APPENDIX - A: Santa Fe River Model for DO and pH (continue ...)

A-6. Santa Fe River Water Quality Model Verification using June 1999 and July 2000 data, prepared by U.S. EPA Region 6, TMDL Team, Model Input/Output files (45 pages).

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Santa Fe River Water Quality Model (June 1999 and July 2000 data)
WASP5pH  V5.1
 NSEG NSYS ICRD MFLG IDMP NSLN INTY ADFC   DD HHMM                A: MODEL
OPTIONS
   24    9    0    0    1    0    0    0    1 0000
   11   12   13   14   15   16
    1
    0.0020       4.0
    1
    0.040      120.0
    0    0    0    0    0    0    0    0    0
    1    0    +    *    +    *    +    *    +    *    +    *
B:EXCHANGES
    1     1.e-4      1.00                    (surface water)
   12
     2210.      0.10    1    2
     2210.      0.10    3    4
     2298.      0.10    5    6
     2386.      0.10    7    8
     2474.      0.10    9   10
     2562.      0.10   11   12
     2610.      0.10   13   14
     2650.      0.11   15   16
     2650.      0.11   17   18
     2650.      0.11   19   20
     2650.      0.11   21   22
     2650.      0.11   23   24
    2
      0.02       0.0      0.02     365.0
    0    0    0    1    0    0    0    0    0
    1    0              *    +    *    +    *    +    *    +    C:
VOLUMES
       1.0   0.02832    million cubic feet to cubic meters
         1         2         1    15920.     0.168       0.0    0.2350
0.0
         2        73         2      433.     0.168       0.0      0.01
0.0
         3         4         1    18324.     0.163       0.0    0.2350
0.0
         4        73         2      433.     0.163       0.0      0.01
0.0
         5         6         1    20732.     0.158       0.0    0.2350
0.0
         6        73         2      433.     0.158       0.0      0.01
0.0
         7         8         1    21938.     0.153       0.0    0.2350
0.0
         8        73         2      433.     0.153       0.0      0.01
0.0
         9        10         1    21938.     0.148       0.0    0.2350
0.0
        10        73         2      433.     0.148       0.0      0.01
0.0
        11        12         1    21938.     0.143       0.0    0.2350
0.0
        12        73         2      433.     0.143       0.0      0.01
0.0
        13        14         1    21938.     0.128       0.0    0.2350
0.0
        14        73         2      433.     0.128       0.0      0.01
0.0
        15        16         1    21938.     0.128       0.0    0.2350
0.0
        16        73         2      433.     0.128       0.0      0.01
0.0
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        17        18         1    21938.     0.128       0.0    0.2350
0.0
        18        73         2      433.     0.128       0.0      0.01
0.0
        19        20         1    21938.     0.128       0.0    0.2350
0.0
        20        73         2      433.     0.128       0.0      0.01
0.0
        21        22         1    21938.     0.128       0.0    0.2350
0.0
        22        73         2      433.     0.128       0.0      0.01
0.0
        23        24         1    21938.     0.128       0.0    0.2350
0.0
        24        73         2      433.     0.128       0.0      0.01
0.0
    1    5    *    +    *    +    *    *    *    +    *    +    D: FLOWS
    2       1.0   0.02832    cubic feet/second to cubic meters/second
   13                    Headwater above Santa Fe Plant
      1.0    0    1       1.0    1    3       1.0    3    5       1.0
5    7
      1.0    7    9       1.0    9   11       1.0   11   13       1.0
13   15
      1.0   15   17       1.0   17   19       1.0   19   21       1.0
21   23
      1.0   23    0
    2
     9.50        0.      9.50      365.
   13                    Headwater above Santa Fe Plant
      1.0    0    2       1.0    2    4       1.0    4    6       1.0
6    8
      1.0    8   10       1.0   10   12       1.0   12   14       1.0
14   16
      1.0   16   18       1.0   18   20       1.0   20   22       1.0
22   24
      1.0   24    0
    2
     0.00        0.      0.00      365.
    0                                     Field 2: pore water
    1       1.0       1.0                 Field 3: (Solids 1: organic
matter)
   24
     2210.    1    2     2210.    2   73     2210.    3    4     2210.
4   73
     2298.    5    6     2298.    6   73     2386.    7    8     2386.
8   73
     2472.    9   10     2474.   10   73     2562.   11   12     2562.
12   73
     2610.   13   14     2650.   14   73     2650.   15   16     2650.
16   73
     2650.   17   18     2650.   18   73     2650.   19   20     2650.
20   73
     2650.   21   22     2650.   22   73     2650.   23   24     2650.
24   73
    2
   3.0E-06        0.   3.0E-06      365.
    1       0.1      .0929 sq ft to sq m    Field 4: (Solids 2:
Phytoplankton)
   24
     2210.    1    2     2210.    2   73     2210.    3    4     2210.
4   73
     2298.    5    6     2298.    6   73     2386.    7    8     2386.
8   73
     2472.    9   10     2474.   10   73     2562.   11   12     2562.
12   73
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     2610.   13   14     2650.   14   73     2650.   15   16     2650.
16   73
     2650.   17   18     2650.   18   73     2650.   19   20     2650.
20   73
     2650.   21   22     2650.   22   73     2650.   23   24     2650.
24   73
    2
   0.0e-05        0.   0.0e-05      365.
    1       1.0      .0929 sq ft to sq m    Field 5: (Solids 3: Inorganic
matter)
   24
     2210.    1    2     2210.    2   73     2210.    3    4     2210.
4   73
     2298.    5    6     2298.    6   73     2386.    7    8     2386.
8   73
     2472.    9   10     2474.   10   73     2562.   11   12     2562.
12   73
     2610.   13   14     2650.   14   73     2650.   15   16     2650.
16   73
     2650.   17   18     2650.   18   73     2650.   19   20     2650.
20   73
     2650.   21   22     2650.   22   73     2650.   23   24     2650.
24   73
    2
   1.0E-06        0.   1.0E-06      365.
    0    0    0    1    0    0    0    0    0
         4    *    +    *    +    *    +    System 1 - Ammonia  E:
BOUNDARIES
       1.0       1.0                         mg/L (total)
    1    2                                   Santa Fe WWTP Input
     0.410        0.     0.410      365.
    2    2
     0.000        0.     0.000      365.
   23    2
     0.001        0.     0.001      365.
   24    2
     0.001        0.     0.001      365.
         4    *    +    *    +    *    +    System 2 - Nitrite/Nitrate
       1.0       1.0                         mg/L (total)
    1    2                                   Santa Fe WWTP Input
       0.27        0.       0.27      365.
    2    2
       0.0         0.       0.0       365.
   23    2
     0.150        0.     0.150      365.
   24    2
     0.150        0.     0.150      365.
         4    *    +    *    +    *    +    System 3 - Orthophosphate
       1.0       1.0                         mg/L (dissolved)
    1    2                                   Santa Fe WWTP Input
      0.40        0.      0.40      365.
    2    2
     0.000        0.     0.000      365.
   23    2
     0.010        0.     0.010      365.
   24    2
     0.010        0.     0.010      365.
         4    *    +    *    +    *    +    System 4 - Periphyton
       1.0       1.0                         ug/L  (viable chlorophyll-a)
    1    2                                   Santa Fe WWTP Input
       0.0         0.       0.0       365.
    2    2
       0.0         0.       0.0       365.
   23    2
      2.00         0.      2.00       365.
```

```
   24    2
      2.00          0.       2.00       365.
         4    *    +    *    +    *    +    System 5 - CBOD
       1.0        1.0                        mg/L (ultimate less algal
component)
    1    2                                   Santa Fe WWTP Input
      2.5          0.        2.5       365.
    2    2
      0.00         0.       0.00       365.
   23    2
      1.00         0.       1.00       365.
   24    2
      1.00         0.       1.00       365.
         4    *    +    *    +    *    +    System 6 - Dissolved Oxygen
       1.0        1.0                        mg/L
    1    2                                   Santa Fe WWTP Input
       5.0        0.0       5.0       365.
    2    2
      0.00         0.       0.00       365.
   23    2
      8.00         0.       8.00       365.
   24    2
      8.00         0.       8.00       365.
         4    *    +    *    +    *    +    System 7 - Nonliving Organic
N
       1.0        1.0                        mg/L (TKN - NH3 - algal N)
    1    2                                   Santa Fe WWTP Input
      1.00         0.       1.00       365.
    2    2
      0.00         0.       0.00       365.
   23    2
      0.40         0.       0.40       365.
   24    2
      0.40         0.       0.40       365.
         4    *    +    *    +    *    +    System 8 - Nonliving Organic
P
       1.0        1.0                        mg/L (TP - PO4 - algal P)
    1    2                                   Santa Fe WWTP Input
      0.10         0.       0.10       365.
    2    2
      0.00         0.       0.00       365.
   23    2
      0.04         0.       0.04       365.
   24    2
      0.04         0.       0.04       365.
         4    *    +    *    +    *    +    System 9 - CO2 Acidity
       1.0        1.0                        mg/L as CaCO3
    1    2                                   Santa Fe WWTP Input
      15.0         0.      15.0       365.
    2    2
       0.0         0.       0.0       365.
   23    2
      10.0         0.      10.0       365.
   24    2
      10.0         0.      10.0       365.
         0    *    +    *    +    *    +    System 1 - Ammonia F: PS
loads
         0    *    +    *    +    *    +    System 2 - Nitrite + Nitrate
         0    *    +    *    +    *    +    System 3 - Dissolved
Orthophosphate
         0    *    +    *    +    *    +    System 4 - Viable
chlorophylla-a
         0    *    +    *    +    *    +    System 5 - Ultimate CBOD (-
algae)
         0    *    +    *    +    *    +    System 6 - Dissolved Oxygen
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          0    *    +    *    +    *    +    System 7 - Nonliving Organic
N
          0    *    +    *    +    *    +    System 8 - Nonliving Organic
P
          0    *    +    *    +    *    +    System 9 - CO2 Acidity
          0                                   No NPS Loads
          8    *    +    *    +    *    +    *    +    *    +    G:
PARAMETERS
TMPSG     3        1.0 KESG     5        1.0 SOD1D     9        1.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
1.0
          1
TMPSG     3        1.0 KESG     5        0.15SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
1.0
          2
TMPSG     3        1.0 KESG     5        0.15SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
1.0
          3
TMPSG     3        1.0 KESG     5        0.15SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
1.0
          4
TMPSG     3        1.0 KESG     5        0.15SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
1.0
          5
TMPSG     3        1.0 KESG     5        0.15SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
1.0
          6
TMPSG     3        1.0 KESG     5        0.15SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
1.0
          7
TMPSG     3        1.0 KESG     5        0.20SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
1.0
          8
TMPSG     3        1.0 KESG     5        0.20SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
1.0
          9
TMPSG     3        1.0 KESG     5        0.20SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
1.0
         10
TMPSG     3        1.0 KESG     5        0.20SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
1.0
         11
TMPSG     3        1.0 KESG     5        0.20SOD1D     9        0.0SODTA    12
1.0
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FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
1.0
          12
TMPSG     3        1.0 KESG     5        0.20SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
1.0
          13
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          14
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          15
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          16
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        7.1 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          17
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          18
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          19
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          20
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          21
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          22
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          23
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          24
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
```

```
FNH4      7        0.0 FPO4     8       0.0 ITOTL   13        1.0TMPFN     4
2.0
    +    *    +    *    +    *    +    *    +    *    +    *    H:
CONSTANTS
   GLOBALS          0
       NH3          1
nitrificat          2
      K12C         11       0.20       K12T        12       1.08
       NO3          1
  denitrif          2
      K20C         21       0.10       K20T        22      1.045
       PO4          0
      PHYT          4
    growth          2
       K1C         41       2.45        K1T        42      1.055
     light          3
     LGHTS         43        1.0       CCHL        46        67.
       IS1         47       525.
 nutrients          4
     KMNG1         48      0.025      KMPG1        49      0.005
      NCRB         58       0.18       PCRB        57      0.025
     death          4
      K1RC         50      0.600       K1RT        51      1.069
       K1D         52       0.30      KPZDC        55       0.00
      CBOD          1
 deoxygent          2
       KDC         71       0.07        KDT        72       1.05
        DO          1
     ratio          2
      OCRB         81       2.67         K2        82       4.50
        ON          1
mineralize          3
      K71C         91      0.500       K71T        92       1.08
       FON         95       0.15
        OP          1
mineralize          3
      K83C        100       0.75       K83T       101       1.08
       FOP        104       0.50
    CO2acy          0
         4    *    +    *    +    *    +    *    +    *    +    I: TIME
FUNCTION
TEMP1  193     1            River Water Temperature (C) below WWTP
     25.41    0.00000     25.41    0.01042     25.40    0.02083     25.37
0.03125
     25.36    0.04167     25.36    0.05208     25.32    0.06250     25.33
0.07292
     25.31    0.08333     25.29    0.09375     25.27    0.10417     25.25
0.11458
     25.21    0.12500     25.17    0.13542     25.13    0.14583     25.08
0.15625
     25.01    0.16667     24.94    0.17708     24.88    0.18750     24.83
0.19792
     24.77    0.20833     24.69    0.21875     24.61    0.22917     24.52
0.23958
     24.42    0.25000     24.32    0.26042     24.24    0.27083     24.17
0.28125
     24.11    0.29167     24.07    0.30208     24.07    0.31250     24.12
0.32292
     24.27    0.33333     24.45    0.34375     24.63    0.35417     24.82
0.36458
     24.99    0.37500     25.08    0.38542     25.18    0.39583     25.30
0.40625
     25.40    0.41667     25.55    0.42708     25.63    0.43750     25.69
0.44792
     25.74    0.45833     25.83    0.46875     25.90    0.47917     25.96
```

0.48958						
26.04	0.50000	26.09	0.51042	26.17	0.52083	26.24
0.53125						
26.25	0.54167	26.26	0.55208	26.29	0.56250	26.29
0.57292						
26.33	0.58333	26.37	0.59375	26.34	0.60417	26.44
0.61458						
26.39	0.62500	26.17	0.63542	26.09	0.64583	26.35
0.65625						
26.51	0.66667	26.46	0.67708	26.34	0.68750	26.06
0.69792						
25.94	0.70833	25.93	0.71875	25.93	0.72917	25.98
0.73958						
25.99	0.75000	25.92	0.76042	25.77	0.77083	25.68
0.78125						
25.74	0.79167	25.81	0.80208	25.60	0.81250	25.17
0.82292						
25.25	0.83333	25.46	0.84375	25.64	0.85417	25.67
0.86458						
25.61	0.87500	25.49	0.88542	25.53	0.89583	25.53
0.90625						
25.61	0.91667	25.60	0.92708	25.58	0.93750	25.58
0.94792						
25.58	0.95833	25.57	0.96875	25.56	0.97917	25.58
0.98958						
25.58	1.00000	25.58	1.01042	25.58	1.02083	25.55
1.03125						
25.54	1.04167	25.53	1.05208	25.51	1.06250	25.48
1.07292						
25.45	1.08333	25.42	1.09375	25.42	1.10417	25.38
1.11458						
25.33	1.12500	25.29	1.13542	25.25	1.14583	25.21
1.15625						
25.19	1.16667	25.21	1.17708	25.18	1.18750	25.06
1.19792						
24.92	1.20833	24.81	1.21875	24.72	1.22917	24.67
1.23958						
24.65	1.25000	24.67	1.26042	24.60	1.27083	24.45
1.28125						
24.30	1.29167	24.20	1.30208	24.16	1.31250	24.22
1.32292						
24.37	1.33333	24.52	1.34375	24.66	1.35417	24.77
1.36458						
24.89	1.37500	24.88	1.38542	24.84	1.39583	25.02
1.40625						
25.31	1.41667	25.54	1.42708	25.70	1.43750	25.82
1.44792						
25.86	1.45833	25.83	1.46875	25.88	1.47917	25.92
1.48958						
25.98	1.50000	26.05	1.51042	26.12	1.52083	26.20
1.53125						
25.95	1.54167	25.95	1.55208	26.19	1.56250	26.24
1.57292						
26.21	1.58333	26.05	1.59375	26.11	1.60417	26.20
1.61458						
26.14	1.62500	25.95	1.63541	25.76	1.64583	25.74
1.65625						
25.79	1.66666	25.86	1.67708	25.91	1.68750	25.95
1.69791						
25.96	1.70833	26.00	1.71875	26.01	1.72916	26.00
1.73958						
25.85	1.75000	25.69	1.76041	25.66	1.77083	25.66
1.78125						
25.62	1.79166	25.57	1.80208	25.57	1.81250	25.57
1.82291						

```
     25.59    1.83333      25.45    1.84375      25.14    1.85416      25.34
1.86458
     25.36    1.87500      25.44    1.88541      25.51    1.89583      25.50
1.90625
     25.49    1.91666      25.51    1.92708      25.50    1.93750      25.48
1.94791
     25.45    1.95833      25.41    1.96875      25.39    1.97916      25.39
1.98958
     25.39    2.00000
TEMP2  193     2            River Temperature at Preserve
     23.44    0.00000      23.57    0.01042      23.66    0.02083      23.70
0.03125
     23.71    0.04167      23.70    0.05208      23.65    0.06250      23.62
0.07292
     23.54    0.08333      23.36    0.09375      23.34    0.10417      23.38
0.11458
     23.43    0.12500      23.44    0.13542      23.33    0.14583      23.15
0.15625
     22.82    0.16667      22.49    0.17708      22.23    0.18750      22.10
0.19792
     21.96    0.20833      21.84    0.21875      21.88    0.22917      21.79
0.23958
     21.60    0.25000      21.37    0.26042      21.17    0.27083      21.01
0.28125
     20.93    0.29167      20.78    0.30208      20.73    0.31250      20.83
0.32292
     20.99    0.33333      21.29    0.34375      21.42    0.35417      21.60
0.36458
     21.85    0.37500      22.27    0.38542      23.04    0.39583      23.93
0.40625
     24.93    0.41667      25.92    0.42708      26.78    0.43750      27.46
0.44792
     28.20    0.45833      28.84    0.46875      29.11    0.47917      29.37
0.48958
     29.44    0.50000      28.64    0.51042      28.81    0.52083      28.84
0.53125
     28.98    0.54167      28.79    0.55208      29.23    0.56250      29.46
0.57292
     29.50    0.58333      29.43    0.59375      29.15    0.60417      28.93
0.61458
     28.87    0.62500      27.75    0.63542      27.28    0.64583      26.63
0.65625
     26.41    0.66667      26.19    0.67708      25.95    0.68750      25.65
0.69792
     25.39    0.70833      25.34    0.71875      25.26    0.72917      24.92
0.73958
     24.73    0.75000      24.64    0.76042      24.49    0.77083      24.42
0.78125
     24.37    0.79167      24.42    0.80208      24.47    0.81250      24.35
0.82292
     24.14    0.83333      23.99    0.84375      23.56    0.85417      23.34
0.86458
     23.08    0.87500      23.01    0.88542      23.10    0.89583      23.33
0.90625
     23.59    0.91667      23.75    0.92708      23.82    0.93750      23.85
0.94792
     23.75    0.95833      23.77    0.96875      23.73    0.97917      23.76
0.98958
     23.81    1.00000      23.85    1.01042      23.82    1.02083      23.79
1.03125
     23.76    1.04167      23.73    1.05208      23.70    1.06250      23.63
1.07292
     23.53    1.08333      23.47    1.09375      23.46    1.10417      23.40
1.11458
     23.32    1.12500      23.23    1.13542      23.11    1.14583      23.01
```

```
1.15625
     22.91   1.16667     22.82   1.17708     22.69   1.18750     22.57
1.19792
     22.42   1.20833     22.30   1.21875     22.18   1.22917     22.06
1.23958
     21.92   1.25000     21.80   1.26042     21.68   1.27083     21.63
1.28125
     21.66   1.29167     21.79   1.30208     21.99   1.31250     22.25
1.32292
     22.35   1.33333     22.46   1.34375     22.66   1.35417     22.91
1.36458
     23.29   1.37500     23.67   1.38542     24.11   1.39583     24.55
1.40625
     25.07   1.41667     25.49   1.42708     25.89   1.43750     26.34
1.44792
     26.68   1.45833     27.04   1.46875     27.29   1.47917     27.52
1.48958
     27.66   1.50000     27.90   1.51042     28.09   1.52083     28.20
1.53125
     28.15   1.54167     28.20   1.55208     28.28   1.56250     28.18
1.57292
     28.26   1.58333     27.82   1.59375     26.92   1.60417     25.33
1.61458
     24.25   1.62500     23.61   1.63541     23.29   1.64583     23.45
1.65625
     23.80   1.66666     24.51   1.67708     25.27   1.68750     25.84
1.69791
     25.71   1.70833     25.11   1.71875     24.53   1.72916     24.04
1.73958
     23.89   1.75000     23.82   1.76041     23.95   1.77083     23.88
1.78125
     23.78   1.79166     23.65   1.80208     23.53   1.81250     23.36
1.82291
     21.91   1.83333     22.27   1.84375     22.55   1.85416     22.74
1.86458
     22.85   1.87500     22.89   1.88541     22.85   1.89583     22.75
1.90625
     22.45   1.91666     22.39   1.92708     22.37   1.93750     22.33
1.94791
     22.23   1.95833     22.08   1.96875     21.90   1.97916     21.69
1.98958
     21.47   2.00000
ITOT    26     5            Solar radiation (ly/day)
       0.0       0.0        0.0   0.03681       0.0   0.07847       0.0
0.12014
       0.0   0.16181       4.41   0.20347     78.51   0.24514    254.94
0.28681
    453.43   0.32874     626.33   0.37014    798.36   0.41181    924.50
0.45347
    984.49   0.49514     988.02   0.53681    935.97   0.57847    820.41
0.62014
    668.68   0.66181     486.95   0.70000    285.82   0.74514     94.39
0.78681
     10.59   0.82847        0.0   0.87014       0.0   0.91181       0.0
0.95347
       0.0   0.99514        0.0       1.0
F        2     6            Photoperiod (fraction of day)
      1.00        0.       1.00     365.0
Ammonia                                        3 0.00       10.    J:
INITIAL
    1      0.02       1.0    2      0.02       1.0    3      0.02
1.0
    4      0.02       1.0    5      0.02       1.0    6      0.02
1.0
    7      0.02       1.0    8      0.02       1.0    9      0.02
```

```
1.0
   10       0.02        1.0   11       0.02        1.0   12       0.02
1.0
   13       0.02        1.0   14       0.02        1.0   15       0.02
1.0
   16       0.02        1.0   17       0.02        1.0   18       0.02
1.0
   19       0.02        1.0   20       0.02        1.0   21       0.02
1.0
   22       0.02        1.0   23       0.02        1.0   24       0.02
1.0
Nitrite + Nitrate                                 3 0.00        10.    J:
INITIAL
    1       0.09        1.0    2       0.09        1.0    3       0.09
1.0
    4       0.09        1.0    5       0.09        1.0    6       0.09
1.0
    7       0.09        1.0    8       0.09        1.0    9       0.09
1.0
   10       0.09        1.0   11       0.09        1.0   12       0.09
1.0
   13       0.09        1.0   14       0.09        1.0   15       0.09
1.0
   16       0.09        1.0   17       0.09        1.0   18       0.09
1.0
   19       0.09        1.0   20       0.09        1.0   21       0.09
1.0
   22       0.09        1.0   23       0.09        1.0   24       0.09
1.0
Dissolved Orthophosphate                          3 0.00         5.    J:
INITIAL
    1      1.010        1.0    2      1.010        1.0    3      1.010
1.0
    4      1.010        1.0    5      1.010        1.0    6      1.010
1.0
    7      1.010        1.0    8      1.010        1.0    9      1.010
1.0
   10      1.010        1.0   11      1.010        1.0   12      1.010
1.0
   13      1.010        1.0   14      1.010        1.0   15      1.010
1.0
   16      1.010        1.0   17      1.010        1.0   18      1.010
1.0
   19      1.010        1.0   20      1.010        1.0   21      1.010
1.0
   22      1.010        1.0   23      1.010        1.0   24      1.010
1.0
Viable Chlorophyll-a (ug/l)                       4 0.00       500.    J:
INITIAL
    1         0.        0.0    2     1000.        0.0    3         0.
0.0
    4      1000.        0.0    5        0.        0.0    6      1000.
0.0
    7         0.        0.0    8      975.        0.0    9         0.
0.0
   10       950.        0.0   11        0.        0.0   12       925.
0.0
   13         0.        0.0   14      900.        0.0   15         0.
0.0
   16       900.        0.0   17        0.        0.0   18       900.
0.0
   19         0.        0.0   20      900.        0.0   21         0.
0.0
   22       900.        0.0   23        0.        0.0   24       900.
0.0
```

```
Carbonaceous BOD (ultimate - algae)          3 0.00       100.    J:
INITIAL
    1       5.0       1.0    2       5.0       1.0    3       5.0
1.0
    4       5.0       1.0    5       5.0       1.0    6       5.0
1.0
    7       5.0       1.0    8       5.0       1.0    9       5.0
1.0
   10       5.0       1.0   11       5.0       1.0   12       5.0
1.0
   13       5.0       1.0   14       5.0       1.0   15       5.0
1.0
   16       5.0       1.0   17       5.0       1.0   18       5.0
1.0
   19       5.0       1.0   20       5.0       1.0   21       5.0
1.0
   22       5.0       1.0   23       5.0       1.0   24       5.0
1.0
Dissolved Oxygen                             3 0.00        20.    J:
INITIAL
    1      7.99       1.0    2      7.59       1.0    3      7.59
1.0
    4      7.99       1.0    5      7.59       1.0    6      7.59
1.0
    7      7.99       1.0    8      7.59       1.0    9      7.59
1.0
   10      7.99       1.0   11      7.59       1.0   12      7.59
1.0
   13      7.99       1.0   14      7.59       1.0   15      7.59
1.0
   16      7.99       1.0   17      7.59       1.0   18      7.59
1.0
   19      7.99       1.0   20      7.59       1.0   21      7.59
1.0
   22      7.99       1.0   23      7.59       1.0   24      7.59
1.0
Nonliving Organic Nitrogen                   3 0.00        10.    J:
INITIAL
    1      1.02       0.7    2      1.02       0.7    3      1.02
0.7
    4      1.02       0.7    5      1.02       0.7    6      1.02
0.7
    7      1.02       0.7    8      1.02       0.7    9      1.02
0.7
   10      1.02       0.7   11      1.02       0.7   12      1.02
0.7
   13      1.02       0.7   14      1.02       0.7   15      1.02
0.7
   16      1.02       0.7   17      1.02       0.7   18      1.02
0.7
   19      1.02       0.7   20      1.02       0.7   21      1.02
0.7
   22      1.02       0.7   23      1.02       0.7   24      1.02
0.7
Nonliving Organic Phosphorus                 3 0.00         5.    J:
INITIAL
    1      0.10       1.0    2      0.10       1.0    3      0.10
1.0
    4      0.10       1.0    5      0.10       1.0    6      0.10
1.0
    7      0.10       1.0    8      0.10       1.0    9      0.10
1.0
   10      0.10       1.0   11      0.10       1.0   12      0.10
1.0
   13      0.10       1.0   14      0.10       1.0   15      0.10
```

```
1.0
   16       0.10        1.0   17       0.10        1.0   18       0.10
1.0
   19       0.10        1.0   20       0.10        1.0   21       0.10
1.0
   22       0.10        1.0   23       0.10        1.0   24       0.10
1.0
CO2 Acidity (mg/L as CaCO3)                    3 0.00     5000.    J:
INITIAL
    1       4.0         1.0    2       4.0        1.0    3       4.0
1.0
    4       4.0         1.0    5       4.0        1.0    6       4.0
1.0
    7       4.0         1.0    8       4.0        1.0    9       4.0
1.0
   10       4.0         1.0   11       4.0        1.0   12       4.0
1.0
   13       6.0         1.0   14       6.0        1.0   15       6.0
1.0
   16       6.0         1.0   17       6.0        1.0   18       6.0
1.0
   19       6.0         1.0   20       6.0        1.0   21       6.0
1.0
   22       6.0         1.0   23       6.0        1.0   24       6.0
1.0
```

```
**********************************************************************

            WASP  - - WATER QUALITY ANALYSIS SIMULATION PROGRAM

**********************************************************************

                          Supported by
                 Center for Exposure Assessment Modeling
                              (CEAM)
                 Athens Environmental Research Laboratory
                          College Station Road
                        Athens, Georgia  30613
                   FTS 250-3491 or (404) 546-3491

                          Version 4.32 pH
                 Compiled on: Date: Tuesday, 26 Oct 1999,

                     Maximum Parameters for this Model

            Systems:    9          Segments:  100     Break Points:
193
         Parameters:   15          Constants:  104    Boundary Cond:
35
       Waste Loads:    9     Print Interval:    5    Time Function:
23

**********************************************************************

     No. Segments --->    24        No. Systems --->     9

**********************************************************************
TIME VARIABLE SOLUTION TECHNIQUE

**********************************************************************
            System Bypass Options for System  1 TO  9 are 0 0 0 0 0 0 0
0 0
```

```
**********************************************************************
1
```

Simulation Time Steps
Option 0 Selected
Advection Factor = 0.000

DT	T	DT	T	DT	T
0.00200	4.00000				

Print Intervals

PRINT INTERVAL	ELAPSED TIME	PRINT INTERVAL	ELAPSED TIME	PRINT INTERVAL	ELAPSED TIME
0.040	120.00				

```
1
```

Exchange Coefficients

Number of Exchange Fields = 1

FIELD 1 has 1 Time Functions

SCALR = 0.100E-03 CONVR = 0.100E+01

Time Function 1 has 12 Exchanges

A	EL	From	To
0.221E+04	0.100E+00	1	2
0.221E+04	0.100E+00	3	4
0.230E+04	0.100E+00	5	6
0.239E+04	0.100E+00	7	8
0.247E+04	0.100E+00	9	10
0.256E+04	0.100E+00	11	12
0.261E+04	0.100E+00	13	14
0.265E+04	0.110E+00	15	16

0.265E+04	0.110E+00	17	18
0.265E+04	0.110E+00	19	20
0.265E+04	0.110E+00	21	22
0.265E+04	0.110E+00	23	24

Number of Breaks in Time Function = 2

Dispersion	Time	Dispersion	Time	Dispersion	Time
0.200E-01	0.000E+00	0.200E-01	0.365E+03		

R Bypass Options for Systems 1 to 9 are 0 0 0 1 0 0 0 0 0
1

VOLUMES

Bed Volume Option = 0 Bed Time Step = 0.000E+00

Scale Factor = 0.1000E+01 Conversion Factor = 0.2832E-01

Seg #	BOTSG	Type	Volume	V mult	V exp	D mult	D exp
1	2	1	15920.000	0.168	0.000	0.235	0.000
2	73	2	433.000	0.168	0.000	0.010	0.000
3	4	1	18324.000	0.163	0.000	0.235	0.000
4	73	2	433.000	0.163	0.000	0.010	0.000
5	6	1	20732.000	0.158	0.000	0.235	0.000
6	73	2	433.000	0.158	0.000	0.010	0.000
7	8	1	21938.000	0.153	0.000	0.235	0.000
8	73	2	433.000	0.153	0.000	0.010	0.000
9	10	1	21938.000	0.148	0.000	0.235	0.000
10	73	2	433.000	0.148	0.000	0.010	0.000
11	12	1	21938.000	0.143	0.000	0.235	0.000
12	73	2	433.000	0.143	0.000	0.010	0.000
13	14	1	21938.000	0.128	0.000	0.235	0.000
14	73	2	433.000	0.128	0.000	0.010	0.000

```
    15      16      1       21938.000    0.128    0.000    0.235
0.000
    16      73      2         433.000    0.128    0.000    0.010
0.000
    17      18      1       21938.000    0.128    0.000    0.235
0.000
    18      73      2         433.000    0.128    0.000    0.010
0.000
    19      20      1       21938.000    0.128    0.000    0.235
0.000
    20      73      2         433.000    0.128    0.000    0.010
0.000
    21      22      1       21938.000    0.128    0.000    0.235
0.000
    22      73      2         433.000    0.128    0.000    0.010
0.000
    23      24      1       21938.000    0.128    0.000    0.235
0.000
    24      73      2         433.000    0.128    0.000    0.010
0.000
1


                              FLOWS
                              -----

                     Flow Option  1 Used
                 Number of Flow Fields =   5

               Field  1 has   2 Inflows
               SCALQ = 0.100E+01  CONVQ = 0.283E-01


                          Inflow Number  1
                          ----------------
     Continuity Array:

        Flow    From   To        Flow    From   To        Flow    From
To
-------------------------------------------------------------------------
--------

      0.100E+01    0    1      0.100E+01    1    3      0.100E+01    3
5
      0.100E+01    5    7      0.100E+01    7    9      0.100E+01    9
11
      0.100E+01   11   13      0.100E+01   13   15      0.100E+01   15
17
      0.100E+01   17   19      0.100E+01   19   21      0.100E+01   21
23
      0.100E+01   23    0

     Number of Breaks in Time Function =     2

        Flow      Time           Flow      Time           Flow      Time
-------------------------------------------------------------------------
------
```

0.950E+01	0.000E+00	0.950E+01	0.365E+03

Inflow Number 2

Continuity Array:

Flow	From	To	Flow	From	To	Flow	From	To
0.100E+01	0	2	0.100E+01	2	4	0.100E+01	4	6
0.100E+01	6	8	0.100E+01	8	10	0.100E+01	10	12
0.100E+01	12	14	0.100E+01	14	16	0.100E+01	16	18
0.100E+01	18	20	0.100E+01	20	22	0.100E+01	22	24
0.100E+01	24	0						

Number of Breaks in Time Function = 2

Flow	Time	Flow	Time	Flow	Time
0.000E+00	0.000E+00	0.000E+00	0.365E+03		

Field 2 has 0 Inflows
SCALQ = 0.000E+00 CONVQ = 0.000E+00

Field 3 has 1 Inflows
SCALQ = 0.100E+01 CONVQ = 0.100E+01

Inflow Number 1

Solids Transport:

Area	From	To	Area	From	To	Area	From	To
0.221E+04	1	2	0.221E+04	2	73	0.221E+04	3	4
0.221E+04	4	73	0.230E+04	5	6	0.230E+04	6	73
0.239E+04	7	8	0.239E+04	8	73	0.247E+04	9	10
0.247E+04	10	73	0.256E+04	11	12	0.256E+04	12	73
0.261E+04	13	14	0.265E+04	14	73	0.265E+04	15	16

0.265E+04	16	73	0.265E+04	17	18	0.265E+04	18	73
0.265E+04	19	20	0.265E+04	20	73	0.265E+04	21	22
0.265E+04	22	73	0.265E+04	23	24	0.265E+04	24	73

Number of Breaks in Time Function = 2

Velocity	Time	Velocity	Time	Velocity	Time
0.300E-05	0.000E+00	0.300E-05	0.365E+03		

Field 4 has 1 Inflows
SCALQ = 0.100E+00 CONVQ = 0.929E-01

Inflow Number 1

Solids Transport:

Area	From	To	Area	From	To	Area	From	To
0.221E+04	1	2	0.221E+04	2	73	0.221E+04	3	4
0.221E+04	4	73	0.230E+04	5	6	0.230E+04	6	73
0.239E+04	7	8	0.239E+04	8	73	0.247E+04	9	10
0.247E+04	10	73	0.256E+04	11	12	0.256E+04	12	73
0.261E+04	13	14	0.265E+04	14	73	0.265E+04	15	16
0.265E+04	16	73	0.265E+04	17	18	0.265E+04	18	73
0.265E+04	19	20	0.265E+04	20	73	0.265E+04	21	22
0.265E+04	22	73	0.265E+04	23	24	0.265E+04	24	73

Number of Breaks in Time Function = 2

Velocity	Time	Velocity	Time	Velocity	Time
0.000E+00	0.000E+00	0.000E+00	0.365E+03		

Field 5 has 1 Inflows

SCALQ = 0.100E+01 CONVQ = 0.929E-01

Inflow Number 1

Solids Transport:

Area	From	To	Area	From	To	Area	From	To
0.221E+04	1	2	0.221E+04	2	73	0.221E+04	3	4
0.221E+04	4	73	0.230E+04	5	6	0.230E+04	6	73
0.239E+04	7	8	0.239E+04	8	73	0.247E+04	9	10
0.247E+04	10	73	0.256E+04	11	12	0.256E+04	12	73
0.261E+04	13	14	0.265E+04	14	73	0.265E+04	15	16
0.265E+04	16	73	0.265E+04	17	18	0.265E+04	18	73
0.265E+04	19	20	0.265E+04	20	73	0.265E+04	21	22
0.265E+04	22	73	0.265E+04	23	24	0.265E+04	24	73

Number of Breaks in Time Function = 2

Velocity	Time	Velocity	Time	Velocity	Time
0.100E-05	0.000E+00	0.100E-05	0.365E+03		

QSUMX= 0.000
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```

Q Bypass Options for Systems 1 to 9 are 0 0 0 1 0 0 0 0 0
1

Boundary Conditions

Boundary Concentrations for System 1

BC Option 0 Used No.Of BC'S Read 4

Scale Factor = 0.1000E+01 Conversion Factor = 0.1000E+01

Segment	No.Brk.	BC(T)	T	BC(T)	T
1	2	0.4100000E+00	0.00	0.4100000E+00	365.00
2	2	0.0000000E+00	0.00	0.0000000E+00	365.00
23	2	0.1000000E-02	0.00	0.1000000E-02	365.00
24	2	0.1000000E-02	0.00	0.1000000E-02	365.00

Boundary Concentrations for System 2

BC Option 0 Used No.Of BC'S Read 4

Scale Factor = 0.1000E+01 Conversion Factor = 0.1000E+
01

Segment	No.Brk.	BC(T)	T	BC(T)	T
1	2	0.2000000E+00	70.00	0.2000000E+00	7365.00
2	2	0.0000000E+00	0.00	0.0000000E+00	365.00
23	2	0.1500000E+00	0.00	0.1500000E+00	365.00
24	2	0.1500000E+00	0.00	0.1500000E+00	365.00

Boundary Concentrations for System 3

BC Option 0 Used No.Of BC'S Read 4

Scale Factor = 0.1000E+01 Conversion Factor = 0.1000E+
01

Segment	No.Brk.	BC(T)	T	BC(T)	T
1	2	0.4000000E+00	0.00	0.4000000E+00	365.00
2	2	0.0000000E+00	0.00	0.0000000E+00	365.00
23	2	0.1000000E-01	0.00	0.1000000E-01	365.00
24	2	0.1000000E-01	0.00	0.1000000E-01	365.00

Boundary Concentrations for System 4

BC Option 0 Used No.Of BC'S Read 4

Scale Factor = 0.1000E+01 Conversion Factor = 0.1000E+
01

```
        Segment  No.Brk.      BC(T)            T           BC(T)
T
-----------------------------------------------------------------------
             1       2      0.0000000E+00      0.00   0.0000000E+00
365.00
             2       2      0.0000000E+00      0.00   0.0000000E+00
365.00
            23       2      0.2000000E+01      0.00   0.2000000E+01
365.00
            24       2      0.2000000E+01      0.00   0.2000000E+01
365.00

                    Boundary Concentrations for System  5
                BC Option  0 Used     No.Of BC'S Read    4
            Scale Factor =  0.1000E+01  Conversion Factor =  0.1000E+
01

        Segment  No.Brk.      BC(T)            T           BC(T)
T
-----------------------------------------------------------------------
             1       2      0.2500000E+01      0.00   0.2500000E+01
365.00
             2       2      0.0000000E+00      0.00   0.0000000E+00
365.00
            23       2      0.1000000E+01      0.00   0.1000000E+01
365.00
            24       2      0.1000000E+01      0.00   0.1000000E+01
365.00

                    Boundary Concentrations for System  6
                BC Option  0 Used     No.Of BC'S Read    4
            Scale Factor =  0.1000E+01  Conversion Factor =  0.1000E+
01

        Segment  No.Brk.      BC(T)            T           BC(T)
T
-----------------------------------------------------------------------
             1       2      0.5000000E+01      0.00   0.5000000E+01
365.00
             2       2      0.0000000E+00      0.00   0.0000000E+00
365.00
```

23	2	0.8000000E+01	0.00	0.8000000E+01	365.00
24	2	0.8000000E+01	0.00	0.8000000E+01	365.00

Boundary Concentrations for System 7

BC Option 0 Used No.Of BC'S Read 4

Scale Factor = 0.1000E+01 Conversion Factor = 0.1000E+01

Segment	No.Brk.	BC(T)	T	BC(T)	T
1	2	0.1000000E+01	0.00	0.1000000E+01	365.00
2	2	0.0000000E+00	0.00	0.0000000E+00	365.00
23	2	0.4000000E+00	0.00	0.4000000E+00	365.00
24	2	0.4000000E+00	0.00	0.4000000E+00	365.00

Boundary Concentrations for System 8

BC Option 0 Used No.Of BC'S Read 4

Scale Factor = 0.1000E+01 Conversion Factor = 0.1000E+01

Segment	No.Brk.	BC(T)	T	BC(T)	T
1	2	0.1000000E+00	0.00	0.1000000E+00	365.00
2	2	0.0000000E+00	0.00	0.0000000E+00	365.00
23	2	0.4000000E-01	0.00	0.4000000E-01	365.00
24	2	0.4000000E-01	0.00	0.4000000E-01	365.00

Boundary Concentrations for System 9

BC Option 0 Used No.Of BC'S Read 4

Scale Factor = 0.1000E+01 Conversion Factor = 0.1000E+
01

Segment	No.Brk.	BC(T)	T	BC(T)	T
1	2	0.1500000E+02	0.00	0.1500000E+02	365.00
2	2	0.0000000E+00	0.00	0.0000000E+00	365.00
23	2	0.1000000E+02	0.00	0.1000000E+02	365.00
24	2	0.1000000E+02	0.00	0.1000000E+02	365.00

Waste Loads

Forcing Functions For System 1

Wk Option 3 Used No.of WK'S Read 0

No Forcing Function for System 1
1

Forcing Functions For System 2

Wk Option 3 Used No.of WK'S Read 0

No Forcing Function for System 2
1

Forcing Functions For System 3

Wk Option 3 Used No.of WK'S Read 0

No Forcing Function for System 3
1

```
                Forcing Functions For System  4
                ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
          Wk Option  3 Used     No.of WK'S Read    0


             No Forcing Function for System  4
1

                Forcing Functions For System  5
                ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
          Wk Option  3 Used     No.of WK'S Read    0


             No Forcing Function for System  5
1

                Forcing Functions For System  6
                ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
          Wk Option  3 Used     No.of WK'S Read    0


             No Forcing Function for System  6
1

                Forcing Functions For System  7
                ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
          Wk Option  3 Used     No.of WK'S Read    0


             No Forcing Function for System  7
1

                Forcing Functions For System  8
                ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
          Wk Option  3 Used     No.of WK'S Read    0


             No Forcing Function for System  8
1

                Forcing Functions For System  9
                ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

```
                    Wk Option  3 Used     No.of WK'S Read    0


                      No Forcing Function for System  9
 1
                                 Segment Parameters
                                 ~~~~~~~~~~~~~~~~~~


  PARM      SCALE        PARM      SCALE       PARM      SCALE        PARM
 SCALE

 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
 ~~~~~~~
  TMPSG   0.100E+01    KESG   0.100E+01   SOD1D   0.100E+01   SODTA
 0.100E+01
  FNH4    0.000E+00    FPO4   0.000E+00   ITOTL   0.100E+01   TMPFN
 0.100E+01


  Segment #    1
  TMPSG    3 0.100E+01  KESG    5 0.150E+00 SOD1D    9 0.000E+00 SODTA  12
 0.100E+01
  FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN   4
 0.100E+01


  Segment #    2
  TMPSG    3 0.100E+01  KESG    5 0.150E+00 SOD1D    9 0.000E+00 SODTA  12
 0.100E+01
  FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN   4
 0.100E+01


  Segment #    3
  TMPSG    3 0.100E+01  KESG    5 0.150E+00 SOD1D    9 0.000E+00 SODTA  12
 0.100E+01
  FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN   4
 0.100E+01


  Segment #    4
  TMPSG    3 0.100E+01  KESG    5 0.150E+00 SOD1D    9 0.000E+00 SODTA  12
 0.100E+01
  FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN   4
 0.100E+01


  Segment #    5
  TMPSG    3 0.100E+01  KESG    5 0.150E+00 SOD1D    9 0.000E+00 SODTA  12
 0.100E+01
  FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN   4
 0.100E+01


  Segment #    6
  TMPSG    3 0.100E+01  KESG    5 0.150E+00 SOD1D    9 0.000E+00 SODTA  12
 0.100E+01
  FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN   4
 0.100E+01


  Segment #    7
```

```
 TMPSG    3 0.100E+01  KESG    5 0.200E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.100E+01

 Segment #    8
 TMPSG    3 0.100E+01  KESG    5 0.200E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.100E+01

 Segment #    9
 TMPSG    3 0.100E+01  KESG    5 0.200E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.100E+01

 Segment #   10
 TMPSG    3 0.100E+01  KESG    5 0.200E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.100E+01

 Segment #   11
 TMPSG    3 0.100E+01  KESG    5 0.200E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.100E+01

 Segment #   12
 TMPSG    3 0.100E+01  KESG    5 0.200E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.100E+01

 Segment #   13
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.200E+01

 Segment #   14
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.200E+01

 Segment #   15
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.200E+01

 Segment #   16
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
```

```
 FNH4     7 0.710E+01  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  17
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  18
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  19
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  20
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  21
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  22
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  23
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  24
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

1
                    Environmental and Chemical Constants
                    ------------------------------------

                 No Constants Enter for System  1:     GLOBALS
```

NH3 Constants for System 2

Number of Constants for System 2; Group nitrificat is 2

Constant	Const. #	K Value	Constant	Const. #	K Value
K12C	11	0.200E+00	K12T	12	0.108E+01

NO3 Constants for System 3

Number of Constants for System 3; Group denitrif is 2

Constant	Const. #	K Value	Constant	Const. #	K Value
K20C	21	0.100E+00	K20T	22	0.104E+01

No Constants Enter for System 4: PO4

PHYT Constants for System 5

Number of Constants for System 5; Group growth is 2

Constant	Const. #	K Value	Constant	Const. #	K Value
K1C	41	0.245E+01	K1T	42	0.105E+01

Number of Constants for System 5; Group light is 3

Constant	Const. #	K Value	Constant	Const. #	K Value
LGHTS	43	0.100E+01	CCHL	46	0.670E+02
IS1	47	0.525E+03		0	0.000E+00

Number of Constants for System 5; Group nutrients is 4

Constant	Const. #	K Value	Constant	Const. #	K Value
KMNG1	48	0.250E-01	KMPG1	49	0.500E-02
NCRB	58	0.180E+00	PCRB	57	0.250E-01

Number of Constants for System 5; Group death is 4

Constant	Const. #	K Value	Constant	Const. #	K Value
K1RC	50	0.600E+00	K1RT	51	0.107E+01
K1D	52	0.300E+00	KPZDC	55	0.000E+00

CBOD Constants for System 6

Number of Constants for System 6; Group deoxygent is 2

Constant	Const. #	K Value	Constant	Const. #	K Value
KDC	71	0.700E-01	KDT	72	0.105E+01

DO Constants for System 7

Number of Constants for System 7; Group ratio is 2

Constant	Const. #	K Value	Constant	Const. #	K Value
OCRB	81	0.267E+01	K2	82	0.450E+01

ON Constants for System 8

Number of Constants for System 8; Group mineralize is 3

Constant	Const. #	K Value	Constant	Const. #	K Value
K71C	91	0.500E+00	K71T	92	0.108E+01
FON	95	0.150E+00		0	0.000E+00

OP Constants for System 9

Number of Constants for System 9; Group mineralize is 3

Constant	Const. #	K Value	Constant	Const. #	K Value
K83C	100	0.750E+00	K83T	101	0.108E+01
FOP	104	0.500E+00		0	0.000E+00

No Constants Enter for System 10: CO2acy

1

Environmental Time Functions

Piecewise Linear Functions

	VAL(T)	T	VAL(T)	T	VAL(T)	T
TEMP1	0.25410E+02	0.00	0.25410E+02	0.01	0.25400E+02	0.02
	0.25370E+02	0.03	0.25360E+02	0.04	0.25360E+02	0.05
	0.25320E+02	0.06	0.25330E+02	0.07	0.25310E+02	0.08
	0.25290E+02	0.09	0.25270E+02	0.10	0.25250E+02	0.11
	0.25210E+02	0.13	0.25170E+02	0.14	0.25130E+02	0.15
	0.25080E+02	0.16	0.25010E+02	0.17	0.24940E+02	0.18
	0.24880E+02	0.19	0.24830E+02	0.20	0.24770E+02	0.21
	0.24690E+02	0.22	0.24610E+02	0.23	0.24520E+02	0.24
	0.24420E+02	0.25	0.24320E+02	0.26	0.24240E+02	0.27
	0.24170E+02	0.28	0.24110E+02	0.29	0.24070E+02	0.30
	0.24070E+02	0.31	0.24120E+02	0.32	0.24270E+02	0.33
	0.24450E+02	0.34	0.24630E+02	0.35	0.24820E+02	0.36
	0.24990E+02	0.38	0.25080E+02	0.39	0.25180E+02	0.40
	0.25300E+02	0.41	0.25400E+02	0.42	0.25550E+02	0.43
	0.25630E+02	0.44	0.25690E+02	0.45	0.25740E+02	0.46
	0.25830E+02	0.47	0.25900E+02	0.48	0.25960E+02	0.49
	0.26040E+02	0.50	0.26090E+02	0.51	0.26170E+02	0.52
	0.26240E+02	0.53	0.26250E+02	0.54	0.26260E+02	0.55
	0.26290E+02	0.56	0.26290E+02	0.57	0.26330E+02	0.58
	0.26370E+02	0.59	0.26340E+02	0.60	0.26440E+02	0.61
	0.26390E+02	0.63	0.26170E+02	0.64	0.26090E+02	0.65
	0.26350E+02	0.66	0.26510E+02	0.67	0.26460E+02	0.68
	0.26340E+02	0.69	0.26060E+02	0.70	0.25940E+02	0.71
	0.25930E+02	0.72	0.25930E+02	0.73	0.25980E+02	0.74
	0.25990E+02	0.75	0.25920E+02	0.76	0.25770E+02	0.77
	0.25680E+02	0.78	0.25740E+02	0.79	0.25810E+02	0.80
	0.25600E+02	0.81	0.25170E+02	0.82	0.25250E+02	0.83
	0.25460E+02	0.84	0.25640E+02	0.85	0.25670E+02	0.86
	0.25610E+02	0.88	0.25490E+02	0.89	0.25530E+02	0.90
	0.25530E+02	0.91	0.25610E+02	0.92	0.25600E+02	0.93
	0.25580E+02	0.94	0.25580E+02	0.95	0.25580E+02	0.96
	0.25570E+02	0.97	0.25560E+02	0.98	0.25580E+02	0.99
	0.25580E+02	1.00	0.25580E+02	1.01	0.25580E+02	1.02
	0.25550E+02	1.03	0.25540E+02	1.04	0.25530E+02	1.05
	0.25510E+02	1.06	0.25480E+02	1.07	0.25450E+02	1.08
	0.25420E+02	1.09	0.25420E+02	1.10	0.25380E+02	1.11
	0.25330E+02	1.13	0.25290E+02	1.14	0.25250E+02	1.15
	0.25210E+02	1.16	0.25190E+02	1.17	0.25210E+02	1.18
	0.25180E+02	1.19	0.25060E+02	1.20	0.24920E+02	1.21
	0.24810E+02	1.22	0.24720E+02	1.23	0.24670E+02	1.24
	0.24650E+02	1.25	0.24670E+02	1.26	0.24600E+02	1.27
	0.24450E+02	1.28	0.24300E+02	1.29	0.24200E+02	1.30
	0.24160E+02	1.31	0.24220E+02	1.32	0.24370E+02	1.33
	0.24520E+02	1.34	0.24660E+02	1.35	0.24770E+02	1.36
	0.24890E+02	1.38	0.24880E+02	1.39	0.24840E+02	1.40
	0.25020E+02	1.41	0.25310E+02	1.42	0.25540E+02	1.43
	0.25700E+02	1.44	0.25820E+02	1.45	0.25860E+02	1.46
	0.25830E+02	1.47	0.25880E+02	1.48	0.25920E+02	1.49
	0.25980E+02	1.50	0.26050E+02	1.51	0.26120E+02	1.52
	0.26200E+02	1.53	0.25950E+02	1.54	0.25950E+02	1.55
	0.26190E+02	1.56	0.26240E+02	1.57	0.26210E+02	1.58
	0.26050E+02	1.59	0.26110E+02	1.60	0.26200E+02	1.61
	0.26140E+02	1.63	0.25950E+02	1.64	0.25760E+02	1.65
	0.25740E+02	1.66	0.25790E+02	1.67	0.25860E+02	1.68
	0.25910E+02	1.69	0.25950E+02	1.70	0.25960E+02	1.71
	0.26000E+02	1.72	0.26010E+02	1.73	0.26000E+02	1.74
	0.25850E+02	1.75	0.25690E+02	1.76	0.25660E+02	1.77

	0.25660E+02	1.78	0.25620E+02	1.79	0.25570E+02	1.80
	0.25570E+02	1.81	0.25570E+02	1.82	0.25590E+02	1.83
	0.25450E+02	1.84	0.25140E+02	1.85	0.25340E+02	1.86
	0.25360E+02	1.88	0.25440E+02	1.89	0.25510E+02	1.90
	0.25500E+02	1.91	0.25490E+02	1.92	0.25510E+02	1.93
	0.25500E+02	1.94	0.25480E+02	1.95	0.25450E+02	1.96
	0.25410E+02	1.97	0.25390E+02	1.98	0.25390E+02	1.99
	0.25390E+02	2.00				
TEMP2	0.23440E+02	0.00	0.23570E+02	0.01	0.23660E+02	0.02
	0.23700E+02	0.03	0.23710E+02	0.04	0.23700E+02	0.05
	0.23650E+02	0.06	0.23620E+02	0.07	0.23540E+02	0.08
	0.23360E+02	0.09	0.23340E+02	0.10	0.23380E+02	0.11
	0.23430E+02	0.13	0.23440E+02	0.14	0.23330E+02	0.15
	0.23150E+02	0.16	0.22820E+02	0.17	0.22490E+02	0.18
	0.22230E+02	0.19	0.22100E+02	0.20	0.21960E+02	0.21
	0.21840E+02	0.22	0.21880E+02	0.23	0.21790E+02	0.24
	0.21600E+02	0.25	0.21370E+02	0.26	0.21170E+02	0.27
	0.21010E+02	0.28	0.20930E+02	0.29	0.20780E+02	0.30
	0.20730E+02	0.31	0.20830E+02	0.32	0.20990E+02	0.33
	0.21290E+02	0.34	0.21420E+02	0.35	0.21600E+02	0.36
	0.21850E+02	0.38	0.22270E+02	0.39	0.23040E+02	0.40
	0.23930E+02	0.41	0.24930E+02	0.42	0.25920E+02	0.43
	0.26780E+02	0.44	0.27460E+02	0.45	0.28200E+02	0.46
	0.28840E+02	0.47	0.29110E+02	0.48	0.29370E+02	0.49
	0.29440E+02	0.50	0.28640E+02	0.51	0.28810E+02	0.52
	0.28840E+02	0.53	0.28980E+02	0.54	0.28790E+02	0.55
	0.29230E+02	0.56	0.29460E+02	0.57	0.29500E+02	0.58
	0.29430E+02	0.59	0.29150E+02	0.60	0.28930E+02	0.61
	0.28870E+02	0.63	0.27750E+02	0.64	0.27280E+02	0.65
	0.26630E+02	0.66	0.26410E+02	0.67	0.26190E+02	0.68
	0.25950E+02	0.69	0.25650E+02	0.70	0.25390E+02	0.71
	0.25340E+02	0.72	0.25260E+02	0.73	0.24920E+02	0.74
	0.24730E+02	0.75	0.24640E+02	0.76	0.24490E+02	0.77
	0.24420E+02	0.78	0.24370E+02	0.79	0.24420E+02	0.80
	0.24470E+02	0.81	0.24350E+02	0.82	0.24140E+02	0.83
	0.23990E+02	0.84	0.23560E+02	0.85	0.23340E+02	0.86
	0.23080E+02	0.88	0.23010E+02	0.89	0.23100E+02	0.90
	0.23330E+02	0.91	0.23590E+02	0.92	0.23750E+02	0.93
	0.23820E+02	0.94	0.23850E+02	0.95	0.23750E+02	0.96
	0.23770E+02	0.97	0.23730E+02	0.98	0.23760E+02	0.99
	0.23810E+02	1.00	0.23850E+02	1.01	0.23820E+02	1.02
	0.23790E+02	1.03	0.23760E+02	1.04	0.23730E+02	1.05
	0.23700E+02	1.06	0.23630E+02	1.07	0.23530E+02	1.08
	0.23470E+02	1.09	0.23460E+02	1.10	0.23400E+02	1.11
	0.23320E+02	1.13	0.23230E+02	1.14	0.23110E+02	1.15
	0.23010E+02	1.16	0.22910E+02	1.17	0.22820E+02	1.18
	0.22690E+02	1.19	0.22570E+02	1.20	0.22420E+02	1.21
	0.22300E+02	1.22	0.22180E+02	1.23	0.22060E+02	1.24
	0.21920E+02	1.25	0.21800E+02	1.26	0.21680E+02	1.27
	0.21630E+02	1.28	0.21660E+02	1.29	0.21790E+02	1.30
	0.21990E+02	1.31	0.22250E+02	1.32	0.22350E+02	1.33
	0.22460E+02	1.34	0.22660E+02	1.35	0.22910E+02	1.36
	0.23290E+02	1.38	0.23670E+02	1.39	0.24110E+02	1.40
	0.24550E+02	1.41	0.25070E+02	1.42	0.25490E+02	1.43
	0.25890E+02	1.44	0.26340E+02	1.45	0.26680E+02	1.46
	0.27040E+02	1.47	0.27290E+02	1.48	0.27520E+02	1.49
	0.27660E+02	1.50	0.27900E+02	1.51	0.28090E+02	1.52
	0.28200E+02	1.53	0.28150E+02	1.54	0.28200E+02	1.55
	0.28280E+02	1.56	0.28180E+02	1.57	0.28260E+02	1.58
	0.27820E+02	1.59	0.26920E+02	1.60	0.25330E+02	1.61
	0.24250E+02	1.63	0.23610E+02	1.64	0.23290E+02	1.65
	0.23450E+02	1.66	0.23800E+02	1.67	0.24510E+02	1.68
	0.25270E+02	1.69	0.25840E+02	1.70	0.25710E+02	1.71
	0.25110E+02	1.72	0.24530E+02	1.73	0.24040E+02	1.74
	0.23890E+02	1.75	0.23820E+02	1.76	0.23950E+02	1.77

```
          0.23880E+02   1.78    0.23780E+02   1.79    0.23650E+02   1.80
          0.23530E+02   1.81    0.23360E+02   1.82    0.21910E+02   1.83
          0.22270E+02   1.84    0.22550E+02   1.85    0.22740E+02   1.86
          0.22850E+02   1.88    0.22890E+02   1.89    0.22850E+02   1.90
          0.22750E+02   1.91    0.22450E+02   1.92    0.22390E+02   1.93
          0.22370E+02   1.94    0.22330E+02   1.95    0.22230E+02   1.96
          0.22080E+02   1.97    0.21900E+02   1.98    0.21690E+02   1.99
          0.21470E+02   2.00
 ITOT     0.00000E+00   0.00    0.00000E+00   0.04    0.00000E+00   0.08
          0.00000E+00   0.12    0.00000E+00   0.16    0.44100E+01   0.20
          0.78510E+02   0.25    0.25494E+03   0.29    0.45343E+03   0.33
          0.62633E+03   0.37    0.79836E+03   0.41    0.92450E+03   0.45
          0.98449E+03   0.50    0.98802E+03   0.54    0.93597E+03   0.58
          0.82041E+03   0.62    0.66868E+03   0.66    0.48695E+03   0.70
          0.28582E+03   0.75    0.94390E+02   0.79    0.10590E+02   0.83
          0.00000E+00   0.87    0.00000E+00   0.91    0.00000E+00   0.95
          0.00000E+00   1.00    0.00000E+00   1.00
 F        0.10000E+01   0.00    0.10000E+01 365.00
1
```

Initial Conditions

```
                    Initial Conditions for System 1
   Particulate Fraction of System is Transported by Solids Field    3
                     Density of System =  0.100E+01

      1 0.2000E-01 0.1000E+01      2 0.2000E-01 0.1000E+01      3
0.2000E-01 0.1000E+01
      4 0.2000E-01 0.1000E+01      5 0.2000E-01 0.1000E+01      6
0.2000E-01 0.1000E+01
      7 0.2000E-01 0.1000E+01      8 0.2000E-01 0.1000E+01      9
0.2000E-01 0.1000E+01
     10 0.2000E-01 0.1000E+01     11 0.2000E-01 0.1000E+01     12
0.2000E-01 0.1000E+01
     13 0.2000E-01 0.1000E+01     14 0.2000E-01 0.1000E+01     15
0.2000E-01 0.1000E+01
     16 0.2000E-01 0.1000E+01     17 0.2000E-01 0.1000E+01     18
0.2000E-01 0.1000E+01
     19 0.2000E-01 0.1000E+01     20 0.2000E-01 0.1000E+01     21
0.2000E-01 0.1000E+01
     22 0.2000E-01 0.1000E+01     23 0.2000E-01 0.1000E+01     24
0.2000E-01 0.1000E+01

                    Initial Conditions for System 2
   Particulate Fraction of System is Transported by Solids Field    3
                     Density of System =  0.100E+01

      1 0.9000E-01 0.1000E+01      2 0.9000E-01 0.1000E+01      3
0.9000E-01 0.1000E+01
      4 0.9000E-01 0.1000E+01      5 0.9000E-01 0.1000E+01      6
0.9000E-01 0.1000E+01
      7 0.9000E-01 0.1000E+01      8 0.9000E-01 0.1000E+01      9
0.9000E-01 0.1000E+01
     10 0.9000E-01 0.1000E+01     11 0.9000E-01 0.1000E+01     12
0.9000E-01 0.1000E+01
     13 0.9000E-01 0.1000E+01     14 0.9000E-01 0.1000E+01     15
0.9000E-01 0.1000E+01
     16 0.9000E-01 0.1000E+01     17 0.9000E-01 0.1000E+01     18
0.9000E-01 0.1000E+01
```

```
     19 0.9000E-01 0.1000E+01      20 0.9000E-01 0.1000E+01      21
0.9000E-01 0.1000E+01
     22 0.9000E-01 0.1000E+01      23 0.9000E-01 0.1000E+01      24
0.9000E-01 0.1000E+01

                    Initial Conditions for System 3
    Particulate Fraction of System is Transported by Solids Field    3
                    Density of System =  0.100E+01

      1 0.1010E+01 0.1000E+01       2 0.1010E+01 0.1000E+01       3
0.1010E+01 0.1000E+01
      4 0.1010E+01 0.1000E+01       5 0.1010E+01 0.1000E+01       6
0.1010E+01 0.1000E+01
      7 0.1010E+01 0.1000E+01       8 0.1010E+01 0.1000E+01       9
0.1010E+01 0.1000E+01
     10 0.1010E+01 0.1000E+01      11 0.1010E+01 0.1000E+01      12
0.1010E+01 0.1000E+01
     13 0.1010E+01 0.1000E+01      14 0.1010E+01 0.1000E+01      15
0.1010E+01 0.1000E+01
     16 0.1010E+01 0.1000E+01      17 0.1010E+01 0.1000E+01      18
0.1010E+01 0.1000E+01
     19 0.1010E+01 0.1000E+01      20 0.1010E+01 0.1000E+01      21
0.1010E+01 0.1000E+01
     22 0.1010E+01 0.1000E+01      23 0.1010E+01 0.1000E+01      24
0.1010E+01 0.1000E+01

                    Initial Conditions for System 4
    Particulate Fraction of System is Transported by Solids Field    4
                    Density of System =  0.100E+01

      1 0.1000E-23 0.0000E+00       2 0.1000E+04 0.0000E+00       3
0.1000E-23 0.0000E+00
      4 0.1000E+04 0.0000E+00       5 0.1000E-23 0.0000E+00       6
0.1000E+04 0.0000E+00
      7 0.1000E-23 0.0000E+00       8 0.9750E+03 0.0000E+00       9
0.1000E-23 0.0000E+00
     10 0.9500E+03 0.0000E+00      11 0.1000E-23 0.0000E+00      12
0.9250E+03 0.0000E+00
     13 0.1000E-23 0.0000E+00      14 0.9000E+03 0.0000E+00      15
0.1000E-23 0.0000E+00
     16 0.9000E+03 0.0000E+00      17 0.1000E-23 0.0000E+00      18
0.9000E+03 0.0000E+00
     19 0.1000E-23 0.0000E+00      20 0.9000E+03 0.0000E+00      21
0.1000E-23 0.0000E+00
     22 0.9000E+03 0.0000E+00      23 0.1000E-23 0.0000E+00      24
0.9000E+03 0.0000E+00

                    Initial Conditions for System 5
    Particulate Fraction of System is Transported by Solids Field    3
                    Density of System =  0.100E+01

      1 0.5000E+01 0.1000E+01       2 0.5000E+01 0.1000E+01       3
0.5000E+01 0.1000E+01
      4 0.5000E+01 0.1000E+01       5 0.5000E+01 0.1000E+01       6
0.5000E+01 0.1000E+01
      7 0.5000E+01 0.1000E+01       8 0.5000E+01 0.1000E+01       9
0.5000E+01 0.1000E+01
     10 0.5000E+01 0.1000E+01      11 0.5000E+01 0.1000E+01      12
0.5000E+01 0.1000E+01
     13 0.5000E+01 0.1000E+01      14 0.5000E+01 0.1000E+01      15
0.5000E+01 0.1000E+01
     16 0.5000E+01 0.1000E+01      17 0.5000E+01 0.1000E+01      18
```

```
0.5000E+01 0.1000E+01
      19 0.5000E+01 0.1000E+01      20 0.5000E+01 0.1000E+01      21
0.5000E+01 0.1000E+01
      22 0.5000E+01 0.1000E+01      23 0.5000E+01 0.1000E+01      24
0.5000E+01 0.1000E+01

                    Initial Conditions for System 6
    Particulate Fraction of System is Transported by Solids Field    3
                      Density of System =  0.100E+01

       1 0.7990E+01 0.1000E+01       2 0.7590E+01 0.1000E+01       3
0.7590E+01 0.1000E+01
       4 0.7990E+01 0.1000E+01       5 0.7590E+01 0.1000E+01       6
0.7590E+01 0.1000E+01
       7 0.7990E+01 0.1000E+01       8 0.7590E+01 0.1000E+01       9
0.7590E+01 0.1000E+01
      10 0.7990E+01 0.1000E+01      11 0.7590E+01 0.1000E+01      12
0.7590E+01 0.1000E+01
      13 0.7990E+01 0.1000E+01      14 0.7590E+01 0.1000E+01      15
0.7590E+01 0.1000E+01
      16 0.7990E+01 0.1000E+01      17 0.7590E+01 0.1000E+01      18
0.7590E+01 0.1000E+01
      19 0.7990E+01 0.1000E+01      20 0.7590E+01 0.1000E+01      21
0.7590E+01 0.1000E+01
      22 0.7990E+01 0.1000E+01      23 0.7590E+01 0.1000E+01      24
0.7590E+01 0.1000E+01

                    Initial Conditions for System 7
    Particulate Fraction of System is Transported by Solids Field    3
                      Density of System =  0.100E+01

       1 0.1020E+01 0.7000E+00       2 0.1020E+01 0.7000E+00       3
0.1020E+01 0.7000E+00
       4 0.1020E+01 0.7000E+00       5 0.1020E+01 0.7000E+00       6
0.1020E+01 0.7000E+00
       7 0.1020E+01 0.7000E+00       8 0.1020E+01 0.7000E+00       9
0.1020E+01 0.7000E+00
      10 0.1020E+01 0.7000E+00      11 0.1020E+01 0.7000E+00      12
0.1020E+01 0.7000E+00
      13 0.1020E+01 0.7000E+00      14 0.1020E+01 0.7000E+00      15
0.1020E+01 0.7000E+00
      16 0.1020E+01 0.7000E+00      17 0.1020E+01 0.7000E+00      18
0.1020E+01 0.7000E+00
      19 0.1020E+01 0.7000E+00      20 0.1020E+01 0.7000E+00      21
0.1020E+01 0.7000E+00
      22 0.1020E+01 0.7000E+00      23 0.1020E+01 0.7000E+00      24
0.1020E+01 0.7000E+00

                    Initial Conditions for System 8
    Particulate Fraction of System is Transported by Solids Field    3
                      Density of System =  0.100E+01

       1 0.1000E+00 0.1000E+01       2 0.1000E+00 0.1000E+01       3
0.1000E+00 0.1000E+01
       4 0.1000E+00 0.1000E+01       5 0.1000E+00 0.1000E+01       6
0.1000E+00 0.1000E+01
       7 0.1000E+00 0.1000E+01       8 0.1000E+00 0.1000E+01       9
0.1000E+00 0.1000E+01
      10 0.1000E+00 0.1000E+01      11 0.1000E+00 0.1000E+01      12
0.1000E+00 0.1000E+01
      13 0.1000E+00 0.1000E+01      14 0.1000E+00 0.1000E+01      15
0.1000E+00 0.1000E+01
```

```
      16 0.1000E+00 0.1000E+01      17 0.1000E+00 0.1000E+01      18
0.1000E+00 0.1000E+01
      19 0.1000E+00 0.1000E+01      20 0.1000E+00 0.1000E+01      21
0.1000E+00 0.1000E+01
      22 0.1000E+00 0.1000E+01      23 0.1000E+00 0.1000E+01      24
0.1000E+00 0.1000E+01

                    Initial Conditions for System 9
    Particulate Fraction of System is Transported by Solids Field    3
                      Density of System =  0.100E+01

       1 0.4000E+01 0.1000E+01       2 0.4000E+01 0.1000E+01       3
0.4000E+01 0.1000E+01
       4 0.4000E+01 0.1000E+01       5 0.4000E+01 0.1000E+01       6
0.4000E+01 0.1000E+01
       7 0.4000E+01 0.1000E+01       8 0.4000E+01 0.1000E+01       9
0.4000E+01 0.1000E+01
      10 0.4000E+01 0.1000E+01      11 0.4000E+01 0.1000E+01      12
0.4000E+01 0.1000E+01
      13 0.6000E+01 0.1000E+01      14 0.6000E+01 0.1000E+01      15
0.6000E+01 0.1000E+01
      16 0.6000E+01 0.1000E+01      17 0.6000E+01 0.1000E+01      18
0.6000E+01 0.1000E+01
      19 0.6000E+01 0.1000E+01      20 0.6000E+01 0.1000E+01      21
0.6000E+01 0.1000E+01
      22 0.6000E+01 0.1000E+01      23 0.6000E+01 0.1000E+01      24
0.6000E+01 0.1000E+01

                Stability Criteria for Numerical Integration

                System   Maximum Concentration
                  1              10.00
                  2              10.00
                  3               5.00
                  4             500.00
                  5             100.00
                  6              20.00
                  7              10.00
                  8               5.00
                  9             5000.00

Completed
```

```
# WASP5pH EDF dump file
#
# Seg    = model segment number
# Time   = simulation time in days
# Tchlax = total chlorophyll-a [periphyton] (ug/L)
# DO     = dissolved oxygen (mg/L)
# CO2acy = carbon dioxide acidity (mg/L)
# pH     = pH (standard units)
# CO2sat = saturated CO2 concentration (mg/L)
# Nlim   = Michaelis Nitrogen limitation factor
# Plim   = Michaelis Phosphorus limitation factor
#
# Seg    Time Tchlax     DO CO2acy     pH  CO2sat    Nlim    Plim
   2    0.00 1000.0   7.59   4.00   8.02    0.50    0.81    1.00
  14    0.00  900.0   7.59   6.00   7.86    0.53    0.81    1.00
   2    0.04  954.6   4.92  13.69   7.49    0.50    0.96    0.99
  14    0.04  862.5   7.10   4.77   7.96    0.53    0.85    1.00
   2    0.08  909.3   4.63  14.71   7.46    0.50    0.96    0.99
  14    0.08  824.7   6.74   4.32   8.01    0.53    0.87    0.99
   2    0.12  868.3   4.62  14.75   7.46    0.50    0.96    0.99
  14    0.12  790.6   6.29   5.05   7.94    0.53    0.91    0.99
   2    0.16  829.3   4.65  14.70   7.46    0.51    0.96    0.99
  14    0.16  758.1   5.83   6.27   7.85    0.54    0.94    0.99
   2    0.20  795.1   4.70  14.61   7.47    0.51    0.96    0.99
  14    0.20  730.2   5.57   7.16   7.80    0.55    0.95    0.99
   2    0.24  772.8   5.08  14.03   7.49    0.51    0.96    0.99
  14    0.24  711.9   5.66   7.34   7.79    0.55    0.96    0.99
   2    0.28  782.1   5.68  13.12   7.52    0.52    0.96    0.99
  14    0.28  718.3   6.06   6.89   7.82    0.57    0.96    0.99
   2    0.32  820.7   6.06  12.55   7.54    0.52    0.96    0.99
  14    0.32  747.3   6.44   6.41   7.86    0.57    0.96    0.99
   2    0.36  872.6   6.22  12.33   7.54    0.51    0.96    0.99
  14    0.36  786.8   6.72   6.01   7.88    0.56    0.96    0.99
   2    0.40  927.6   6.23  12.32   7.54    0.50    0.96    0.99
  14    0.40  829.9   6.92   5.70   7.89    0.53    0.96    0.99
   2    0.44  979.4   6.17  12.43   7.53    0.50    0.96    0.99
  14    0.44  877.4   7.06   5.32   7.89    0.48    0.95    0.99
   2    0.48 1026.9   6.11  12.52   7.52    0.50    0.96    0.99
  14    0.48  928.8   7.12   5.13   7.89    0.46    0.95    0.99
   2    0.52 1072.9   6.12  12.52   7.52    0.49    0.96    0.99
  14    0.52  981.2   7.10   5.12   7.89    0.46    0.95    0.99
   2    0.56 1123.5   6.19  12.42   7.52    0.49    0.96    0.99
  14    0.56 1037.9   7.17   5.01   7.90    0.45    0.95    0.99
   2    0.60 1178.2   6.35  12.21   7.53    0.49    0.96    0.99
  14    0.60 1100.9   7.32   4.78   7.92    0.45    0.95    0.99
   2    0.64 1243.9   6.55  11.92   7.54    0.49    0.95    0.99
  14    0.64 1172.9   7.47   4.59   7.95    0.48    0.95    0.99
   2    0.68 1321.6   6.77  11.61   7.55    0.49    0.95    0.99
  14    0.68 1248.7   7.62   4.43   7.97    0.49    0.95    0.99
   2    0.72 1403.4   6.74  11.69   7.55    0.49    0.95    0.99
  14    0.72 1324.1   7.64   4.45   7.98    0.50    0.95    0.99
   2    0.76 1467.8   6.25  12.45   7.53    0.50    0.96    0.99
  14    0.76 1380.8   7.28   5.04   7.93    0.51    0.95    0.99
   2    0.80 1475.5   5.14  14.15   7.47    0.50    0.96    0.99
  14    0.80 1386.4   6.41   6.40   7.83    0.52    0.96    0.99
   2    0.84 1428.7   4.44  15.22   7.44    0.50    0.96    0.99
  14    0.84 1344.4   5.69   7.52   7.76    0.52    0.96    0.99
   2    0.88 1365.2   4.33  15.36   7.44    0.50    0.96    0.99
  14    0.88 1290.4   5.37   8.13   7.73    0.54    0.96    0.99
   2    0.92 1302.8   4.36  15.30   7.44    0.50    0.96    0.99
  14    0.92 1237.4   5.13   8.54   7.71    0.53    0.96    0.99
   2    0.96 1243.1   4.39  15.23   7.44    0.50    0.96    0.99
  14    0.96 1185.4   4.98   8.70   7.70    0.52    0.96    0.99
   2    1.00 1186.2   4.42  15.16   7.44    0.50    0.96    0.99
  14    1.00 1135.6   4.92   8.83   7.69    0.52    0.97    0.99
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2	1.04	1131.9	4.46	15.09	7.45	0.50	0.96	0.99
14	1.04	1087.8	4.91	8.77	7.70	0.52	0.97	0.99
2	1.08	1080.2	4.49	15.02	7.45	0.50	0.96	0.99
14	1.08	1042.3	4.94	8.76	7.70	0.53	0.97	0.99
2	1.12	1031.1	4.52	14.96	7.45	0.50	0.96	0.99
14	1.12	999.2	4.98	8.70	7.70	0.53	0.97	0.99
2	1.16	984.6	4.56	14.89	7.45	0.50	0.96	0.99
14	1.16	958.4	5.02	8.61	7.71	0.54	0.97	0.99
2	1.20	941.5	4.62	14.79	7.46	0.51	0.96	0.99
14	1.20	920.9	5.10	8.50	7.72	0.54	0.96	0.99
2	1.24	916.0	5.08	14.07	7.48	0.51	0.96	0.99
14	1.24	898.3	5.47	7.93	7.75	0.55	0.96	0.99
2	1.28	928.6	5.80	12.99	7.52	0.52	0.96	0.99
14	1.28	907.8	6.08	7.00	7.81	0.56	0.96	0.99
2	1.32	974.3	6.22	12.36	7.54	0.52	0.96	0.99
14	1.32	946.1	6.60	6.23	7.86	0.55	0.96	0.99
2	1.36	1034.2	6.39	12.12	7.55	0.51	0.96	0.99
14	1.36	998.1	6.95	5.71	7.89	0.54	0.96	0.99
2	1.40	1096.3	6.37	12.16	7.54	0.51	0.96	0.99
14	1.40	1054.5	7.18	5.31	7.91	0.52	0.95	0.99
2	1.44	1154.4	6.31	12.26	7.53	0.50	0.96	0.99
14	1.44	1111.5	7.28	5.05	7.92	0.49	0.95	0.99
2	1.48	1207.9	6.25	12.37	7.53	0.50	0.96	0.99
14	1.48	1167.8	7.31	4.96	7.91	0.48	0.95	0.99
2	1.52	1259.2	6.25	12.38	7.53	0.49	0.96	0.99
14	1.52	1224.9	7.33	4.89	7.91	0.47	0.95	0.99
2	1.56	1312.5	6.32	12.29	7.53	0.49	0.96	0.99
14	1.56	1285.7	7.40	4.79	7.92	0.47	0.95	0.99
2	1.60	1373.0	6.49	12.06	7.54	0.49	0.95	0.99
14	1.60	1353.5	7.51	4.63	7.95	0.48	0.95	0.99
2	1.64	1445.0	6.71	11.75	7.55	0.50	0.95	0.99
14	1.64	1421.1	7.55	4.68	7.97	0.53	0.95	0.99
2	1.68	1528.6	6.92	11.45	7.56	0.50	0.95	0.99
14	1.68	1494.7	7.83	4.35	7.99	0.51	0.95	0.99
2	1.72	1618.2	6.93	11.48	7.56	0.49	0.95	0.99
14	1.72	1579.2	7.90	4.21	8.01	0.51	0.95	0.99
2	1.76	1688.5	6.36	12.36	7.53	0.50	0.96	0.99
14	1.76	1639.8	7.46	4.91	7.95	0.52	0.95	0.99
2	1.80	1695.1	5.12	14.25	7.47	0.50	0.96	0.99
14	1.80	1643.8	6.49	6.47	7.83	0.53	0.96	0.99
2	1.84	1640.3	4.32	15.46	7.44	0.50	0.96	0.99
14	1.84	1596.4	5.73	7.72	7.76	0.55	0.96	0.99
2	1.88	1568.3	4.23	15.59	7.43	0.50	0.96	0.99
14	1.88	1534.6	5.31	8.39	7.72	0.54	0.96	0.99
2	1.92	1496.8	4.25	15.53	7.43	0.50	0.96	0.99
14	1.92	1473.2	5.07	8.77	7.71	0.54	0.96	0.99
2	1.96	1428.6	4.29	15.44	7.44	0.50	0.96	0.99
14	1.96	1415.3	4.92	8.98	7.70	0.55	0.96	0.99
2	2.00	1363.7	4.33	15.36	7.44	0.50	0.96	0.99
14	2.00	1360.9	4.89	9.03	7.69	0.53	0.97	0.99
2	2.04	1301.8	4.37	15.28	7.44	0.50	0.96	0.99
14	2.04	1304.1	4.79	9.14	7.68	0.53	0.97	0.99
2	2.08	1242.9	4.41	15.21	7.44	0.50	0.96	0.99
14	2.08	1249.6	4.81	9.08	7.68	0.53	0.97	0.99
2	2.12	1186.8	4.44	15.14	7.45	0.50	0.96	0.99
14	2.12	1198.0	4.85	8.99	7.69	0.53	0.97	0.99
2	2.16	1133.6	4.48	15.06	7.45	0.51	0.96	0.99
14	2.16	1148.8	4.90	8.89	7.70	0.54	0.97	0.99
2	2.20	1084.5	4.55	14.94	7.46	0.51	0.96	0.99
14	2.20	1104.4	5.01	8.73	7.71	0.55	0.97	0.99
2	2.24	1055.1	5.07	14.14	7.48	0.51	0.96	0.99
14	2.24	1077.5	5.43	8.08	7.75	0.55	0.96	0.99
2	2.28	1068.2	5.87	12.92	7.52	0.52	0.96	0.99
14	2.28	1087.3	6.13	7.03	7.81	0.57	0.96	0.99
2	2.32	1118.6	6.35	12.21	7.55	0.52	0.96	0.99

14	2.32	1128.6	6.69	6.21	7.87	0.57	0.96	0.99
2	2.36	1185.0	6.53	11.95	7.55	0.51	0.95	0.99
14	2.36	1183.7	7.08	5.63	7.91	0.56	0.96	0.99
2	2.40	1250.9	6.53	11.96	7.55	0.50	0.95	0.99
14	2.40	1240.1	7.32	5.25	7.92	0.53	0.95	0.99
2	2.44	1315.6	6.45	12.11	7.54	0.50	0.96	0.99
14	2.44	1304.3	7.52	4.80	7.93	0.48	0.95	0.99
2	2.48	1374.3	6.37	12.24	7.53	0.50	0.96	0.99
14	2.48	1372.8	7.59	4.60	7.93	0.46	0.95	0.99
2	2.52	1430.4	6.37	12.26	7.53	0.49	0.96	0.99
14	2.52	1441.6	7.56	4.61	7.94	0.46	0.95	0.99
2	2.56	1488.7	6.45	12.16	7.53	0.49	0.96	0.99
14	2.56	1511.6	7.63	4.50	7.94	0.46	0.95	0.99
2	2.60	1554.5	6.63	11.91	7.54	0.49	0.95	0.99
14	2.60	1592.3	7.82	4.22	7.97	0.45	0.95	0.99
2	2.64	1633.2	6.87	11.56	7.56	0.49	0.95	0.99
14	2.64	1684.5	8.00	3.99	8.01	0.47	0.95	0.99
2	2.68	1726.2	7.14	11.19	7.57	0.49	0.95	0.99
14	2.68	1781.2	8.17	3.80	8.04	0.49	0.95	0.99
2	2.72	1824.3	7.10	11.28	7.57	0.49	0.95	0.99
14	2.72	1877.0	8.19	3.84	8.04	0.50	0.95	0.99
2	2.76	1901.8	6.52	12.18	7.54	0.49	0.95	0.99
14	2.76	1948.9	7.72	4.60	7.97	0.51	0.95	0.99
2	2.80	1911.2	5.15	14.28	7.47	0.50	0.96	0.99
14	2.80	1954.8	6.56	6.40	7.83	0.52	0.96	0.99
2	2.84	1851.8	4.25	15.65	7.43	0.50	0.96	0.99
14	2.84	1896.1	5.59	7.89	7.74	0.52	0.96	0.99
2	2.88	1769.7	4.10	15.85	7.42	0.50	0.97	0.99
14	2.88	1819.9	5.19	8.63	7.71	0.54	0.96	0.99
2	2.92	1688.8	4.13	15.77	7.43	0.50	0.96	0.99
14	2.92	1745.4	4.88	9.13	7.68	0.53	0.96	0.99
2	2.96	1611.4	4.18	15.68	7.43	0.50	0.96	0.99
14	2.96	1672.1	4.70	9.34	7.67	0.52	0.97	0.99
2	3.00	1537.7	4.22	15.59	7.43	0.50	0.96	0.99
14	3.00	1601.9	4.62	9.49	7.66	0.52	0.97	0.99
2	3.04	1467.3	4.26	15.50	7.43	0.50	0.96	0.99
14	3.04	1534.4	4.61	9.42	7.66	0.52	0.97	0.99
2	3.08	1400.3	4.31	15.41	7.44	0.50	0.96	0.99
14	3.08	1470.2	4.65	9.39	7.67	0.53	0.97	0.99
2	3.12	1336.7	4.35	15.33	7.44	0.50	0.96	0.99
14	3.12	1409.3	4.70	9.30	7.67	0.53	0.97	0.99
2	3.16	1276.3	4.39	15.24	7.44	0.50	0.96	0.99
14	3.16	1351.7	4.76	9.19	7.68	0.54	0.97	0.99
2	3.20	1220.2	4.47	15.11	7.45	0.51	0.96	0.99
14	3.20	1298.6	4.86	9.03	7.69	0.54	0.97	0.99
2	3.24	1184.8	5.02	14.25	7.48	0.51	0.96	0.99
14	3.24	1264.4	5.33	8.29	7.73	0.55	0.96	0.99
2	3.28	1196.3	5.91	12.90	7.52	0.51	0.96	0.99
14	3.28	1272.7	6.14	7.07	7.81	0.56	0.96	0.99
2	3.32	1250.1	6.45	12.09	7.55	0.52	0.96	0.99
14	3.32	1320.6	6.82	6.05	7.87	0.55	0.96	0.99
2	3.36	1322.1	6.66	11.80	7.56	0.51	0.95	0.99
14	3.36	1387.1	7.27	5.38	7.92	0.54	0.96	0.99
2	3.40	1396.8	6.64	11.85	7.56	0.51	0.95	0.99
14	3.40	1458.9	7.55	4.91	7.94	0.52	0.95	0.99
2	3.44	1466.1	6.56	11.99	7.54	0.50	0.95	0.99
14	3.44	1530.6	7.68	4.62	7.96	0.49	0.95	0.99
2	3.48	1529.3	6.47	12.14	7.54	0.50	0.96	0.99
14	3.48	1600.5	7.71	4.53	7.95	0.48	0.95	0.99
2	3.52	1589.1	6.46	12.17	7.53	0.49	0.96	0.99
14	3.52	1670.2	7.73	4.48	7.95	0.47	0.95	0.99
2	3.56	1650.6	6.54	12.08	7.54	0.49	0.95	0.99
14	3.56	1743.6	7.79	4.37	7.96	0.47	0.95	0.99
2	3.60	1720.0	6.72	11.82	7.55	0.49	0.95	0.99
14	3.60	1825.2	7.93	4.19	7.99	0.48	0.95	0.99

2	3.64	1802.6	6.98	11.46	7.56	0.50	0.95	0.99
14	3.64	1906.9	7.95	4.25	8.01	0.53	0.95	0.99
2	3.68	1898.4	7.22	11.12	7.58	0.50	0.95	0.99
14	3.68	1994.6	8.27	3.89	8.04	0.51	0.95	0.99
2	3.72	2001.3	7.23	11.14	7.57	0.49	0.95	0.99
14	3.72	2095.6	8.37	3.71	8.06	0.51	0.94	0.99
2	3.76	2082.6	6.59	12.13	7.54	0.50	0.95	0.99
14	3.76	2168.3	7.83	4.57	7.98	0.52	0.95	0.99
2	3.80	2090.6	5.13	14.37	7.47	0.50	0.96	0.99
14	3.80	2171.8	6.62	6.47	7.83	0.53	0.96	0.99
2	3.84	2024.4	4.14	15.86	7.42	0.50	0.97	0.99
14	3.84	2109.9	5.66	8.03	7.75	0.55	0.96	0.99
2	3.88	1935.8	4.02	16.03	7.42	0.50	0.97	0.99
14	3.88	2028.5	5.14	8.86	7.70	0.54	0.96	0.99
2	3.92	1847.5	4.05	15.95	7.42	0.50	0.97	0.99
14	3.92	1947.2	4.85	9.30	7.68	0.54	0.96	0.99
2	3.96	1763.3	4.10	15.85	7.43	0.50	0.97	0.99
14	3.96	1870.7	4.68	9.55	7.67	0.55	0.97	0.99
2	4.00	1683.2	4.15	15.75	7.43	0.50	0.96	0.99
14	4.00	1798.7	4.63	9.61	7.66	0.53	0.97	0.99

Mass Balance for Constituent 1

Initial Mass is 0.1459E+00 KG

Time	Accumulated Mass In (KG) ***** Advection	Dispersion	Resident Loading Mass (KG)	Excess Advection Mass (KG)	Accumulated Mass Out (KG) ********** Dispersion	Buried	Kinetic
0.000	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.1459E+00
0.040	0.3812E+00	0.0000E+00	0.0000E+00	0.2153E-01	0.0000E+00	0.0000E+00	0.6186E-01
0.082	0.7815E+00	0.0000E+00	0.0000E+00	0.5167E-01	0.0000E+00	0.0000E+00	0.1185E+00
0.122	0.1163E+01	0.0000E+00	0.0000E+00	0.8746E-01	0.0000E+00	0.0000E+00	0.1646E+00
0.162	0.1544E+01	0.0000E+00	0.0000E+00	0.1325E+00	0.0000E+00	0.0000E+00	0.2037E+00
0.200	0.1906E+01	0.0000E+00	0.0000E+00	0.1931E+00	0.0000E+00	0.0000E+00	0.2333E+00
0.240	0.2287E+01	0.0000E+00	0.0000E+00	0.2936E+00	0.0000E+00	0.0000E+00	0.2428E+00
0.280	0.2669E+01	0.0000E+00	0.0000E+00	0.4480E+00	0.0000E+00	0.0000E+00	0.2069E+00
0.320	0.3050E+01	0.0000E+00	0.0000E+00	0.6602E+00	0.0000E+00	0.0000E+00	0.1295E+00
0.360	0.3431E+01	0.0000E+00	0.0000E+00	0.9212E+00	0.0000E+00	0.0000E+00	0.3220E-01
0.400	0.3812E+01	0.0000E+00	0.0000E+00	0.1215E+01	0.0000E+00	0.0000E+00	-0.7236E-01
0.440	0.4193E+01	0.0000E+00	0.0000E+00	0.1524E+01	0.0000E+00	0.0000E+00	-0.1813E+00
0.480	0.4575E+01	0.0000E+00	0.0000E+00	0.1835E+01	0.0000E+00	0.0000E+00	-0.2938E+00
0.520	0.4956E+01	0.0000E+00	0.0000E+00	0.2138E+01	0.0000E+00	0.0000E+00	-0.4067E+00
0.562	0.5356E+01	0.0000E+00	0.0000E+00	0.2445E+01	0.0000E+00	0.0000E+00	-0.5278E+00
0.602	0.5737E+01	0.0000E+00	0.0000E+00	0.2728E+01	0.0000E+00	0.0000E+00	-0.6551E+00
0.642	0.6119E+01	0.0000E+00	0.0000E+00	0.3001E+01	0.0000E+00	0.0000E+00	-0.7957E+00
0.682	0.6500E+01	0.0000E+00	0.0000E+00	0.3267E+01	0.0000E+00	0.0000E+00	-0.9451E+00
0.722	0.6881E+01	0.0000E+00	0.0000E+00	0.3527E+01	0.0000E+00	0.0000E+00	-0.1095E+01
0.762	0.7262E+01	0.0000E+00	0.0000E+00	0.3785E+01	0.0000E+00	0.0000E+00	-0.1216E+01
0.802	0.7643E+01	0.0000E+00	0.0000E+00	0.4046E+01	0.0000E+00	0.0000E+00	-0.1256E+01
0.842	0.8025E+01	0.0000E+00	0.0000E+00	0.4319E+01	0.0000E+00	0.0000E+00	-0.1218E+01
0.882	0.8406E+01	0.0000E+00	0.0000E+00	0.4612E+01	0.0000E+00	0.0000E+00	-0.1157E+01
0.922	0.8787E+01	0.0000E+00	0.0000E+00	0.4925E+01	0.0000E+00	0.0000E+00	-0.1100E+01
0.962	0.9168E+01	0.0000E+00	0.0000E+00	0.5259E+01	0.0000E+00	0.0000E+00	-0.1046E+01
1.002	0.9550E+01	0.0000E+00	0.0000E+00	0.5614E+01	0.0000E+00	0.0000E+00	-0.9979E+00
1.042	0.9931E+01	0.0000E+00	0.0000E+00	0.5989E+01			

0.0000E+00	0.0000E+00	-0.9535E+00	0.3134E+01	-0.5687E-06
1.082	0.1031E+02	0.0000E+00	0.0000E+00	0.6382E+01
0.0000E+00	0.0000E+00	-0.9130E+00	0.3163E+01	-0.1767E-06
1.122	0.1069E+02	0.0000E+00	0.0000E+00	0.6787E+01
0.0000E+00	0.0000E+00	-0.8761E+00	0.3176E+01	-0.2385E-06
1.162	0.1107E+02	0.0000E+00	0.0000E+00	0.7201E+01
0.0000E+00	0.0000E+00	-0.8423E+00	0.3178E+01	-0.4056E-06
1.202	0.1146E+02	0.0000E+00	0.0000E+00	0.7618E+01
0.0000E+00	0.0000E+00	-0.8129E+00	0.3170E+01	0.1284E-07
1.242	0.1184E+02	0.0000E+00	0.0000E+00	0.8036E+01
0.0000E+00	0.0000E+00	-0.8084E+00	0.3138E+01	-0.6982E-07
1.282	0.1222E+02	0.0000E+00	0.0000E+00	0.8449E+01
0.0000E+00	0.0000E+00	-0.8584E+00	0.3057E+01	0.1672E-06
1.322	0.1260E+02	0.0000E+00	0.0000E+00	0.8849E+01
0.0000E+00	0.0000E+00	-0.9557E+00	0.2941E+01	-0.7198E-07
1.362	0.1298E+02	0.0000E+00	0.0000E+00	0.9231E+01
0.0000E+00	0.0000E+00	-0.1074E+01	0.2821E+01	-0.2884E-06
1.402	0.1336E+02	0.0000E+00	0.0000E+00	0.9594E+01
0.0000E+00	0.0000E+00	-0.1198E+01	0.2715E+01	-0.4465E-06
1.442	0.1374E+02	0.0000E+00	0.0000E+00	0.9937E+01
0.0000E+00	0.0000E+00	-0.1321E+01	0.2631E+01	-0.2493E-06
1.482	0.1412E+02	0.0000E+00	0.0000E+00	0.1026E+02
0.0000E+00	0.0000E+00	-0.1440E+01	0.2569E+01	0.5247E-07
1.522	0.1451E+02	0.0000E+00	0.0000E+00	0.1057E+02
0.0000E+00	0.0000E+00	-0.1559E+01	0.2526E+01	0.1086E-07
1.562	0.1489E+02	0.0000E+00	0.0000E+00	0.1086E+02
0.0000E+00	0.0000E+00	-0.1682E+01	0.2495E+01	0.2869E-06
1.602	0.1527E+02	0.0000E+00	0.0000E+00	0.1113E+02
0.0000E+00	0.0000E+00	-0.1816E+01	0.2466E+01	0.4853E-07
1.642	0.1565E+02	0.0000E+00	0.0000E+00	0.1140E+02
0.0000E+00	0.0000E+00	-0.1953E+01	0.2442E+01	-0.4846E-07
1.682	0.1603E+02	0.0000E+00	0.0000E+00	0.1166E+02
0.0000E+00	0.0000E+00	-0.2102E+01	0.2412E+01	0.2453E-06
1.722	0.1641E+02	0.0000E+00	0.0000E+00	0.1192E+02
0.0000E+00	0.0000E+00	-0.2264E+01	0.2374E+01	0.2969E-06
1.762	0.1679E+02	0.0000E+00	0.0000E+00	0.1217E+02
0.0000E+00	0.0000E+00	-0.2392E+01	0.2374E+01	0.2854E-06
1.802	0.1717E+02	0.0000E+00	0.0000E+00	0.1243E+02
0.0000E+00	0.0000E+00	-0.2429E+01	0.2462E+01	0.2628E-06
1.842	0.1756E+02	0.0000E+00	0.0000E+00	0.1270E+02
0.0000E+00	0.0000E+00	-0.2379E+01	0.2624E+01	-0.1289E-06
1.882	0.1794E+02	0.0000E+00	0.0000E+00	0.1299E+02
0.0000E+00	0.0000E+00	-0.2306E+01	0.2789E+01	0.2127E-06
1.922	0.1832E+02	0.0000E+00	0.0000E+00	0.1330E+02
0.0000E+00	0.0000E+00	-0.2234E+01	0.2929E+01	-0.6003E-07
1.962	0.1870E+02	0.0000E+00	0.0000E+00	0.1364E+02
0.0000E+00	0.0000E+00	-0.2169E+01	0.3040E+01	-0.2314E-06
2.002	0.1908E+02	0.0000E+00	0.0000E+00	0.1399E+02
0.0000E+00	0.0000E+00	-0.2109E+01	0.3122E+01	0.1425E-06
2.042	0.1946E+02	0.0000E+00	0.0000E+00	0.1438E+02
0.0000E+00	0.0000E+00	-0.2052E+01	0.3179E+01	-0.4854E-06
2.082	0.1984E+02	0.0000E+00	0.0000E+00	0.1478E+02
0.0000E+00	0.0000E+00	-0.2000E+01	0.3212E+01	-0.5326E-07
2.122	0.2022E+02	0.0000E+00	0.0000E+00	0.1519E+02
0.0000E+00	0.0000E+00	-0.1951E+01	0.3227E+01	0.2526E-06
2.162	0.2060E+02	0.0000E+00	0.0000E+00	0.1562E+02
0.0000E+00	0.0000E+00	-0.1907E+01	0.3228E+01	0.1809E-06
2.202	0.2099E+02	0.0000E+00	0.0000E+00	0.1604E+02
0.0000E+00	0.0000E+00	-0.1868E+01	0.3219E+01	0.6999E-07
2.242	0.2137E+02	0.0000E+00	0.0000E+00	0.1647E+02
0.0000E+00	0.0000E+00	-0.1857E+01	0.3182E+01	0.3187E-06
2.282	0.2175E+02	0.0000E+00	0.0000E+00	0.1690E+02
0.0000E+00	0.0000E+00	-0.1908E+01	0.3089E+01	0.7094E-06
2.322	0.2213E+02	0.0000E+00	0.0000E+00	0.1731E+02
0.0000E+00	0.0000E+00	-0.2011E+01	0.2959E+01	0.5086E-06

2.362	0.2251E+02	0.0000E+00	0.0000E+00	0.1769E+02	0.0000E+00	0.0000E+00
-0.2137E+01	0.2826E+01	0.5071E-06				
2.400	0.2287E+02	0.0000E+00	0.0000E+00	0.1804E+02	0.0000E+00	0.0000E+00
-0.2261E+01	0.2714E+01	0.3096E-06				
2.440	0.2325E+02	0.0000E+00	0.0000E+00	0.1839E+02	0.0000E+00	0.0000E+00
-0.2395E+01	0.2615E+01	0.7360E-06				
2.480	0.2364E+02	0.0000E+00	0.0000E+00	0.1871E+02	0.0000E+00	0.0000E+00
-0.2530E+01	0.2538E+01	0.5335E-06				
2.520	0.2402E+02	0.0000E+00	0.0000E+00	0.1901E+02	0.0000E+00	0.0000E+00
-0.2663E+01	0.2486E+01	0.4781E-06				
2.560	0.2440E+02	0.0000E+00	0.0000E+00	0.1929E+02	0.0000E+00	0.0000E+00
-0.2798E+01	0.2451E+01	0.2480E-06				
2.600	0.2478E+02	0.0000E+00	0.0000E+00	0.1956E+02	0.0000E+00	0.0000E+00
-0.2945E+01	0.2418E+01	0.1992E-06				
2.640	0.2516E+02	0.0000E+00	0.0000E+00	0.1982E+02	0.0000E+00	0.0000E+00
-0.3109E+01	0.2380E+01	0.4072E-06				
2.680	0.2554E+02	0.0000E+00	0.0000E+00	0.2006E+02	0.0000E+00	0.0000E+00
-0.3283E+01	0.2342E+01	0.3396E-06				
2.720	0.2592E+02	0.0000E+00	0.0000E+00	0.2030E+02	0.0000E+00	0.0000E+00
-0.3458E+01	0.2308E+01	0.5602E-06				
2.760	0.2630E+02	0.0000E+00	0.0000E+00	0.2054E+02	0.0000E+00	0.0000E+00
-0.3598E+01	0.2312E+01	0.2214E-06				
2.800	0.2669E+02	0.0000E+00	0.0000E+00	0.2078E+02	0.0000E+00	0.0000E+00
-0.3639E+01	0.2411E+01	0.2981E-06				
2.840	0.2707E+02	0.0000E+00	0.0000E+00	0.2104E+02	0.0000E+00	0.0000E+00
-0.3579E+01	0.2596E+01	0.2700E-06				
2.880	0.2745E+02	0.0000E+00	0.0000E+00	0.2132E+02	0.0000E+00	0.0000E+00
-0.3488E+01	0.2786E+01	0.3911E-06				
2.920	0.2783E+02	0.0000E+00	0.0000E+00	0.2163E+02	0.0000E+00	0.0000E+00
-0.3400E+01	0.2945E+01	0.6852E-06				
2.960	0.2821E+02	0.0000E+00	0.0000E+00	0.2197E+02	0.0000E+00	0.0000E+00
-0.3318E+01	0.3072E+01	-0.3260E-07				
3.000	0.2859E+02	0.0000E+00	0.0000E+00	0.2233E+02	0.0000E+00	0.0000E+00
-0.3242E+01	0.3166E+01	0.7148E-06				
3.040	0.2897E+02	0.0000E+00	0.0000E+00	0.2272E+02	0.0000E+00	0.0000E+00
-0.3172E+01	0.3228E+01	0.4922E-06				
3.080	0.2935E+02	0.0000E+00	0.0000E+00	0.2313E+02	0.0000E+00	0.0000E+00
-0.3107E+01	0.3265E+01	0.5546E-07				
3.120	0.2974E+02	0.0000E+00	0.0000E+00	0.2355E+02	0.0000E+00	0.0000E+00
-0.3047E+01	0.3280E+01	0.6525E-07				
3.160	0.3012E+02	0.0000E+00	0.0000E+00	0.2399E+02	0.0000E+00	0.0000E+00
-0.2991E+01	0.3281E+01	-0.1293E-06				
3.200	0.3050E+02	0.0000E+00	0.0000E+00	0.2443E+02	0.0000E+00	0.0000E+00
-0.2942E+01	0.3271E+01	-0.2449E-06				
3.240	0.3088E+02	0.0000E+00	0.0000E+00	0.2487E+02	0.0000E+00	0.0000E+00
-0.2922E+01	0.3230E+01	-0.1187E-06				
3.280	0.3126E+02	0.0000E+00	0.0000E+00	0.2531E+02	0.0000E+00	0.0000E+00
-0.2973E+01	0.3126E+01	-0.2244E-06				
3.320	0.3164E+02	0.0000E+00	0.0000E+00	0.2572E+02	0.0000E+00	0.0000E+00
-0.3087E+01	0.2977E+01	-0.6742E-07				
3.360	0.3202E+02	0.0000E+00	0.0000E+00	0.2612E+02	0.0000E+00	0.0000E+00
-0.3228E+01	0.2824E+01	-0.1882E-06				
3.400	0.3240E+02	0.0000E+00	0.0000E+00	0.2649E+02	0.0000E+00	0.0000E+00
-0.3374E+01	0.2690E+01	0.2837E-06				
3.440	0.3278E+02	0.0000E+00	0.0000E+00	0.2683E+02	0.0000E+00	0.0000E+00
-0.3517E+01	0.2586E+01	0.1310E-06				
3.480	0.3317E+02	0.0000E+00	0.0000E+00	0.2715E+02	0.0000E+00	0.0000E+00
-0.3654E+01	0.2512E+01	0.4782E-07				
3.520	0.3355E+02	0.0000E+00	0.0000E+00	0.2744E+02	0.0000E+00	0.0000E+00
-0.3789E+01	0.2463E+01	0.2911E-06				
3.560	0.3393E+02	0.0000E+00	0.0000E+00	0.2772E+02	0.0000E+00	0.0000E+00
-0.3927E+01	0.2429E+01	-0.6869E-07				
3.600	0.3431E+02	0.0000E+00	0.0000E+00	0.2798E+02	0.0000E+00	0.0000E+00
-0.4076E+01	0.2398E+01	0.4186E-06				
3.640	0.3469E+02	0.0000E+00	0.0000E+00	0.2823E+02		

0.0000E+00	0.0000E+00	-0.4231E+01	0.2371E+01	0.3978E-06
3.680	0.3507E+02	0.0000E+00	0.0000E+00	0.2848E+02
0.0000E+00	0.0000E+00	-0.4398E+01	0.2339E+01	0.5026E-06
3.720	0.3545E+02	0.0000E+00	0.0000E+00	0.2872E+02
0.0000E+00	0.0000E+00	-0.4579E+01	0.2298E+01	0.4740E-06
3.760	0.3583E+02	0.0000E+00	0.0000E+00	0.2896E+02
0.0000E+00	0.0000E+00	-0.4723E+01	0.2299E+01	0.6991E-06
3.800	0.3622E+02	0.0000E+00	0.0000E+00	0.2920E+02
0.0000E+00	0.0000E+00	-0.4760E+01	0.2402E+01	0.7856E-06
3.840	0.3660E+02	0.0000E+00	0.0000E+00	0.2946E+02
0.0000E+00	0.0000E+00	-0.4691E+01	0.2595E+01	0.7072E-06
3.880	0.3698E+02	0.0000E+00	0.0000E+00	0.2974E+02
0.0000E+00	0.0000E+00	-0.4590E+01	0.2795E+01	0.1138E-05
3.920	0.3736E+02	0.0000E+00	0.0000E+00	0.3005E+02
0.0000E+00	0.0000E+00	-0.4492E+01	0.2965E+01	0.7290E-06
3.960	0.3774E+02	0.0000E+00	0.0000E+00	0.3039E+02
0.0000E+00	0.0000E+00	-0.4401E+01	0.3099E+01	0.8846E-06
4.000	0.3812E+02	0.0000E+00	0.0000E+00	0.3075E+02
0.0000E+00	0.0000E+00	-0.4317E+01	0.3197E+01	0.5760E-06
4.001	0.3812E+02	0.0000E+00	0.0000E+00	0.3075E+02
0.0000E+00	0.0000E+00	-0.4317E+01	0.3197E+01	0.5760E-06

APPENDIX - A: Santa Fe River Model for DO and pH (continue ...)

A-7. Santa Fe River Water Quality Model Projection Run for the City of Santa Fe Wastewater Treatment Facility, prepared by U.S. EPA Region 6, TMDL Team, Model Input/Output files (45 pages).

```
Santa Fe River Water Quality Model (June 1999 and July 2000 data)
WASP5pH  V5.1
 NSEG NSYS ICRD MFLG IDMP NSLN INTY ADFC   DD HHMM                A: MODEL
OPTIONS
   24    9    0    0    1    0    0    0    1 0000
   11   12   13   14   15   16
    1
    0.0020       4.0
    1
    0.040      120.0
    0    0    0    0    0    0    0    0    0
    1    0    +    *    +    *    +    *    +    *    +    *
B:EXCHANGES
    1     1.e-4      1.00                    (surface water)
   12
     2210.      0.10    1    2
     2210.      0.10    3    4
     2298.      0.10    5    6
     2386.      0.10    7    8
     2474.      0.10    9   10
     2562.      0.10   11   12
     2610.      0.10   13   14
     2650.      0.11   15   16
     2650.      0.11   17   18
     2650.      0.11   19   20
     2650.      0.11   21   22
     2650.      0.11   23   24
    2
      0.02       0.0      0.02     365.0
    0    0    0    1    0    0    0    0    0
    1    0              *    +    *    +    *    +    *    +    C:
VOLUMES
       1.0   0.02832    million cubic feet to cubic meters
        1         2         1    15920.     0.168       0.0    0.2350
0.0
        2        73         2      433.     0.168       0.0      0.01
0.0
        3         4         1    18324.     0.163       0.0    0.2350
0.0
        4        73         2      433.     0.163       0.0      0.01
0.0
        5         6         1    20732.     0.158       0.0    0.2350
0.0
        6        73         2      433.     0.158       0.0      0.01
0.0
        7         8         1    21938.     0.153       0.0    0.2350
0.0
        8        73         2      433.     0.153       0.0      0.01
0.0
        9        10         1    21938.     0.148       0.0    0.2350
0.0
       10        73         2      433.     0.148       0.0      0.01
0.0
       11        12         1    21938.     0.143       0.0    0.2350
0.0
       12        73         2      433.     0.143       0.0      0.01
0.0
       13        14         1    21938.     0.128       0.0    0.2350
0.0
       14        73         2      433.     0.128       0.0      0.01
0.0
       15        16         1    21938.     0.128       0.0    0.2350
0.0
       16        73         2      433.     0.128       0.0      0.01
0.0
```

EFFL. INP

```
        17          18          1    21938.      0.128       0.0    0.2350
0.0
        18          73          2      433.      0.128       0.0      0.01
0.0
        19          20          1    21938.      0.128       0.0    0.2350
0.0
        20          73          2      433.      0.128       0.0      0.01
0.0
        21          22          1    21938.      0.128       0.0    0.2350
0.0
        22          73          2      433.      0.128       0.0      0.01
0.0
        23          24          1    21938.      0.128       0.0    0.2350
0.0
        24          73          2      433.      0.128       0.0      0.01
0.0
    1    5    *    +    *    +    *    *    *    +    *    +    D: FLOWS
    2       1.0   0.02832    cubic feet/second to cubic meters/second
   13                     Headwater above Santa Fe Plant
       1.0    0    1       1.0    1    3       1.0    3    5       1.0
5    7
       1.0    7    9       1.0    9   11       1.0   11   13       1.0
13   15
       1.0   15   17       1.0   17   19       1.0   19   21       1.0
21   23
       1.0   23    0
    2
     13.15        0.     13.15      365.
   13                     Headwater above Santa Fe Plant
       1.0    0    2       1.0    2    4       1.0    4    6       1.0
6    8
       1.0    8   10       1.0   10   12       1.0   12   14       1.0
14   16
       1.0   16   18       1.0   18   20       1.0   20   22       1.0
22   24
       1.0   24    0
    2
      0.00        0.      0.00      365.
    0                                     Field 2: pore water
    1       1.0       1.0                 Field 3: (Solids 1: organic
matter)
   24
     2210.    1    2     2210.    2   73     2210.    3    4     2210.
4   73
     2298.    5    6     2298.    6   73     2386.    7    8     2386.
8   73
     2472.    9   10     2474.   10   73     2562.   11   12     2562.
12   73
     2610.   13   14     2650.   14   73     2650.   15   16     2650.
16   73
     2650.   17   18     2650.   18   73     2650.   19   20     2650.
20   73
     2650.   21   22     2650.   22   73     2650.   23   24     2650.
24   73
    2
   3.0E-06        0.   3.0E-06      365.
    1       0.1     .0929 sq ft to sq m    Field 4: (Solids 2:
Phytoplankton)
   24
     2210.    1    2     2210.    2   73     2210.    3    4     2210.
4   73
     2298.    5    6     2298.    6   73     2386.    7    8     2386.
8   73
     2472.    9   10     2474.   10   73     2562.   11   12     2562.
12   73
```

```
     2610.   13   14     2650.   14   73     2650.   15   16     2650.
16   73
     2650.   17   18     2650.   18   73     2650.   19   20     2650.
20   73
     2650.   21   22     2650.   22   73     2650.   23   24     2650.
24   73
    2
   0.0e-05        0.   0.0e-05      365.
    1       1.0     .0929 sq ft to sq m    Field 5: (Solids 3: Inorganic
matter)
   24
     2210.    1    2     2210.    2   73     2210.    3    4     2210.
4   73
     2298.    5    6     2298.    6   73     2386.    7    8     2386.
8   73
     2472.    9   10     2474.   10   73     2562.   11   12     2562.
12   73
     2610.   13   14     2650.   14   73     2650.   15   16     2650.
16   73
     2650.   17   18     2650.   18   73     2650.   19   20     2650.
20   73
     2650.   21   22     2650.   22   73     2650.   23   24     2650.
24   73
    2
   1.0E-06        0.   1.0E-06      365.
    0    0    0    1    0    0    0    0    0
         4    *    +    *    +    *    +    System 1 - Ammonia  E:
BOUNDARIES
       1.0       1.0                         mg/L (total)
    1    2                                   Santa Fe WWTP Input
     2.000        0.     2.000      365.
    2    2
     0.000        0.     0.000      365.
   23    2
     0.001        0.     0.001      365.
   24    2
     0.001        0.     0.001      365.
         4    *    +    *    +    *    +    System 2 - Nitrite/Nitrate
       1.0       1.0                         mg/L (total)
    1    2                                   Santa Fe WWTP Input
       3.00        0.       3.00      365.
    2    2
       0.0        0.       0.0       365.
   23    2
     0.150        0.     0.150      365.
   24    2
     0.150        0.     0.150      365.
         4    *    +    *    +    *    +    System 3 - Orthophosphate
       1.0       1.0                         mg/L (dissolved)
    1    2                                   Santa Fe WWTP Input
      0.40        0.      0.40      365.
    2    2
     0.000        0.     0.000      365.
   23    2
     0.010        0.     0.010      365.
   24    2
     0.010        0.     0.010      365.
         4    *    +    *    +    *    +    System 4 - Periphyton
       1.0       1.0                         ug/L  (viable chlorophyll-a)
    1    2                                   Santa Fe WWTP Input
       0.0        0.       0.0       365.
    2    2
       0.0        0.       0.0       365.
   23    2
      2.00        0.      2.00       365.
```

```
   24    2
      2.00          0.        2.00        365.
         4    *     +    *     +    *     +    System 5 - CBOD
       1.0         1.0                        mg/L (ultimate less algal
component)
    1    2                                    Santa Fe WWTP Input
      14.0          0.       14.0        365.
    2    2
      0.00          0.       0.00        365.
   23    2
      1.00          0.       1.00        365.
   24    2
      1.00          0.       1.00        365.
         4    *     +    *     +    *     +    System 6 - Dissolved Oxygen
       1.0         1.0                        mg/L
    1    2                                    Santa Fe WWTP Input
       5.0        0.0        5.0        365.
    2    2
      0.00          0.       0.00        365.
   23    2
      8.00          0.       8.00        365.
   24    2
      8.00          0.       8.00        365.
         4    *     +    *     +    *     +    System 7 - Nonliving Organic
N
       1.0         1.0                        mg/L (TKN - NH3 - algal N)
    1    2                                    Santa Fe WWTP Input
      1.00          0.       1.00        365.
    2    2
      0.00          0.       0.00        365.
   23    2
      0.40          0.       0.40        365.
   24    2
      0.40          0.       0.40        365.
         4    *     +    *     +    *     +    System 8 - Nonliving Organic
P
       1.0         1.0                        mg/L (TP - PO4 - algal P)
    1    2                                    Santa Fe WWTP Input
      0.10          0.       0.10        365.
    2    2
      0.00          0.       0.00        365.
   23    2
      0.04          0.       0.04        365.
   24    2
      0.04          0.       0.04        365.
         4    *     +    *     +    *     +    System 9 - CO2 Acidity
       1.0         1.0                        mg/L as CaCO3
    1    2                                    Santa Fe WWTP Input
      15.0          0.       15.0        365.
    2    2
       0.0          0.        0.0        365.
   23    2
      10.0          0.       10.0        365.
   24    2
      10.0          0.       10.0        365.
         0    *     +    *     +    *     +    System 1 - Ammonia F: PS
loads
         0    *     +    *     +    *     +    System 2 - Nitrite + Nitrate
         0    *     +    *     +    *     +    System 3 - Dissolved
Orthophosphate
         0    *     +    *     +    *     +    System 4 - Viable
chlorophylla-a
         0    *     +    *     +    *     +    System 5 - Ultimate CBOD (-
algae)
         0    *     +    *     +    *     +    System 6 - Dissolved Oxygen
```

```
          0    *    +    *    +    *    +    System 7 - Nonliving Organic
N
          0    *    +    *    +    *    +    System 8 - Nonliving Organic
P
          0    *    +    *    +    *    +    System 9 - CO2 Acidity
          0                                   No NPS Loads
          8    *    +    *    +    *    +    *    +    *    +    G:
PARAMETERS
TMPSG     3        1.0 KESG    5       1.0 SOD1D    9        1.0SODTA   12
1.0
FNH4      7        0.0 FPO4    8       0.0 ITOTL   13        1.0TMPFN    4
1.0
          1
TMPSG     3        1.0 KESG    5       0.15SOD1D    9        0.0SODTA   12
1.0
FNH4      7        0.0 FPO4    8       0.0 ITOTL   13        1.0TMPFN    4
1.0
          2
TMPSG     3        1.0 KESG    5       0.15SOD1D    9        0.0SODTA   12
1.0
FNH4      7        0.0 FPO4    8       0.0 ITOTL   13        1.0TMPFN    4
1.0
          3
TMPSG     3        1.0 KESG    5       0.15SOD1D    9        0.0SODTA   12
1.0
FNH4      7        0.0 FPO4    8       0.0 ITOTL   13        1.0TMPFN    4
1.0
          4
TMPSG     3        1.0 KESG    5       0.15SOD1D    9        0.0SODTA   12
1.0
FNH4      7        0.0 FPO4    8       0.0 ITOTL   13        1.0TMPFN    4
1.0
          5
TMPSG     3        1.0 KESG    5       0.15SOD1D    9        0.0SODTA   12
1.0
FNH4      7        0.0 FPO4    8       0.0 ITOTL   13        1.0TMPFN    4
1.0
          6
TMPSG     3        1.0 KESG    5       0.15SOD1D    9        0.0SODTA   12
1.0
FNH4      7        0.0 FPO4    8       0.0 ITOTL   13        1.0TMPFN    4
1.0
          7
TMPSG     3        1.0 KESG    5       0.20SOD1D    9        0.0SODTA   12
1.0
FNH4      7        0.0 FPO4    8       0.0 ITOTL   13        1.0TMPFN    4
1.0
          8
TMPSG     3        1.0 KESG    5       0.20SOD1D    9        0.0SODTA   12
1.0
FNH4      7        0.0 FPO4    8       0.0 ITOTL   13        1.0TMPFN    4
1.0
          9
TMPSG     3        1.0 KESG    5       0.20SOD1D    9        0.0SODTA   12
1.0
FNH4      7        0.0 FPO4    8       0.0 ITOTL   13        1.0TMPFN    4
1.0
         10
TMPSG     3        1.0 KESG    5       0.20SOD1D    9        0.0SODTA   12
1.0
FNH4      7        0.0 FPO4    8       0.0 ITOTL   13        1.0TMPFN    4
1.0
         11
TMPSG     3        1.0 KESG    5       0.20SOD1D    9        0.0SODTA   12
1.0
```

```
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
1.0
          12
TMPSG     3        1.0 KESG     5        0.20SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
1.0
          13
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          14
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          15
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          16
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        7.1 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          17
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          18
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          19
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          20
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          21
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          22
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          23
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
FNH4      7        0.0 FPO4     8        0.0 ITOTL    13        1.0TMPFN     4
2.0
          24
TMPSG     3        1.0 KESG     5        0.25SOD1D     9        0.0SODTA    12
1.0
```

```
FNH4      7        0.0 FPO4     8       0.0 ITOTL   13        1.0TMPFN     4
2.0
    +    *    +    *    +    *    +    *    +    *    +    *    H:
CONSTANTS
   GLOBALS          0
       NH3          1
nitrificat          2
      K12C         11       0.20      K12T        12       1.08
       NO3          1
  denitrif          2
      K20C         21       0.10      K20T        22      1.045
       PO4          0
      PHYT          4
    growth          2
       K1C         41       2.45       K1T        42      1.055
     light          3
     LGHTS         43        1.0      CCHL        46        67.
       IS1         47       525.
 nutrients          4
     KMNG1         48      0.025     KMPG1        49      0.005
      NCRB         58       0.18      PCRB        57      0.025
     death          4
      K1RC         50      0.600      K1RT        51      1.069
       K1D         52       0.30     KPZDC        55       0.00
      CBOD          1
 deoxygent          2
       KDC         71       0.07       KDT        72       1.05
        DO          1
     ratio          2
      OCRB         81       2.67        K2        82       4.50
        ON          1
mineralize          3
      K71C         91      0.500      K71T        92       1.08
       FON         95       0.15
        OP          1
mineralize          3
      K83C        100       0.75      K83T       101       1.08
       FOP        104       0.50
    CO2acy          0
         4    *    +    *    +    *    +    *    +    *    +    I: TIME
FUNCTION
TEMP1  193    1            River Water Temperature (C) below WWTP
     25.41   0.00000     25.41   0.01042     25.40   0.02083     25.37
0.03125
     25.36   0.04167     25.36   0.05208     25.32   0.06250     25.33
0.07292
     25.31   0.08333     25.29   0.09375     25.27   0.10417     25.25
0.11458
     25.21   0.12500     25.17   0.13542     25.13   0.14583     25.08
0.15625
     25.01   0.16667     24.94   0.17708     24.88   0.18750     24.83
0.19792
     24.77   0.20833     24.69   0.21875     24.61   0.22917     24.52
0.23958
     24.42   0.25000     24.32   0.26042     24.24   0.27083     24.17
0.28125
     24.11   0.29167     24.07   0.30208     24.07   0.31250     24.12
0.32292
     24.27   0.33333     24.45   0.34375     24.63   0.35417     24.82
0.36458
     24.99   0.37500     25.08   0.38542     25.18   0.39583     25.30
0.40625
     25.40   0.41667     25.55   0.42708     25.63   0.43750     25.69
0.44792
     25.74   0.45833     25.83   0.46875     25.90   0.47917     25.96
```

0.48958						
26.04	0.50000	26.09	0.51042	26.17	0.52083	26.24
0.53125						
26.25	0.54167	26.26	0.55208	26.29	0.56250	26.29
0.57292						
26.33	0.58333	26.37	0.59375	26.34	0.60417	26.44
0.61458						
26.39	0.62500	26.17	0.63542	26.09	0.64583	26.35
0.65625						
26.51	0.66667	26.46	0.67708	26.34	0.68750	26.06
0.69792						
25.94	0.70833	25.93	0.71875	25.93	0.72917	25.98
0.73958						
25.99	0.75000	25.92	0.76042	25.77	0.77083	25.68
0.78125						
25.74	0.79167	25.81	0.80208	25.60	0.81250	25.17
0.82292						
25.25	0.83333	25.46	0.84375	25.64	0.85417	25.67
0.86458						
25.61	0.87500	25.49	0.88542	25.53	0.89583	25.53
0.90625						
25.61	0.91667	25.60	0.92708	25.58	0.93750	25.58
0.94792						
25.58	0.95833	25.57	0.96875	25.56	0.97917	25.58
0.98958						
25.58	1.00000	25.58	1.01042	25.58	1.02083	25.55
1.03125						
25.54	1.04167	25.53	1.05208	25.51	1.06250	25.48
1.07292						
25.45	1.08333	25.42	1.09375	25.42	1.10417	25.38
1.11458						
25.33	1.12500	25.29	1.13542	25.25	1.14583	25.21
1.15625						
25.19	1.16667	25.21	1.17708	25.18	1.18750	25.06
1.19792						
24.92	1.20833	24.81	1.21875	24.72	1.22917	24.67
1.23958						
24.65	1.25000	24.67	1.26042	24.60	1.27083	24.45
1.28125						
24.30	1.29167	24.20	1.30208	24.16	1.31250	24.22
1.32292						
24.37	1.33333	24.52	1.34375	24.66	1.35417	24.77
1.36458						
24.89	1.37500	24.88	1.38542	24.84	1.39583	25.02
1.40625						
25.31	1.41667	25.54	1.42708	25.70	1.43750	25.82
1.44792						
25.86	1.45833	25.83	1.46875	25.88	1.47917	25.92
1.48958						
25.98	1.50000	26.05	1.51042	26.12	1.52083	26.20
1.53125						
25.95	1.54167	25.95	1.55208	26.19	1.56250	26.24
1.57292						
26.21	1.58333	26.05	1.59375	26.11	1.60417	26.20
1.61458						
26.14	1.62500	25.95	1.63541	25.76	1.64583	25.74
1.65625						
25.79	1.66666	25.86	1.67708	25.91	1.68750	25.95
1.69791						
25.96	1.70833	26.00	1.71875	26.01	1.72916	26.00
1.73958						
25.85	1.75000	25.69	1.76041	25.66	1.77083	25.66
1.78125						
25.62	1.79166	25.57	1.80208	25.57	1.81250	25.57
1.82291						

```
     25.59    1.83333      25.45    1.84375      25.14    1.85416      25.34
1.86458
     25.36    1.87500      25.44    1.88541      25.51    1.89583      25.50
1.90625
     25.49    1.91666      25.51    1.92708      25.50    1.93750      25.48
1.94791
     25.45    1.95833      25.41    1.96875      25.39    1.97916      25.39
1.98958
     25.39    2.00000
TEMP2  193     2            River Temperature at Preserve
     23.44    0.00000      23.57    0.01042      23.66    0.02083      23.70
0.03125
     23.71    0.04167      23.70    0.05208      23.65    0.06250      23.62
0.07292
     23.54    0.08333      23.36    0.09375      23.34    0.10417      23.38
0.11458
     23.43    0.12500      23.44    0.13542      23.33    0.14583      23.15
0.15625
     22.82    0.16667      22.49    0.17708      22.23    0.18750      22.10
0.19792
     21.96    0.20833      21.84    0.21875      21.88    0.22917      21.79
0.23958
     21.60    0.25000      21.37    0.26042      21.17    0.27083      21.01
0.28125
     20.93    0.29167      20.78    0.30208      20.73    0.31250      20.83
0.32292
     20.99    0.33333      21.29    0.34375      21.42    0.35417      21.60
0.36458
     21.85    0.37500      22.27    0.38542      23.04    0.39583      23.93
0.40625
     24.93    0.41667      25.92    0.42708      26.78    0.43750      27.46
0.44792
     28.20    0.45833      28.84    0.46875      29.11    0.47917      29.37
0.48958
     29.44    0.50000      28.64    0.51042      28.81    0.52083      28.84
0.53125
     28.98    0.54167      28.79    0.55208      29.23    0.56250      29.46
0.57292
     29.50    0.58333      29.43    0.59375      29.15    0.60417      28.93
0.61458
     28.87    0.62500      27.75    0.63542      27.28    0.64583      26.63
0.65625
     26.41    0.66667      26.19    0.67708      25.95    0.68750      25.65
0.69792
     25.39    0.70833      25.34    0.71875      25.26    0.72917      24.92
0.73958
     24.73    0.75000      24.64    0.76042      24.49    0.77083      24.42
0.78125
     24.37    0.79167      24.42    0.80208      24.47    0.81250      24.35
0.82292
     24.14    0.83333      23.99    0.84375      23.56    0.85417      23.34
0.86458
     23.08    0.87500      23.01    0.88542      23.10    0.89583      23.33
0.90625
     23.59    0.91667      23.75    0.92708      23.82    0.93750      23.85
0.94792
     23.75    0.95833      23.77    0.96875      23.73    0.97917      23.76
0.98958
     23.81    1.00000      23.85    1.01042      23.82    1.02083      23.79
1.03125
     23.76    1.04167      23.73    1.05208      23.70    1.06250      23.63
1.07292
     23.53    1.08333      23.47    1.09375      23.46    1.10417      23.40
1.11458
     23.32    1.12500      23.23    1.13542      23.11    1.14583      23.01
```

```
1.15625
     22.91   1.16667     22.82   1.17708     22.69   1.18750     22.57
1.19792
     22.42   1.20833     22.30   1.21875     22.18   1.22917     22.06
1.23958
     21.92   1.25000     21.80   1.26042     21.68   1.27083     21.63
1.28125
     21.66   1.29167     21.79   1.30208     21.99   1.31250     22.25
1.32292
     22.35   1.33333     22.46   1.34375     22.66   1.35417     22.91
1.36458
     23.29   1.37500     23.67   1.38542     24.11   1.39583     24.55
1.40625
     25.07   1.41667     25.49   1.42708     25.89   1.43750     26.34
1.44792
     26.68   1.45833     27.04   1.46875     27.29   1.47917     27.52
1.48958
     27.66   1.50000     27.90   1.51042     28.09   1.52083     28.20
1.53125
     28.15   1.54167     28.20   1.55208     28.28   1.56250     28.18
1.57292
     28.26   1.58333     27.82   1.59375     26.92   1.60417     25.33
1.61458
     24.25   1.62500     23.61   1.63541     23.29   1.64583     23.45
1.65625
     23.80   1.66666     24.51   1.67708     25.27   1.68750     25.84
1.69791
     25.71   1.70833     25.11   1.71875     24.53   1.72916     24.04
1.73958
     23.89   1.75000     23.82   1.76041     23.95   1.77083     23.88
1.78125
     23.78   1.79166     23.65   1.80208     23.53   1.81250     23.36
1.82291
     21.91   1.83333     22.27   1.84375     22.55   1.85416     22.74
1.86458
     22.85   1.87500     22.89   1.88541     22.85   1.89583     22.75
1.90625
     22.45   1.91666     22.39   1.92708     22.37   1.93750     22.33
1.94791
     22.23   1.95833     22.08   1.96875     21.90   1.97916     21.69
1.98958
     21.47   2.00000
ITOT    26     5            Solar radiation (ly/day)
       0.0       0.0       0.0   0.03681       0.0   0.07847       0.0
0.12014
       0.0   0.16181      4.41   0.20347     78.51   0.24514    254.94
0.28681
    453.43   0.32874    626.33   0.37014    798.36   0.41181    924.50
0.45347
    984.49   0.49514    988.02   0.53681    935.97   0.57847    820.41
0.62014
    668.68   0.66181    486.95   0.70000    285.82   0.74514     94.39
0.78681
     10.59   0.82847       0.0   0.87014       0.0   0.91181       0.0
0.95347
       0.0   0.99514       0.0       1.0
F        2     6            Photoperiod (fraction of day)
      1.00       0.      1.00     365.0
Ammonia                                        3 0.00       10.    J:
INITIAL
    1      0.02       1.0    2      0.02       1.0    3      0.02
1.0
    4      0.02       1.0    5      0.02       1.0    6      0.02
1.0
    7      0.02       1.0    8      0.02       1.0    9      0.02
```

```
1.0
   10       0.02        1.0   11       0.02        1.0   12       0.02
1.0
   13       0.02        1.0   14       0.02        1.0   15       0.02
1.0
   16       0.02        1.0   17       0.02        1.0   18       0.02
1.0
   19       0.02        1.0   20       0.02        1.0   21       0.02
1.0
   22       0.02        1.0   23       0.02        1.0   24       0.02
1.0
Nitrite + Nitrate                                 3 0.00       10.    J:
INITIAL
    1       0.09        1.0    2       0.09        1.0    3       0.09
1.0
    4       0.09        1.0    5       0.09        1.0    6       0.09
1.0
    7       0.09        1.0    8       0.09        1.0    9       0.09
1.0
   10       0.09        1.0   11       0.09        1.0   12       0.09
1.0
   13       0.09        1.0   14       0.09        1.0   15       0.09
1.0
   16       0.09        1.0   17       0.09        1.0   18       0.09
1.0
   19       0.09        1.0   20       0.09        1.0   21       0.09
1.0
   22       0.09        1.0   23       0.09        1.0   24       0.09
1.0
Dissolved Orthophosphate                          3 0.00        5.    J:
INITIAL
    1      1.010        1.0    2      1.010        1.0    3      1.010
1.0
    4      1.010        1.0    5      1.010        1.0    6      1.010
1.0
    7      1.010        1.0    8      1.010        1.0    9      1.010
1.0
   10      1.010        1.0   11      1.010        1.0   12      1.010
1.0
   13      1.010        1.0   14      1.010        1.0   15      1.010
1.0
   16      1.010        1.0   17      1.010        1.0   18      1.010
1.0
   19      1.010        1.0   20      1.010        1.0   21      1.010
1.0
   22      1.010        1.0   23      1.010        1.0   24      1.010
1.0
Viable Chlorophyll-a (ug/l)                       4 0.00      500.    J:
INITIAL
    1        0.        0.0    2     1000.        0.0    3        0.
0.0
    4     1000.        0.0    5        0.        0.0    6     1000.
0.0
    7        0.        0.0    8      975.        0.0    9        0.
0.0
   10      950.        0.0   11        0.        0.0   12      925.
0.0
   13        0.        0.0   14      900.        0.0   15        0.
0.0
   16      900.        0.0   17        0.        0.0   18      900.
0.0
   19        0.        0.0   20      900.        0.0   21        0.
0.0
   22      900.        0.0   23        0.        0.0   24      900.
0.0
```

```
Carbonaceous BOD (ultimate - algae)          3 0.00      100.    J:
INITIAL
    1       5.0       1.0    2       5.0       1.0    3       5.0
1.0
    4       5.0       1.0    5       5.0       1.0    6       5.0
1.0
    7       5.0       1.0    8       5.0       1.0    9       5.0
1.0
   10       5.0       1.0   11       5.0       1.0   12       5.0
1.0
   13       5.0       1.0   14       5.0       1.0   15       5.0
1.0
   16       5.0       1.0   17       5.0       1.0   18       5.0
1.0
   19       5.0       1.0   20       5.0       1.0   21       5.0
1.0
   22       5.0       1.0   23       5.0       1.0   24       5.0
1.0
Dissolved Oxygen                             3 0.00       20.    J:
INITIAL
    1      7.99       1.0    2      7.59       1.0    3      7.59
1.0
    4      7.99       1.0    5      7.59       1.0    6      7.59
1.0
    7      7.99       1.0    8      7.59       1.0    9      7.59
1.0
   10      7.99       1.0   11      7.59       1.0   12      7.59
1.0
   13      7.99       1.0   14      7.59       1.0   15      7.59
1.0
   16      7.99       1.0   17      7.59       1.0   18      7.59
1.0
   19      7.99       1.0   20      7.59       1.0   21      7.59
1.0
   22      7.99       1.0   23      7.59       1.0   24      7.59
1.0
Nonliving Organic Nitrogen                   3 0.00       10.    J:
INITIAL
    1      1.02       0.7    2      1.02       0.7    3      1.02
0.7
    4      1.02       0.7    5      1.02       0.7    6      1.02
0.7
    7      1.02       0.7    8      1.02       0.7    9      1.02
0.7
   10      1.02       0.7   11      1.02       0.7   12      1.02
0.7
   13      1.02       0.7   14      1.02       0.7   15      1.02
0.7
   16      1.02       0.7   17      1.02       0.7   18      1.02
0.7
   19      1.02       0.7   20      1.02       0.7   21      1.02
0.7
   22      1.02       0.7   23      1.02       0.7   24      1.02
0.7
Nonliving Organic Phosphorus                 3 0.00        5.    J:
INITIAL
    1      0.10       1.0    2      0.10       1.0    3      0.10
1.0
    4      0.10       1.0    5      0.10       1.0    6      0.10
1.0
    7      0.10       1.0    8      0.10       1.0    9      0.10
1.0
   10      0.10       1.0   11      0.10       1.0   12      0.10
1.0
   13      0.10       1.0   14      0.10       1.0   15      0.10
```

```
1.0
   16       0.10        1.0   17       0.10        1.0   18       0.10
1.0
   19       0.10        1.0   20       0.10        1.0   21       0.10
1.0
   22       0.10        1.0   23       0.10        1.0   24       0.10
1.0
CO2 Acidity (mg/L as CaCO3)                    3 0.00     5000.    J:
INITIAL
    1       4.0         1.0    2       4.0        1.0    3       4.0
1.0
    4       4.0         1.0    5       4.0        1.0    6       4.0
1.0
    7       4.0         1.0    8       4.0        1.0    9       4.0
1.0
   10       4.0         1.0   11       4.0        1.0   12       4.0
1.0
   13       6.0         1.0   14       6.0        1.0   15       6.0
1.0
   16       6.0         1.0   17       6.0        1.0   18       6.0
1.0
   19       6.0         1.0   20       6.0        1.0   21       6.0
1.0
   22       6.0         1.0   23       6.0        1.0   24       6.0
1.0
```

```
*********************************************************************

            WASP  - - WATER QUALITY ANALYSIS SIMULATION PROGRAM

*********************************************************************

                          Supported by
                 Center for Exposure Assessment Modeling
                              (CEAM)
                 Athens Environmental Research Laboratory
                          College Station Road
                        Athens, Georgia  30613
                   FTS 250-3491 or (404) 546-3491

                          Version 4.32 pH
                 Compiled on: Date: Tuesday, 26 Oct 1999,

                     Maximum Parameters for this Model

            Systems:    9          Segments:  100     Break Points:
193
         Parameters:   15         Constants:  104    Boundary Cond:
35
       Waste Loads:    9     Print Interval:    5    Time Function:
23

*********************************************************************

     No. Segments --->    24        No. Systems --->     9

*********************************************************************
TIME VARIABLE SOLUTION TECHNIQUE

*********************************************************************
            System Bypass Options for System  1 TO  9 are 0 0 0 0 0 0 0
0 0
```

```
*********************************************************************
1
```

Simulation Time Steps
Option 0 Selected
Advection Factor = 0.000

DT	T	DT	T	DT	T
0.00200	4.00000				

Print Intervals

PRINT INTERVAL	ELAPSED TIME	PRINT INTERVAL	ELAPSED TIME	PRINT INTERVAL	ELAPSED TIME
0.040	120.00				

1

Exchange Coefficients

Number of Exchange Fields = 1

FIELD 1 has 1 Time Functions

SCALR = 0.100E-03 CONVR = 0.100E+01

Time Function 1 has 12 Exchanges

A	EL	From	To
0.221E+04	0.100E+00	1	2
0.221E+04	0.100E-00	3	4
0.230E+04	0.100E+00	5	6
0.239E+04	0.100E+00	7	8
0.247E+04	0.100E+00	9	10
0.256E+04	0.100E+00	11	12
0.261E+04	0.100E+00	13	14
0.265E+04	0.110E+00	15	16

0.265E+04	0.110E+00	17	18
0.265E+04	0.110E+00	19	20
0.265E+04	0.110E+00	21	22
0.265E+04	0.110E+00	23	24

Number of Breaks in Time Function = 2

Dispersion	Time	Dispersion	Time	Dispersion	Time
0.200E-01	0.000E+00	0.200E-01	0.365E+03		

R Bypass Options for Systems 1 to 9 are 0 0 0 1 0 0 0 0 0
1

VOLUMES

Bed Volume Option = 0 Bed Time Step = 0.000E+00

Scale Factor = 0.1000E+01 Conversion Factor = 0.2832E-01

Seg #	BOTSG	Type	Volume	V mult	V exp	D mult	D exp
1	2	1	15920.000	0.168	0.000	0.235	0.000
2	73	2	433.000	0.168	0.000	0.010	0.000
3	4	1	18324.000	0.163	0.000	0.235	0.000
4	73	2	433.000	0.163	0.000	0.010	0.000
5	6	1	20732.000	0.158	0.000	0.235	0.000
6	73	2	433.000	0.158	0.000	0.010	0.000
7	8	1	21938.000	0.153	0.000	0.235	0.000
8	73	2	433.000	0.153	0.000	0.010	0.000
9	10	1	21938.000	0.148	0.000	0.235	0.000
10	73	2	433.000	0.148	0.000	0.010	0.000
11	12	1	21938.000	0.143	0.000	0.235	0.000
12	73	2	433.000	0.143	0.000	0.010	0.000
13	14	1	21938.000	0.128	0.000	0.235	0.000
14	73	2	433.000	0.128	0.000	0.010	0.000

```
    15      16      1       21938.000    0.128    0.000    0.235
0.000
    16      73      2         433.000    0.128    0.000    0.010
0.000
    17      18      1       21938.000    0.128    0.000    0.235
0.000
    18      73      2         433.000    0.128    0.000    0.010
0.000
    19      20      1       21938.000    0.128    0.000    0.235
0.000
    20      73      2         433.000    0.128    0.000    0.010
0.000
    21      22      1       21938.000    0.128    0.000    0.235
0.000
    22      73      2         433.000    0.128    0.000    0.010
0.000
    23      24      1       21938.000    0.128    0.000    0.235
0.000
    24      73      2         433.000    0.128    0.000    0.010
0.000
1


                              FLOWS
                              -----

                     Flow Option  1 Used
                 Number of Flow Fields =    5


                Field  1 has    2 Inflows
                SCALQ = 0.100E+01  CONVQ = 0.283E-01


                          Inflow Number  1
                          ----------------
     Continuity Array:

        Flow    From   To        Flow    From   To        Flow    From
To
-------------------------------------------------------------------------
--------

      0.100E+01    0    1      0.100E+01    1    3      0.100E+01    3
5
      0.100E+01    5    7      0.100E+01    7    9      0.100E+01    9
11
      0.100E+01   11   13      0.100E+01   13   15      0.100E+01   15
17
      0.100E+01   17   19      0.100E+01   19   21      0.100E+01   21
23
      0.100E+01   23    0

     Number of Breaks in Time Function =      2


        Flow      Time           Flow      Time           Flow      Time

-------------------------------------------------------------------------
------
```

```
      0.131E+02 0.000E+00       0.131E+02 0.365E+03

                                Inflow Number  2
                                ----------------
     Continuity Array:
        Flow    From   To        Flow    From   To        Flow    From
To
-----------------------------------------------------------------------
--------
      0.100E+01    0    2       0.100E+01    2    4       0.100E+01    4
6
      0.100E+01    6    8       0.100E+01    8   10       0.100E+01   10
12
      0.100E+01   12   14       0.100E+01   14   16       0.100E+01   16
18
      0.100E+01   18   20       0.100E+01   20   22       0.100E+01   22
24
      0.100E+01   24    0

     Number of Breaks in Time Function =     2

        Flow      Time           Flow      Time           Flow      Time
-----------------------------------------------------------------------
------
      0.000E+00 0.000E+00       0.000E+00 0.365E+03

                        Field  2 has   0 Inflows
                        SCALQ = 0.000E+00  CONVQ = 0.000E+00


                        Field  3 has   1 Inflows
                        SCALQ = 0.100E+01  CONVQ = 0.100E+01


                                Inflow Number  1
                                ----------------
     Solids Transport:
        Area    From   To        Area    From   To        Area    From
To
-----------------------------------------------------------------------
--------
      0.221E+04    1    2       0.221E+04    2   73       0.221E+04    3
4
      0.221E+04    4   73       0.230E+04    5    6       0.230E+04    6
73
      0.239E+04    7    8       0.239E+04    8   73       0.247E+04    9
10
      0.247E+04   10   73       0.256E+04   11   12       0.256E+04   12
73
      0.261E+04   13   14       0.265E+04   14   73       0.265E+04   15
16
```

```
      0.265E+04   16   73      0.265E+04   17   18      0.265E+04   18
73
      0.265E+04   19   20      0.265E+04   20   73      0.265E+04   21
22
      0.265E+04   22   73      0.265E+04   23   24      0.265E+04   24
73

     Number of Breaks in Time Function =     2

      Velocity    Time         Velocity    Time         Velocity    Time
-----------------------------------------------------------------------
------

      0.300E-05 0.000E+00      0.300E-05 0.365E+03

                        Field  4 has   1 Inflows
                        SCALQ = 0.100E+00  CONVQ = 0.929E-01


                                Inflow Number  1
                                ----------------
     Solids Transport:

        Area    From   To        Area    From   To        Area    From
To
-----------------------------------------------------------------------
--------

      0.221E+04    1    2      0.221E+04    2   73      0.221E+04    3
4
      0.221E+04    4   73      0.230E+04    5    6      0.230E+04    6
73
      0.239E+04    7    8      0.239E+04    8   73      0.247E+04    9
10
      0.247E+04   10   73      0.256E+04   11   12      0.256E+04   12
73
      0.261E+04   13   14      0.265E+04   14   73      0.265E+04   15
16
      0.265E+04   16   73      0.265E+04   17   18      0.265E+04   18
73
      0.265E+04   19   20      0.265E+04   20   73      0.265E+04   21
22
      0.265E+04   22   73      0.265E+04   23   24      0.265E+04   24
73

     Number of Breaks in Time Function =     2

      Velocity    Time         Velocity    Time         Velocity    Time
-----------------------------------------------------------------------
------

      0.000E+00 0.000E+00      0.000E+00 0.365E+03

                        Field  5 has   1 Inflows
```

SCALQ = 0.100E+01 CONVQ = 0.929E-01

Inflow Number 1

Solids Transport:

Area	From	To	Area	From	To	Area	From	To
0.221E+04	1	2	0.221E+04	2	73	0.221E+04	3	4
0.221E+04	4	73	0.230E+04	5	6	0.230E+04	6	73
0.239E+04	7	8	0.239E+04	8	73	0.247E+04	9	10
0.247E+04	10	73	0.256E+04	11	12	0.256E+04	12	73
0.261E+04	13	14	0.265E+04	14	73	0.265E+04	15	16
0.265E+04	16	73	0.265E+04	17	18	0.265E+04	18	73
0.265E+04	19	20	0.265E+04	20	73	0.265E+04	21	22
0.265E+04	22	73	0.265E+04	23	24	0.265E+04	24	73

Number of Breaks in Time Function = 2

Velocity	Time	Velocity	Time	Velocity	Time
0.100E-05	0.000E+00	0.100E-05	0.365E+03		

```
QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
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QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
```

```
QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
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QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
QSUMX=      0.000
```

Q Bypass Options for Systems 1 to 9 are 0 0 0 1 0 0 0 0 0
1

Boundary Conditions

Boundary Concentrations for System 1

BC Option 0 Used No.Of BC'S Read 4

Scale Factor = 0.1000E+01 Conversion Factor = 0.1000E+01

Segment	No.Brk.	BC(T)	T	BC(T)	T
1	2	0.2000000E+01	0.00	0.2000000E+01	365.00
2	2	0.0000000E+00	0.00	0.0000000E+00	365.00
23	2	0.1000000E-02	0.00	0.1000000E-02	365.00
24	2	0.1000000E-02	0.00	0.1000000E-02	365.00

Boundary Concentrations for System 2

BC Option 0 Used No.Of BC'S Read 4

Scale Factor = 0.1000E+01 Conversion Factor = 0.1000E+
01

Segment	No.Brk.	BC(T)	T	BC(T)	T
1	2	0.3000000E+01	0.00	0.3000000E+01	365.00
2	2	0.0000000E+00	0.00	0.0000000E+00	365.00
23	2	0.1500000E+00	0.00	0.1500000E+00	365.00
24	2	0.1500000E+00	0.00	0.1500000E+00	365.00

Boundary Concentrations for System 3

BC Option 0 Used No.Of BC'S Read 4

Scale Factor = 0.1000E+01 Conversion Factor = 0.1000E+
01

Segment	No.Brk.	BC(T)	T	BC(T)	T
1	2	0.4000000E+00	0.00	0.4000000E+00	365.00
2	2	0.0000000E+00	0.00	0.0000000E+00	365.00
23	2	0.1000000E-01	0.00	0.1000000E-01	365.00
24	2	0.1000000E-01	0.00	0.1000000E-01	365.00

Boundary Concentrations for System 4

BC Option 0 Used No.Of BC'S Read 4

Scale Factor = 0.1000E+01 Conversion Factor = 0.1000E+
01

```
        Segment  No.Brk.      BC(T)            T          BC(T)
T
-----------------------------------------------------------------------
             1       2      0.0000000E+00      0.00   0.0000000E+00
365.00
             2       2      0.0000000E+00      0.00   0.0000000E+00
365.00
            23       2      0.2000000E+01      0.00   0.2000000E+01
365.00
            24       2      0.2000000E+01      0.00   0.2000000E+01
365.00

                    Boundary Concentrations for System  5
                 BC Option  0 Used     No.Of BC'S Read    4
            Scale Factor =  0.1000E+01  Conversion Factor =  0.1000E+
01

        Segment  No.Brk.      BC(T)            T          BC(T)
T
-----------------------------------------------------------------------
             1       2      0.1400000E+02      0.00   0.1400000E+02
365.00
             2       2      0.0000000E+00      0.00   0.0000000E+00
365.00
            23       2      0.1000000E+01      0.00   0.1000000E+01
365.00
            24       2      0.1000000E+01      0.00   0.1000000E+01
365.00

                    Boundary Concentrations for System  6
                 BC Option  0 Used     No.Of BC'S Read    4
            Scale Factor =  0.1000E+01  Conversion Factor =  0.1000E+
01

        Segment  No.Brk.      BC(T)            T          BC(T)
T
-----------------------------------------------------------------------
             1       2      0.5000000E+01      0.00   0.5000000E+01
365.00
             2       2      0.0000000E+00      0.00   0.0000000E+00
365.00
```

23	2	0.8000000E+01	0.00	0.8000000E+01	365.00
24	2	0.8000000E+01	0.00	0.8000000E+01	365.00

Boundary Concentrations for System 7

BC Option 0 Used No.Of BC'S Read 4

Scale Factor = 0.1000E+01 Conversion Factor = 0.1000E+01

Segment	No.Brk.	BC(T)	T	BC(T)	T
1	2	0.1000000E+01	0.00	0.1000000E+01	365.00
2	2	0.0000000E+00	0.00	0.0000000E+00	365.00
23	2	0.4000000E+00	0.00	0.4000000E+00	365.00
24	2	0.4000000E+00	0.00	0.4000000E+00	365.00

Boundary Concentrations for System 8

BC Option 0 Used No.Of BC'S Read 4

Scale Factor = 0.1000E+01 Conversion Factor = 0.1000E+01

Segment	No.Brk.	BC(T)	T	BC(T)	T
1	2	0.1000000E+00	0.00	0.1000000E+00	365.00
2	2	0.0000000E+00	0.00	0.0000000E+00	365.00
23	2	0.4000000E-01	0.00	0.4000000E-01	365.00
24	2	0.4000000E-01	0.00	0.4000000E-01	365.00

Boundary Concentrations for System 9

BC Option 0 Used No.Of BC'S Read 4

Scale Factor = 0.1000E+01 Conversion Factor = 0.1000E+
01

Segment	No.Brk.	BC(T)	T	BC(T)	T
1	2	0.1500000E+02	0.00	0.1500000E+02	365.00
2	2	0.0000000E+00	0.00	0.0000000E+00	365.00
23	2	0.1000000E+02	0.00	0.1000000E+02	365.00
24	2	0.1000000E+02	0.00	0.1000000E+02	365.00

Waste Loads

Forcing Functions For System 1

Wk Option 3 Used No.of WK'S Read 0

No Forcing Function for System 1

1

Forcing Functions For System 2

Wk Option 3 Used No.of WK'S Read 0

No Forcing Function for System 2

1

Forcing Functions For System 3

Wk Option 3 Used No.of WK'S Read 0

No Forcing Function for System 3

1

Forcing Functions For System 4

Wk Option 3 Used No.of WK'S Read 0

No Forcing Function for System 4

1

Forcing Functions For System 5

Wk Option 3 Used No.of WK'S Read 0

No Forcing Function for System 5

1

Forcing Functions For System 6

Wk Option 3 Used No.of WK'S Read 0

No Forcing Function for System 6

1

Forcing Functions For System 7

Wk Option 3 Used No.of WK'S Read 0

No Forcing Function for System 7

1

Forcing Functions For System 8

Wk Option 3 Used No.of WK'S Read 0

No Forcing Function for System 8

1

Forcing Functions For System 9

Wk Option 3 Used No.of WK'S Read 0

No Forcing Function for System 9

1

Segment Parameters

```
 PARM      SCALE        PARM      SCALE        PARM      SCALE        PARM
SCALE

-----------------------------------------------------------------------------
-------
 TMPSG    0.100E+01     KESG    0.100E+01    SOD1D    0.100E+01    SODTA
0.100E+01
 FNH4     0.000E+00     FPO4    0.000E+00    ITOTL    0.100E+01    TMPFN
0.100E+01


 Segment #    1
 TMPSG    3 0.100E+01   KESG    5 0.150E+00 SOD1D    9 0.000E+00 SODTA  12
0.100E+01
 FNH4     7 0.000E+00   FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN   4
0.100E+01


 Segment #    2
 TMPSG    3 0.100E+01   KESG    5 0.150E+00 SOD1D    9 0.000E+00 SODTA  12
0.100E+01
 FNH4     7 0.000E+00   FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN   4
0.100E+01


 Segment #    3
 TMPSG    3 0.100E+01   KESG    5 0.150E+00 SOD1D    9 0.000E+00 SODTA  12
0.100E+01
 FNH4     7 0.000E+00   FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN   4
0.100E+01


 Segment #    4
 TMPSG    3 0.100E+01   KESG    5 0.150E+00 SOD1D    9 0.000E+00 SODTA  12
0.100E+01
 FNH4     7 0.000E+00   FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN   4
0.100E+01


 Segment #    5
 TMPSG    3 0.100E+01   KESG    5 0.150E+00 SOD1D    9 0.000E+00 SODTA  12
0.100E-01
 FNH4     7 0.000E+00   FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN   4
0.100E+01


 Segment #    6
 TMPSG    3 0.100E+01   KESG    5 0.150E+00 SOD1D    9 0.000E+00 SODTA  12
0.100E+01
 FNH4     7 0.000E+00   FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN   4
0.100E+01


 Segment #    7
```

```
 TMPSG    3 0.100E+01  KESG    5 0.200E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.100E+01

 Segment #    8
 TMPSG    3 0.100E+01  KESG    5 0.200E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.100E+01

 Segment #    9
 TMPSG    3 0.100E+01  KESG    5 0.200E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.100E+01

 Segment #   10
 TMPSG    3 0.100E+01  KESG    5 0.200E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.100E+01

 Segment #   11
 TMPSG    3 0.100E+01  KESG    5 0.200E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.100E+01

 Segment #   12
 TMPSG    3 0.100E+01  KESG    5 0.200E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.100E+01

 Segment #   13
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.200E+01

 Segment #   14
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.200E+01

 Segment #   15
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL   13 0.100E+01 TMPFN    4
0.200E+01

 Segment #   16
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D    9 0.000E+00 SODTA   12
0.100E+01
```

```
 FNH4     7 0.710E+01  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  17
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  18
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  19
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  20
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  21
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  22
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  23
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

 Segment #  24
 TMPSG    3 0.100E+01  KESG    5 0.250E+00 SOD1D   9 0.000E+00 SODTA   12
0.100E+01
 FNH4     7 0.000E+00  FPO4    8 0.000E+00 ITOTL  13 0.100E+01 TMPFN    4
0.200E+01

1
                    Environmental and Chemical Constants
                    ------------------------------------

                 No Constants Enter for System  1:     GLOBALS
```

NH3 Constants for System 2

Number of Constants for System 2; Group nitrificat is 2

Constant	Const. #	K Value	Constant	Const. #	K Value
K12C	11	0.200E+00	K12T	12	0.108E+01

NO3 Constants for System 3

Number of Constants for System 3; Group denitrif is 2

Constant	Const. #	K Value	Constant	Const. #	K Value
K20C	21	0.100E+00	K20T	22	0.104E+01

No Constants Enter for System 4: PO4

PHYT Constants for System 5

Number of Constants for System 5; Group growth is 2

Constant	Const. #	K Value	Constant	Const. #	K Value
K1C	41	0.245E+01	K1T	42	0.105E+01

Number of Constants for System 5; Group light is 3

Constant	Const. #	K Value	Constant	Const. #	K Value
LGHTS	43	0.100E+01	CCHL	46	0.670E+02
IS1	47	0.525E+03		0	0.000E+00

Number of Constants for System 5; Group nutrients is 4

Constant	Const. #	K Value	Constant	Const. #	K Value
KMNG1	48	0.250E-01	KMPG1	49	0.500E-02
NCRB	58	0.180E+00	PCRB	57	0.250E-01

Number of Constants for System 5; Group death is 4

Constant	Const. #	K Value	Constant	Const. #	K Value
K1RC	50	0.600E+00	K1RT	51	0.107E+01
K1D	52	0.300E+00	KPZDC	55	0.000E+00

CBOD Constants for System 6

Number of Constants for System 6; Group deoxygent is 2

Constant	Const. #	K Value	Constant	Const. #	K Value
KDC	71	0.700E-01	KDT	72	0.105E+01

DO Constants for System 7

Number of Constants for System 7; Group ratio is 2

Constant	Const. #	K Value	Constant	Const. #	K Value
OCRB	81	0.267E+01	K2	82	0.450E+01

ON Constants for System 8

Number of Constants for System 8; Group mineralize is 3

Constant	Const. #	K Value	Constant	Const. #	K Value
K71C	91	0.500E+00	K71T	92	0.108E+01
FON	95	0.150E+00		0	0.000E+00

OP Constants for System 9

Number of Constants for System 9; Group mineralize is 3

Constant	Const. #	K Value	Constant	Const. #	K Value
K83C	100	0.750E+00	K83T	101	0.108E+01
FOP	104	0.500E+00		0	0.000E+00

No Constants Enter for System 10: CO2acy

Environmental Time Functions

Piecewise Linear Functions

	VAL(T)	T	VAL(T)	T	VAL(T)	T
TEMP1	0.25410E+02	0.00	0.25410E+02	0.01	0.25400E+02	0.02
	0.25370E+02	0.03	0.25360E+02	0.04	0.25360E+02	0.05
	0.25320E+02	0.06	0.25330E+02	0.07	0.25310E+02	0.08
	0.25290E+02	0.09	0.25270E+02	0.10	0.25250E+02	0.11
	0.25210E+02	0.13	0.25170E+02	0.14	0.25130E+02	0.15
	0.25080E+02	0.16	0.25010E+02	0.17	0.24940E+02	0.18
	0.24880E+02	0.19	0.24830E+02	0.20	0.24770E+02	0.21
	0.24690E+02	0.22	0.24610E+02	0.23	0.24520E+02	0.24
	0.24420E+02	0.25	0.24320E+02	0.26	0.24240E+02	0.27
	0.24170E+02	0.28	0.24110E+02	0.29	0.24070E+02	0.30
	0.24070E+02	0.31	0.24120E+02	0.32	0.24270E+02	0.33
	0.24450E+02	0.34	0.24630E+02	0.35	0.24820E+02	0.36
	0.24990E+02	0.38	0.25080E+02	0.39	0.25180E+02	0.40
	0.25300E+02	0.41	0.25400E+02	0.42	0.25550E+02	0.43
	0.25630E+02	0.44	0.25690E+02	0.45	0.25740E+02	0.46
	0.25830E+02	0.47	0.25900E+02	0.48	0.25960E+02	0.49
	0.26040E+02	0.50	0.26090E+02	0.51	0.26170E+02	0.52
	0.26240E+02	0.53	0.26250E+02	0.54	0.26260E+02	0.55
	0.26290E+02	0.56	0.26290E+02	0.57	0.26330E+02	0.58
	0.26370E+02	0.59	0.26340E+02	0.60	0.26440E+02	0.61
	0.26390E+02	0.63	0.26170E+02	0.64	0.26090E+02	0.65
	0.26350E+02	0.66	0.26510E+02	0.67	0.26460E+02	0.68
	0.26340E+02	0.69	0.26060E+02	0.70	0.25940E+02	0.71
	0.25930E+02	0.72	0.25930E+02	0.73	0.25980E+02	0.74
	0.25990E+02	0.75	0.25920E+02	0.76	0.25770E+02	0.77
	0.25680E+02	0.78	0.25740E+02	0.79	0.25810E+02	0.80
	0.25600E+02	0.81	0.25170E+02	0.82	0.25250E+02	0.83
	0.25460E+02	0.84	0.25640E+02	0.85	0.25670E+02	0.86
	0.25610E+02	0.88	0.25490E+02	0.89	0.25530E+02	0.90
	0.25530E+02	0.91	0.25610E+02	0.92	0.25600E+02	0.93
	0.25580E+02	0.94	0.25580E+02	0.95	0.25580E+02	0.96
	0.25570E+02	0.97	0.25560E+02	0.98	0.25580E+02	0.99
	0.25580E+02	1.00	0.25580E+02	1.01	0.25580E+02	1.02
	0.25550E+02	1.03	0.25540E+02	1.04	0.25530E+02	1.05
	0.25510E+02	1.06	0.25480E+02	1.07	0.25450E+02	1.08
	0.25420E+02	1.09	0.25420E+02	1.10	0.25380E+02	1.11
	0.25330E+02	1.13	0.25290E+02	1.14	0.25250E+02	1.15
	0.25210E+02	1.16	0.25190E+02	1.17	0.25210E+02	1.18
	0.25180E+02	1.19	0.25060E+02	1.20	0.24920E+02	1.21
	0.24810E+02	1.22	0.24720E+02	1.23	0.24670E+02	1.24
	0.24650E+02	1.25	0.24670E+02	1.26	0.24600E+02	1.27
	0.24450E+02	1.28	0.24300E+02	1.29	0.24200E+02	1.30
	0.24160E+02	1.31	0.24220E+02	1.32	0.24370E+02	1.33
	0.24520E+02	1.34	0.24660E+02	1.35	0.24770E+02	1.36
	0.24890E+02	1.38	0.24880E+02	1.39	0.24840E+02	1.40
	0.25020E+02	1.41	0.25310E+02	1.42	0.25540E+02	1.43
	0.25700E+02	1.44	0.25820E+02	1.45	0.25860E+02	1.46
	0.25830E+02	1.47	0.25880E+02	1.48	0.25920E+02	1.49
	0.25980E+02	1.50	0.26050E+02	1.51	0.26120E+02	1.52
	0.26200E+02	1.53	0.25950E+02	1.54	0.25950E+02	1.55
	0.26190E+02	1.56	0.26240E+02	1.57	0.26210E+02	1.58
	0.26050E+02	1.59	0.26110E+02	1.60	0.26200E+02	1.61
	0.26140E+02	1.63	0.25950E+02	1.64	0.25760E+02	1.65
	0.25740E+02	1.66	0.25790E+02	1.67	0.25860E+02	1.68
	0.25910E+02	1.69	0.25950E+02	1.70	0.25960E+02	1.71
	0.26000E+02	1.72	0.26010E+02	1.73	0.26000E+02	1.74
	0.25850E+02	1.75	0.25690E+02	1.76	0.25660E+02	1.77

	0.25660E+02	1.78	0.25620E+02	1.79	0.25570E+02	1.80
	0.25570E+02	1.81	0.25570E+02	1.82	0.25590E+02	1.83
	0.25450E+02	1.84	0.25140E+02	1.85	0.25340E+02	1.86
	0.25360E+02	1.88	0.25440E+02	1.89	0.25510E+02	1.90
	0.25500E+02	1.91	0.25490E+02	1.92	0.25510E+02	1.93
	0.25500E+02	1.94	0.25480E+02	1.95	0.25450E+02	1.96
	0.25410E+02	1.97	0.25390E+02	1.98	0.25390E+02	1.99
	0.25390E+02	2.00				
TEMP2	0.23440E+02	0.00	0.23570E+02	0.01	0.23660E+02	0.02
	0.23700E+02	0.03	0.23710E+02	0.04	0.23700E+02	0.05
	0.23650E+02	0.06	0.23620E+02	0.07	0.23540E+02	0.08
	0.23360E+02	0.09	0.23340E+02	0.10	0.23380E+02	0.11
	0.23430E+02	0.13	0.23440E+02	0.14	0.23330E+02	0.15
	0.23150E+02	0.16	0.22820E+02	0.17	0.22490E+02	0.18
	0.22230E+02	0.19	0.22100E+02	0.20	0.21960E+02	0.21
	0.21840E+02	0.22	0.21880E+02	0.23	0.21790E+02	0.24
	0.21600E+02	0.25	0.21370E+02	0.26	0.21170E+02	0.27
	0.21010E+02	0.28	0.20930E+02	0.29	0.20780E+02	0.30
	0.20730E+02	0.31	0.20830E+02	0.32	0.20990E+02	0.33
	0.21290E+02	0.34	0.21420E+02	0.35	0.21600E+02	0.36
	0.21850E+02	0.38	0.22270E+02	0.39	0.23040E+02	0.40
	0.23930E+02	0.41	0.24930E+02	0.42	0.25920E+02	0.43
	0.26780E+02	0.44	0.27460E+02	0.45	0.28200E+02	0.46
	0.28840E+02	0.47	0.29110E+02	0.48	0.29370E+02	0.49
	0.29440E+02	0.50	0.28640E+02	0.51	0.28810E+02	0.52
	0.28840E+02	0.53	0.28980E+02	0.54	0.28790E+02	0.55
	0.29230E+02	0.56	0.29460E+02	0.57	0.29500E+02	0.58
	0.29430E+02	0.59	0.29150E+02	0.60	0.28930E+02	0.61
	0.28870E+02	0.63	0.27750E+02	0.64	0.27280E+02	0.65
	0.26630E+02	0.66	0.26410E+02	0.67	0.26190E+02	0.68
	0.25950E+02	0.69	0.25650E+02	0.70	0.25390E+02	0.71
	0.25340E+02	0.72	0.25260E+02	0.73	0.24920E+02	0.74
	0.24730E+02	0.75	0.24640E+02	0.76	0.24490E+02	0.77
	0.24420E+02	0.78	0.24370E+02	0.79	0.24420E+02	0.80
	0.24470E+02	0.81	0.24350E+02	0.82	0.24140E+02	0.83
	0.23990E+02	0.84	0.23560E+02	0.85	0.23340E+02	0.86
	0.23080E+02	0.88	0.23010E+02	0.89	0.23100E+02	0.90
	0.23330E+02	0.91	0.23590E+02	0.92	0.23750E+02	0.93
	0.23820E+02	0.94	0.23850E+02	0.95	0.23750E+02	0.96
	0.23770E+02	0.97	0.23730E+02	0.98	0.23760E+02	0.99
	0.23810E+02	1.00	0.23850E+02	1.01	0.23820E+02	1.02
	0.23790E+02	1.03	0.23760E+02	1.04	0.23730E+02	1.05
	0.23700E+02	1.06	0.23630E+02	1.07	0.23530E+02	1.08
	0.23470E+02	1.09	0.23460E+02	1.10	0.23400E+02	1.11
	0.23320E+02	1.13	0.23230E+02	1.14	0.23110E+02	1.15
	0.23010E+02	1.16	0.22910E+02	1.17	0.22820E+02	1.18
	0.22690E+02	1.19	0.22570E+02	1.20	0.22420E+02	1.21
	0.22300E+02	1.22	0.22180E+02	1.23	0.22060E+02	1.24
	0.21920E+02	1.25	0.21800E+02	1.26	0.21680E+02	1.27
	0.21630E+02	1.28	0.21660E+02	1.29	0.21790E+02	1.30
	0.21990E+02	1.31	0.22250E+02	1.32	0.22350E+02	1.33
	0.22460E+02	1.34	0.22660E+02	1.35	0.22910E+02	1.36
	0.23290E+02	1.38	0.23670E+02	1.39	0.24110E+02	1.40
	0.24550E+02	1.41	0.25070E+02	1.42	0.25490E+02	1.43
	0.25890E+02	1.44	0.26340E+02	1.45	0.26680E+02	1.46
	0.27040E+02	1.47	0.27290E+02	1.48	0.27520E+02	1.49
	0.27660E+02	1.50	0.27900E+02	1.51	0.28090E+02	1.52
	0.28200E+02	1.53	0.28150E+02	1.54	0.28200E+02	1.55
	0.28280E+02	1.56	0.28180E+02	1.57	0.28260E+02	1.58
	0.27820E+02	1.59	0.26920E+02	1.60	0.25330E+02	1.61
	0.24250E+02	1.63	0.23610E+02	1.64	0.23290E+02	1.65
	0.23450E+02	1.66	0.23800E+02	1.67	0.24510E+02	1.68
	0.25270E+02	1.69	0.25840E+02	1.70	0.25710E+02	1.71
	0.25110E+02	1.72	0.24530E+02	1.73	0.24040E+02	1.74
	0.23890E+02	1.75	0.23820E+02	1.76	0.23950E+02	1.77

```
          0.23880E+02   1.78    0.23780E+02   1.79    0.23650E+02   1.80
          0.23530E+02   1.81    0.23360E+02   1.82    0.21910E+02   1.83
          0.22270E+02   1.84    0.22550E+02   1.85    0.22740E+02   1.86
          0.22850E+02   1.88    0.22890E+02   1.89    0.22850E+02   1.90
          0.22750E+02   1.91    0.22450E+02   1.92    0.22390E+02   1.93
          0.22370E+02   1.94    0.22330E+02   1.95    0.22230E+02   1.96
          0.22080E+02   1.97    0.21900E+02   1.98    0.21690E+02   1.99
          0.21470E+02   2.00
 ITOT     0.00000E+00   0.00    0.00000E+00   0.04    0.00000E+00   0.08
          0.00000E+00   0.12    0.00000E+00   0.16    0.44100E+01   0.20
          0.78510E+02   0.25    0.25494E+03   0.29    0.45343E+03   0.33
          0.62633E+03   0.37    0.79836E+03   0.41    0.92450E+03   0.45
          0.98449E+03   0.50    0.98802E+03   0.54    0.93597E+03   0.58
          0.82041E+03   0.62    0.66868E+03   0.66    0.48695E+03   0.70
          0.28582E+03   0.75    0.94390E+02   0.79    0.10590E+02   0.83
          0.00000E+00   0.87    0.00000E+00   0.91    0.00000E+00   0.95
          0.00000E+00   1.00    0.00000E+00   1.00
 F        0.10000E+01   0.00    0.10000E+01 365.00
1
```

Initial Conditions

```
                    Initial Conditions for System 1
    Particulate Fraction of System is Transported by Solids Field     3
                      Density of System =  0.100E+01

      1 0.2000E-01 0.1000E+01      2 0.2000E-01 0.1000E+01      3
0.2000E-01 0.1000E+01
      4 0.2000E-01 0.1000E+01      5 0.2000E-01 0.1000E+01      6
0.2000E-01 0.1000E+01
      7 0.2000E-01 0.1000E+01      8 0.2000E-01 0.1000E+01      9
0.2000E-01 0.1000E+01
     10 0.2000E-01 0.1000E+01     11 0.2000E-01 0.1000E+01     12
0.2000E-01 0.1000E+01
     13 0.2000E-01 0.1000E+01     14 0.2000E-01 0.1000E+01     15
0.2000E-01 0.1000E+01
     16 0.2000E-01 0.1000E+01     17 0.2000E-01 0.1000E+01     18
0.2000E-01 0.1000E+01
     19 0.2000E-01 0.1000E+01     20 0.2000E-01 0.1000E+01     21
0.2000E-01 0.1000E+01
     22 0.2000E-01 0.1000E+01     23 0.2000E-01 0.1000E+01     24
0.2000E-01 0.1000E+01

                    Initial Conditions for System 2
    Particulate Fraction of System is Transported by Solids Field     3
                      Density of System =  0.100E+01

      1 0.9000E-01 0.1000E+01      2 0.9000E-01 0.1000E+01      3
0.9000E-01 0.1000E+01
      4 0.9000E-01 0.1000E+01      5 0.9000E-01 0.1000E+01      6
0.9000E-01 0.1000E+01
      7 0.9000E-01 0.1000E+01      8 0.9000E-01 0.1000E+01      9
0.9000E-01 0.1000E+01
     10 0.9000E-01 0.1000E+01     11 0.9000E-01 0.1000E+01     12
0.9000E-01 0.1000E+01
     13 0.9000E-01 0.1000E+01     14 0.9000E-01 0.1000E+01     15
0.9000E-01 0.1000E+01
     16 0.9000E-01 0.1000E+01     17 0.9000E-01 0.1000E+01     18
0.9000E-01 0.1000E+01
```

```
      19 0.9000E-01 0.1000E+01      20 0.9000E-01 0.1000E+01      21
0.9000E-01 0.1000E+01
      22 0.9000E-01 0.1000E+01      23 0.9000E-01 0.1000E+01      24
0.9000E-01 0.1000E+01

                    Initial Conditions for System 3
    Particulate Fraction of System is Transported by Solids Field    3
                    Density of System =  0.100E+01

       1 0.1010E+01 0.1000E+01       2 0.1010E+01 0.1000E+01       3
0.1010E+01 0.1000E+01
       4 0.1010E+01 0.1000E+01       5 0.1010E+01 0.1000E+01       6
0.1010E+01 0.1000E+01
       7 0.1010E+01 0.1000E+01       8 0.1010E+01 0.1000E+01       9
0.1010E+01 0.1000E+01
      10 0.1010E+01 0.1000E+01      11 0.1010E+01 0.1000E+01      12
0.1010E+01 0.1000E+01
      13 0.1010E+01 0.1000E+01      14 0.1010E+01 0.1000E+01      15
0.1010E+01 0.1000E+01
      16 0.1010E+01 0.1000E+01      17 0.1010E+01 0.1000E+01      18
0.1010E+01 0.1000E+01
      19 0.1010E+01 0.1000E+01      20 0.1010E+01 0.1000E+01      21
0.1010E+01 0.1000E+01
      22 0.1010E+01 0.1000E+01      23 0.1010E+01 0.1000E+01      24
0.1010E+01 0.1000E+01

                    Initial Conditions for System 4
    Particulate Fraction of System is Transported by Solids Field    4
                    Density of System =  0.100E+01

       1 0.1000E-23 0.0000E+00       2 0.1000E+04 0.0000E+00       3
0.1000E-23 0.0000E+00
       4 0.1000E+04 0.0000E+00       5 0.1000E-23 0.0000E+00       6
0.1000E+04 0.0000E+00
       7 0.1000E-23 0.0000E+00       8 0.9750E+03 0.0000E+00       9
0.1000E-23 0.0000E+00
      10 0.9500E+03 0.0000E+00      11 0.1000E-23 0.0000E+00      12
0.9250E+03 0.0000E+00
      13 0.1000E-23 0.0000E+00      14 0.9000E+03 0.0000E+00      15
0.1000E-23 0.0000E+00
      16 0.9000E+03 0.0000E+00      17 0.1000E-23 0.0000E+00      18
0.9000E+03 0.0000E+00
      19 0.1000E-23 0.0000E+00      20 0.9000E+03 0.0000E+00      21
0.1000E-23 0.0000E+00
      22 0.9000E+03 0.0000E+00      23 0.1000E-23 0.0000E+00      24
0.9000E+03 0.0000E+00

                    Initial Conditions for System 5
    Particulate Fraction of System is Transported by Solids Field    3
                    Density of System =  0.100E+01

       1 0.5000E+01 0.1000E+01       2 0.5000E+01 0.1000E+01       3
0.5000E+01 0.1000E+01
       4 0.5000E+01 0.1000E+01       5 0.5000E+01 0.1000E+01       6
0.5000E+01 0.1000E+01
       7 0.5000E+01 0.1000E+01       8 0.5000E+01 0.1000E+01       9
0.5000E+01 0.1000E+01
      10 0.5000E+01 0.1000E+01      11 0.5000E+01 0.1000E+01      12
0.5000E+01 0.1000E+01
      13 0.5000E+01 0.1000E+01      14 0.5000E+01 0.1000E+01      15
0.5000E+01 0.1000E+01
      16 0.5000E+01 0.1000E+01      17 0.5000E+01 0.1000E+01      18
```

```
0.5000E+01 0.1000E+01
      19 0.5000E+01 0.1000E+01      20 0.5000E+01 0.1000E+01      21
0.5000E+01 0.1000E+01
      22 0.5000E+01 0.1000E+01      23 0.5000E+01 0.1000E+01      24
0.5000E+01 0.1000E+01

                    Initial Conditions for System 6
    Particulate Fraction of System is Transported by Solids Field    3
                      Density of System =  0.100E+01

       1 0.7990E+01 0.1000E+01       2 0.7590E+01 0.1000E+01       3
0.7590E+01 0.1000E+01
       4 0.7990E+01 0.1000E+01       5 0.7590E+01 0.1000E+01       6
0.7590E+01 0.1000E+01
       7 0.7990E+01 0.1000E+01       8 0.7590E+01 0.1000E+01       9
0.7590E+01 0.1000E+01
      10 0.7990E+01 0.1000E+01      11 0.7590E+01 0.1000E+01      12
0.7590E+01 0.1000E+01
      13 0.7990E+01 0.1000E+01      14 0.7590E+01 0.1000E+01      15
0.7590E+01 0.1000E+01
      16 0.7990E+01 0.1000E+01      17 0.7590E+01 0.1000E+01      18
0.7590E+01 0.1000E+01
      19 0.7990E+01 0.1000E+01      20 0.7590E+01 0.1000E+01      21
0.7590E+01 0.1000E+01
      22 0.7990E+01 0.1000E+01      23 0.7590E+01 0.1000E+01      24
0.7590E+01 0.1000E+01

                    Initial Conditions for System 7
    Particulate Fraction of System is Transported by Solids Field    3
                      Density of System =  0.100E+01

       1 0.1020E+01 0.7000E+00       2 0.1020E+01 0.7000E+00       3
0.1020E+01 0.7000E+00
       4 0.1020E+01 0.7000E+00       5 0.1020E+01 0.7000E+00       6
0.1020E+01 0.7000E+00
       7 0.1020E+01 0.7000E+00       8 0.1020E+01 0.7000E+00       9
0.1020E+01 0.7000E+00
      10 0.1020E+01 0.7000E+00      11 0.1020E+01 0.7000E+00      12
0.1020E+01 0.7000E+00
      13 0.1020E+01 0.7000E+00      14 0.1020E+01 0.7000E+00      15
0.1020E+01 0.7000E+00
      16 0.1020E+01 0.7000E+00      17 0.1020E+01 0.7000E+00      18
0.1020E+01 0.7000E+00
      19 0.1020E+01 0.7000E+00      20 0.1020E+01 0.7000E+00      21
0.1020E+01 0.7000E+00
      22 0.1020E+01 0.7000E+00      23 0.1020E+01 0.7000E+00      24
0.1020E+01 0.7000E+00

                    Initial Conditions for System 8
    Particulate Fraction of System is Transported by Solids Field    3
                      Density of System =  0.100E+01

       1 0.1000E+00 0.1000E+01       2 0.1000E+00 0.1000E+01       3
0.1000E+00 0.1000E+01
       4 0.1000E+00 0.1000E+01       5 0.1000E+00 0.1000E+01       6
0.1000E+00 0.1000E+01
       7 0.1000E+00 0.1000E+01       8 0.1000E+00 0.1000E+01       9
0.1000E+00 0.1000E+01
      10 0.1000E+00 0.1000E+01      11 0.1000E+00 0.1000E+01      12
0.1000E+00 0.1000E+01
      13 0.1000E+00 0.1000E+01      14 0.1000E+00 0.1000E+01      15
0.1000E+00 0.1000E+01
```

```
      16 0.1000E+00 0.1000E+01      17 0.1000E+00 0.1000E+01      18
0.1000E+00 0.1000E+01
      19 0.1000E+00 0.1000E+01      20 0.1000E+00 0.1000E+01      21
0.1000E+00 0.1000E+01
      22 0.1000E+00 0.1000E+01      23 0.1000E+00 0.1000E+01      24
0.1000E+00 0.1000E+01
```

Initial Conditions for System 9
Particulate Fraction of System is Transported by Solids Field 3
Density of System = 0.100E+01

```
       1 0.4000E+01 0.1000E+01       2 0.4000E+01 0.1000E+01       3
0.4000E+01 0.1000E+01
       4 0.4000E+01 0.1000E+01       5 0.4000E+01 0.1000E+01       6
0.4000E+01 0.1000E+01
       7 0.4000E+01 0.1000E+01       8 0.4000E+01 0.1000E+01       9
0.4000E+01 0.1000E+01
      10 0.4000E+01 0.1000E+01      11 0.4000E+01 0.1000E+01      12
0.4000E+01 0.1000E+01
      13 0.6000E+01 0.1000E+01      14 0.6000E+01 0.1000E+01      15
0.6000E+01 0.1000E+01
      16 0.6000E+01 0.1000E+01      17 0.6000E+01 0.1000E+01      18
0.6000E+01 0.1000E+01
      19 0.6000E+01 0.1000E+01      20 0.6000E+01 0.1000E+01      21
0.6000E+01 0.1000E+01
      22 0.6000E+01 0.1000E+01      23 0.6000E+01 0.1000E+01      24
0.6000E+01 0.1000E+01
```

Stability Criteria for Numerical Integration

System	Maximum Concentration
1	10.00
2	10.00
3	5.00
4	500.00
5	100.00
6	20.00
7	10.00
8	5.00
9	5000.00

Completed

```
# WASP5pH EDF dump file
#
# Seg    = model segment number
# Time   = simulation time in days
# Tchlax = total chlorophyll-a [periphyton] (ug/L)
# DO     = dissolved oxygen (mg/L)
# CO2acy = carbon dioxide acidity (mg/L)
# pH     = pH (standard units)
# CO2sat = saturated CO2 concentration (mg/L)
# Nlim   = Michaelis Nitrogen limitation factor
# Plim   = Michaelis Phosphorus limitation factor
#
# Seg    Time Tchlax     DO CO2acy    pH CO2sat   Nlim   Plim
    2    0.00 1000.0   7.59   4.00  8.02   0.50   0.81   1.00
   14    0.00  900.0   7.59   6.00  7.86   0.53   0.81   1.00
    2    0.04  954.6   4.67  14.61  7.46   0.50   0.99   0.99
   14    0.04  862.5   7.08   4.60  7.98   0.53   0.86   1.00
    2    0.08  909.3   4.54  15.08  7.45   0.50   1.00   0.99
   14    0.08  824.7   6.51   5.14  7.93   0.53   0.97   0.99
    2    0.12  868.3   4.56  15.05  7.45   0.50   1.00   0.99
   14    0.12  790.6   5.70   7.25  7.78   0.53   0.99   0.99
    2    0.16  829.3   4.58  15.00  7.45   0.51   1.00   0.99
   14    0.16  758.1   5.15   8.80  7.70   0.54   0.99   0.99
    2    0.20  795.1   4.64  14.91  7.46   0.51   1.00   0.99
   14    0.20  730.3   4.98   9.35  7.68   0.55   0.99   0.99
    2    0.24  773.1   5.01  14.33  7.48   0.51   1.00   0.99
   14    0.24  712.2   5.18   9.12  7.69   0.55   0.99   0.99
    2    0.28  783.8   5.60  13.41  7.51   0.52   0.99   0.99
   14    0.28  719.7   5.65   8.43  7.73   0.57   0.99   0.99
    2    0.32  824.7   5.98  12.84  7.53   0.52   0.99   0.99
   14    0.32  750.5   6.07   7.83  7.77   0.57   0.99   0.99
    2    0.36  879.7   6.13  12.61  7.53   0.51   0.99   0.99
   14    0.36  792.3   6.35   7.40  7.79   0.56   0.99   0.99
    2    0.40  938.4   6.14  12.61  7.53   0.50   0.99   0.99
   14    0.40  838.2   6.51   7.13  7.79   0.53   0.99   0.99
    2    0.44  993.9   6.08  12.71  7.52   0.50   0.99   0.99
   14    0.44  889.0   6.61   6.78  7.78   0.48   0.99   0.99
    2    0.48 1045.1   6.03  12.80  7.51   0.50   0.99   0.99
   14    0.48  944.5   6.63   6.65  7.77   0.46   0.99   0.99
    2    0.52 1094.8   6.04  12.80  7.51   0.49   0.99   0.99
   14    0.52 1001.5   6.60   6.67  7.77   0.46   0.99   0.99
    2    0.56 1149.7   6.12  12.69  7.52   0.49   0.99   0.99
   14    0.56 1063.4   6.67   6.56  7.78   0.45   0.99   0.99
    2    0.60 1209.1   6.27  12.46  7.52   0.49   0.99   0.99
   14    0.60 1132.3   6.83   6.31  7.80   0.45   0.99   0.99
    2    0.64 1280.3   6.48  12.16  7.54   0.49   0.99   0.99
   14    0.64 1211.2   6.99   6.10  7.82   0.48   0.99   0.99
    2    0.68 1364.9   6.71  11.82  7.54   0.49   0.99   0.99
   14    0.68 1294.4   7.15   5.91  7.85   0.49   0.99   0.99
    2    0.72 1454.0   6.68  11.91  7.55   0.49   0.99   0.99
   14    0.72 1377.4   7.17   5.93  7.85   0.50   0.99   0.99
    2    0.76 1524.7   6.17  12.72  7.52   0.50   0.99   0.99
   14    0.76 1440.5   6.79   6.59  7.81   0.51   0.99   0.99
    2    0.80 1534.6   5.03  14.50  7.46   0.50   1.00   0.99
   14    0.80 1448.3   5.85   8.08  7.73   0.52   0.99   0.99
    2    0.84 1486.3   4.33  15.58  7.43   0.50   1.00   0.99
   14    0.84 1404.8   5.08   9.30  7.67   0.52   1.00   0.99
    2    0.88 1420.3   4.24  15.71  7.43   0.50   1.00   0.99
   14    0.88 1348.4   4.77   9.93  7.65   0.54   1.00   0.99
    2    0.92 1355.4   4.27  15.64  7.43   0.50   1.00   0.99
   14    0.92 1293.1   4.57  10.26  7.63   0.53   1.00   0.99
    2    0.96 1293.3   4.30  15.57  7.43   0.50   1.00   0.99
   14    0.96 1238.7   4.49  10.31  7.63   0.52   1.00   0.99
    2    1.00 1234.1   4.34  15.50  7.43   0.50   1.00   0.99
   14    1.00 1186.7   4.48  10.34  7.62   0.52   1.00   0.99
```

2	1.04	1177.6	4.37	15.43	7.44	0.50	1.00	0.99
14	1.04	1136.8	4.51	10.24	7.63	0.52	1.00	0.99
2	1.08	1123.8	4.40	15.36	7.44	0.50	1.00	0.99
14	1.08	1089.2	4.55	10.21	7.63	0.53	1.00	0.99
2	1.12	1072.8	4.44	15.30	7.44	0.50	1.00	0.99
14	1.12	1044.1	4.59	10.13	7.64	0.53	1.00	0.99
2	1.16	1024.4	4.47	15.23	7.44	0.50	1.00	0.99
14	1.16	1001.5	4.64	10.05	7.64	0.54	1.00	0.99
2	1.20	979.5	4.54	15.12	7.45	0.51	1.00	0.99
14	1.20	962.3	4.72	9.93	7.65	0.54	1.00	0.99
2	1.24	953.4	5.01	14.37	7.47	0.51	1.00	0.99
14	1.24	939.0	5.10	9.33	7.68	0.55	1.00	0.99
2	1.28	967.9	5.75	13.24	7.51	0.52	0.99	0.99
14	1.28	949.9	5.75	8.35	7.73	0.56	1.00	0.99
2	1.32	1018.0	6.17	12.59	7.54	0.52	0.99	0.99
14	1.32	991.9	6.29	7.53	7.77	0.55	0.99	0.99
2	1.36	1083.7	6.34	12.35	7.54	0.51	0.99	0.99
14	1.36	1048.9	6.64	7.01	7.80	0.54	0.99	0.99
2	1.40	1151.9	6.32	12.40	7.54	0.51	0.99	0.99
14	1.40	1111.0	6.83	6.64	7.81	0.52	0.99	0.99
2	1.44	1216.1	6.26	12.50	7.53	0.50	0.99	0.99
14	1.44	1174.2	6.88	6.45	7.81	0.49	0.99	0.99
2	1.48	1275.4	6.20	12.61	7.52	0.50	0.99	0.99
14	1.48	1237.2	6.87	6.42	7.80	0.48	0.99	0.99
2	1.52	1332.5	6.20	12.61	7.52	0.49	0.99	0.99
14	1.52	1301.2	6.87	6.39	7.80	0.47	0.99	0.99
2	1.56	1391.8	6.28	12.51	7.52	0.49	0.99	0.99
14	1.56	1369.7	6.93	6.28	7.80	0.47	0.99	0.99
2	1.60	1459.1	6.45	12.26	7.53	0.49	0.99	0.99
14	1.60	1446.2	7.06	6.10	7.83	0.48	0.99	0.99
2	1.64	1539.3	6.69	11.92	7.55	0.50	0.99	0.99
14	1.64	1522.2	7.11	6.15	7.85	0.53	0.99	0.99
2	1.68	1632.5	6.91	11.60	7.56	0.50	0.99	0.99
14	1.68	1605.2	7.41	5.76	7.87	0.51	0.99	0.99
2	1.72	1732.4	6.91	11.63	7.56	0.49	0.99	0.99
14	1.72	1700.8	7.49	5.60	7.88	0.51	0.99	0.99
2	1.76	1811.3	6.31	12.60	7.52	0.50	0.99	0.99
14	1.76	1769.7	7.00	6.42	7.83	0.52	0.99	0.99
2	1.80	1819.9	5.01	14.63	7.46	0.50	1.00	0.99
14	1.80	1775.7	5.92	8.18	7.73	0.53	0.99	0.99
2	1.84	1761.4	4.19	15.89	7.42	0.50	1.00	0.99
14	1.84	1724.9	5.09	9.57	7.67	0.55	1.00	0.99
2	1.88	1684.1	4.10	16.00	7.42	0.50	1.00	0.99
14	1.88	1658.2	4.65	10.27	7.63	0.54	1.00	0.99
2	1.92	1607.4	4.13	15.93	7.42	0.50	1.00	0.99
14	1.92	1591.8	4.46	10.56	7.63	0.54	1.00	0.99
2	1.96	1534.1	4.18	15.84	7.43	0.50	1.00	0.99
14	1.96	1529.3	4.39	10.65	7.62	0.55	1.00	0.99
2	2.00	1464.4	4.22	15.75	7.43	0.50	1.00	0.99
14	2.00	1470.5	4.42	10.60	7.62	0.53	1.00	0.99
2	2.04	1398.0	4.26	15.67	7.43	0.50	1.00	0.99
14	2.04	1409.1	4.35	10.65	7.61	0.53	1.00	0.99
2	2.08	1334.7	4.30	15.60	7.43	0.50	1.00	0.99
14	2.08	1350.3	4.39	10.56	7.62	0.53	1.00	0.99
2	2.12	1274.5	4.33	15.52	7.44	0.50	1.00	0.99
14	2.12	1294.5	4.44	10.47	7.62	0.53	1.00	0.99
2	2.16	1217.3	4.37	15.44	7.44	0.51	1.00	0.99
14	2.16	1241.3	4.50	10.37	7.63	0.54	1.00	0.99
2	2.20	1164.6	4.45	15.31	7.45	0.51	1.00	0.99
14	2.20	1193.4	4.61	10.20	7.64	0.55	1.00	0.99
2	2.24	1133.3	5.00	14.45	7.47	0.51	1.00	0.99
14	2.24	1164.5	5.06	9.50	7.68	0.55	1.00	0.99
2	2.28	1148.7	5.84	13.15	7.52	0.52	0.99	0.99
14	2.28	1176.0	5.82	8.35	7.74	0.57	1.00	0.99
2	2.32	1205.2	6.34	12.40	7.54	0.52	0.99	0.99

14	2.32	1222.2	6.42	7.45	7.79	0.57	0.99	0.99
2	2.36	1279.7	6.53	12.12	7.55	0.51	0.99	0.99
14	2.36	1284.2	6.81	6.86	7.82	0.56	0.99	0.99
2	2.40	1354.0	6.52	12.14	7.54	0.50	0.99	0.99
14	2.40	1347.7	7.02	6.51	7.83	0.53	0.99	0.99
2	2.44	1426.9	6.43	12.30	7.53	0.50	0.99	0.99
14	2.44	1420.6	7.17	6.11	7.83	0.48	0.99	0.99
2	2.48	1493.2	6.35	12.44	7.53	0.50	0.99	0.99
14	2.48	1498.9	7.19	5.97	7.82	0.46	0.99	0.99
2	2.52	1556.8	6.35	12.46	7.52	0.49	0.99	0.99
14	2.52	1577.9	7.14	6.04	7.82	0.46	0.99	0.99
2	2.56	1622.9	6.43	12.34	7.53	0.49	0.99	0.99
14	2.56	1658.4	7.21	5.93	7.82	0.46	0.99	0.99
2	2.60	1697.4	6.63	12.06	7.54	0.49	0.99	0.99
14	2.60	1751.3	7.42	5.60	7.85	0.45	0.99	0.99
2	2.64	1786.6	6.89	11.68	7.55	0.49	0.99	0.99
14	2.64	1857.5	7.62	5.33	7.88	0.47	0.99	0.99
2	2.68	1892.0	7.17	11.27	7.57	0.49	0.99	0.99
14	2.68	1968.9	7.82	5.11	7.91	0.49	0.99	0.99
2	2.72	2003.3	7.12	11.38	7.57	0.49	0.99	0.99
14	2.72	2079.4	7.82	5.16	7.91	0.50	0.99	0.99
2	2.76	2091.5	6.50	12.39	7.53	0.49	0.99	0.99
14	2.76	2162.6	7.29	6.06	7.85	0.51	0.99	0.99
2	2.80	2102.9	5.02	14.70	7.46	0.50	1.00	0.99
14	2.80	2170.6	5.99	8.12	7.72	0.52	0.99	0.99
2	2.84	2037.7	4.08	16.14	7.42	0.50	1.00	0.99
14	2.84	2105.7	4.91	9.82	7.64	0.52	1.00	0.99
2	2.88	1947.4	3.94	16.33	7.41	0.50	1.00	0.99
14	2.88	2021.1	4.49	10.62	7.62	0.54	1.00	0.99
2	2.92	1858.4	3.99	16.23	7.41	0.50	1.00	0.99
14	2.92	1938.3	4.22	11.04	7.60	0.53	1.00	0.99
2	2.96	1773.2	4.04	16.13	7.42	0.50	1.00	0.99
14	2.96	1856.9	4.12	11.11	7.59	0.52	1.00	0.99
2	3.00	1692.1	4.08	16.04	7.42	0.50	1.00	0.99
14	3.00	1778.9	4.11	11.14	7.59	0.52	1.00	0.99
2	3.04	1614.6	4.13	15.94	7.42	0.50	1.00	0.99
14	3.04	1704.1	4.15	11.01	7.60	0.52	1.00	0.99
2	3.08	1540.9	4.17	15.85	7.43	0.50	1.00	0.99
14	3.08	1632.7	4.21	10.94	7.60	0.53	1.00	0.99
2	3.12	1470.9	4.22	15.76	7.43	0.50	1.00	0.99
14	3.12	1565.1	4.27	10.83	7.61	0.53	1.00	0.99
2	3.16	1404.5	4.26	15.67	7.43	0.50	1.00	0.99
14	3.16	1501.2	4.34	10.71	7.62	0.54	1.00	0.99
2	3.20	1342.8	4.35	15.52	7.44	0.51	1.00	0.99
14	3.20	1442.2	4.44	10.54	7.63	0.54	1.00	0.99
2	3.24	1304.1	4.95	14.58	7.47	0.51	1.00	0.99
14	3.24	1404.3	4.96	9.73	7.66	0.55	1.00	0.99
2	3.28	1317.8	5.90	13.10	7.52	0.51	0.99	0.99
14	3.28	1414.2	5.84	8.37	7.73	0.56	1.00	0.99
2	3.32	1379.2	6.47	12.24	7.55	0.52	0.99	0.99
14	3.32	1468.7	6.59	7.23	7.79	0.55	0.99	0.99
2	3.36	1461.3	6.69	11.92	7.55	0.51	0.99	0.99
14	3.36	1544.6	7.06	6.52	7.83	0.54	0.99	0.99
2	3.40	1546.6	6.66	11.99	7.55	0.51	0.99	0.99
14	3.40	1626.9	7.31	6.09	7.85	0.52	0.99	0.99
2	3.44	1626.0	6.57	12.14	7.54	0.50	0.99	0.99
14	3.44	1709.7	7.37	5.88	7.85	0.49	0.99	0.99
2	3.48	1698.3	6.47	12.31	7.53	0.50	0.99	0.99
14	3.48	1790.7	7.34	5.88	7.84	0.48	0.99	0.99
2	3.52	1766.8	6.47	12.34	7.53	0.49	0.99	0.99
14	3.52	1871.8	7.33	5.87	7.84	0.47	0.99	0.99
2	3.56	1837.3	6.55	12.23	7.53	0.49	0.99	0.99
14	3.56	1957.3	7.39	5.77	7.84	0.47	0.99	0.99
2	3.60	1916.8	6.75	11.94	7.54	0.49	0.99	0.99
14	3.60	2052.4	7.55	5.55	7.87	0.48	0.99	0.99

2	3.64	2011.4	7.02	11.54	7.56	0.50	0.99	0.99
14	3.64	2147.3	7.59	5.62	7.89	0.53	0.99	0.99
2	3.68	2121.2	7.29	11.16	7.57	0.50	0.99	0.99
14	3.68	2249.2	7.94	5.17	7.92	0.51	0.99	0.99
2	3.72	2239.1	7.29	11.20	7.57	0.49	0.99	0.99
14	3.72	2366.9	8.04	4.97	7.93	0.51	0.99	0.99
2	3.76	2332.3	6.58	12.33	7.53	0.50	0.99	0.99
14	3.76	2451.6	7.42	6.00	7.86	0.52	0.99	0.99
2	3.80	2341.8	4.99	14.82	7.45	0.50	1.00	0.99
14	3.80	2456.6	6.03	8.24	7.72	0.53	0.99	0.99
2	3.84	2267.6	3.95	16.41	7.41	0.50	1.00	0.99
14	3.84	2386.6	4.95	10.02	7.65	0.55	1.00	0.99
2	3.88	2168.3	3.84	16.56	7.41	0.50	1.00	0.99
14	3.88	2294.5	4.39	10.91	7.61	0.54	1.00	0.99
2	3.92	2069.5	3.88	16.47	7.41	0.50	1.00	0.99
14	3.92	2202.6	4.15	11.27	7.60	0.54	1.00	0.99
2	3.96	1975.1	3.93	16.35	7.41	0.50	1.00	0.99
14	3.96	2116.0	4.07	11.38	7.59	0.55	1.00	0.99
2	4.00	1885.4	3.99	16.24	7.41	0.50	1.00	0.99
14	4.00	2034.5	4.10	11.30	7.59	0.53	1.00	0.99

Mass Balance for Constituent 1

Initial Mass is 0.1459E+00 KG

Time	***** Accumulated Mass In (KG) ***** Advection	Dispersion	Kinetic	********** Resident Loading Mass (KG)	Excess Advection Mass (KG)
Accumulated Mass Out (KG) **********					
Dispersion	Buried				
0.000	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.0000E+00	0.0000E+00	0.0000E+00	0.1459E+00	-0.2913E-08	
0.040	0.2574E+01	0.0000E+00	0.0000E+00	0.2980E-01	
0.0000E+00	0.0000E+00	0.4934E-01	0.2740E+01	-0.9868E-01	
0.082	0.5277E+01	0.0000E+00	0.0000E+00	0.7190E-01	
0.0000E+00	0.0000E+00	0.6502E-01	0.5416E+01	-0.1300E+00	
0.122	0.7851E+01	0.0000E+00	0.0000E+00	0.1414E+00	
0.0000E+00	0.0000E+00	0.4724E-01	0.7903E+01	-0.9449E-01	
0.162	0.1043E+02	0.0000E+00	0.0000E+00	0.3798E+00	
0.0000E+00	0.0000E+00	0.1202E-02	0.1019E+02	-0.2406E-02	
0.200	0.1287E+02	0.0000E+00	0.0000E+00	0.1017E+01	
0.0000E+00	0.0000E+00	-0.6376E-01	0.1194E+02	0.3514E-06	
0.240	0.1544E+02	0.0000E+00	0.0000E+00	0.2291E+01	
0.0000E+00	0.0000E+00	-0.1645E+00	0.1314E+02	-0.1407E-05	
0.280	0.1802E+02	0.0000E+00	0.0000E+00	0.4110E+01	
0.0000E+00	0.0000E+00	-0.3190E+00	0.1374E+02	-0.1483E-05	
0.320	0.2059E+02	0.0000E+00	0.0000E+00	0.6274E+01	
0.0000E+00	0.0000E+00	-0.5194E+00	0.1395E+02	-0.3876E-06	
0.360	0.2317E+02	0.0000E+00	0.0000E+00	0.8599E+01	
0.0000E+00	0.0000E+00	-0.7457E+00	0.1397E+02	-0.2008E-05	
0.400	0.2574E+02	0.0000E+00	0.0000E+00	0.1098E+02	
0.0000E+00	0.0000E+00	-0.9880E+00	0.1392E+02	-0.4396E-05	
0.440	0.2831E+02	0.0000E+00	0.0000E+00	0.1336E+02	
0.0000E+00	0.0000E+00	-0.1252E+01	0.1385E+02	-0.1892E-05	
0.480	0.3089E+02	0.0000E+00	0.0000E+00	0.1571E+02	
0.0000E+00	0.0000E+00	-0.1541E+01	0.1378E+02	-0.2977E-05	
0.520	0.3346E+02	0.0000E+00	0.0000E+00	0.1804E+02	
0.0000E+00	0.0000E+00	-0.1840E+01	0.1373E+02	-0.1270E-05	
0.562	0.3617E+02	0.0000E+00	0.0000E+00	0.2045E+02	
0.0000E+00	0.0000E+00	-0.2157E+01	0.1370E+02	-0.1777E-05	
0.602	0.3874E+02	0.0000E+00	0.0000E+00	0.2274E+02	
0.0000E+00	0.0000E+00	-0.2479E+01	0.1367E+02	-0.1143E-05	
0.642	0.4131E+02	0.0000E+00	0.0000E+00	0.2501E+02	
0.0000E+00	0.0000E+00	-0.2813E+01	0.1364E+02	-0.3052E-05	
0.682	0.4389E+02	0.0000E+00	0.0000E+00	0.2728E+02	
0.0000E+00	0.0000E+00	-0.3148E+01	0.1361E+02	-0.4281E-05	
0.722	0.4646E+02	0.0000E+00	0.0000E+00	0.2954E+02	
0.0000E+00	0.0000E+00	-0.3478E+01	0.1359E+02	-0.2284E-05	
0.762	0.4904E+02	0.0000E+00	0.0000E+00	0.3181E+02	
0.0000E+00	0.0000E+00	-0.3770E+01	0.1360E+02	-0.2006E-05	
0.802	0.5161E+02	0.0000E+00	0.0000E+00	0.3409E+02	
0.0000E+00	0.0000E+00	-0.3958E+01	0.1371E+02	-0.2211E-05	
0.842	0.5418E+02	0.0000E+00	0.0000E+00	0.3639E+02	
0.0000E+00	0.0000E+00	-0.4051E+01	0.1389E+02	-0.1581E-05	
0.882	0.5676E+02	0.0000E+00	0.0000E+00	0.3873E+02	
0.0000E+00	0.0000E+00	-0.4115E+01	0.1406E+02	-0.1132E-05	
0.922	0.5933E+02	0.0000E+00	0.0000E+00	0.4110E+02	
0.0000E+00	0.0000E+00	-0.4180E+01	0.1419E+02	-0.3469E-05	
0.962	0.6191E+02	0.0000E+00	0.0000E+00	0.4352E+02	
0.0000E+00	0.0000E+00	-0.4253E+01	0.1428E+02	-0.4570E-06	
1.002	0.6448E+02	0.0000E+00	0.0000E+00	0.4597E+02	
0.0000E+00	0.0000E+00	-0.4329E+01	0.1432E+02	-0.2600E-05	
1.042	0.6705E+02	0.0000E+00	0.0000E+00	0.4845E+02	

2.362	0.1520E+03	0.0000E+00	0.0000E+00	0.1280E+03
0.0000E+00	0.0000E+00	-0.1019E+02	0.1398E+02	-0.5445E-05
2.400	0.1544E+03	0.0000E+00	0.0000E+00	0.1303E+03
0.0000E+00	0.0000E+00	-0.1045E+02	0.1386E+02	-0.6464E-05
2.440	0.1570E+03	0.0000E+00	0.0000E+00	0.1327E+03
0.0000E+00	0.0000E+00	-0.1076E+02	0.1376E+02	-0.5227E-05
2.480	0.1596E+03	0.0000E+00	0.0000E+00	0.1350E+03
0.0000E+00	0.0000E+00	-0.1108E+02	0.1367E+02	-0.6086E-05
2.520	0.1622E+03	0.0000E+00	0.0000E+00	0.1373E+03
0.0000E+00	0.0000E+00	-0.1142E+02	0.1362E+02	-0.7668E-05
2.560	0.1647E+03	0.0000E+00	0.0000E+00	0.1395E+03
0.0000E+00	0.0000E+00	-0.1176E+02	0.1359E+02	-0.7479E-05
2.600	0.1673E+03	0.0000E+00	0.0000E+00	0.1418E+03
0.0000E+00	0.0000E+00	-0.1212E+02	0.1356E+02	-0.6906E-05
2.640	0.1699E+03	0.0000E+00	0.0000E+00	0.1440E+03
0.0000E+00	0.0000E+00	-0.1250E+02	0.1351E+02	-0.8960E-05
2.680	0.1725E+03	0.0000E+00	0.0000E+00	0.1462E+03
0.0000E+00	0.0000E+00	-0.1288E+02	0.1348E+02	-0.7474E-05
2.720	0.1750E+03	0.0000E+00	0.0000E+00	0.1485E+03
0.0000E+00	0.0000E+00	-0.1326E+02	0.1345E+02	-0.7588E-05
2.760	0.1776E+03	0.0000E+00	0.0000E+00	0.1507E+03
0.0000E+00	0.0000E+00	-0.1359E+02	0.1347E+02	-0.8632E-05
2.800	0.1802E+03	0.0000E+00	0.0000E+00	0.1529E+03
0.0000E+00	0.0000E+00	-0.1379E+02	0.1361E+02	-0.7816E-05
2.840	0.1828E+03	0.0000E+00	0.0000E+00	0.1552E+03
0.0000E+00	0.0000E+00	-0.1385E+02	0.1385E+02	-0.7656E-05
2.880	0.1853E+03	0.0000E+00	0.0000E+00	0.1575E+03
0.0000E+00	0.0000E+00	-0.1387E+02	0.1408E+02	-0.9318E-05
2.920	0.1879E+03	0.0000E+00	0.0000E+00	0.1599E+03
0.0000E+00	0.0000E+00	-0.1390E+02	0.1425E+02	-0.8061E-05
2.960	0.1905E+03	0.0000E+00	0.0000E+00	0.1623E+03
0.0000E+00	0.0000E+00	-0.1394E+02	0.1436E+02	-0.7509E-05
3.000	0.1931E+03	0.0000E+00	0.0000E+00	0.1648E+03
0.0000E+00	0.0000E+00	-0.1398E+02	0.1442E+02	-0.7835E-05
3.040	0.1956E+03	0.0000E+00	0.0000E+00	0.1673E+03
0.0000E+00	0.0000E+00	-0.1403E+02	0.1445E+02	-0.9364E-05
3.080	0.1982E+03	0.0000E+00	0.0000E+00	0.1698E+03
0.0000E+00	0.0000E+00	-0.1408E+02	0.1445E+02	-0.1040E-04
3.120	0.2008E+03	0.0000E+00	0.0000E+00	0.1723E+03
0.0000E+00	0.0000E+00	-0.1413E+02	0.1445E+02	-0.1000E-04
3.160	0.2034E+03	0.0000E+00	0.0000E+00	0.1749E+03
0.0000E+00	0.0000E+00	-0.1419E+02	0.1443E+02	-0.9263E-05
3.200	0.2059E+03	0.0000E+00	0.0000E+00	0.1774E+03
0.0000E+00	0.0000E+00	-0.1425E+02	0.1442E+02	-0.9062E-05
3.240	0.2085E+03	0.0000E+00	0.0000E+00	0.1799E+03
0.0000E+00	0.0000E+00	-0.1435E+02	0.1438E+02	-0.8548E-05
3.280	0.2111E+03	0.0000E+00	0.0000E+00	0.1824E+03
0.0000E+00	0.0000E+00	-0.1453E+02	0.1427E+02	-0.1133E-04
3.320	0.2136E+03	0.0000E+00	0.0000E+00	0.1849E+03
0.0000E+00	0.0000E+00	-0.1478E+02	0.1411E+02	-0.1068E-04
3.360	0.2162E+03	0.0000E+00	0.0000E+00	0.1873E+03
0.0000E+00	0.0000E+00	-0.1507E+02	0.1395E+02	-0.1061E-04
3.400	0.2188E+03	0.0000E+00	0.0000E+00	0.1898E+03
0.0000E+00	0.0000E+00	-0.1538E+02	0.1381E+02	-0.1005E-04
3.440	0.2214E+03	0.0000E+00	0.0000E+00	0.1921E+03
0.0000E+00	0.0000E+00	-0.1570E+02	0.1371E+02	-0.1112E-04
3.480	0.2239E+03	0.0000E+00	0.0000E+00	0.1944E+03
0.0000E+00	0.0000E+00	-0.1603E+02	0.1364E+02	-0.1203E-04
3.520	0.2265E+03	0.0000E+00	0.0000E+00	0.1967E+03
0.0000E+00	0.0000E+00	-0.1636E+02	0.1360E+02	-0.1049E-04
3.560	0.2291E+03	0.0000E+00	0.0000E+00	0.1990E+03
0.0000E+00	0.0000E+00	-0.1670E+02	0.1357E+02	-0.1117E-04
3.600	0.2317E+03	0.0000E+00	0.0000E+00	0.2012E+03
0.0000E+00	0.0000E+00	-0.1706E+02	0.1354E+02	-0.1177E-04
3.640	0.2342E+03	0.0000E+00	0.0000E+00	0.2035E+03

0.0000E+00	0.0000E+00	-0.1741E+02	0.1353E+02	-0.1022E-04
3.680	0.2368E+03	0.0000E+00	0.0000E+00	0.2057E+03
0.0000E+00	0.0000E+00	-0.1777E+02	0.1350E+02	-0.1060E-04
3.720	0.2394E+03	0.0000E+00	0.0000E+00	0.2079E+03
0.0000E+00	0.0000E+00	-0.1816E+02	0.1345E+02	-0.1243E-04
3.760	0.2420E+03	0.0000E+00	0.0000E+00	0.2102E+03
0.0000E+00	0.0000E+00	-0.1849E+02	0.1346E+02	-0.1140E-04
3.800	0.2445E+03	0.0000E+00	0.0000E+00	0.2124E+03
0.0000E+00	0.0000E+00	-0.1868E+02	0.1360E+02	-0.9490E-05
3.840	0.2471E+03	0.0000E+00	0.0000E+00	0.2147E+03
0.0000E+00	0.0000E+00	-0.1873E+02	0.1386E+02	-0.9695E-05
3.880	0.2497E+03	0.0000E+00	0.0000E+00	0.2170E+03
0.0000E+00	0.0000E+00	-0.1874E+02	0.1410E+02	-0.1169E-04
3.920	0.2523E+03	0.0000E+00	0.0000E+00	0.2194E+03
0.0000E+00	0.0000E+00	-0.1874E+02	0.1429E+02	-0.9883E-05
3.960	0.2548E+03	0.0000E+00	0.0000E+00	0.2218E+03
0.0000E+00	0.0000E+00	-0.1876E+02	0.1441E+02	-0.9543E-05
4.000	0.2574E+03	0.0000E+00	0.0000E+00	0.2243E+03
0.0000E+00	0.0000E+00	-0.1878E+02	0.1448E+02	-0.8161E-05
4.001	0.2574E+03	0.0000E+00	0.0000E+00	0.2243E+03
0.0000E+00	0.0000E+00	-0.1878E+02	0.1448E+02	-0.8161E-05