Appendix E: Model Input Control File

This appendix presents a printout of the CE-QUAL-W2 (v.3.6) input control file used for the calibration and validation run. This file presents model input settings. Cole and Wells (2008) provide detailed description of all input types presented here in their CE-QUAL-W2 manual.

```
        W2 v3.6

TITLE C
.............................TITLE.................................
        Horsetooth_InletBr2
        cal/val model
        All DO flux terms on for DO sens analysis
        _
        -

        _
        -
        -
        -
        _

GRID          NWB      NBR      IMX      KMX    NPROC  CLOSEC
                1        2       45       42        2     OFF

IN/OUTFLOW    NTR      NST      NIW      NWD      NGT      NSP      NPI      NPU
                0        1        0        1        0        0        0        0

CONSTITUENTS NGC      NSS      NAL      NEP     NBOD      NMC      NZP
                1        1        2        1        0        0        1

MISCELL      NDAY
             9000

TIME CON   TMSTRT    TMEND     YEAR
             1.0   2099.0     2005

DLT CON      NDLT   DLTMIN
               1      1.0

DLT DATE     DLTD     DLTD     DLTD     DLTD     DLTD     DLTD     DLTD     DLTD
DLTD
             1.0

DLT MAX    DLTMAX   DLTMAX   DLTMAX   DLTMAX   DLTMAX   DLTMAX   DLTMAX   DLTMAX
DLTMAX
          3600.0

DLT FRN      DLTF     DLTF     DLTF     DLTF     DLTF     DLTF     DLTF     DLTF
DLTF
             0.9

DLT LIMIT    VISC     CELC
Wb 1           ON       ON

BRANCH G       US       DS      UHS      DHS      UQB      DQB    NLMIN    SLOPE
Br 1            2       37        0        0        0        0        1      0.0
Br 2           40       44        0       11        0        0        1      0.0

LOCATION      LAT     LONG     EBOT       BS       BE     JBDN
Wb 1        40.55  105.161594.104        1        2        1

INIT CND    TEMPI     ICEI   WTYPEC
Wb 1          4.0    0.000    FRESH

CALCULAT      VBC      EBC      MBC      PQC      EVC      PRC
Wb 1          OFF      OFF      OFF       ON      OFF       ON

DEAD SEA    WINDC     QINC    QOUTC    HEATC
Wb 1          ON       ON       ON       ON

INTERPOL    QINIC    DTRIC     HDIC
Br 1          OFF      OFF      OFF
```

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```
Br 2          OFF      OFF      OFF

HEAT EXCH   SLHTC     SROC   RHEVAP    METIC   FETCHC      AFW      BFW      CFW
WINDH
Wb 1         TERM       ON      OFF       ON      OFF    9.200    0.460    2.000
10.000

ICE COVER    ICEC   SLICEC   ALBEDO    HWICE     BICE     GICE   ICEMIN    ICET2
Wb 1           ON   DETAIL    0.250   10.000    0.600    0.070    0.050    3.000

TRANSPORT   SLTRC    THETA
Wb 1    ULTIMATE     0.55

HYD COEF       AX       DX     CBHE     TSED       FI    TSEDF    FRICC       Z0
Wb 1          1.0      1.0      0.3      9.4    0.000      0.5   CHEZY    0.001

EDDY VISC     AZC    AZSLC    AZMAX      FBC        E   ARODI STRCKLR BOUNDFR
TKECAL
WB 1          W2N      EXP    0.001        3    9.535    0.431     24.0     10.0
IMP

N STRUC      NSTR
Br 1            1
Br 2            0

STR INT     STRIC    STRIC    STRIC    STRIC    STRIC    STRIC    STRIC    STRIC
STRIC
Br 1          OFF
Br 2

STR TOP     KTSTR    KTSTR    KTSTR    KTSTR    KTSTR    KTSTR    KTSTR    KTSTR
KTSTR
Br 1            2
Br 2

STR BOT     KBSTR    KBSTR    KBSTR    KBSTR    KBSTR    KBSTR    KBSTR    KBSTR
KBSTR
Br 1           29
Br 2

STR SINK    SINKC    SINKC    SINKC    SINKC    SINKC    SINKC    SINKC    SINKC
SINKC
Br 1        POINT
Br 2

STR ELEV     ESTR     ESTR     ESTR     ESTR     ESTR     ESTR     ESTR     ESTR
ESTR
Br 1      1614.60
Br 2

STR WIDTH    WSTR     WSTR     WSTR     WSTR     WSTR     WSTR     WSTR     WSTR
WSTR
Br 1          5.0
Br 2

PIPES        IUPI     IDPI     EUPI     EDPI      WPI    DLXPI      FPI   FMINPI
WTHLC
Pi 1

PIPE UP     PUPIC    ETUPI    EBUPI    KTUPI    KBUPI
Pi 1

PIPE DOWN   PDPIC    ETDPI    EBDPI    KTDPI    KBDPI
Pi 1

SPILLWAY     IUSP     IDSP      ESP     A1SP     B1SP     A2SP     B2SP    WTHLC
```

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```
Sp 1

SPILL UP    PUSPC    ETUSP    EBUSP    KTUSP    KBUSP
Sp 1

SPILL DOWN PDSPC    ETDSP    EBDSP    KTDSP    KBDSP
Sp 1

SPILL GAS GASSPC     EQSP   AGASSP   BGASSP   CGASSP
Sp 1

GATES       IUGT     IDGT      EGT     A1GT     B1GT     G1GT     A2GT     B2GT
G2GT   WTHLC
Gt 1

GATE WEIR   GTA1     GTB1     GTA2     GTB2   DYNVAR
Gt 1

GATE UP     PUGTC    ETUGT    EBUGT    KTUGT    KBUGT
Gt 1

GATE DOWN   PDGTC    ETDGT    EBDGT    KTDGT    KBDGT
Gt 1

GATE GAS   GASGTC     EQGT   AGASGT   BGASGT   CGASGT
Gt 1

PUMPS 1      IUPU     IDPU      EPU   STRTPU    ENDPU    EONPU   EOFFPU      QPU
WTHLC
Wl 1

PUMPS 2      PPUC     ETPU     EBPU     KTPU     KBPU
Wl 1

WEIR SEG      IWR      IWR      IWR      IWR      IWR      IWR      IWR      IWR
IWR
Wr 1

WEIR TOP     KTWR     KTWR     KTWR     KTWR     KTWR     KTWR     KTWR     KTWR
KTWR
Wr 1

WEIR BOT     KBWR     KBWR     KBWR     KBWR     KBWR     KBWR     KBWR     KBWR
KBWR
Wr 1

WD INT       WDIC     WDIC     WDIC     WDIC     WDIC     WDIC     WDIC     WDIC
WDIC
Wd 1          OFF

WD SEG        IWD      IWD      IWD      IWD      IWD      IWD      IWD      IWD
IWD
Wd 1           33

WD ELEV       EWD      EWD      EWD      EWD      EWD      EWD      EWD      EWD
EWD
Wd 1      1606.30

WD TOP       KTWD     KTWD     KTWD     KTWD     KTWD     KTWD     KTWD     KTWD
KTWD
Wd 1            2

WD BOT       KBWD     KBWD     KBWD     KBWD     KBWD     KBWD     KBWD     KBWD
KBWD
Wd 1           39
```

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```
TRIB PLACE  PTRC    PTRC    PTRC    PTRC    PTRC    PTRC    PTRC    PTRC
PTRC
Tr 1

TRIB INT    TRIC    TRIC    TRIC    TRIC    TRIC    TRIC    TRIC    TRIC
TRIC
Tr 1

TRIB SEG     ITR     ITR     ITR     ITR     ITR     ITR     ITR     ITR
ITR
Tr 1

TRIB TOP    ETTR    ETTR    ETTR    ETTR    ETTR    ETTR    ETTR    ETTR
ETTR
Tr 1

TRIB BOT    EBTR    EBTR    EBTR    EBTR    EBTR    EBTR    EBTR    EBTR
EBTR
Tr 1

DST TRIB    DTRC
Br 1          ON
Br 2         OFF

HYD PRINT HPRWBC  HPRWBC  HPRWBC  HPRWBC  HPRWBC  HPRWBC  HPRWBC  HPRWBC
HPRWBC
NVIOL        OFF
U            OFF
W            OFF
T             ON
RHO          OFF
AZ           OFF
SHEAR        OFF
ST           OFF
SB           OFF
ADMX         OFF
DM           OFF
HDG          OFF
ADMZ         OFF
HPG          OFF
GRAV         OFF

SNP PRINT   SNPC    NSNP   NISNP
Wb 1          ON       1       4

SNP DATE    SNPD    SNPD    SNPD    SNPD    SNPD    SNPD    SNPD    SNPD
SNPD
Wb 1          1.

SNP FREQ    SNPF    SNPF    SNPF    SNPF    SNPF    SNPF    SNPF    SNPF
SNPF
Wb 1        100.0

SNP SEG     ISNP    ISNP    ISNP    ISNP    ISNP    ISNP    ISNP    ISNP
ISNP
Wb 1          13      22      34      42

SCR PRINT   SCRC    NSCR
Wb 1          ON       1

SCR DATE    SCRD    SCRD    SCRD    SCRD    SCRD    SCRD    SCRD    SCRD
SCRD
Wb 1         1.0

SCR FREQ    SCRF    SCRF    SCRF    SCRF    SCRF    SCRF    SCRF    SCRF
SCRF
```

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```
Wb 1          5.0

PRF PLOT     PRFC     NPRF    NIPRF
Wb 1          OFF        0        0

PRF DATE     PRFD     PRFD     PRFD     PRFD     PRFD     PRFD     PRFD     PRFD
PRFD
Wb 1

PRF FREQ     PRFF     PRFF     PRFF     PRFF     PRFF     PRFF     PRFF     PRFF
PRFF
Wb 1

PRF SEG      IPRF     IPRF     IPRF     IPRF     IPRF     IPRF     IPRF     IPRF
IPRF
Wb 1

SPR PLOT     SPRC     NSPR    NISPR
Wb 1            ON      112        4

SPR DATE     SPRD     SPRD     SPRD     SPRD     SPRD     SPRD     SPRD     SPRD
SPRD
Wb 1       135.50   143.50   161.50   171.50   186.50   192.50   206.50   214.50
220.50
           229.50   236.50   241.50   250.50   263.50   276.50   298.50   460.50
500.50
           507.50   521.50   529.50   535.50   556.50   558.50   565.50   570.50
584.50
           598.50   615.50   619.50   633.50   635.50   649.50   654.50   668.50
682.50
           850.50   859.50   871.50   892.50   906.50   920.50   930.50   934.50
950.50
           955.50   969.50   977.50   983.50   992.50   997.50   998.50  1011.50
1014.50
          1025.50  1047.50  1049.50  1168.50  1200.50  1201.50  1236.50  1257.50
1263.50
          1291.50  1292.50  1312.50  1319.50  1326.50  1347.50  1348.50  1361.50
1376.50
          1397.50  1404.50  1424.50  1432.50  1564.50  1571.50  1599.50  1634.50
1641.50
          1656.50  1663.50  1670.50  1676.50  1690.50  1691.50  1705.50  1712.50
1719.50
          1728.50  1733.50  1739.50  1753.50  1767.50  1782.50  1917.50  1935.50
1937.50
          1963.50  1966.50  1980.50  1985.50  1991.50  2015.50  2027.50  2047.50
2048.50
          2061.50  2082.50  2083.50  2110.50

SPR FREQ     SPRF     SPRF     SPRF     SPRF     SPRF     SPRF     SPRF     SPRF
SPRF
Wb 1       300.00   300.00   300.00   300.00   300.00   300.00   300.00   300.00
300.00
           300.00   300.00   300.00   300.00   300.00   300.00   300.00   300.00
300.00
           300.00   300.00   300.00   300.00   300.00   300.00   300.00   300.00
300.00
           300.00   300.00   300.00   300.00   300.00   300.00   300.00   300.00
300.00
           300.00   300.00   300.00   300.00   300.00   300.00   300.00   300.00
300.00
           300.00   300.00   300.00   300.00   300.00   300.00   300.00   300.00
300.00
           300.00   300.00   300.00   300.00   300.00   300.00   300.00   300.00
300.00
           300.00   300.00   300.00   300.00   300.00   300.00   300.00   300.00
300.00
```

```
           300.00  300.00  300.00  300.00  300.00  300.00  300.00  300.00
300.00
           300.00  300.00  300.00  300.00  300.00  300.00  300.00  300.00
300.00
           300.00  300.00  300.00  300.00  300.00  300.00  300.00  300.00
300.00
           300.00  300.00  300.00  300.00  300.00  300.00  300.00  300.00
300.00
           300.00  300.00  300.00  300.00

SPR SEG     ISPR    ISPR    ISPR    ISPR    ISPR    ISPR    ISPR    ISPR
ISPR
Wb 1          13      22      34      42

VPL PLOT    VPLC    NVPL
Wb 1         OFF       0

VPL DATE    VPLD    VPLD    VPLD    VPLD    VPLD    VPLD    VPLD    VPLD
VPLD
Wb 1

VPL FREQ    VPLF    VPLF    VPLF    VPLF    VPLF    VPLF    VPLF    VPLF
VPLF
Wb 1

CPL PLOT    CPLC    NCPL TECPLOT
WB 1         OFF       1     OFF

CPL DATE    CPLD    CPLD    CPLD    CPLD    CPLD    CPLD    CPLD    CPLD
CPLD
Wb 1

CPL FREQ    CPLF    CPLF    CPLF    CPLF    CPLF    CPLF    CPLF    CPLF
CPLF
Wb 1

FLUXES      FLXC    NFLX
Wb 1         OFF       1

FLX DATE    FLXD    FLXD    FLXD    FLXD    FLXD    FLXD    FLXD    FLXD
FLXD
Wb 1        1.00

FLX FREQ    FLXF    FLXF    FLXF    FLXF    FLXF    FLXF    FLXF    FLXF
FLXF
Wb 1       40.00

TSR PLOT    TSRC    NTSR   NITSR
             ON       1      16

TSR DATE    TSRD    TSRD    TSRD    TSRD    TSRD    TSRD    TSRD    TSRD
TSRD
            1.0

TSR FREQ    TSRF    TSRF    TSRF    TSRF    TSRF    TSRF    TSRF    TSRF
TSRF
           0.10

TSR SEG     ITSR    ITSR    ITSR    ITSR    ITSR    ITSR    ITSR    ITSR
ITSR
             13      13      22      22      34      34      42      42
22
             13      34      42      13      22      34      42

TSR LAYER   ETSR    ETSR    ETSR    ETSR    ETSR    ETSR    ETSR    ETSR
ETSR
```

```
                                    w2_con_for appendix
                1.0      -31      1.0      -33      1.0      -37      1.0      -21
15.0
               15.0     15.0     15.0     10.0     10.0     10.0     10.0

WITH OUT      WDOC     NWDO    NIWDO
                ON        1        1

WITH DATE     WDOD     WDOD     WDOD     WDOD     WDOD     WDOD     WDOD     WDOD
WDOD
               1.0

WITH FREQ     WDOF     WDOF     WDOF     WDOF     WDOF     WDOF     WDOF     WDOF
WDOF
               1.0

WITH SEG      IWDO     IWDO     IWDO     IWDO     IWDO     IWDO     IWDO     IWDO
IWDO
                33

RESTART       RSOC     NRSO     RSIC
                ON        4      OFF

RSO DATE      RSOD     RSOD     RSOD     RSOD     RSOD     RSOD     RSOD     RSOD
RSOD
               731     1096     1462     1827

RSO FREQ      RSOF     RSOF     RSOF     RSOF     RSOF     RSOF     RSOF     RSOF
RSOF
               500      500      500      500

CST COMP      CCC     LIMC      CUF
                ON       ON        4

CST ACTIVE    CAC
TDS             ON
AGE             ON

ISS1            ON

PO4             ON

NH4             ON

NOx             ON

DSi             ON

PSi             ON

TFe             ON

LDOM            ON

RDOM            ON

LPOM            ON
    !17
RPOM            ON
    !18
ALG1            ON
    !22
ALG2            ON
    !23
DO              ON
    !25
TIC             ON
```

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```
     !26
ALK              ON
     !27
ZOO1             ON
     !28
LDOM_P           ON
     !29
RDOM_P           ON
     !30
LPOM_P           ON
     !31
RPOM_P           ON
     !32
LDOM_N           ON
     !33
RDOM_N           ON
     !34
LPOM_N           ON
     !35
RPOM_N           ON
     !36

CST DERIV   CDWBC    CDWBC    CDWBC    CDWBC    CDWBC    CDWBC    CDWBC    CDWBC
CDWBC
DOC              ON
     !1
POC              ON
     !2
TOC              ON
     !3
DON             OFF
     !4
PON             OFF
     !5
TON             OFF
     !6
TKN              ON
     !7
TN               ON
     !8
DOP             OFF
     !9
POP             OFF
     !10
TOP             OFF
     !11
TP               ON
     !12
APR             OFF
     !13
CHLA             ON
     !14
ATOT            OFF
     !15
%DO              ON
     !16
TSS              ON
     !17
TISS            OFF
     !18
CBODU           OFF
     !19
pH               ON
     !20
CO2             OFF
     !21
```

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```
HCO3            OFF
    !22
CO3             OFF
    !23

CST FLUX    CFWBC    CFWBC    CFWBC    CFWBC    CFWBC    CFWBC    CFWBC    CFWBC
CFWBC
TISSIN          OFF
TISSOUT         OFF
PO4AR           OFF
PO4AG           OFF
PO4AP           OFF
PO4ER           OFF
PO4EG           OFF
PO4EP           OFF
PO4POM          OFF
PO4DOM          OFF
PO4OM           OFF
PO4SED          OFF
PO4SOD          OFF
PO4SET          OFF
NH4NITR         OFF
NH4AR           OFF
NH4AG           OFF
NH4AP           OFF
NH4ER           OFF
NH4EG           OFF
NH4EP           OFF
NH4POM          OFF
NH4DOM          OFF
NH4OM           OFF
NH4SED          OFF
NH4SOD          OFF
NO3DEN          OFF
NO3AG           OFF
NO3EG           OFF
NO3SED          OFF
DSIAG           OFF
DSIEG           OFF
DSIPIS          OFF
DSISED          OFF
DSISOD          OFF
DSISET          OFF
PSIAM           OFF
PSINET          OFF
PSIDK           OFF
FESET           OFF
FESED           OFF
LDOMDK          OFF
LRDOM           OFF
RDOMDK          OFF
LDOMAP          OFF
LDOME           OFF
LPOMDK          OFF
LRPOM           OFF
RPOMDK          OFF
LPOMAP          OFF
LPOMEP          OFF
LPOMSET         OFF
RPOMSET         OFF
CBODDK          OFF
DOAP             ON
DOEP             ON
DOAR             ON
DOER             ON
DOPOM            ON
```

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```
DODOM           ON
DOOM            ON
DONITR          ON
DOCBOD         OFF
DOREAR          ON
DOSED           ON
DOSOD           ON
TICAG          OFF
TICEG          OFF
SEDDK          OFF
SEDAS          OFF
SEDLPOM        OFF
SEDSET         OFF
SODDK          OFF

CST ICON    C2IWB    C2IWB    C2IWB    C2IWB    C2IWB    C2IWB    C2IWB    C2IWB
C2IWB
TDS           43.0
AGE            0.0
     !3
ISS1           0.5
     !6
PO4          0.009
     !9
NH4          0.010
     !10
NOx          0.025
     !11
DSi            6.3
     !12
PSi            0.1
     !13
TFe           0.02
     !14
LDOM          1.20
     !15
RDOM           5.0
     !16
LPOM         0.300
     !17
RPOM        0.0360
     !18
ALG1         0.500
     !22
ALG2         0.200
     !23
DO             9.5
     !25
TIC            3.0
     !26
ALK            25.
     !27
ZOO1         0.005
     !28
LDOM_P     0.0003
     !29
RDOM_P     0.0022
     !30
LPOM_P    0.00010
    !31
RPOM_P     0.0001
     !32
LDOM_N     0.0090
 !33
RDOM_N     0.1500
     !34
```

w2_con_for appendix

```
LPOM_N     0.0120
     !35
RPOM_N     0.0010
     !36

CST PRINT CPRWBC   CPRWBC   CPRWBC   CPRWBC   CPRWBC   CPRWBC   CPRWBC   CPRWBC
CPRWBC
TDS            ON

AGE            ON
     !3
ISS1           ON
     !6
PO4            ON
     !9
NH4            ON
     !10
NOx            ON
     !11
DSi            ON
     !12
PSi            ON
     !13
TFe            ON
     !14
LDOM           ON
     !15
RDOM           ON
     !16
LPOM           ON
     !17
RPOM           ON
     !18
ALG1           ON
     !22
ALG2           ON
     !23
DO             ON
     !25
TIC            ON
     !26
ALK            ON
     !27
ZOO1           ON
     !28
LDOM_P         ON
     !29
RDOM_P         ON
     !30
LPOM_P         ON
     !31
RPOM_P         ON
     !32
LDOM_N         ON
     !33
RDOM_N         ON
     !34
LPOM_N         ON
     !35
RPOM_N         ON
     !36

CIN CON    CINBRC   CINBRC   CINBRC   CINBRC   CINBRC   CINBRC   CINBRC   CINBRC
CINBRC
TDS           OFF       ON
```

w2_con_for appendix

```
AGE             OFF      OFF
     !3
ISS1            OFF       ON
     !6
PO4             OFF       ON
     !9
NH4             OFF       ON
     !10
NOx             OFF       ON
     !11
DSi             OFF       ON
     !12
PSi             OFF       ON
     !13
TFe             OFF       ON
     !14
LDOM            OFF       ON
     !15
RDOM            OFF       ON
     !16
LPOM            OFF       ON
     !17
RPOM            OFF       ON
     !18
ALG1            OFF       ON
     !22
ALG2            OFF       ON
     !23
DO              OFF       ON
     !25
TIC             OFF       ON
     !26
ALK             OFF       ON
     !27
ZOO1            OFF       ON
     !28
LDOM_P          OFF       ON
     !29
RDOM_P          OFF       ON
     !30
LPOM_P          OFF       ON
     !31
RPOM_P          OFF       ON
     !32
LDOM_N          OFF       ON
     !33
RDOM_N          OFF       ON
     !34
LPOM_N          OFF       ON
     !35
RPOM_N          OFF       ON
     !36

CTR CON    CTRTRC   CTRTRC   CTRTRC   CTRTRC   CTRTRC   CTRTRC   CTRTRC   CTRTRC
CTRTRC
TDS             OFF
     !1
AGE             OFF
     !3
ISS1            OFF
     !6
PO4             OFF
     !9
NH4             OFF
     !10
NOx             OFF
```

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```
    !11
DSi             OFF
    !12
PSi             OFF
    !13
TFe             OFF
    !14
LDOM            OFF
    !15
RDOM            OFF
    !16
LPOM            OFF
    !17
RPOM            OFF
    !18
ALG1            OFF
    !22
ALG2            OFF
    !23
DO              OFF
    !25
TIC             OFF
    !26
ALK             OFF
    !27
ZOO1            OFF
    !28
LDOM_P          OFF
    !29
RDOM_P          OFF
    !30
LPOM_P          OFF
    !31
RPOM_P          OFF
    !32
LDOM_N          OFF
    !33
RDOM_N          OFF
    !34
LPOM_N          OFF
    !35
RPOM_N          OFF
    !36

CDT CON    CDTBRC  CDTBRC  CDTBRC  CDTBRC  CDTBRC  CDTBRC  CDTBRC  CDTBRC
CDTBRC
TDS             OFF     OFF
    !1
AGE             OFF     OFF
    !3
ISS1            OFF     OFF
    !8
PO4             OFF     OFF
    !9
NH4             OFF     OFF
    !10
NOx             OFF     OFF
    !11
DSi             OFF     OFF
    !12
PSi             OFF     OFF
    !13
TFe             OFF     OFF
    !14
LDOM            OFF     OFF
    !15
```

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```
RDOM            OFF     OFF
     !16
LPOM            OFF     OFF
     !17
RPOM            OFF     OFF
     !18
ALG1            OFF     OFF
     !23
ALG2            OFF     OFF
     !24
DO              OFF     OFF
     !25
TIC             OFF     OFF
     !26
ALK             OFF     OFF
     !27
ZOO1            OFF     OFF
     !28
LDOM_P          OFF     OFF
     !29
RDOM_P          OFF     OFF
     !30
LPOM_P          OFF     OFF
     !31
RPOM_P          OFF     OFF
     !32
LDOM_N          OFF     OFF
     !33
RDOM_N          OFF     OFF
     !34
LPOM_N          OFF     OFF
     !35
RPOM_N          OFF     OFF
     !36

CPR CON    CPRBRC  CPRBRC  CPRBRC  CPRBRC  CPRBRC  CPRBRC  CPRBRC  CPRBRC
CPRBRC
TDS             OFF     OFF
     !1
AGE             OFF     OFF
     !3
ISS1            OFF     OFF
     !8
PO4             OFF     OFF
     !9
NH4             OFF     OFF
     !10
NOx             OFF     OFF
     !11
DSi             OFF     OFF
     !12
PSi             OFF     OFF
     !13
TFe             OFF     OFF
     !14
LDOM            OFF     OFF
     !15
RDOM            OFF     OFF
     !16
LPOM            OFF     OFF
     !17
RPOM            OFF     OFF
     !18
ALG1            OFF     OFF
     !23
ALG2            OFF     OFF
```

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```
    !24
DO              OFF     OFF
    !25
TIC             OFF     OFF
    !26
ALK             OFF     OFF
    !27
ZOO1            OFF     OFF
    !28
LDOM_P          OFF     OFF
    !29
RDOM_P          OFF     OFF
    !30
LPOM_P          OFF     OFF
    !31
RPOM_P          OFF     OFF
    !32
LDOM_N          OFF     OFF
    !33
RDOM_N          OFF     OFF
    !34
LPOM_N          OFF     OFF
    !35
RPOM_N          OFF     OFF
    !36

EX COEF     EXH2O     EXSS     EXOM     BETA      EXC     EXIC
Wb 1         0.45     0.01     0.10     0.45      OFF      OFF

ALG EX        EXA      EXA      EXA      EXA      EXA      EXA      EXA      EXA
EXA
Wb 1        0.200    0.200    0.200

ZOO EX        EXZ      EXZ      EXZ      EXZ      EXZ      EXZ
              0.2      0.2      0.2

MACRO EX      EXM      EXM      EXM      EXM      EXM      EXM
           0.0100

GENERIC     CGQ10    CG0DK    CG1DK     CGS
Age          0.00     -1.0      0.0      0.0

S SOLIDS      SSS    SEDRC    TAUCR
SS1         1.500      OFF     0.00

ALGAL RATE     AG       AR       AE       AM       AS     AHSP     AHSN    AHSSI
ASAT
Alg 1         2.0     0.04     0.04     0.08     0.10    0.001    0.005    0.003
20.0
Alg 2         2.0     0.04     0.04     0.02     0.10    0.001    0.014    0.003
20.0

ALGAL TEMP    AT1      AT2      AT3      AT4      AK1      AK2      AK3      AK4
Alg 1         6.0     22.0     24.0     26.0    0.075     0.20     0.99      0.1
Alg 2         4.0      6.0      9.0     15.0     0.10     0.90     0.10     0.01

ALG STOICH   ALGP     ALGN     ALGC    ALGSI   ALCHLA    ALPOM    ANEQN     ANPR
Alg 1       0.006     0.08     0.70     0.00     0.18      0.8        1    0.001
Alg 2       0.006     0.08     0.45     0.00     0.09      0.8        1    0.001

EPIPHYTE     EPIC     EPIC     EPIC     EPIC     EPIC     EPIC     EPIC     EPIC
EPIC
Epi 1          ON

EPI PRINT    EPRC     EPRC     EPRC     EPRC     EPRC     EPRC     EPRC     EPRC
EPRC
```

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```
Epi 1        OFF

EPI INIT   EPICI   EPICI   EPICI   EPICI   EPICI   EPICI   EPICI   EPICI
EPICI
Epi 1        0.0

EPI RATE      EG      ER      EE      EM      EB    EHSP    EHSN   EHSSI
Epi 1      0.000   0.000   0.000   0.000   0.000   0.003   0.014   0.000

EPI HALF    ESAT     EHS   ENEQN    ENPR
Epi 1      125.0     1.0       1     0.0

EPI TEMP     ET1     ET2     ET3     ET4     EK1     EK2     EK3     EK4
Epi 1      35.00   36.00   37.00   40.00    0.10    0.99    0.99    0.10

EPI STOICH    EP      EN      EC     ESI   ECHLA    EPOM
Epi 1      0.005   0.080   0.450   0.000     0.8   0.800

ZOOP RATE     ZG      ZR      ZM    ZEFF   PREFP  ZOOMIN     ZS2P
Zoo1         1.2    0.10    0.20    0.30    0.50  0.0100     0.30

ZOOP ALGP  PREFA   PREFA   PREFA   PREFA   PREFA   PREFA   PREFA   PREFA
PREFA
Zoo1         1.00    0.00    0.00

ZOOP ZOOP  PREFZ   PREFZ   PREFZ   PREFZ   PREFZ   PREFZ   PREFZ   PREFZ
PREFZ
Zoo1         0.80    0.00    0.00

ZOOP TEMP    ZT1     ZT2     ZT3     ZT4     ZK1     ZK2     ZK3     ZK4
            10.0    21.0    24.0    26.0    0.01    0.50    0.20     0.1

ZOOP STOI     ZP      ZN      ZC
          0.0100 0.08000 0.45000

MACROPHYT MACWBC  MACWBC  MACWBC  MACWBC  MACWBC  MACWBC  MACWBC  MACWBC
MACWBC
Mac1         OFF     OFF     OFF

MAC PRINT MPRWBC  MPRWBC  MPRWBC  MPRWBC  MPRWBC  MPRWBC  MPRWBC  MPRWBC
MPRWBC
Mac1         OFF     OFF     OFF

MAC INI  MACWBCI MACWBCI MACWBCI MACWBCI MACWBCI MACWBCI MACWBCI MACWBCI
MACWBCI
Mac1     0.00000     0.1     0.5

MAC RATE      MG      MR      MM    MSAT    MHSP    MHSN    MHSC    MPOM
LRPMAC
Mac 1       0.30    0.05    0.05    30.0     0.0     0.0     0.0     0.9
0.2

MAC SED     PSED    NSED
MAC 1        0.5     0.5

MAC DIST    MBMP    MMAX
Mac 1        40.0   500.0

MAC DRAG  CDDRAG     DWV    DWSA   ANORM
Mac 1         3.0 7.0E+04     8.0     0.3

MAC TEMP     MT1     MT2     MT3     MT4     MK1     MK2     MK3     MK4
Mac 1        7.0    15.0    24.0    34.0     0.1    0.99    0.99    0.01

MAC STOICH    MP      MN      MC
Mac 1      0.005    0.08    0.45
```

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DOM	LDOMDK	RDOMDK	LRDDK
Wb	0.15	0.0012	0.010

POM	LPOMDK	RPOMDK	LRPDK	POMS
Wb 1	0.120	0.0008	0.010	0.20

OM STOICH	ORGP	ORGN	ORGC	ORGSI
Wb 1	0.005	0.08	0.45	0.18

OM RATE	OMT1	OMT2	OMK1	OMK2
Wb 1	8.0	22.0	0.08	0.99

CBOD	KBOD	TBOD	RBOD	CBODS
CBOD 1	0.25	1.0147	1.85	0.0

CBOD STOI	BODP	BODN	BODC
BOD 1	0.005	0.080	0.450

PHOSPHOR	PO4R	PARTP
Wb 1	0.013	0.0

AMMONIUM	NH4R	NH4DK
Wb 1	0.09	0.20

NH4 RATE	NH4T1	NH4T2	NH4K1	NH4K2
Wb 1	5.0	25.0	0.10	0.70

NITRATE	NO3DK	NO3S	FNO3SED
WB 1	0.030	0.001	0.37

NO3 RATE	NO3T1	NO3T2	NO3K1	NO3K2
Wb 1	5.0	25.0	0.1	0.99

SILICA	DSIR	PSIS	PSIDK	PARTSI
Wb 1	0.1	1.0	0.3	0.0

IRON	FER	FES
Wb 1	0.5	2.0

SED CO2	CO2R
Wb 1	1.2

STOICH 1	O2NH4	O2OM
Wb 1	4.57	1.4

STOICH 2	O2AR	O2AG
Alg 1	1.1	1.4
Alg 2	1.1	1.4

STOICH 3	O2ER	O2EG
Epi 1	1.1	1.4

STOICH 4	O2ZR
ZOO1	1.1

STOICH 5	O2MR	O2MG
MAC1	1.1	1.4

O2 LIMIT	O2LIM
	0.10

SEDIMENT	SEDC	SEDPRC	SEDCI	SEDK	SEDS	FSOD	FSED	SEDB	DYNSEDK
WB 1	ON	ON	1.0	0.0900	0.1	1.55	1.000	0.001	OFF

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SOD RATE    SODT1    SODT2    SODK1    SODK2
Wb 1          5.0     25.0     0.10     0.99

S DEMAND      SOD      SOD      SOD      SOD      SOD      SOD      SOD      SOD
SOD
              0.5      0.5      0.5      0.5      0.5      0.5      0.5      0.5
0.7
              0.9      1.4      1.4      1.4      1.3      1.2      1.2      1.2
1.0
              0.8      0.8      0.8      0.8      0.7      0.8      0.8      0.8
0.7
              0.6      0.5      0.5     0.32     0.32     0.32     0.32     0.32
0.32
              0.3      0.4      0.5      0.4      0.4      0.4      0.5      0.5

REAERATION  TYPE     EQN#    COEF1    COEF2    COEF3    COEF4
Wb 1        LAKE        5

RSI
FILE.................................RSIFN.....................................
        rsi.npt - not used

QWD
FILE.................................QWDFN.....................................
        qwd_SOL.npt

QGT
FILE.................................QGTFN.....................................
        qgt.npt - not used

WSC
FILE.................................WSCFN.....................................
        wsc_var4.npt

SHD
FILE.................................SHDFN.....................................
        shdpt9.npt

BTH
FILE.................................BTHFN.....................................
Wb 1    bth_original.npt

MET
FILE.................................METFN.....................................
Wb 1    met_1hour_hybrid2.npt

EXT
FILE.................................EXTFN.....................................
Wb 1    ext.npt - not used

VPR
FILE.................................VPRFN.....................................
Wb 1    vpr_wb1.npt - not used

LPR
FILE.................................LPRFN.....................................
Wb 1    lpr_wb1.npt - not used

QIN
FILE.................................QINFN.....................................
Br 1    qin_br1.npt
Br 2    Qin_HFC.npt

TIN
FILE.................................TINFN.....................................
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Br 1    Tin_br1.npt
Br 2    Tin_HFC.npt

CIN
FILE.............................CINFN.....................................
Br 1    cin_HFC1.npt
Br 2    Cin_pt1Ap-Jun_pt2Jul-Ma.npt

QOT
FILE.............................QOTFN.....................................
Br 1    qot_br1_HSC.npt
Br 2    qot_br2_zero.npt - not used

QTR
FILE.............................QTRFN.....................................
Tr 1    qtr_tr1.npt - not used

TTR
FILE.............................TTRFN.....................................
Tr 1    ttr_tr1.npt - not used

CTR
FILE.............................CTRFN.....................................
Tr 1    ctr_tr1.npt - not used

QDT
FILE.............................QDTFN.....................................
Br 1    seep_evap_br1.npt
Br 2    qdt_br2.npt - not used

TDT
FILE.............................TDTFN.....................................
Br 1    tdt_br1.npt
Br 2    tdt_br2.npt - not used

CDT
FILE.............................CDTFN.....................................
Br 1    cdt_br1.npt
Br 2    cdt_br2.npt

PRE
FILE.............................PREFN.....................................
Br 1    pcp_br1.npt
Br 2    pcp_br2.npt

TPR
FILE.............................TPRFN.....................................
Br 1    tpr_br1.npt
Br 2    tpr_br2.npt

CPR
FILE.............................CPRFN.....................................
Br 1    cpr_br1.npt
Br 2    cpr_br2.npt

EUH
FILE.............................EUHFN.....................................
Br 1    euh_br1.npt
Br 2    euh_br2.npt

TUH
FILE.............................TUHFN.....................................
Br 1    tuh_br1.npt
Br 2    tuh_br2.npt

CUH
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                                w2_con_for appendix
FILE.................................CUHFN.....................................
Br 1    cuh_br1.npt
Br 2    cuh_br2.npt

EDH
FILE.................................EDHFN.....................................
Br 1    edh_br1.npt
Br 2    edh_br2.npt

TDH
FILE.................................TDHFN.....................................
Br 1    tdh_br1.npt
Br 2    tdh_br2.npt

CDH
FILE.................................CDHFN.....................................
Br 1    cdh_br1.npt
Br 2    cdh_br2.npt

SNP
FILE.................................SNPFN.....................................
Wb 1    snp_wb1.opt

PRF
FILE.................................PRFFN.....................................
Wb 1    prf_wb1.opt

VPL
FILE.................................VPLFN.....................................
Wb 1    vpl_wb1.opt

CPL
FILE.................................CPLFN.....................................
Wb 1    cpl_wb1.opt

SPR
FILE.................................SPRFN.....................................
Wb 1    spr_wb1.opt

FLX
FILE.................................KFLFN.....................................
Wb 1    kfl_wb1.opt

TSR
FILE.................................TSRFN.....................................
        tsr_test.opt

WDO
FILE.................................WDOFN.....................................
        wdo.opt
```