```
c      1       2       3       4       5       6       7       8       9      10
c      |       |       |       |       |       |       |       |       |       |
c. Primary HEC-5Q data set.  The data contained within this file and associated
c. subordinate data files provide all supplemental input for the temperature /
c. water quality component of HEC-5Q.

c. Extensive comments are included within the data set to provide insights
c. into the data preparation process.  The definition and significance of the
c. individual data entries are provided in the Users Manual.  Specific data
c. entries are defined in Exhibit 3 of the Users Manual.

c. The USBR-TMS interface utilizes comments identified by
c. "CV" - vertically segmented reservoir
c. "CL" - Longitudinally segmented reservoirs
c. "CS" - streams

Ti      Thermal analysis, Upper Central Valley System
Ti      Trinity, Lewiston, Whiskeytown, Shasta and Keswick Reservoirs
Ti      Cottonwood Creek / record or CALSIM II

c. Flow at 24 hour time steps and water quality at 6-hour time steps.

JA      19910913        19920330       6       C       2       0

c. Two output files are specified.    The "US_5Q.out" file is the traditional
c. printer output file.  "US" is the GUI interface file which allow
c. interactive viewing of model results and ambient data.  The complete GUI
c. file name is created by the model and takes the form of "iiiii_nn.yy where
c. "iiiii" is the user input (up to 5 characters), nn is the next available
c. sequence number and yy is the beginning year of simulation.  A complete file
c. name of "US_03.91" would be the GUI output for the third run beginning in 1991.

JF  out=  UPSac_5q.out

c. GUI output interval for 6-hour time steps (Hours 6 & 18 - max and min)
c      |       |       |       |       |       |       |       |       |       |
JF  gui=  US                                   2

JF  swm=  some.swm

JF  icr=  16jun98.dat

TEMPERATURE OUTPUT    F
c.... EXCEL compatible output file (CDF: "," replaced by "_")
EXCEL OUT        FCST.2XL
c               |       |       |                        |
c. CDEC temperature sta.  Mile  HEC-5Q elem.
c     Lewiston (WQ-fish)            11
c     Spring Cr.PH                  17
c     Shasta Dam                    19
c     Keswick            301.5      37
c     Bonneview          289.5      49
c     Balls Ferry        276.2      62
c     Jellys Ferry       266.7      72
c     Bend Bridge        257.7      81
c. DWR temperature sta.  Mile  HEC-5Q elem.
c     Keswick            301.5      37
c     Balls Ferry        276.2      62
c     Jellys Ferry       266.7      72
c     Bend Bridge        257.7      81
c. flag           element Parameter Identification
EXCEL ELEM            11       1     10 Lewiston TW Temp-F
EXCEL ELEM            17       1     99 Spring Cr.PH Temp-F
```

```
EXCEL ELEM            19       1     99 Shasta Temp-F
cp-rm        200   301.5       1    500 Keswick Temp-F
cp-rm        180   289.5       1    500 Bonneview Temp-F
cp-rm        178   276.5       1    500 Balls Ferry Temp-F
cp-rm        170   266.5       1    500 Jellys Ferry Temp-F
cp-rm        170   257.5       1    500 Bend Bridge Temp-F

LakeProFile     ResFCST.2xl
c... the following will save the temperature profile for a single date
c.LakeproDate           220   temp 30-Apr-2004 12:00
                        Shasta Lake
c... omitting the date as below will save the indicated date/time for each year of
simulation
LakeproDate           340   temp 09-Apr-     12:00
                        Trinity Lake
LakeproDate           340   temp 31-May-     12:00
                        Trinity Lake
LakeproDate           340   temp 30-Jun-     12:00
                        Trinity Lake
LakeproDate           340   temp 31-Jul-     12:00
                        Trinity Lake
LakeproDate           340   temp 31-Aug-     12:00
                        Trinity Lake
LakeproDate           340   temp 30-Sep-     12:00
                        Trinity Lake
LakeproDate           340   temp 30-Oct-     12:00
                        Trinity Lake
LakeproDate           340   temp 30-Nov-     12:00
                        Trinity Lake
LakeproDate           240   temp 30-Apr-     12:00
                        Whiskytown Lake
LakeproDate           240   temp 31-May-     12:00
                        Whiskytown Lake
LakeproDate           240   temp 30-Jun-     12:00
                        Whiskytown Lake
LakeproDate           240   temp 22-Jul-     12:00
                        Whiskytown Lake
LakeproDate           240   temp 31-Jul-     12:00
                        Whiskytown Lake
LakeproDate           240   temp 31-Aug-     12:00
                        Whiskytown Lake
LakeproDate           240   temp 30-Sep-     12:00
                        Whiskytown Lake
LakeproDate           240   temp 30-Oct-     12:00
                        Whiskytown Lake
LakeproDate           240   temp 30-Nov-     12:00
                        Whiskytown Lake
LakeproDate           220   temp 30-Apr-     12:00
                        Shasta Lake
LakeproDate           220   temp 31-May-     12:00
                        Shasta Lake
LakeproDate           220   temp 30-Jun-     12:00
                        Shasta Lake
LakeproDate           220   temp 22-Jul-     12:00
                        Shasta Lake
LakeproDate           220   temp 31-Jul-     12:00
                        Shasta Lake
LakeproDate           220   temp 31-Aug-     12:00
                        Shasta Lake
LakeproDate           220   temp 30-Sep-     12:00
                        Shasta Lake
LakeproDate           220   temp 30-Oct-     12:00
```

```
                              UpSac_5Q
                       Shasta Lake
LakeproDate          220   temp 30-Nov-     12:00
                       Shasta Lake
OrderLakeProFile

c. The GUI output variables are defined on the "JG" Records.  If these records
c. are omitted, the default output is limited to temperature, TDS, flow and
c. water surface elevation.  The "JG" Record references the parameter numbers
c. of Table L9 in the documentation.  Up to 3 parameters may be included with
c. the appropriate scaling factors (i.e., F1-F3).  Flows and elevations may be
c. included.  For temperature simulation, GUI output is limited to:

c.   ID1      F1     ID2      F2     ID3      F3     min     max
JG     1      1.                                      40      80 Temperature, F
*F *T
JG     2      1.                                     990    1010 Inflow Tracer
JG    28      1.                                       0   40000 Flow, cfs

            *T
JG    29      1.                                     600    1200 Elevation, Ft

ZW JAN05.dss  A=UPPER_SAC_5Q   E=1DAY  F=SIMULATION

c. USBR option: specify b part in the DSS file path name instead of default CP & RM
JZ  -340   239.5 TEMP      B=TRINITY
JZ  -330   230.5 TEMP      B=LEWISTON
JZ  -242   190.5 TEMP      B=CLEAR_CR_TUNNEL
JZ  -230   180.1 TEMP  FLOW B=WHISKEYTOWN
JZ  -212   304.5 TEMP      B=SPRG_CR_TUNNEL
JZ  -220   310.9 TEMP      B=SHASTA
JZ  -200   301.5 TEMP  FLOW  B=KESWICK
JZ  -180   289.5 TEMP  FLOW  B=CLEAR_CR
JZ  -180    10.0 TEMP        B=IGO
JZ  -180     0.5 TEMP  FLOW  B=DS_CLEAR_CR
JZ  -178   284.0 TEMP      B=AIRPORT_RD
JZ  -178   280.5 TEMP      B=COW_CR
JZ  -178   276.2 TEMP  FLOW  B=BALLS_FERRY
JZ  -170   266.5 TEMP  FLOW  b=JELLYS_FERRY
JZ  -170   259.9 TEMP  FLOW B=BEND_BR
JZ  -160   243.1 TEMP  FLOW B=RED_BLUFF
JI     1         TEMP      B=SHASTA_INFLOW
JI     2         TEMP      B=TRINITY_INFLOW

c. Meteorological data may reside in a subordinate ASCII input file or in DSS.
c. The subordinate input file contains all EZ and associated ET Records.
c. The meteorological data interval should be compatible with the water quality
c. time step.  These data are normally placed in DSS file or in the subordinate
c. file to streamline and reduce the size of the main data file.  Note that when
c. the end of a subordinate meteorological data file is reached, the file
c. is rewound and the data are reused.  This option is normally used if average
c. meteorological data are being considered.  The DSS input option requires data for

c. the entire simulation period.

c. An example of the meteorological data format is provided below.
c. [Note that the ES (staurated vapor pressure), W.TMP (Temperature of a 10-foot
c.  deep pool) & EVAP (accumulative evaporation) are for information purposes only]
c.EZ             6     cd         Modesto CIMIS hourly data, 2.0*wind
c     YEAR  MMDDHH      ET       KT      RAD    WIND      ES   W.TMP    EVAP
c                     Temp   Coeff     Rad.   Speed      mb       F      ft
c.ET  1989  010106   25.64   75.90      0.0    9.87    6.69   31.91    0.00
c.ET  1989  010112   46.96  107.08   1735.2   12.18    7.04   31.90    0.00
```

```
c.EZFILE= ShastaDM.met
c.EZEND

c. DSS input
c.  A Part                   B Part        C Part        F Part        E Part  D
Part
c.  MET DATA           GERBER2SHASTA        EQTEMP       AVERAGE       6HOUR
01JAN1990 - 01DEC1999
c.   - - - - - - - -   - - - - - - - - - -   EXRATE       AVERAGE       6HOUR
01JAN1990 - 01DEC1999
c.   - - - - - - - -   - - - - - - - - - -   SWRAD        AVERAGE       6HOUR
01JAN1990 - 01DEC1999
c.   - - - - - - - -   - - - - - - - - - -   WIND         AVERAGE       6HOUR
01JAN1990 - 01DEC1999
c. Note that the "C" part may be omitted if these C part identifications are used
c. If the "C part" is included, the input sequence must be for ET, KE, solar rad and
wind
c. the "ZR" triggers DSS input
c.EZ    1       6     ZR pr      Gerber (CIMIS) / Shasta Dam (USWS)
EZ     1       6     ZR         Gerber (CIMIS) / Shasta Dam (USWS) >> wind * 2
ET  A=met data  B=Gerber2Shasta  E=6HOUR  F=AVERAGE

EZEND

Shasta Dam TCD opp file TCD_opp.log
c.Shasta Dam TCD date       11Mar1999
c.Shasta Dam outlet opp   shasta_outlet_flows.dat

list

c. The QC Records triggers simulation of water quality parameters in addition to
c. temperature.

QC     1       1       0       0       0       0       0       0

TQ   Inflow Tracer

L1    30       1

c.  IRCP    METL     IPL     SDZ   EDMAX   XQPCT   XQDEP      IZ   FICEL
c. CV Clair Engle Lake (Trinity)
CV Trinity River, Clair Engle Lake , 240
L2   340       1       0  3.2814     -.8      .3       1       0       0
c.  FK2R    FK2C    FK2S   SFMET1  SFMET2  sfmet3
L2     1       1       1     -2.      1.    1.05
C. Scalinf factors for===>   EQT1    EQT2    KEF

C. SEASONAL EXCO
LE             1      22      90      20     120      12     180      15
LE           240      15     366      22

c      1       2       3       4       5       6       7       8       9      10
c      |       |       |       |       |       |       |       |       |       |
LR      I IN F         2     1.     5000 Trinity River                       .035

L3     0  .12E-6  .12E-4     -.7    -15.     .25
LB  .001      5.     10.

L5   400    2400    2000
L6   100   12000    2365
c.L7   400    4600    2030
L7   400   11100    2110
```

```
L8              200     400     500     600     700     800     880     960    1040
L8  1120    1200    1280    1360    1440    1520    1600    1620    1640    1660
L8  1680    1700    1720    1740    1760    1780    1800    1820    1840    1860
L8  1880    1900    1920    1940    1960    1980    2000    2020    2040    2060
L8  2080    2100    2120    2140    2160    2180

c.RE    45    1950    1960    1970    1980    1990    2000    2010    2020    2030
c.RE  2040    2050    2060    2070    2080    2090    2100    2110    2120    2130
c.RE  2140    2150    2160    2170    2180    2190    2200    2210    2220    2230
c.RE  2240    2250    2260    2270    2280    2290    2300    2310    2320    2330
c.RE  2340    2350    2360    2370    2380    2390

L9 temp    ICR          1
L9 CONS1    1000

c. No coefficients are required for thermal analysis or for conservative parameters.

c. Records containing values of coefficients and rate constants used in the
c. equations for various water quality parameters would be inserted here.  The
c. coefficients specified on records KA through KE are global and pertain to
c. all reservoirs and stream reaches.  These coefficients can only be set with
c. the first reservoirs data.  If these data are not entered at that time,
c. the default values would apply.

c. The remaining records would contain coefficients and rate constants that apply
c. to specific reservoirs.  These coefficients must be provided for the first
c. reservoir in the system since many coefficients have no default values.
c. These coefficients would apply to all subsequent reservoirs and stream
c. sections if not respecified with the subsequent reservoir and stream data sets.

EL

c.  IRCP    METL     IPL     SDZ   EDMAX   XQPCT   XQDEP
c. CL Lewiston Lake
CL Lewiston Lake, Trinity River, Trinity River, 230.0, 208
L2   320       1                       8.0      .4       1
c.  FK2R    FK2C    FK2S   SFMET1  SFMET2  sfmet3
L2     1       1       1      1.    1.00     1.0
C. Scalinf factors for===>   EQT1    EQT2    KEF

LS                   5.0    1000

C. Layering
lt     9  .01E-4   1.E-4   2.E-6     -2.    1.10
lu           .11     .11     .11     .11     .11     .11     .11     .11     .12

R2     1    1000    1880     100    1890     300    1900     450    1910     550
R3  1920     600

LI        CP         330      1. Trinity River
LV   US      .11     .11     .11     .11     .11     .11     .11     .11     .12

R2     2    1000    1875     100    1880     200    1890     350    1900     500
R3  1910     600    1920     700

LV   US      .11     .11     .11     .11     .11     .11     .11     .11     .12

R2     3    1000    1870     100    1880     200    1890     400    1900     600
R3  1910     800    1920     900

R2     4    1000    1865     100    1880     200    1890     300    1900     450
R3  1910     600    1920     700
```

```
LV  DS        -1       8    1.33

R2     5    1000    1860     100    1870     150    1880     300    1890     400
R3  1900     550    1910     700    1920     800

R2     6    1000    1855     100    1870     200    1880     300    1890     450
R3  1900     550    1910     600    1920     660

R2     7    1000    1850     100    1865     250    1880     500    1890     650
R3  1900     800    1910     900    1920     960

R2     8    1000    1845     100    1860     200    1880     250    1900     300
R3  1920     350

R2     9    1000    1840     100    1860     180    1880     280    1900     350
R3  1920     400

LW   DS        1   1860.    100.      0

L9  TEMP     10.       0
L9 CONS1    1000

EL

c ********* Dummy Reservoir: Clear Creek Tunnel inflow to Whiskeytown ************
c.ID IRCP   METL     IPL     SDZ    EDMAX   XQPCT   XQDEP     IZ   FICEL
L2   244       1                      3.      .4       1
LA            12.
RS     5      2.     12.     24.     36.     52.
RA     5      2.      3.      5.      6.      7.
RE     5    1200    1205    1210    1212    1214

LS                   1.0     200       0      12       3    1105
R1     1      10       2      40     100       0
LI      R              5      1. Clear Creek Tunnel
R1     2      10       2      40     100       0

L9  TEMP     10.       0
L9 CONS1    1000

EL
c.  IRCP    METL     IPL     SDZ   EDMAX   XQPCT   XQDEP
c. CV Whiskeytown Lake
CV Clear Creek, Whiskeytown Lake, 21.0, 16.6
L2   240       1       0  3.2814     -.8     .25       1
c.  FK2R    FK2C    FK2S   SFMET1  SFMET2  sfmet3
L2     1       1       1     -1.      1.    1.10
C. Scalinf factors for===>   EQT1    EQT2   KE

C. SEASONAL EXCO
LE             1       9     120       9     180       6     300       6
LE           366       9

c      1       2       3       4       5       6       7       8       9      10
c      |       |       |       |       |       |       |       |       |       |
LR     I IN F          3     1.     5000 Clear / Whiskey Creek              .020
c. Temperature Curtain - no entrainment
LR     cp            242     1.     5000 Clear Creek PH                     .020

L3     0   .5E-6   .2E-4     -.7    -15.     .25
LB  .001      5.     10.
```

```
L5    80     900     970
L6    80   15000    1200
LD   480            1080

l8           100     150     200     250     300     350     400     450     500
L8   550     600     800    1000    1100    1200    1300    1400    1500    1600
L8  1700    1800    1900    2000    2100    2200    2300    2400

c.RE    26     980     990    1000    1010    1020    1030    1040    1050    1060
c.RE  1070    1080    1090    1100    1110    1120    1130    1140    1150    1160
c.RE  1170    1180    1190    1200    1210    1220    1225

L9 temp    ICR         2
L9 CONS1    1000

EL

c ********* Dummy Reservoir: Spring Creek Tunnel inflow to Keswick ************
c.ID IRCP    METL     IPL     SDZ    EDMAX   XQPCT   XQDEP     IZ   FICEL
L2   214       1                     3.      .4       1
LA          12.
RS     5      2.     12.     24.     36.     52.
RA     5      2.      3.      5.      6.      7.
RE     5     580     585     590     592     594

LS                   1.0     200       0      12       3    1105
R1     1      10       2      40     100       0
LI      R              6      1. Spring Creek Tunnel
R1     2      10       2      40     100       0

L9  TEMP     10.       0
L9 CONS1    1000

EL

c.  IRCP    METL     IPL     SDZ   EDMAX   XQPCT   XQDEP
c. CV Lake Shasta
CV Sacramento River, Lake Shasta,313,311
L2   220       1       1  3.2814     -.8      .3       1
c.  FK2R    FK2C    FK2S   SFMET1  SFMET2  sfmet3
L2     1       1       1     -.1     .97     1.1
C. Scalinf factors for===>   EQT1    EQT2   KE

C. SEASONAL EXCO
LE             1      14     120      14     150      10     300      10
LE           366      14

c      1       2       3       4       5       6       7       8       9      10
c      |       |       |       |       |       |       |       |       |       |
LR     I IN F          1      1.    15000 flow weighted average           .0175

L3-.1e-6   1.E-6 .225E-4     -.7    -10.     .33
LB  .001      5.     10.

L5   603   22000     942     603   24500     842     680   17500     742      -1
L6   300  150000    1060
L7  1000   18000     817

L8            28      34      47      59      68      85     104     123     145
L8   174     232     238     276     316     366     467     459     502     557
L8   678     683     749     819     890     969    1044    1182    1205    1289
L8  1376    1468    1554    1657    1752    1854    1951    2060    2175    2294
L8  2388    2408    2543    2656    2770    2895    2974    3023    3108    3133
```

```
c. Temperature objectives penality function and temperature targets
PL     1      2.     100       0      -2       0       0       0
c.PT            1.    16.0    128.    10.8    150.    10.0    151.    11.0
c.PT          161.    10.8    170.    10.6    176.     9.5    197.     8.1
c.PT          232.     8.7    268.    11.2    288.    12.2    366.    20.0

c.PT            1.    16.0    197.     8.1    210.     8.6    212.     8.8
c.PT          215.     8.7    225.     8.5    226.     9.2    240.     9.5
c.PT          255.    10.1    273     11.2    288.    12.4    366.    20.0

c.PT            1.    16.0    197.     8.1    210.     8.6    212.     8.8
c.PT          215.     8.5    225.     8.3    226.     9.0    240.     9.3
c.PT          255.     9.9    273     11.2    288.    12.4    366.    20.0

c.PT            1.    16.0    124.    16.0    130.    10.0    138.     9.5
c.PT          150.     9.5    155.    11.6    161.     9.7    175.     9.7
c.PT          176.     8.9    197.     7.5    232.     8.5    366.    20.0

c.PT            1.    16.0    114.    16.0    115.    13.3    122.    11.5
c.PT          123.    11.8    158.    11.5    161.    12.0    175.    12.9
c.PT          176.    11.1    197.    10.0    232.    10.2    366.    20.0

c.PT            1.    16.0    124.    16.0    130.    10.0    138.     9.5
c.PT          150.     9.5    155.    11.6    161.     9.7    175.     9.7
c.PT          176.     8.9    192.     7.0    232.     8.0    366.    20.0

c.PT            1.    16.0    120.    16.0    121.    11.6    130.    11.6
c.PT          131.    10.3    155.    10.9    161.    10.2    175.    10.2
c.PT          176.     9.4    212.     7.1    242.     8.2    366.    21.0

c.PT            1.    16.0    120.    16.0    121.    11.7    130.    11.4
c.PT          131.    10.5    161.    10.5    175.    10.4    176      9.4
c.PT          212.     7.1    242.     8.2    273     12.0    366.    16.0

L9 temp    ICR          3
L9 CONS1    1000

EL

c **************** Dummy Reservoir below Lewiston Dam *****************
c.ID IRCP   METL     IPL     SDZ    EDMAX   XQPCT   XQDEP     IZ   FICEL
L2   300       1                       3.      .4       1
LA            12.
RS     5      2.     12.     24.     36.     52.
RA     5      2.      3.      5.      6.      7.
RE     5     580     585     590     592     594

LS                   1.0     200       0      12       3    1105
R1     1      10       2      40     100       0
LI        CP         300      1. Trinity River
R1     2      10       2      40     100       0

L9  TEMP     10.       0
L9 CONS1    1000

EL

c ************** Dummy Reservoir below Whiskeytown Dam ****************
c.ID IRCP   METL     IPL     SDZ    EDMAX   XQPCT   XQDEP     IZ   FICEL
L2   230       1                       3.      .4       1
c.  FK2R    FK2C    FK2S   SFMET1  SFMET2  sfmet3
L2     1       1       1     -.1      1.     1.1
```

```
C. Scaling factors for===>   EQT1    EQT2   KE
LA            12.
RS     5      2.     12.     24.     36.     52.
RA     5      2.      3.      5.      6.      7.
RE     5     580     585     590     592     594

LS                   1.0     200       0      12       3    1105
R1     1      10       2      40     100       0
LI        CP         230      1. Spring Creek
R1     2      10       2      40     100       0

L9  TEMP     10.       0
L9 CONS1    1000

EL

c.  IRCP    METL     IPL     SDZ   EDMAX   XQPCT   XQDEP
c. CL Keswick Lake to Spring Creek              310
CL Keswick Lake, to Spring Creek,Sacramento River,310,302.7
L2   200       1                     8.0      .4       1
c.  FK2R    FK2C    FK2S   SFMET1  SFMET2  sfmet3
L2     1       1       1     -.1      1.     1.1
C. Scaling factors for===>   EQT1    EQT2   KE

LS                   5.0    1000

C. Layering
lt     5  .01E-4   1.E-4   1.E-6     -5.    1.33
lu            .20     .20     .20     .20     .20

R2     1    3900   574.0   220.0   577.8   264.4   581.5   308.8   585.3   353.1
R3 589.0   397.5   592.8   441.9

LI        CP         210      1. Sacramento below Shasta

R2     2    3900   567.3   220.0   572.7   274.3   578.2   328.6   583.6   382.9
R3 589.0   437.3   594.4   491.6

R2     3    3900   560.6   220.0   567.7   284.3   574.8   348.5   581.9   412.8
R3 589.0   477.0   596.1   541.3


R2     4    3900   553.9   220.0   562.7   304.1   571.5   388.3   580.2   472.4
R3 589.0   556.5   597.8   640.6

R2     5    3900   547.2   220.0   557.7   324.0   568.1   428.0   578.6   532.0
R3 589.0   636.0   599.5   740.0

R2     6    3900   540.5   220.0   552.6   343.9   564.8   467.8   576.9   591.6
R3 589.0   715.5   601.1   839.4

R2     7    3900   533.8   220.0   547.6   363.8   561.4   507.5   575.2   651.3
R3 589.0   795.0   602.8   938.8


R2     8    3900   527.1   220.0   542.6   383.6   558.1   547.3   573.5   710.9
R3 589.0   874.5   604.5  1038.1

R2   -12    3900   520.4   220.0   537.6   403.5   554.7   587.0   571.9   770.5
R3 589.0   954.0   606.2  1137.5

c. CL Keswick Lake, Spring Creek branch       304.4
CL Keswick Lake, Spring Creek branch, Spring Creek Tunnel, 304.0,301.402
```

```
R2    10    1000   550.0   100.0   559.8   174.4   569.5   248.8   579.3   323.1
R3 589.0   397.5   598.8   471.9

LI        CP          212      1. Spring Creek Tunnel

R2   -12    1000   522.0   200.0   538.8   309.0   555.5   418.0   572.3   527.0
R3 589.0   636.0   605.8   745.0

c. CL Keswick Lake below Spring Creek           304
CL Keswick Lake, below Spring Creek, Sacramento River, 302.7, 302
R2    12    3500   513.7   220.0   532.5   483.0   551.4   746.0   570.2  1009.0
R3 589.0  1272.0   607.8  1535.0

R2    13    3500   507.0   220.0   527.5   443.3   548.0   666.5   568.5   889.8
R3 589.0  1113.0   609.5  1336.3

L9  TEMP      8.       0
L9 CONS1    1000

EL

c **************** Dummy Reservoir - Cottonwood Creek gauge ******************
c.ID IRCP   METL     IPL     SDZ    EDMAX   XQPCT   XQDEP     IZ   FICEL
L2   176       1                       3.      .4       1
LA            12.
RS     5      2.     12.     24.     36.     52.
RA     5      2.      3.      5.      6.      7.
RE     5     580     585     590     592     594

LS                   1.0     200       0      12       3    1105
R1     1      10       2      40     100       0
LI     I IN F         12      1. Cottonwood Creek
R1     2      10       2      40     100       0

L9  TEMP     15.       0
L9 CONS1    1000

EL

c.       -1 <=== TO PRINT AFTER EACH REACH
c.                        1 <=== to print stream geometry data
S1    30       1       0

c. The input sequence for the S2 Records controls the phasing of the reservoir
c. simulation.  The input sequence must progress from upstream to downstream.
c. If the upstream control point (S2.1) corresponds to a reservoir number
c. (L2.1), then the reach is an upstream limit of a stream  section.  If the
c. downstream control point (S2.3) corresponds to control point named as an
c. inflow to a reservoir (LI.2 = "CP"), then the reach is the downstream limit
c. of the stream section.

CS Trinity River, below Trinity Dam
S2   340    240.     330   230.0     1.0

c. A dummy reservoir is needed below Lewiston and Whiskeytown so that these
reservoirs
c. will be simulated prior to the diversion to Whiskeytown and Keswick.

c. Each reservoir must be separated by a stream reach.  The -0.1 indicates
c. that the reach serves as a conveyance reach in which no changes in
c. temperature are to be computed. (Cross section data are not required.)

S2   320   220.2     300   220.0    -0.1
```

```
CS Clear Creek Tunnel
S2   244   210.0     242   209.8    -0.1


c. Clear Creek, below Whiskeytown Dam
S2   240   180.2     230   180.0    -0.1

CS Spring Creek Tunnel
S2   214   314.0     212   313.8    -0.1

CS Sacramento River, below Shasta Dam
S2   220    311.     210   309.5    0.75

CS Clear Creek, below Whiskeytown Dam
S2   230    16.5     180     0.0    1.03

CS Sacramento River, Keswick Dam to Clear Creek
S2   200   302.0     180   289.0     1.0

SI    QD  W        298.5      -1      1.  ACID Canal
SI    I IN F       292.5      11     1.0  all creeks

CS Sacramento River, Clear Creek to Cow Creek
S2   180    289.     178   280.0     1.0

SI    I IN F       284.5      11     .15  Churn Creek
SI    I IN F       280.1      11     .85  Cow Creek

CS Sacramento River, Cow Creek to Cottonwood Creek
S2   178   280.0     174   273.0     1.0
SI    I IN F       277.3      11     .80  Bear+Ash Creek
SI    I IN F       273.5      11     .20  Anderson Creek

c. Cottonwood Creek to Sacramento River
S2   176    6.0     174     0.0     1.0

CS Sacramento River, Cow Creek to Bend Bridge
S2   174   273.0     170   260.0     1.0
SI    I IN F       271.3      10     1.0  Battle Creek

CS Sacramento River, Bend Bridge to Red Bluff Diversion Dam
S2   170    260.     160   243.0     1.0

SI    I IN F       253.3      10      .5  Paynes Creek
SI    I IN F       244.3       9      .5  Red Bank + Reeds Creek

c.  US CP   DS CP    METZ  unused   K2OPP   RK2MI     RK2  K2min   K2max
c.                     DC   BEDDC  BEDDEP      IZ  ICEDEP   HEX1    HEX2    HEX3
SR   340     330        1               2       0       0    1.0     5.0
SR                   0.44    .010     0.5       0       0    1.0     1.0     1.0
SR   244     212        1               2       0       0    1.0     5.0
SR                   0.44    .010     0.5       0       0   -1.0      1.     0.9
SR   220     210        1               2       0       0    1.0     5.0
SR                   0.44    .010     0.5       0       0   -1.0      .8     0.9
SR   230     180        1               2       0       0    1.0     5.0
SR                   0.44    .010     0.5       0       0    3.0     1.1     1.0
SR   200     180        1               2       0       0    1.0     5.0
SR                   0.44    .010     0.5       0       0   -1.0      .8     0.9
SR   180     160        1               2       0       0    1.0     5.0
SR                   0.44    .010     0.5       0       0   -0.5      .9     0.9

c.nolist
```

```
c. Alternative or subordinate files may be used to input the cross-section data
c. to streamline and reduce the size of the main data file.  A partial listing
c. of the "Xsec_s3.dat" file follows.  The S3 Records define the cross-section
c. geometry and flow characteristics.  These data include the relationship
c. between elevation, cross-section area, top width and flow.  As a minimum,
c. cross-section data must be supplied at each control point, but should be
c. input in sufficient detail as to represent the hydraulic characteristics of
c. the stream reach.  The flow table must also cover the expected range or flows.

c.      CP    Mile    Elev    Area          Width            flow     Vel

c.S3   340   150.0 1948.00   202.8           86.6            .001     .00
c.S3               1948.70   264.2           88.8           179.0    1.43
c.S3               1949.40   326.7           90.1           394.0    1.82
c.S3               1950.10   390.1           90.9           560.0    2.20
c.S3               1950.70   444.8           91.3           869.0    2.63
c.S3               1951.20   490.6           91.8          1200.0    3.06
c.S3               1951.70   536.6           92.4          1827.0    3.41
c.S3               1952.30   592.7           94.0          2267.0    3.83
c.S3               1952.90   650.3           97.7          2746.0    4.22
c.S3               1954.40   814.4          119.9          3938.0    4.84
c.S3               1955.60   964.0          129.2          5475.0    5.68
c.S3               1957.00  1155.4          145.0          7395.0    6.40
c.S3               1958.30  1353.8          159.9          9730.0    7.19
c.S3               1959.50  1551.2          168.9         12515.0    8.07
c.S3               1960.70  1758.2          176.2         15784.0    8.98
c.S3               1961.80  1952.8          177.6         19567.0   10.02
c.S3               1962.90  2148.5          178.2         23894.0   11.12
c.S3               1964.10  2362.9          179.1         28797.0   12.19
c.S3               1965.30  2578.3          179.9         34304.0   13.31
c.S3               1966.50  2794.5          180.7         40444.0   14.47


c. Actual Stream cross-section data
S3FILE= S3_FCST.dat
S3END

ES

nolist

C... TRIBUTARY INFLOW DATA
I1   P  20000401        20151231

c. One or more alternative input files are allowed for input of tributary
c. inflow data.  All inflow data for this application are input via file
c. "Trib_Q.dat" as specified by the "ETFILE=" Record.  The file contains
c. comments regarding the data for the first tributary.

I2FILE= Trib_Q.dat
I2END

EI


C. Gate operation data determine operation of the outlets.
c. Withdrawal sequence is Power, Flood control (low Level outlets) spillway.

c.      yyyymmdd
G1      20000401        20201231
G2  340 20000401    2400   12000   11100       0                      312
```

```
c                                                                logoff
G2  320 20000401     900    1500       0       0                       12
G2  244 20000401     900    1500       0       0                       12
G2  214 20000401     900    1500       0       0                       12
G2  230 20000401     900    1500       0       0                       12
G2  240 20000401     900    1500       0       0                       12
G2  200 20000401     900    1500       0       0                       12
G2  300 20000401     900    1500       0       0                       12
c.G2  220 20000401   64000  150000   18000       2   18000       2     312
c. Seasonal!! G2  220 19210101   10.77
G2  220 20000401   20.00
G2  220 20150203   20.00
G2  220 20150501   13.00
G2  220 20150515   11.38
G2  220 20150529   11.38
G2  220 20150601   11.90
G2  220 20150630   11.90
G2  220 20150701   10.50
G2  220 20150802   10.50
G2  220 20150905   10.50
G2  220 20150910   11.38
G2  220 20151001   11.38
G2  220 20151101   13.00

c                                                                logoff

ER
```