
Node133	-581.6055	-0.6720	0.0354	993.7779	0.0000	412.1724	86054.8410	0
Node134	-231.5674	-0.2261	0.0141	597.9584	0.0000	366.3910	102109.3927	0
Node135	-683.3523	-0.3134	0.0416	736.6620	0.0000	53.3097	217650.7319	0

The total continuity error was -3470.5 cubic feet
The remaining total volume was 62617. cubic feet
Your mean node continuity error was Excellent
Your worst node continuity error was Excellent

```
*==================================================*
|  Table E19 - Junction Inflow & Outflow Listing    |
|              Units are either ft^3 or m^3         |
|              depending on the units in your model.|
*==================================================*
```

Junction Name	Constant Inflow to Node	User Inflow to Node	Interface Inflow to Node	DWF Inlow to Node	Inflow through Outfall	RNF Layer Inflow to Node	Inflow from 2D Layer	Outflow from Node	Evaporation from Node	Basin Infil.
Node11	0.0000	0.0000	0.0000	0.0000	0.0000	516666.3951	0.0000	0.0000	0.0000	0.0000
Node24	0.0000	0.0000	0.0000	0.0000	0.0000	112561.7603	0.0000	0.0000	0.0000	0.0000
Node25	0.0000	0.0000	0.0000	0.0000	0.0000	18159.8541	0.0000	0.0000	0.0000	0.0000
Node30	0.0000	0.0000	0.0000	0.0000	0.0000	44310.9291	0.0000	0.0000	0.0000	0.0000
Node33	0.0000	0.0000	0.0000	0.0000	0.0000	173808.8481	0.0000	0.0000	0.0000	0.0000
Node46	0.0000	0.0000	0.0000	0.0000	0.0000	168849.6912	0.0000	0.0000	0.0000	0.0000

Node47	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.5362E+06	0.0000
Node48	0.0000	0.0000	0.0000	0.0000	0.0000	82336.6382	0.0000	0.0000	0.0000
Node63	0.0000	0.0000	0.0000	0.0000	0.0000	25422.6231	0.0000	0.0000	0.0000
Node65	0.0000	0.0000	0.0000	0.0000	0.0000	83155.3084	0.0000	0.0000	0.0000
Node66	0.0000	0.0000	0.0000	0.0000	0.0000	49463.1968	0.0000	0.0000	0.0000
Node79	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Node89	0.0000	0.0000	0.0000	0.0000	0.0000	30077.0537	0.0000	0.0000	0.0000
Node92	0.0000	0.0000	0.0000	0.0000	0.0000	28192.3189	0.0000	0.0000	0.0000
Node94	0.0000	0.0000	0.0000	0.0000	0.0000	25629.3809	0.0000	0.0000	0.0000
Node99	0.0000	0.0000	0.0000	0.0000	0.0000	139929.5028	0.0000	0.0000	0.0000
Node120	0.0000	0.0000	0.0000	0.0000	0.0000	139255.0091	0.0000	0.0000	0.0000

```
*====================================================*
| Table E20 - Junction Flooding and Volume Listing.   |
|             The maximum volume is the total volume  |
|             in the node including the volume in the |
|             flooded storage area. This is the max   |
|             volume at any time. The volume in the   |
|             flooded storage area is the total volume|
|             above the ground elevation, where the   |
|             flooded pond storage area starts.       |
| The fourth column is instantaneous, the fifth is the|
| sum of the flooded volume over the entire simulation|
| Units are either ft^3 or m^3 depending on the units.|
*====================================================*
```

Junction Name	Surcharged Time (min)	Flooded Time(min)	Out of 1D-System (Flooded Volume)	Maximum Volume	Passed to 2D cell OR Volume Stored in allowed Flood Pond of 1D-System
Node11	0.0000	0.0000	0.0000	41.8812	0.0000
Node12	0.0000	0.0000	0.0000	25.2209	0.0000
Node20	0.0000	0.0000	0.0000	6.4108	0.0000
Node21	0.0000	0.0000	0.0000	16.6347	0.0000
Node22	0.0000	0.0000	0.0000	24.1699	0.0000
Node23	0.0000	0.0000	0.0000	32.4091	0.0000
Node24	0.0000	0.0000	0.0000	38.0822	0.0000
Node25	0.0000	0.0000	0.0000	33.2760	0.0000
Node26	0.0000	0.0000	0.0000	30.1083	0.0000
Node27	0.0000	0.0000	0.0000	18.1405	0.0000
Node29	0.0000	0.0000	0.0000	11.8646	0.0000
Node30	0.0000	0.0000	0.0000	17.1536	0.0000
Node33	0.0000	0.0000	0.0000	52.7155	0.0000
Node34	215.0505	0.0000	0.0000	60.7406	0.0000
Node35	213.3711	0.0000	0.0000	57.7732	0.0000
Node36	214.4685	0.0000	0.0000	53.0171	0.0000
Node37	213.8049	0.0000	0.0000	47.7335	0.0000
Node38	0.0000	0.0000	0.0000	33.6051	0.0000
Node39	0.0000	0.0000	0.0000	15.9647	0.0000
Node41	0.0000	0.0000	0.0000	6.2054	0.0000
Node43	0.0000	0.0000	0.0000	33.2781	0.0000
Node46	0.0000	0.0000	0.0000	11.7272	0.0000
Node47	0.0000	0.0000	0.0000	11.2507	0.0000
Node48	0.0000	0.0000	0.0000	7.0072	0.0000
Node63	54.6963	0.0000	0.0000	30.5096	0.0000
Node65	0.0000	0.0000	0.0000	53882.1519	0.0000
Node66	0.0000	0.0000	0.0000	25.8554	0.0000
Node71	0.0000	0.0000	0.0000	11.5830	0.0000
Node74	0.0000	0.0000	0.0000	19.6129	0.0000
Node75	0.0000	0.0000	0.0000	12.3939	0.0000
Node79	0.0000	0.0000	0.0000	218126.5947	0.0000
Node80	0.0000	0.0000	0.0000	19.8007	0.0000

Node81	0.0000	0.0000	0.0000	13.6464	0.0000
Node82	0.0000	0.0000	0.0000	18.7927	0.0000
Node83	0.0000	0.0000	0.0000	3.4405	0.0000
Node84	0.0000	0.0000	0.0000	12.7537	0.0000
Node86	0.0000	0.0000	0.0000	25.3769	0.0000
Node87	0.0000	0.0000	0.0000	14.5563	0.0000
Node89	0.0000	0.0000	0.0000	1.2062	0.0000
Node92	0.0000	0.0000	0.0000	9.9513	0.0000
Node94	0.0000	0.0000	0.0000	12.3711	0.0000
Node99	2228.3871	0.0000	0.0000	8819.4181	0.0000
Node100	0.0000	0.0000	0.0000	35.7801	0.0000
Node108	1018.4304	0.0000	0.0000	59.4542	0.0000
Node120	2860.0000	0.0000	0.0000	59372.9523	0.0000
Node121	0.0000	0.0000	0.0000	6.4100	0.0000
Node122	0.0000	0.0000	0.0000	0.0000	0.0000
Node123	121.1832	0.0000	0.0000	50.6217	0.0000
Node124	88.8125	0.0000	0.0000	42.6675	0.0000
Node127	0.0000	0.0000	0.0000	5.4898	0.0000
Node128	0.0000	0.0000	0.0000	23.1326	0.0000
Node132	0.0000	0.0000	0.0000	8.9502	0.0000
Node133	2843.6139	0.0000	0.0000	80.0508	0.0000
Node134	2842.9703	0.0000	0.0000	67.3110	0.0000
Node135	575.1283	0.0000	0.0000	45.1518	0.0000

```
*==================================*
| Simulation Specific Information  |
*==================================*
Number of Input Conduits..........        48 Number of Simulated Conduits......        58
Number of Natural Channels........        10 Number of Junctions...............        55
Number of Storage Junctions.......         4 Number of Weirs...................         5
Number of Orifices................         4 Number of Pumps...................         0
Number of Free Outfalls...........         1 Number of Tide Gate Outfalls......         0


*==========================================================*
| Average % Change in Junction or Conduit is defined as:  |
| Conduit  % Change ==> 100.0 ( Q(n+1) - Q(n) ) / Qfull   |
| Junction % Change ==> 100.0 ( Y(n+1) - Y(n) ) / Yfull   |
*==========================================================*

The Conduit with the largest average change was..Link133    with     0.000 percent
The Junction with the largest average change was.Node43     with     0.463 percent
The Conduit with the largest sinuosity was.......214.1      with     3.870


*==================================================================*
| Table E21. Continuity balance at the end of the simulation       |
|            Junction Inflow, Outflow or Street Flooding           |
| Error = Inflow  + Initial Volume - Outflow - Final   Volume      |
*==================================================================*
```

Inflow Junction	Inflow Volume,ft^3	Average Inflow, cfs
Node11	517067.9756	2.9923
Node24	112651.6432	0.6519
Node25	18168.4988	0.1051
Node30	44395.8497	0.2569
Node33	173824.7334	1.0059
Node46	169026.8664	0.9782
Node48	82424.5957	0.4770
Node63	25608.0470	0.1482
Node65	83335.3821	0.4823
Node66	51634.7464	0.2988
Node89	30399.6736	0.1759
Node92	28349.6403	0.1641
Node94	25772.4003	0.1491
Node99	139928.9967	0.8098
Node120	139313.8947	0.8062

```
         Node47    -1.536E+06        -8.8899

       Outflow      Outflow          Average
       Junction  Volume,ft^3    Outflow, cfs
---------------  ------------   ------------
         Node47   1.53617E+06         8.8899


*=====================================================*

| Initial system volume        =         0.0000 Cu Ft |

| Total system inflow volume   =   1.637819E+06 Cu Ft |

| Inflow + Initial volume      =   1.637819E+06 Cu Ft |

*=====================================================*

| Total system outflow         =   1.536169E+06 Cu Ft |

| Volume left (Final volume)   =     62617.4480 Cu Ft |

| Evaporation                  =         0.0000 Cu Ft |

| Basin Infiltration           =     46708.2524 Cu Ft |

| Outflow + Final Volume       =   1.645495E+06 Cu Ft |

*=====================================================*


*==============================================*
| Total Model Continuity Error                 |
| Error in Continuity, Percent =        -0.4687 |
| Error in Continuity, ft^3    =      -7676.389 |
| + Error means a continuity loss, - a gain    |
*==============================================*


####################################################
# Table E22. Numerical Model judgement section    #
####################################################

Overall error was (minimum of Table E18 & E21)             -0.2119 percent


Worst nodal error was in node Node79           with         0.4230 percent


Of the total inflow this loss was                           0.3362 percent


Your overall continuity error was                  Excellent


                                                  Excellent Efficiency


Efficiency of the simulation                       2.01


Most Number of Non Convergences at one Node       33.


Total Number Non Convergences at all Nodes        59.


Total Number of Nodes with Non Convergences        9.




##########################################################
# Table E23. New Basin Design Information               #
#            Maximum Hydraulic Grade Line,              #
#            Out Conduit Sizes and Maximum Flow         #
##########################################################

A) Resize d/s Pipes based on given HGL
B) Resize Basin based on given HGL
C) Resize d/s Pipes and Basin based on HGL and max discharge
D) Resize d/s pipes based on given max discharge

   Basin Name    Type    Max.HGL   Conduit         Depth   Width   Barrels   Max.Flow
                           (ft)                     (ft)    (ft)             (ft^3/s)
--------------- ------  --------- --------------- ------- ------- --------- ---------

===> Hydraulic model simulation ended normally.
===> XP-SWMM Simulation ended normally.


===> Your input file was named  : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Proposed\Proposed2_Final_10yr
2hr.DAT
```

```
 ===> Your output file was named : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Proposed\Proposed2_Final_10yr
2hr.out


 *==============================================================*
 |              SWMM Simulation Date and Time Summary            |
 *==============================================================*
 | Starting Date... April       8, 2015  Time...    8:31:36: 0  |
 |   Ending Date... April       8, 2015  Time...    8:32: 0:84  |
 |  Elapsed Time...    0.41400 minutes or     24.84000 seconds  |
 *==============================================================*
```

```
Current Directory:   N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Stud
Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


Input File : Loc_Drain_Study\XPSWMM model\Proposed\Proposed2_Final_50yr 2hr.XP

          *==============================================*
          |                   xpswmm                     |
          |     Storm and Wastewater Management Model    |
          |        Developed by XP Solutions Inc.        |
          |==============================================|
          |                                              |
          | Last Update      : Jan., 2013                |
          | Interface Version: 2012                      |
          | Engine Version   : 12.0                      |
          | Data File Version: 12.6                      |
          |                                              |
          |                                              |
          *==============================================*

Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


*===================================================*
|       Input and Output file names by Layer        |
*===================================================*

 Input File  to Layer #     1 JOT.US


 Output File to Layer #     1 JOT.US


 Input File  to Layer #     2 JOT.US


 Output File to Layer #     2 JOT.US


*==========================================================*
|   Special command line arguments in XP-SWMM2000. This    |
|   now includes program defaults. $Keywords are the program|
|   defaults.  Other Keywords are from the SWMMCOM.CFG file.|
|   or the command line or any cfg file on the command line.|
|   Examples include these in the file xpswm.bat under the  |
|   section :solve or in the windows version XPSWMM32 in the|
|   file solve.bat                                          |
|                                                           |
|   Note: the cfg file should be in the subdirectory swmxp  |
|         or defined by the set variable in the xpswm.bat   |
|         file.  Some examples of the command lines possible|
|         are shown below:                                  |
|                                                           |
|   swmmd swmmcom.cfg                                       |
|   swmmd my.cfg                                            |
|   swmmd nokeys nconv5 perv extranwq                       |
*==========================================================*

 $powerstation                        0.0000         1         2
 $perv                                0.0000         0         4
 $oldegg                              0.0000         0         7
 $as                                  0.0000         0        11
 $noflat                              0.0000         0        21
 $oldomega                            0.0000         0        24
 $oldvol                              0.0000         1        28
 $implicit                            0.0000         1        29
 $oldhot                              0.0000         1        31
 $oldscs                              0.0000         0        33
 $flood                               0.0000         1        40
 $nokeys                              0.0000         0        42
 $pzero                               0.0000         0        55
 $oldvol2                             0.0000         2        59
 $storage2                            0.0000         3        62
 $oldhot1                             0.0000         1        63
 $pumpwt                              0.0000         1        70
 $ecloss                              0.0000         1        77
 $exout                               0.0000         0        97
 $spatial = 0.90                      0.9000         5       124
 $djref = -1.0                       -0.1000         3       143
 $weirlen = 50                       50.0000         1       153
 $oldbnd                              0.0000         1       154
 $nogrelev                            0.0000         1       161
 $ncmid                               0.0000         0       164
 $new_nl_97                           0.0000         2       290
 SCSIADEPTH=ON                        0.0000         1       293
 $best97                              0.0000         1       294
 $newbound                            0.0000         1       295
 $q_tol = 0.01                        0.0001         1       316
 $new_storage                         0.0000         1       322
 $old_iteration                       0.0000         1       333
 MINLEN=5                             5.0000         1       346
 $review_elevation                    0.0000         1       383
 $use_half_volume                     0.0000         1       385
 VERT_WALLS=ON                        0.0000         1       389
 $min_ts = 1.0                        1.0000         1       407
 $design_restart = on                 0.0000         1       412
 $zero_value=1.e-05                   0.0000         1       415
 SUBCATCHMENT_RES=ON                  0.0000         1       419
 $relax_depth = on                    0.0000         1       427
 $saveallpts = on                     0.0000         1       434
 $channel_geometry=1                  0.0000         1       456

 *==========================================================*
```

```
| Parameter Values on the Tapes Common Block.These are the |
| values read from the data file and dynamically allocated |
| by the model for this simulation.                        |
*==========================================================*

 Number of Subcatchments in the Runoff Block (NW)....    15
 Number of Channel/Pipes in the Runoff Block (NG)....     0
 Runoff Water quality constituents (NRQ)............     0
 Runoff Land Uses per Subcatchment (NLU)............     0
 Number of Elements in the Transport Block (NET).....     0
 Number of Storage Junctions in Transport (NTSE).....     0
 Number of Input Hydrographs in Transport (NTH)......     0
 Number of Elements in the Extran Block (NEE)........    58
 Number of Groundwater Subcatchments in Runoff (NGW).     0
 Number of Interface locations for all Blocks (NIE)..    58
 Number of Pumps in Extran (NEP).....................     0
 Number of Orifices in Extran (NEO)..................     4
 Number of Tide Gates/Free Outfalls in Extran (NTG)..     1
 Number of Extran Weirs (NEW)........................     5
 Number of scs hydrograph points.....................  1513
 Number of Extran printout locations (NPO)...........     0
 Number of Tide elements in Extran (NTE)............     1
 Number of Natural channels (NNC)....................    10
 Number of Storage junctions in Extran (NVSE)........     4
 Number of Time history data points in Extran(NTVAL).     0
 Number of Variable storage elements in Extran (NVST)     5
 Number of Input Hydrographs in Extran (NEH).........     0
 Number of Particle sizes in Transport Block (NPS)...     0
 Number of User defined conduits (NHW)...............    15
 Number of Connecting conduits in Extran (NECC)......    20
 Number of Upstream elements in Transport (NTCC).....    10
 Number of Storage/treatment plants (NSTU)...........     1
 Number of Values for R1 lines in Transport (NR1)....     0
 Number of Nodes to be allowed for (NNOD)............    58
 Number of Plugs in a Storage Treatment Unit.........     1


#######################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
#    Last Updated Jan., 2013 by XP Solutions          #

*==========================================================*
|          RUNOFF TABLES IN THE OUTPUT FILE.               |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,      |
|  for example: search for Table R3 to check continuity.   |
|  This output file can be imported into a Word Processor  |
|  and printed on US letter or A4 paper using portrait     |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                          |
| Table R1  - Physical Hydrology Data                      |
| Table R2  - Infiltration data                            |
| Table R3  - Raingage and Infiltration Database Names     |
| Table R4  - Groundwater Data                             |
| Table R5  - Continuity Check for Surface Water           |
| Table R6  - Continuity Check for Channels/Pipes          |
| Table R7  - Continuity Check for Subsurface Water        |
| Table R8  - Infiltration/Inflow Continuity Check         |
| Table R9  - Summary Statistics for Subcatchments         |
| Table R10 - Sensitivity anlysis for Subcatchments        |
*==========================================================*

                    A1

###########################################
#             RUNOFF JOB CONTROL          #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                 0
 Runoff graph plot control....                                 0
 Runoff output print control..                                 0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                     60.0
 Dry time step length (seconds)......                  86400.0
 Wet/Dry time step length (seconds)...                    60.0
 Simulation length is......                               24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ........................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..         21
 KINC   - Rainfall values(pairs) per line..         10
 KPRINT - Print rainfall(0-Yes,1-No).......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
```

```
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval...........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00


#######################################
# Rainfall input summary from Runoff #
#######################################

 Total rainfall for gage #     1 is    3.8200 inches

   ############################
   #        Data Group F1     #
   # Evaporation Rate (in/day) #
   ############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100


  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################

                                                                                                  Deprs Deprs Prcnt
                                                                    Per-                         -sion -sion  Zero
      Subcatchment            Channel      Width    Area      cent  Slope  "n"   "n"  Storge Strge Deten
  Number         Name         or inlet      (ft)    (ac)     Imperv ft/ft Imprv  Perv Imprv  Perv -tion
  ====== =============== =============== ======== ========   ====== ===== ===== ===== ===== ===== =====
      1         Node63#1           Node63 300.00    5.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
      2        Node120#1          Node120 700.00    32.000      0.00 0.020 0.020 0.020 0.000 0.000  0.00
      3         Node89#1           Node89 200.00    5.9000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
      4         Node11#1           Node11 1000.0    107.90      0.00 0.020 0.020 0.020 0.000 0.000  0.00
      5         Node33#1           Node33 400.00    37.800      0.00 0.010 0.020 0.020 0.000 0.000  0.00
      6         Node30#1           Node30 450.00    9.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
      7         Node46#1           Node46 600.00    30.100      0.00 0.015 0.020 0.020 0.000 0.000  0.00
      8         Node65#1           Node65 450.00    16.100      0.00 0.023 0.020 0.020 0.000 0.000  0.00
      9         Node99#1           Node99 700.00    32.100      0.00 0.020 0.020 0.020 0.000 0.000  0.00
     10         Node92#1           Node92 200.00    5.5000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     11         Node94#1           Node94 300.00    5.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     12         Node66#1           Node66 150.00    10.000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     13         Node24#1           Node24 950.00    19.700      0.00 0.040 0.020 0.020 0.000 0.000  0.00
     14         Node25#1           Node25 300.00    5.4000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     15         Node48#1           Node48 600.00    19.600      0.00 0.014 0.020 0.020 0.000 0.000  0.00


#######################################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                             #
#                     Infiltration or Time of Concentration Data                                      #
#                                                                                                     #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)             Infl #4(#8)  #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction  #
# SBUH                ->   Comp CN          Time Conc                  N/A                      N/A  #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                      N/A  #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume  #
# Proportional        ->  Constant               N/A                  N/A                      N/A  #
# Initial/Cont Loss   ->   Initial         Continuing                  N/A                      N/A  #
# Initial/Proportional ->  Initial           Constant                  N/A                      N/A  #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                 Exponent  #
# Rational Formula     -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance  #
#                                 (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)             #
#                     Rational Formula Tc Method: 1 = Constant                                        #
#                                                 2 = Friend's Equation                               #
#                                                 3 = Kinematic Wave                                  #
#                                                 4 = Alameda Method                                  #
#                                                 5 = Izzard's Formula                                #
#                                                 6 = Kerby's Equation                                #
#                                                 7 = Kirpich's Equation                              #
#                                                 8 = Bransby Williams Equation                       #
#                                                 9 = Federal Aviation Authority Equation             #
#######################################################################################################

     Subcatchment           Infl      Infl      Infl      Infl      Infl      Infl      Infl      Infl
  Number     Name            # 1       # 2       # 3       # 4       # 5       # 6       # 7       # 8
  ===============        ========= ========= ========= ========= ========= ========= ========= =========
    1         Node63#1    87.0000    0.3617  484.0000    0.2000
    2        Node120#1    83.7000    0.7500  484.0000    0.2000
    3         Node89#1    87.0000    0.3183  484.0000    0.2000
    4         Node11#1    85.5000    0.6700  484.0000    0.2000
    5         Node33#1    84.7000    1.0833  484.0000    0.2000
    6         Node30#1    86.0000    0.5333  484.0000    0.2000
    7         Node46#1    88.5000    0.7083  484.0000    0.2000
    8         Node65#1    87.0000    0.5283  484.0000    0.2000
    9         Node99#1    83.7000    1.5200  484.0000    0.2000
   10         Node92#1    87.0000    0.4167  484.0000    0.2000
   11         Node94#1    87.0000    0.4167  484.0000    0.2000
   12         Node66#1    87.0000    0.1450  484.0000    0.2000
   13         Node24#1    89.0000    0.7383  484.0000    0.2000
   14         Node25#1    79.0000    0.6200  484.0000    0.2000
   15         Node48#1    83.0000    0.5633  484.0000    0.2000


#############################################################
#     Table R3.  SUBCATCHMENT  DATA                        #
#                Rainfall and Infiltration Database Names  #
#############################################################

      Subcatchment         Gage  Infiltration        Routing
  Number         Name        No       Type              Type
  ====== =============== ======= ============ ====================
      1         Node63#1      1   SCS Method       SCS curvilinear
      2        Node120#1      1   SCS Method       SCS curvilinear
```

```
     3         Node89#1      1   SCS Method       SCS curvilinear
     4         Node11#1      1   SCS Method       SCS curvilinear
     5         Node33#1      1   SCS Method       SCS curvilinear
     6         Node30#1      1   SCS Method       SCS curvilinear
     7         Node46#1      1   SCS Method       SCS curvilinear
     8         Node65#1      1   SCS Method       SCS curvilinear
     9         Node99#1      1   SCS Method       SCS curvilinear
    10         Node92#1      1   SCS Method       SCS curvilinear
    11         Node94#1      1   SCS Method       SCS curvilinear
    12         Node66#1      1   SCS Method       SCS curvilinear
    13         Node24#1      1   SCS Method       SCS curvilinear
    14         Node25#1      1   SCS Method       SCS curvilinear
    15         Node48#1      1   SCS Method       SCS curvilinear

Total Number of Subcatchments...             15
Total Tributary Area (acres)....         341.10
Impervious Area (acres).........           0.00
Pervious Area (acres)...........         341.10
Total Width (feet)..............        7300.00
Impervious Area (%).............           0.00


 ##################################################
 #          S U B C A T C H M E N T  D A T A      #
 #   Default, Ratio values for subcatchment data  #
 #   Used with the calibrate node in the runoff.  #
 # 1 - width     2 - area       3 - impervious %  #
 # 4 - slope     5 - imp "n"    6 - perv "n"      #
 # 7 - imp ds    8 - perv ds    9 - 1st infil     #
 #10 - 2nd infil               11 - 3rd infil     #
 ##################################################

Column           1         2         3         4         5         6         7         8         9        10        11
Default     0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
Ratio       1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000

*******************************************************
*     Arrangement of Subcatchments and Channel/Pipes    *
*******************************************************


    Inlet
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


*********************************************************
* Hydrographs will be stored for the following  15 INLETS *
*********************************************************
Node63    Node120   Node89    Node11    Node33    Node30
Node46    Node65    Node99    Node92    Node94    Node66
Node24    Node25    Node48


************************************************
*  Quality Simulation not included in this run *
************************************************



***************************************************
*  Precipitation Interface File Summary           *
*  Number of precipitation station....        1   *
***************************************************

Location Station Number
-------- --------------
       1.             1

XXX End of Header Section XXX

#########################################################
#    Entry made to the HYDRAULIC Layer of XP-SWMM     #
#    Last Updated in Jan., 2013 by XP Solutions       #

#########################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
```

```
#    Last Updated Jan., 2013 by XP Solutions          #

*=========================================================*
|         RUNOFF TABLES IN THE OUTPUT FILE.               |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,      |
|  for example: search for Table R3 to check continuity.   |
|  This output file can be imported into a Word Processor  |
|  and printed on US letter or A4 paper using portrait     |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                          |
| Table R1  - Physical Hydrology Data                      |
| Table R2  - Infiltration data                            |
| Table R3  - Raingage and Infiltration Database Names     |
| Table R4  - Groundwater Data                             |
| Table R5  - Continuity Check for Surface Water           |
| Table R6  - Continuity Check for Channels/Pipes          |
| Table R7  - Continuity Check for Subsurface Water        |
| Table R8  - Infiltration/Inflow Continuity Check         |
| Table R9  - Summary Statistics for Subcatchments         |
| Table R10 - Sensitivity anlysis for Subcatchments        |
*=========================================================*

                    A1

###########################################
#            RUNOFF JOB CONTROL           #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                0
 Runoff graph plot control....                                0
 Runoff output print control..                                0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                      60.0
 Dry time step length (seconds)......                  86400.0
 Wet/Dry time step length (seconds)...                     60.0
 Simulation length is......                                24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ............................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..        21
 KINC   - Rainfall values(pairs) per line..        10
 KPRINT - Print rainfall(0-Yes,1-No).......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval..........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00


#######################################
# Rainfall input summary from Runoff #
#######################################

 Total rainfall for gage #     1 is    3.8200 inches

   ##############################
   #        Data Group F1       #
   # Evaporation Rate (in/day) #
   ##############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100


  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################

                                                                                   Deprs Deprs Prcnt
                                                          Per-                     -sion -sion  Zero
      Subcatchment            Channel      Width    Area      cent  Slope  "n"   "n"  Storge Strge Deten
 Number          Name         or inlet      (ft)    (ac)     Imperv ft/ft Imprv  Perv Imprv  Perv -tion
 ====== =============== ================ ======== ========   ====== ===== ===== ===== ===== ===== =====
     1         Node63#1           Node63 300.00    5.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     2        Node120#1          Node120 700.00    32.000      0.00 0.020 0.020 0.020 0.000 0.000  0.00
     3         Node89#1           Node89 200.00    5.9000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     4         Node11#1           Node11 1000.0    107.90      0.00 0.020 0.020 0.020 0.000 0.000  0.00
     5         Node33#1           Node33 400.00    37.800      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     6         Node30#1           Node30 450.00    9.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
```

```
     7         Node46#1           Node46 600.00    30.100      0.00 0.015 0.020 0.020 0.000 0.000  0.00
     8         Node65#1           Node65 450.00    16.100      0.00 0.023 0.020 0.020 0.000 0.000  0.00
     9         Node99#1           Node99 700.00    32.100      0.00 0.020 0.020 0.020 0.000 0.000  0.00
    10         Node92#1           Node92 200.00    5.5000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
    11         Node94#1           Node94 300.00    5.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
    12         Node66#1           Node66 150.00    10.000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
    13         Node24#1           Node24 950.00    19.700      0.00 0.040 0.020 0.020 0.000 0.000  0.00
    14         Node25#1           Node25 300.00    5.4000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
    15         Node48#1           Node48 600.00    19.600      0.00 0.014 0.020 0.020 0.000 0.000  0.00


##############################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                     #
#                     Infiltration or Time of Concentration Data                             #
#                                                                                            #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)             Infl #4(#8)  #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction  #
# SBUH                ->   Comp CN          Time Conc                N/A                      N/A  #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                    N/A  #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume  #
# Proportional        ->  Constant                N/A                 N/A                      N/A  #
# Initial/Cont Loss   ->   Initial         Continuing                 N/A                      N/A  #
# Initial/Proportional ->  Initial           Constant                 N/A                      N/A  #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                 Exponent  #
# Rational Formula    -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance  #
#                                (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)             #
#                     Rational Formula Tc Method: 1 = Constant                                     #
#                                                 2 = Friend's Equation                            #
#                                                 3 = Kinematic Wave                               #
#                                                 4 = Alameda Method                               #
#                                                 5 = Izzard's Formula                             #
#                                                 6 = Kerby's Equation                             #
#                                                 7 = Kirpich's Equation                           #
#                                                 8 = Bransby Williams Equation                    #
#                                                 9 = Federal Aviation Authority Equation          #
##############################################################################################

     Subcatchment           Infl      Infl      Infl      Infl      Infl      Infl      Infl      Infl
  Number     Name            # 1       # 2       # 3       # 4       # 5       # 6       # 7       # 8
  ===============        ========  ========  ========  ========  ========  ========  ========  ========
    1         Node63#1    87.0000    0.3617  484.0000    0.2000
    2        Node120#1    83.7000    0.7500  484.0000    0.2000
    3         Node89#1    87.0000    0.3183  484.0000    0.2000
    4         Node11#1    85.5000    0.6700  484.0000    0.2000
    5         Node33#1    84.7000    1.0833  484.0000    0.2000
    6         Node30#1    86.0000    0.5333  484.0000    0.2000
    7         Node46#1    88.5000    0.7083  484.0000    0.2000
    8         Node65#1    87.0000    0.5283  484.0000    0.2000
    9         Node99#1    83.7000    1.5200  484.0000    0.2000
   10         Node92#1    87.0000    0.4167  484.0000    0.2000
   11         Node94#1    87.0000    0.4167  484.0000    0.2000
   12         Node66#1    87.0000    0.1450  484.0000    0.2000
   13         Node24#1    89.0000    0.7383  484.0000    0.2000
   14         Node25#1    79.0000    0.6200  484.0000    0.2000
   15         Node48#1    83.0000    0.5633  484.0000    0.2000


##############################################################
#     Table R3.  SUBCATCHMENT  DATA                         #
#                Rainfall and Infiltration Database Names  #
##############################################################

     Subcatchment          Gage  Infiltration       Routing
  Number           Name      No       Type             Type
  ====== =============== ======= ============ ====================
     1         Node63#1      1   SCS Method       SCS curvilinear
     2        Node120#1      1   SCS Method       SCS curvilinear
     3         Node89#1      1   SCS Method       SCS curvilinear
     4         Node11#1      1   SCS Method       SCS curvilinear
     5         Node33#1      1   SCS Method       SCS curvilinear
     6         Node30#1      1   SCS Method       SCS curvilinear
     7         Node46#1      1   SCS Method       SCS curvilinear
     8         Node65#1      1   SCS Method       SCS curvilinear
     9         Node99#1      1   SCS Method       SCS curvilinear
    10         Node92#1      1   SCS Method       SCS curvilinear
    11         Node94#1      1   SCS Method       SCS curvilinear
    12         Node66#1      1   SCS Method       SCS curvilinear
    13         Node24#1      1   SCS Method       SCS curvilinear
    14         Node25#1      1   SCS Method       SCS curvilinear
    15         Node48#1      1   SCS Method       SCS curvilinear

 Total Number of Subcatchments...              15
 Total Tributary Area (acres)....          341.10
 Impervious Area (acres).........            0.00
 Pervious Area (acres)...........          341.10
 Total Width (feet)..............         7300.00
 Impervious Area (%).............            0.00


  ##################################################
  #          S U B C A T C H M E N T  D A T A      #
  #   Default, Ratio values for subcatchment data  #
  #   Used with the calibrate node in the runoff.  #
  # 1 - width     2 - area       3 - impervious %  #
  # 4 - slope     5 - imp "n"    6 - perv "n"      #
  # 7 - imp ds    8 - perv ds    9 - 1st infil     #
  #10 - 2nd infil               11 - 3rd infil     #
  ##################################################

 Column          1         2         3         4         5         6         7         8         9        10        11
 Default    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
 Ratio      1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000

 *******************************************************
 *     Arrangement of Subcatchments and Channel/Pipes    *
 *******************************************************
```

```
    Inlet
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


************************************************************
* Hydrographs will be stored for the following  15 INLETS *
************************************************************
Node63    Node120   Node89    Node11    Node33    Node30
Node46    Node65    Node99    Node92    Node94    Node66
Node24    Node25    Node48


************************************************
*  Quality Simulation not included in this run *
************************************************



*****************************************************
*  Precipitation Interface File Summary             *
*  Number of precipitation station....          1   *
*****************************************************

Location Station Number
-------- --------------
       1.             1


    A1


*==========================================================*
|        HYDRAULICS TABLES IN THE OUTPUT FILE               |
|  These are the more important tables in the output file.  |
|  You can use your editor to find the table numbers,       |
|  for example: search for Table E20 to check continuity.   |
|  This output file can be imported into a Word Processor   |
|  and printed on US letter or A4 paper using portrait      |
|  mode, courier font, a size of 8 pt. and margins of 0.75  |
|                                                           |
| Table E1   - Basic Conduit Data                           |
| Table E2   - Conduit Factor Data                          |
| Table E3a  - Junction Data                                |
| Table E3b  - Junction Data                                |
| Table E4   - Conduit Connectivity Data                    |
| Table E4a  - Dry Weather Flow Data                        |
| Table E4b  - Real Time Control Data                       |
| Table E5   - Junction Time Step Limitation Summary        |
| Table E5a  - Conduit Explicit Condition Summary           |
| Table E6   - Final Model Condition                        |
| Table E7   - Iteration Summary                            |
| Table E8   - Junction Time Step Limitation Summary        |
| Table E9   - Junction  Summary  Statistics                |
| Table E10  - Conduit   Summary  Statistics                |
| Table E11  - Area assumptions used in the analysis        |
| Table E12  - Mean conduit information                     |
| Table E13  - Channel losses(H) and culvert info           |
| Table E13a - Culvert Analysis Classification              |
| Table E14  - Natural Channel Overbank Flow Information    |
| Table E14a - Natural Channel Encroachment Information     |
| Table E14b - Floodplain Mapping                           |
| Table E15  - Spreadsheet Info List                        |
| Table E15a - Spreadsheet Reach List                       |
| Table E16  - New Conduit Output Section                   |
| Table E17  - Pump Operation                               |
| Table E18  - Junction Continuity Error                    |
| Table E19  - Junction Inflow & Outflow Listing            |
| Table E20  - Junction Flooding and Volume List            |
| Table E21  - Continuity balance at simulation end         |
| Table E22  - Model Judgement Section                      |
*==========================================================*

Time Control from Hydraulics Job Control
```

```
Year.........    2014 Month.......       1
Day..........       1 Hour........       0
Minute.......       0 Second......       0


Control information for simulation
----------------------------------

Integration cycles................       576
Length of integration step is......    300.00 seconds
Simulation length..................     48.00 hours
Do not create equiv. pipes(NEQUAL).         0
Use U.S. customary units for I/O...         0
Printing starts in cycle...........         1
Intermediate printout intervals of.       500 cycles
Intermediate printout intervals of.   2500.00 minutes
Summary printout intervals of......       500 cycles
Summary printout time interval of..   2500.00 minutes
Hot start file parameter (REDO)....         0
Initial time.......................      0.00 hours

Iteration variables: Flow Tolerance.   0.00010
                     Head Tolerance.   0.00050
    Minimum depth (m or ft).........   0.00001
    Underrelaxation parameter........  0.85000
    Time weighting parameter........   0.85000
    Conduit roughness factor........   1.00000
    Flow adjustment factor..........   1.00000
    Initial Condition Smoothing.....         0
    Courant Time Step Factor........   1.00000
    Default Expansion/Contraction K.   0.00000
    Default Entrance/Exit K.........   0.00000
    Routing Method..................   Dynamic Wave
Default surface area of junctions...     12.57 square feet.
Minimum Junction/Conduit Depth......   0.00001 feet.
Ponding Area Coefficient............   5000.00
Ponding Area Exponent...............    1.0000
Minimum Orifice Length..............   1000.00 feet.
NJSW input hydrograph junctions.....     0
     or user defined hydrographs....

        Natural Cross-Section information for Channel Link68
        ====================================================
         Cross-Section ID (from X1 card) :     1.0 Channel sequence number :     1

  Left Overbank Length   :    400.0 ft                Maximum Elevation        :   622.00 ft.
  Main Channel Length    :    400.0 ft                Maximum Depth            :     2.70 ft.
  Right Overbank Length  :    400.0 ft                Maximum Section Area     :  45.1725 ft^2
                                                      Maximum hydraulic radius :     0.46 ft.
  Manning N :      0.025  to Station         -67.2    Max topwidth             :    97.80 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 9.85E+01 ft
    "    "  :      0.025  Beyond station      30.6    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  45.1725 ft^2

        Natural Cross-Section information for Channel Link69
        ====================================================
         Cross-Section ID (from X1 card) :     2.0 Channel sequence number :     2

  Left Overbank Length   :    258.0 ft                Maximum Elevation        :   624.37 ft.
  Main Channel Length    :    260.0 ft                Maximum Depth            :     6.05 ft.
  Right Overbank Length  :    262.0 ft                Maximum Section Area     : 1075.528 ft^2
                                                      Maximum hydraulic radius :     3.57 ft.
  Manning N :      0.025  to Station        -126.4    Max topwidth             :   301.00 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.01E+02 ft
    "    "  :      0.025  Beyond station     174.6    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1075.528 ft^2

        Natural Cross-Section information for Channel Link70
        ====================================================
         Cross-Section ID (from X1 card) :     3.0 Channel sequence number :     3

  Left Overbank Length   :    450.0 ft                Maximum Elevation        :   624.09 ft.
  Main Channel Length    :    450.0 ft                Maximum Depth            :     7.76 ft.
  Right Overbank Length  :    450.0 ft                Maximum Section Area     : 955.4430 ft^2
                                                      Maximum hydraulic radius :     5.13 ft.
  Manning N :      0.025  to Station         -64.2    Max topwidth             :   185.50 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.86E+02 ft
    "    "  :      0.025  Beyond station     121.3    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 955.4430 ft^2

        Natural Cross-Section information for Channel Link71
        ====================================================
         Cross-Section ID (from X1 card) :     4.0 Channel sequence number :     4

  Left Overbank Length   :    383.0 ft                Maximum Elevation        :   624.37 ft.
  Main Channel Length    :    383.0 ft                Maximum Depth            :     8.76 ft.
  Right Overbank Length  :    383.0 ft                Maximum Section Area     : 2270.844 ft^2
                                                      Maximum hydraulic radius :     7.27 ft.
  Manning N :      0.025  to Station        -245.8    Max topwidth             :   311.30 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.12E+02 ft
    "    "  :      0.025  Beyond station      65.5    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 2270.844 ft^2

        Natural Cross-Section information for Channel Link73
        ====================================================
         Cross-Section ID (from X1 card) :     5.0 Channel sequence number :     5

  Left Overbank Length   :     40.0 ft                Maximum Elevation        :   613.47 ft.
  Main Channel Length    :     73.0 ft                Maximum Depth            :    11.92 ft.
  Right Overbank Length  :    100.0 ft                Maximum Section Area     : 1101.166 ft^2
                                                      Maximum hydraulic radius :     6.02 ft.
  Manning N :      0.025  to Station         -92.8    Max topwidth             :   181.40 ft.
```

```
   "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
   "    "  :      0.025  Beyond station      88.6    Max left bank area       :     0.00 ft^2
                                                     Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1101.166 ft^2

        Natural Cross-Section information for Channel Link74
        ====================================================
         Cross-Section ID (from X1 card) :     6.0 Channel sequence number :     6

  Left Overbank Length   :    102.0 ft                Maximum Elevation        :   613.84 ft.
  Main Channel Length    :    102.0 ft                Maximum Depth            :    15.95 ft.
  Right Overbank Length  :    102.0 ft                Maximum Section Area     : 1003.556 ft^2
                                                      Maximum hydraulic radius :     7.52 ft.
  Manning N :      0.025  to Station         -93.3    Max topwidth             :   126.70 ft.
   "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.33E+02 ft
   "    "  :      0.025  Beyond station      33.4    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1003.556 ft^2

        Natural Cross-Section information for Channel Link75
        ====================================================
         Cross-Section ID (from X1 card) :     7.0 Channel sequence number :     7

  Left Overbank Length   :     52.0 ft                Maximum Elevation        :   612.13 ft.
  Main Channel Length    :     52.0 ft                Maximum Depth            :    17.46 ft.
  Right Overbank Length  :     52.0 ft                Maximum Section Area     : 1220.157 ft^2
                                                      Maximum hydraulic radius :     8.32 ft.
  Manning N :      0.025  to Station         -92.5    Max topwidth             :   141.30 ft.
   "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.47E+02 ft
   "    "  :      0.025  Beyond station      48.8    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1220.157 ft^2

        Natural Cross-Section information for Channel Link76
        ====================================================
         Cross-Section ID (from X1 card) :     8.0 Channel sequence number :     8

  Left Overbank Length   :     40.0 ft                Maximum Elevation        :   609.77 ft.
  Main Channel Length    :     40.0 ft                Maximum Depth            :    17.61 ft.
  Right Overbank Length  :     40.0 ft                Maximum Section Area     : 829.0790 ft^2
                                                      Maximum hydraulic radius :     7.27 ft.
  Manning N :      0.025  to Station         -46.5    Max topwidth             :   106.90 ft.
   "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.14E+02 ft
   "    "  :      0.025  Beyond station      60.4    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 829.0790 ft^2

        Natural Cross-Section information for Channel Link84
        ====================================================
         Cross-Section ID (from X1 card) :     9.0 Channel sequence number :     9

  Left Overbank Length   :    270.0 ft                Maximum Elevation        :   618.53 ft.
  Main Channel Length    :    280.0 ft                Maximum Depth            :     7.43 ft.
  Right Overbank Length  :    290.0 ft                Maximum Section Area     : 222.9791 ft^2
                                                      Maximum hydraulic radius :     3.66 ft.
  Manning N :      0.025  to Station         -30.6    Max topwidth             :    57.40 ft.
   "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 6.09E+01 ft
   "    "  :      0.025  Beyond station      26.8    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 222.9791 ft^2

        Natural Cross-Section information for Channel Link85
        ====================================================
         Cross-Section ID (from X1 card) :    10.0 Channel sequence number :    10

  Left Overbank Length   :    450.0 ft                Maximum Elevation        :   616.00 ft.
  Main Channel Length    :    470.0 ft                Maximum Depth            :    16.50 ft.
  Right Overbank Length  :    490.0 ft                Maximum Section Area     : 1074.025 ft^2
                                                      Maximum hydraulic radius :     5.87 ft.
  Manning N :      0.025  to Station         -68.1    Max topwidth             :   177.10 ft.
   "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
   "    "  :      0.025  Beyond station     109.0    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1074.025 ft^2

*==================================================*
|          Table E1 - Conduit Data                 |
*==================================================*
```

Inp Num	Conduit Name	Length (ft)	Conduit Class	Area (ft^2)	Manning Coef.	Max Width (ft)	Depth (ft)	Trapezoid Side Slopes	Hazen Williams c-factor
1	Link13	311.0000	Circular	7.0686	0.0120	3.0000	3.0000		
2	Link14	341.0000	Circular	7.0686	0.0120	3.0000	3.0000		
3	Link15	322.0000	Circular	7.0686	0.0120	3.0000	3.0000		
4	Link16	631.0000	Circular	7.0686	0.0120	3.0000	3.0000		
5	Link17	51.0000	Circular	7.0686	0.0120	3.0000	3.0000		
6	Link18	462.0000	Circular	7.0686	0.0120	3.0000	3.0000		
7	Link23	312.0000	Circular	7.0686	0.0120	3.0000	3.0000		
8	Link24	74.0000	Circular	7.0686	0.0120	3.0000	3.0000		
9	Link25	305.0000	Circular	7.0686	0.0120	3.0000	3.0000		
10	Link26	308.0000	Circular	7.0686	0.0120	3.0000	3.0000		
11	Link27	324.0000	Circular	7.0686	0.0140	3.0000	3.0000		
12	Link28	327.0000	Circular	7.0686	0.0120	3.0000	3.0000		
13	Link32	400.0000	Rectangle	16.0000	0.0120	4.0000	4.0000		
14	Link33	260.0000	Rectangle	24.0000	0.0140	6.0000	4.0000		
15	Link47	54.0000	Circular	7.0686	0.0120	3.0000	3.0000		
16	Link56	610.0000	Trapezoid	19.0000	0.0400	4.0000	1.0000	15.0000	15.0000
17	Link68	400.0000	Natural	45.1725	0.0250	97.8000	2.7000		
18	Link69	260.0000	Natural	1075.5285	0.0250	301.0000	6.0500		
19	Link70	450.0000	Natural	955.4430	0.0250	185.5000	7.7600		
20	Link71	383.0000	Natural	2270.8440	0.0250	311.3000	8.7600		
21	Link72	42.0000	Circular	7.0686	0.0120	3.0000	3.0000		
22	Link73	73.0000	Natural	1101.1655	0.0250	181.4000	11.9200		
23	Link74	102.0000	Natural	1003.5558	0.0250	126.7000	15.9500		

24	Link75	52.0000	Natural	1220.1569	0.0250	141.3000	17.4600		
25	Link76	40.0000	Natural	829.0790	0.0250	106.9000	17.6100		
26	Link77	60.0000	Circular	3.1416	0.0120	2.0000	2.0000		
27	Link78	325.0000	Trapezoid	195.0000	0.0400	20.0000	3.0000	15.0000	15.0000
28	Link79	52.0000	Circular	7.0686	0.0120	3.0000	3.0000		
29	Link82	436.0000	Circular	7.0686	0.0120	3.0000	3.0000		
30	Link83	123.0000	Circular	7.0686	0.0120	3.0000	3.0000		
31	Link84	280.0000	Natural	222.9791	0.0250	57.4000	7.4310		
32	Link85	470.0000	Natural	1074.0250	0.0250	177.1000	16.5000		
33	Link90	250.0000	Circular	2.4053	0.0120	1.7500	1.7500		
34	Link93	150.0000	Circular	1.7671	0.0120	1.5000	1.5000		
35	Link118	200.0000	Trapezoid	58.5000	0.0120	30.0000	1.5000	6.0000	6.0000
36	Link120	630.0000	Circular	7.0686	0.0120	3.0000	3.0000		
37	Link121	330.0000	Circular	7.0686	0.0120	3.0000	3.0000		
38	Link123	1065.0000	Circular	7.0686	0.0120	3.0000	3.0000		
39	Link124	150.0000	Circular	7.0686	0.0120	3.0000	3.0000		
40	Link125	160.0000	Circular	7.0686	0.0120	3.0000	3.0000		
41	Link126	270.0000	Circular	7.0686	0.0120	3.0000	3.0000		
42	Link127	355.0000	Circular	7.0686	0.0120	3.0000	3.0000		
43	Link130	300.0000	Circular	7.0686	0.0120	3.0000	3.0000		
44	Link131	310.0000	Circular	3.1416	0.0120	2.0000	2.0000		
45	Link132	350.0000	Circular	7.0686	0.0120	3.0000	3.0000		
46	Link133	330.0000	Circular	3.1416	0.0120	2.0000	2.0000		
47	214.1	29.0000	Circular	3.1416	0.0240	2.0000	2.0000		
48	283.1	40.0000	Circular	0.7854	0.0240	1.0000	1.0000		

Total length of all conduits .... 13559.0000 feet

==========
| Table E2 - Conduit Factor Data |
==========

Conduit Name	Number of Barrels	Entrance Loss Coef	Exit Loss Coef	Exp/Contc Coefficnt	Time Weighting Parameter	Low Flow Roughness Factor	Depth at Which n Changes	Sediment Depth	Flow Routing
Link56	1.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
214.1	2.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave

==========
| If there are messages about (sqrt(g*d)*dt/dx), or |
| the sqrt(wave celerity)*time step/conduit length |
| in the output file all it means is that the |
| program will lower the internal time step to |
| satisfy this condition (explicit condition). |
| You control the actual internal time step by |
| using the minimum courant time step factor in the |
| HYDRAULICS job control. The message put in words |
| states that the smallest conduit with the fastest |
| velocity will control the time step selection. |
| You have further control by using the modify |
| conduit option in the HYDRAULICS Job Control. |
==========

Conduit Name	Courant Ratio	
Link13	9.48	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link14	8.65	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link15	9.16	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link16	4.67	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link17	57.81	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link18	6.38	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link23	9.45	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link24	39.85	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link25	9.67	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link26	9.57	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link27	9.10	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link28	9.02	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link32	8.51	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link33	13.10	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link47	54.60	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link56	2.09	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link68	2.89	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link69	12.38	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link70	8.59	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link71	12.00	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link72	70.20	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link73	57.46	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link74	46.97	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link75	96.20	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link76	119.30	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link77	40.12	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link78	6.97	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link79	56.70	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link82	6.76	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link83	23.97	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link84	11.98	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link85	8.92	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link90	9.01	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link93	13.90	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link118	9.40	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link120	4.68	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link121	8.94	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link123	2.77	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link124	19.66	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link125	18.43	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link126	10.92	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link127	8.31	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link130	9.83	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link131	7.77	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link132	8.42	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link133	7.30	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
214.1	83.02	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
283.1	42.56	===> Warning ! (sqrt(wave celerity)*time step/conduit length)

```
*==================*
|  Conduit Volume  |
*==================*

Full pipe or full open conduit volume
Input full depth volume............    2.6036E+06 cubic feet

===> Warning !! The upstream and downstream junctions for the following conduits
                have been reversed to correspond to the positive flow and decreasing
                slope convention.  A negative flow in the output thus means
                the flow was from your original upstream junction to your original
                downstream junction.  Any initial flow has been multiplied by -1.

                1.  Conduit #...Link17      has been changed.

===> ERROR !!!  Conduit Link73           has caused ZCROWN  of Junction Node75     to lie above the specified ground elev of     614.84
611.73

===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node81     to lie above the specified ground elev of     612.64
611.30

===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.13
611.67

===> ERROR !!!  Conduit Link76           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.28
611.67
```

==========
|Table E3a - Junction Data|
==========

Inp Num	Junction Name	Ground Elevation	Crown Elevation	Invert Elevation	Qinst cfs	Initial Depth-ft	Interface Flow (%)
1	Node11	623.2500	623.2500	617.2000	0.0000	0.0000	100.0000
2	Node12	624.9700	624.9700	617.2100	0.0000	0.0000	100.0000
3	Node20	638.4000	637.6000	634.6000	0.0000	0.0000	100.0000
4	Node21	639.0000	636.1600	633.1600	0.0000	0.0000	100.0000
5	Node22	639.3500	639.3500	630.1100	0.0000	0.0000	100.0000
6	Node23	635.9100	631.8600	628.8600	0.0000	0.0000	100.0000
7	Node24	635.3400	631.3300	628.0300	0.0000	0.0000	100.0000
8	Node25	634.1030	629.3500	626.3500	0.0000	0.0000	100.0000
9	Node26	634.3200	629.4200	626.4200	0.0000	0.0000	100.0000
10	Node27	635.4400	626.6900	623.6900	0.0000	0.0000	100.0000
11	Node29	620.2110	620.2110	612.7800	0.0000	0.0000	100.0000
12	Node30	631.4300	623.0000	620.0000	0.0000	0.0000	100.0000
13	Node33	619.3200	619.3200	610.5600	0.0000	0.0000	100.0000
14	Node34	618.6800	611.5000	608.5000	0.0000	0.0000	100.0000
15	Node35	621.6500	611.4000	608.4000	0.0000	0.0000	100.0000
16	Node36	633.6100	610.4000	607.4000	0.0000	0.0000	100.0000
17	Node37	632.4600	609.4600	606.4600	0.0000	0.0000	100.0000
18	Node38	626.7800	608.4500	605.4500	0.0000	0.0000	100.0000
19	Node39	611.6440	607.4400	604.4400	0.0000	0.0000	100.0000
20	Node41	633.3700	631.2200	628.0000	0.0000	0.0000	100.0000
21	Node43	638.5000	636.0000	631.4500	0.0000	0.0000	100.0000
22	Node46	608.0000	610.3500	592.7400	0.0000	0.0000	100.0000
23	Node47	610.0000	576.0000	572.0000	0.0000	0.0000	100.0000
24	Node48	618.0000	609.8000	593.3000	0.0000	0.0000	100.0000
25	Node63	633.6300	632.0100	631.0000	0.0000	0.0000	100.0000
26	Node65	642.0000	642.0000	638.0000	0.0000	0.0000	100.0000
27	Node66	634.7700	632.0000	629.0000	0.0000	0.0000	100.0000
28	Node71	624.7000	624.7000	622.0000	0.0000	0.0000	100.0000
29	Node74	625.0300	625.0300	618.9800	0.0000	0.0000	100.0000
30	Node75	611.7300	611.7200	602.9200	0.0000	0.0000	100.0000
31	Node79	624.3700	623.3700	615.6100	0.0000	0.0000	100.0000
32	Node80	613.8400	613.8400	597.8900	0.0000	0.0000	100.0000
33	Node81	611.3000	611.2900	595.1800	0.0000	0.0000	100.0000
34	Node82	611.6700	611.6600	594.6700	0.0000	0.0000	100.0000
35	Node83	642.6000	642.6000	639.6000	0.0000	0.0000	100.0000
36	Node84	639.7400	634.5400	631.5400	0.0000	0.0000	100.0000
37	Node86	621.1000	616.4900	613.4900	0.0000	0.0000	100.0000
38	Node87	622.5000	622.5000	606.0000	0.0000	0.0000	100.0000
39	Node89	639.1000	638.6000	637.1000	0.0000	0.0000	100.0000
40	Node92	636.3000	634.5000	633.0000	0.0000	0.0000	100.0000
41	Node94	635.3000	632.7500	631.0000	0.0000	0.0000	100.0000
42	Node99	639.7000	637.7000	637.7000	0.0000	0.0000	100.0000
43	Node100	639.0600	632.5000	628.9700	0.0000	0.0000	100.0000
44	Node108	636.5000	630.0700	627.0700	0.0000	0.0000	100.0000
45	Node120	639.6000	638.0000	638.0000	0.0000	0.0000	100.0000
46	Node121	639.1000	634.4500	631.4500	0.0000	0.0000	100.0000
47	Node122	639.2000	636.5000	633.5000	0.0000	0.0000	100.0000
48	Node123	638.0000	630.7800	627.7800	0.0000	0.0000	100.0000
49	Node124	627.5000	621.0000	618.0000	0.0000	0.0000	100.0000
50	Node127	640.1000	635.0000	633.0000	0.0000	0.0000	100.0000
51	Node128	641.4000	632.8000	629.8000	0.0000	0.0000	100.0000
52	Node132	624.4000	624.3700	615.6100	0.0000	0.0000	100.0000
53	Node133	632.3400	618.0000	615.0000	0.0000	0.0000	100.0000
54	Node134	634.3200	629.4200	626.4200	0.0000	0.0000	100.0000
55	Node135	633.3700	631.0500	628.0500	0.0000	0.0000	100.0000

==========
|Table E3b - Junction Data|
==========

Inp Num	Junction Name	X Coord.	Y Coord.	Type of Manhole	Type of Inlet	Maximum Capacity	Pavement Shape	Pavement Slope
1	Node11	0.0000	0.0000	F	Normal		0	0.0000
2	Node12	0.0000	0.0000	No P	Normal		0	0.0000
3	Node20	0.0000	0.0000	F	Normal		0	0.0000
4	Node21	0.0000	0.0000	F	Normal		0	0.0000
5	Node22	0.0000	0.0000		Normal		0	0.0000
6	Node23	0.0000	0.0000		Normal		0	0.0000
7	Node24	0.0000	0.0000		Normal		0	0.0000

8	Node25	0.0000	0.0000	F	Normal	0	0.0000
9	Node26	0.0000	0.0000	F	Normal	0	0.0000
10	Node27	0.0000	0.0000	F	Normal	0	0.0000
11	Node29	0.0000	0.0000	No P	Normal	0	0.0000
12	Node30	0.0000	0.0000	F	Normal	0	0.0000
13	Node33	0.0000	0.0000	F	Normal	0	0.0000
14	Node34	0.0000	0.0000		Normal	0	0.0000
15	Node35	0.0000	0.0000		Normal	0	0.0000
16	Node36	0.0000	0.0000		Normal	0	0.0000
17	Node37	0.0000	0.0000		Normal	0	0.0000
18	Node38	0.0000	0.0000	No P	Normal	0	0.0000
19	Node39	0.0000	0.0000		Normal	0	0.0000
20	Node41	0.0000	0.0000	No P	Normal	0	0.0000
21	Node43	0.0000	0.0000	F	Normal	0	0.0000
22	Node46	0.0000	0.0000	F	Normal	0	0.0000
23	Node47	0.0000	0.0000	No P	Normal	0	0.0000
24	Node48	0.0000	0.0000	No P	Normal	0	0.0000
25	Node63	0.0000	0.0000	F	Normal	0	0.0000
26	Node65	0.0000	0.0000	F	Normal	0	0.0000
27	Node66	0.0000	0.0000	F	Normal	0	0.0000
28	Node71	0.0000	0.0000	No P	Normal	0	0.0000
29	Node74	0.0000	0.0000	No P	Normal	0	0.0000
30	Node75	0.0000	0.0000	No P	Normal	0	0.0000
31	Node79	0.0000	0.0000	F	Normal	0	0.0000
32	Node80	0.0000	0.0000	No P	Normal	0	0.0000
33	Node81	0.0000	0.0000	No P	Normal	0	0.0000
34	Node82	0.0000	0.0000	No P	Normal	0	0.0000
35	Node83	0.0000	0.0000	No P	Normal	0	0.0000
36	Node84	0.0000	0.0000	No P	Normal	0	0.0000
37	Node86	0.0000	0.0000	F	Normal	0	0.0000
38	Node87	0.0000	0.0000	No P	Normal	0	0.0000
39	Node89	0.0000	0.0000	F	Normal	0	0.0000
40	Node92	0.0000	0.0000	F	Normal	0	0.0000
41	Node94	0.0000	0.0000	F	Normal	0	0.0000
42	Node99	0.0000	0.0000	F	Normal	0	0.0000
43	Node100	0.0000	0.0000	F	Normal	0	0.0000
44	Node108	0.0000	0.0000	F	Normal	0	0.0000
45	Node120	0.0000	0.0000	F	Normal	0	0.0000
46	Node121	0.0000	0.0000	No P	Normal	0	0.0000
47	Node122	0.0000	0.0000	F	Normal	0	0.0000
48	Node123	0.0000	0.0000	No P	Normal	0	0.0000
49	Node124	0.0000	0.0000	No P	Normal	0	0.0000
50	Node127	0.0000	0.0000	No P	Normal	0	0.0000
51	Node128	0.0000	0.0000	No P	Normal	0	0.0000
52	Node132	0.0000	0.0000	No P	Normal	0	0.0000
53	Node133	0.0000	0.0000	No P	Normal	0	0.0000
54	Node134	0.0000	0.0000	No P	Normal	0	0.0000
55	Node135	0.0000	0.0000	No P	Normal	0	0.0000

==========
|Table E4 - Conduit Connectivity|
==========

Input Number	Conduit Name	Upstream Node	Downstream Node	Upstream Elevation	Downstream Elevation	
1	Link13	Node21	Node84	633.1600	631.5400	No Design
2	Link14	Node22	Node23	630.1100	628.8600	No Design
3	Link15	Node23	Node24	628.8600	628.0300	No Design
4	Link16	Node24	Node25	628.0300	626.3500	No Design
5	Link17	Node26	Node25	626.4200	626.3500	No Design
6	Link18	Node26	Node27	626.4200	623.6900	No Design
7	Link23	Node33	Node34	610.5630	608.5000	No Design
8	Link24	Node34	Node35	608.5000	608.4000	No Design
9	Link25	Node35	Node36	608.4000	607.4000	No Design
10	Link26	Node36	Node37	607.4000	606.4600	No Design
11	Link27	Node37	Node38	606.4600	605.4500	No Design
12	Link28	Node38	Node39	605.4500	604.4400	No Design
13	Link32	Node46	Node47	592.7400	572.0000	No Design
14	Link33	Node48	Node47	593.3000	572.0000	No Design
15	Link47	Node66	Node24	629.0000	628.3300	No Design
16	Link56	Node41	Node71	628.0000	622.0000	No Design
17	Link68	Node71	Node74	622.0000	618.9800	No Design
18	Link69	Node74	Node11	618.9800	617.2000	No Design
19	Link70	Node12	Node79	617.2100	615.6100	No Design
20	Link71	Node132	Node33	615.6100	610.5600	No Design
21	Link72	Node39	Node75	604.4400	602.9220	No Design
22	Link73	Node75	Node80	602.9200	597.8900	No Design
23	Link74	Node80	Node81	597.8900	595.1800	No Design
24	Link75	Node81	Node82	595.1800	594.6700	No Design
25	Link76	Node82	Node46	594.6700	592.7400	No Design
26	Link77	Node65	Node83	640.0000	639.6000	No Design
27	Link78	Node83	Node22	639.6000	636.3500	No Design
28	Link79	Node84	Node22	631.5400	630.5100	No Design
29	Link82	Node27	Node86	623.6900	613.4900	No Design
30	Link83	Node86	Node29	613.4900	612.7800	No Design
31	Link84	Node29	Node87	612.7800	606.0000	No Design
32	Link85	Node87	Node48	606.0000	593.3000	No Design
33	Link90	Node94	Node108	631.0000	628.0000	No Design
34	Link93	Node92	Node100	633.0000	631.0000	No Design
35	Link118	Node89	Node43	637.1000	634.5000	No Design
36	Link120	Node20	Node121	634.6000	631.4500	No Design
37	Link121	Node121	Node128	631.4500	629.8000	No Design
38	Link123	Node122	Node100	633.5000	628.9700	No Design
39	Link124	Node108	Node134	627.0700	626.4200	No Design
40	Link125	Node123	Node108	627.7800	627.0700	No Design
41	Link126	Node100	Node123	628.9700	627.7800	No Design
42	Link127	Node30	Node124	620.0000	618.0000	No Design
43	Link130	Node124	Node133	618.0000	615.0000	No Design
44	Link131	Node127	Node43	633.0000	631.4500	No Design
45	Link132	Node128	Node135	629.8000	628.0500	No Design
46	Link133	Node43	Node128	631.4500	629.8000	No Design
47	214.1	Node11	Node12	617.7000	617.2100	No Design
48	283.1	Node63	Node41	631.0100	630.2200	No Design

```
*==========================================*
|          Storage Junction Data           |
*==========================================*

                              MAXIMUM OR          PEAK OR        CROWN      DEPTH
STORAGE JUNCTION  JUNCTION  CONSTANT SURFACE   CONSTANT VOLUME  ELEVATION   STARTS
  NUMBER OR NAME      TYPE     AREA (FT2)        (CUBIC FEET)      (FT)       FROM
  --------------  --------  ----------------   ---------------  --------- -----------
         Node65 Stage/Area       50965.2000       114339.2685    642.0000 Node Invert
         Node79 Stage/Area       87120.0000       669705.4795    624.3700 Node Invert
         Node99 Stage/Area       43560.0000        65156.9320    639.7000 Node Invert
        Node120 Stage/Area       65340.0000        59372.3585    639.6000 Node Invert

      *==================================*
      |   Variable storage data for node | Node65
      *==================================*
       Data     Elevation    Depth           Area          Volume          Area          Volume
      Point         ft         ft           ft^2            ft^3         acres           ac-ft
      =====     =========    ======   ===========   ============   ===========   ============
         1       638.0000    0.0000      435.6000         0.0000        0.0100         0.0000
         2       639.0000    1.0000    10890.0000      4501.1550        0.2500         0.1033
         3       640.0000    2.0000    29185.2000     23801.9281        0.6700         0.5464
         4       641.0000    3.0000    50965.2000     63374.0685        1.1700         1.4549
         5       642.0000    4.0000    50965.2000    114339.2685        1.1700         2.6249

      *==================================*
      |   Variable storage data for node | Node79
      *==================================*
       Data     Elevation    Depth           Area          Volume          Area          Volume
      Point         ft         ft           ft^2            ft^3         acres           ac-ft
      =====     =========    ======   ===========   ============   ===========   ============
         1       615.6100    0.0000       43.5600         0.0000        0.0010         0.0000
         2       616.1100    0.5000    21780.0000      3799.5605        0.5000         0.0872
         3       616.6100    1.0000    39639.6000     18933.1469        0.9100         0.4346
         4       617.6100    2.0000    87120.0000     80774.2795        2.0000         1.8543
         5       624.3700    8.7600    87120.0000    669705.4795        2.0000        15.3743

      *==================================*
      |   Variable storage data for node | Node99
      *==================================*
       Data     Elevation    Depth           Area          Volume          Area          Volume
      Point         ft         ft           ft^2            ft^3         acres           ac-ft
      =====     =========    ======   ===========   ============   ===========   ============
         1       637.7000    0.0000        4.3560         0.0000        0.0001         0.0000
         2       637.7100    0.0100     2178.0000         7.5991        0.0500         0.0002
         3       638.0000    0.3000    12196.8000      1895.3728        0.2800         0.0435
         4       638.2000    0.5000    22651.2000      5326.6343        0.5200         0.1223
         5       638.7000    1.0000    43560.0000     21596.9320        1.0000         0.4958
         6       639.7000    2.0000    43560.0000     65156.9320        1.0000         1.4958

      *==================================*
      |   Variable storage data for node | Node120
      *==================================*
       Data     Elevation    Depth           Area          Volume          Area          Volume
      Point         ft         ft           ft^2            ft^3         acres           ac-ft
      =====     =========    ======   ===========   ============   ===========   ============
         1       638.0000    0.0000       43.5600         0.0000        0.0010         0.0000
         2       639.0000    1.0000    32670.0000     11302.0536        0.7500         0.2595
         3       640.0000    2.0000    65340.0000     59372.3585        1.5000         1.3630


*==========================================*
|             Orifice Data                 |
*==========================================*

         Conduit            From             To                Area     Depth      Discharge   Height Above
            Name         Junction        Junction      Type    (ft2)     (ft)     Coefficient  Junction (ft)
---------------- --------------- ---------------     ----    -----     -----    -----------  -------------
       Restrict5          Node79         Node132 Circ Side     7.07      0.00          0.600          0.000
       restric11         Node133          Node37 Circ Side     4.91      0.00          0.600          5.000
       Restrict2         Node134          Node26 Circ Side     3.14      0.00          0.600          3.580
       Restrict3         Node135          Node41 Circ Side     4.90      0.00          0.600          2.450

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE                1
      CONDUIT NAME..........................        Restrict5
      Upstream node.........................           Node79
      Downstream node.......................          Node132
      PIPE DIAMETER.........................             3.00
      PIPE LENGTH...........................          5897.41
      MANNINGS ROUGHNESS....................           0.0033
      INVERT ELEVATION AT UPSTREAM END.....          615.6100
      INVERT ELEVATION AT DOWNSTREAM END...          615.6000

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE                2
      CONDUIT NAME..........................        restric11
      Upstream node.........................          Node133
      Downstream node.......................           Node37
      PIPE DIAMETER.........................             2.50
      PIPE LENGTH...........................          5382.56
      MANNINGS ROUGHNESS....................           0.0031
      INVERT ELEVATION AT UPSTREAM END.....          620.0000
      INVERT ELEVATION AT DOWNSTREAM END...          619.9900

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE                3
      CONDUIT NAME..........................        Restrict2
      Upstream node.........................          Node134
      Downstream node.......................           Node26
      PIPE DIAMETER.........................             2.00
      PIPE LENGTH...........................          4814.37
      MANNINGS ROUGHNESS....................           0.0028
      INVERT ELEVATION AT UPSTREAM END.....          630.0000
      INVERT ELEVATION AT DOWNSTREAM END...          629.9900

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE                4
      CONDUIT NAME..........................        Restrict3
```

```
      Upstream node..........................         Node135
      Downstream node........................          Node41
      PIPE DIAMETER.......................                2.50
      PIPE LENGTH.........................            5380.91
      MANNINGS ROUGHNESS..................              0.0031
      INVERT ELEVATION AT UPSTREAM END.....           630.5000
      INVERT ELEVATION AT DOWNSTREAM END...           630.4900

Note: For a Bottom-outlet orifice the invert elevation of the downstream node will be
      adjusted to accomodate the equivalent conduit.  Conduit grades are not affected.


*===========================================*
|                 Weir Data                 |
*===========================================*
```

Weir Name	From Junction	To Junction	Type	Crest Height(ft)	Weir Top(ft)	Weir Length(ft)	Discharge Coefficient	Weir Power
Link 5	Node11	Node12	1	3.16	182.80	300.00	3.0000	1.5000
WEIR46	Node63	Node41	1	2.37	169.00	50.00	3.0000	1.5000
Link97.1	Node99	Node21	1	0.56	162.30	300.00	3.0000	1.5000
WEIR119	Node120	Node20	2	1.30	162.00	5.00	3.0000	1.5000
Weir122	Node21	Node122	1	6.54	166.84	50.00	3.0000	1.5000

```
*===============================================*
|          FREE OUTFALL DATA (DATA GROUP I1)     |
|         BOUNDARY CONDITION ON DATA GROUP J1    |
*===============================================*

Outfall at Junction....Node47           has boundary condition number...         1

===> Warning !!  Outfall Junction Node47           has two or more connecting conduits.


*=============================================*
|               Weir Outfall Data             |
|      Boundary Condition on data group J1    |
*=============================================*



*===============================================*
|        INTERNAL CONNECTIVITY INFORMATION      |
*===============================================*
```

CONDUIT	JUNCTION	JUNCTION
Restrict5	Node79	Node132
restric11	Node133	Node37
Restrict2	Node134	Node26
Restrict3	Node135	Node41
Link 5	Node11	Node12
WEIR46	Node63	Node41
Link97.1	Node99	Node21
WEIR119	Node120	Node20
Weir122	Node21	Node122
FREE # 1	Node47	BOUNDARY

```
*===================================================*
|        Boundary Condition Information             |
|                 Data Groups J1-J4                 |
*===================================================*


BC NUMBER..         1 has no control water surface.

*===================================================*
|             XP Note Field Summary                 |
*===================================================*



*================================*
|   Conduit Convergence Criteria  |
*================================*
```

Conduit Name	Full Flow	Conduit Slope
Link13	52.1501	0.0052
Link14	43.7477	0.0037
Link15	36.6850	0.0026
Link16	37.2836	0.0027
Link17	26.7696	0.0014
Link18	55.5441	0.0059
Link23	58.7557	0.0066
Link24	26.5621	0.0014
Link25	41.3740	0.0033
Link26	39.9177	0.0031
Link27	34.5795	0.0031
Link28	40.1573	0.0031
Link32	451.1614	0.0519
Link33	823.3655	0.0819
Link47	80.4856	0.0124
Link56	47.4322	0.0098
Link68	138.7842	0.0075
Link69	12349.6692	0.0068
Link70	10078.6135	0.0036
Link71	58179.1079	0.0132
Link72	137.3690	0.0361
Link73	56825.7885	0.0689
Link74	37318.0904	0.0266
Link75	29495.4038	0.0098

```
         Link76  40618.1464      0.0482
         Link77     20.0104      0.0067
         Link78   1059.8133      0.0100
         Link79    101.6938      0.0198
         Link82    110.5183      0.0234
         Link83     54.8977      0.0058
         Link84   4900.7542      0.0242
         Link85  34130.3174      0.0270
         Link90     18.8038      0.0120
         Link93     13.1401      0.0133
        Link118    939.1777      0.0130
        Link120     51.0931      0.0050
        Link121     51.0931      0.0050
        Link123     47.1250      0.0043
        Link124     47.5651      0.0043
        Link125     48.1334      0.0044
        Link126     47.9699      0.0044
        Link127     54.2348      0.0056
        Link130     72.2566      0.0100
        Link131     17.3295      0.0050
        Link132     51.0931      0.0050
        Link133     17.3295      0.0050
          214.1     15.9283      0.0169
          283.1      2.7121      0.0197
      Restrict5     58.9652      0.0000
      restric11     37.3449      0.0000
      Restrict2     21.3788      0.0000
      Restrict3     37.2878      0.0000

*================================*
|    Initial Model Condition     |
| Initial Time =      0.08 hours |
*================================*

      Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
         Node11/   0.00 /   617.20           Node12/   0.00 /   617.21           Node20/   0.00 /   634.60
         Node21/   0.00 /   633.16           Node22/   0.00 /   630.11           Node23/   0.00 /   628.86
         Node24/   0.00 /   628.03           Node25/   0.00 /   626.35           Node26/   0.00 /   626.42
         Node27/   0.00 /   623.69           Node29/   0.00 /   612.78           Node30/   0.00 /   620.00
         Node33/   0.00 /   610.56           Node34/   0.00 /   608.50           Node35/   0.00 /   608.40
         Node36/   0.00 /   607.40           Node37/   0.00 /   606.46           Node38/   0.00 /   605.45
         Node39/   0.00 /   604.44           Node41/   0.00 /   628.00           Node43/   0.00 /   631.45
         Node46/   0.00 /   592.74           Node47/   0.00 /   572.00           Node48/   0.00 /   593.30
         Node63/   0.00 /   631.00           Node65/   0.00 /   638.00           Node66/   0.00 /   629.00
         Node71/   0.00 /   622.00           Node74/   0.00 /   618.98           Node75/   0.00 /   602.92
         Node79/   0.00 /   615.61           Node80/   0.00 /   597.89           Node81/   0.00 /   595.18
         Node82/   0.00 /   594.67           Node83/   0.00 /   639.60           Node84/   0.00 /   631.54
         Node86/   0.00 /   613.49           Node87/   0.00 /   606.00           Node89/   0.00 /   637.10
         Node92/   0.00 /   633.00           Node94/   0.00 /   631.00           Node99/   0.00 /   637.70
        Node100/   0.00 /   628.97          Node108/   0.00 /   627.07          Node120/   0.00 /   638.00
        Node121/   0.00 /   631.45          Node122/   0.00 /   633.50          Node123/   0.00 /   627.78
        Node124/   0.00 /   618.00          Node127/   0.00 /   633.00          Node128/   0.00 /   629.80
        Node132/   0.00 /   615.60          Node133/   0.00 /   615.00          Node134/   0.00 /   626.42
        Node135/   0.00 /   628.05

        Conduit/       FLOW   ===> "*" Conduit uses the normal flow option.
         Link13/       0.00           Link14/       0.00           Link15/       0.00
         Link16/       0.00           Link17/       0.00           Link18/       0.00
         Link23/       0.00           Link24/       0.00           Link25/       0.00
         Link26/       0.00           Link27/       0.00           Link28/       0.00
         Link32/       0.00           Link33/       0.00           Link47/       0.00
         Link56/       0.00           Link68/       0.00           Link69/       0.00
         Link70/       0.00           Link71/       0.00           Link72/       0.00
         Link73/       0.00           Link74/       0.00           Link75/       0.00
         Link76/       0.00           Link77/       0.00           Link78/       0.00
         Link79/       0.00           Link82/       0.00           Link83/       0.00
         Link84/       0.00           Link85/       0.00           Link90/       0.00
         Link93/       0.00          Link118/       0.00          Link120/       0.00
        Link121/       0.00          Link123/       0.00          Link124/       0.00
        Link125/       0.00          Link126/       0.00          Link127/       0.00
        Link130/       0.00          Link131/       0.00          Link132/       0.00
        Link133/       0.00            214.1/       0.00            283.1/       0.00
      Restrict5/       0.00        restric11/       0.00        Restrict2/       0.00
      Restrict3/       0.00           Link 5/       0.00           WEIR46/       0.00
       Link97.1/       0.00          WEIR119/       0.00          Weir122/       0.00
       FREE # 1/       0.00

        Conduit/   Velocity
         Link13/       0.00           Link14/       0.00           Link15/       0.00
         Link16/       0.00           Link17/       0.00           Link18/       0.00
         Link23/       0.00           Link24/       0.00           Link25/       0.00
         Link26/       0.00           Link27/       0.00           Link28/       0.00
         Link32/       0.00           Link33/       0.00           Link47/       0.00
         Link56/       0.00           Link68/       0.00           Link69/       0.00
         Link70/       0.00           Link71/       0.00           Link72/       0.00
         Link73/       0.00           Link74/       0.00           Link75/       0.00
         Link76/       0.00           Link77/       0.00           Link78/       0.00
         Link79/       0.00           Link82/       0.00           Link83/       0.00
         Link84/       0.00           Link85/       0.00           Link90/       0.00
         Link93/       0.00          Link118/       0.00          Link120/       0.00
        Link121/       0.00          Link123/       0.00          Link124/       0.00
        Link125/       0.00          Link126/       0.00          Link127/       0.00
        Link130/       0.00          Link131/       0.00          Link132/       0.00
        Link133/       0.00            214.1/       0.00            283.1/       0.00
      Restrict5/       0.00        restric11/       0.00        Restrict2/       0.00
      Restrict3/       0.00

        Conduit/ Cross Sectional Area
         Link13/       0.00           Link14/       0.00           Link15/       0.00
         Link16/       0.00           Link17/       0.00           Link18/       0.00
         Link23/       0.00           Link24/       0.00           Link25/       0.00
         Link26/       0.00           Link27/       0.00           Link28/       0.00
         Link32/       0.00           Link33/       0.00           Link47/       0.00
         Link56/       0.00           Link68/       0.00           Link69/       0.00
         Link70/       0.00           Link71/       0.00           Link72/       0.00
         Link73/       0.00           Link74/       0.00           Link75/       0.00
```

```
        Link76/       0.00          Link77/       0.00          Link78/       0.00
        Link79/       0.00          Link82/       0.00          Link83/       0.00
        Link84/       0.00          Link85/       0.00          Link90/       0.00
        Link93/       0.00         Link118/       0.00         Link120/       0.00
       Link121/       0.00         Link123/       0.00         Link124/       0.00
       Link125/       0.00         Link126/       0.00         Link127/       0.00
       Link130/       0.00         Link131/       0.00         Link132/       0.00
       Link133/       0.00           214.1/       0.00           283.1/       0.00
     Restrict5/       0.00       restric11/       0.00       Restrict2/       0.00
     Restrict3/       0.00

       Conduit/ Hydraulic Radius
        Link13/       0.00          Link14/       0.00          Link15/       0.00
        Link16/       0.00          Link17/       0.00          Link18/       0.00
        Link23/       0.00          Link24/       0.00          Link25/       0.00
        Link26/       0.00          Link27/       0.00          Link28/       0.00
        Link32/       0.00          Link33/       0.00          Link47/       0.00
        Link56/       0.00          Link68/       0.00          Link69/       0.00
        Link70/       0.00          Link71/       0.00          Link72/       0.00
        Link73/       0.00          Link74/       0.00          Link75/       0.00
        Link76/       0.00          Link77/       0.00          Link78/       0.00
        Link79/       0.00          Link82/       0.00          Link83/       0.00
        Link84/       0.00          Link85/       0.00          Link90/       0.00
        Link93/       0.00         Link118/       0.00         Link120/       0.00
       Link121/       0.00         Link123/       0.00         Link124/       0.00
       Link125/       0.00         Link126/       0.00         Link127/       0.00
       Link130/       0.00         Link131/       0.00         Link132/       0.00
       Link133/       0.00           214.1/       0.00           283.1/       0.00
     Restrict5/       0.00       restric11/       0.00       Restrict2/       0.00
     Restrict3/       0.00

       Conduit/ Upstream/ Downstream Elevation
        Link13/   631.54/   631.54         Link14/   628.86/   628.86         Link15/   628.03/   628.03
        Link16/   626.35/   626.35         Link17/   626.35/   626.35         Link18/   623.69/   623.69
        Link23/   608.50/   608.50         Link24/   608.40/   608.40         Link25/   607.40/   607.40
        Link26/   606.46/   606.46         Link27/   605.45/   605.45         Link28/   604.44/   604.44
        Link32/   572.00/   572.00         Link33/   572.00/   572.00         Link47/   628.03/   628.03
        Link56/   622.00/   622.00         Link68/   618.98/   618.98         Link69/   617.20/   617.20
        Link70/   615.61/   615.61         Link71/   610.56/   610.56         Link72/   602.92/   602.92
        Link73/   597.89/   597.89         Link74/   595.18/   595.18         Link75/   594.67/   594.67
        Link76/   592.74/   592.74         Link77/   639.60/   639.60         Link78/   630.11/   630.11
        Link79/   630.11/   630.11         Link82/   613.49/   613.49         Link83/   612.78/   612.78
        Link84/   606.00/   606.00         Link85/   593.30/   593.30         Link90/   627.07/   627.07
        Link93/   628.97/   628.97        Link118/   631.45/   631.45        Link120/   631.45/   631.45
       Link121/   629.80/   629.80        Link123/   628.97/   628.97        Link124/   626.42/   626.42
       Link125/   627.07/   627.07        Link126/   627.78/   627.78        Link127/   618.00/   618.00
       Link130/   615.00/   615.00        Link131/   631.45/   631.45        Link132/   628.05/   628.05
       Link133/   629.80/   629.80          214.1/   617.21/   617.21          283.1/   628.00/   628.00
     Restrict5/   615.60/   615.60      restric11/   606.46/   606.46      Restrict2/   626.42/   626.42
     Restrict3/   628.00/   628.00

Cycle        500      Time         41 Hrs - 40.00 Min

     Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
        Node11/   0.54 /   617.74         Node12/   0.04 /   617.25         Node20/   0.03 /   634.63
        Node21/   0.00 /   633.16         Node22/   0.02 /   630.13         Node23/   0.02 /   628.88
        Node24/   0.02 /   628.05         Node25/   0.09 /   626.44         Node26/   0.02 /   626.44
        Node27/   0.01 /   623.70         Node29/   0.01 /   612.79         Node30/   0.03 /   620.03
        Node33/   0.05 /   610.61         Node34/   0.09 /   608.59         Node35/   0.06 /   608.46
        Node36/   0.06 /   607.46         Node37/   0.07 /   606.53         Node38/   0.08 /   605.53
        Node39/   0.03 /   604.47         Node41/   0.03 /   628.03         Node43/   0.00 /   631.45
        Node46/   0.01 /   592.75         Node47/   0.00 /   572.00         Node48/   0.00 /   593.30
        Node63/   0.01 /   631.01         Node65/   2.02 /   640.02         Node66/   0.00 /   629.00
        Node71/   0.12 /   622.12         Node74/   0.07 /   619.05         Node75/   0.02 /   602.94
        Node79/   0.15 /   615.76         Node80/   0.05 /   597.94         Node81/   0.01 /   595.19
        Node82/   0.04 /   594.71         Node83/   0.00 /   639.60         Node84/   0.00 /   631.54
        Node86/   0.02 /   613.51         Node87/   0.01 /   606.01         Node89/   0.00 /   637.10
        Node92/   0.00 /   633.00         Node94/   0.00 /   631.00         Node99/   0.00 /   637.70
       Node100/   1.06 /   630.03        Node108/   2.96 /   630.03        Node120/   1.59*/   639.59
       Node121/   0.03 /   631.48        Node122/   0.00 /   633.50        Node123/   2.25 /   630.03
       Node124/   2.03 /   620.03        Node127/   0.00 /   633.00        Node128/   0.84 /   630.64
       Node132/   0.04 /   615.64        Node133/   5.03*/   620.03        Node134/   3.61*/   630.03
       Node135/   2.59 /   630.64

       Conduit/       FLOW   ===> "*" Conduit uses the normal flow option.
        Link13/       0.00          Link14/       0.01*         Link15/       0.01          Link16/       0.01*
        Link17/      -0.01          Link18/       0.01          Link23/       0.04*         Link24/       0.04
        Link25/       0.04*         Link26/       0.04*         Link27/       0.05*         Link28/       0.05
        Link32/       0.05          Link33/       0.01          Link47/       0.00*         Link56/       0.04*
        Link68/       0.04          Link69/       0.04*         Link70/       0.04*         Link71/       0.04*
        Link72/       0.05          Link73/       0.05*         Link74/       0.05          Link75/       0.05*
        Link76/       0.05          Link77/       0.01          Link78/       0.01          Link79/       0.00
        Link82/       0.01*         Link83/       0.01          Link84/       0.01          Link85/       0.01
        Link90/       0.00*         Link93/       0.00         Link118/       0.00         Link120/       0.02*
       Link121/       0.02*        Link123/       0.00*        Link124/       0.00         Link125/       0.00
       Link126/       0.00         Link127/       0.00         Link130/       0.00         Link131/       0.00
       Link132/       0.02         Link133/       0.00*          214.1/       0.04           283.1/       0.00
     Restrict5/       0.04       restric11/       0.00       Restrict2/       0.00       Restrict3/       0.03
        Link 5/       0.00          WEIR46/       0.00        Link97.1/       0.00         WEIR119/       0.02
       Weir122/       0.00         FREE # 1/       0.06


  *==================================================*
  | Table E5 - Junction Time Limitation Summary      |
  |            (0.10 or 0.25)* Depth * Area          |
  | Time step = ------------------------------       |
  |                  Sum of Flow                     |
  *==================================================*
  |  The time this junction was the limiting junction |
  |                is listed in the third column.    |
  *==================================================*

          Junction     Time(.10)  Time(.25)  Time(sec)
-----------------      ---------  ---------  ---------
            Node11       47.6379   119.0947  1200.0000
            Node12       94.6520   236.6301     0.0000
```

Node20	253.7012	634.2529	0.0000
Node21	25.3142	63.2855	300.0000
Node22	16.5482	41.3706	1500.0000
Node23	6.0902	15.2255	300.0000
Node24	0.5612	1.4029	600.0000
Node25	49.4459	123.6147	0.0000
Node26	58.0046	145.0114	300.0000
Node27	127.0766	317.6916	0.0000
Node29	120.3288	300.8219	0.0000
Node30	100.8334	252.0836	0.0000
Node33	11.0345	27.5864	13800.0000
Node34	21.0829	52.7072	5700.0000
Node35	25.2839	63.2098	1500.0000
Node36	30.6227	76.5567	0.0000
Node37	45.6397	114.0993	0.0000
Node38	68.6070	171.5175	0.0000
Node39	271.0246	677.5616	0.0000
Node41	220.3730	550.9325	0.0000
Node43	68.0226	170.0564	0.0000
Node46	176.9690	442.4226	0.0000
Node47	3000.0000	3000.0000	0.0000
Node48	133.7599	334.3999	0.0000
Node63	10.0485	25.1212	300.0000
Node65	76.0252	190.0629	0.0000
Node66	10.3889	25.9723	1800.0000
Node71	361.3012	903.2530	0.0000
Node74	34.0882	85.2206	600.0000
Node75	224.8620	562.1549	0.0000
Node79	67.7578	169.3945	0.0000
Node80	176.5407	441.3517	0.0000
Node81	161.0265	402.5661	0.0000
Node82	142.7171	356.7928	138900.000
Node83	273.8386	684.5965	0.0000
Node84	26.5395	66.3486	900.0000
Node86	32.5483	81.3706	300.0000
Node87	193.1237	482.8094	0.0000
Node89	716.0638	1790.1595	0.0000
Node92	54.6466	136.6166	0.0000
Node94	36.2340	90.5850	0.0000
Node99	214.4248	536.0619	0.0000
Node100	14.9641	37.4102	300.0000
Node108	30.2066	75.5164	300.0000
Node120	115.1423	287.8559	0.0000
Node121	200.6785	501.6963	0.0000
Node122	58.2377	145.5943	0.0000
Node123	17.9652	44.9130	300.0000
Node124	19.1824	47.9561	0.0000
Node127	3000.0000	3000.0000	0.0000
Node128	115.9918	289.9794	0.0000
Node132	46.1425	115.3562	3600.0000
Node133	15.8067	39.5168	0.0000
Node134	14.8004	37.0010	300.0000
Node135	55.6288	139.0720	0.0000

The junction requiring the smallest time step was...Node82

```
*=========================================================*
|       Table E5a - Conduit Explicit Condition Summary    |
|       Courant   =         Conduit Length                |
|       Time step = -------------------------------       |
|                     Velocity + sqrt(g*depth)            |
|                                                         |
|                  Conduit Implicit Condition Summary     |
|       Courant   =         Conduit Length                |
|       Time step = -------------------------------       |
|                              Velocity                   |
*=========================================================*
|  The 3rd column is the Explicit time step times the     |
|      minimum courant time step factor                   |
|                                                         |
|  Minimum Conduit Time Step in seconds in the 4th column |
|  in the list. Maximum possible is 10 * maximum time step |
|                                                         |
|  The 5th column is the maximum change at any time step  |
|  during the simulation. The 6th column is the wobble    |
|  value which is an indicator of the flow stability.     |
|                                                         |
|  You should use this section to find those conduits that |
|  are slowing your model down.  Use modify conduits to   |
|  alter the length of the slow conduits to make your     |
|  simulation faster, or change the conduit name to       |
|  "CHME?????" where ????? are any characters, this will  |
|  lengthen the conduit based on the model time step,     |
|  not the value listed in modify conduits.               |
*=========================================================*
```

Conduit	Time(exp)	Expl*Cmin	Time(imp)	Time(min)	Max Qchange	Wobble	Type of Soln
Link13	15.4909	15.4909	40.1617	20.0000	-0.1027	2.4553	Normal Soln
Link14	15.0145	15.0145	44.6910	0.0000	0.0946	3.0643	Normal Soln
Link15	14.4506	14.4506	42.1296	0.0000	0.4319	3.6648	Normal Soln
Link16	24.9418	24.9418	71.6149	0.0000	0.8986	3.8824	Normal Soln
Link17	2.2442	2.2442	5.4587	0.0000	-0.7816	5.7471	Normal Soln
Link18	18.7032	18.7032	40.3810	0.0000	0.5476	2.9517	Normal Soln
Link23	13.0080	13.0080	38.1329	0.0000	-0.0692	2.9952	Normal Soln
Link24	3.0851	3.0851	9.0456	0.0000	-0.0721	6.6800	Normal Soln
Link25	12.9179	12.9179	37.2464	0.0000	-0.0961	4.1410	Normal Soln
Link26	13.6294	13.6294	37.5376	0.0000	-0.0763	4.2667	Normal Soln
Link27	15.0010	15.0010	38.6248	0.0000	-0.0768	5.0766	Normal Soln
Link28	17.1445	17.1445	38.1882	0.0000	-0.0763	4.0873	Normal Soln
Link32	13.6283	13.6283	17.3220	0.0000	6.7521	0.6051	Normal Soln
Link33	9.3751	9.3751	12.0038	0.0000	0.7168	0.2726	Normal Soln
Link47	3.1177	3.1177	5.7746	10.0000	-2.3030	1.3045	Normal Soln
Link56	113.9893	113.9893	370.3875	0.0000	0.0629	0.7817	Normal Soln
Link68	53.9533	53.9533	128.9081	0.0000	0.0329	0.2659	Normal Soln
Link69	39.1000	39.1000	132.8054	0.0000	3.8740	0.0546	Normal Soln

```
          Link70    54.4735    54.4735   155.2179     0.0000       0.4792   0.0521  Normal Soln
          Link71    42.5254    42.5254   248.9860     0.0000      19.9547   0.9735  Normal Soln
          Link72     1.6493     1.6493     2.2360  1585.0000      -0.0766   1.2071  Normal Soln
          Link73     6.2323     6.2323     9.5793     0.0000       0.0759   0.0029  Normal Soln
          Link74     8.0251     8.0251    13.6225     0.0000       0.0765   0.0044  Normal Soln
          Link75     6.2067     6.2067    16.3074     0.0000      -0.0789   0.0056  Normal Soln
          Link76     2.7372     2.7372     4.1632  1210.0000      -0.0774   0.0040  Normal Soln
          Link77     3.8775     3.8775     6.5248     0.0000       0.0192   1.7065  Normal Soln
          Link78    66.1578    66.1578   195.4337     0.0000       0.0263   0.0360  Normal Soln
          Link79     2.4748     2.4748     5.3624     0.0000      -0.1149   1.1970  Normal Soln
          Link82    17.0774    17.0774    26.8372     0.0000       0.2611   1.4671  Normal Soln
          Link83     5.6230     5.6230     9.7698     0.0000       0.2954   2.9627  Normal Soln
          Link84    22.5847    22.5847    38.1296     0.0000       0.3495   0.0330  Normal Soln
          Link85    40.3140    40.3140    70.3495     0.0000       0.3044   0.0047  Normal Soln
          Link90    13.9146    13.9146    43.5655     0.0000       0.0439   1.4805  Normal Soln
          Link93     9.3257     9.3257    17.7220     0.0000       0.0353   2.1519  Normal Soln
         Link118    35.3841    35.3841    55.5221     0.0000       0.0609   0.0380  Normal Soln
         Link120    53.8493    53.8493   110.2439     0.0000       0.0062   0.4506  Normal Soln
         Link121    25.0382    25.0382    79.5384     0.0000      -0.0187   0.4980  Normal Soln
         Link123    78.1265    78.1265   844.3860     0.0000      -0.0360   0.2242  Normal Soln
         Link124     8.1864     8.1864    47.2312     0.0000      -0.1105   2.0165  Normal Soln
         Link125     9.7635     9.7635    78.2126     0.0000      -0.1367   1.7412  Normal Soln
         Link126    17.2505    17.2505    75.1580     0.0000       0.1220   1.4128  Normal Soln
         Link127    23.9172    23.9172    75.2168     0.0000       0.0377   0.9620  Normal Soln
         Link130    17.3391    17.3391   116.5201     0.0000       0.9685   1.4800  Normal Soln
         Link131  3000.0000  3000.0000  3000.0000     0.0000       0.0000   0.0000  Normal Soln
         Link132    25.6870    25.6870   104.0039     0.0000      -1.0542   0.8569  Normal Soln
         Link133    24.4372    24.4372    55.0416     0.0000      -0.1985   2.1011  Normal Soln
           214.1     1.5290     1.5290     3.0604    50.0000       0.0793   5.4518  Normal Soln
           283.1     2.6610     2.6610     6.5894     5.0000       0.0361   3.5735  Normal Soln
       Restrict5   270.3948   270.3948   687.6627     0.0000       0.0507   2.1942  Normal Soln
       restric11   460.9204   460.9204  1449.1468     0.0000       0.0160   0.7929  Normal Soln
       Restrict2   272.1945   272.1945   711.5822     0.0000       0.0287   2.0120  Normal Soln
       Restrict3   490.5082   490.5082  1582.0466     0.0000       0.0114   0.6824  Normal Soln
The conduit with the smallest time step limitation was..Link72
The conduit with the largest wobble was................Link24
The conduit with the largest flow change in any
consecutive time step..................................Link71

 ************************************************
 *      End of time step DO-loop in Runoff      *
 ************************************************

 Final Date (Mo/Day/Year)   =             1/ 2/2014
 Total number of time steps =                  1513
 Final Julian Date          =               2014002
 Final time of day          =                    0. seconds.
 Final time of day          =                 0.00   hours.
 Final running time         =               24.0000   hours.
 Final running time         =                1.0000    days.

 ****************************************************
 *     Extrapolation Summary for Watersheds         *
 * Explains the number of time steps and iterations *
 * used in the solution of the subcatchments.       *
 * # Steps ==> Total Number of Extrapolated Steps   *
 * # Calls ==> Total Number of OVERLND Calls        *
 ****************************************************

 Subcatchment   # Steps   # Calls Subcatchment   # Steps   # Calls
 -------------  -------  -------- -------------  -------  --------
 Node63#1             0         0 Node120#1            0         0 Node89#1             0         0
 Node11#1             0         0 Node33#1             0         0 Node30#1             0         0
 Node46#1             0         0 Node65#1             0         0 Node99#1             0         0
 Node92#1             0         0 Node94#1             0         0 Node66#1             0         0
 Node24#1             0         0 Node25#1             0         0 Node48#1             0         0


##########################################################
# Rainfall input summary from Runoff Continuity Check   #
##########################################################

 Total rainfall read for gage #         1 is       3.8200 in
 Total rainfall duration for gage #     1 is       114.29 minutes

 ***********************************************************
 * Table R5. CONTINUITY CHECK FOR SURFACE WATER            *
 *       Any continuity error can be fixed by lowering the  *
 *       wet and transition time step. The transition time  *
 *       should not be much greater than the wet time step. *
 ***********************************************************
                                                                  Inches over
                                                   cubic feet    Total Basin
 Total Precipitation (Rain plus Snow)              4.729897E+06      3.820
 Total Infiltration                                1.825008E+06          1.474
 Total Evaporation                                 9.826929E+03          0.008
 Surface Runoff from Watersheds                    2.899956E+06          2.342
 Total Water remaining in Surface Storage          0.000000E+00          0.000
 Infiltration over the Pervious Area...            1.825008E+06          1.474
                        --------
 Infiltration + Evaporation +
 Surface Runoff + Snow removal +
 Water remaining in Surface Storage +
 Water remaining in Snow Cover.........            4.734791E+06          3.824
 Total Precipitation + Initial Storage.            4.729897E+06          3.820


 The error in continuity is calculated as
 ****************************************
 * Precipitation + Initial Snow Cover  *
 *      - Infiltration -               *
 *Evaporation - Snow removal -          *
 *Surface Runoff from Watersheds -      *
 *Water in Surface Storage -            *
 *Water remaining in Snow Cover         *
 *--------------------------------------*
```

```
* Precipitation + Initial Snow Cover  *
****************************************
Percent Continuity Error..............                    -0.1035


****************************************************
* Table R6. Continuity Check for Channel/Pipes     *
*           You should have zero continuity error  *
*           if you are not using runoff hydraulics *
****************************************************
                                                        Inches over
                                            cubic feet  Total Basin
Initial Channel/Pipe Storage...............  0.000000E+00    0.000
Final Channel/Pipe Storage.................  0.000000E+00    0.000
Surface Runoff from Watersheds.............  2.899956E+06    2.342
Groundwater Subsurface Inflow or Diversion..  0.000000E+00    0.000
Evaporation Loss from Channels.............  0.000000E+00    0.000
Groundwater Flow Diverted Out of Network....  0.000000E+00    0.000
Channel/Pipe/Inlet Outflow.................  2.899956E+06    2.342
Initial Storage + Inflow...................  2.899956E+06    2.342
Final Storage + Outflow + Diverted GW.......  2.899956E+06    2.342
****************************************
* Final Storage + Outflow + Evaporation  - *
* Watershed Runoff - Groundwater Inflow  - *
*     Initial Channel/Pipe Storage         *
*     ---------------------------------    *
*  Final Storage + Outflow  + Evaporation  *
****************************************
Percent Continuity Error...................                0.0000

        ##################################################
        # Table R9. Summary Statistics for Subcatchments #
        ##################################################

Note: Total Runoff Depth includes pervious & impervious areas.
      Pervious and Impervious Runoff Depth is only the runoff from those two areas.
      For catchments receiving redirected flow, this flow will only be shown if the flow is not
      directed directly to the outlet. Flow that is getting redirected is also listed with
      the original subcatchment.


Subcatchment...........        Node63#1        Node120#1        Node89#1        Node11#1        Node33#1        Node30#1
Area (acres)...........         5.00000         32.00000         5.90000       107.90000         37.80000         9.00000
Percent Impervious.....         0.00000          0.00000         0.00000         0.00000          0.00000         0.00000
Total Rainfall (in)....         3.82000          3.82000         3.82000         3.82000          3.82000         3.82000
Max Intensity (in/hr)..         6.81870          6.81870         6.81870         6.81870          6.81870         6.81870

Pervious Area
-------------
Total Runoff Depth (in)         2.44437          2.17964         2.45881         2.33714          2.26877         2.38841
Peak Runoff Rate (cfs).        12.21648         53.06838        14.94302       202.96210         55.01040        18.94980

Total Impervious Area
---------------------
Total Runoff Depth (in)         0.00000          0.00000         0.00000         0.00000          0.00000         0.00000
Peak Runoff Rate (cfs).         0.00000          0.00000         0.00000         0.00000          0.00000         0.00000

Impervious Area with depression storage
---------------------------------------
Total Runoff Depth (in)         0.00000          0.00000         0.00000         0.00000          0.00000         0.00000
Peak Runoff Rate (cfs).         0.00000          0.00000         0.00000         0.00000          0.00000         0.00000

Impervious Area without depression storage
------------------------------------------
Total Runoff Depth (in)         0.00000          0.00000         0.00000         0.00000          0.00000         0.00000
Peak Runoff Rate (cfs).         0.00000          0.00000         0.00000         0.00000          0.00000         0.00000

Total Area
----------
Total Runoff Depth (in)         2.44437          2.17964         2.45881         2.33714          2.26877         2.38841
Peak Runoff Rate (cfs).        12.21648         53.06838        14.94302       202.96210         55.01040        18.94980

Rational Formula
----------------
Pervious Tc. (mins).....        0.00000          0.00000         0.00000         0.00000          0.00000         0.00000
Perv. Intensity (in/hr)         0.00000          0.00000         0.00000         0.00000          0.00000         0.00000
Pervious C .............        0.00000          0.00000         0.00000         0.00000          0.00000         0.00000
Impervious Tc. (mins)..         0.00000          0.00000         0.00000         0.00000          0.00000         0.00000
Imp. Intensity (in/hr).         0.00000          0.00000         0.00000         0.00000          0.00000         0.00000
Impervious C ..........         0.00000          0.00000         0.00000         0.00000          0.00000         0.00000
Partial Area (Ha)......         0.00000          0.00000         0.00000         0.00000          0.00000         0.00000
Partial Area Tc........         0.00000          0.00000         0.00000         0.00000          0.00000         0.00000
Partial Area Intensity.         0.00000          0.00000         0.00000         0.00000          0.00000         0.00000


Subcatchment...........        Node46#1        Node65#1        Node99#1        Node92#1        Node94#1        Node66#1
Area (acres)...........        30.10000        16.10000        32.10000         5.50000         5.00000        10.00000
Percent Impervious.....         0.00000         0.00000         0.00000         0.00000         0.00000         0.00000
Total Rainfall (in)....         3.82000         3.82000         3.82000         3.82000         3.82000         3.82000
Max Intensity (in/hr)..         6.81870         6.81870         6.81870         6.81870         6.81870         6.81870

Pervious Area
-------------
Total Runoff Depth (in)         2.62489         2.47055         2.18259         2.46199         2.46199         2.45150
Peak Runoff Rate (cfs).        63.14458        35.36448        36.93468        13.02292        11.83902        28.63904

Total Impervious Area
---------------------
Total Runoff Depth (in)         0.00000         0.00000         0.00000         0.00000         0.00000         0.00000
Peak Runoff Rate (cfs).         0.00000         0.00000         0.00000         0.00000         0.00000         0.00000

Impervious Area with depression storage
---------------------------------------
Total Runoff Depth (in)         0.00000         0.00000         0.00000         0.00000         0.00000         0.00000
Peak Runoff Rate (cfs).         0.00000         0.00000         0.00000         0.00000         0.00000         0.00000
```

```
Impervious Area without depression storage
------------------------------------------
Total Runoff Depth (in)          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Peak Runoff Rate (cfs).          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000

Total Area
----------
Total Runoff Depth (in)          2.62489          2.47055          2.18259          2.46199          2.46199          2.45150
Peak Runoff Rate (cfs).         63.14458         35.36448         36.93468         13.02292         11.83902         28.63904

Rational Formula
----------------
Pervious Tc. (mins)....          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Perv. Intensity (in/hr)          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Pervious C ............          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Impervious Tc. (mins)..          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Imp. Intensity (in/hr).          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Impervious C ..........          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Partial Area (Ha)......          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Partial Area Tc........          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000
Partial Area Intensity.          0.00000          0.00000          0.00000          0.00000          0.00000          0.00000


Subcatchment...........         Node24#1         Node25#1         Node48#1
Area (acres)...........         19.70000          5.40000         19.60000
Percent Impervious.....          0.00000          0.00000          0.00000
Total Rainfall (in)....          3.82000          3.82000          3.82000
Max Intensity (in/hr)..          6.81870          6.81870          6.81870

Pervious Area
-------------
Total Runoff Depth (in)          2.65430          1.81127          2.12721
Peak Runoff Rate (cfs).         41.26456          7.81583         35.27000

Total Impervious Area
---------------------
Total Runoff Depth (in)          0.00000          0.00000          0.00000
Peak Runoff Rate (cfs).          0.00000          0.00000          0.00000

Impervious Area with depression storage
---------------------------------------
Total Runoff Depth (in)          0.00000          0.00000          0.00000
Peak Runoff Rate (cfs).          0.00000          0.00000          0.00000

Impervious Area without depression storage
------------------------------------------
Total Runoff Depth (in)          0.00000          0.00000          0.00000
Peak Runoff Rate (cfs).          0.00000          0.00000          0.00000

Total Area
----------
Total Runoff Depth (in)          2.65430          1.81127          2.12721
Peak Runoff Rate (cfs).         41.26456          7.81583         35.27000

Rational Formula
----------------
Pervious Tc. (mins)....          0.00000          0.00000          0.00000
Perv. Intensity (in/hr)          0.00000          0.00000          0.00000
Pervious C ............          0.00000          0.00000          0.00000
Impervious Tc. (mins)..          0.00000          0.00000          0.00000
Imp. Intensity (in/hr).          0.00000          0.00000          0.00000
Impervious C ..........          0.00000          0.00000          0.00000
Partial Area (Ha)......          0.00000          0.00000          0.00000
Partial Area Tc........          0.00000          0.00000          0.00000
Partial Area Intensity.          0.00000          0.00000          0.00000

===> Runoff simulation ended normally.

*==================================================*
|  Table E6. Final Model Condition                 |
|            This table is used for steady state   |
|            flow comparison and is the information|
|            saved to the hot-restart file.        |
|            Final Time =    48.083 hours         |
*==================================================*

Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
         Node11/   0.52 /   617.72/          Node12/   0.03 /   617.24/          Node20/   0.00 /   634.60/
         Node21/   0.00 /   633.16/          Node22/   0.01 /   630.12/          Node23/   0.02 /   628.88/
         Node24/   0.02 /   628.05/          Node25/   0.09 /   626.44/          Node26/   0.02 /   626.44/
         Node27/   0.01 /   623.70/          Node29/   0.01 /   612.79/          Node30/   0.03 /   620.03/
         Node33/   0.03 /   610.59/          Node34/   0.05 /   608.55/          Node35/   0.04 /   608.44/
         Node36/   0.04 /   607.44/          Node37/   0.04 /   606.50/          Node38/   0.05 /   605.50/
         Node39/   0.02 /   604.46/          Node41/   0.02 /   628.02/          Node43/   0.00 /   631.45/
         Node46/   0.01 /   592.75/          Node47/   0.00 /   572.00/          Node48/   0.00 /   593.30/
         Node63/   0.01 /   631.01/          Node65/   2.02 /   640.02/          Node66/   0.00 /   629.00/
         Node71/   0.08 /   622.08/          Node74/   0.04 /   619.02/          Node75/   0.01 /   602.93/
         Node79/   0.11 /   615.72/          Node80/   0.03 /   597.92/          Node81/   0.01 /   595.19/
         Node82/   0.02 /   594.69/          Node83/   0.00 /   639.60/          Node84/   0.00 /   631.54/
         Node86/   0.02 /   613.51/          Node87/   0.01 /   606.01/          Node89/   0.00 /   637.10/
         Node92/   0.00 /   633.00/          Node94/   0.00 /   631.00/          Node99/   0.00 /   637.70/
        Node100/   1.06 /   630.03/         Node108/   2.96 /   630.03/         Node120/   1.50 /   639.50/
        Node121/   0.01 /   631.46/         Node122/   0.00 /   633.50/         Node123/   2.25 /   630.03/
        Node124/   2.03 /   620.03/         Node127/   0.00 /   633.00/         Node128/   0.80 /   630.60/
        Node132/   0.03 /   615.63/         Node133/   5.03*/   620.03/         Node134/   3.61*/   630.03/
        Node135/   2.55 /   630.60/

  Conduit/       Flow   ===> "*" Conduit uses the normal flow option.
         Link13/       0.00 /          Link14/       0.01*/          Link15/       0.01 /
         Link16/       0.01*/          Link17/      -0.01 /          Link18/       0.01 /
         Link23/       0.02*/          Link24/       0.02 /          Link25/       0.02*/
         Link26/       0.02*/          Link27/       0.02*/          Link28/       0.02 /
         Link32/       0.02 /          Link33/       0.01 /          Link47/       0.00*/
         Link56/       0.01*/          Link68/       0.01 /          Link69/       0.01*/
         Link70/       0.02*/          Link71/       0.02*/          Link72/       0.02 /
         Link73/       0.02*/          Link74/       0.02 /          Link75/       0.02*/
```

```
   Link76/       0.02 /          Link77/       0.01 /          Link78/       0.01 /
   Link79/       0.00 /          Link82/       0.01*/          Link83/       0.01 /
   Link84/       0.01 /          Link85/       0.01 /          Link90/       0.00*/
   Link93/       0.00 /         Link118/       0.00 /         Link120/       0.00*/
  Link121/       0.00*/         Link123/       0.00*/         Link124/       0.00 /
  Link125/       0.00 /         Link126/       0.00 /         Link127/       0.00 /
  Link130/       0.00 /         Link131/       0.00 /         Link132/       0.00 /
  Link133/       0.00*/           214.1/       0.02 /           283.1/       0.00 /
Restrict5/       0.02 /       restric11/       0.00 /       Restrict2/       0.00 /
Restrict3/       0.01 /          Link 5/       0.00 /          WEIR46/       0.00 /
 Link97.1/       0.00 /         WEIR119/       0.00 /         Weir122/       0.00 /
 FREE # 1/       0.03 /

  Conduit/   Velocity
   Link13/       0.00 /          Link14/       0.47 /          Link15/       0.42 /
   Link16/       0.29 /          Link17/      -0.08 /          Link18/       0.53 /
   Link23/       0.78 /          Link24/       0.48 /          Link25/       0.67 /
   Link26/       0.65 /          Link27/       0.61 /          Link28/       0.60 /
   Link32/       0.80 /          Link33/       0.44 /          Link47/       0.00 /
   Link56/       0.14 /          Link68/       0.48 /          Link69/       0.10 /
   Link70/       0.15 /          Link71/       0.25 /          Link72/       1.46 /
   Link73/       0.53 /          Link74/       0.42 /          Link75/       0.17 /
   Link76/       0.51 /          Link77/       0.52 /          Link78/       0.07 /
   Link79/       0.00 /          Link82/       0.92 /          Link83/       0.53 /
   Link84/       0.22 /          Link85/       0.18 /          Link90/       0.00 /
   Link93/       0.00 /         Link118/       0.00 /         Link120/       0.41 /
  Link121/       0.01 /         Link123/       0.00 /         Link124/       0.00 /
  Link125/       0.00 /         Link126/       0.00 /         Link127/       0.00 /
  Link130/       0.00 /         Link131/       0.00 /         Link132/       0.00 /
  Link133/       0.00 /           214.1/       0.58 /           283.1/       0.00 /
Restrict5/       0.23 /       restric11/       0.08 /       Restrict2/       0.08 /
Restrict3/       0.24 /

  Conduit/      Width
   Link13/       1.18 /          Link14/       1.18 /          Link15/       1.18 /
   Link16/       1.18 /          Link17/       1.18 /          Link18/       1.18 /
   Link23/       1.18 /          Link24/       1.18 /          Link25/       1.18 /
   Link26/       1.18 /          Link27/       1.18 /          Link28/       1.18 /
   Link32/       4.00 /          Link33/       6.00 /          Link47/       1.18 /
   Link56/       4.66 /          Link68/       0.57 /          Link69/       0.70 /
   Link70/       0.66 /          Link71/       0.44 /          Link72/       1.18 /
   Link73/       0.17 /          Link74/       0.16 /          Link75/       0.25 /
   Link76/       0.12 /          Link77/       0.78 /          Link78/      20.11 /
   Link79/       1.18 /          Link82/       1.18 /          Link83/       1.18 /
   Link84/       0.19 /          Link85/       0.10 /          Link90/       0.66 /
   Link93/       0.59 /         Link118/      30.00 /         Link120/       1.18 /
  Link121/       1.32 /         Link123/       1.34 /         Link124/       1.10 /
  Link125/       2.46 /         Link126/       2.84 /         Link127/       1.34 /
  Link130/       2.53 /         Link131/       0.78 /         Link132/       2.60 /
  Link133/       0.90 /           214.1/       0.78 /           283.1/       0.39 /
Restrict5/       1.18 /       restric11/       0.98 /       Restrict2/       0.78 /
Restrict3/       0.98 /

 Junction/        EGL
   Node11/       0.52 /          Node12/       0.03 /          Node20/       0.00 /
   Node21/       0.00 /          Node22/       6.24 /          Node23/       0.02 /
   Node24/       0.02 /          Node25/       0.09 /          Node26/       3.57 /
   Node27/       0.01 /          Node29/       0.01 /          Node30/       0.03 /
   Node33/       0.03 /          Node34/       0.06 /          Node35/       0.04 /
   Node36/       0.04 /          Node37/      13.53 /          Node38/       0.05 /
   Node39/       0.02 /          Node41/       2.51 /          Node43/       0.00 /
   Node46/       0.01 /          Node47/       0.01 /          Node48/       0.00 /
   Node63/       0.01 /          Node65/       2.02 /          Node66/       0.00 /
   Node71/       0.08 /          Node74/       0.05 /          Node75/       0.05 /
   Node79/       0.11 /          Node80/       0.03 /          Node81/       0.01 /
   Node82/       0.03 /          Node83/       0.01 /          Node84/       0.00 /
   Node86/       0.03 /          Node87/       0.01 /          Node89/       0.00 /
   Node92/       0.00 /          Node94/       0.00 /          Node99/       0.00 /
  Node100/       2.03 /         Node108/       2.96 /         Node120/       1.50 /
  Node121/       0.01 /         Node122/       0.00 /         Node123/       2.25 /
  Node124/       2.03 /         Node127/       0.00 /         Node128/       0.80 /
  Node132/       0.03 /         Node133/       5.03 /         Node134/       3.61 /
  Node135/       2.55 /

 Junction/  Freeboard
   Node11/       5.53 /          Node12/       7.73 /          Node20/       3.80 /
   Node21/       5.84 /          Node22/       9.23 /          Node23/       7.03 /
   Node24/       7.29 /          Node25/       7.66 /          Node26/       7.88 /
   Node27/      11.74 /          Node29/       7.42 /          Node30/      11.40 /
   Node33/       8.73 /          Node34/      10.13 /          Node35/      13.21 /
   Node36/      26.17 /          Node37/      25.96 /          Node38/      21.28 /
   Node39/       7.18 /          Node41/       5.35 /          Node43/       7.05 /
   Node46/      15.25 /          Node47/      38.00 /          Node48/      24.70 /
   Node63/       2.62 /          Node65/       1.98 /          Node66/       5.77 /
   Node71/       2.62 /          Node74/       6.01 /          Node75/       8.80 /
   Node79/       8.65 /          Node80/      15.92 /          Node81/      16.11 /
   Node82/      16.98 /          Node83/       3.00 /          Node84/       8.20 /
   Node86/       7.59 /          Node87/      16.49 /          Node89/       2.00 /
   Node92/       3.30 /          Node94/       4.30 /          Node99/       2.00 /
  Node100/       9.03 /         Node108/       6.47 /         Node120/       0.10 /
  Node121/       7.64 /         Node122/       5.70 /         Node123/       7.97 /
  Node124/       7.47 /         Node127/       7.10 /         Node128/      10.80 /
  Node132/       8.77 /         Node133/      12.31 /         Node134/       4.29 /
  Node135/       2.77 /

 Junction/ Max Volume
   Node11/      48.86 /          Node12/      48.63 /          Node20/      12.16 /
   Node21/      71.93 /          Node22/     103.73 /          Node23/     107.10 /
   Node24/     106.78 /          Node25/      73.89 /          Node26/      68.77 /
   Node27/      23.49 /          Node29/      14.26 /          Node30/      27.81 /
   Node33/      98.66 /          Node34/      99.75 /          Node35/      95.10 /
   Node36/      83.23 /          Node37/      70.33 /          Node38/      44.78 /
   Node39/      17.52 /          Node41/       8.27 /          Node43/      19.07 /
   Node46/      15.30 /          Node47/      14.74 /          Node48/      10.24 /
   Node63/      31.47 /          Node65/   74820.73 /          Node66/   24179.65 /
   Node71/      14.90 /          Node74/      26.50 /          Node75/      13.04 /
```

```
   Node79/  383058.22 /          Node80/      21.06 /          Node81/      14.76 /
   Node82/      19.82 /          Node83/       5.04 /          Node84/      86.60 /
   Node86/      33.65 /          Node87/      17.15 /          Node89/       1.69 /
   Node92/      31.03 /          Node94/      48.79 /          Node99/   29854.89 /
  Node100/      65.31 /         Node108/      87.93 /         Node120/   59372.95 /
  Node121/      13.99 /         Node122/       8.18 /         Node123/      79.32 /
  Node124/      51.94 /         Node127/       0.00 /         Node128/      32.09 /
  Node132/      35.17 /         Node133/      88.17 /         Node134/      94.71 /
  Node135/      53.24 /

 Junction/Total Fldng
   Node11/       0.00 /          Node12/       0.00 /          Node20/       0.00 /
   Node21/       0.00 /          Node22/       0.00 /          Node23/      30.04 /
   Node24/      28.54 /          Node25/       0.00 /          Node26/       0.00 /
   Node27/       0.00 /          Node29/       0.00 /          Node30/       0.00 /
   Node33/       0.00 /          Node34/       0.00 /          Node35/       0.00 /
   Node36/       0.00 /          Node37/       0.00 /          Node38/       0.00 /
   Node39/       0.00 /          Node41/       0.00 /          Node43/       0.00 /
   Node46/       0.00 /          Node47/       0.00 /          Node48/       0.00 /
   Node63/       0.00 /          Node65/       0.00 /          Node66/   24322.40 /
   Node71/       0.00 /          Node74/       0.00 /          Node75/       0.00 /
   Node79/       0.00 /          Node80/       0.00 /          Node81/       0.00 /
   Node82/       0.00 /          Node83/       0.00 /          Node84/       0.00 /
   Node86/       0.00 /          Node87/       0.00 /          Node89/       0.00 /
   Node92/       0.00 /          Node94/       0.00 /          Node99/       0.00 /
  Node100/       0.00 /         Node108/       0.00 /         Node120/       0.00 /
  Node121/       0.00 /         Node122/       0.00 /         Node123/       0.00 /
  Node124/       0.00 /         Node127/       0.00 /         Node128/       0.00 /
  Node132/       0.00 /         Node133/       0.00 /         Node134/       0.00 /
  Node135/       0.00 /

  Conduit/ Cross Sectional Area
   Link13/       0.00 /          Link14/       0.01 /          Link15/       0.01 /
   Link16/       0.02 /          Link17/       0.06 /          Link18/       0.01 /
   Link23/       0.02 /          Link24/       0.04 /          Link25/       0.03 /
   Link26/       0.03 /          Link27/       0.03 /          Link28/       0.04 /
   Link32/       0.03 /          Link33/       0.01 /          Link47/       0.00 /
   Link56/       0.10 /          Link68/       0.03 /          Link69/       0.14 /
   Link70/       0.10 /          Link71/       0.08 /          Link72/       0.01 /
   Link73/       0.04 /          Link74/       0.05 /          Link75/       0.12 /
   Link76/       0.04 /          Link77/       0.01 /          Link78/       0.07 /
   Link79/       0.00 /          Link82/       0.01 /          Link83/       0.01 /
   Link84/       0.03 /          Link85/       0.04 /          Link90/       0.25 /
   Link93/       0.00 /         Link118/       0.00 /         Link120/       0.00 /
  Link121/       0.15 /         Link123/       0.22 /         Link124/       7.06 /
  Link125/       5.81 /         Link126/       2.57 /         Link127/       0.53 /
  Link130/       5.29 /         Link131/       0.00 /         Link132/       2.00 /
  Link133/       0.12 /           214.1/       0.01 /           283.1/       0.00 /
Restrict5/       0.08 /       restric11/       0.02 /       Restrict2/       0.01 /
Restrict3/       0.06 /

  Conduit/  Final Volume
   Link13/       0.00 /          Link14/       3.86 /          Link15/       4.11 /
   Link16/      11.61 /          Link17/       3.26 /          Link18/       5.63 /
   Link23/       7.61 /          Link24/       2.94 /          Link25/       8.83 /
   Link26/       9.31 /          Link27/      11.26 /          Link28/      11.66 /
   Link32/      10.81 /          Link33/       3.86 /          Link47/       0.00 /
   Link56/      62.02 /          Link68/      12.25 /          Link69/      37.38 /
   Link70/      45.87 /          Link71/      29.54 /          Link72/       0.61 /
   Link73/       2.97 /          Link74/       5.16 /          Link75/       6.46 /
   Link76/       1.69 /          Link77/       0.58 /          Link78/      24.15 /
   Link79/       0.00 /          Link82/       3.07 /          Link83/       1.50 /
   Link84/       8.09 /          Link85/      16.48 /          Link90/      63.01 /
   Link93/       0.00 /         Link118/       0.00 /         Link120/       2.42 /
  Link121/      51.01 /         Link123/     236.84 /         Link124/    1059.41 /
  Link125/     929.71 /         Link126/     693.58 /         Link127/     187.66 /
  Link130/    1585.93 /         Link131/       0.00 /         Link132/     698.56 /
  Link133/      38.55 /           214.1/       0.75 /           283.1/       0.00 /
Restrict5/     458.79 /       restric11/      90.62 /       Restrict2/      59.88 /
Restrict3/     313.93 /

  Conduit/ Hydraulic Radius
   Link13/       0.01 /          Link14/       0.02 /          Link15/       0.02 /
   Link16/       0.02 /          Link17/       0.06 /          Link18/       0.02 /
   Link23/       0.03 /          Link24/       0.04 /          Link25/       0.03 /
   Link26/       0.03 /          Link27/       0.03 /          Link28/       0.03 /
   Link32/       0.01 /          Link33/       0.00 /          Link47/       0.00 /
   Link56/       0.02 /          Link68/       0.04 /          Link69/       0.04 /
   Link70/       0.02 /          Link71/       0.01 /          Link72/       0.02 /
   Link73/       0.01 /          Link74/       0.01 /          Link75/       0.01 /
   Link76/       0.01 /          Link77/       0.02 /          Link78/       0.00 /
   Link79/       0.01 /          Link82/       0.01 /          Link83/       0.02 /
   Link84/       0.00 /          Link85/       0.00 /          Link90/       0.05 /
   Link93/       0.00 /         Link118/       0.00 /         Link120/       0.01 /
  Link121/       0.06 /         Link123/       0.07 /         Link124/       0.78 /
  Link125/       0.89 /         Link126/       0.61 /         Link127/       0.11 /
  Link130/       0.87 /         Link131/       0.00 /         Link132/       0.51 /
  Link133/       0.05 /           214.1/       0.02 /           283.1/       0.00 /
Restrict5/       0.07 /       restric11/       0.02 /       Restrict2/       0.02 /
Restrict3/       0.06 /

  Conduit/ Upstream/ Downstream Elevation
   Link13/   633.16/   631.54          Link14/   630.12/   628.88          Link15/   628.88/   628.05/
   Link16/   628.05/   626.44          Link17/   626.44/   626.44          Link18/   626.44/   623.70/
   Link23/   610.59/   608.55          Link24/   608.55/   608.44          Link25/   608.44/   607.44/
   Link26/   607.44/   606.50          Link27/   606.50/   605.50          Link28/   605.50/   604.46/
   Link32/   592.75/   572.00          Link33/   593.30/   572.00          Link47/   628.05/   628.05/
   Link56/   628.02/   622.08          Link68/   622.08/   619.02          Link69/   619.02/   617.72/
   Link70/   617.24/   615.72          Link71/   615.63/   610.59          Link72/   604.46/   602.93/
   Link73/   602.93/   597.92          Link74/   597.92/   595.19          Link75/   595.19/   594.69/
   Link76/   594.69/   592.75          Link77/   640.02/   639.60          Link78/   639.60/   636.35/
   Link79/   631.54/   630.51          Link82/   623.70/   613.51          Link83/   613.51/   612.79/
   Link84/   612.79/   606.01          Link85/   606.01/   593.30          Link90/   631.00/   630.03/
   Link93/   633.00/   631.00         Link118/   631.45/   631.45         Link120/   634.60/   631.46/
  Link121/   631.46/   630.60         Link123/   633.50/   630.03         Link124/   630.03/   630.03/
  Link125/   630.03/   630.03         Link126/   630.03/   630.03         Link127/   620.03/   620.03/
```

```
        Link130/   620.03/   620.03         Link131/   631.45/   631.45         Link132/   630.60/   630.60/
        Link133/   631.45/   630.60           214.1/   617.72/   617.24           283.1/   631.01/   630.22/
      Restrict5/   615.72/   615.63       restric11/   620.03/   619.99       Restrict2/   630.03/   629.99/
      Restrict3/   630.60/   630.50
```

```
*=========================================================*
|         Table E7 -  Iteration Summary                   |
*=========================================================*

Total number of time steps simulated...........        576
Total number of passes in the simulation........      57829
Total number of time steps during simulation....      39175
Ratio of actual # of time steps / NTCYC.........     68.012
Average number of iterations per time step......      1.476
Average  time step size(seconds)................      4.411
Smallest time step size(seconds)................      1.000
Largest  time step size(seconds)................    300.000
Average minimum Conduit Courant time step (sec).      8.234
Average minimum implicit time step (sec)........      4.434
Average minimum junction time step (sec)........      4.434
Average Courant Factor Tf.......................      4.434
Number of times omega reduced...................       9455
```

```
*=========================================================*
|     Table E8 - Junction Time Step Limitation Summary    |
*=========================================================*
|   Not Convr = Number of times this junction did not     |
|               converge during the simulation.           |
|   Avg Convr = Average junction iterations.              |
|   Conv err  = Mean convergence error.                   |
|   Omega Cng = Change of omega during iterations         |
|   Max Itern = Maximum number of iterations              |
*=========================================================*
```

Junction	Not Convr	Avg Convr	Total Itt	Omega Cng	Max Itern	Ittrn >10	Ittrn >25	Ittrn >40
Node11	0	2.09	81969	2137	60	30	12	6
Node12	0	2.28	89511	1534	12	1	0	0
Node20	0	1.57	61570	0	19	1	0	0
Node21	0	1.83	71612	1599	34	12	1	0
Node22	2	2.32	90878	124	501	82	79	79
Node23	0	1.56	61049	4	32	6	1	0
Node24	0	1.93	75695	223	480	43	16	11
Node25	0	1.35	52839	6	498	6	1	1
Node26	0	1.52	59357	4	23	5	0	0
Node27	0	1.42	55607	25	23	3	0	0
Node29	0	1.32	51720	29	27	1	1	0
Node30	0	1.56	60991	0	31	34	19	0
Node33	0	2.15	84059	34	51	115	55	13
Node34	0	1.58	61738	0	5	0	0	0
Node35	0	1.62	63533	7	377	5	5	5
Node36	0	1.54	60165	1	44	1	1	1
Node37	0	1.76	69022	22	496	16	16	15
Node38	0	1.41	55246	1	282	1	1	1
Node39	1	10.30	403616	1060	501	1051	1033	1025
Node41	4	3.14	123084	162	501	170	165	165
Node43	0	1.30	50739	24	426	22	18	18
Node46	0	1.39	54338	8	22	1	0	0
Node47	0	1.68	65952	2	60	3	1	1
Node48	0	1.44	56366	20	12	1	0	0
Node63	33	2.65	103618	138	501	155	150	150
Node65	0	1.25	48964	0	9	0	0	0
Node66	0	1.60	62809	302	292	34	16	10
Node71	0	1.44	56530	1	28	2	1	0
Node74	0	1.65	64776	4	29	14	2	0
Node75	0	5.83	228440	492	480	484	482	481
Node79	0	1.80	70560	0	10	1	0	0
Node80	0	1.41	55104	0	6	0	0	0
Node81	0	1.55	60625	0	8	0	0	0
Node82	0	1.49	58544	0	6	0	0	0
Node83	0	1.37	53566	0	6	0	0	0
Node84	2	2.16	84587	91	501	89	83	82
Node86	0	1.41	55086	2	30	1	1	0
Node87	0	1.35	52881	4	26	2	1	0
Node89	0	1.32	51896	20	428	19	19	17
Node92	4	4.09	160412	266	501	267	265	263
Node94	0	1.44	56391	39	455	39	37	37
Node99	0	1.20	46888	689	7	0	0	0
Node100	8	4.75	185950	262	501	276	268	267
Node108	0	1.96	76729	18	311	14	3	3
Node120	0	1.00	39175	0	1	0	0	0
Node121	0	1.33	52090	0	27	2	1	0
Node122	0	1.05	41148	0	24	1	0	0
Node123	0	1.92	75085	11	21	28	0	0
Node124	0	2.12	83092	13	33	73	26	0
Node127	0	1.00	39175	0	1	0	0	0
Node128	0	1.65	64705	4	38	4	1	0
Node132	0	2.36	92366	64	51	132	64	12
Node133	0	1.73	67963	6	65	20	1	1
Node134	0	1.71	66935	0	21	1	0	0
Node135	0	1.46	57101	3	19	1	0	0

```
Total number of iterations for all junctions..   4273847


Minimum number of possible iterations.........   2154625


Efficiency of the simulation..................      1.98
```

Excellent Efficiency

```
*=========================================================*
| Extran Efficiency is an indicator of the efficiency of   |
| the simulation.  Ideal efficiency is one iteration per   |
| time step.  Altering the underrelaxation parameter,      |
| lowering the time step, increasing the flow and head     |
| tolerance are good ways of improving the efficiency,     |
| another is lowering the internal time step. The lower the|
| efficiency generally the faster your model will run.     |
| If your efficiency is less than 1.5 then you may try     |
| increasing your time step so that your overall simulation|
| is faster.  Ideal efficiency would be around 2.0         |
|                                                          |
| Good Efficiency      < 1.5           mean iterations     |
| Excellent Efficiency < 2.5 and > 1.5 mean iterations     |
| Good      Efficiency < 4.0 and > 2.5 mean iterations     |
| Fair      Efficiency < 7.5 and > 4.0 mean iterations     |
| Poor Efficiency      > 7.5           mean iterations     |
*=========================================================*
```

```
*=====================================================*
|        Table E9 - JUNCTION SUMMARY STATISTICS        |
| The Maximum area is only the area of the node, it    |
| does not include the area of the surrounding conduits|
*=====================================================*
```

Junction Name	Ground Elevation feet	Uppermost PipeCrown Elevation feet	Maximum Junction Elevation feet	Time of Occurence Hr.	Min.	Feet of Surcharge at Max Elevation	Freeboard of node feet	Maximum Junction Area ft^2	Maximum Gutter Depth feet	Maximum Gutter Width feet	Maximum Gutter Velocity ft/s
Node11	623.2500	623.2500	621.0881	2	34	0.0000	2.1619	12.5660	0.0000	0.0000	0.0000
Node12	624.9700	624.9700	621.0798	2	34	0.0000	3.8902	12.5660	0.0000	0.0000	0.0000
Node20	638.4000	637.6000	635.5681	2	40	0.0000	2.8319	12.5660	0.0000	0.0000	0.0000
Node21	639.0000	636.1600	638.8845	2	30	2.7245	0.1155	12.5660	0.0000	0.0000	0.0000
Node22	639.3500	639.3500	638.3647	2	16	0.0000	0.9853	12.5660	0.0000	0.0000	0.0000
Node23	635.9100	631.8600	637.3832	2	7	5.5232	0.0000	12.5660	0.0000	0.0000	0.0000
Node24	635.3400	631.3300	636.5279	2	55	5.1979	0.0000	12.5660	0.0000	0.0000	0.0000
Node25	634.1030	629.3500	632.2297	1	13	2.8797	1.8733	12.5660	0.0000	0.0000	0.0000
Node26	634.3200	629.4200	631.8928	1	13	2.4728	2.4272	12.5660	0.0000	0.0000	0.0000
Node27	635.4400	626.6900	625.5592	1	14	0.0000	9.8808	12.5660	0.0000	0.0000	0.0000
Node29	620.2110	620.2110	613.9149	1	14	0.0000	6.2961	12.5660	0.0000	0.0000	0.0000
Node30	631.4300	623.0000	622.2131	1	15	0.0000	9.2169	12.5660	0.0000	0.0000	0.0000
Node33	619.3200	619.3200	618.4113	3	1	0.0000	0.9087	12.5660	0.0000	0.0000	0.0000
Node34	618.6800	611.5000	616.4383	3	1	4.9383	2.2417	12.5660	0.0000	0.0000	0.0000
Node35	621.6500	611.4000	615.9677	3	1	4.5677	5.6823	12.5660	0.0000	0.0000	0.0000
Node36	633.6100	610.4000	614.0239	3	1	3.6239	19.5861	12.5660	0.0000	0.0000	0.0000
Node37	632.4600	609.4600	612.0566	3	1	2.5966	20.4034	12.5660	0.0000	0.0000	0.0000
Node38	626.7800	608.4500	609.0136	3	1	0.5636	17.7664	12.5660	0.0000	0.0000	0.0000
Node39	611.6440	607.4400	605.8340	3	2	0.0000	5.8100	12.5660	0.0000	0.0000	0.0000
Node41	633.3700	631.2200	628.6584	1	6	0.0000	4.7116	12.5660	0.0000	0.0000	0.0000
Node43	638.5000	636.0000	632.9675	0	52	0.0000	5.5325	12.5660	0.0000	0.0000	0.0000
Node46	608.0000	610.3500	593.9576	1	14	0.0000	14.0424	12.5660	0.0000	0.0000	0.0000
Node47	610.0000	576.0000	573.1728	1	14	0.0000	36.8272	12.5660	0.0000	0.0000	0.0000
Node48	618.0000	609.8000	594.1148	1	12	0.0000	23.8852	12.5660	0.0000	0.0000	0.0000
Node63	633.6300	632.0100	633.5042	0	50	1.4942	0.1258	12.5660	0.0000	0.0000	0.0000
Node65	642.0000	642.0000	641.2246	1	36	0.0000	0.7754	50965.200	0.0000	0.0000	0.0000
Node66	634.7700	632.0000	636.5315	2	55	4.5315	0.0000	29107.140	0.0000	0.0000	0.0000
Node71	624.7000	624.7000	623.1858	1	8	0.0000	1.5142	12.5660	0.0000	0.0000	0.0000
Node74	625.0300	625.0300	621.0890	2	33	0.0000	3.9410	12.5660	0.0000	0.0000	0.0000
Node75	611.7300	611.7200	603.9581	3	2	0.0000	7.7719	12.5660	0.0000	0.0000	0.0000
Node79	624.3700	623.3700	621.0797	2	33	0.0000	3.2903	87120.000	0.0000	0.0000	0.0000
Node80	613.8400	613.8400	599.5662	3	2	0.0000	14.2738	12.5660	0.0000	0.0000	0.0000
Node81	611.3000	611.2900	596.3547	3	2	0.0000	14.9453	12.5660	0.0000	0.0000	0.0000
Node82	611.6700	611.6600	596.2473	3	2	0.0000	15.4227	12.5660	0.0000	0.0000	0.0000
Node83	642.6000	642.6000	640.0014	1	23	0.0000	2.5986	12.5660	0.0000	0.0000	0.0000
Node84	639.7400	634.5400	638.4320	2	18	3.8920	1.3080	12.5660	0.0000	0.0000	0.0000
Node86	621.1000	616.4900	616.1681	1	14	0.0000	4.9319	12.5660	0.0000	0.0000	0.0000
Node87	622.5000	622.5000	607.3648	1	16	0.0000	15.1352	12.5660	0.0000	0.0000	0.0000
Node89	639.1000	638.6000	637.2343	0	45	0.0000	1.8657	12.5660	0.0000	0.0000	0.0000
Node92	636.3000	634.5000	635.4697	1	5	0.9697	0.8303	12.5660	0.0000	0.0000	0.0000
Node94	635.3000	632.7500	634.8825	1	5	2.1325	0.4175	12.5660	0.0000	0.0000	0.0000
Node99	639.7000	637.7000	638.8896	2	30	1.1896	0.8104	43560.000	0.0000	0.0000	0.0000
Node100	639.0600	632.5000	634.1677	1	5	1.6677	4.8923	12.5660	0.0000	0.0000	0.0000
Node108	636.5000	630.0700	634.0670	1	5	3.9970	2.4330	12.5660	0.0000	0.0000	0.0000
Node120	639.6000	638.0000	642.1520	2	39	4.1520	0.0000	65340.000	0.0000	0.0000	0.0000
Node121	639.1000	634.4500	632.5630	2	37	0.0000	6.5370	12.5660	0.0000	0.0000	0.0000
Node122	639.2000	636.5000	634.1513	1	5	0.0000	5.0487	12.5660	0.0000	0.0000	0.0000
Node123	638.0000	630.7800	634.0921	1	5	3.3121	3.9079	12.5660	0.0000	0.0000	0.0000
Node124	627.5000	621.0000	622.1335	1	17	1.1335	5.3665	12.5660	0.0000	0.0000	0.0000
Node127	640.1000	635.0000	633.0000	0	0	0.0000	7.1000	12.5660	0.0000	0.0000	0.0000
Node128	641.4000	632.8000	632.3540	2	25	0.0000	9.0460	12.5660	0.0000	0.0000	0.0000
Node132	624.4000	624.3700	618.3989	3	0	0.0000	6.0011	12.5660	0.0000	0.0000	0.0000
Node133	632.3400	618.0000	622.0167	1	19	4.0167	10.3233	12.5660	0.0000	0.0000	0.0000
Node134	634.3200	629.4200	633.9572	1	5	4.5372	0.3628	12.5660	0.0000	0.0000	0.0000
Node135	633.3700	631.0500	632.2866	2	27	1.2366	1.0834	12.5660	0.0000	0.0000	0.0000

```
*=====================================================*
|        Table E10 - CONDUIT SUMMARY STATISTICS        |
| Note: The peak flow may be less than the design flow |
| and the conduit may still surcharge because of the   |
| downstream boundary conditions.                      |
|                                                      |
| * denotes an open conduit that has been overtopped   |
|   this is a potential source of severe errors        |
*=====================================================*
```

Conduit Name	Design Flow (cfs)	Conduit Design Velocity (ft/s)	Maximum Vertical Depth (in)	Maximum Computed Flow (cfs)	Time of Occurence Hr.	Min.	Maximum Computed Velocity (ft/s)	Time of Occurence Hr.	Min.	Ratio of Max. to Design Flow	Maximum Water Elev at Pipe Ends Upstream (ft)	Dwnstrm (ft)	Ratio d/D US	DS
Link13	52.1501	7.3777	36.0000	48.9969	3	9	7.8184	3	22	0.9395	638.8845	638.4320	1.908	2.297

Link14	43.7477	6.1890	36.0000	55.0429	3	55	7.7134	3	55	1.2582	638.3647	637.3831	2.752	2.841
Link15	36.6850	5.1899	36.0000	54.6811	3	57	7.6784	3	57	1.4906	637.3832	636.5279	2.841	2.833
Link16	37.2836	5.2745	36.0000	62.9593	2	13	8.8116	2	14	1.6887	636.5279	632.2298	2.833	1.960
Link17	26.7696	3.7871	36.0000	-66.4052	2	57	-9.3453	2	57	-2.4806	632.2297	631.8928	1.937	1.848
Link18	55.5441	7.8579	36.0000	78.5117	1	13	11.4482	1	13	1.4135	631.8928	625.5592	1.824	0.623
Link23	58.7557	8.3122	36.0000	58.4223	3	50	8.1844	3	50	0.9943	618.4113	616.4384	2.616	2.646
Link24	26.5621	3.7578	36.0000	58.4239	3	50	8.1843	3	50	2.1995	616.4383	615.9679	2.646	2.523
Link25	41.3740	5.8532	36.0000	58.4260	3	50	8.1921	3	50	1.4121	615.9678	614.0239	2.523	2.208
Link26	39.9177	5.6472	36.0000	58.4285	3	50	8.2092	3	50	1.4637	614.0235	612.0566	2.208	1.866
Link27	34.5795	4.8920	36.0000	60.7998	3	1	8.5215	3	1	1.7583	612.0566	609.0136	1.866	1.188
Link28	40.1573	5.6811	36.0000	60.4180	3	2	8.6906	3	2	1.5045	609.0136	605.8340	1.188	0.465
Link32	451.1614	28.1976	48.0000	112.0474	1	14	23.0958	1	14	0.2484	593.9576	573.1728	0.304	0.293
Link33	823.3655	34.3069	48.0000	110.3948	1	12	21.6599	1	10	0.1341	594.1148	573.1728	0.204	0.293
Link47	80.4856	11.3864	36.0000	28.5309	0	30	9.4051	0	25	0.3545	636.5315	636.5279	2.511	2.733
Link56	47.4322	2.4964	14.2270	17.7814	1	6	1.6471	1	4	0.3749	628.6584	623.1858	0.555	1.000 *
Link68	138.7842	3.0723	32.4000	17.7432	1	8	3.1140	0	44	0.1278	623.1858	621.0890	0.439	0.781
Link69	12349.67	11.4824	72.6000	-63.0053	0	47	1.9578	6	50	-0.0051	621.0890	621.0881	0.349	0.643
Link70	10078.61	10.5486	93.1200	213.0368	1	7	2.9328	1	59	0.0211	621.0798	621.0797	0.499	0.705
Link71	58179.11	25.6200	105.1200	-1464.80	2	52	2.2528	3	55	-0.0252	618.3989	618.4113	0.318	0.896
Link72	137.3690	19.4337	36.0000	60.4492	3	2	18.8152	3	2	0.4400	605.8340	604.3146	0.465	0.464
Link73	56825.79	51.6051	143.0400	60.4436	3	2	7.6233	3	56	0.0011	603.9581	599.5662	0.087	0.141
Link74	37318.09	37.1859	191.4000	60.4358	3	2	7.4938	3	2	0.0016	599.5662	596.3547	0.105	0.074
Link75	29495.40	24.1735	209.5200	60.4173	3	2	3.1914	3	2	0.0020	596.3547	596.2473	0.067	0.090
Link76	40618.15	48.9919	211.3200	60.4088	3	2	9.6158	3	2	0.0015	596.2473	593.9576	0.090	0.069
Link77	20.0104	6.3695	24.0000	17.0765	1	36	9.1985	1	36	0.8534	641.2246	640.0014	0.612	0.201
Link78	1059.813	5.4349	36.0000	17.8383	1	23	1.7349	1	23	0.0168	640.0014	638.3647	0.134	0.672
Link79	101.6938	14.3867	36.0000	48.8393	3	9	9.8894	3	27	0.4803	638.4320	638.3647	2.297	2.618
Link82	110.5183	15.6351	36.0000	78.5050	1	14	16.2470	1	14	0.7103	625.5592	616.1681	0.623	0.893
Link83	54.8977	7.7664	36.0000	78.5077	1	14	12.5906	1	15	1.4301	616.1681	613.9149	0.893	0.378
Link84	4900.754	21.9785	89.1720	78.5036	1	14	7.3437	1	14	0.0160	613.9149	607.3648	0.153	0.184
Link85	34130.32	31.7780	198.0000	78.4611	1	15	6.6812	1	14	0.0023	607.3648	594.1148	0.083	0.049
Link90	18.8038	7.8177	21.0000	11.7510	0	51	5.7895	0	41	0.6249	634.8825	634.0671	2.219	3.467
Link93	13.1401	7.4358	18.0000	12.9775	0	50	8.4751	0	51	0.9876	635.4697	634.1677	1.646	2.112
Link118	939.1777	16.0543	18.0000	14.9031	0	45	3.6078	0	45	0.0159	637.2343	634.6321	0.090	0.088
Link120	51.0931	7.2282	36.0000	11.5117	2	40	5.7153	2	41	0.2253	635.5681	632.5630	0.323	0.371
Link121	51.0931	7.2282	36.0000	11.5228	2	41	4.1506	2	47	0.2255	632.5630	632.3540	0.371	0.851
Link123	47.1250	6.6668	36.0000	-3.2990	1	2	1.4364	1	10	-0.0700	634.1513	634.1677	0.217	1.733
Link124	47.5651	6.7291	36.0000	22.6129	0	50	3.1861	0	50	0.4754	634.0670	633.9572	2.332	2.512
Link125	48.1334	6.8095	36.0000	12.2325	1	9	2.3888	0	27	0.2541	634.0921	634.0670	2.104	2.332
Link126	47.9699	6.7864	36.0000	12.2168	1	9	3.5932	0	29	0.2547	634.1677	634.0921	1.733	2.104
Link127	54.2348	7.6727	36.0000	18.5209	1	0	4.7832	0	46	0.3415	622.2131	622.1335	0.738	1.378
Link130	72.2566	10.2222	36.0000	18.4211	1	0	2.6003	1	0	0.2549	622.1335	622.0167	1.378	2.339
Link131	17.3295	5.5161	24.0000	0.0000	0	0	0.0000	0	0	0.0000	633.0000	632.9675	.0000	.0000
Link132	51.0931	7.2282	36.0000	13.4919	0	48	3.4336	0	38	0.2641	632.3540	632.2866	0.851	1.412
Link133	17.3295	5.5161	24.0000	14.7720	0	46	6.0091	0	41	0.8524	632.9675	632.3540	0.759	1.277
214.1	15.9283	5.0701	24.0000	29.7011	0	49	9.5903	0	49	1.8647	621.0881	621.0798	1.694	1.935
283.1	2.7121	3.4532	12.0000	4.7849	0	50	6.0708	0	50	1.7643	633.5042	631.1230	2.494	0.903
Restrict5	58.9652	0.4815	36.0036	59.6941	2	50	8.7956	2	46	1.0124	621.0797	618.3989	1.823	0.933
restric11	37.3449	0.4815	29.9916	14.7902	1	24	3.7147	1	30	0.3960	622.0167	621.2861	0.807	0.519
Restrict2	21.3788	0.4815	23.9939	21.4270	1	8	6.8841	1	8	1.0023	633.9572	631.8928	1.979	0.952
Restrict3	37.2878	0.4815	29.9733	12.1921	2	34	3.4014	2	41	0.3270	632.2866	631.6612	0.715	0.469
Link 5	Undefnd	Undefnd	Undefn	166.5635	1	9								
WEIR46	Undefnd	Undefnd	Undefn	7.3710	0	50								
Link97.1	Undefnd	Undefnd	Undefn	45.1727	3	3								
WEIR119	Undefnd	Undefnd	Undefn	11.5133	2	39								
Weir122	Undefnd	Undefnd	Undefn	0.0000	0	0								
FREE # 1	Undefnd	Undefnd	Undefn	222.1866	1	14								

==========
| Table E11. Area assumptions used in the analysis|
| Subcritical and Critical flow assumptions from |
| Subroutine Head. See Figure 17-1 in the |
| manual for further information. |
==========

Conduit Name	Duration of Dry Flow(min)	Duration of Sub-Critical Flow(min)	Durat. of Upstream Critical Flow(min)	Durat. of Downstream Critical Flow(min)	Maximum Hydraulic Radius-m	Maximum X-Sect Area(ft^2)	Maximum Vel*D (ft^2/s)
Link13	58.5789	2821.4211	0.0000	0.0000	0.9017	7.2538	36.2843
Link14	32.2381	2847.7619	0.0000	0.0000	0.9067	7.3802	51.4877
Link15	21.2712	2858.7288	0.0000	0.0000	0.9122	7.3796	48.6740
Link16	15.0000	2865.0000	0.0000	0.0000	0.9122	7.2592	61.3620
Link17	15.8333	2864.1667	0.0000	0.0000	0.9107	7.3459	49.9463
Link18	15.8333	2864.1667	0.0000	0.0000	0.8951	5.8234	41.9303
Link23	20.4237	2859.5763	0.0000	0.0000	0.8965	7.2505	63.1442
Link24	20.4237	2859.5763	0.0000	0.0000	0.9123	7.4039	61.9542
Link25	20.7627	2859.2373	0.0000	0.0000	0.9121	7.4044	56.6052
Link26	21.4407	2858.5593	0.0000	0.0000	0.9123	7.3977	48.5555
Link27	23.4746	2856.5254	0.0000	0.0000	0.9104	7.2575	37.1733
Link28	26.0345	2853.9655	0.0000	0.0000	0.8853	5.1644	20.6253
Link32	17.5000	2862.5000	0.0000	0.0000	0.7551	4.7804	27.5788
Link33	15.8333	2864.1667	0.0000	0.0000	0.6608	5.9263	21.4198
Link47	2637.9558	233.4849	0.0000	8.5593	0.8965	7.2471	13.1614
Link56	15.0000	2865.0000	0.0000	0.0000	0.4106	16.7716	1.5162
Link68	15.8333	2864.1667	0.0000	0.0000	0.5600	10.9751	4.4141
Link69	17.5000	2862.5000	0.0000	0.0000	1.2619	253.5471	1.8049
Link70	21.1017	2858.8983	0.0000	0.0000	2.0128	414.7166	6.4075
Link71	33.4286	2846.0694	0.5021	0.0000	5.9076	1086.1748	4.9684
Link72	29.1379	1052.8358	0.0000	1798.0262	0.7140	3.2140	26.0476
Link73	31.0952	2848.9048	0.0000	0.0000	0.4879	13.3888	10.3166
Link74	32.3333	2847.6667	0.0000	0.0000	0.7682	6.2224	10.6606
Link75	34.1429	2845.8571	0.0000	0.0000	0.7932	22.6213	4.3849
Link76	34.4762	2845.5238	0.0000	0.0000	0.6856	4.8832	12.8117
Link77	49.6571	2830.3429	0.0000	0.0000	0.5275	1.1215	7.3961
Link78	49.7429	106.2563	0.0000	2724.0008	0.3942	46.4526	1.0592
Link79	52.6396	185.5747	0.0000	2641.7857	0.8964	7.2498	39.9129
Link82	15.8333	2864.1667	0.0000	0.0000	0.8521	5.6123	36.9279
Link83	18.3333	2861.6667	0.0000	0.0000	0.8803	4.3824	23.9966
Link84	20.0000	2860.0000	0.0000	0.0000	0.7566	11.9288	9.1769
Link85	20.3390	2859.6610	0.0000	0.0000	0.7329	8.6472	7.2715
Link90	2573.7778	292.6303	0.0000	13.5920	0.5229	2.4756	20.7371
Link93	15.8333	90.2810	0.0000	2773.8857	0.4564	1.8141	16.8605
Link118	1530.2222	0.0000	0.0000	1349.7778	0.1306	4.1024	0.4791

Link120	57.5000	2822.5000	0.0000	0.0000	0.5501	2.1765	5.9442
Link121	44.3464	2835.6536	0.0000	0.0000	0.8578	4.2287	7.5533
Link123	2257.4347	622.5653	0.0000	0.0000	0.7139	3.6902	3.3214
Link124	15.8333	2864.1667	0.0000	0.0000	0.8986	7.2472	20.3195
Link125	16.6667	2863.3333	0.0000	0.0000	0.9032	7.2474	10.6574
Link126	15.8333	2864.1667	0.0000	0.0000	0.8965	7.2508	9.1394
Link127	15.8333	2864.1667	0.0000	0.0000	0.8857	6.3219	10.9104
Link130	17.5000	2862.5000	0.0000	0.0000	0.8965	7.2645	13.4883
Link131	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Link132	15.8333	2864.1667	0.0000	0.0000	0.8965	6.7453	7.7125
Link133	1529.2222	1350.7778	0.0000	0.0000	0.6007	2.8754	9.6352
214.1	21.1017	2858.8983	0.0000	0.0000	0.6042	3.2221	21.5064
283.1	15.0000	0.0000	0.0000	2865.0000	0.3034	0.7692	10.3108
Restrict5	21.1017	2858.8983	0.0000	0.0000	0.8872	6.9822	33.2079
restric11	36.5984	0.0000	0.0000	2843.4016	0.7482	3.3582	6.0375
Restrict2	33.6667	118.4412	0.0000	2727.8921	0.6062	3.1159	17.7644
Restrict3	29.2529	0.0000	0.0000	2850.7471	0.7294	2.9686	5.0136

==========
| Table E12. Mean Conduit Flow Information |
==========

Conduit Name	Mean Flow (cfs)	Total Flow (ft^3)	Mean Percent Change	Low Flow Weightng	Mean Froude Number	Mean Hydraulic Radius	Mean Cross Area	Mean Conduit Roughness
Link13	1.4841	256455.04	0.0000	0.3958	0.6822	0.1572	1.0906	0.0120
Link14	2.1749	375822.91	0.0000	0.9947	0.6395	0.2168	1.3301	0.0120
Link15	2.1742	375698.30	0.0000	0.9993	0.5543	0.2288	1.4154	0.0120
Link16	3.7972	656149.58	0.0000	0.9998	0.5594	0.2347	1.4355	0.0120
Link17	-4.0021	-691556.0	0.0000	0.9998	0.3852	0.2722	1.5013	0.0120
Link18	4.4758	773411.30	0.0000	0.9998	1.0682	0.2268	1.2999	0.0120
Link23	9.6562	1668584.7	0.0000	0.9995	0.7699	0.4299	3.3750	0.0120
Link24	9.6561	1668569.4	0.0000	0.9995	0.5568	0.4538	3.5008	0.0120
Link25	9.6562	1668592.0	0.0000	0.9994	0.6672	0.4392	3.4455	0.0120
Link26	9.6566	1668655.3	0.0000	0.9990	0.6742	0.4412	3.4583	0.0120
Link27	10.1029	1745780.2	0.0000	0.9983	0.7065	0.4493	3.4949	0.0140
Link28	10.1034	1745863.8	0.0000	0.9968	1.0602	0.4523	3.3038	0.0120
Link32	11.7662	2033200.7	0.0001	0.9998	4.0309	0.3010	1.6586	0.0120
Link33	5.3525	924910.18	0.0000	0.9998	2.1953	0.1334	0.9602	0.0140
Link47	0.5250	90712.138	0.0000	0.2136	0.0293	0.1379	1.1442	0.0120
Link56	1.6575	286416.77	0.0000	0.9998	0.3052	0.1809	3.1207	0.0400
Link68	1.6588	286636.73	0.0000	0.9998	0.4703	0.2578	1.5997	0.0250
Link69	1.6664	287955.88	0.0001	0.9997	0.2301	0.2634	17.3604	0.0250
Link70	6.9704	1204483.0	0.0000	0.9993	0.1596	0.5223	57.0039	0.0250
Link71	7.6106	1315104.2	0.0010	0.9941	0.2523	0.6484	168.6710	0.0250
Link72	10.1035	1745884.6	0.0000	0.9957	2.5877	0.3695	1.4708	0.0120
Link73	10.1037	1745913.8	0.0000	0.9954	1.1700	0.2584	3.5352	0.0250
Link74	10.1037	1745914.2	0.0000	0.9947	1.1249	0.3981	3.7119	0.0250
Link75	10.1038	1745929.8	0.0000	0.9937	0.4642	0.3864	8.7725	0.0250
Link76	10.1037	1745918.0	0.0000	0.9935	1.6198	0.3548	2.8814	0.0250
Link77	0.6948	120067.23	0.0000	0.9821	1.7774	0.1323	0.2881	0.0120
Link78	0.6920	119579.28	0.0000	0.9820	0.7492	0.0689	2.2621	0.0400
Link79	1.4828	256223.92	0.0000	0.3994	1.4599	0.1478	1.0821	0.0120
Link82	4.4760	773458.72	0.0000	0.9998	1.7343	0.2028	0.8387	0.0120
Link83	4.4759	773437.16	0.0000	0.9998	1.2552	0.2370	1.1320	0.0120
Link84	4.4763	773504.51	0.0000	0.9997	0.7262	0.1585	1.9407	0.0250
Link85	4.4763	773501.14	0.0000	0.9996	1.0183	0.1548	2.1550	0.0250
Link90	0.2579	44560.494	0.0000	0.2737	0.0805	0.0913	0.4040	0.0120
Link93	0.2837	49031.959	0.0000	0.2657	0.7294	0.0452	0.1116	0.0120
Link118	0.3085	53316.067	0.0000	0.7391	0.9531	0.0093	0.2880	0.0120
Link120	1.0917	188641.42	0.0000	0.9744	0.8846	0.2189	0.5776	0.0120
Link121	1.0916	188628.94	0.0000	0.9868	0.4669	0.2924	1.0084	0.0120
Link123	0.0005	89.7364	0.0000	0.5160	0.0080	0.0808	0.3500	0.0120
Link124	0.5181	89524.086	0.0000	0.9998	0.0170	0.7542	7.1168	0.0120
Link125	0.2670	46135.305	0.0000	0.9997	0.0113	0.8408	6.4218	0.0120
Link126	0.2733	47228.996	0.0000	0.9998	0.0167	0.7385	4.1033	0.0120

Link127	0.4520	78113.861	0.0000	0.9998	0.0516	0.3635	1.8695	0.0120
Link130	0.4450	76900.713	0.0000	0.9997	0.0226	0.8410	5.9620	0.0120
Link131	0.0000	0.0000	0.0000	0.0000	0.0000	0.0148	0.0316	0.0120
Link132	1.3975	241496.10	0.0000	0.9998	0.0836	0.7158	3.8489	0.0120
Link133	0.3083	53272.460	0.0000	0.7393	0.0716	0.1577	0.5145	0.0120
214.1	2.2745	393038.35	0.0000	0.9994	0.6081	0.2581	1.0870	0.0240
283.1	0.1701	29389.903	0.0000	0.2379	0.3209	0.0345	0.0833	0.0240
Restrict5	6.8728	1187624.6	0.0000	0.9993	0.6849	0.4852	3.1000	0.0033
restric11	0.4462	77096.146	0.0000	0.9923	0.3603	0.1680	0.5034	0.0031
Restrict2	0.4563	78843.373	0.0000	0.9940	0.3763	0.1398	0.4167	0.0028
Restrict3	1.4008	242052.82	0.0000	0.9962	0.4117	0.3905	1.3522	0.0031
Link 5	4.6966	811573.21						
WEIR46	0.0868	14999.089						
Link97.1	1.4171	244871.07						
WEIR119	1.0916	188633.33						
Weir122	0.0000	0.0000						
FREE # 1	17.1188	2958128.6						

Table E13. Channel losses(H), headwater depth (HW), tailwater depth (TW), critical and normal depth (Yc and Yn). Use this section for culvert comparisons

Conduit Name	Maximum Flow	Head Loss	Friction Loss	Critical Depth	Normal Depth	HW Elevat	TW Elevat	
Link13	48.3669	0.0000	1.3835	2.2639	2.2836	637.8395	636.4760	Max Flow
Link14	54.3584	0.0000	1.8999	2.3933	3.0000	636.8815	634.9805	Max Flow
Link15	54.3727	0.0000	1.8001	2.3937	3.0000	634.9817	633.1787	Max Flow
Link16	62.9535	0.0000	4.6880	2.5497	3.0000	636.4176	631.7088	Max Flow
Link17	-0.0054	0.0000	0.4260	0.0042	0.0081	626.4363	626.4381	Max Flow
Link18	78.4598	0.0000	5.6889	2.7544	3.0000	631.8810	625.5589	Max Flow
Link23	58.4060	0.0000	1.9988	2.4702	2.4455	618.2125	616.2124	Max Flow
Link24	58.4033	0.0000	0.4740	2.4702	3.0000	616.2306	615.7548	Max Flow
Link25	58.4058	0.0000	1.9572	2.4702	3.0000	615.7552	613.7922	Max Flow
Link26	58.4030	0.0000	1.9844	2.4702	3.0000	613.7920	611.8007	Max Flow
Link27	59.8554	0.0000	2.9697	2.4974	3.0000	611.8796	608.8886	Max Flow
Link28	59.8416	0.0000	2.3103	2.4972	3.0000	608.8806	605.8268	Max Flow
Link32	111.9525	0.0000	20.4419	2.8973	1.1721	593.9565	573.1721	Max Flow
Link33	109.9241	0.0000	21.0867	2.1838	0.7973	594.1125	573.1455	Max Flow
Link47	28.4548	0.0000	0.6257	1.7248	1.2314	630.4029	630.0015	Max Flow
Link56	17.7734	0.0000	5.6985	0.4972	0.6579	628.6583	623.1829	Max Flow
Link68	17.7339	0.0000	2.9237	1.0881	1.1854	623.1855	620.6915	Max Flow
Link69	19.6551	0.0000	0.2746	1.1008	1.4548	620.2490	620.1621	Max Flow
Link70	211.7335	0.0000	1.5357	1.8048	2.0847	619.3246	618.2467	Max Flow
Link71	569.0525	0.0000	0.2846	1.3652	1.3085	618.2231	617.9629	Max Flow
Link72	60.0101	0.0000	1.5213	2.5004	1.3868	605.8268	604.3087	Max Flow
Link73	60.1163	0.0000	3.7887	1.4608	1.0336	603.9562	599.5636	Max Flow
Link74	60.2717	0.0000	2.3047	1.9218	1.5477	599.5639	596.3537	Max Flow
Link75	60.3047	0.0000	0.3559	0.9172	0.9266	596.3537	596.2465	Max Flow
Link76	60.2849	0.0000	1.8993	1.9976	1.4786	596.2465	593.5583	Max Flow
Link77	17.0629	0.0000	0.7765	1.4880	1.4208	641.2241	639.9845	Max Flow
Link78	17.0417	0.0000	3.0173	0.2610	0.3825	639.9850	637.9209	Max Flow
Link79	48.3765	0.0000	0.2311	2.2641	1.4570	636.4760	636.2515	Max Flow
Link82	78.4803	0.0000	9.2987	2.7546	1.8684	625.5588	616.1672	Max Flow
Link83	78.4928	0.0000	1.5346	2.7548	3.0000	616.1672	613.9148	Max Flow
Link84	78.4999	0.0000	6.5311	1.3920	1.1293	613.9148	607.3645	Max Flow
Link85	78.4577	0.0000	9.0029	1.4831	1.1927	607.3645	594.1123	Max Flow
Link90	11.6910	0.0000	2.8278	1.2740	0.9992	632.9976	631.8811	Max Flow
Link93	12.9468	0.0000	1.9953	1.3465	1.2107	634.2124	632.2107	Max Flow
Link118	14.8607	0.0000	2.5584	0.1934	0.1319	637.2342	634.6319	Max Flow
Link120	11.5111	0.0000	3.0274	1.0755	0.9677	635.5680	632.5623	Max Flow
Link121	11.5198	0.0000	0.6718	1.0759	0.9681	632.5623	632.3400	Max Flow
Link123	1.8134	0.0000	0.4343	0.4133	0.3980	634.0144	633.7224	Max Flow
Link124	22.5375	0.0000	0.3107	1.5266	1.4537	631.8812	631.7360	Max Flow
Link125	12.2279	0.0000	0.6051	1.1089	1.0297	633.6462	633.6021	Max Flow
Link126	12.2158	0.0000	1.0310	1.1084	1.0311	633.7224	633.6462	Max Flow
Link127	18.4579	0.0000	1.5665	1.3750	1.2063	621.8583	621.7364	Max Flow
Link130	18.3096	0.0000	0.7944	1.3692	1.0284	621.7364	621.5380	Max Flow
Link131	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	Max Flow
Link132	13.4445	0.0000	0.4684	1.1650	1.0494	631.4858	631.4377	Max Flow
Link133	14.6439	0.0000	1.5780	1.3784	1.4108	632.9046	631.4858	Max Flow
214.1	29.4531	0.0000	1.6634	1.8502	2.0000	620.4976	618.8371	Max Flow
283.1	4.7844	0.0000	2.3812	0.9029	1.0000	633.5042	631.1229	Max Flow
Restrict5	59.6043	0.0000	3.0967	2.4927	3.0003	621.0178	617.9460	Max Flow
restric11	14.7896	0.0000	0.4589	1.2961	2.4993	621.9882	621.2861	Max Flow
Restrict2	21.2010	0.0000	1.9233	1.6471	1.9995	633.4778	631.7635	Max Flow
Restrict3	12.1920	0.0000	0.4046	1.1712	2.4978	632.2817	631.6612	Max Flow

Table E13a. CULVERT ANALYSIS CLASSIFICATION, and the time the culvert was in a particular classification during the simulation. The time is in minutes. The Dynamic Wave Equation is used for all conduit analysis but the culvert flow classification condition is based on the HW and TW depths.

Conduit Name	Critical D Outlet Control	Mild Slope Outlet Control	Mild Slope TW Outlet Control	Steep Slope TW Insignf Entrance Control	Slug Flow Outlet/ Entrance Control	Mild Slope TW > D Outlet Control	Mild Slope TW <= D Outlet Control	Outlet Control	Inlet Control	Inlet Configuration
Link13	0.0000	0.0000	2735.0000	20.0000	10.0000	105.0000	10.0000	0.0000	None	
Link14	0.0000	2580.0000	130.0000	10.0000	125.0000	20.0000	15.0000	0.0000	None	
Link15	0.0000	2705.0000	20.0000	0.0000	155.0000	0.0000	0.0000	0.0000	None	
Link16	5.0000	2720.0000	15.0000	0.0000	135.0000	0.0000	5.0000	0.0000	None	
Link17	0.0000	2730.0000	15.0000	0.0000	135.0000	0.0000	0.0000	0.0000	None	
Link18	50.0000	0.0000	2740.0000	0.0000	0.0000	0.0000	90.0000	0.0000	None	
Link23	0.0000	0.0000	2390.0000	40.0000	0.0000	405.0000	45.0000	0.0000	None	
Link24	25.0000	2355.0000	20.0000	0.0000	480.0000	0.0000	0.0000	0.0000	None	
Link25	20.0000	2360.0000	20.0000	0.0000	480.0000	0.0000	0.0000	0.0000	None	
Link26	10.0000	2375.0000	20.0000	0.0000	475.0000	0.0000	0.0000	0.0000	None	
Link27	10.0000	2460.0000	20.0000	0.0000	390.0000	0.0000	0.0000	0.0000	None	
Link28	2625.0000	230.0000	25.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link32	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link33	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link47	0.0000	0.0000	2660.0000	50.0000	0.0000	145.0000	25.0000	0.0000	None	
Link56	0.0000	2860.0000	15.0000	0.0000	5.0000	0.0000	0.0000	0.0000	None	
Link68	325.0000	2540.0000	15.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link69	0.0000	2865.0000	15.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link70	30.0000	2830.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link71	0.0000	2760.0000	30.0000	90.0000	0.0000	0.0000	0.0000	0.0000	None	
Link72	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link73	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link74	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link75	0.0000	2850.0000	30.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link76	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link77	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link78	690.0000	2145.0000	45.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link79	0.0000	0.0000	2720.0000	15.0000	0.0000	135.0000	10.0000	0.0000	None	
Link82	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link83	145.0000	0.0000	2700.0000	0.0000	0.0000	0.0000	35.0000	0.0000	None	
Link84	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link85	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link90	0.0000	0.0000	2765.0000	55.0000	0.0000	20.0000	40.0000	0.0000	None	
Link93	0.0000	0.0000	2865.0000	0.0000	0.0000	0.0000	15.0000	0.0000	None	
Link118	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link120	0.0000	1295.0000	1585.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link121	0.0000	1285.0000	1230.0000	40.0000	0.0000	0.0000	325.0000	0.0000	None	
Link123	0.0000	585.0000	2260.0000	0.0000	25.0000	0.0000	10.0000	0.0000	None	
Link124	0.0000	5.0000	15.0000	5.0000	2705.0000	145.0000	5.0000	0.0000	None	
Link125	0.0000	1855.0000	20.0000	25.0000	855.0000	125.0000	0.0000	0.0000	None	
Link126	5.0000	2710.0000	25.0000	95.0000	0.0000	45.0000	0.0000	0.0000	None	
Link127	0.0000	0.0000	35.0000	2830.0000	0.0000	0.0000	15.0000	0.0000	None	
Link130	0.0000	0.0000	30.0000	2735.0000	0.0000	115.0000	0.0000	0.0000	None	
Link131	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link132	0.0000	1265.0000	25.0000	1590.0000	0.0000	0.0000	0.0000	0.0000	None	
Link133	0.0000	1100.0000	1550.0000	50.0000	120.0000	0.0000	60.0000	0.0000	None	
214.1	20.0000	2140.0000	320.0000	115.0000	55.0000	175.0000	55.0000	0.0000	None	
283.1	55.0000	115.0000	2630.0000	0.0000	0.0000	0.0000	80.0000	0.0000	None	
Restrict5	2155.0000	545.0000	20.0000	0.0000	0.0000	0.0000	160.0000	0.0000	None	
restric11	785.0000	2060.0000	35.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Restrict2	540.0000	2295.0000	30.0000	0.0000	0.0000	0.0000	15.0000	0.0000	None	
Restrict3	870.0000	1985.0000	25.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	

```
*====================================*
|    Kinematic Wave Approximations    |
|  Time in Minutes for Each Condition |
*====================================*
```

Conduit Name	Duration of Normal Flow	Slope Criteria	Super-Critical	Roll Waves
Link13	1.1813	132.4906	117.8349	0.0000
Link14	2640.2989	2773.0366	0.0000	0.0000
Link15	291.5444	381.9222	0.0000	0.0000
Link16	2671.1264	2671.5385	0.8333	0.0000
Link17	0.0000	0.0000	0.0000	0.0000
Link18	0.0000	0.0000	539.1667	0.0000
Link23	2327.6959	2852.3563	383.4510	0.0000
Link24	0.0000	0.0000	8.0820	0.0000
Link25	2325.0245	2373.3045	5.0345	0.0000
Link26	2281.4106	2383.8009	5.1856	0.0000
Link27	2272.8984	2282.8261	4.8982	0.0000
Link28	0.0000	0.0000	630.5721	0.0000
Link32	20.5256	25.0254	2864.1667	0.0000
Link33	2012.6387	2834.2521	2693.6443	0.0000
Link47	2641.4011	2824.2491	23.1148	0.0000
Link56	2860.8333	2860.8333	1.6667	0.0000
Link68	529.4520	529.7358	5.5508	0.0000
Link69	2645.8259	2858.4154	0.0000	0.0000
Link70	2434.3785	2821.0263	4.4185	0.0000
Link71	2523.9259	2791.6603	0.0000	0.0000
Link72	18.8983	19.4698	2849.7619	0.0000
Link73	2844.9180	2848.1561	1484.0537	0.0000
Link74	0.0000	0.0000	1593.5379	0.0000
Link75	2157.8335	2844.5492	0.0000	0.0000
Link76	12.8697	22.8885	2840.7787	0.0000
Link77	0.0000	0.0000	2830.1143	0.0000
Link78	104.8849	104.9685	1.9829	0.0000
Link79	3.5201	166.3855	2676.2912	0.0000
Link82	2860.2401	2860.8333	2864.1667	0.0000
Link83	0.0000	0.0000	2862.5000	0.0000
Link84	261.5104	261.7403	193.6748	0.0000
Link85	0.0000	0.0847	514.1525	0.0000
Link90	2723.1995	2850.5747	21.9536	0.0000
Link93	46.3920	93.7140	2846.8775	0.0000
Link118	0.2412	0.2412	2865.0000	0.0000
Link120	2821.5503	2822.5000	278.2531	0.0000
Link121	2584.4199	2813.6243	0.0000	0.0000
Link123	2807.2995	2814.8942	0.0000	0.0000

Link124	4.7458	2385.9752	0.8333	0.0000
Link125	9.9269	2140.2890	2.5000	0.0000
Link126	0.9524	2145.4663	3.8559	0.0000
Link127	2.1909	2051.4051	12.6477	0.0000
Link130	11.4431	2680.9385	4.3644	0.0000
Link131	0.0000	0.0000	0.0000	0.0000
Link132	11.1494	2864.1667	0.0000	0.0000
Link133	2483.7736	2848.2865	4.4253	0.0000
214.1	1390.3633	2378.1742	34.4290	0.0000
283.1	3.0939	3.1215	2742.3396	0.0000
Restrict5	0.0000	0.0000	161.9127	0.0000
restric11	0.0000	0.0000	0.0000	0.0000
Restrict2	0.0000	0.0000	10.1656	0.0000
Restrict3	0.0000	0.0000	0.0000	0.0000

==========
| Table E14 - Natural Channel Overbank Flow Information |
==========

Conduit Name	<---- Maximum Velocity -----> Left Velocity	Center Velocity	Right Velocity	<------ Maximum Flow -------> Left Flow	Center Flow	Right Flow	<------ Maximum Area ------> Left Area	Center Area	Right Area	<--- Max. Storage Volume ---> Left Area	Center Area	Right Area	Maximum Depth
Link68	0.0000	1.6189	0.0000	0.0000	17.7432	0.0000	0.0000	10.9599	0.0000	0.0000	4383.9710	0.0000	1.6776
Link69	0.0000	0.2489	0.0000	0.0000	63.0053	0.0000	0.0000	253.1532	0.0000	0.0000	65819.834	0.0000	2.9787
Link70	0.0002	0.5137	0.0000	0.0000	213.0368	0.0000	0.0000	414.7022	0.0000	0.0105	186615.98	0.0000	4.6435
Link71	0.0004	1.3486	0.0000	0.0000	1464.7962	0.0000	0.0000	1086.1484	0.0000	0.0184	415994.84	0.0000	4.8619
Link73	0.0000	4.5307	0.0000	0.0000	60.4436	0.0000	0.0000	13.3410	0.0000	0.0000	973.8914	0.0000	1.4248
Link74	0.0000	10.0690	0.0000	0.0000	60.4358	0.0000	0.0000	6.0022	0.0000	0.0000	612.2206	0.0000	1.4322
Link75	0.0000	2.6715	0.0000	0.0000	60.4173	0.0000	0.0000	22.6156	0.0000	0.0000	1176.0131	0.0000	1.3986
Link76	0.0000	12.6017	0.0000	0.0000	60.4088	0.0000	0.0000	4.7937	0.0000	0.0000	191.7482	0.0000	1.3585
Link84	0.0000	6.5946	0.0000	0.0000	78.5036	0.0000	0.0000	11.9043	0.0000	0.0000	3333.1929	0.0000	1.2492
Link85	0.0000	9.5678	0.0000	0.0000	78.4611	0.0000	0.0000	8.2005	0.0000	0.0000	3854.2513	0.0000	1.0792

==========
| Table E14a - Natural Channel Encroachment Information |
==========

Conduit Name	<------- Existing Conveyance Condition -------> Left Bank	Centre Channel	Right Bank	Total	Left Station	Right Station	<----- Encroachment Conveyance Condition -----> Left Bank	Centre Channel	Right Bank	Total	Left Station	Right Station	<- % Volume --> Reduction Left	Right	<-- Encroachment Data --> Depth Incr.	Method
Link68	0.0000	536.97	0.0000	536.97	-4.0958	10.038	0.0000	536.97	0.0000	536.97	-4.0958	10.038	0.0000	0.0000	0.0000	None
Link69	0.0000	16263.0	0.0000	16263.0	-60.772	164.12	0.0000	16263.0	0.0000	16263.0	-60.772	164.12	0.0000	0.0000	0.0000	None
Link70	.88E-06	46147.5	0.0000	46147.5	-64.200	97.313	.88E-06	46147.5	0.0000	46147.5	-64.200	97.313	0.0000	0.0000	0.0000	None
Link71	.21E-05	153255.	0.0000	153255.	-245.80	50.727	.21E-05	153255.	0.0000	153255.	-245.80	50.727	0.0000	0.0000	0.0000	None
Link73	0.0000	496.33	0.0000	496.33	-6.0055	20.649	0.0000	496.33	0.0000	496.33	-6.0055	20.649	0.0000	0.0000	0.0000	None
Link74	0.0000	274.97	0.0000	274.97	-4.9264	3.4553	0.0000	274.97	0.0000	274.97	-4.9264	3.4553	0.0000	0.0000	0.0000	None
Link75	0.0000	1255.1	0.0000	1255.1	-17.876	6.9592	0.0000	1255.1	0.0000	1255.1	-17.876	6.9592	0.0000	0.0000	0.0000	None
Link76	0.0000	208.85	0.0000	208.85	-8.1268	-0.9878	0.0000	208.85	0.0000	208.85	-8.1268	-0.9878	0.0000	0.0000	0.0000	None
Link84	0.0000	621.89	0.0000	621.89	-7.5497	6.2528	0.0000	621.89	0.0000	621.89	-7.5497	6.2528	0.0000	0.0000	0.0000	None
Link85	0.0000	349.81	0.0000	349.81	-4.8556	8.3700	0.0000	349.81	0.0000	349.81	-4.8556	8.3700	0.0000	0.0000	0.0000	None

==========
| Table E14b - Floodplain Mapping |
==========

Conduit Name	Upstream WS Elev.	Downstream WS Elev.	Channel Length	Center Station	<----- Left Offsets ------> Natural	Encroach	Bank	<----- Right Offsets ------> Natural	Encroach	Bank	<- Channel Widths-> Total	Encroach.
Link68	623.1858	621.0890	400.0000	0.0000	4.0958	4.0958	67.2000	10.0384	10.0384	30.6000	14.1342	14.1342
Link69	621.0890	621.0881	260.0000	0.0000	60.7721	60.7721	126.4000	164.1193	164.1193	174.6000	224.8914	224.8914
Link70	621.0798	621.0797	450.0000	0.0000	64.2000	64.2000	64.2000	97.3135	97.3135	121.3000	161.5135	161.5135
Link71	618.3989	618.4113	383.0000	0.0000	245.8000	245.8000	245.8000	50.7271	50.7271	65.5000	296.5272	296.5272
Link73	603.9581	599.5662	73.0000	0.0000	6.0055	6.0055	92.8000	20.6494	20.6494	88.6000	26.6550	26.6550
Link74	599.5662	596.3547	102.0000	0.0000	4.9264	4.9264	93.3000	3.4553	3.4553	33.4000	8.3817	8.3817
Link75	596.3547	596.2473	52.0000	0.0000	17.8757	17.8757	92.5000	6.9592	6.9592	48.8000	24.8348	24.8348
Link76	596.2473	593.9576	40.0000	-4.6000	3.5268	3.5268	41.9000	3.6122	3.6122	65.0000	7.1390	7.1390
Link84	613.9149	607.3648	280.0000	0.0000	7.5497	7.5497	30.6000	6.2528	6.2528	26.8000	13.8025	13.8025

Link85	607.3648	594.1148	470.0000	0.0000	4.8556	4.8556	68.1000	8.3700	8.3700	109.0000	13.2256	13.2256

```
*=========================================================*
|     Table E15 - SPREADSHEET INFO LIST                   |
| Conduit Flow and Junction Depth Information for use in  |
| spreadsheets.  The maximum values in this table are the |
| true maximum values because they sample every time step.|
| The values in the review results may only be the        |
| maximum of a subset of all the time steps in the run.   |
| Note: These flows are only the flows in a single barrel.|
*=========================================================*
```

Conduit Name	Maximum Flow (cfs)	Total Flow (ft^3)	Maximum Velocity (ft/s)	Maximum Volume (ft^3)	##	Junction Name	Invert Elevation (ft)	Maximum Elevation (ft)
Link13	48.9969	256455.0402	7.8184	2223.4204	##	Node11	617.2000	621.0881
Link14	55.0429	375822.9112	7.7134	2438.6346	##	Node12	617.2100	621.0798
Link15	54.6811	375698.2990	7.6784	2347.9541	##	Node20	634.6000	635.5681
Link16	62.9593	656149.5831	8.8116	4595.9982	##	Node21	633.1600	638.8845
Link17	66.4052	691556.0358	9.3453	377.3138	##	Node22	630.1100	638.3647
Link18	78.5117	773411.3019	11.4482	1841.5422	##	Node23	628.8600	637.3832
Link23	58.4223	1668584.728	8.1844	2232.9279	##	Node24	628.0300	636.5279
Link24	58.4239	1668569.359	8.1843	548.3178	##	Node25	626.3500	632.2297
Link25	58.4260	1668591.954	8.1921	2255.8403	##	Node26	626.4200	631.8928
Link26	58.4285	1668655.291	8.2092	2274.4718	##	Node27	623.6900	625.5592
Link27	60.7998	1745780.189	8.5215	2373.1883	##	Node29	612.7800	613.9149
Link28	60.4180	1745863.794	8.6906	1686.2677	##	Node30	620.0000	622.2131
Link32	112.0474	2033200.696	23.0958	107.9896	##	Node33	610.5600	618.4113
Link33	110.3948	924910.1839	21.6599	84.7088	##	Node34	608.5000	616.4383
Link47	28.5309	90712.1378	9.4051	386.0372	##	Node35	608.4000	615.9677
Link56	17.7814	286416.7673	1.6471	2019.1956	##	Node36	607.4000	614.0239
Link68	17.7432	286636.7329	3.1140	3059.6200	##	Node37	606.4600	612.0566
Link69	-63.0053	287955.8780	1.9578	65819.8345	##	Node38	605.4500	609.0136
Link70	213.0368	1204483.015	2.9328	186615.9912	##	Node39	604.4400	605.8340
Link71	-1464.7962	1315104.203	2.2528	415994.8577	##	Node41	628.0000	628.6584
Link72	60.4492	1745884.613	18.8152	122.5743	##	Node43	631.4500	632.9675
Link73	60.4436	1745913.776	7.6233	323.1377	##	Node46	592.7400	593.9576
Link74	60.4358	1745914.233	7.4938	264.7699	##	Node47	572.0000	573.1728
Link75	60.4173	1745929.762	3.1914	1176.0131	##	Node48	593.3000	594.1148
Link76	60.4088	1745918.033	9.6158	117.5604	##	Node63	631.0000	633.5042
Link77	17.0765	120067.2252	9.1985	64.6374	##	Node65	638.0000	641.2246
Link78	17.8383	119579.2769	1.7349	9352.1447	##	Node66	629.0000	636.5315
Link79	48.8393	256223.9218	9.8894	371.3520	##	Node71	622.0000	623.1858
Link82	78.5050	773458.7190	16.2470	642.1054	##	Node74	618.9800	621.0890
Link83	78.5077	773437.1601	12.5906	538.9518	##	Node75	602.9200	603.9581
Link84	78.5036	773504.5138	7.3437	670.8773	##	Node79	615.6100	621.0797
Link85	78.4611	773501.1382	6.6812	242.6800	##	Node80	597.8900	599.5662
Link90	11.7510	44560.4943	5.7895	610.6025	##	Node81	595.1800	596.3547
Link93	12.9775	49031.9594	8.4751	268.0236	##	Node82	594.6700	596.2473
Link118	14.9031	53316.0672	3.6078	41.5467	##	Node83	639.6000	640.0014
Link120	11.5117	188641.4219	5.7153	484.1088	##	Node84	631.5400	638.4320
Link121	11.5228	188628.9441	4.1506	1395.4263	##	Node86	613.4900	616.1681
Link123	-3.2990	89.7364	1.4364	5628.3930	##	Node87	606.0000	607.3648
Link124	22.6129	89524.0864	3.1861	1096.7961	##	Node89	637.1000	637.2343
Link125	12.2325	46135.3050	2.3888	1171.4474	##	Node92	633.0000	635.4697
Link126	12.2168	47228.9961	3.5932	1921.6771	##	Node94	631.0000	634.8825
Link127	18.5209	78113.8612	4.7832	2397.1457	##	Node99	637.7000	638.8896
Link130	18.4211	76900.7131	2.6003	2138.6488	##	Node100	628.9700	634.1677
Link131	0.0000	0.0000	0.0000	254.8590	##	Node108	627.0700	634.0670

Link132	13.4919	241496.1015	3.4336	2445.3257	##	Node120	638.0000	642.1520
Link133	14.7720	53272.4603	6.0091	958.5021	##	Node121	631.4500	632.5630
214.1	29.7011	393038.3465	9.5903	180.2871	##	Node122	633.5000	634.1513
283.1	4.7849	29389.9025	6.0708	30.7681	##	Node123	627.7800	634.0921
Restrict5	59.6941	1187624.577	8.7956	41176.0198	##	Node124	618.0000	622.1335
restric11	14.7902	77096.1458	3.7147	18034.6082	##	Node127	633.0000	633.0000
Restrict2	21.4270	78843.3733	6.8841	14987.1875	##	Node128	629.8000	632.3540
Restrict3	12.1921	242052.8241	3.4014	15970.5464	##	Node132	615.6000	618.3989
Link 5	166.5635	811573.2077	0.0000	0.0000	##	Node133	615.0000	622.0167
WEIR46	7.3710	14999.0890	0.0000	0.0000	##	Node134	626.4200	633.9572
Link97.1	45.1727	244871.0732	0.0000	0.0000	##	Node135	628.0500	632.2866
WEIR119	11.5133	188633.3340	0.0000	0.0000	##			
Weir122	0.0000	0.0000	0.0000	0.0000	##			
FREE # 1	222.1866	2958128.610	0.0000	0.0000	##			

```
*====================================================*
|     Table E15a - SPREADSHEET REACH LIST            |
| Peak flow and Total Flow listed by Reach or those  |
|      conduits or diversions having the same        |
|      upstream and downstream nodes.                |
*====================================================*
```

Upstream Node	Downstream Node	Maximum Flow (cfs)	Total Flow (ft^3)
Node21	Node84	48.9969	256455.040
Node22	Node23	55.0429	375822.911
Node23	Node24	54.6811	375698.299
Node24	Node25	62.9593	656149.583
Node26	Node25	66.4052	691556.036
Node26	Node27	78.5117	773411.302
Node33	Node34	58.4223	1668584.73
Node34	Node35	58.4239	1668569.36
Node35	Node36	58.4260	1668591.95
Node36	Node37	58.4285	1668655.29
Node37	Node38	60.7998	1745780.19
Node38	Node39	60.4180	1745863.79
Node46	Node47	112.0474	2033200.70
Node48	Node47	110.3948	924910.184
Node66	Node24	28.5309	90712.1378
Node41	Node71	17.7814	286416.767
Node71	Node74	17.7432	286636.733
Node74	Node11	-63.0053	287955.878
Node12	Node79	213.0368	1204483.02
Node132	Node33	-1464.7962	1315104.20
Node39	Node75	60.4492	1745884.61
Node75	Node80	60.4436	1745913.78
Node80	Node81	60.4358	1745914.23
Node81	Node82	60.4173	1745929.76
Node82	Node46	60.4088	1745918.03
Node65	Node83	17.0765	120067.225
Node83	Node22	17.8383	119579.277
Node84	Node22	48.8393	256223.922
Node27	Node86	78.5050	773458.719
Node86	Node29	78.5077	773437.160
Node29	Node87	78.5036	773504.514
Node87	Node48	78.4611	773501.138
Node94	Node108	11.7510	44560.4943

Node92	Node100	12.9775	49031.9594
Node89	Node43	14.9031	53316.0672
Node20	Node121	11.5117	188641.422
Node121	Node128	11.5228	188628.944
Node122	Node100	-3.2990	89.7364
Node108	Node134	22.6129	89524.0864
Node123	Node108	12.2325	46135.3050
Node100	Node123	12.2168	47228.9961
Node30	Node124	18.5209	78113.8612
Node124	Node133	18.4211	76900.7131
Node128	Node135	13.4919	241496.101
Node43	Node128	14.7720	53272.4603
Node11	Node12	59.4021	393038.347
Node63	Node41	4.7849	29389.9025
Node79	Node132	59.6941	1187624.58
Node133	Node37	14.7902	77096.1458
Node134	Node26	21.4270	78843.3733
Node135	Node41	12.1921	242052.824
Node11	Node12	166.5635	811573.208
Node63	Node41	7.3710	14999.0890
Node99	Node21	45.1727	244871.073
Node120	Node20	11.5133	188633.334

```
#########################################################
# Table E16. New Conduit Information Section            #
#            Conduit Invert (IE) Elevation and Conduit  #
#            Maximum Water Surface (WS) Elevations      #
#########################################################
```

Conduit Name	Upstream Node	Downstream Node	IE Up	IE Dn	WS Up	WS Dn	Conduit Type
Link13	Node21	Node84	633.1600	631.5400	638.8845	638.4320	Circular
Link14	Node22	Node23	630.1100	628.8600	638.3647	637.3831	Circular
Link15	Node23	Node24	628.8600	628.0300	637.3832	636.5279	Circular
Link16	Node24	Node25	628.0300	626.3500	636.5279	632.2298	Circular
Link17	Node26	Node25	626.4200	626.3500	631.8928	632.2297	Circular
Link18	Node26	Node27	626.4200	623.6900	631.8928	625.5592	Circular
Link23	Node33	Node34	610.5630	608.5000	618.4113	616.4384	Circular
Link24	Node34	Node35	608.5000	608.4000	616.4383	615.9679	Circular
Link25	Node35	Node36	608.4000	607.4000	615.9678	614.0239	Circular
Link26	Node36	Node37	607.4000	606.4600	614.0235	612.0566	Circular
Link27	Node37	Node38	606.4600	605.4500	612.0566	609.0136	Circular
Link28	Node38	Node39	605.4500	604.4400	609.0136	605.8340	Circular
Link32	Node46	Node47	592.7400	572.0000	593.9576	573.1728	Rectangle
Link33	Node48	Node47	593.3000	572.0000	594.1148	573.1728	Rectangle
Link47	Node66	Node24	629.0000	628.3300	636.5315	636.5279	Circular
Link56	Node41	Node71	628.0000	622.0000	628.6584	623.1858	Trapezoid
Link68	Node71	Node74	622.0000	618.9800	623.1858	621.0890	Natural
Link69	Node74	Node11	618.9800	617.2000	621.0890	621.0881	Natural
Link70	Node12	Node79	617.2100	615.6100	621.0798	621.0797	Natural
Link71	Node132	Node33	615.6100	610.5600	618.3989	618.4113	Natural
Link72	Node39	Node75	604.4400	602.9220	605.8340	604.3146	Circular
Link73	Node75	Node80	602.9200	597.8900	603.9581	599.5662	Natural
Link74	Node80	Node81	597.8900	595.1800	599.5662	596.3547	Natural
Link75	Node81	Node82	595.1800	594.6700	596.3547	596.2473	Natural
Link76	Node82	Node46	594.6700	592.7400	596.2473	593.9576	Natural
Link77	Node65	Node83	640.0000	639.6000	641.2246	640.0014	Circular
Link78	Node83	Node22	639.6000	636.3500	640.0014	638.3647	Trapezoid

Link79	Node84	Node22	631.5400	630.5100	638.4320	638.3647	Circular
Link82	Node27	Node86	623.6900	613.4900	625.5592	616.1681	Circular
Link83	Node86	Node29	613.4900	612.7800	616.1681	613.9149	Circular
Link84	Node29	Node87	612.7800	606.0000	613.9149	607.3648	Natural
Link85	Node87	Node48	606.0000	593.3000	607.3648	594.1148	Natural
Link90	Node94	Node108	631.0000	628.0000	634.8825	634.0671	Circular
Link93	Node92	Node100	633.0000	631.0000	635.4697	634.1677	Circular
Link118	Node89	Node43	637.1000	634.5000	637.2343	634.6321	Trapezoid
Link120	Node20	Node121	634.6000	631.4500	635.5681	632.5630	Circular
Link121	Node121	Node128	631.4500	629.8000	632.5630	632.3540	Circular
Link123	Node122	Node100	633.5000	628.9700	634.1513	634.1677	Circular
Link124	Node108	Node134	627.0700	626.4200	634.0670	633.9572	Circular
Link125	Node123	Node108	627.7800	627.0700	634.0921	634.0670	Circular
Link126	Node100	Node123	628.9700	627.7800	634.1677	634.0921	Circular
Link127	Node30	Node124	620.0000	618.0000	622.2131	622.1335	Circular
Link130	Node124	Node133	618.0000	615.0000	622.1335	622.0167	Circular
Link131	Node127	Node43	633.0000	631.4500	633.0000	632.9675	Circular
Link132	Node128	Node135	629.8000	628.0500	632.3540	632.2866	Circular
Link133	Node43	Node128	631.4500	629.8000	632.9675	632.3540	Circular
214.1	Node11	Node12	617.7000	617.2100	621.0881	621.0798	Circular
283.1	Node63	Node41	631.0100	630.2200	633.5042	631.1230	Circular
Restrict5	Node79	Node132	615.6100	615.6000	621.0797	618.3989	Circ Orif
restric11	Node133	Node37	620.0000	619.9900	622.0167	621.2861	Circ Orif
Restrict2	Node134	Node26	630.0000	629.9900	633.9572	631.8928	Circ Orif
Restrict3	Node135	Node41	630.5000	630.4900	632.2866	631.6612	Circ Orif

```
*==========================================================================*
|    Table E18 - Junction Continuity Error.   Division by Volume added 11/96  |
|                                                                            |
|  Continuity Error = Net Flow + Beginning Volume - Ending Volume            |
|                     ------------------------------------------------       |
|                     Total Flow + (Beginning Volume + Ending Volume)/2      |
|                                                                            |
|  Net Flow   = Node Inflow - Node Outflow                                   |
|  Total Flow = absolute (Inflow + Outflow)                                  |
|  Intermediate column is a judgement on the node continuity error.          |
|                                                                            |
|  Excellent  < 1 percent    Great  1 to  2 percent  Good  2 to  5 percent   |
|  Fair  5 to 10  percent    Poor  10 to 25 percent  Bad  25 to 50 percent   |
|  Terrible > 50  percent                                                    |
*==========================================================================*
```

Junction Name	<------Continuity Error -------> Volume	% of Node	% of Inflow	Remaining Volume	Beginning Volume	Net Flow Thru Node	Total Flow Thru Node	Failed to Converge
Node11	-1092.3642	-0.0454	0.0377	64.3964	0.0000	-1027.9678	2407938.428	0
Node12	-214.8630	-0.0089	0.0074	42.2096	0.0000	-172.6534	2409094.570	0
Node20	-14.2373	-0.0038	0.0005	1.3314	0.0000	-12.9059	377274.7559	0
Node21	-11661.6991	-2.3262	0.4021	0.0017	0.0000	-11661.6974	501326.1134	0
Node22	-28.8806	-0.0038	0.0010	7.6374	0.0000	-21.2431	751626.1099	2
Node23	126.7033	0.0169	0.0044	4.2968	0.0000	131.0001	751521.2102	0
Node24	-46.5953	-0.0036	0.0016	14.0343	0.0000	-32.5610	1312392.061	0
Node25	-12.4340	-0.0009	0.0004	13.8385	0.0000	1.4044	1383214.890	0
Node26	-3082.4442	-0.1997	0.1063	17.5429	0.0000	-3064.9012	1543810.711	0
Node27	-64.3093	-0.0042	0.0022	4.3382	0.0000	-59.9711	1546870.021	0
Node29	-90.1154	-0.0058	0.0031	4.4638	0.0000	-85.6516	1546941.674	0
Node30	-408.0493	-0.2611	0.0141	322.4846	0.0000	-85.5646	156144.6600	0
Node33	-41014.3616	-1.2447	1.4142	25.0134	0.0000	-40989.3482	3294995.000	0
Node34	-21.5017	-0.0006	0.0007	6.8231	0.0000	-14.6786	3337154.086	0
Node35	-59.4633	-0.0018	0.0021	6.2164	0.0000	-53.2468	3337161.313	0
Node36	-68.0259	-0.0020	0.0023	9.8806	0.0000	-58.1453	3337247.246	0
Node37	-50.1498	-0.0014	0.0017	32.4416	0.0000	-17.7082	3491531.626	0
Node38	-94.7316	-0.0027	0.0033	10.6556	0.0000	-84.0760	3491643.983	0

Node39	-30.9510	-0.0009	0.0011	4.6981	0.0000	-26.2529	3491748.407	1
Node41	-142.4898	-0.0249	0.0049	154.9741	0.0000	12.4843	572858.5829	4
Node43	3.5069	0.0033	0.0001	64.4344	0.0000	67.9414	106588.5275	0
Node46	-201.7235	-0.0050	0.0070	3.3910	0.0000	-198.3325	4065934.826	0
Node47	-35.2017	-0.0006	0.0012	3.9539	0.0000	-31.2478	5916239.490	0
Node48	-79.7227	-0.0043	0.0027	7.0503	0.0000	-72.6724	1849767.782	0
Node63	-26.4351	-0.0298	0.0009	0.1263	0.0000	-26.3087	88759.0980	33
Node65	-84.3136	-0.0305	0.0029	24416.7508	0.0000	24332.4373	264478.0441	0
Node66	-1550.3854	-0.8616	0.0535	0.0003	0.0000	-1550.3851	179937.1092	0
Node71	-312.2776	-0.0545	0.0108	72.9052	0.0000	-239.3723	573053.5001	0
Node74	-1386.8477	-0.2413	0.0478	62.8109	0.0000	-1324.0369	574592.6108	0
Node75	-10.6317	-0.0003	0.0004	2.4280	0.0000	-8.2037	3491798.389	0
Node79	11703.7054	0.4892	0.4036	244.2734	0.0000	11947.9788	2392107.593	0
Node80	-17.4016	-0.0005	0.0006	4.0819	0.0000	-13.3197	3491828.009	0
Node81	-25.0641	-0.0007	0.0009	6.7750	0.0000	-18.2891	3491843.995	0
Node82	7.4298	0.0002	0.0003	5.7988	0.0000	13.2286	3491847.795	0
Node83	477.8934	0.1994	0.0165	5.6461	0.0000	483.5395	239646.5021	0
Node84	234.6511	0.0458	0.0081	0.0020	0.0000	234.6531	512678.9620	2
Node86	-27.3186	-0.0018	0.0009	2.8561	0.0000	-24.4624	1546895.879	0
Node87	-24.3448	-0.0016	0.0008	9.6600	0.0000	-14.6849	1547005.652	0
Node89	-363.8347	-0.3433	0.0125	0.0010	0.0000	-363.8337	105990.4188	0
Node92	91.1431	0.0929	0.0031	0.0011	0.0000	91.1441	98157.7844	4
Node94	-7.0214	-0.0079	0.0002	105.2173	0.0000	98.1959	89220.3353	0
Node99	-0.5390	-0.0001	0.0000	0.0000	0.0000	-0.5390	499176.8544	0
Node100	958.7644	0.9903	0.0331	924.1055	0.0000	1882.8699	96350.6919	8
Node108	-47.7610	-0.0264	0.0016	1188.0400	0.0000	1140.2790	180219.8857	0
Node120	-89.3460	-0.0195	0.0031	31109.0306	0.0000	31019.6846	441809.5802	0
Node121	-84.5860	-0.0224	0.0029	88.8856	0.0000	4.2996	377270.3660	0
Node122	-484.9846	-168.6842	0.0167	395.5479	0.0000	-89.4367	89.7364	0
Node123	24.4802	0.0261	0.0008	1050.8860	0.0000	1075.3662	93364.3011	0
Node124	-53.9118	-0.0346	0.0019	1257.2309	0.0000	1203.3191	155014.5743	0
Node127	-0.0016	0.0000	0.0000	0.0016	0.0000	0.0000	0.0000	0
Node128	-370.6911	-0.0766	0.0128	804.0239	0.0000	433.3327	483397.5058	0
Node132	-111887.722	-4.4705	3.8580	163.5668	0.0000	-111724.156	2502728.780	0
Node133	-1198.3781	-0.7757	0.0413	993.9031	0.0000	-204.4749	153996.8589	0
Node134	10071.6316	5.9713	0.3473	597.8200	0.0000	10669.4516	168367.4597	0
Node135	-1391.7526	-0.2876	0.0480	761.7796	0.0000	-629.9731	483548.9256	0

The total continuity error was -1.54260E+05 cubic feet
The remaining total volume was 65100. cubic feet
Your mean node continuity error was Excellent
Your worst node continuity error was Good

```
*==================================================*
|  Table E19 - Junction Inflow & Outflow Listing    |
|              Units are either ft^3 or m^3         |
|              depending on the units in your model.|
*==================================================*
```

Junction Name	Constant Inflow to Node	User Inflow to Node	Interface Inflow to Node	DWF Inlow to Node	Inflow through Outfall	RNF Layer Inflow to Node	Inflow from 2D Layer	Outflow from Node	Evaporation from Node	Basin Infil.
Node11	0.0000	0.0000	0.0000	0.0000	0.0000	915042.3990	0.0000	0.0000	0.0000	0.0000
Node24	0.0000	0.0000	0.0000	0.0000	0.0000	189770.6537	0.0000	0.0000	0.0000	0.0000
Node25	0.0000	0.0000	0.0000	0.0000	0.0000	35501.0712	0.0000	0.0000	0.0000	0.0000
Node30	0.0000	0.0000	0.0000	0.0000	0.0000	77968.8974	0.0000	0.0000	0.0000	0.0000
Node33	0.0000	0.0000	0.0000	0.0000	0.0000	311292.8611	0.0000	0.0000	0.0000	0.0000
Node46	0.0000	0.0000	0.0000	0.0000	0.0000	286695.6464	0.0000	0.0000	0.0000	0.0000

Node47	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.9581E+06	0.0000
Node48	0.0000	0.0000	0.0000	0.0000	0.0000	151279.7131	0.0000	0.0000	0.0000
Node63	0.0000	0.0000	0.0000	0.0000	0.0000	44241.6951	0.0000	0.0000	0.0000
Node65	0.0000	0.0000	0.0000	0.0000	0.0000	144279.8879	0.0000	0.0000	0.0000
Node66	0.0000	0.0000	0.0000	0.0000	0.0000	86717.1002	0.0000	0.0000	0.0000
Node79	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Node89	0.0000	0.0000	0.0000	0.0000	0.0000	52444.1120	0.0000	0.0000	0.0000
Node92	0.0000	0.0000	0.0000	0.0000	0.0000	49017.3181	0.0000	0.0000	0.0000
Node94	0.0000	0.0000	0.0000	0.0000	0.0000	44561.1983	0.0000	0.0000	0.0000
Node99	0.0000	0.0000	0.0000	0.0000	0.0000	254303.1364	0.0000	0.0000	0.0000
Node120	0.0000	0.0000	0.0000	0.0000	0.0000	253132.8622	0.0000	0.0000	0.0000

```
*====================================================*
| Table E20 - Junction Flooding and Volume Listing.   |
|             The maximum volume is the total volume  |
|             in the node including the volume in the |
|             flooded storage area. This is the max   |
|             volume at any time. The volume in the   |
|             flooded storage area is the total volume|
|             above the ground elevation, where the   |
|             flooded pond storage area starts.       |
| The fourth column is instantaneous, the fifth is the|
| sum of the flooded volume over the entire simulation|
| Units are either ft^3 or m^3 depending on the units.|
*====================================================*
```

Junction Name	Surcharged Time (min)	Flooded Time(min)	Out of 1D-System (Flooded Volume)	Maximum Volume	Passed to 2D cell OR Volume Stored in allowed Flood Pond of 1D-System
Node11	0.0000	0.0000	0.0000	48.8578	0.0000
Node12	0.0000	0.0000	0.0000	48.6276	0.0000
Node20	0.0000	0.0000	0.0000	12.1646	0.0000
Node21	118.7186	0.0000	0.0000	71.9338	0.0000
Node22	0.0000	0.0000	0.0000	103.7281	0.0000
Node23	150.6960	96.7167	0.0000	107.1022	30.0441
Node24	151.9835	94.6029	0.0000	106.7845	28.5356
Node25	134.3128	0.0000	0.0000	73.8858	0.0000
Node26	124.4763	0.0000	0.0000	68.7715	0.0000
Node27	0.0000	0.0000	0.0000	23.4888	0.0000
Node29	0.0000	0.0000	0.0000	14.2608	0.0000
Node30	0.0000	0.0000	0.0000	27.8095	0.0000
Node33	0.0000	0.0000	0.0000	98.6599	0.0000
Node34	476.7657	0.0000	0.0000	99.7546	0.0000
Node35	475.7067	0.0000	0.0000	95.0985	0.0000
Node36	476.6855	0.0000	0.0000	83.2333	0.0000
Node37	476.6162	0.0000	0.0000	70.3273	0.0000
Node38	386.9522	0.0000	0.0000	44.7804	0.0000
Node39	0.0000	0.0000	0.0000	17.5168	0.0000
Node41	0.0000	0.0000	0.0000	8.2735	0.0000
Node43	0.0000	0.0000	0.0000	19.0686	0.0000
Node46	0.0000	0.0000	0.0000	15.2999	0.0000
Node47	0.0000	0.0000	0.0000	14.7379	0.0000
Node48	0.0000	0.0000	0.0000	10.2391	0.0000
Node63	95.0181	0.0000	0.0000	31.4673	0.0000
Node65	0.0000	0.0000	0.0000	74820.7347	0.0000
Node66	141.7627	110.6553	0.0000	24179.6455	24322.4016
Node71	0.0000	0.0000	0.0000	14.9004	0.0000
Node74	0.0000	0.0000	0.0000	26.5022	0.0000
Node75	0.0000	0.0000	0.0000	13.0445	0.0000
Node79	0.0000	0.0000	0.0000	383058.2246	0.0000
Node80	0.0000	0.0000	0.0000	21.0631	0.0000

Node81	0.0000	0.0000	0.0000	14.7611	0.0000
Node82	0.0000	0.0000	0.0000	19.8206	0.0000
Node83	0.0000	0.0000	0.0000	5.0440	0.0000
Node84	136.5789	0.0000	0.0000	86.6049	0.0000
Node86	0.0000	0.0000	0.0000	33.6533	0.0000
Node87	0.0000	0.0000	0.0000	17.1507	0.0000
Node89	0.0000	0.0000	0.0000	1.6881	0.0000
Node92	16.5142	0.0000	0.0000	31.0349	0.0000
Node94	34.8013	0.0000	0.0000	48.7896	0.0000
Node99	2239.8438	0.0000	0.0000	29854.8902	0.0000
Node100	28.0177	0.0000	0.0000	65.3149	0.0000
Node108	998.9709	0.0000	0.0000	87.9251	0.0000
Node120	2863.3333	0.0000	0.0000	59372.9523	0.0000
Node121	0.0000	0.0000	0.0000	13.9859	0.0000
Node122	0.0000	0.0000	0.0000	8.1837	0.0000
Node123	128.2219	0.0000	0.0000	79.3183	0.0000
Node124	117.6107	0.0000	0.0000	51.9412	0.0000
Node127	0.0000	0.0000	0.0000	0.0000	0.0000
Node128	0.0000	0.0000	0.0000	32.0934	0.0000
Node132	0.0000	0.0000	0.0000	35.1709	0.0000
Node133	2847.7143	0.0000	0.0000	88.1724	0.0000
Node134	2847.6667	0.0000	0.0000	94.7137	0.0000
Node135	771.9061	0.0000	0.0000	53.2369	0.0000

```
*==================================*
| Simulation Specific Information  |
*==================================*
Number of Input Conduits..........        48 Number of Simulated Conduits......        58
Number of Natural Channels........        10 Number of Junctions...............        55
Number of Storage Junctions.......         4 Number of Weirs...................         5
Number of Orifices................         4 Number of Pumps...................         0
Number of Free Outfalls...........         1 Number of Tide Gate Outfalls......         0


*==========================================================*
| Average % Change in Junction or Conduit is defined as:  |
| Conduit  % Change ==> 100.0 ( Q(n+1) - Q(n) ) / Qfull   |
| Junction % Change ==> 100.0 ( Y(n+1) - Y(n) ) / Yfull   |
*==========================================================*

The Conduit with the largest average change was..Link71     with     0.001 percent
The Junction with the largest average change was.Node24     with     0.103 percent
The Conduit with the largest sinuosity was.......Link24     with     6.680


*==================================================================*
| Table E21. Continuity balance at the end of the simulation       |
|            Junction Inflow, Outflow or Street Flooding           |
| Error = Inflow  + Initial Volume - Outflow - Final   Volume      |
*==================================================================*
```

Inflow Junction	Inflow Volume,ft^3	Average Inflow, cfs
Node11	915370.9960	5.2973
Node24	189832.0406	1.0986
Node25	35509.2709	0.2055
Node30	78030.7989	0.4516
Node33	311306.0695	1.8015
Node46	286816.0972	1.6598
Node48	151356.4600	0.8759
Node63	44370.1065	0.2568
Node65	144410.8190	0.8357
Node66	89224.9714	0.5163
Node89	52674.3516	0.3048
Node92	49125.8251	0.2843
Node94	44659.8410	0.2584
Node99	254305.7812	1.4717
Node120	253176.2462	1.4651

```
         Node47    -2.958E+06       -17.1188

       Outflow      Outflow          Average
       Junction  Volume,ft^3    Outflow, cfs
---------------  ------------   ------------
         Node47   2.95813E+06        17.1188


*=====================================================*

| Initial system volume        =         0.0000 Cu Ft |

| Total system inflow volume   =   2.896249E+06 Cu Ft |

| Inflow + Initial volume      =   2.896249E+06 Cu Ft |

*=====================================================*

| Total system outflow         =   2.958129E+06 Cu Ft |

| Volume left (Final volume)   =     65100.2638 Cu Ft |

| Evaporation                  =         0.0000 Cu Ft |

| Basin Infiltration           =     47871.4573 Cu Ft |

| Outflow + Final Volume       =   3.071100E+06 Cu Ft |

*=====================================================*


*==============================================*
| Total Model Continuity Error                 |
| Error in Continuity, Percent =        -6.0372 |
| Error in Continuity, ft^3    =    -174851.779 |
| + Error means a continuity loss, - a gain    |
*==============================================*


####################################################
# Table E22. Numerical Model judgement section    #
####################################################

Overall error was (minimum of Table E18 & E21)             -5.3262 percent


Worst nodal error was in node Node132          with        -4.4706 percent


Of the total inflow this loss was                           3.8632 percent


Your overall continuity error was                  Fair


                                                  Excellent Efficiency


Efficiency of the simulation                       1.98


Most Number of Non Convergences at one Node       33.


Total Number Non Convergences at all Nodes        54.


Total Number of Nodes with Non Convergences        7.




##########################################################
# Table E23. New Basin Design Information               #
#            Maximum Hydraulic Grade Line,              #
#            Out Conduit Sizes and Maximum Flow         #
##########################################################

A) Resize d/s Pipes based on given HGL
B) Resize Basin based on given HGL
C) Resize d/s Pipes and Basin based on HGL and max discharge
D) Resize d/s pipes based on given max discharge

   Basin Name    Type    Max.HGL   Conduit         Depth   Width   Barrels   Max.Flow
                           (ft)                     (ft)    (ft)             (ft^3/s)
--------------- ------  --------- --------------- ------- ------- --------- ---------

===> Hydraulic model simulation ended normally.
===> XP-SWMM Simulation ended normally.


===> Your input file was named  : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Proposed\Proposed2_Final_50yr
2hr.DAT
```

```
 ===> Your output file was named : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Proposed\Proposed2_Final_50yr
2hr.out


 *==============================================================*
 |              SWMM Simulation Date and Time Summary            |
 *==============================================================*
 | Starting Date... April       8, 2015  Time...    8:35:47:45  |
 |   Ending Date... April       8, 2015  Time...    8:36:23:79  |
 |  Elapsed Time...    0.60567 minutes or     36.34000 seconds  |
 *==============================================================*
```