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Report on

A HYDROLOGIC ANALYSIS OF THE POWERLINE F.R.S.

Prepared by

Flood Control District of Maricopa County
Hydrology Division
Watershed Management Branch

Valerie Rice, Hydrologist
Doug Plasencia, Hydrologist

Volume II

November 1988

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TABLE OF CONTENTS

I. INTRODUCTION 1

Appendix A : HEC-1 Output - Powerline F.R.S. hydrology for the Probable Maximum Flood A-1

Appendix B : HEC-1 Output - Powerline F.R.S. hydrology for the 100 year, 24 hour storm B-1

Appendix C : HEC-1 Output - Areal Reduction using the NOAA method C-1

Appendix D : HEC-1 Output - Areal Reduction using the Osborn method D-1

Appendix E : HEC-1 Output - Alternative A : excavate - increase storage behind the Powerline F.R.S. (Probable Maximum Flood) E-1

Appendix F : HEC-1 Output - Alternative A : excavate - increase storage behind the Powerline F.R.S. (100 year storm) F-1

Appendix G : HEC-1 Output - Alternative B : raise the Powerline F.R.S. to increase storage capacity (PMF) G-1

Appendix H : HEC-1 Output - Combine Alternatives : excavate and raise the Powerline F.R.S. (PMF) H-1

Appendix I : HEC-1 Output - Combined Alternatives : excavate and raise the Powerline F.R.S. (100 year storm) I-1

Appendix J : HEC-2 Output - Powerline F.R.S. emergency spillway rating curve J-1

Appendix K : HEC-2 Output - Upper Weekes Wash breakout rating curve K-1

I. INTRODUCTION

Volume II of the Powerline F.R.S. analysis contains the final computer runs for the various conditions and alternatives.

Appendix A

HEC-1 Output

Powerline F.R.S. Hydrology for the
Probable Maximum Flood

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$   $  $   $  $$$$          $   $   $$$   $   $
$   $  $   $  $   $         $   $  $   $  $$ $$
$   $   $ $   $   $         $   $  $      $ $ $
$$$$$    $    $   $         $ $ $   $$$   $ $ $
$   $    $    $   $         $ $ $       $  $   $
$   $    $    $   $    $$   $$ $$  $   $  $   $
$   $    $    $$$$    $$    $   $   $$$   $   $
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DEST=HYD.WSM USER=HYD.WSM QUEUE=LPT DEVICE=@LP8
SEQ=26485 QPRI=128 CPL=132 LPP=66 COPIES=1 PAGES=68

CREATED: 10-NOV-88 10:30:16
ENQUEUED: 14-NOV-88 11:43:58
PRINTING: 14-NOV-88 11:43:58

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:POWERLINE.OUT

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$$$$     $$$   $   $  $$$$$  $$$$   $      $$$$$  $   $  $$$$$          $$$   $   $  $$$$$
$   $  $   $  $   $  $      $   $  $        $    $$  $  $              $   $  $   $    $
$   $  $   $  $   $  $      $   $  $        $    $ $ $  $              $   $  $   $    $
$$$$   $   $  $ $ $  $$$$   $$$$   $        $    $  $$  $$$$           $   $  $   $    $
$      $   $  $ $ $  $      $ $    $        $    $   $  $              $   $  $   $    $
$      $   $  $$ $$  $      $  $   $        $    $   $  $         $$   $   $  $   $    $
$       $$$   $   $  $$$$$  $   $  $$$$$  $$$$$  $   $  $$$$$     $$    $$$     $$$     $
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+5555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555+

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00

```
**** AOS/VS REV 7.62.CC.CC / BATCH OUTPUT FILE ****

AOS/VS 7.62.CC.CC / EXEC-32 7.62.CC.CC  10-NOV-88        10:30:20
GPRI=128        SEQ=26276
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?41.CLI.00001.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.26276

--------
LAST MESSAGE CHANGE     25-OCT-86        0:36:12


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


--------
MOST RECENT LOGON        10-NOV-88        10:28:20

AOS/VS CLI   REV 07.62.CC.00    10-NOV-88        10:30:36
) SEARCHLIST :UTIL/:MACROS/:UDD:HYD.WSM/:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM/OWARE
)
)
) LISTFILE POWERLINE.OUT
) DATAFILE POWERLINE.DAT
) SEA :UTIL:HEC1.DIR/[!SEA]
) X HEC1_START
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```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            FEBRUARY 1981             *
*          REVISED 31 JAN 85           *
*                                      *
*  RUN DATE11/10/1985   TIME10:30:40 *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3265 OR (FTS) 448-3265  *
*                                      *
****************************************
```

```
X      X  XXXXXXX   XXXXX            X
X      X  X         X     X         XX
X      X  X         X                X
XXXXXXX   XXXX      X        XXXXX   X
X      X  X         X                X
X      X  X         X     X          X
X      X  XXXXXXX   XXXXX           XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AVSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID     WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID     CONVERSION OF MODEL FROM TR-20
  3           ID                 1/2 PMF, & FULL PMF ;SCS EXCESS & HYDROGRAPH
  4           ID                 DEVELOPMENT, MUSKINGUM ROUTING
  5           ID        CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  6           ID                         POINT OF WEEKES WASH AT JUNCTION ROAD.
  7           ID                      2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  8           ID                         AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
  9           ID                         LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 10           ID                      3: SUPERSTITION FREEWAY IN PLACE.
 11           ID                      4: ADJUSTED WATERSHED AREAS.
 12           ID                      5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 13           ID                      6: NO MODIFICATIONS TO POWERLINE F.R.S.
              *DIAGRAM
 14           IT      10        0        0      400
 15           IO       5
 16           JR    FLOW      .5      1.0

 17           KK      15  WATERSHED 15
 18           KM      HYDROGRAPH FOR WATERSHED 15
 19           PB   11.08
 20           IN      60
 21           PI     .81      .75     1.71      .47     7.02      .32
 22           BA    1.76
 23           LS       0       80
 24           UD     .18

 25           KK     R15 ROUTE HYDROGRAPH FROM WS 15
 26           KM     ROUTE HYDROGRAPH FROM WATERSHED 15
 27           RM       1      .11       .3

 28           KK      14 WATERSHED 14
 29           KM     HYDROGRAPH FOR WATERSHED 14
 30           BA    1.11
 31           LS       0       79
 32           UD     .15

 33           KK      16 WATERSHED 16
 34           KM     HYDROGRAPH FOR WATERSHED 16
 35           BA    2.16
 36           LS       0       82
 37           UD     .35

 38           KK     114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
 39           KM     COMBINE ALL THREE HYDROGRAPHS AT CP 114
 40           HC       3

 41           KK    R114 ROUTE CP 114
 42           KM     ROUTE HYDROGRAPH FROM CP114 TO CP 113
 43           RM       1      .17       .3
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 44           KK      13 WATERSHED 13
 45           KM     HYDROGRAPH FOR WATERSHED 13
 46           BA    1.29
 47           LS       0       83
 48           UD    .126

 49           KK     113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
 50           KM     COMBINE HYDROGRAPHS CP 114 AND WS 13
 51           HC       2

 52           KK    R113 ROUTE CP 113 TO CP 112
 53           KM     ROUTE HYDROGRAPH FOR CP 113
 54           RM       1      .19       .3

 55           KK      12 WATERSHED 12
 56           KM     HYDROGRAPH FOR WATERSHED 12
 57           BA    1.32
 58           LS       0       86
 59           UD     .27

 60           KK     112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
 61           KM     COMBINE HYDROGRAPH FROM CP 113 AND WS 12
 62           HC       2

 63           KK    R112 ROUTE CP 112 TO CP 111
 64           KM     ROUTE HYDROGRAPH CP 112 TO CP 111
 65           RM       1      .07       .3

 66           KK      11 WATERSHED 11
 67           KM     HYDROGRAPH FOR WATERSHED 11
 68           BA     .70
 69           LS       0       89
 70           UD    .186

 71           KK      17 WATERSHED 17
 72           KM     HYDROGRAPH FOR WATERSHED 17
 73           BA     .37
 74           LS       0       79
 75           UD    .138

 76           KK      10   WATERSHED 10
 77           KM     HYDROGRAPH FOR WATERSHED 10
 78           BA     .54
 79           LS       0       79
 80           UD     .14

 81           KK     111 CONCENTRATION PT. 111.
 82           KM     COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
 83           HC       4
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  84          KK   RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
  85          KM     ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
  86          RM       5      .64       .3

  87          KK      2A  WATERSHED 2A
  88          KM      HYDROGRAPH FOR WATERSHED 2A
  89          BA    1.09
  90          LS       0       82
  91          UD     .22

  92          KK    CP2A  CONCENTRATION POINT 2A
  93          KM    COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
  94          HC       2

  95          KK    FLOW    POINT OF DIVERSION FOR WEEKES WASH
  96          DT  DIVERT
  97          DI       0     6500     7000     9000    10000    15000
  98          DQ       0        0      260     1300     1880     4600

  99          KK    RR2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREWAY
 100          KM     ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
 101          RM       2      .42       .3

 102          KK     2BE WATERSHED 2B EAST
 103          KM     HYDROGRAPH FOR WATERSHED 2B EAST
 104          BA    1.22
 105          LS       0       82
 106          UD     .48

 107          KK    1C2B  CONCENTRATION POINT NORTH OF FREEWAY
 108          KM     CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
 109          HC       2

 110          KK  DET2BE   ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
 111          KM      ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
 112          KM      PRINCIPLE OUTLET IS 2-12 X 12 (FOOT) BOX CULVERTS
 113          KM      INVERT IS AT 1636; EMERGENCY SPILLWAY CREST IS AT 1650.
 114          RS       1    ELEV    1636
 115          SV       0      6.0     13.0     29.0     47.0     69.0     93.0    122.0    153.0    184.0
 116          SV     217      239
 117          SE    1636     1637     1638     1640     1642     1644     1646     1648     1650     1652
 118          SE    1654     1655
 119          SQ       0       22      194      584     1050     1604     2236     2900     3534     4108
 120          SQ    4622     4860
 121          ST    1650      320      2.2      1.5

 122          KK   FRWAY
 123          KM    DIVERT ALL FLOWS FROM EMERGENCY SPILLWAY
 124          DT   SPILL
 125          DI       0     3665     5000    10000    15000
 126          DQ       0        0     1335     6335    11335
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 127          KK    CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 128          KM     ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 129          RM       1       .1       .3

 130          KK    WASH   ROUTE FLOWS THROUGH THE WASH
 131          KM      ROUTE FLOWS THROUGH THE NATURAL WASH SYSTEM
 132          RM       2      .50       .3

 133          KK  RSPILL
 134          KM    RETRIEVE FLOW DIVERTED FROM THE EMERGENCY SPILLWAY
 135          DR   SPILL

 136          KK   IDAHO
 137          KM    ROUTE THE RETRIEVED FLOW DOWN IDAHO RD.
 138          RM       1       .1       .3

 139          KK      WW
 140          KM     COMBINE ALL FLOWS FROM FREEWAY
 141          HC       2

 142          KK     RWW
 143          KM     ROUTE FLOWS TO POWERLINE F.P.S.
 144          RM       4      .93       .3

 145          KK    2EWW  WATERSHED 2E WEST, WEST
 146          KM      HYDROGRAPH FOR WATERSHED 2E WEST, WEST
 147          BA     .45
 148          LS       0       82
 149          UD      .4

 150          KK    2EWE  WATERSHED 2E WEST, EAST
 151          KM     RUNOFF FROM EAST OF IDAHO ROAD 2E WEST, EAST
 152          BA     .70
 153          LS       0       82
 154          UD      .3

 155          KK   16BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 156          KM      ROUTE FLOWS THROUGH THE DETENTION NORTH OF THE SUPERSTITION FREEWAY
 157          RS       1     ELEV  1623.5
 158          SV       0       .6      8.3     17.5     28.2     36.0     48.6
 159          SE  1623.5  1624.0  1626.0  1628.0  1630.0  1632.0  1634.0
 160          SQ       0       0      31      93     135     169     203
 161          ST  1630.0     110     2.2     1.5

 162          KK    CC04  COMBINE FLOWS JUST NORTH OF FREEWAY
 163          KM    COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 164          HC       2

 165          KK    NDIV
 166          KM    DIVERSION OF FLOW OVER THE NORTH DIVERSION DAM.
 167          DT    EXIT
 168          DI       0    1218    5000   10000
 169          DQ       0       0    3782    8782
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 170          KK  NORCUT  ROUTE THROUGH THE FREEWAY
 171          KM    ROUTE COMBINED FLOW THROUGH 2 - 10  X 8  BOX CULVERTS
 172          RS       1     ELEV  1622.6
 173          SV       0     0.02     0.15     1.12     4.17    25.42
 174          SE  1622.6  1623.0  1624.0  1626.0  1628.0  1630.0
 175          SQ       0       0     101     372     738    1111
 176          ST  1630.0    2875     2.2     1.5

 177          KK    R2BW  ROUTE TO CP102
 178          KM     ROUTE THE FLOWS FROM DETENTION POND TO CP102 (POWERLINE F.R.S.)
 179          RM       2     .40      .3

 180          KK     2BS  WATERSHED 2B SOUTH OF SUPERTITION FREEWAY
 181          KM     HYDROGRAPH FOR WATERSHED 2B SOUTH
 182          BA    1.91
 183          LS       0      80
 184          UD     .32

 185          KK     102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 186          KM     COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 187          HC       3

 188          KK       5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 189          KM     HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 190          BA    5.65
 191          LS       0      85
 192          UD     .71

 193          KK      R5 ROUTE HYDROGRAPH FROM WS 5 TO CP 104
 194          KM      ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 195          RM       1     .07      .3

 196          KK       4 WATERSHED 4
 197          KM      HYDROGRAPH FOR WATERSHED 4
 198          BA   11.85
 199          LS       0      86
 200          UD    1.30

 201          KK     104  CONCENTRATION POINT 104
 202          KM     COMBINE HYDROGRAPHS AT CP 104
 203          HC       2

 204          KK    R104
 205          KM    ROUTE CP 104 TO 106
 206          RM       2     .50      .3

 207          KK       7  WATERSHED 7
 208          KM    HYDROGRAPH FOR WATERSHED 7
 209          BA     .61
 210          LS       0      86
 211          UD     .3
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 212          KK        6 WATERSHED 6
 213          KM       HYDROGRAPH FOR WATERSHED 6
 214          BA     7.86
 215          LS        C       83
 216          UD     1.08

 217          KK      106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 218          KM       COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 219          HC        3

 220          KK     R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
 221          KM       ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 222          RM        1      .27       .3

 223          KK       3N WATERSHED 3N
 224          KM       HYDROGRAPH FOR WATERSHED 3N
 225          BA     2.89
 226          LS        C       85
 227          UD      .41

 228          KK     CULV   ROUTE FLOWS THROUGH CULVERTS
 229          KM      ROUTE FLOWS THROUGH THE CULVERTS
 230          RS      1.0     ELEV     1665
 231          SV        0      .15      .60      1.5      3.1      5.6      9.1     13.7    19.45    26.35
 232          SE     1665  1665.5     1666   1666.5     1667   1667.5     1668   1668.5     1669   1669.5
 233          SQ        0      119      375      688     1063     1462     1938     2375     2875     3375

 234          KK    RCLLV  ROUTE FLOWS TO W103
 235          KM      ROUTE THE FLOWS TO CONCENTRATION POINT W103
 236          RM        2       .5       .3

 237          KK       3S  WATERSHED 3 SOUTH
 238          KM       HYDROGRAPH FOR WATERSHED 3 SOUTH
 239          BA     2.39
 240          LS        C       85
 241          UD     .436

 242          KK      103
 243          HC        2

 244          KK       3A   WATERSHED 3A
 245          KM      HYDROGRAPH FOR WATERSHED 3A
 246          BA     1.20
 247          LS        C       86
 248          UD       .4

 249          KK    CP103
 250          KM      CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
 251          HC        2
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 252          KK    W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 253          KM      COMBINE HYDROGRAPHS FROM CP 104 AND WS 3 - SIPHON DRAW WATERSHED
 254          HC        2

 255          KK   RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 256          KM      ROUTE THE HYDROGRAPH TO POWERLINE DAM
 257          RM        1      .16       .3

 258          KK     PLD CONCENTRATION PT. AT POWERLINE DAM
 259          KM     COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 260          HC        2

 261          KK     RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 262          KM     RESERVOIR RATING CURVE
 263          RS        1     ELEV  1568.2
 264          SV        0      175      380      700     1100     1600     2175     2875     3675     4200
 265          SV     4600     5525     6725     7925
 266          SQ        0       75       92      106      119      130      141      150      159      165
 267          SQ     1228     7360    16500    27280
 268          SE   1568.1   1568.2   1570.0   1572.1   1574.1   1576.1   1578.1   1580.1   1582.1   1583.3
 269          SE   1584.1   1586.1   1588.1   1590.1
 270          SS   1583.3        0        0        0
 271          ST   1589.1    13358      2.2      1.5
 272          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   17          15
                V
                V
   25         R15
                .
                .
   28           .          14
                .           .
                .           .
   33           .           .          16
                .           .           .
                .           .           .
   38         114..........................
                V
                V
   41        R114
                .
                .
   44           .          13
                .           .
                .           .
   49         113............
                V
                V
   52        R113
                .
                .
   55           .          12
                .           .
                .           .
   60         112............
                V
                V
   63        R112
                .
                .
   66           .          11
                .           .
                .           .
   71           .           .          17
                .           .           .
                .           .           .
   76           .           .           .          10
                .           .           .           .
                .           .           .           .
   81         111.......................................
                V
                V
   84       RD111
                .
                .
   87           .          2A
                .           .
```

```
                .
 96             .-------> DIVERT
 95         FLOW
                V
                V
 99         RR2A
                .
                .
102             .          23E
                .           .
                .           .
107         102B.............
                V
                V
110       DET23E
                .
                .
124             .------->  SPILL
122        FRWAY
                V
                V
127         CHAN
                V
                V
130         WASH
                .
                .
135             .           .<-------   SPILL
133             .      RSPILL
                .           V
                .           V
136             .       ICAHC
                .           .
                .           .
139           WW.............
                V
                V
142          RWW
                .
                .
145             .        23WW
                .           .
                .           .
150             .           .        23WB
                .           .           V
                .           .           V
155             .           .        16BW
                .           .           .
                .           .           .
162             .        CC04.............
                .           .
                .           .
167             .           .------->    EXIT
165             .        NDIV
                .           V
                .           V
170             .      NCROUT
                .           V
                .           V
177             .        R23W
```

```
180                                  2S

185        102.......................
188                  5
                     V
                     V
193                 R5
196                                  4
201                 104.............
                     V
                     V
204                R104
207                                  7
212                                                6
217                 106.......................
                     V
                     V
220                R106
223                                 3N
                                     V
                                     V
228                              COLV
                                     V
                                     V
234                             RCOLV
237                                                3S
242                              103.............
244                                                3A
249                             CP103.............
252                W103.............
                     V
                     V
255               RW103
258        PLD.............
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            FEBRUARY 1981             *
*          REVISED 31 JAN 85           *
*                                      *
*  RUN DATE11/10/1988   TIME10:31: 0 *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3265 OR (FTS) 448-3265 *
*                                      *
****************************************
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```
                    WEEKES WASH - POWERLINE F.R.S  ANALYSIS
                    CONVERSION OF MODEL FROM TR-20
                                 1/2 PMF, 1 FULL PMF ;SCS EXCESS & HYDROGRAPH
                                 DEVELOPMENT, MUSKINGUM ROUTING
                       CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
                                        POINT OF WEEKES WASH AT JUNCTION ROAD.
                                     2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
                                        AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
                                        LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
                                     3: SUPERSTITION FREEWAY IN PLACE.
                                     4: ADJUSTED WATERSHED AREAS.
                                     5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
                                     6: NO MODIFICATIONS TO POWERLINE F.R.S.

 15 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN          10  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME       0000  STARTING TIME
                         NQ        400  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE        3    0  ENDING DATE
                     NDTIME       1830  ENDING TIME

                  COMPUTATION INTERVAL     .17 HOURS
                       TOTAL TIME BASE   66.50 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

    JP          MULTI-PLAN OPTION
                      NPLAN           1  NUMBER OF PLANS

    JR          MULTI-RATIO OPTION
                    RATIOS OF RUNOFF
                    .50      1.00
```

```
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO     1462.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
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PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO FLOWS RATIO 1 .50	RATIO 2 1.00
HYDROGRAPH AT	15	1.76	1	FLOW	3760.	7520.
				TIME	5.00	5.00
ROUTED TO	R15	1.76	1	FLOW	3709.	7419.
				TIME	5.00	5.00
HYDROGRAPH AT	14	1.11	1	FLOW	2371.	4743.
				TIME	5.00	5.00
HYDROGRAPH AT	16	2.16	1	FLOW	4360.	8720.
				TIME	5.00	5.00
3 COMBINED AT	114	5.03	1	FLOW	10441.	20881.
				TIME	5.00	5.00
ROUTED TO	R114	5.03	1	FLOW	10105.	20210.
				TIME	5.17	5.17
HYDROGRAPH AT	13	1.29	1	FLOW	2819.	5638.
				TIME	5.00	5.00
2 COMBINED AT	113	6.32	1	FLOW	12728.	25455.
				TIME	5.00	5.00
ROUTED TO	R113	6.32	1	FLOW	12291.	24582.
				TIME	5.17	5.17
HYDROGRAPH AT	12	1.32	1	FLOW	2836.	5672.
				TIME	5.00	5.00
2 COMBINED AT	112	7.64	1	FLOW	14756.	29511.
				TIME	5.17	5.17
ROUTED TO	R112	7.64	1	FLOW	14704.	29408.
				TIME	5.17	5.17
HYDROGRAPH AT	11	.70	1	FLOW	1554.	3108.
				TIME	5.00	5.00
HYDROGRAPH AT	17	.37	1	FLOW	792.	1583.
				TIME	5.00	5.00
HYDROGRAPH AT	10	.54	1	FLOW	1155.	2310.
				TIME	5.00	5.00
4 COMBINED AT	111	9.25	1	FLOW	17167.	34335.
				TIME	5.00	5.00
ROUTED TO	RD111	9.25	1	FLOW	16004.	32007.

HYDROGRAPH AT	2A	1.09	1	FLOW	2332.	4665.
				TIME	5.00	5.00
2 COMBINED AT	CP2A	10.34	1	FLOW	16244.	32489.
				TIME	5.67	5.67
DIVERSION TO	DIVERT	10.34	1	FLOW	5277.	14114.
				TIME	5.67	5.67
HYDROGRAPH AT	FLOW	10.34	1	FLOW	10967.	18375.
				TIME	5.67	5.67
ROUTED TO	RR2A	10.34	1	FLOW	10575.	17591.
				TIME	6.17	6.17
HYDROGRAPH AT	2BE	1.22	1	FLOW	2231.	4561.
				TIME	5.17	5.17
2 COMBINED AT	1C2B	11.56	1	FLOW	10964.	18374.
				TIME	6.00	6.00
ROUTED TO	DET2BE	11.56	1	FLOW	10899.	18303.
				TIME	6.17	6.17
			** PEAK STAGES IN FEET **			
			1	STAGE	1654.27	1656.98
				TIME	6.17	6.17
DIVERSION TO	SPILL	11.56	1	FLOW	7234.	14638.
				TIME	6.17	6.17
HYDROGRAPH AT	FRWAY	11.56	1	FLOW	3665.	3665.
				TIME	4.67	5.67
ROUTED TO	CHAN	11.56	1	FLOW	3685.	3668.
				TIME	4.83	3.83
ROUTED TO	WASH	11.56	1	FLOW	3665.	3665.
				TIME	7.17	6.33
HYDROGRAPH AT	RSPILL	.00	1	FLOW	7234.	14638.
				TIME	6.17	6.17
ROUTED TO	IDAHO	.00	1	FLOW	7157.	14456.
				TIME	6.33	6.17
2 COMBINED AT	WW	11.56	1	FLOW	10821.	18121.
				TIME	6.33	6.17
ROUTED TO	RWW	11.56	1	FLOW	10310.	17192.
				TIME	7.17	7.17
HYDROGRAPH AT	2EWW	.45	1	FLOW	878.	1756.
				TIME	5.00	5.00
HYDROGRAPH AT	2EWE	.70	1	FLOW	1453.	2906.
				TIME	5.00	5.00
ROUTED TO	16EW	.70	1	FLOW	1390.	2822.
				TIME	5.00	5.00

				TIME	5.00	5.00
2 COMBINED AT	CCC4	1.15	1	FLOW	2268.	4578.
				TIME	5.00	5.00
DIVERSION TO	EXIT	1.15	1	FLOW	1050.	3360.
				TIME	5.00	5.00
HYDROGRAPH AT	NDIV	1.15	1	FLOW	1218.	1218.
				TIME	4.67	4.33
ROUTED TO	NDROUT	1.15	1	FLOW	1100.	1218.
				TIME	5.50	5.67
			** PEAK STAGES IN FEET **			
			1	STAGE	1629.94	1630.06
				TIME	5.50	5.67
ROUTED TO	R2BW	1.15	1	FLOW	1074.	1182.
				TIME	5.83	6.00
HYDROGRAPH AT	2BS	1.91	1	FLOW	3869.	7738.
				TIME	5.00	5.00
3 COMBINED AT	102	14.62	1	FLOW	10499.	17405.
				TIME	7.17	7.17
HYDROGRAPH AT	5	5.65	1	FLOW	9317.	18635.
				TIME	5.33	5.33
ROUTED TO	R5	5.65	1	FLOW	9278.	18555.
				TIME	5.33	5.33
HYDROGRAPH AT	4	11.85	1	FLOW	13890.	27780.
				TIME	5.83	5.83
2 COMBINED AT	104	17.50	1	FLOW	21576.	43152.
				TIME	5.50	5.50
ROUTED TO	R104	17.50	1	FLOW	20571.	41143.
				TIME	6.00	6.00
HYDROGRAPH AT	7	.61	1	FLOW	1295.	2589.
				TIME	5.00	5.00
HYDROGRAPH AT	6	7.86	1	FLOW	10170.	20341.
				TIME	5.67	5.67
3 COMBINED AT	106	25.97	1	FLOW	29515.	59030.
				TIME	6.00	6.00
ROUTED TO	R106	25.97	1	FLOW	28965.	57930.
				TIME	6.17	6.17
HYDROGRAPH AT	3N	2.89	1	FLOW	5706.	11413.
				TIME	5.00	5.00
ROUTED TO	CLLV	2.89	1	FLOW	5483.	10955.
				TIME	5.17	5.17

** PEAK STAGES IN FEET **

ROUTED TO	RCULV	2.39	1	FLOW	5059.	10083.
				TIME	5.67	5.67
HYDROGRAPH AT	3S	2.39	1	FLOW	4623.	9247.
				TIME	5.17	5.17
2 COMBINED AT	1C3	5.28	1	FLOW	8181.	16228.
				TIME	5.33	5.33
HYDROGRAPH AT	3A	1.20	1	FLOW	2402.	4805.
				TIME	5.00	5.00
2 COMBINED AT	CP1C3	6.48	1	FLOW	10431.	20634.
				TIME	5.17	5.17
2 COMBINED AT	W1C3	32.45	1	FLOW	33218.	66438.
				TIME	6.00	6.00
ROUTED TO	RW1C3	32.45	1	FLOW	33002.	66025.
				TIME	6.17	6.17
2 COMBINED AT	PLD	47.07	1	FLOW	40927.	79709.
				TIME	6.33	6.33
ROUTED TO	RES	47.07	1	FLOW	21989.	78627.
				TIME	7.67	6.50

** PEAK STAGES IN FEET **

1	STAGE	1589.09	1590.51
	TIME	7.67	6.50

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BE

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1654.27	4.27	223.	10899.	2.67	6.17	.00
1.00	1656.98	6.98	282.	18303.	4.17	6.17	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION 168W

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1632.91	2.91	42.	1390.	1.83	5.00	.00
1.00	1634.87	4.87	54.	2822.	3.50	5.00	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDROUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1629.94	.00	25.	1100.	.00	5.50	.00
1.00	1630.06	.06	26.	1218.	.33	5.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1589.09	.00	7319.	21989.	.00	7.67	.00
1.00	1590.51	1.41	8171.	78627.	2.67	6.50	.00

```
*** NORMAL END OF HEC-1 ***
STOP
)
)
END OF FILE
ACS/VS CLI   TERMINATING        10-NOV-88        10:31:48

PROCESS 72 TERMINATED

ELAPSED TIME  0:01:28, CPU TIME  00:00:00.090, I/O BLOCKS  61
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF       10-NOV-88        10:31:48

****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix B

HEC-1 Output

Powerline F.R.S. Hydrology for the
100 year, 24 hour Storm

DEST=HYD.WSM USER=HYD.WSM QUEUE=LPT DEVICE=SLPB
SEQ=24601 QPRI=128 CPL=132 LPP=66 COPIES=1 PAGES=83

CREATED: 01-NOV-88 14:35:58
ENQUEUED: 01-NOV-88 15:17:20
PRINTING: 01-NOV-88 15:18:27

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:POWERLINE1CO.OUT

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00

```
**** AOS/VS REV 7.62.00.00 / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00   1-NOV-88        14:36:04
QPRI=128        SEQ=24565
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?71.CLI.00004.JCB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.24565

--------
LAST MESSAGE CHANGE     25-OCT-86        0:36:12


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


--------
MOST RECENT LOGON        1-NOV-88        14:35:14

AOS/VS CLI   REV 07.62.00.00     1-NOV-88        14:36:08
) SEARCHLIST :UTIL/:MACROS/:UDD:HYD.WSM/:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM/OWARE
)
)
) LISTFILE POWERLINE100.OUT
) DATAFILE POWERLINE100.DAT
) SEA :UTIL:HEC1.DIR/[!SEA]
) X HEC1_START
```

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            FEBRUARY 1981             *
*          REVISED 31 JAN 85           *
*                                      *
*  RUN DATE11/ 1/1988   TIME14:36:11 * -
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
* (916) 440-3285 OR (FTS) 448-3285   *
*                                      *
****************************************
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```
X     X  XXXXXXX   XXXXX          X
X     X  X       X     X        XX
X     X  X       X               X
XXXXXXX  XXXX    X        XXXXX  X
X     X  X       X               X
X     X  X       X     X         X
X     X  XXXXXXX  XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID      WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID      CONVERSION OF MODEL FROM TR-20
  3           ID                  100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
  4           ID                  DEVELOPMENT, MUSKINGUM ROUTING
  5           ID         CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  6           ID                          POINT OF WEEKES WASH AT JUNCTION ROAD.
  7           ID                       2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  8           ID                          AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
  9           ID                          LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 10           ID                       3: SUPERSTITION FREEWAY IN PLACE.
 11           ID                       4: ADJUSTED WATERSHED AREAS.
 12           ID                       5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 13           ID                       6: NO MODIFICATIONS TO POWERLINE F.R.S.
              *DIAGRAM
 14           IT      10       0       0     200
 15           IO       5

 16           KK      15  WATERSHED 15
 17           KM      HYDROGRAPH FOR WATERSHED 15
 18           PB    3.85
 19           IN      15
 20           PC       0    .002    .005    .008    .011    .014    .017    .020    .023    .026
 21           PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
 22           PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
 23           PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
 24           PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
 25           PC    .735    .758    .766    .791    .804    .815    .825    .834    .842    .849
 26           PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
 27           PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
 28           PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
 29           PC    .983    .986    .992    .995    .998   1.000   1.000   1.000   1.000   1.000
 30           BA    1.76
 31           LS       0      80
 32           UD     .18

 33           KK     R15 ROUTE HYDROGRAPH FROM WS 15
 34           KM     ROUTE HYDROGRAPH FROM WATERSHED 15
 35           RM       1     .11      .3

 36           KK      14 WATERSHED 14
 37           KM     HYDROGRAPH FOR WATERSHED 14
 38           BA    1.11
 39           LS       0      79
 40           UD     .15

 41           KK      16 WATERSHED 16
 42           KM     HYDROGRAPH FOR WATERSHED 16
 43           BA    2.16
 44           LS       0      82
 45           UD     .35
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  46          KK     114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
  47          KM     COMBINE ALL THREE HYDROGRAPHS AT CP 114
  48          HC       3

  49          KK    R114 ROUTE CP 114
  50          KM     ROUTE HYDROGRAPH FROM CP114 TO CP 113
  51          RM       1      .17       .3

  52          KK      13 WATERSHED 13
  53          KM     HYDROGRAPH FOR WATERSHED 13
  54          BA    1.29
  55          LS       0       83
  56          UD    .126

  57          KK     113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
  58          KM     COMBINE HYDROGRAPHS CP 114 AND WS 13
  59          HC       2

  60          KK    R113 ROUTE CP 113 TO CP 112
  61          KM     ROUTE HYDROGRAPH FOR CP 113
  62          RM       1      .19       .3

  63          KK      12 WATERSHED 12
  64          KM     HYDROGRAPH FOR WATERSHED 12
  65          BA    1.32
  66          LS       0       86
  67          UD     .27

  68          KK     112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
  69          KM     COMBINE HYDROGRAPH FROM CP 113 AND WS 12
  70          HC       2

  71          KK    R112 ROUTE CP 112 TO CP 111
  72          KM     ROUTE HYDROGRAPH CP 112 TO CP 111
  73          RM       1      .07       .3

  74          KK      11 WATERSHED 11
  75          KM     HYDROGRAPH FOR WATERSHED 11
  76          BA     .70
  77          LS       0       89
  78          UD    .186

  79          KK      17 WATERSHED 17
  80          KM     HYDROGRAPH FOR WATERSHED 17
  81          BA     .37
  82          LS       0       79
  83          UD    .138

  84          KK      10   WATERSHED 10
  85          KM     HYDROGRAPH FOR WATERSHED 10
  86          BA     .54
  87          LS       0       79
  88          UD     .14
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  89          KK     111 CONCENTRATION PT. 111
  90          KM     COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
  91          HC       4

  92          KK   RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
  93          KM     ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
  94          RM       5      .64       .3

  95          KK      2A  WATERSHED 2A
  96          KM      HYDROGRAPH FOR WATERSHED 2A
  97          BA    1.09
  98          LS       0       82
  99          UD     .22

 100          KK    CP2A  CONCENTRATION POINT 2A
 101          KM    COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
 102          HC       2

 103          KK  DIVERT    POINT OF DIVERSION FOR WEEKES WASH
 104          DT    FLOW
 105          DI       0     6500     7000     9000    10000    15000
 106          DQ       0        0      260     1300     1880     4600

 107          KK    RR2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREEWAY
 108          KM     ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
 109          RM       2      .42       .3

 110          KK     2BE WATERSHED 2B EAST
 111          KM     HYDROGRAPH FOR WATERSHED 2B EAST
 112          BA    1.22
 113          LS       0       82
 114          UD     .48

 115          KK    1C2E  CONCENTRATION POINT NORTH OF FREEWAY
 116          KM     CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
 117          HC       2

 118          KK  DET2BE   ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
 119          KM      ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
 120          RS       1    ELEV    1636
 121          SV       0     6.0    13.0     29.0     47.0     69.0     93.0    122.0    153.0    184.0
 122          SV     217     239
 123          SE    1636    1637    1638     1640     1642     1644     1646     1648     1650     1652
 124          SE    1654    1655
 125          SQ       0      22     194      584     1050     1604     2236     2900     3534     4408
 126          SQ    4622    4860
 127          ST    1650     320     2.2      1.5

 128          KK   FRWAY
 129          KM    DIVERT ALL FLOW THAT GO UNDER THE ROAD
 130          DT   SPILL
 131          DI       0    3665     5000    10000    15000
 132          DQ       0       0     1335     6335    11335
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 133          KK    CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 134          KM     ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 135          RM       1       .1       .3

 136          KK    WASH   ROUTE FLOWS THROUGH THE WASH
 137          KM      ROUTE FLOWS THROUGH THE NATURAL WASH SYSTEM
 138          RM       2      .50       .3

 139          KK  RSPILL
 140          KM     RETRIEVE FLOW DEIVERTED FROM THE EMERGENCY SPILLWAY
 141          DR   SPILL

 142          KK   IDAHO
 143          KM    ROUTE THE RETRIEVED FLOW DOWN IDAYO ROAD.
 144          RM       1       .1       .3

 145          KK      WW
 146          KM    COMBINE ALL THE FLOW FROM THE FREEWAY
 147          HC       2

 148          KK     RWW
 149          KM    ROUTE THE FLOW TO POWERLINE F.R.S.
 150          RM       4      .98       .3

 151          KK    2BWW  WATERSHED 2B WEST, WEST
 152          KM      HYDROGRAPH FOR WATERSHED 2B WEST, WEST
 153          BA     .45
 154          LS       0       82
 155          UD      .4

 156          KK    2BWE  WATERSHED 2B WEST, EAST
 157          KM     RUNOFF FROM EAST OF IDAHO ROAD 2B WEST, EAST
 158          KO       1
 159          BA     .70
 160          LS       0       82
 161          UD      .3

 162          KK  DET2BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 163          KM      ROUTE FLOWS THROUGH THE DETENTION NORTH OF THE SUPERSTITION FREEWAY
 164          RS       1    ELEV  1623.5
 165          SV       0       .6      8.3     17.5     28.2     36.0     48.6
 166          SE  1623.5  1624.0  1626.0  1628.0  1630.0  1632.0  1634.0
 167          SQ       0       0      31      93     135     169     208
 168          ST  1630.0     110     2.2     1.5

 169          KK    COC4  COMBINE FLOWS JUST NORTH OF FREEWAY
 170          KM    COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 171          HC       2
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 172          KK    NDIV
 173          DT    EXIT
 174          DI       0     1218     5000    10000
 175          DQ       0        0     3782     8782

 176          KK  NDPCUT  ROUTE THROUGH THE FREEWAY
 177          KM    ROUTE COMBINED FLOW THROUGH 3 BBL. 6 X 8 BOX CULVERTS
 178          RS       1     ELEV  1622.6
 179          SV       0      .02      .16     1.12     4.17    25.42
 180          SE  1622.6   1623.0   1624.0   1626.0   1628.0   1630.0
 181          SQ       0        0      101      372      738     1111
 182          ST  1630.0     2875      2.2      1.5

 183          KK    R2BW  ROUTE TO CP102
 184          KM     ROUTE THE FLOWS FROM DETENTION POND TO CP102 (POWERLINE F.R.S.)
 185          RM       2      .40       .3

 186          KK     2BS  WATERSHED 2B SOUTH OF SUPERTITION FREEWAY
 187          KM     HYDROGRAPH FOR WATERSHED 2B SOUTH
 188          BA    1.91
 189          LS       0       80
 190          UD     .32

 191          KK     102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 192          KM     COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 193          HC       3

 194          KK       5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 195          KM     HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 196          BA    5.65
 197          LS       0       85
 198          UD     .71

 199          KK      R5 ROUTE HYDROGRAPH FROM WS 5 TO CP 104
 200          KM      ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 201          RM       1      .07       .3

 202          KK       4 WATERSHED 4
 203          KM      HYDROGRAPH FOR WATERSHED 4
 204          BA   11.85
 205          LS       0       86
 206          UD    1.30

 207          KK     104  CONCENTRATION POINT 104
 208          KM     COMBINE HYDROGRAPHS AT CP 104
 209          HC       2

 210          KK    R104
 211          KM    ROUTE CP 104 TO 106
 212          RM       2      .50       .3
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 213          KK        7  WATERSHED 7
 214          KM     HYDROGRAPH FOR WATERSHED 7
 215          BA      .61
 216          LS        0       86
 217          UD       .3

 218          KK        6 WATERSHED 6
 219          KM       HYDROGRAPH FOR WATERSHED 6
 220          BA     7.86
 221          LS        0       83
 222          UD     1.08

 223          KK      106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 224          KM       COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 225          HC        3

 226          KK     R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
 227          KM       ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 228          RM        1      .27       .3

 229          KK       3N WATERSHED 3N
 230          KM       HYDROGRAPH FOR WATERSHED 3N
 231          BA     2.39
 232          LS        0       85
 233          UD      .41

 234          KK     CULV   ROUTE FLOWS THROUGH CULVERTS
 235          KM      ROUTE FLOWS THROUGH THE CULVERTS
 236          RS      1.0     ELEV     1665
 237          SV        0      .15      .60      1.5      3.1      5.6      9.1     13.7    19.45    26.35
 238          SE     1665   1665.5     1666   1666.5     1667   1667.5     1668   1668.5     1669   1669.5
 239          SQ        0      119      375      688     1063     1462     1938     2375     2875     3375

 240          KK    RCULV  ROUTE FLOWS TO W103
 241          KM      ROUTE THE FLOWS TO CONCENTRATION POINT W103
 242          RM        2       .5       .3

 243          KK       3S  WATERSHED 3 SOUTH
 244          KM       HYDROGRAPH FOR WATERSHED 3 SOUTH
 245          BA     2.39
 246          LS        0       85
 247          UD     .436

 248          KK      103
 249          HC        2

 250          KK       3A   WATERSHED 3A
 251          KM      HYDROGRAPH FOR WATERSHED 3A
 252          BA     1.20
 253          LS        0       86
 254          UD       .4
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 255          KK   CP103
 256          KM     CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
 257          HC       2

 258          KK    W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 259          KM      COMBINE HYDROGRAPHS FROM CP 104 AND WS 3 - SIPHON DRAW WATERSHED
 260          HC       2

 261          KK   RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 262          KM      ROUTE THE HYDROGRAPH TO POWERLINE DAM
 263          RM       1     .16      .3

 264          KK     FLD CONCENTRATION PT. AT POWERLINE DAM
 265          KM     COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 266          HC       2

 267          KK     RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 268          KM     RESERVOIR RATING CURVE
 269          RS       1    ELEV  1568.2
 270          SV       0     175     380     700    1100    1600    2175    2875    3675    4200
 271          SV    4600    5525    6725    7925
 272          SQ       0      75      92     106     119     130     141     150     159     165
 273          SQ    1228    7360   16800   27280
 274          SE  1568.1  1568.2  1570.0  1572.1  1574.1  1576.1  1578.1  1580.1  1582.1  1583.3
 275          SE  1584.1  1586.1  1588.1  1590.1
 276          SS  1583.3       0       0       0
 277          ST  1589.1   13358     2.2     1.5
 278          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

(V) ROUTING (--->) DIVERSION OR PUMP FLOW

(.) CONNECTOR (<---) RETURN OF DIVERTED OR PUMPED FLOW

```
INPUT
 LINE
  NO.

 17          15
              V
              V
 25         R15
              .
              .
 28           .          14
              .           .
              .           .
 33           .           .          16
              .           .           .
              .           .           .
 38         114..........................
              V
              V
 41        R114
              .
              .
 44           .          13
              .           .
              .           .
 49         113............
              V
              V
 52        R113
              .
              .
 55           .          12
              .           .
              .           .
 60         112............
              V
              V
 63        R112
              .
              .
 66           .          11
              .           .
              .           .
 71           .           .          17
              .           .           .
              .           .           .
 76           .           .           .          10
              .           .           .           .
              .           .           .           .
 81         111.......................................
              V
              V
 84        RD111
              .
              .
 87           .          2A
              .           .
              .           .
 92        CP2A............
```

```
                 .
                 [redacted]---[redacted]IVE[redacted]
 95          FLOW
                 V
                 V
 99          RR2A
                 .
                 .
102              .          2BE
                 .            .
                 .            .
107          102E.............
                 V
                 V
110        DET2BE
                 .
                 .
124              .------->   SPILL
122         FRWAY
                 V
                 V
127          CHAN
                 V
                 V
130          WASH
                 .
                 .
135              .           .<-------   SPILL
133              .      RSPILL
                 .           V
                 .           V
136              .       IDAHO
                 .           .
                 .           .
139           WW.............
                 V
                 V
142          RWW
                 .
                 .
145              .        2BWW
                 .           .
                 .           .
150              .           .        2BWE
                 .           .           V
                 .           .           V
155              .           .      DET2BW
                 .           .           .
                 .           .           .
162              .        COO4.............
                 .           .
                 .           .
167              .           .------->    EXIT
165              .        NDIV
                 .           V
                 .           V
170              .      NDROUT
                 .           V
                 .           V
177              .        R2BW
                 .           .
                 .           .
180              .           .         2BS
```

```
185        102.......................
             .
             .
188          .          5
             .          V
             .          V
193          .         R5
             .          .
             .          .
196          .          .          4
             .          .          .
             .          .          .
201          .        104...........
             .          V
             .          V
204          .       R104
             .          .
             .          .
207          .          .          7
             .          .          .
             .          .          .
212          .          .          .          6
             .          .          .          .
             .          .          .          .
217          .        106.......................
             .          V
             .          V
220          .       R106
             .          .
             .          .
223          .          .         3N
             .          .          V
             .          .          V
228          .          .       CULV
             .          .          V
             .          .          V
234          .          .      RCULV
             .          .          .
             .          .          .
237          .          .          .          3S
             .          .          .          .
             .          .          .          .
242          .          .        103...........
             .          .          .
             .          .          .
244          .          .          .         3A
             .          .          .          .
             .          .          .          .
249          .          .      CP103...........
             .          .          .
             .          .          .
252          .       W103...........
             .          V
             .          V
255          .      RW103
             .          .
             .          .
258        PLD...........
             V
             V
261        RES
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

(***) RUNOFF ALSC COMPUTED AT THIS LOCATION

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            FEBRUARY 1981             *
*          REVISED 31 JAN 85           *
*                                      *
*  RUN DATE11/ 1/1988   TIME14:36:28 *
*                                      *
****************************************
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```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
* (916) 440-3285 OR (FTS) 448-3285 *
*                                      *
****************************************
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                    WEEKES WASH - POWERLINE F.R.S  ANALYSIS
                    CONVERSION OF MODEL FROM TR-20
                                 100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
                                 DEVELOPMENT, MUSKINGUM ROUTING
                       CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
                                        POINT OF WEEKES WASH AT JUNCTION ROAD.
                                     2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
                                        AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
                                        LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
                                     3: SUPERSTITION FREEWAY IN PLACE.
                                     4: ADJUSTED WATERSHED AREAS.
                                     5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
                                     6: NO MODIFICATIONS TO POWERLINE F.R.S.

 15 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN          10  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         200  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME        0910  ENDING TIME

                 COMPUTATION INTERVAL      .17 HOURS
                      TOTAL TIME BASE   33.17 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG


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


            **************
            *            *
 156 KK     *     2BWE   *        WATERSHED 2B WEST, EAST
            *            *
            **************

 158 KO          OUTPUT CONTROL VARIABLES
                      IPRNT            1  PRINT CONTROL
                      IPLOT            0  PLOT CONTROL
                      QSCAL           0.  HYDROGRAPH PLOT SCALE

               SUBBASIN RUNOFF DATA

 159 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .70  SUBBASIN AREA

                 PRECIPITATION DATA

  18 PB                STORM         3.85  BASIN TOTAL PRECIPITATION

  20 PI            INCREMENTAL PRECIPITATION PATTERN
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .01       .01       .01       .01       .01       .01
                      .01       .01       .01       .01       .01       .01       .01       .02       .02       .07
                      .13       .18       .03       .02       .02       .02       .01       .01       .02       .01
                      .01       .01       .01       .01       .01       .01       .01       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00

 160 LS          SCS LOSS RATE
                      STRTL          .44  INITIAL ABSTRACTION
                     CRVNBR        82.00  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

 161 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .30  LAG
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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

UNIT HYDROGRAPH
11 END-OF-PERIOD ORDINATES

325. 864. 762. 385. 193. 94. 46. 23. 11. 6.
2.

****

HYDROGRAPH AT STATION 2EWE

****

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	*	1		1640	101	.01	.00	.01	34.
1		0010	2	.01	.01	.00	0.	*	1		1650	102	.01	.00	.01	32.
1		0020	3	.01	.01	.00	0.	*	1		1700	103	.01	.00	.01	30.
1		0030	4	.01	.01	.00	0.	*	1		1710	104	.01	.00	.01	29.
1		0040	5	.01	.01	.00	0.	*	1		1720	105	.01	.00	.01	29.
1		0050	6	.01	.01	.00	0.	*	1		1730	106	.01	.00	.01	29.
1		0100	7	.01	.01	.00	0.	*	1		1740	107	.01	.00	.01	29.
1		0110	8	.01	.01	.00	0.	*	1		1750	108	.01	.00	.01	28.
1		0120	9	.01	.01	.00	0.	*	1		1800	109	.01	.00	.01	27.
1		0130	10	.01	.01	.00	0.	*	1		1810	110	.01	.00	.01	25.
1		0140	11	.01	.01	.00	0.	*	1		1820	111	.01	.00	.01	24.
1		0150	12	.01	.01	.00	0.	*	1		1830	112	.01	.00	.01	24.
1		0200	13	.01	.01	.00	0.	*	1		1840	113	.01	.00	.01	23.
1		0210	14	.01	.01	.00	0.	*	1		1850	114	.01	.00	.01	23.
1		0220	15	.01	.01	.00	0.	*	1		1900	115	.01	.00	.01	23.
1		0230	16	.01	.01	.00	0.	*	1		1910	116	.01	.00	.01	23.
1		0240	17	.01	.01	.00	0.	*	1		1920	117	.01	.00	.01	23.
1		0250	18	.01	.01	.00	0.	*	1		1930	118	.01	.00	.01	23.
1		0300	19	.01	.01	.00	0.	*	1		1940	119	.01	.00	.01	23.
1		0310	20	.01	.01	.00	0.	*	1		1950	120	.01	.00	.01	23.
1		0320	21	.01	.01	.00	0.	*	1		2000	121	.01	.00	.01	22.
1		0330	22	.01	.01	.00	0.	*	1		2010	122	.01	.00	.01	20.
1		0340	23	.01	.01	.00	0.	*	1		2020	123	.01	.00	.01	19.
1		0350	24	.01	.01	.00	0.	*	1		2030	124	.01	.00	.01	18.
1		0400	25	.01	.01	.00	0.	*	1		2040	125	.01	.00	.01	18.
1		0410	26	.01	.01	.00	0.	*	1		2050	126	.01	.00	.01	18.
1		0420	27	.01	.01	.00	0.	*	1		2100	127	.01	.00	.01	18.
1		0430	28	.01	.01	.00	0.	*	1		2110	128	.01	.00	.01	18.
1		0440	29	.01	.01	.00	0.	*	1		2120	129	.01	.00	.01	18.
1		0450	30	.01	.01	.00	0.	*	1		2130	130	.01	.00	.01	18.
1		0500	31	.01	.01	.00	0.	*	1		2140	131	.01	.00	.01	18.
1		0510	32	.01	.01	.00	0.	*	1		2150	132	.01	.00	.01	18.
1		0520	33	.01	.01	.00	0.	*	1		2200	133	.01	.00	.01	18.
1		0530	34	.01	.01	.00	0.	*	1		2210	134	.01	.00	.01	18.
1		0540	35	.01	.01	.00	0.	*	1		2220	135	.01	.00	.01	18.
1		0550	36	.01	.01	.00	0.	*	1		2230	136	.01	.00	.01	18.
1		0600	37	.01	.01	.00	0.	*	1		2240	137	.01	.00	.01	18.
1		0610	38	.01	.01	.00	0.	*	1		2250	138	.01	.00	.01	19.
1		0620	39	.01	.01	.00	0.	*	1		2300	139	.02	.00	.01	23.
1		0630	40	.01	.01	.00	0.	*	1		2310	140	.01	.00	.01	26.
1		0640	41	.01	.01	.00	0.	*	1		2320	141	.01	.00	.01	24.
1		0650	42	.01	.01	.00	0.	*	1		2330	142	.01	.00	.01	21.
1		0700	43	.01	.01	.00	0.	*	1		2340	143	.01	.00	.00	18.
1		0710	44	.01	.01	.00	0.	*	1		2350	144	.00	.00	.00	15.
1		0720	45	.01	.01	.00	0.	*	2		0000	145	.00	.00	.00	11.

1	0750	48	.01	.01	.00	0.	*	2	0030	148	.00	.00	.00	1.
1	0800	49	.01	.01	.00	0.	*	2	0040	149	.00	.00	.00	1.
1	0810	50	.02	.01	.00	0.	*	2	0050	150	.00	.00	.00	0.
1	0820	51	.02	.02	.00	1.	*	2	0100	151	.00	.00	.00	0.
1	0830	52	.02	.02	.00	1.	*	2	0110	152	.00	.00	.00	0.
1	0840	53	.02	.02	.00	2.	*	2	0120	153	.00	.00	.00	0.
1	0850	54	.02	.02	.00	3.	*	2	0130	154	.00	.00	.00	0.
1	0900	55	.02	.02	.00	3.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	4.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	5.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	6.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	7.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	9.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	10.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.03	.02	.01	11.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.03	.02	.01	13.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.03	.02	.01	15.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.04	.03	.01	18.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.04	.03	.01	23.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.05	.03	.01	28.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.05	.04	.02	34.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.06	.04	.02	41.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.07	.04	.03	50.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.27	.15	.12	90.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.49	.21	.28	230.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.71	.22	.49	509.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.11	.03	.08	716.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.09	.02	.07	602.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.07	.02	.06	398.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.06	.01	.05	275.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.04	.01	.03	197.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.02	140.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.06	.01	.05	108.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.05	.01	.04	107.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.03	105.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.03	.01	.02	91.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.03	.01	.02	76.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.03	.01	.02	67.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.02	61.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.02	56.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.02	52.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.02	.00	.01	48.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.02	.00	.01	44.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.02	.00	.01	42.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.02	.00	.01	41.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.02	.00	.01	40.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.02	.00	.01	38.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.02	.00	.01	36.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.02	.00	.01	35.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.02	.00	.01	35.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.02	.00	.01	34.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.02	.00	.01	34.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.02	.00	.01	34.	*	2	0910	200	.00	.00	.00	0.
							*							

****

TOTAL RAINFALL = 3.85, TOTAL LOSS = 1.77, TOTAL EXCESS = 2.08

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
716.	12.17	(CFS)	127.	39.	28.	28.

```
                    CUMULATIVE AREA =      .70 SQ MI

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO     1462.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
```

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	15	1890.	12.00	295.	91.	66.	1.76		
ROUTED TO	R15	1886.	12.17	295.	91.	66.	1.76		
HYDROGRAPH AT	14	1280.	12.00	179.	55.	40.	1.11		
HYDROGRAPH AT	16	1979.	12.17	391.	121.	87.	2.16		
3 COMBINED AT	114	4890.	12.17	865.	266.	193.	5.03		
ROUTED TO	R114	4521.	12.33	865.	266.	193.	5.03		
HYDROGRAPH AT	13	1922.	12.00	242.	75.	54.	1.29		
2 COMBINED AT	113	5124.	12.33	1106.	341.	247.	6.32		
ROUTED TO	R113	4890.	12.50	1106.	341.	247.	6.32		
HYDROGRAPH AT	12	1646.	12.17	275.	86.	62.	1.32		
2 COMBINED AT	112	5838.	12.33	1379.	427.	309.	7.64		
ROUTED TO	R112	5795.	12.50	1379.	427.	309.	7.64		
HYDROGRAPH AT	11	1040.	12.00	161.	50.	37.	.70		
HYDROGRAPH AT	17	447.	12.00	60.	18.	13.	.37		
HYDROGRAPH AT	10	647.	12.00	87.	27.	19.	.54		
4 COMBINED AT	111	6621.	12.33	1684.	522.	378.	9.25		
ROUTED TO	RD111	6187.	13.00	1682.	522.	378.	9.25		
HYDROGRAPH AT	2A	1227.	12.17	197.	61.	44.	1.09		
2 COMBINED AT	CP2A	6348.	13.00	1874.	583.	422.	10.34		
DIVERSION TO	FLOW	0.	13.00	0.	0.	0.	10.34		
HYDROGRAPH AT	DIVERT	6348.	13.00	1874.	583.	422.	10.34		
ROUTED TO	RR2A	5940.	13.50	1872.	583.	422.	10.34		
HYDROGRAPH AT	2BE	957.	12.33	220.	68.	49.	1.22		
2 COMBINED AT	1C2B	6160.	13.50	2087.	651.	471.	11.56		
ROUTED TO	DET2BE	5937.	13.67	2071.	651.	471.	11.56	1651.75	13.67
DIVERSION TO	SPILL	2272.	13.33	232.	58.	42.	11.56		
HYDROGRAPH AT	FFWAY	3665.	13.33	1840.	593.	429.	11.56		

ROUTED TO	WASH	3650.	14.50	1835.	593.	429.	11.56		
HYDROGRAPH AT	RSPILL	2272.	13.67	232.	58.	42.	.00		
ROUTED TO	IDAHO	2333.	13.67	232.	58.	42.	.00		
2 COMBINED AT	WW	5416.	13.83	2066.	651.	471.	11.56		
ROUTED TO	RWW	4543.	14.83	2058.	651.	471.	11.56		
HYDROGRAPH AT	2BWW	387.	12.33	81.	25.	18.	.45		
HYDROGRAPH AT	2BWE	716.	12.17	127.	39.	28.	.70		
ROUTED TO	DET2BW	300.	12.67	111.	39.	28.	.70	1630.74	12.67
2 COMBINED AT	CC04	537.	12.50	190.	64.	46.	1.15		
DIVERSION TO	EXIT	0.	12.50	0.	0.	0.	1.15		
HYDROGRAPH AT	NDIV	537.	12.50	190.	64.	46.	1.15		
ROUTED TO	NDRCUT	530.	12.67	190.	64.	46.	1.15	1626.87	12.67
ROUTED TO	R2BW	506.	13.00	190.	64.	46.	1.15		
HYDROGRAPH AT	2BS	1724.	12.17	320.	99.	71.	1.91		
3 COMBINED AT	102	4817.	14.83	2414.	813.	588.	14.62		
HYDROGRAPH AT	5	3882.	12.67	1134.	353.	256.	5.65		
ROUTED TO	R5	3907.	12.67	1134.	353.	256.	5.65		
HYDROGRAPH AT	4	5614.	13.17	2433.	768.	556.	11.85		
2 COMBINED AT	104	8660.	12.83	3564.	1121.	811.	17.50		
ROUTED TO	R104	8251.	13.50	3558.	1121.	811.	17.50		
HYDROGRAPH AT	7	727.	12.17	127.	40.	29.	.61		
HYDROGRAPH AT	6	3788.	13.00	1459.	456.	330.	7.86		
3 COMBINED AT	106	11740.	13.33	5127.	1617.	1170.	25.97		
ROUTED TO	R106	11406.	13.67	5120.	1617.	1170.	25.97		
HYDROGRAPH AT	3N	2763.	12.33	582.	181.	131.	2.89		
ROUTED TO	CULV	2537.	12.33	582.	181.	131.	2.89	1668.66	12.33
ROUTED TO	RCULV	2246.	12.83	581.	181.	131.	2.89		
HYDROGRAPH AT	3S	2227.	12.33	481.	149.	108.	2.39		
2 COMBINED AT	103	3399.	12.67	1061.	330.	239.	5.28		
HYDROGRAPH AT	3A	1197.	12.33	250.	78.	56.	1.20		

2 COMBINED AT	W103	13110.	13.50	6394.	2024.	1465.	32.45		
ROUTED TO	RW103	13027.	13.67	6388.	2024.	1465.	32.45		
2 COMBINED AT	PLD	14312.	13.67	8802.	2837.	2053.	47.07		
ROUTED TO	RES	1703.	20.67	1559.	761.	568.	47.07	1584.25	20.67

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BE

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1651.75	1.75	180.	5937.	1.00	13.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BW

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1630.74	.74	31.	300.	1.00	12.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDROUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.87	.00	2.	530.	.00	12.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1584.25	.00	4672.	1703.	.00	20.67	.00

```
*** NORMAL END OF HEC-1 ***
STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING        1-NOV-88       14:36:51

PROCESS 78 TERMINATED

ELAPSED TIME  0:00:46, CPU TIME  00:00:00.092, I/O BLOCKS  64
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF       1-NOV-88       14:36:52

****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix C

HEC-1 Output

Areal Reduction
using NOAA Method

```
+66666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666+

$   $  $   $  $$$$          $   $   $$$   $   $
$   $  $   $  $   $         $   $  $   $  $$ $$
$   $   $ $   $   $         $   $  $       $ $ $
$$$$$    $    $   $         $ $ $   $$$    $ $ $
$   $    $    $   $         $ $ $       $  $   $
$   $    $    $   $    $$   $$ $$  $   $  $   $
$   $    $    $$$$    $$    $   $   $$$   $   $

DEST=HYD.WSM  USER=HYD.WSM  QUEUE=LPT  DEVICE=@LPB
SEQ=26488  QPRI=128  CPL=132  LPP=66  COPIES=1  PAGES=160

CREATED:  14-NOV-88  11:42:58
ENQUEUED:  14-NOV-88  11:45:30
PRINTING:  14-NOV-88  11:45:32

PATH=:SMCKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:REDMCAA.OUT

$$$$   $$$$$  $$$$   $   $   $$$     $       $            $$$   $   $  $$$$$
$   $  $      $   $  $$  $  $   $   $ $     $ $          $   $  $   $     $
$   $  $      $   $  $ $ $  $   $  $   $   $   $         $   $  $   $     $
$$$$   $$$$   $   $  $  $$  $   $  $   $   $   $         $   $  $   $     $
$ $    $      $   $  $   $  $   $  $$$$$   $$$$$         $   $  $   $     $
$  $   $      $   $  $   $  $   $  $   $   $   $    $$   $   $  $   $     $
$   $  $$$$$  $$$$   $   $   $$$   $   $   $   $    $$    $$$    $$$      $

+66666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666+

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00
```

```
**** AOS/VS REV 7.62.00.00 / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00  14-NOV-88        11:43:00
QPRI=128          SEQ=26483
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?23.CLI.00001.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.26483

--------
LAST MESSAGE CHANGE     25-OCT-86        0:36:12


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


--------
MOST RECENT LOGON        14-NOV-88        11:41:48

AOS/VS CLI    REV 07.62.00.00     14-NOV-88        11:43:01
) SEARCHLIST :UTIL/:MACROS/:LDD:HYD.WSM/:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM/OWARE
)
)
) LISTFILE REDNOAA.OLT
) DATAFILE REDNOAA.DAT
) SEA :UTIL:HEC1.DIR/D!SEAI
) X HEC1_START
```

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            FEBRUARY 1981             *
*          REVISED 31 JAN 85           *
*                                      *
* RUN DATE11/14/1989   TIME11:43: 3 *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285    *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9.......10

  1           ID      WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID      CONVERSION OF MODEL FROM TR-20
  3           ID                    100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
  4           ID                    DEVELOPMENT, MUSKINGUM ROUTING
  5           ID         CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  6           ID                          POINT OF WEEKES WASH AT JUNCTION ROAD.
  7           ID                       2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  8           ID                          AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
  9           ID                          LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 10           ID                       3: SUPERSTITION FREEWAY IN PLACE.
 11           ID                       4: ADJUSTED WATERSHED AREAS.
 12           ID                       5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 13           ID                       6: NO MODIFICATIONS TO POWERLINE F.R.S.
 14           ID                       7: AREAL REDUCTION BASED ON NOAA ATLAS 2, 1973.
              *DIAGRAM
 15           IT      10       0       0     200
 16           IO       5
 17           IN      15
 18           JD    3.85     .01
 19           PC       0    .002    .005    .008    .011    .014    .017    .020    .023    .026
 20           PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
 21           PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
 22           PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
 23           PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
 24           PC    .735    .758    .766    .791    .804    .815    .825    .834    .842    .849
 25           PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
 26           PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
 27           PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
 28           PC    .983    .986    .992    .995    .998   1.000   1.000   1.000   1.000   1.000
 29           JD    3.30      10
 30           JD    3.72      30
 31           JD    3.67      50

 32           KK      15  WATERSHED 15
 33           KM      HYDROGRAPH FOR WATERSHED 15
 34           BA    1.76
 35           LS       0      80
 36           LD     .18

 37           KK     R15 ROUTE HYDROGRAPH FROM WS 15
 38           KM     ROUTE HYDROGRAPH FROM WATERSHED 15
 39           RM       1     .11      .3

 40           KK      14 WATERSHED 14
 41           KM     HYDROGRAPH FOR WATERSHED 14
 42           BA    1.11
 43           LS       0      79
 44           LD     .15

 45           KK      16 WATERSHED 16
 46           KM     HYDROGRAPH FOR WATERSHED 16
 47           BA    2.16
 48           LS       0      82
 49           LD     .35
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 50           KK      114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
 51           KM      COMBINE ALL THREE HYDROGRAPHS AT CP 114
 52           HC        3

 53           KK     R114 ROUTE CP 114
 54           KM      ROUTE HYDROGRAPH FROM CP114 TO CP 113
 55           RM        1      .17       .3

 56           KK       13 WATERSHED 13
 57           KM      HYDROGRAPH FOR WATERSHED 13
 58           BA     1.29
 59           LS        0       83
 60           UD     .126

 61           KK      113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
 62           KM      COMBINE HYDROGRAPHS CP 114 AND WS 13
 63           HC        2

 64           KK     R113 ROUTE CP 113 TO CP 112
 65           KM      ROUTE HYDROGRAPH FOR CP 113
 66           RM        1      .19       .3

 67           KK       12 WATERSHED 12
 68           KM      HYDROGRAPH FOR WATERSHED 12
 69           BA     1.32
 70           LS        0       86
 71           UD      .27

 72           KK      112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
 73           KM      COMBINE HYDROGRAPH FROM CP 113 AND WS 12
 74           HC        2

 75           KK     R112 ROUTE CP 112 TO CP 111
 76           KM      ROUTE HYDROGRAPH CP 112 TO CP 111
 77           RM        1      .07       .3

 78           KK       11 WATERSHED 11
 79           KM      HYDROGRAPH FOR WATERSHED 11
 80           BA      .70
 81           LS        0       89
 82           UD     .186

 83           KK       17 WATERSHED 17
 84           KM      HYDROGRAPH FOR WATERSHED 17
 85           BA      .37
 86           LS        0       79
 87           UD     .138

 88           KK       10   WATERSHED 10
 89           KM      HYDROGRAPH FOR WATERSHED 10
 90           BA      .54
 91           LS        0       79
 92           UD      .14
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  93          KK     111 CONCENTRATION PT. 111
  94          KM     COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
  95          HC       4

  96          KK   RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
  97          KM     ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
  98          RM       5      .64       .3

  99          KK      2A  WATERSHED 2A
 100          KM      HYDROGRAPH FOR WATERSHED 2A
 101          BA    1.09
 102          LS       0       82
 103          LD     .22

 104          KK    CP2A  CONCENTRATION POINT 2A
 105          KM    COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
 106          HC       2

 107          KK  DIVERT    POINT OF DIVERSION FOR WEEKES WASH
 108          DT    FLOW
 109          DI       0     6500     7000     9000    10000    15000
 110          DQ       0        0      260     1300     1880     4600

 111          KK    RR2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREEWAY
 112          KM     ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
 113          RM       2      .42       .3

 114          KK     2BE WATERSHED 2B EAST
 115          KM     HYDROGRAPH FOR WATERSHED 2B EAST
 116          BA    1.22
 117          LS       0       82
 118          LD     .48

 119          KK    1C2B  CONCENTRATION POINT NORTH OF FREEWAY
 120          KM     CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
 121          HC       2

 122          KK  DET2BE   ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
 123          KM      ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
 124          RS       1     ELEV     1636
 125          SV       0      6.0     13.0     29.0     47.0     69.0     93.0    122.0    153.0    184.0
 126          SV     217      239
 127          SE    1636     1637     1638     1640     1642     1644     1646     1648     1650     1652
 128          SE    1654     1655
 129          SQ       0       22      194      584     1050     1604     2236     2900     3534     4408
 130          SQ    4622     4860
 131          ST    1650      320      2.2      1.5

 132          KK   FRWAY
 133          KM    DIVERT ALL FLOW THAT GO UNDER THE ROAD
 134          DT   SPILL
 135          DI       0     3665     5000    10000    15000
 136          DQ       0        0     1335     6335    11335
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 137          KK    CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 138          KM     ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 139          RM       1       .1       .3

 140          KK    WASH   ROUTE FLOWS THROUGH THE WASH
 141          KM      ROUTE FLOWS THROUGH THE NATURAL WASH SYSTEM
 142          RM       2      .50       .3

 143          KK  RSPILL
 144          KM     RETRIEVE FLOW DEIVERTED FROM THE EMERGENCY SPILLWAY
 145          DR   SPILL

 146          KK   IDAHO
 147          KM    ROUTE THE RETRIEVED FLOW DOWN IDAYO ROAD.
 148          RM       1       .1       .3

 149          KK      WW
 150          KM    COMBINE ALL THE FLOW FROM THE FREEWAY
 151          HC       2

 152          KK     RWW
 153          KM    ROUTE THE FLOW TO POWERLINE F.R.S.
 154          RM       4      .98       .3

 155          KK    2BWW  WATERSHED 2B WEST, WEST
 156          KM      HYDROGRAPH FOR WATERSHED 2B WEST, WEST
 157          BA     .45
 158          LS       0       82
 159          UD      .4

 160          KK    2BWE  WATERSHED 2B WEST, EAST
 161          KM     RUNOFF FROM EAST OF IDAHO ROAD 2B WEST, EAST
 162          KO       1
 163          BA     .70
 164          LS       0       82
 165          UD      .3

 166          KK  DET2BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 167          KM      ROUTE FLOWS THROUGH THE DETENTION NORTH OF THE SUPERSTITION FREEWAY
 168          RS       1     ELEV  1623.5
 169          SV       0       .6      8.3     17.5     28.2     36.0     48.6
 170          SE  1623.5  1624.0  1626.0  1628.0  1630.0  1632.0  1634.0
 171          SQ       0       0      31      93     135     169     208
 172          ST  1630.0     110     2.2     1.5

 173          KK    CCO4  COMBINE FLOWS JUST NORTH OF FREEWAY
 174          KM    COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 175          HC       2
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9.......10

 176          KK     NDIV
 177          DT     EXIT
 178          DI        0     1218     5000    10000
 179          DQ        0        0     3782     8782

 180          KK   NDRCUT  ROUTE THROUGH THE FREEWAY
 181          KM     ROUTE COMBINED FLOW THROUGH 3 BBL. 6 X 8 BOX CULVERTS
 182          RS        1     ELEV  1622.6
 183          SV        0      .02      .16     1.12     4.17    25.42
 184          SE   1622.6   1623.0   1624.0   1626.0   1628.0   1630.0
 185          SQ        0        0      101      372      738     1111
 186          ST   1630.0     2675      2.2      1.5

 187          KK     R2BW  ROUTE TO CP102
 188          KM      ROUTE THE FLOWS FROM DETENTION POND TO CP102 (POWERLINE F.R.S.)
 189          RM        2      .40       .3

 190          KK      2BS  WATERSHED 2B SOUTH OF SUPERTITION FREEWAY
 191          KM      HYDROGRAPH FOR WATERSHED 2B SOUTH
 192          BA     1.91
 193          LS        0       80
 194          UD      .32

 195          KK      102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 196          KM      COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 197          HC        3

 198          KK        5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 199          KM      HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 200          BA     5.65
 201          LS        0       85
 202          UD      .71

 203          KK      R5 ROUTE HYDROGRAPH FROM WS 5 TO CP 104
 204          KM      ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 205          RM        1      .07       .3

 206          KK        4 WATERSHED 4
 207          KM      HYDROGRAPH FOR WATERSHED 4
 208          BA    11.85
 209          LS        0       86
 210          UD     1.30

 211          KK      104  CONCENTRATION POINT 104
 212          KM      COMBINE HYDROGRAPHS AT CP 104
 213          HC        2

 214          KK     R104
 215          KM     ROUTE CP 104 TO 106
 216          RM        2      .50       .3
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 217          KK        7  WATERSHED 7
 218          KM     HYDROGRAPH FOR WATERSHED 7
 219          BA      .61
 220          LS        0       86
 221          UD       .3

 222          KK        6 WATERSHED 6
 223          KM      HYDROGRAPH FOR WATERSHED 6
 224          BA     7.86
 225          LS        0       83
 226          UD     1.03

 227          KK      106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 228          KM       COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 229          HC        3

 230          KK     R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
 231          KM       ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 232          RM        1      .27       .3

 233          KK       3N WATERSHED 3N
 234          KM       HYDROGRAPH FOR WATERSHED 3N
 235          BA     2.89
 236          LS        0       85
 237          UD      .41

 238          KK     CULV   ROUTE FLOWS THROUGH CULVERTS
 239          KM      ROUTE FLOWS THROUGH THE CULVERTS
 240          RS      1.0     ELEV     1665
 241          SV        0      .15      .60      1.5      3.1      5.0      9.1     13.7    19.45    26.35
 242          SE     1665   1665.5     1666   1666.5     1667   1667.5     1668   1668.5     1669   1669.5
 243          SQ        0      119      375      688     1063     1462     1938     2375     2875     3375

 244          KK    ROUTE  ROUTE FLOWS TO W103
 245          KM      ROUTE THE FLOWS TO CONCENTRATION POINT W103
 246          RM        2       .5       .3

 247          KK       3S  WATERSHED 3 SOUTH
 248          KM       HYDROGRAPH FOR WATERSHED 3 SOUTH
 249          BA     2.39
 250          LS        0       85
 251          UD     .436

 252          KK      103
 253          HC        2

 254          KK       3A   WATERSHED 3A
 255          KM      HYDROGRAPH FOR WATERSHED 3A
 256          BA     1.20
 257          LS        0       86
 258          UD       .4
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 259          KK   CP103
 260          KM     CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
 261          HC       2

 262          KK    W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 263          KM     COMBINE HYDROGRAPHS FROM CP 104 AND WS 3 - SIPHON DRAW WATERSHED
 264          HC       2

 265          KK   RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 266          KM     ROUTE THE HYDROGRAPH TO POWERLINE DAM
 267          RM       1     .16      .3

 268          KK     PLD CONCENTRATION PT. AT POWERLINE DAM
 269          KM     COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 270          HC       2

 271          KK     RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 272          KM     RESERVOIR RATING CURVE
 273          RS       1    ELEV  1568.2
 274          SV       0     175     380     700    1100    1600    2175    2875    3675    4200
 275          SV    4600    5525    6725    7925
 276          SQ       0      75      92     106     119     130     141     150     159     165
 277          SQ    1228    7360   16800   27280
 278          SE  1568.1  1568.2  1570.0  1572.1  1574.1  1576.1  1578.1  1580.1  1582.1  1583.3
 279          SE  1584.1  1586.1  1588.1  1590.1
 280          SS  1583.3       0       0       0
 281          ST  1589.1   13358     2.2     1.5
 282          ZZ
```

```
                 SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE        (V) ROUTING          (--->) DIVERSION OR PUMP FLOW
  NO.        (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW
  32            15
                 V
                 V
  37           R15
                 .
                 .
  40             .          14
                 .           .
                 .           .
  45             .           .          16
                 .           .           .
                 .           .           .
  50           114.......................
                 V
                 V
  53          R114
                 .
                 .
  56             .          13
                 .           .
                 .           .
  61           113............
                 V
                 V
  64          R113
                 .
                 .
  67             .          12
                 .           .
                 .           .
  72           112............
                 V
                 V
  75          R112
                 .
                 .
  78             .          11
                 .           .
                 .           .
  83             .           .          17
                 .           .           .
                 .           .           .
  88             .           .           .          10
                 .           .           .           .
                 .           .           .           .
  93           111.......................................
                 V
                 V
  96         RD111
                 .
                 .
  99             .          2A
                 .           .
```

```
                .
                .
108             .-------->    FLOW
107       DIVERT
                V
                V
111        RR2A
                .
                .
114             .          2BE
                .           .
                .           .
119        102E.............
                V
                V
122      DET2BE
                .
                .
134             .-------->  SPILL
132       FRWAY
                V
                V
137        CHAN
                V
                V
140        WASH
                .
                .
145             .           .<-------    SPILL
143             .      RSPILL
                .           V
                .           V
146             .       IDAHO
                .           .
                .           .
149          WW.............
                V
                V
152         RWW
                .
                .
155             .        2BWW
                .           .
                .           .
160             .           .        2BWE
                .           .           V
                .           .           V
166             .           .      DET2BW
                .           .           .
                .           .           .
173             .        COO4.............
                .           .
                .           .
177             .           .-------->    EXIT
176             .        NDIV
                .           V
                .           V
180             .      NDPOUT
                .           V
                .           V
187             .        R2BW
```

```
190                   2-S
195            102
198                 5
                    V
                    V
203                 R5
206                            4
211                 104
                    V
                    V
214                R104
217                            7
222                                          6
227                 106
                    V
                    V
230                R106
233                           3N
                               V
                               V
238                         CULV
                               V
                               V
244                        RCULV
247                                         3S
252                           103
254                                         3A
259                        CR103
262                W103
                    V
                    V
265               RW103
268            PLD
```

(***) RUNOFF ALSC COMPUTED AT THIS LCCATICN

```
*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*          FEBRUARY 1981            *
*        REVISED 31 JAN 85          *
*                                   *
*  RUN DATE11/14/1989   TIME11:43:20 *
*                                   *
*************************************
```

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*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*  THE HYDROLOGIC ENGINEERING CENTER *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*  (916) 440-3265 OR (FTS) 448-3285 *
*                                   *
*************************************
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                    WEEKES WASH - POWERLINE F.R.S  ANALYSIS
                    CONVERSION OF MODEL FROM TR-20
                                 100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
                                 DEVELOPMENT, MUSKINGUM ROUTING
                       CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
                                        POINT OF WEEKES WASH AT JUNCTION ROAD.
                                     2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
                                        AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
                                        LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
                                     3: SUPERSTITION FREEWAY IN PLACE.
                                     4: ADJUSTED WATERSHED AREAS.
                                     5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
                                     6: NO MODIFICATIONS TO POWERLINE F.R.S.
                                     7: AREAL REDUCTION BASED ON NOAA ATLAS 2, 1973.

16 IO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

   IT          HYDROGRAPH TIME DATA
                      NMIN          10  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME        0000  STARTING TIME
                        NQ         200  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      2    0  ENDING DATE
                    NDTIME        0910  ENDING TIME

                 COMPUTATION INTERVAL     .17 HOURS
                      TOTAL TIME BASE   33.17 HOURS

        ENGLISH UNITS
             DRAINAGE AREA          SQUARE MILES
             PRECIPITATION DEPTH    INCHES
             LENGTH, ELEVATION      FEET
             FLOW                   CUBIC FEET PER SECOND
             STORAGE VOLUME         ACRE-FEET
             SURFACE AREA           ACRES
             TEMPERATURE            DEGREES FAHRENHEIT

18 JD            INDEX STORM NO. 1
                      STRM       3.85  PRECIPITATION DEPTH
                      TRDA        .01  TRANSPOSITION DRAINAGE AREA

19 PI              PRECIPITATION PATTERN
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
```

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.01	.02	.02	.07
.13	.18	.03	.02	.02	.02	.01	.01	.02	.01
.01	.01	.01	.01	.01	.01	.01	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00							

29 JD INDEX STORM NO. 2

STRM 3.80 PRECIPITATION DEPTH

TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.01	.02	.02	.07
.13	.18	.03	.02	.02	.02	.01	.01	.02	.01
.01	.01	.01	.01	.01	.01	.01	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00							

30 JD INDEX STORM NO. 3

STRM 3.72 PRECIPITATION DEPTH

TRDA 30.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.01	.02	.02	.07
.13	.18	.03	.02	.02	.02	.01	.01	.02	.01
.01	.01	.01	.01	.01	.01	.01	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00							

31 JD INDEX STORM NO. 4

STRM 3.67 PRECIPITATION DEPTH

TRDA 50.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

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.00      .00      .00      .00      .00      .00      .00      .00      .00      .00
.00      .00      .00      .00      .00      .00      .00      .00      .00      .00
.00      .00      .00      .00      .01      .01      .01      .01      .01      .01
.01      .01      .01      .01      .01      .01      .01      .02      .02      .07
.13      .18      .03      .02      .02      .02      .01      .01      .02      .01
.01      .01      .01      .01      .01      .01      .01      .00      .00      .00
.00      .00      .00      .00      .00      .00      .00      .00      .00      .00
.00      .00      .00      .00      .00      .00      .00      .00      .00      .00
.00      .00      .00      .00      .00      .00      .00      .00      .00      .00
.00      .00      .00      .00      .00      .00      .00      .00      .00      .00
.00      .00      .00      .00      .00      .00      .00      .00      .00      .00
.00      .00      .00

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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          **************
          *            *
160 KK    *    2BWE    *      WATERSHED 2B WEST, EAST
          *            *
          **************

162 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          1  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

              SUBBASIN RUNOFF DATA

163 BA          SUBBASIN CHARACTERISTICS
                     TAREA        .70  SUBBASIN AREA

164 LS          SCS LOSS RATE
                     STRTL        .44  INITIAL ABSTRACTION
                    CRVNBR      82.00  CURVE NUMBER
                     RTIMP        .00  PERCENT IMPERVIOUS AREA
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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

UNIT HYDROGRAPH
11 END-OF-PERIOD ORDINATES

325.	864.	762.	385.	193.	94.	46.	23.	11.	6.
2.									

****

HYDROGRAPH AT 2EWE
TRANSPOSITION AREA .0 SQ MI

****

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	1		1640	101	.01	.00	.01	34.
1		0010	2	.01	.01	.00	0.	1		1650	102	.01	.00	.01	32.
1		0020	3	.01	.01	.00	0.	1		1700	103	.01	.00	.01	30.
1		0030	4	.01	.01	.00	0.	1		1710	104	.01	.00	.01	29.
1		0040	5	.01	.01	.00	0.	1		1720	105	.01	.00	.01	29.
1		0050	6	.01	.01	.00	0.	1		1730	106	.01	.00	.01	29.
1		0100	7	.01	.01	.00	0.	1		1740	107	.01	.00	.01	29.
1		0110	8	.01	.01	.00	0.	1		1750	108	.01	.00	.01	28.
1		0120	9	.01	.01	.00	0.	1		1800	109	.01	.00	.01	27.
1		0130	10	.01	.01	.00	0.	1		1810	110	.01	.00	.01	25.
1		0140	11	.01	.01	.00	0.	1		1820	111	.01	.00	.01	24.
1		0150	12	.01	.01	.00	0.	1		1830	112	.01	.00	.01	24.
1		0200	13	.01	.01	.00	0.	1		1840	113	.01	.00	.01	23.
1		0210	14	.01	.01	.00	0.	1		1850	114	.01	.00	.01	23.
1		0220	15	.01	.01	.00	0.	1		1900	115	.01	.00	.01	23.
1		0230	16	.01	.01	.00	0.	1		1910	116	.01	.00	.01	23.
1		0240	17	.01	.01	.00	0.	1		1920	117	.01	.00	.01	23.
1		0250	18	.01	.01	.00	0.	1		1930	118	.01	.00	.01	23.
1		0300	19	.01	.01	.00	0.	1		1940	119	.01	.00	.01	23.
1		0310	20	.01	.01	.00	0.	1		1950	120	.01	.00	.01	23.
1		0320	21	.01	.01	.00	0.	1		2000	121	.01	.00	.01	22.
1		0330	22	.01	.01	.00	0.	1		2010	122	.01	.00	.01	20.
1		0340	23	.01	.01	.00	0.	1		2020	123	.01	.00	.01	19.
1		0350	24	.01	.01	.00	0.	1		2030	124	.01	.00	.01	18.
1		0400	25	.01	.01	.00	0.	1		2040	125	.01	.00	.01	18.
1		0410	26	.01	.01	.00	0.	1		2050	126	.01	.00	.01	18.
1		0420	27	.01	.01	.00	0.	1		2100	127	.01	.00	.01	18.
1		0430	28	.01	.01	.00	0.	1		2110	128	.01	.00	.01	18.
1		0440	29	.01	.01	.00	0.	1		2120	129	.01	.00	.01	18.
1		0450	30	.01	.01	.00	0.	1		2130	130	.01	.00	.01	18.
1		0500	31	.01	.01	.00	0.	1		2140	131	.01	.00	.01	18.
1		0510	32	.01	.01	.00	0.	1		2150	132	.01	.00	.01	18.
1		0520	33	.01	.01	.00	0.	1		2200	133	.01	.00	.01	18.
1		0530	34	.01	.01	.00	0.	1		2210	134	.01	.00	.01	18.
1		0540	35	.01	.01	.00	0.	1		2220	135	.01	.00	.01	18.
1		0550	36	.01	.01	.00	0.	1		2230	136	.01	.00	.01	18.
1		0600	37	.01	.01	.00	0.	1		2240	137	.01	.00	.01	18.
1		0610	38	.01	.01	.00	0.	1		2250	138	.01	.00	.01	19.
1		0620	39	.01	.01	.00	0.	1		2300	139	.02	.00	.01	23.
1		0630	40	.01	.01	.00	0.	1		2310	140	.01	.00	.01	26.
1		0640	41	.01	.01	.00	0.	1		2320	141	.01	.00	.01	24.
1		0650	42	.01	.01	.00	0.	1		2330	142	.01	.00	.01	21.

1	0720	45	.01	.01	.00	0.	*	2	C000	145	.00	.00	.00	11.
1	0730	46	.01	.01	.00	0.	*	2	C010	146	.00	.00	.00	6.
1	0740	47	.01	.01	.00	0.	*	2	C020	147	.00	.00	.00	3.
1	0750	48	.01	.01	.00	0.	*	2	C030	148	.00	.00	.00	1.
1	0800	49	.01	.01	.00	0.	*	2	C040	149	.00	.00	.00	1.
1	0810	50	.02	.01	.00	0.	*	2	C050	150	.00	.00	.00	0.
1	0820	51	.02	.02	.00	1.	*	2	C100	151	.00	.00	.00	0.
1	0830	52	.02	.02	.00	1.	*	2	C110	152	.00	.00	.00	0.
1	0840	53	.02	.02	.00	2.	*	2	C120	153	.00	.00	.00	0.
1	0850	54	.02	.02	.00	3.	*	2	C130	154	.00	.00	.00	0.
1	0900	55	.02	.02	.00	3.	*	2	C140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	4.	*	2	C150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	5.	*	2	C200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	6.	*	2	C210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	7.	*	2	C220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	9.	*	2	C230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	10.	*	2	C240	161	.00	.00	.00	0.
1	1010	62	.03	.02	.01	11.	*	2	C250	162	.00	.00	.00	0.
1	1020	63	.03	.02	.01	13.	*	2	C300	163	.00	.00	.00	0.
1	1030	64	.03	.02	.01	15.	*	2	C310	164	.00	.00	.00	0.
1	1040	65	.04	.03	.01	18.	*	2	C320	165	.00	.00	.00	0.
1	1050	66	.04	.03	.01	23.	*	2	C330	166	.00	.00	.00	0.
1	1100	67	.05	.03	.01	28.	*	2	C340	167	.00	.00	.00	0.
1	1110	68	.05	.04	.02	34.	*	2	C350	168	.00	.00	.00	0.
1	1120	69	.06	.04	.02	41.	*	2	C400	169	.00	.00	.00	0.
1	1130	70	.07	.04	.03	50.	*	2	C410	170	.00	.00	.00	0.
1	1140	71	.27	.15	.12	90.	*	2	C420	171	.00	.00	.00	0.
1	1150	72	.49	.21	.28	230.	*	2	C430	172	.00	.00	.00	0.
1	1200	73	.71	.22	.49	509.	*	2	C440	173	.00	.00	.00	0.
1	1210	74	.11	.03	.08	716.	*	2	C450	174	.00	.00	.00	0.
1	1220	75	.09	.02	.07	602.	*	2	C500	175	.00	.00	.00	0.
1	1230	76	.07	.02	.06	398.	*	2	C510	176	.00	.00	.00	0.
1	1240	77	.06	.01	.05	275.	*	2	C520	177	.00	.00	.00	0.
1	1250	78	.04	.01	.03	197.	*	2	C530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.02	140.	*	2	C540	179	.00	.00	.00	0.
1	1310	80	.06	.01	.05	108.	*	2	C550	180	.00	.00	.00	0.
1	1320	81	.05	.01	.04	107.	*	2	C600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.03	105.	*	2	C610	182	.00	.00	.00	0.
1	1340	83	.03	.01	.02	91.	*	2	C620	183	.00	.00	.00	0.
1	1350	84	.03	.01	.02	76.	*	2	C630	184	.00	.00	.00	0.
1	1400	85	.03	.01	.02	67.	*	2	C640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.02	61.	*	2	C650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.02	56.	*	2	C700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.02	52.	*	2	C710	188	.00	.00	.00	0.
1	1440	89	.02	.00	.01	48.	*	2	C720	189	.00	.00	.00	0.
1	1450	90	.02	.00	.01	44.	*	2	C730	190	.00	.00	.00	0.
1	1500	91	.02	.00	.01	42.	*	2	C740	191	.00	.00	.00	0.
1	1510	92	.02	.00	.01	41.	*	2	C750	192	.00	.00	.00	0.
1	1520	93	.02	.00	.01	40.	*	2	C800	193	.00	.00	.00	0.
1	1530	94	.02	.00	.01	38.	*	2	C810	194	.00	.00	.00	0.
1	1540	95	.02	.00	.01	36.	*	2	C820	195	.00	.00	.00	0.
1	1550	96	.02	.00	.01	35.	*	2	C830	196	.00	.00	.00	0.
1	1600	97	.02	.00	.01	35.	*	2	C840	197	.00	.00	.00	0.
1	1610	98	.02	.00	.01	34.	*	2	C850	198	.00	.00	.00	0.
1	1620	99	.02	.00	.01	34.	*	2	C900	199	.00	.00	.00	0.
1	1630	100	.02	.00	.01	34.	*	2	C910	200	.00	.00	.00	0.

****

TOTAL RAINFALL = 3.85, TOTAL LOSS = 1.77, TOTAL EXCESS = 2.08

716.	12.17	(CFS)	127.	54.	28.	28.	

(INCHES)	1.682	2.075	2.075	2.075
(AC-FT)	63.	77.	77.	77.

CUMULATIVE AREA = .70 SQ MI

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HYDROGRAPH AT 2EWE
TRANSPOSITION AREA 10.0 SQ MI

****

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	1		1640	101	.01	.00	.01	33.
1		0010	2	.01	.01	.00	0.	1		1650	102	.01	.00	.01	31.
1		0020	3	.01	.01	.00	0.	1		1700	103	.01	.00	.01	30.
1		0030	4	.01	.01	.00	0.	1		1710	104	.01	.00	.01	29.
1		0040	5	.01	.01	.00	0.	1		1720	105	.01	.00	.01	29.
1		0050	6	.01	.01	.00	0.	1		1730	106	.01	.00	.01	28.
1		0100	7	.01	.01	.00	0.	1		1740	107	.01	.00	.01	28.
1		0110	8	.01	.01	.00	0.	1		1750	108	.01	.00	.01	28.
1		0120	9	.01	.01	.00	0.	1		1800	109	.01	.00	.01	27.
1		0130	10	.01	.01	.00	0.	1		1810	110	.01	.00	.01	25.
1		0140	11	.01	.01	.00	0.	1		1820	111	.01	.00	.01	24.
1		0150	12	.01	.01	.00	0.	1		1830	112	.01	.00	.01	23.
1		0200	13	.01	.01	.00	0.	1		1840	113	.01	.00	.01	23.
1		0210	14	.01	.01	.00	0.	1		1850	114	.01	.00	.01	23.
1		0220	15	.01	.01	.00	0.	1		1900	115	.01	.00	.01	23.
1		0230	16	.01	.01	.00	0.	1		1910	116	.01	.00	.01	23.
1		0240	17	.01	.01	.00	0.	1		1920	117	.01	.00	.01	23.
1		0250	18	.01	.01	.00	0.	1		1930	118	.01	.00	.01	23.
1		0300	19	.01	.01	.00	0.	1		1940	119	.01	.00	.01	23.
1		0310	20	.01	.01	.00	0.	1		1950	120	.01	.00	.01	22.
1		0320	21	.01	.01	.00	0.	1		2000	121	.01	.00	.01	21.
1		0330	22	.01	.01	.00	0.	1		2010	122	.01	.00	.01	20.
1		0340	23	.01	.01	.00	0.	1		2020	123	.01	.00	.01	18.
1		0350	24	.01	.01	.00	0.	1		2030	124	.01	.00	.01	18.
1		0400	25	.01	.01	.00	0.	1		2040	125	.01	.00	.01	17.
1		0410	26	.01	.01	.00	0.	1		2050	126	.01	.00	.01	17.
1		0420	27	.01	.01	.00	0.	1		2100	127	.01	.00	.01	17.
1		0430	28	.01	.01	.00	0.	1		2110	128	.01	.00	.01	17.
1		0440	29	.01	.01	.00	0.	1		2120	129	.01	.00	.01	17.
1		0450	30	.01	.01	.00	0.	1		2130	130	.01	.00	.01	17.
1		0500	31	.01	.01	.00	0.	1		2140	131	.01	.00	.01	17.
1		0510	32	.01	.01	.00	0.	1		2150	132	.01	.00	.01	17.
1		0520	33	.01	.01	.00	0.	1		2200	133	.01	.00	.01	17.
1		0530	34	.01	.01	.00	0.	1		2210	134	.01	.00	.01	17.
1		0540	35	.01	.01	.00	0.	1		2220	135	.01	.00	.01	17.
1		0550	36	.01	.01	.00	0.	1		2230	136	.01	.00	.01	17.
1		0600	37	.01	.01	.00	0.	1		2240	137	.01	.00	.01	17.
1		0610	38	.01	.01	.00	0.	1		2250	138	.01	.00	.01	18.
1		0620	39	.01	.01	.00	0.	1		2300	139	.02	.00	.01	22.
1		0630	40	.01	.01	.00	0.	1		2310	140	.01	.00	.01	25.
1		0640	41	.01	.01	.00	0.	1		2320	141	.01	.00	.01	23.
1		0650	42	.01	.01	.00	0.	1		2330	142	.01	.00	.01	20.
1		0700	43	.01	.01	.00	0.	1		2340	143	.01	.00	.00	18.
1		0710	44	.01	.01	.00	0.	1		2350	144	.00	.00	.00	15.
1		0720	45	.01	.01	.00	0.	2		0000	145	.00	.00	.00	10.

1	0750	48	.01	.01	.00	0.	*	2	0030	148	.00	.00	.00	1.
1	0800	49	.01	.01	.00	0.	*	2	0040	149	.00	.00	.00	1.
1	0810	50	.02	.01	.00	0.	*	2	0050	150	.00	.00	.00	0.
1	0820	51	.02	.02	.00	1.	*	2	0100	151	.00	.00	.00	0.
1	0830	52	.02	.02	.00	1.	*	2	0110	152	.00	.00	.00	0.
1	0840	53	.02	.02	.00	2.	*	2	0120	153	.00	.00	.00	0.
1	0850	54	.02	.02	.00	2.	*	2	0130	154	.00	.00	.00	0.
1	0900	55	.02	.02	.00	3.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	4.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	5.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	6.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	7.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	8.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	9.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.03	.02	.01	11.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.03	.02	.01	12.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.03	.02	.01	14.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.04	.03	.01	17.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.04	.03	.01	22.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.05	.03	.01	27.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.05	.04	.02	33.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.06	.04	.02	40.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.07	.04	.03	49.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.26	.14	.12	88.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.48	.21	.27	224.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.70	.22	.48	497.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.11	.03	.08	702.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.09	.02	.07	590.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.07	.02	.05	390.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.06	.01	.04	270.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.04	.01	.03	193.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.02	137.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.06	.01	.05	106.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.05	.01	.04	105.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.03	103.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.03	.01	.02	89.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.03	.01	.02	75.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.03	.01	.02	66.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.02	60.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.02	55.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.02	51.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.02	.00	.01	47.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.02	.00	.01	44.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.02	.00	.01	41.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.02	.00	.01	40.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.02	.00	.01	39.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.02	.00	.01	38.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.02	.00	.01	36.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.02	.00	.01	35.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.02	.00	.01	34.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.02	.00	.01	34.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.02	.00	.01	34.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.02	.00	.01	34.	*	2	0910	200	.00	.00	.00	0.
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TOTAL RAINFALL = 3.80, TOTAL LOSS = 1.77, TOTAL EXCESS = 2.03

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
702.	12.17	(CFS)	124.	33.	28.	28.

CUMULATIVE AREA = .70 SQ MI

HYDROGRAPH AT 2EWE
TRANSPOSITION AREA 30.0 SQ MI

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	1		1640	101	.01	.00	.01	32.
1		0010	2	.00	.00	.00	0.	1		1650	102	.01	.00	.01	30.
1		0020	3	.01	.01	.00	0.	1		1700	103	.01	.00	.01	29.
1		0030	4	.01	.01	.00	0.	1		1710	104	.01	.00	.01	28.
1		0040	5	.01	.01	.00	0.	1		1720	105	.01	.00	.01	28.
1		0050	6	.01	.01	.00	0.	1		1730	106	.01	.00	.01	28.
1		0100	7	.01	.01	.00	0.	1		1740	107	.01	.00	.01	29.
1		0110	8	.01	.01	.00	0.	1		1750	108	.01	.00	.01	27.
1		0120	9	.01	.01	.00	0.	1		1800	109	.01	.00	.01	26.
1		0130	10	.01	.01	.00	0.	1		1810	110	.01	.00	.01	24.
1		0140	11	.01	.01	.00	0.	1		1820	111	.01	.00	.01	23.
1		0150	12	.01	.01	.00	0.	1		1830	112	.01	.00	.01	23.
1		0200	13	.01	.01	.00	0.	1		1840	113	.01	.00	.01	22.
1		0210	14	.01	.01	.00	0.	1		1850	114	.01	.00	.01	22.
1		0220	15	.01	.01	.00	0.	1		1900	115	.01	.00	.01	22.
1		0230	16	.01	.01	.00	0.	1		1910	116	.01	.00	.01	22.
1		0240	17	.01	.01	.00	0.	1		1920	117	.01	.00	.01	22.
1		0250	18	.01	.01	.00	0.	1		1930	118	.01	.00	.01	22.
1		0300	19	.01	.01	.00	0.	1		1940	119	.01	.00	.01	22.
1		0310	20	.01	.01	.00	0.	1		1950	120	.01	.00	.01	22.
1		0320	21	.01	.01	.00	0.	1		2000	121	.01	.00	.01	21.
1		0330	22	.01	.01	.00	0.	1		2010	122	.01	.00	.01	19.
1		0340	23	.01	.01	.00	0.	1		2020	123	.01	.00	.01	18.
1		0350	24	.01	.01	.00	0.	1		2030	124	.01	.00	.01	17.
1		0400	25	.01	.01	.00	0.	1		2040	125	.01	.00	.01	17.
1		0410	26	.01	.01	.00	0.	1		2050	126	.01	.00	.01	17.
1		0420	27	.01	.01	.00	0.	1		2100	127	.01	.00	.01	17.
1		0430	28	.01	.01	.00	0.	1		2110	128	.01	.00	.01	17.
1		0440	29	.01	.01	.00	0.	1		2120	129	.01	.00	.01	17.
1		0450	30	.01	.01	.00	0.	1		2130	130	.01	.00	.01	17.
1		0500	31	.01	.01	.00	0.	1		2140	131	.01	.00	.01	17.
1		0510	32	.01	.01	.00	0.	1		2150	132	.01	.00	.01	17.
1		0520	33	.01	.01	.00	0.	1		2200	133	.01	.00	.01	17.
1		0530	34	.01	.01	.00	0.	1		2210	134	.01	.00	.01	17.
1		0540	35	.01	.01	.00	0.	1		2220	135	.01	.00	.01	17.
1		0550	36	.01	.01	.00	0.	1		2230	136	.01	.00	.01	17.
1		0600	37	.01	.01	.00	0.	1		2240	137	.01	.00	.01	17.
1		0610	38	.01	.01	.00	0.	1		2250	138	.01	.00	.01	18.
1		0620	39	.01	.01	.00	0.	1		2300	139	.01	.00	.01	22.
1		0630	40	.01	.01	.00	0.	1		2310	140	.01	.00	.01	25.
1		0640	41	.01	.01	.00	0.	1		2320	141	.01	.00	.01	23.
1		0650	42	.01	.01	.00	0.	1		2330	142	.01	.00	.01	20.
1		0700	43	.01	.01	.00	0.	1		2340	143	.00	.00	.00	18.
1		0710	44	.01	.01	.00	0.	1		2350	144	.00	.00	.00	14.
1		0720	45	.01	.01	.00	0.	2		0000	145	.00	.00	.00	10.
1		0730	46	.01	.01	.00	0.	2		0010	146	.00	.00	.00	6.
1		0740	47	.01	.01	.00	0.	2		0020	147	.00	.00	.00	3.
1		0750	48	.01	.01	.00	0.	2		0030	148	.00	.00	.00	1.

1	0820	51	.02	.02	.00	0.	*	2	C100	151	.00	.00	.00	0.
1	0830	52	.02	.02	.00	1.	*	2	C110	152	.00	.00	.00	0.
1	0840	53	.02	.02	.00	1.	*	2	C120	153	.00	.00	.00	0.
1	0850	54	.02	.02	.00	2.	*	2	C130	154	.00	.00	.00	0.
1	0900	55	.02	.02	.00	3.	*	2	C140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	3.	*	2	C150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	4.	*	2	C200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	5.	*	2	C210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	6.	*	2	C220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	7.	*	2	C230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	9.	*	2	C240	161	.00	.00	.00	0.
1	1010	62	.02	.02	.00	10.	*	2	C250	162	.00	.00	.00	0.
1	1020	63	.03	.02	.01	11.	*	2	C300	163	.00	.00	.00	0.
1	1030	64	.03	.02	.01	13.	*	2	C310	164	.00	.00	.00	0.
1	1040	65	.04	.03	.01	16.	*	2	C320	165	.00	.00	.00	0.
1	1050	66	.04	.03	.01	20.	*	2	C330	166	.00	.00	.00	0.
1	1100	67	.04	.03	.01	25.	*	2	C340	167	.00	.00	.00	0.
1	1110	68	.05	.04	.02	31.	*	2	C350	168	.00	.00	.00	0.
1	1120	69	.06	.04	.02	38.	*	2	C400	169	.00	.00	.00	0.
1	1130	70	.06	.04	.02	47.	*	2	C410	170	.00	.00	.00	0.
1	1140	71	.26	.14	.11	84.	*	2	C420	171	.00	.00	.00	0.
1	1150	72	.47	.21	.26	215.	*	2	C430	172	.00	.00	.00	0.
1	1200	73	.68	.22	.46	479.	*	2	C440	173	.00	.00	.00	0.
1	1210	74	.11	.03	.08	678.	*	2	C450	174	.00	.00	.00	0.
1	1220	75	.09	.02	.07	571.	*	2	C500	175	.00	.00	.00	0.
1	1230	76	.07	.02	.05	377.	*	2	C510	176	.00	.00	.00	0.
1	1240	77	.06	.01	.04	261.	*	2	C520	177	.00	.00	.00	0.
1	1250	78	.04	.01	.03	187.	*	2	C530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.02	133.	*	2	C540	179	.00	.00	.00	0.
1	1310	80	.06	.01	.05	103.	*	2	C550	180	.00	.00	.00	0.
1	1320	81	.05	.01	.04	102.	*	2	C600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.03	101.	*	2	C610	182	.00	.00	.00	0.
1	1340	83	.03	.01	.02	86.	*	2	C620	183	.00	.00	.00	0.
1	1350	84	.03	.01	.02	73.	*	2	C630	184	.00	.00	.00	0.
1	1400	85	.02	.01	.02	64.	*	2	C640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.02	58.	*	2	C650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.02	53.	*	2	C700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.02	49.	*	2	C710	188	.00	.00	.00	0.
1	1440	89	.02	.00	.01	46.	*	2	C720	189	.00	.00	.00	0.
1	1450	90	.02	.00	.01	42.	*	2	C730	190	.00	.00	.00	0.
1	1500	91	.02	.00	.01	40.	*	2	C740	191	.00	.00	.00	0.
1	1510	92	.02	.00	.01	39.	*	2	C750	192	.00	.00	.00	0.
1	1520	93	.02	.00	.01	38.	*	2	C800	193	.00	.00	.00	0.
1	1530	94	.01	.00	.01	37.	*	2	C810	194	.00	.00	.00	0.
1	1540	95	.01	.00	.01	35.	*	2	C820	195	.00	.00	.00	0.
1	1550	96	.01	.00	.01	34.	*	2	C830	196	.00	.00	.00	0.
1	1600	97	.01	.00	.01	33.	*	2	C840	197	.00	.00	.00	0.
1	1610	98	.01	.00	.01	33.	*	2	C850	198	.00	.00	.00	0.
1	1620	99	.01	.00	.01	33.	*	2	C900	199	.00	.00	.00	0.
1	1630	100	.01	.00	.01	33.	*	2	C910	200	.00	.00	.00	0.
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TOTAL RAINFALL = 3.72, TOTAL LOSS = 1.75, TOTAL EXCESS = 1.97

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
678.	12.17	(CFS)	120.	37.	27.	27.
		(INCHES)	1.595	1.966	1.966	1.966
		(AC-FT)	60.	73.	73.	73.

HYDROGRAPH AT 2BWE
TRANSPOSITION AREA 50.0 SQ MI

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	1		1640	101	.01	.00	.01	32.
1		0010	2	.00	.00	.00	0.	1		1650	102	.01	.00	.01	30.
1		0020	3	.01	.01	.00	0.	1		1700	103	.01	.00	.01	28.
1		0030	4	.01	.01	.00	0.	1		1710	104	.01	.00	.01	28.
1		0040	5	.01	.01	.00	0.	1		1720	105	.01	.00	.01	27.
1		0050	6	.01	.01	.00	0.	1		1730	106	.01	.00	.01	27.
1		0100	7	.01	.01	.00	0.	1		1740	107	.01	.00	.01	27.
1		0110	8	.01	.01	.00	0.	1		1750	108	.01	.00	.01	27.
1		0120	9	.01	.01	.00	0.	1		1800	109	.01	.00	.01	26.
1		0130	10	.01	.01	.00	0.	1		1810	110	.01	.00	.01	24.
1		0140	11	.01	.01	.00	0.	1		1820	111	.01	.00	.01	23.
1		0150	12	.01	.01	.00	0.	1		1830	112	.01	.00	.01	22.
1		0200	13	.01	.01	.00	0.	1		1840	113	.01	.00	.01	22.
1		0210	14	.01	.01	.00	0.	1		1850	114	.01	.00	.01	22.
1		0220	15	.01	.01	.00	0.	1		1900	115	.01	.00	.01	22.
1		0230	16	.01	.01	.00	0.	1		1910	116	.01	.00	.01	22.
1		0240	17	.01	.01	.00	0.	1		1920	117	.01	.00	.01	22.
1		0250	18	.01	.01	.00	0.	1		1930	118	.01	.00	.01	22.
1		0300	19	.01	.01	.00	0.	1		1940	119	.01	.00	.01	22.
1		0310	20	.01	.01	.00	0.	1		1950	120	.01	.00	.01	22.
1		0320	21	.01	.01	.00	0.	1		2000	121	.01	.00	.01	20.
1		0330	22	.01	.01	.00	0.	1		2010	122	.01	.00	.01	19.
1		0340	23	.01	.01	.00	0.	1		2020	123	.01	.00	.01	18.
1		0350	24	.01	.01	.00	0.	1		2030	124	.01	.00	.01	17.
1		0400	25	.01	.01	.00	0.	1		2040	125	.01	.00	.01	17.
1		0410	26	.01	.01	.00	0.	1		2050	126	.01	.00	.01	17.
1		0420	27	.01	.01	.00	0.	1		2100	127	.01	.00	.01	17.
1		0430	28	.01	.01	.00	0.	1		2110	128	.01	.00	.01	16.
1		0440	29	.01	.01	.00	0.	1		2120	129	.01	.00	.01	16.
1		0450	30	.01	.01	.00	0.	1		2130	130	.01	.00	.01	16.
1		0500	31	.01	.01	.00	0.	1		2140	131	.01	.00	.01	16.
1		0510	32	.01	.01	.00	0.	1		2150	132	.01	.00	.01	17.
1		0520	33	.01	.01	.00	0.	1		2200	133	.01	.00	.01	17.
1		0530	34	.01	.01	.00	0.	1		2210	134	.01	.00	.01	17.
1		0540	35	.01	.01	.00	0.	1		2220	135	.01	.00	.01	17.
1		0550	36	.01	.01	.00	0.	1		2230	136	.01	.00	.01	17.
1		0600	37	.01	.01	.00	0.	1		2240	137	.01	.00	.01	17.
1		0610	38	.01	.01	.00	0.	1		2250	138	.01	.00	.01	18.
1		0620	39	.01	.01	.00	0.	1		2300	139	.01	.00	.01	21.
1		0630	40	.01	.01	.00	0.	1		2310	140	.01	.00	.01	24.
1		0640	41	.01	.01	.00	0.	1		2320	141	.01	.00	.01	22.
1		0650	42	.01	.01	.00	0.	1		2330	142	.01	.00	.01	20.
1		0700	43	.01	.01	.00	0.	1		2340	143	.00	.00	.00	17.
1		0710	44	.01	.01	.00	0.	1		2350	144	.00	.00	.00	14.
1		0720	45	.01	.01	.00	0.	2		0000	145	.00	.00	.00	10.
1		0730	46	.01	.01	.00	0.	2		0010	146	.00	.00	.00	6.
1		0740	47	.01	.01	.00	0.	2		0020	147	.00	.00	.00	3.
1		0750	48	.01	.01	.00	0.	2		0030	148	.00	.00	.00	1.
1		0800	49	.01	.01	.00	0.	2		0040	149	.00	.00	.00	1.
1		0810	50	.01	.01	.00	0.	2		0050	150	.00	.00	.00	0.
1		0820	51	.02	.02	.00	0.	2		0100	151	.00	.00	.00	0.

1	0890	54	.02	.02	.00	2.	*	2	0130	154	.00	.00	.00	0.
1	0900	55	.02	.02	.00	2.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	3.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	4.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	5.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	6.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	7.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	8.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.02	.02	.00	9.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.03	.02	.01	11.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.03	.02	.01	13.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.04	.03	.01	16.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.04	.03	.01	20.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.04	.03	.01	24.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.05	.04	.02	30.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.06	.04	.02	37.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.06	.04	.02	45.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.25	.14	.11	81.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.46	.21	.26	209.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.68	.22	.45	468.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.11	.03	.08	663.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.09	.02	.07	559.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.07	.02	.05	370.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.06	.01	.04	256.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.04	.01	.03	184.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.02	131.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.06	.01	.05	101.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.05	.01	.04	100.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.02	99.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.03	.01	.02	85.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.03	.01	.02	72.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.02	.01	.02	63.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.02	57.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.02	52.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.02	48.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.02	.00	.01	45.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.02	.00	.01	42.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.02	.00	.01	39.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.02	.00	.01	38.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.02	.00	.01	37.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.01	.00	.01	36.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.01	.00	.01	34.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.01	.00	.01	33.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.01	.00	.01	33.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.01	.00	.01	32.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.01	.00	.01	32.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.01	.00	.01	32.	*	2	0910	200	.00	.00	.00	0.
							*							

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TOTAL RAINFALL = 3.67, TOTAL LOSS = 1.75, TOTAL EXCESS = 1.92

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
663.	12.17	(CFS)	118.	36.	26.	26.
		(INCHES)	1.561	1.924	1.924	1.924
		(AC-FT)	58.	72.	72.	72.

CUMULATIVE AREA = .70 SQ MI

INTERPOLATED HYDROGRAPH AT 23WE

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		0820	51	1.	1		1640	101	33.	2		0100	151	0.
1		0010	2	0.	1		0830	52	1.	1		1650	102	31.	2		0110	152	0.
1		0020	3	0.	1		0840	53	2.	1		1700	103	30.	2		0120	153	0.
1		0030	4	0.	1		0850	54	3.	1		1710	104	29.	2		0130	154	0.
1		0040	5	0.	1		0900	55	3.	1		1720	105	29.	2		0140	155	0.
1		0050	6	0.	1		0910	56	4.	1		1730	106	29.	2		0150	156	0.
1		0100	7	0.	1		0920	57	5.	1		1740	107	29.	2		0200	157	0.
1		0110	8	0.	1		0930	58	6.	1		1750	108	28.	2		0210	158	0.
1		0120	9	0.	1		0940	59	7.	1		1800	109	27.	2		0220	159	0.
1		0130	10	0.	1		0950	60	8.	1		1810	110	25.	2		0230	160	0.
1		0140	11	0.	1		1000	61	9.	1		1820	111	24.	2		0240	161	0.
1		0150	12	0.	1		1010	62	11.	1		1830	112	23.	2		0250	162	0.
1		0200	13	0.	1		1020	63	12.	1		1840	113	23.	2		0300	163	0.
1		0210	14	0.	1		1030	64	15.	1		1850	114	23.	2		0310	164	0.
1		0220	15	0.	1		1040	65	18.	1		1900	115	23.	2		0320	165	0.
1		0230	16	0.	1		1050	66	22.	1		1910	116	23.	2		0330	166	0.
1		0240	17	0.	1		1100	67	27.	1		1920	117	23.	2		0340	167	0.
1		0250	18	0.	1		1110	68	33.	1		1930	118	23.	2		0350	168	0.
1		0300	19	0.	1		1120	69	41.	1		1940	119	23.	2		0400	169	0.
1		0310	20	0.	1		1130	70	50.	1		1950	120	23.	2		0410	170	0.
1		0320	21	0.	1		1140	71	89.	1		2000	121	21.	2		0420	171	0.
1		0330	22	0.	1		1150	72	226.	1		2010	122	20.	2		0430	172	0.
1		0340	23	0.	1		1200	73	502.	1		2020	123	18.	2		0440	173	0.
1		0350	24	0.	1		1210	74	707.	1		2030	124	18.	2		0450	174	0.
1		0400	25	0.	1		1220	75	595.	1		2040	125	18.	2		0500	175	0.
1		0410	26	0.	1		1230	76	393.	1		2050	126	17.	2		0510	176	0.
1		0420	27	0.	1		1240	77	272.	1		2100	127	17.	2		0520	177	0.
1		0430	28	0.	1		1250	78	194.	1		2110	128	17.	2		0530	178	0.
1		0440	29	0.	1		1300	79	133.	1		2120	129	17.	2		0540	179	0.
1		0450	30	0.	1		1310	80	106.	1		2130	130	17.	2		0550	180	0.
1		0500	31	0.	1		1320	81	106.	1		2140	131	17.	2		0600	181	0.
1		0510	32	0.	1		1330	82	104.	1		2150	132	17.	2		0610	182	0.
1		0520	33	0.	1		1340	83	90.	1		2200	133	17.	2		0620	183	0.
1		0530	34	0.	1		1350	84	76.	1		2210	134	17.	2		0630	184	0.
1		0540	35	0.	1		1400	85	66.	1		2220	135	17.	2		0640	185	0.
1		0550	36	0.	1		1410	86	60.	1		2230	136	17.	2		0650	186	0.
1		0600	37	0.	1		1420	87	55.	1		2240	137	17.	2		0700	187	0.
1		0610	38	0.	1		1430	88	51.	1		2250	138	18.	2		0710	188	0.
1		0620	39	0.	1		1440	89	47.	1		2300	139	22.	2		0720	189	0.
1		0630	40	0.	1		1450	90	44.	1		2310	140	25.	2		0730	190	0.
1		0640	41	0.	1		1500	91	41.	1		2320	141	24.	2		0740	191	0.
1		0650	42	0.	1		1510	92	40.	1		2330	142	21.	2		0750	192	0.
1		0700	43	0.	1		1520	93	39.	1		2340	143	18.	2		0800	193	0.
1		0710	44	0.	1		1530	94	38.	1		2350	144	15.	2		0810	194	0.
1		0720	45	0.	1		1540	95	36.	2		0000	145	10.	2		0820	195	0.
1		0730	46	0.	1		1550	96	35.	2		0010	146	6.	2		0830	196	0.
1		0740	47	0.	1		1600	97	34.	2		0020	147	3.	2		0840	197	0.
1		0750	48	0.	1		1610	98	34.	2		0030	148	1.	2		0850	198	0.
1		0800	49	0.	1		1620	99	34.	2		0040	149	1.	2		0900	199	0.
1		0810	50	0.	1		1630	100	34.	2		0050	150	0.	2		0910	200	0.

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR

(AC-FT) 62. 77. 77. 77.

CUMULATIVE AREA = .70 SQ MI

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 0. TO 1462.
THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	15	1859.	12.00	291.	89.	65.	1.76		
ROUTED TO	R15	1856.	12.17	291.	89.	65.	1.76		
HYDROGRAPH AT	14	1260.	12.00	176.	54.	39.	1.11		
HYDROGRAPH AT	16	1947.	12.17	385.	119.	86.	2.16		
3 COMBINED AT	114	4796.	12.17	849.	261.	189.	5.03		
ROUTED TO	R114	4433.	12.33	849.	261.	189.	5.03		
HYDROGRAPH AT	13	1895.	12.00	239.	74.	53.	1.29		
2 COMBINED AT	113	5023.	12.33	1085.	335.	242.	6.32		
ROUTED TO	R113	4793.	12.50	1084.	335.	242.	6.32		
HYDROGRAPH AT	12	1624.	12.17	272.	84.	61.	1.32		
2 COMBINED AT	112	5720.	12.33	1352.	418.	303.	7.64		
ROUTED TO	R112	5679.	12.50	1352.	418.	303.	7.64		
HYDROGRAPH AT	11	1029.	12.00	159.	50.	36.	.70		
HYDROGRAPH AT	17	442.	12.00	59.	18.	13.	.37		
HYDROGRAPH AT	10	639.	12.00	86.	26.	19.	.54		
4 COMBINED AT	111	6486.	12.33	1651.	512.	370.	9.25		
ROUTED TO	RD111	6061.	13.00	1649.	512.	370.	9.25		
HYDROGRAPH AT	2A	1210.	12.17	195.	60.	43.	1.09		
2 COMBINED AT	CR2A	6211.	13.00	1835.	571.	413.	10.34		
DIVERSION TO	FLOW	0.	.17	0.	0.	0.	10.34		
HYDROGRAPH AT	DIVERT	6211.	13.00	1835.	571.	413.	10.34		
ROUTED TO	RR2A	5812.	13.50	1833.	571.	413.	10.34		
HYDROGRAPH AT	2BE	943.	12.33	217.	67.	49.	1.22		
2 COMBINED AT	102E	6008.	13.50	2036.	635.	460.	11.56		
ROUTED TO	DET2BE	5780.	13.67	2020.	635.	460.	11.56	1651.49	13.67
DIVERSION TO	SPILL	2115.	13.67	204.	51.	37.	11.56		

ROUTED TO	CHAN	3665.	13.50	1816.	584.	423.	11.56		
ROUTED TO	WASH	3648.	14.50	1811.	584.	422.	11.56		
HYDROGRAPH AT	RSPILL	2115.	13.67	204.	51.	37.	11.56		
ROUTED TO	IDAHO	2130.	13.67	204.	51.	37.	11.56		
2 COMBINED AT	WW	5244.	13.83	2016.	635.	459.	11.56		
ROUTED TO	RWW	4382.	14.83	2007.	635.	459.	11.56		
HYDROGRAPH AT	2BWW	382.	12.33	80.	25.	18.	.45		
HYDROGRAPH AT	2BWE	707.	12.17	125.	39.	28.	.70		
ROUTED TO	DET2BW	288.	12.67	110.	38.	28.	.70	1630.46	12.83
2 COMBINED AT	CC04	511.	12.50	187.	63.	45.	1.15		
DIVERSION TO	EXIT	0.	.17	0.	0.	0.	1.15		
HYDROGRAPH AT	NDIV	511.	12.50	187.	63.	45.	1.15		
ROUTED TO	NDROUT	510.	12.67	187.	63.	45.	1.15	1626.43	12.50
ROUTED TO	R2BW	489.	13.00	187.	63.	45.	1.15		
HYDROGRAPH AT	2BS	1695.	12.17	315.	97.	70.	1.91		
3 COMBINED AT	102	4607.	14.83	2334.	787.	570.	14.62		
HYDROGRAPH AT	5	3814.	12.67	1115.	347.	251.	5.65		
ROUTED TO	R5	3838.	12.67	1115.	347.	251.	5.65		
HYDROGRAPH AT	4	5482.	13.17	2378.	750.	543.	11.85		
2 COMBINED AT	104	8359.	12.83	3445.	1083.	784.	17.50		
ROUTED TO	R104	7967.	13.50	3438.	1083.	784.	17.50		
HYDROGRAPH AT	7	719.	12.17	126.	39.	28.	.61		
HYDROGRAPH AT	6	3714.	13.00	1431.	447.	323.	7.86		
3 COMBINED AT	106	11196.	13.33	4896.	1543.	1116.	25.97		
ROUTED TO	R106	10881.	13.67	4888.	1543.	1116.	25.97		
HYDROGRAPH AT	3N	2720.	12.33	573.	178.	129.	2.89		
ROUTED TO	CULV	2500.	12.33	573.	178.	129.	2.89	1663.50	12.33
ROUTED TO	RCULV	2212.	12.83	573.	178.	129.	2.89		
HYDROGRAPH AT	3S	2193.	12.33	474.	147.	106.	2.39		
2 COMBINED AT	103	3344.	12.67	1043.	324.	235.	5.28		
HYDROGRAPH AT	3A	1181.	12.33	247.	77.	56.	1.20		

2 COMBINED AT	W103	12407.	13.50	6061.	1918.	1388.	32.45		
ROUTED TO	RW103	12329.	13.67	6056.	1918.	1388.	32.45		
2 COMBINED AT	PLD	13319.	13.67	8204.	2645.	1914.	47.07		
ROUTED TO	RES	1201.	24.00	1150.	573.	432.	47.07	1584.07	24.17

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2B2

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1651.75	1.75	180.	5937.	1.00	13.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1651.68	1.68	179.	5808.	1.00	13.67	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1651.57	1.57	177.	5599.	1.00	13.67	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1651.49	1.49	176.	5463.	1.00	13.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET28W

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1630.74	.74	31.	300.	1.00	12.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1630.68	.68	31.	281.	1.00	12.67	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1630.56	.56	30.	245.	1.00	12.67	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1630.46	.46	30.	219.	.67	12.83	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDROUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.87	.00	2.	530.	.00	12.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.70	.00	2.	500.	.00	12.67	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.51	.00	2.	465.	.00	12.50	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.43	.00	2.	451.	.00	12.50	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1584.25	.00	4672.	1703.	.00	20.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1584.20	.00	4648.	1548.	.00	21.33	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1584.12	.00	4611.	1299.	.00	22.50	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1584.07	.00	4586.	1190.	.00	24.17	.00

*** NORMAL END OF HEC-1 ***
STOP
)
)

```
PROCESS 74 TERMINATED

ELAPSED TIME  0:01:14, CPU TIME  00:00:00.092, I/O BLOCKS  56
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF        14-NOV-88        11:44:14


****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix D

HEC-1 Output

Areal Reduction
using the Osborn Method

```
+7777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777+

$   $  $   $  $$$$          $   $   $$$   $   $
$   $  $   $  $   $         $   $  $   $  $$ $$
$   $   $ $   $   $         $   $  $      $ $ $
$$$$$    $    $   $         $ $ $   $$$   $ $ $
$   $    $    $   $         $ $ $      $  $   $
$   $    $    $   $  $$     $$ $$  $   $  $   $
$   $    $    $$$$   $$     $   $   $$$   $   $

DEST=HYD.WSM  USER=HYD.WSM  QUEUE=LPT  DEVICE=@LPB
SEQ=26491  QPRI=128  CPL=132  LPP=66  COPIES=1  PAGES=160

 CREATED:  14-NOV-88  11:45:12
ENQUEUED:  14-NOV-88  11:46:54
PRINTING:  14-NOV-88  11:48:10

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:REDCSB.OUT

$$$$   $$$$$  $$$$    $$$    $$$   $$$$           $$$   $   $  $$$$$
$   $  $      $   $  $   $  $   $  $   $         $   $  $   $    $
$   $  $      $   $  $      $      $   $         $   $  $   $    $
$$$$   $$$$   $   $  $       $$$   $$$$          $   $  $   $    $
$ $    $      $   $  $          $  $   $         $   $  $   $    $
$  $   $      $   $  $   $  $   $  $   $  $$     $   $  $   $    $
$   $  $$$$$  $$$$    $$$    $$$   $$$$   $$      $$$    $$$      $

+7777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777+
```

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00

```
**** AOS/VS REV 7.62.00.00 / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00  14-NOV-88        11:45:14
QPRI=128          SEQ=26487
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?23.CLI.00002.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.26487

--------
LAST MESSAGE CHANGE      25-OCT-86        0:36:12


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


--------
MOST RECENT LOGON        14-NOV-88        11:43:00

AOS/VS CLI    REV 07.62.00.00    14-NOV-88        11:45:16
) SEARCHLIST :UTIL/:MACROS/:UDD:HYD.WSM/:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM/OWARE
)
)
) LISTFILE REDOSE.OUT
) DATAFILE REDOSE.DAT
) SEA :UTIL:HEC1.DIR/[!SEA]
) X HEC1_START
```

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            FEBRUARY 1981             *
*          REVISED 31 JAN 85           *
*                                      *
*  RUN DATE11/14/1988   TIME11:45:17 * 
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285    *
*                                      *
****************************************
```

```
X      X  XXXXXXX   XXXXX            X
X      X  X         X     X          XX
X      X  X         X                X
XXXXXXX   XXXX      X        XXXXX   X
X      X  X         X                X
X      X  X         X     X          X
X      X  XXXXXXX   XXXXX           XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID      WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID      CONVERSION OF MODEL FROM TR-20
  3           ID                    100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
  4           ID                    DEVELOPMENT, MUSKINGUM ROUTING
  5           ID         CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  6           ID                          POINT OF WEEKES WASH AT JUNCTION ROAD.
  7           ID                       2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  8           ID                          AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
  9           ID                          LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 10           ID                       3: SUPERSTITION FREEWAY IN PLACE.
 11           ID                       4: ADJUSTED WATERSHED AREAS.
 12           ID                       5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 13           ID                       6: NO MODIFICATIONS TO POWERLINE F.R.S.
 14           ID                       7: AREAL REDUCTION USING OSBORN CURVES, 1980.
              *DIAGRAM
 15           IT      10       0       0     200
 16           IO       5
 17           IN      15
 18           JD    3.85     .01
 19           PC       0    .002    .005    .008    .011    .014    .017    .020    .023    .026
 20           PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
 21           PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
 22           PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
 23           PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
 24           PC    .735    .758    .766    .791    .804    .815    .825    .834    .842    .849
 25           PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
 26           PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
 27           PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
 28           PC    .983    .986    .992    .995    .998   1.000   1.000   1.000   1.000   1.000
 29           JD    3.38      10
 30           JD    2.94      30
 31           JD    2.66      50

 32           KK      15  WATERSHED 15
 33           KM      HYDROGRAPH FOR WATERSHED 15
 34           BA    1.76
 35           LS       0      80
 36           UD     .18

 37           KK     R15 ROUTE HYDROGRAPH FROM WS 15
 38           KM     ROUTE HYDROGRAPH FROM WATERSHED 15
 39           RM       1     .11      .3

 40           KK      14 WATERSHED 14
 41           KM     HYDROGRAPH FOR WATERSHED 14
 42           BA    1.11
 43           LS       0      79
 44           UD     .15

 45           KK      16 WATERSHED 16
 46           KM     HYDROGRAPH FOR WATERSHED 16
 47           BA    2.16
 48           LS       0      82
 49           UD     .35
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  50          KK     114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
  51          KM     COMBINE ALL THREE HYDROGRAPHS AT CP 114
  52          HC       3

  53          KK    R114 ROUTE CP 114
  54          KM     ROUTE HYDROGRAPH FROM CP114 TO CP 113
  55          RM       1      .17       .3

  56          KK     13 WATERSHED 13
  57          KM     HYDROGRAPH FOR WATERSHED 13
  58          BA    1.29
  59          LS       0       83
  60          UD    .126

  61          KK     113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
  62          KM     COMBINE HYDROGRAPHS CP 114 AND WS 13
  63          HC       2

  64          KK    R113 ROUTE CP 113 TO CP 112
  65          KM     ROUTE HYDROGRAPH FOR CP 113
  66          RM       1      .19       .3

  67          KK     12 WATERSHED 12
  68          KM     HYDROGRAPH FOR WATERSHED 12
  69          BA    1.32
  70          LS       0       86
  71          UD    .27

  72          KK     112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
  73          KM     COMBINE HYDROGRAPH FROM CP 113 AND WS 12
  74          HC       2

  75          KK    R112 ROUTE CP 112 TO CP 111
  76          KM     ROUTE HYDROGRAPH CP 112 TO CP 111
  77          RM       1      .07       .3

  78          KK     11 WATERSHED 11
  79          KM     HYDROGRAPH FOR WATERSHED 11
  80          BA    .70
  81          LS       0       89
  82          UD    .186

  83          KK     17 WATERSHED 17
  84          KM     HYDROGRAPH FOR WATERSHED 17
  85          BA    .37
  86          LS       0       79
  87          UD    .138

  88          KK     10   WATERSHED 10
  89          KM     HYDROGRAPH FOR WATERSHED 10
  90          BA    .54
  91          LS       0       79
  92          UD    .14
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  93          KK     111 CONCENTRATION PT. 111
  94          KM     COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
  95          HC       4

  96          KK   RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
  97          KM     ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
  98          RM       5      .64       .3

  99          KK      2A  WATERSHED 2A
 100          KM      HYDROGRAPH FOR WATERSHED 2A
 101          BA    1.09
 102          LS       0       82
 103          UD     .22

 104          KK    CP2A  CONCENTRATION POINT 2A
 105          KM    COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
 106          HC       2

 107          KK  DIVERT     POINT OF DIVERSION FOR WEEKES WASH
 108          DT    FLOW
 109          DI       0     6500     7000     9000    10000    15000
 110          DQ       0        0      260     1300     1880     4600

 111          KK    RR2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREEWAY
 112          KM     ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
 113          RM       2      .42       .3

 114          KK     2BE WATERSHED 2B EAST
 115          KM     HYDROGRAPH FOR WATERSHED 2B EAST
 116          BA    1.22
 117          LS       0       82
 118          UD     .46

 119          KK    1C2B  CONCENTRATION POINT NORTH OF FREEWAY
 120          KM     CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
 121          HC       2

 122          KK  DET2BE   ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
 123          KM      ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
 124          RS       1    ELEV     1636
 125          SV       0      6.0     13.0     29.0     47.0     69.0     93.0    122.0    153.0    184.0
 126          SV     217      239
 127          SE    1636     1637     1638     1640     1642     1644     1646     1648     1650     1652
 128          SE    1654     1655
 129          SQ       0       22      194      584     1050     1604     2236     2900     3534     4408
 130          SQ    4622     4860
 131          ST    1650      320      2.2      1.5

 132          KK   FRWAY
 133          KM    DIVERT ALL FLOW THAT GO UNDER THE ROAD
 134          DT   SPILL
 135          DI       0     3665     5000    10000    15000
 136          DQ       0        0     1335     6335    11335
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 137          KK    CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 138          KM     ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 139          RM       1       .1       .3

 140          KK    WASH   ROUTE FLOWS THROUGH THE WASH
 141          KM      ROUTE FLOWS THROUGH THE NATURAL WASH SYSTEM
 142          RM       2      .50       .3

 143          KK  RSPILL
 144          KM     RETRIEVE FLOW DEIVERTED FROM THE EMERGENCY SPILLWAY
 145          DR   SPILL

 146          KK   IDAHO
 147          KM    ROUTE THE RETRIEVED FLOW DOWN IDAYO ROAD.
 148          RM       1       .1       .3

 149          KK      WW
 150          KM    COMBINE ALL THE FLOW FROM THE FREEWAY
 151          HC       2

 152          KK     RWW
 153          KM    ROUTE THE FLOW TO POWERLINE F.R.S.
 154          RM       4      .98       .3

 155          KK    2BWW  WATERSHED 2B WEST, WEST
 156          KM      HYDROGRAPH FOR WATERSHED 2B WEST, WEST
 157          BA     .45
 158          LS       0       82
 159          LD      .4

 160          KK    2BWE  WATERSHED 2B WEST, EAST
 161          KM     RUNOFF FROM EAST OF IDAHO ROAD 2B WEST, EAST
 162          KO       1
 163          BA     .70
 164          LS       0       82
 165          LD      .3

 166          KK  DET2BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 167          KM      ROUTE FLOWS THROUGH THE DETENTION NORTH OF THE SUPERSTITION FREEWAY
 168          RS       1    ELEV  1623.5
 169          SV       0      .6      8.3     17.5     28.2     36.0     48.6
 170          SE  1623.5  1624.0  1626.0  1628.0  1630.0  1632.0  1634.0
 171          SQ       0       0      31      93     135     169     208
 172          ST  1630.0     110      2.2     1.5

 173          KK    CC04  COMBINE FLOWS JUST NORTH OF FREEWAY
 174          KM    COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 175          HC       2
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 176          KK    NDIV
 177          DT    EXIT
 178          DI       0     1218     5000    10000
 179          DQ       0        0     3782     8782

 180          KK  NDPOUT  ROUTE THROUGH THE FREEWAY
 181          KM    ROUTE COMBINED FLOW THROUGH 3 BBL. 6 X 8 BOX CULVERTS
 182          RS       1     ELEV  1622.6
 183          SV       0      .02      .16     1.12     4.17    25.42
 184          SE  1622.6  1623.0  1624.0  1626.0  1628.0  1630.0
 185          SQ       0        0      101      372      738     1111
 186          ST  1630.0     2875      2.2      1.5

 187          KK    R2BW  ROUTE TO CP102
 188          KM     ROUTE THE FLOWS FROM DETENTION POND TO CP102 (POWERLINE F.R.S.)
 189          RM       2      .40       .3

 190          KK     2BS  WATERSHED 2B SOUTH OF SUPERTITION FREEWAY
 191          KM     HYDROGRAPH FOR WATERSHED 2B SOUTH
 192          BA    1.91
 193          LS       0       80
 194          UD     .32

 195          KK     102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 196          KM     COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 197          HC       3

 198          KK       5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 199          KM     HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 200          BA    5.65
 201          LS       0       85
 202          UD     .71

 203          KK      R5 ROUTE HYDROGRAPH FROM WS 5 TO CP 104
 204          KM      ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 205          RM       1      .07       .3

 206          KK       4 WATERSHED 4
 207          KM      HYDROGRAPH FOR WATERSHED 4
 208          BA   11.85
 209          LS       0       86
 210          UD    1.30

 211          KK     104  CONCENTRATION POINT 104
 212          KM     COMBINE HYDROGRAPHS AT CP 104
 213          HC       2

 214          KK    R104
 215          KM    ROUTE CP 104 TO 106
 216          RM       2      .50       .3
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 217          KK        7  WATERSHED 7
 218          KM     HYDROGRAPH FOR WATERSHED 7
 219          BA      .61
 220          LS        0       86
 221          UD       .3

 222          KK        6 WATERSHED 6
 223          KM       HYDROGRAPH FOR WATERSHED 6
 224          BA     7.86
 225          LS        0       83
 226          UD     1.08

 227          KK      106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 228          KM       COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 229          HC        3

 230          KK     R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
 231          KM       ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 232          RM        1      .27       .3

 233          KK       3N WATERSHED 3N
 234          KM       HYDROGRAPH FOR WATERSHED 3N
 235          BA     2.89
 236          LS        0       85
 237          UD      .41

 238          KK     CULV   ROUTE FLOWS THROUGH CULVERTS
 239          KM      ROUTE FLOWS THROUGH THE CULVERTS
 240          RS      1.0     ELEV     1665
 241          SV        0      .15      .60      1.5      3.1      5.6      9.1     13.7    19.45    26.35
 242          SE     1665   1665.5     1666     1666.5     1667   1667.5     1668   1668.5     1669   1669.5
 243          SQ        0      119      375      688     1063     1462     1938     2375     2875     3375

 244          KK    RCULV  ROUTE FLOWS TO W103
 245          KM      ROUTE THE FLOWS TO CONCENTRATION POINT W103
 246          RM        2       .5       .3

 247          KK       3S  WATERSHED 3 SOUTH
 248          KM       HYDROGRAPH FOR WATERSHED 3 SOUTH
 249          BA     2.39
 250          LS        0       85
 251          UD     .436

 252          KK      103
 253          HC        2

 254          KK       3A   WATERSHED 3A
 255          KM      HYDROGRAPH FOR WATERSHED 3A
 256          BA     1.20
 257          LS        0       86
 258          UD       .4
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 259          KK   CP103
 260          KM     CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
 261          HC       2

 262          KK    W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 263          KM      COMBINE HYDROGRAPHS FROM CP 104 AND WS 3 - SIPHON DRAW WATERSHED
 264          HC       2

 265          KK   RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 266          KM      ROUTE THE HYDROGRAPH TO POWERLINE DAM
 267          RM       1     .16      .3

 268          KK     PLD CONCENTRATION PT. AT POWERLINE DAM
 269          KM     COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 270          HC       2

 271          KK     PES RESERVOIR ROUTING THROUGH THE STRUCTURE
 272          KM     RESERVOIR RATING CURVE
 273          RS       1     ELEV  1568.2
 274          SV       0      175      380      700     1100     1600     2175     2875     3675     4200
 275          SV    4600     5525     6725     7925
 276          SQ       0       75       92      106      119      130      141      150      159      165
 277          SQ    1228     7360    16800    27280
 278          SE  1568.1   1568.2   1570.0   1572.1   1574.1   1576.1   1578.1   1580.1   1582.1   1583.3
 279          SE  1584.1   1586.1   1588.1   1590.1
 280          SS  1583.3        0        0        0
 281          ST  1589.1    13358      2.2      1.5
 282          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   32          15
                V
                V
   37         R15
                .
                .
   40           .          14
                .           .
                .           .
   45           .           .          16
                .           .           .
                .           .           .
   50         114.......................
                V
                V
   53        R114
                .
                .
   56           .          13
                .           .
                .           .
   61         113............
                V
                V
   64        R113
                .
                .
   67           .          12
                .           .
                .           .
   72         112............
                V
                V
   75        R112
                .
                .
   78           .          11
                .           .
                .           .
   83           .           .          17
                .           .           .
                .           .           .
   88           .           .           .          10
                .           .           .           .
                .           .           .           .
   93         111.....................................
                V
                V
   96        RD111
                .
                .
   99           .          2A
                .           .
```

```
108          .-------->    FLOW
107     DIVERT
             V
             V
111       RR2A
             .
             .
114          .          2BE
             .           .
             .           .
119       102E............
             V
             V
122     DET2BE
             .
             .
134          .-------->   SPILL
132       FRWAY
             V
             V
137       CHAN
             V
             V
140       WASH
             .
             .
145          .           .<-------   SPILL
143          .      RSPILL
             .           V
             .           V
146          .       IDAHC
             .           .
             .           .
149         WW............
             V
             V
152        RWW
             .
             .
155          .        2BWW
             .           .
             .           .
160          .           .        2BWE
             .           .           V
             .           .           V
166          .           .      DET2BW
             .           .           .
             .           .           .
173          .        C004............
             .           .
             .           .
177          .           .-------->    EXIT
176          .        NDIV
             .           V
             .           V
180          .      NDROUT
             .           V
             .           V
187          .        R2BW
```

```
190                 2S

195        102.......................
198                5
                   V
                   V
203                R5
206                          4
211                104............
                   V
                   V
214                R104
217                          7
222                                   6
227                106......................
                   V
                   V
230                R106
233                         3N
                            V
                            V
238                       CULV
                            V
                            V
244                      RCULV
247                                   3S
252                       103............
254                                   3A
259                      CP103...........
262                W103............
                   V
                   V
265                RW103
268        PLD............
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*            FEBRUARY 1981              *
*          REVISED 31 JAN 85            *
*                                       *
*  RUN DATE11/14/1988   TIME11:45:29 *
*                                       *
*****************************************
```

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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*          609 SECOND STREET            *
*        DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285   *
*                                       *
*****************************************
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                    WEEKES WASH - POWERLINE F.R.S  ANALYSIS
                    CONVERSION OF MODEL FROM TR-20
                              100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
                              DEVELOPMENT, MUSKINGUM ROUTING
                       CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
                                        POINT OF WEEKES WASH AT JUNCTION ROAD.
                                     2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
                                        AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
                                        LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
                                     3: SUPERSTITION FREEWAY IN PLACE.
                                     4: ADJUSTED WATERSHED AREAS.
                                     5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
                                     6: NO MODIFICATIONS TO POWERLINE F.R.S.
                                     7: AREAL REDUCTION USING OSBORN CURVES, 1980.

 16 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN          10  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         200  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME        0910  ENDING TIME

                 COMPUTATION INTERVAL      .17 HOURS
                      TOTAL TIME BASE   33.17 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

 18 JD            INDEX STORM NO. 1
                       STRM        3.85  PRECIPITATION DEPTH
                       TRDA         .01  TRANSPOSITION DRAINAGE AREA

 19 PI              PRECIPITATION PATTERN
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
```

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.01	.02	.02	.07
.13	.18	.03	.02	.02	.02	.01	.01	.02	.01
.01	.01	.01	.01	.01	.01	.01	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00							

29 JD INDEX STORM NO. 2

STRM 3.38 PRECIPITATION DEPTH

TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.01	.02	.02	.07
.13	.18	.03	.02	.02	.02	.01	.01	.02	.01
.01	.01	.01	.01	.01	.01	.01	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00							

30 JD INDEX STORM NO. 3

STRM 2.94 PRECIPITATION DEPTH

TRDA 30.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.01	.02	.02	.07
.13	.18	.03	.02	.02	.02	.01	.01	.02	.01
.01	.01	.01	.01	.01	.01	.01	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00							

31 JD INDEX STORM NO. 4

STRM 2.66 PRECIPITATION DEPTH

TRDA 50.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

```
.00      .00      .00      .00      .00      .00      .00      .00      .00      .00

.00      .00      .00      .00      .00      .00      .00      .00      .00      .00
.00      .00      .00      .00      .01      .01      .01      .01      .01      .01
.01      .01      .01      .01      .01      .01      .01      .02      .02      .07
.13      .18      .03      .02      .02      .02      .01      .01      .02      .01
.01      .01      .01      .01      .01      .01      .01      .00      .00      .00
.00      .00      .00      .00      .00      .00      .00      .00      .00      .00
.00      .00      .00      .00      .00      .00      .00      .00      .00      .00
.00      .00      .00      .00      .00      .00      .00      .00      .00      .00
.00      .00      .00      .00      .00      .00      .00      .00      .00      .00
.00      .00      .00      .00      .00      .00      .00      .00      .00      .00
.00      .00      .00

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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

            **************
            *            *
160 KK      *     2EWE   *      WATERSHED 2F WEST, EAST
            *            *
            **************

162 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          1  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

              SUBBASIN RUNOFF DATA

163 BA          SUBBASIN CHARACTERISTICS
                     TAREA        .70  SUBBASIN AREA

164 LS          SCS LOSS RATE
                     STRTL        .44  INITIAL ABSTRACTION
                    CRVNBR      82.00  CURVE NUMBER
                     RTIMP        .00  PERCENT IMPERVIOUS AREA
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***

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

UNIT HYDROGRAPH
11 END-OF-PERIOD ORDINATES

325.	864.	762.	385.	193.	94.	46.	23.	11.	6.
2.									

****

HYDROGRAPH AT 2BWE
TRANSPOSITION AREA .0 SQ MI

****

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	*	1		1640	101	.01	.00	.01	34.
1		0010	2	.01	.01	.00	0.	*	1		1650	102	.01	.00	.01	32.
1		0020	3	.01	.01	.00	0.	*	1		1700	103	.01	.00	.01	30.
1		0030	4	.01	.01	.00	0.	*	1		1710	104	.01	.00	.01	29.
1		0040	5	.01	.01	.00	0.	*	1		1720	105	.01	.00	.01	29.
1		0050	6	.01	.01	.00	0.	*	1		1730	106	.01	.00	.01	29.
1		0100	7	.01	.01	.00	0.	*	1		1740	107	.01	.00	.01	29.
1		0110	8	.01	.01	.00	0.	*	1		1750	108	.01	.00	.01	28.
1		0120	9	.01	.01	.00	0.	*	1		1800	109	.01	.00	.01	27.
1		0130	10	.01	.01	.00	0.	*	1		1810	110	.01	.00	.01	25.
1		0140	11	.01	.01	.00	0.	*	1		1820	111	.01	.00	.01	24.
1		0150	12	.01	.01	.00	0.	*	1		1830	112	.01	.00	.01	24.
1		0200	13	.01	.01	.00	0.	*	1		1840	113	.01	.00	.01	23.
1		0210	14	.01	.01	.00	0.	*	1		1850	114	.01	.00	.01	23.
1		0220	15	.01	.01	.00	0.	*	1		1900	115	.01	.00	.01	23.
1		0230	16	.01	.01	.00	0.	*	1		1910	116	.01	.00	.01	23.
1		0240	17	.01	.01	.00	0.	*	1		1920	117	.01	.00	.01	23.
1		0250	18	.01	.01	.00	0.	*	1		1930	118	.01	.00	.01	23.
1		0300	19	.01	.01	.00	0.	*	1		1940	119	.01	.00	.01	23.
1		0310	20	.01	.01	.00	0.	*	1		1950	120	.01	.00	.01	23.
1		0320	21	.01	.01	.00	0.	*	1		2000	121	.01	.00	.01	22.
1		0330	22	.01	.01	.00	0.	*	1		2010	122	.01	.00	.01	20.
1		0340	23	.01	.01	.00	0.	*	1		2020	123	.01	.00	.01	19.
1		0350	24	.01	.01	.00	0.	*	1		2030	124	.01	.00	.01	18.
1		0400	25	.01	.01	.00	0.	*	1		2040	125	.01	.00	.01	18.
1		0410	26	.01	.01	.00	0.	*	1		2050	126	.01	.00	.01	18.
1		0420	27	.01	.01	.00	0.	*	1		2100	127	.01	.00	.01	18.
1		0430	28	.01	.01	.00	0.	*	1		2110	128	.01	.00	.01	18.
1		0440	29	.01	.01	.00	0.	*	1		2120	129	.01	.00	.01	18.
1		0450	30	.01	.01	.00	0.	*	1		2130	130	.01	.00	.01	18.
1		0500	31	.01	.01	.00	0.	*	1		2140	131	.01	.00	.01	18.
1		0510	32	.01	.01	.00	0.	*	1		2150	132	.01	.00	.01	18.
1		0520	33	.01	.01	.00	0.	*	1		2200	133	.01	.00	.01	18.
1		0530	34	.01	.01	.00	0.	*	1		2210	134	.01	.00	.01	18.
1		0540	35	.01	.01	.00	0.	*	1		2220	135	.01	.00	.01	18.
1		0550	36	.01	.01	.00	0.	*	1		2230	136	.01	.00	.01	18.
1		0600	37	.01	.01	.00	0.	*	1		2240	137	.01	.00	.01	18.
1		0610	38	.01	.01	.00	0.	*	1		2250	138	.01	.00	.01	19.
1		0620	39	.01	.01	.00	0.	*	1		2300	139	.02	.00	.01	23.
1		0630	40	.01	.01	.00	0.	*	1		2310	140	.01	.00	.01	26.
1		0640	41	.01	.01	.00	0.	*	1		2320	141	.01	.00	.01	24.
1		0650	42	.01	.01	.00	0.	*	1		2330	142	.01	.00	.01	21.

1	0720	45	.01	.01	.00	0.	*	2	0000	145	.00	.00	.00	11.
1	0730	46	.01	.01	.00	0.	*	2	0010	146	.00	.00	.00	6.
1	0740	47	.01	.01	.00	0.	*	2	0020	147	.00	.00	.00	3.
1	0750	48	.01	.01	.00	0.	*	2	0030	148	.00	.00	.00	1.
1	0800	49	.01	.01	.00	0.	*	2	0040	149	.00	.00	.00	1.
1	0810	50	.02	.01	.00	0.	*	2	0050	150	.00	.00	.00	0.
1	0820	51	.02	.02	.00	1.	*	2	0100	151	.00	.00	.00	0.
1	0830	52	.02	.02	.00	1.	*	2	0110	152	.00	.00	.00	0.
1	0840	53	.02	.02	.00	2.	*	2	0120	153	.00	.00	.00	0.
1	0850	54	.02	.02	.00	3.	*	2	0130	154	.00	.00	.00	0.
1	0900	55	.02	.02	.00	3.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	4.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	5.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	6.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	7.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	9.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	10.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.03	.02	.01	11.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.03	.02	.01	13.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.03	.02	.01	15.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.04	.03	.01	18.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.04	.03	.01	23.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.05	.03	.01	28.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.05	.04	.02	34.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.06	.04	.02	41.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.07	.04	.03	50.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.27	.15	.12	90.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.49	.21	.28	230.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.71	.22	.49	509.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.11	.03	.08	716.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.09	.02	.07	602.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.07	.02	.06	398.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.06	.01	.05	275.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.04	.01	.03	197.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.02	140.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.06	.01	.05	108.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.05	.01	.04	107.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.03	105.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.03	.01	.02	91.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.03	.01	.02	76.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.03	.01	.02	67.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.02	61.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.02	56.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.02	52.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.02	.00	.01	48.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.02	.00	.01	44.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.02	.00	.01	42.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.02	.00	.01	41.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.02	.00	.01	40.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.02	.00	.01	38.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.02	.00	.01	36.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.02	.00	.01	35.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.02	.00	.01	35.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.02	.00	.01	34.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.02	.00	.01	34.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.02	.00	.01	34.	*	2	0910	200	.00	.00	.00	0.

****

TOTAL RAINFALL = 3.85, TOTAL LOSS = 1.77, TOTAL EXCESS = 2.08

718.	12.17	(CFS)	127.	34.	28.	28.	

(INCHES)	1.682	2.075	2.075	2.075
(AC-FT)	63.	77.	77.	77.

CUMULATIVE AREA = .70 SQ MI

****

HYDROGRAPH AT 2BWE
TRANSPOSITION AREA 10.0 SQ MI

****

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	1		1640	101	.01	.00	.01	28.
1		0010	2	.00	.00	.00	0.	1		1650	102	.01	.00	.01	27.
1		0020	3	.01	.01	.00	0.	1		1700	103	.01	.00	.01	25.
1		0030	4	.01	.01	.00	0.	1		1710	104	.01	.00	.01	25.
1		0040	5	.01	.01	.00	0.	1		1720	105	.01	.00	.01	24.
1		0050	6	.01	.01	.00	0.	1		1730	106	.01	.00	.01	24.
1		0100	7	.01	.01	.00	0.	1		1740	107	.01	.00	.01	24.
1		0110	8	.01	.01	.00	0.	1		1750	108	.01	.00	.01	24.
1		0120	9	.01	.01	.00	0.	1		1800	109	.01	.00	.01	23.
1		0130	10	.01	.01	.00	0.	1		1810	110	.01	.00	.01	21.
1		0140	11	.01	.01	.00	0.	1		1820	111	.01	.00	.01	20.
1		0150	12	.01	.01	.00	0.	1		1830	112	.01	.00	.01	20.
1		0200	13	.01	.01	.00	0.	1		1840	113	.01	.00	.01	20.
1		0210	14	.01	.01	.00	0.	1		1850	114	.01	.00	.01	20.
1		0220	15	.01	.01	.00	0.	1		1900	115	.01	.00	.01	20.
1		0230	16	.01	.01	.00	0.	1		1910	116	.01	.00	.01	20.
1		0240	17	.01	.01	.00	0.	1		1920	117	.01	.00	.01	20.
1		0250	18	.01	.01	.00	0.	1		1930	118	.01	.00	.01	20.
1		0300	19	.01	.01	.00	0.	1		1940	119	.01	.00	.01	20.
1		0310	20	.01	.01	.00	0.	1		1950	120	.01	.00	.01	19.
1		0320	21	.01	.01	.00	0.	1		2000	121	.01	.00	.01	18.
1		0330	22	.01	.01	.00	0.	1		2010	122	.01	.00	.01	17.
1		0340	23	.01	.01	.00	0.	1		2020	123	.01	.00	.01	16.
1		0350	24	.01	.01	.00	0.	1		2030	124	.01	.00	.01	15.
1		0400	25	.01	.01	.00	0.	1		2040	125	.01	.00	.01	15.
1		0410	26	.01	.01	.00	0.	1		2050	126	.01	.00	.01	15.
1		0420	27	.01	.01	.00	0.	1		2100	127	.01	.00	.01	15.
1		0430	28	.01	.01	.00	0.	1		2110	128	.01	.00	.01	15.
1		0440	29	.01	.01	.00	0.	1		2120	129	.01	.00	.01	15.
1		0450	30	.01	.01	.00	0.	1		2130	130	.01	.00	.01	15.
1		0500	31	.01	.01	.00	0.	1		2140	131	.01	.00	.01	15.
1		0510	32	.01	.01	.00	0.	1		2150	132	.01	.00	.01	15.
1		0520	33	.01	.01	.00	0.	1		2200	133	.01	.00	.01	15.
1		0530	34	.01	.01	.00	0.	1		2210	134	.01	.00	.01	15.
1		0540	35	.01	.01	.00	0.	1		2220	135	.01	.00	.01	15.
1		0550	36	.01	.01	.00	0.	1		2230	136	.01	.00	.01	15.
1		0600	37	.01	.01	.00	0.	1		2240	137	.01	.00	.01	15.
1		0610	38	.01	.01	.00	0.	1		2250	138	.01	.00	.01	16.
1		0620	39	.01	.01	.00	0.	1		2300	139	.01	.00	.01	19.
1		0630	40	.01	.01	.00	0.	1		2310	140	.01	.00	.01	22.
1		0640	41	.01	.01	.00	0.	1		2320	141	.01	.00	.01	20.
1		0650	42	.01	.01	.00	0.	1		2330	142	.01	.00	.01	18.
1		0700	43	.01	.01	.00	0.	1		2340	143	.00	.00	.00	16.
1		0710	44	.01	.01	.00	0.	1		2350	144	.00	.00	.00	13.
1		0720	45	.01	.01	.00	0.	2		0000	145	.00	.00	.00	9.

1	0750	48	.01	.01	.00	0.	*	2	0030	148	.00	.00	.00	1.
1	0800	49	.01	.01	.00	0.	*	2	0040	149	.00	.00	.00	1.
1	0810	50	.01	.01	.00	0.	*	2	0050	150	.00	.00	.00	0.
1	0820	51	.01	.01	.00	0.	*	2	0100	151	.00	.00	.00	0.
1	0830	52	.02	.02	.00	0.	*	2	0110	152	.00	.00	.00	0.
1	0840	53	.02	.02	.00	0.	*	2	0120	153	.00	.00	.00	0.
1	0850	54	.02	.02	.00	0.	*	2	0130	154	.00	.00	.00	0.
1	0900	55	.02	.02	.00	1.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	1.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	2.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	3.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	4.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	5.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	6.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.02	.02	.00	7.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.02	.02	.00	8.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.03	.02	.00	10.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.03	.03	.01	12.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.04	.03	.01	15.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.04	.03	.01	19.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.05	.03	.01	24.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.05	.04	.02	29.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.06	.04	.02	37.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.23	.14	.09	67.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.43	.21	.22	177.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.62	.22	.40	404.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.10	.03	.07	578.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.08	.02	.06	490.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.06	.02	.05	325.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.05	.01	.04	226.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.03	.01	.03	162.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.01	116.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.06	.01	.04	89.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.04	.01	.03	89.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.02	88.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.02	.01	.02	76.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.02	.01	.02	64.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.02	.01	.02	56.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.02	51.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.01	47.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.01	43.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.02	.00	.01	40.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.02	.00	.01	37.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.02	.00	.01	35.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.02	.00	.01	34.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.01	.00	.01	33.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.01	.00	.01	32.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.01	.00	.01	31.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.01	.00	.01	30.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.01	.00	.01	29.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.01	.00	.01	29.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.01	.00	.01	29.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.01	.00	.01	29.	*	2	0910	200	.00	.00	.00	0.
							*							

****

TOTAL RAINFALL = 3.38, TOTAL LOSS = 1.70, TOTAL EXCESS = 1.68

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
578.	12.17	(CFS)	103.	32.	23.	23.

CUMULATIVE AREA = .70 SQ MI

****

HYDROGRAPH AT 28WE
TRANSPOSITION AREA 30.0 SQ MI

****

DA	MON	HRMN	CRD	RAIN	LOSS	EXCESS	COMP Q	DA	MON	HRMN	CRD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	1		1640	101	.01	.00	.01	23.
1		0010	2	.00	.00	.00	0.	1		1650	102	.01	.00	.01	22.
1		0020	3	.00	.00	.00	0.	1		1700	103	.01	.00	.01	21.
1		0030	4	.01	.01	.00	0.	1		1710	104	.01	.00	.01	20.
1		0040	5	.01	.01	.00	0.	1		1720	105	.01	.00	.01	20.
1		0050	6	.01	.01	.00	0.	1		1730	106	.01	.00	.01	20.
1		0100	7	.01	.01	.00	0.	1		1740	107	.01	.00	.01	20.
1		0110	8	.01	.01	.00	0.	1		1750	108	.01	.00	.01	20.
1		0120	9	.01	.01	.00	0.	1		1800	109	.01	.00	.01	19.
1		0130	10	.01	.01	.00	0.	1		1810	110	.01	.00	.01	18.
1		0140	11	.01	.01	.00	0.	1		1820	111	.01	.00	.01	17.
1		0150	12	.01	.01	.00	0.	1		1830	112	.01	.00	.01	17.
1		0200	13	.01	.01	.00	0.	1		1840	113	.01	.00	.01	16.
1		0210	14	.01	.01	.00	0.	1		1850	114	.01	.00	.01	16.
1		0220	15	.01	.01	.00	0.	1		1900	115	.01	.00	.01	16.
1		0230	16	.01	.01	.00	0.	1		1910	116	.01	.00	.01	16.
1		0240	17	.01	.01	.00	0.	1		1920	117	.01	.00	.01	16.
1		0250	18	.01	.01	.00	0.	1		1930	118	.01	.00	.01	16.
1		0300	19	.01	.01	.00	0.	1		1940	119	.01	.00	.01	16.
1		0310	20	.01	.01	.00	0.	1		1950	120	.01	.00	.01	16.
1		0320	21	.01	.01	.00	0.	1		2000	121	.01	.00	.00	15.
1		0330	22	.01	.01	.00	0.	1		2010	122	.01	.00	.00	14.
1		0340	23	.01	.01	.00	0.	1		2020	123	.01	.00	.00	13.
1		0350	24	.01	.01	.00	0.	1		2030	124	.01	.00	.00	13.
1		0400	25	.01	.01	.00	0.	1		2040	125	.01	.00	.00	12.
1		0410	26	.01	.01	.00	0.	1		2050	126	.01	.00	.00	12.
1		0420	27	.01	.01	.00	0.	1		2100	127	.01	.00	.00	12.
1		0430	28	.01	.01	.00	0.	1		2110	128	.01	.00	.00	12.
1		0440	29	.01	.01	.00	0.	1		2120	129	.01	.00	.00	12.
1		0450	30	.01	.01	.00	0.	1		2130	130	.01	.00	.00	12.
1		0500	31	.01	.01	.00	0.	1		2140	131	.01	.00	.00	12.
1		0510	32	.01	.01	.00	0.	1		2150	132	.01	.00	.00	12.
1		0520	33	.01	.01	.00	0.	1		2200	133	.01	.00	.00	12.
1		0530	34	.01	.01	.00	0.	1		2210	134	.01	.00	.00	12.
1		0540	35	.01	.01	.00	0.	1		2220	135	.01	.00	.00	12.
1		0550	36	.01	.01	.00	0.	1		2230	136	.01	.00	.00	12.
1		0600	37	.01	.01	.00	0.	1		2240	137	.01	.00	.00	12.
1		0610	38	.01	.01	.00	0.	1		2250	138	.01	.00	.01	13.
1		0620	39	.01	.01	.00	0.	1		2300	139	.01	.00	.01	16.
1		0630	40	.01	.01	.00	0.	1		2310	140	.01	.00	.00	18.
1		0640	41	.01	.01	.00	0.	1		2320	141	.01	.00	.00	17.
1		0650	42	.01	.01	.00	0.	1		2330	142	.01	.00	.00	15.
1		0700	43	.01	.01	.00	0.	1		2340	143	.00	.00	.00	13.
1		0710	44	.01	.01	.00	0.	1		2350	144	.00	.00	.00	11.
1		0720	45	.01	.01	.00	0.	2		0000	145	.00	.00	.00	7.
1		0730	46	.01	.01	.00	0.	2		0010	146	.00	.00	.00	4.
1		0740	47	.01	.01	.00	0.	2		0020	147	.00	.00	.00	2.
1		0750	48	.01	.01	.00	0.	2		0030	148	.00	.00	.00	1.

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1584.25	.00	4672.	1703.	.00	20.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1583.67	.00	4384.	653.	.00	25.67	.00

PLAN 3 .....

	INITIAL VALLE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1581.93	.00	3608.	158.	.00	27.17	.00

PLAN 4 .....

	INITIAL VALLE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1580.54	.00	3052.	152.	.00	27.17	.00

*** NORMAL END OF HEC-1 ***
STOP
)
)

```
PROCESS 47 TERMINATED

ELAPSED TIME  0:01:16, CPU TIME  00:00:00.090, I/O BLOCKS  56
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF        14-NOV-88        11:46:30


****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix E

HEC-1 Output

Alternative A
Excavate - Increase in Storage
of the Powerline F.R.S.
Probable Maximum Flood

```
$   $  $   $  $$$$          $   $   $$$   $   $
$   $  $  $   $   $         $   $  $   $  $$ $$
$   $   $ $   $   $         $   $  $      $ $ $
$$$$$    $    $   $         $ $ $   $$$   $ $ $
$   $    $    $   $         $ $ $      $  $   $
$   $    $    $   $    $$   $$ $$  $   $  $   $
$   $    $    $$$$    $$   $   $   $$$   $   $
```

DEST=HYD.WSM USER=HYD.WSM QUEUE=LPT DEVICE=@LPB
SEG=246C7 QPRI=128 CPL=132 LPP=66 COPIES=1 PAGES=68

CREATED: 01-NOV-88 14:47:12
ENQUEUED: 01-NOV-88 15:23:28
PRINTING: 01-NOV-88 15:25:03

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:STOPPOWER.OUT

```
 $$$   $$$$$   $$$   $$$$   $$$$    $$$   $   $  $$$$$  $$$$          $$$   $   $  $$$$$
$   $    $    $   $  $   $  $   $  $   $  $   $  $      $   $         $   $  $   $    $
$        $    $   $  $   $  $   $  $   $  $   $  $      $   $         $   $  $   $    $
 $$$     $    $   $  $$$$   $$$$   $   $  $ $ $  $$$$   $$$$          $   $  $   $    $
    $    $    $   $  $ $    $      $   $  $ $ $  $      $ $           $   $  $   $    $
$   $    $    $   $  $  $   $      $   $  $$ $$  $      $  $     $$   $   $  $   $    $
 $$$     $     $$$   $   $  $       $$$   $   $  $$$$$  $   $    $$    $$$    $$$     $
```

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00

```
**** AOS/VS REV 7.62.00.00 / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00   1-NOV-88        14:47:12
QPRI=126          SEQ=24577
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?71.CLI.00006.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.24577

--------
LAST MESSAGE CHANGE     25-OCT-86        0:36:12


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


--------
MOST RECENT LOGON        1-NOV-88        14:38:04

AOS/VS CLI    REV 07.62.00.00     1-NOV-88        14:47:14
) SEARCHLIST :UTIL/:MACROS/:UDD:HYD.WSM/:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM/OWARE
)
)
) LISTFILE STORPOWER.OUT
) DATAFILE STORPOWER.DAT
) SEA :UTIL:HEC1.DIR/[!SEA]
) X HEC1_START
```

```
****************************************
*                                      *
  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
           FEBRUARY 1981               *
         REVISED 31 JAN 85             *
                                       *
 RUN DATE11/ 1/1988   TIME14:47:16 *
                                       *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285    *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X       XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX        XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOP- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID     WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID     CONVERSION OF MODEL FROM TR-20
  3           ID                  1/2 PMF, & FULL PMF ;SCS EXCESS & HYDROGRAPH
  4           ID                  DEVELOPMENT, MUSKINGUM ROUTING
  5           ID        CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  6           ID                         POINT OF WEEKES WASH AT JUNCTION ROAD.
  7           ID                      2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  8           ID                         AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
  9           ID                         LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 10           ID                      3: SUPERSTITION FREEWAY IN PLACE.
 11           ID                      4: ADJUSTED WATERSHED AREAS.
 12           ID                      5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 13           ID                      6: MODIFICATIONS TO POWERLINE F.R.S. - EXTRA STORAGE
              *DIAGRAM
 14           IT      10        0        0     400
 15           IO       5
 16           JR    FLOW      .5      1.0

 17           KK      15  WATERSHED 15
 18           KM      HYDROGRAPH FOR WATERSHED 15
 19           PB   11.08
 20           IN      60
 21           PI     .81      .75     1.71      .47     7.02      .32
 22           BA    1.76
 23           LS       0       80
 24           UD     .18

 25           KK     R15 ROUTE HYDROGRAPH FROM WS 15
 26           KM     ROUTE HYDROGRAPH FROM WATERSHED 15
 27           RM       1      .11       .3

 28           KK      14 WATERSHED 14
 29           KM     HYDROGRAPH FOR WATERSHED 14
 30           BA    1.11
 31           LS       0       79
 32           UD     .15

 33           KK      16 WATERSHED 16
 34           KM     HYDROGRAPH FOR WATERSHED 16
 35           BA    2.16
 36           LS       0       82
 37           UD     .35

 38           KK     114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
 39           KM     COMBINE ALL THREE HYDROGRAPHS AT CP 114
 40           HC       3

 41           KK    R114 ROUTE CP 114
 42           KM     ROUTE HYDROGRAPH FROM CP114 TO CP 113
 43           RM       1      .17       .3
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  44          KK      13 WATERSHED 13
  45          KM     HYDROGRAPH FOR WATERSHED 13
  46          BA    1.29
  47          LS       0       83
  48          UD    .126

  49          KK     113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
  50          KM     COMBINE HYDROGRAPHS CP 114 AND WS 13
  51          HC       2

  52          KK    R113 ROUTE CP 113 TO CP 112
  53          KM     ROUTE HYDROGRAPH FOR CP 113
  54          RM       1      .19       .3

  55          KK      12 WATERSHED 12
  56          KM     HYDROGRAPH FOR WATERSHED 12
  57          BA    1.32
  58          LS       0       86
  59          UD     .27

  60          KK     112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
  61          KM     COMBINE HYDROGRAPH FROM CP 113 AND WS 12
  62          HC       2

  63          KK    R112 ROUTE CP 112 TO CP 111
  64          KM     ROUTE HYDROGRAPH CP 112 TO CP 111
  65          RM       1      .07       .3

  66          KK      11 WATERSHED 11
  67          KM     HYDROGRAPH FOR WATERSHED 11
  68          BA     .70
  69          LS       0       89
  70          UD    .186

  71          KK      17 WATERSHED 17
  72          KM     HYDROGRAPH FOR WATERSHED 17
  73          BA     .37
  74          LS       0       79
  75          UD    .138

  76          KK      10   WATERSHED 10
  77          KM     HYDROGRAPH FOR WATERSHED 10
  78          BA     .54
  79          LS       0       79
  80          UD     .14

  81          KK     111 CONCENTRATION PT. 111
  82          KM     COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
  83          HC       4
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  84          KK   RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
  85          KM     ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
  86          RM       5     .64      .3

  87          KK      2A  WATERSHED 2A
  88          KM      HYDROGRAPH FOR WATERSHED 2A
  89          BA    1.09
  90          LS       0      82
  91          UD     .22

  92          KK    CP2A  CONCENTRATION POINT 2A
  93          KM    COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
  94          HC       2

  95          KK    FLOW    POINT OF DIVERSION FOR WEEKES WASH
  96          DT  DIVERT
  97          DI       0    6500    7000    9000   10000   15000
  98          DQ       0       0     260    1300    1880    4600

  99          KK    RR2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREWAY
 100          KM     ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
 101          RM       2     .42      .3

 102          KK     2BE WATERSHED 2B EAST
 103          KM     HYDROGRAPH FOR WATERSHED 2B EAST
 104          BA    1.22
 105          LS       0      82
 106          UD     .48

 107          KK    1C2B  CONCENTRATION POINT NORTH OF FREEWAY
 108          KM     CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
 109          HC       2

 110          KK  DET2BE   ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
 111          KM     ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
 112          KM      PRINCIPLE OUTLET IS 2-12 X 12 (FOOT) BOX CULVERTS
 113          KM      INVERT IS AT 1636; EMERGENCY SPILLWAY CREST IS AT 1650.
 114          RS       1    ELEV    1636
 115          SV       0     6.0    13.0    29.0    47.0    69.0    93.0   122.0   153.0   184.0
 116          SV     217     239
 117          SE    1636    1637    1638    1640    1642    1644    1646    1648    1650    1652
 118          SE    1654    1655
 119          SQ       0      22     194     584    1050    1604    2236    2900    3534    4108
 120          SQ    4622    4860
 121          ST    1650     320     2.2     1.5

 122          KK   FRWAY
 123          KM    DIVERT ALL FLOWS FROM EMERGENCY SPILLWAY
 124          DT   SPILL
 125          DI       0    3665    5000   10000   15000
 126          DQ       0       0    1335    6335   11335
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 127          KK    CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 128          KM     ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 129          RM       1       .1       .3

 130          KK    WASH   ROUTE FLOWS THROUGH THE WASH
 131          KM      ROUTE FLOWS THROUGH THE NATURAL WASH SYSTEM
 132          RM       2      .50       .3

 133          KK  RSPILL
 134          KM    RETRIEVE FLOW DIVERTED FROM THE EMERGENCY SPILLWAY
 135          DR   SPILL

 136          KK   IDAHO
 137          KM    ROUTE THE RETRIEVED FLOW DOWN IDAHO RD.
 138          RM       1       .1       .3

 139          KK      WW
 140          KM     COMBINE ALL FLOWS FROM FREEWAY
 141          HC       2

 142          KK     RWW
 143          KM     ROUTE FLOWS TO POWERLINE F.R.S.
 144          RM       4      .98       .3

 145          KK    2BWW  WATERSHED 2B WEST, WEST
 146          KM      HYDROGRAPH FOR WATERSHED 2B WEST, WEST
 147          BA     .45
 148          LS       0       82
 149          UD      .4

 150          KK    2BWE  WATERSHED 2B WEST, EAST
 151          KM     RUNOFF FROM EAST OF IDAHO ROAD 2B WEST, EAST
 152          BA     .70
 153          LS       0       82
 154          UD      .3

 155          KK  DET2BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 156          KM      ROUTE FLOWS THROUGH THE DETENTION NORTH OF THE SUPERSTITION FREEWAY
 157          RS       1    ELEV  1623.5
 158          SV       0       .6      8.3     17.5     28.2     36.0     48.6
 159          SE  1623.5   1624.0   1626.0   1628.0   1630.0   1632.0   1634.0
 160          SQ       0        0       31       93      135      169      208
 161          ST  1630.0      110      2.2      1.5

 162          KK    CC04  COMBINE FLOWS JUST NORTH OF FREEWAY
 163          KM    COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 164          HC       2

 165          KK    NDIV
 166          KM    DIVERSION OF FLOW OVER THE NORTH DIVERSION DAM.
 167          DT    EXIT
 168          DI       0     1218     5000    10000
 169          DQ       0        0     3782     8782
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 170          KK  NDRCUT  ROUTE THROUGH THE FREEWAY
 171          KM    RCUTE COMBINED FLCW THROUGH 2 - 10  X 8  BCX CULVERTS
 172          RS       1     ELEV  1622.6
 173          SV       0     0.02     0.16     1.12     4.17    25.42
 174          SE  1622.6  1623.0  1624.0  1626.0  1628.0  1630.0
 175          SQ       0       0      101      372      738    1111
 176          ST  1630.0    2875      2.2      1.5

 177          KK    R2BW  ROUTE TC CP102
 178          KM     ROUTE THE FLOWS FROM DETENTICN POND TO CP102 (POWERLINE F.R.S.)
 179          RM       2     .40      .3

 180          KK     2BS  WATERSHED 2B SOUTH OF SUPERTITION FREEWAY
 181          KM     HYDRCGRAPH FOR WATERSHED 2B SCUTH
 182          BA    1.91
 183          LS       0      80
 184          UD     .32

 185          KK     1C2 CONCENTRATICN PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 186          KM     COMBINE HYDRCGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 187          HC       3

 188          KK       5 WATERSHED 5 ( BEGINNING CF SIPHON DRAW WATERSHED)
 189          KM     HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHCN DRAW TC THE DAM)
 190          BA    5.65
 191          LS       0      85
 192          UD     .71

 193          KK      R5 RCUTE HYDROGRAPH FROM WS 5 TC CP 104
 194          KM      ROUTE HYDROGRAPH FOR WS 5 TC CP 104
 195          RM       1     .07      .3

 196          KK       4 WATERSHED 4
 197          KM      HYDRCGRAPH FCR WATERSHED 4
 198          BA   11.85
 199          LS       0      86
 200          UD    1.30

 201          KK     1C4  CONCENTRATICN PCINT 104
 202          KM     COMBINE HYDRCGRAPHS AT CP 104
 203          HC       2

 204          KK    R104
 205          KM    RCUTE CP 104 TC 106
 206          RM       2     .50      .3

 207          KK       7  WATERSHED 7
 208          KM    HYDROGRAPH FOR WATERSHED 7
 209          BA     .61
 210          LS       0      86
 211          UD      .3
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 212          KK       6 WATERSHED 6
 213          KM      HYDROGRAPH FOR WATERSHED 6
 214          BA    7.86
 215          LS       0       83
 216          UD    1.08

 217          KK     106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 218          KM      COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 219          HC       3

 220          KK    R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
 221          KM      ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 222          RM       1      .27       .3

 223          KK      3N WATERSHED 3N
 224          KM      HYDROGRAPH FOR WATERSHED 3N
 225          BA    2.89
 226          LS       0       85
 227          UD     .41

 228          KK    CULV   ROUTE FLOWS THROUGH CULVERTS
 229          KM     ROUTE FLOWS THROUGH THE CULVERTS
 230          RS     1.0     ELEV     1665
 231          SV       0      .15      .60      1.5      3.1      5.6      9.1     13.7    19.45    26.35
 232          SE    1665   1665.5     1666   1666.5     1667   1667.5     1668   1668.5     1669   1669.5
 233          SQ       0      119      375      688     1063     1462     1938     2375     2875     3375

 234          KK   RCULV  ROUTE FLOWS TO W103
 235          KM     ROUTE THE FLOWS TO CONCENTRATION POINT W103
 236          RM       2       .5       .3

 237          KK      3S  WATERSHED 3 SOUTH
 238          KM      HYDROGRAPH FOR WATERSHED 3 SOUTH
 239          BA    2.39
 240          LS       0       85
 241          UD    .436

 242          KK     103
 243          HC       2

 244          KK      3A   WATERSHED 3A
 245          KM     HYDROGRAPH FOR WATERSHED 3A
 246          BA    1.20
 247          LS       0       86
 248          UD      .4

 249          KK   CP103
 250          KM     CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
 251          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 252          KK    W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 253          KM      COMBINE HYDROGRAPHS FROM CP 104 AND WS 3 - SIPHON DRAW WATERSHED
 254          HC        2

 255          KK   RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 256          KM      ROUTE THE HYDROGRAPH TO POWERLINE DAM
 257          RM        1      .16       .3

 258          KK     PLD CONCENTRATION PT. AT POWERLINE DAM
 259          KM     COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 260          HC        2

 261          KK     RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 262          KM     RESERVOIR RATING CURVE
 263          RS        1     ELEV  1568.2
 264          SV        0      175      380     1768     3465     5268     5941     7196     9465
 265          SQ        0       75       92      119      141      159      165     7360    27280
 266          SE   1568.1   1568.2   1570.0   1574.0   1578.0   1582.0   1583.3   1586.0   1590.0
 267          SS   1583.3        0        0        0
 268          ST   1589.1    13358      2.2      1.5
 269          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

(V) ROUTING (--->) DIVERSION OR PUMP FLOW

(.) CONNECTOR (<---) RETURN OF DIVERTED OR PUMPED FLOW

```
INPUT
 LINE
  NO.

 17          15
              V
              V
 25         R15
             .
             .
 28          .          14
             .           .
             .           .
 33          .           .          16
             .           .           .
             .           .           .
 38         114..........................
              V
              V
 41        R114
             .
             .
 44          .          13
             .           .
             .           .
 49         113............
              V
              V
 52        R113
             .
             .
 55          .          12
             .           .
             .           .
 60         112............
              V
              V
 63        R112
             .
             .
 66          .          11
             .           .
             .           .
 71          .           .          17
             .           .           .
             .           .           .
 76          .           .           .          1C
             .           .           .           .
             .           .           .           .
 81         111.......................................
              V
              V
 84       RD111
             .
             .
 87          .          2A
             .           .
             .           .
 92       CP2A............
```

```
 95        FLOW
              V
              V
 99        RR2A
              .
              .
102           .          2BE
              .           .
              .           .
107        1C2E............
              V
              V
110      DET2BE
              .
              .
124           .-------->   SPILL
122       FRWAY
              V
              V
127        CHAN
              V
              V
130        WASH
              .
              .
135           .           .<-------   SPILL
133           .      RSPILL
              .           V
              .           V
136           .       IDAHO
              .           .
              .           .
139          WW............
              V
              V
142         RWW
              .
              .
145           .        2BWW
              .           .
              .           .
150           .           .        2BWE
              .           .           V
              .           .           V
155           .           .      DET2BW
              .           .           .
              .           .           .
162           .        C004............
              .           .
              .           .
167           .           .-------->   EXIT
165           .        NDIV
              .           V
              .           V
170           .      NDROUT
              .           V
              .           V
177           .        R2BW
              .           .
              .           .
180           .           .         2BS
```

```
185        102.......................
188                5
                   V
                   V
193               R5
196                          4
201              104............
                   V
                   V
204             R104
207                          7
212                                   6
217              106.......................
                   V
                   V
220             R106
223                         3N
                             V
                             V
228                       CULV
                             V
                             V
234                      RCULV
237                                   3S
242                        103............
244                                   3A
249                      CP103...........
252             W103............
                   V
                   V
255            RW103
258        PLD............
             V
             V
261        RES
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            FEBRUARY 1981             *
*          REVISED 31 JAN 85           *
*                                      *
*  RUN DATE11/ 1/1988   TIME14:47:30 * 
*                                      *
****************************************
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```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285    *
*                                      *
****************************************
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```
                    WEEKES WASH - POWERLINE F.R.S  ANALYSIS
                    CONVERSION OF MODEL FROM TR-20
                              1/2 PMF, & FULL PMF ;SCS EXCESS & HYDROGRAPH
                              DEVELOPMENT, MUSKINGUM ROUTING
                       CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
                                        POINT OF WEEKES WASH AT JUNCTION ROAD.
                                     2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
                                        AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
                                        LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
                                     3: SUPERSTITION FREEWAY IN PLACE.
                                     4: ADJUSTED WATERSHED AREAS.
                                     5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
                                     6: MODIFICATIONS TO POWERLINE F.R.S. - EXTRA STORAGE

15 IO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

   IT          HYDROGRAPH TIME DATA
                      NMIN          10  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME        0000  STARTING TIME
                        NQ         400  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      3    0  ENDING DATE
                    NDTIME       1830  ENDING TIME

                 COMPUTATION INTERVAL      .17 HOURS
                      TOTAL TIME BASE   66.50 HOURS

       ENGLISH UNITS
            DRAINAGE AREA          SQUARE MILES
            PRECIPITATION DEPTH    INCHES
            LENGTH, ELEVATION      FEET
            FLOW                   CUBIC FEET PER SECOND
            STORAGE VOLUME         ACRE-FEET
            SURFACE AREA           ACRES
            TEMPERATURE            DEGREES FAHRENHEIT

   JP          MULTI-PLAN OPTION
                     NPLAN           1  NUMBER OF PLANS

   JR          MULTI-RATIO OPTION
                   RATIOS OF RUNOFF
                   .50      1.00

ARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
```

```
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO     1462.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
```

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

					RATIOS APPLIED TO FLOWS	
OPERATION	STATION	AREA	PLAN		RATIO 1 .50	RATIO 2 1.00
HYDROGRAPH AT	15	1.76	1	FLOW	3760.	7520.
				TIME	5.00	5.00
ROUTED TO	R15	1.76	1	FLOW	3709.	7419.
				TIME	5.00	5.00
HYDROGRAPH AT	14	1.11	1	FLOW	2371.	4743.
				TIME	5.00	5.00
HYDROGRAPH AT	16	2.16	1	FLOW	4360.	8720.
				TIME	5.00	5.00
3 COMBINED AT	114	5.03	1	FLOW	10441.	20881.
				TIME	5.00	5.00
ROUTED TO	R114	5.03	1	FLOW	10105.	20210.
				TIME	5.17	5.17
HYDROGRAPH AT	13	1.29	1	FLOW	2819.	5638.
				TIME	5.00	5.00
2 COMBINED AT	113	6.32	1	FLOW	12728.	25455.
				TIME	5.00	5.00
ROUTED TO	R113	6.32	1	FLOW	12291.	24582.
				TIME	5.17	5.17
HYDROGRAPH AT	12	1.32	1	FLOW	2836.	5672.
				TIME	5.00	5.00
2 COMBINED AT	112	7.64	1	FLOW	14756.	29511.
				TIME	5.17	5.17
ROUTED TO	R112	7.64	1	FLOW	14704.	29408.
				TIME	5.17	5.17
HYDROGRAPH AT	11	.70	1	FLOW	1554.	3108.
				TIME	5.00	5.00
HYDROGRAPH AT	17	.37	1	FLOW	792.	1583.
				TIME	5.00	5.00
HYDROGRAPH AT	10	.54	1	FLOW	1155.	2310.
				TIME	5.00	5.00
4 COMBINED AT	111	9.25	1	FLOW	17167.	34335.
				TIME	5.00	5.00
ROUTED TO	RD111	9.25	1	FLOW	16004.	32007.
				TIME	5.67	5.67

				TIME	5.00	5.00
2 COMBINED AT	CF2A	10.34	1	FLOW	16244.	32489.
				TIME	5.67	5.67
DIVERSION TO	DIVERT	10.34	1	FLOW	5277.	14114.
				TIME	5.67	5.67
HYDROGRAPH AT	FLOW	10.34	1	FLOW	10967.	18375.
				TIME	5.67	5.67
ROUTED TO	RR2A	10.34	1	FLOW	10575.	17591.
				TIME	6.17	6.17
HYDROGRAPH AT	2BE	1.22	1	FLOW	2281.	4561.
				TIME	5.17	5.17
2 COMBINED AT	1C2B	11.56	1	FLOW	10964.	18374.
				TIME	6.00	6.00
ROUTED TO	DET2BE	11.56	1	FLOW	10899.	18303.
				TIME	6.17	6.17
			** PEAK STAGES IN FEET **			
			1	STAGE	1654.27	1656.98
				TIME	6.17	6.17
DIVERSION TO	SPILL	11.56	1	FLOW	7234.	14638.
				TIME	6.17	6.17
HYDROGRAPH AT	FRWAY	11.56	1	FLOW	3665.	3665.
				TIME	4.67	5.67
ROUTED TO	CHAN	11.56	1	FLOW	3685.	3668.
				TIME	4.83	3.83
ROUTED TO	WASH	11.56	1	FLOW	3665.	3665.
				TIME	7.17	6.33
HYDROGRAPH AT	RSPILL	.00	1	FLOW	7234.	14638.
				TIME	6.17	6.17
ROUTED TO	IDAHO	.00	1	FLOW	7157.	14456.
				TIME	6.33	6.17
2 COMBINED AT	WW	11.56	1	FLOW	10821.	18121.
				TIME	6.33	6.17
ROUTED TO	RWW	11.56	1	FLOW	10310.	17192.
				TIME	7.17	7.17
HYDROGRAPH AT	2BWW	.45	1	FLOW	878.	1756.
				TIME	5.00	5.00
HYDROGRAPH AT	2BWE	.70	1	FLOW	1453.	2906.
				TIME	5.00	5.00
ROUTED TO	DET2BW	.70	1	FLOW	1390.	2822.
				TIME	5.00	5.00
			** PEAK STAGES IN FEET **			

2 COMBINED AT	CC04	1.15	1	FLOW	2268.	4578.
				TIME	5.00	5.00
DIVERSION TO	EXIT	1.15	1	FLOW	1050.	3360.
				TIME	5.00	5.00
HYDROGRAPH AT	NDIV	1.15	1	FLOW	1218.	1218.
				TIME	4.67	4.33
ROUTED TO	NDRCUT	1.15	1	FLOW	1100.	1218.
				TIME	5.50	5.67
			** PEAK STAGES IN FEET **			
			1	STAGE	1629.94	1630.06
				TIME	5.50	5.67
ROUTED TO	R2BW	1.15	1	FLOW	1074.	1182.
				TIME	5.83	6.00
HYDROGRAPH AT	2BS	1.91	1	FLOW	3869.	7738.
				TIME	5.00	5.00
3 COMBINED AT	102	14.62	1	FLOW	10459.	17405.
				TIME	7.17	7.17
HYDROGRAPH AT	5	5.65	1	FLOW	9317.	18635.
				TIME	5.33	5.33
ROUTED TO	R5	5.65	1	FLOW	9278.	18555.
				TIME	5.33	5.33
HYDROGRAPH AT	4	11.85	1	FLOW	13890.	27780.
				TIME	5.83	5.83
2 COMBINED AT	104	17.50	1	FLOW	21576.	43152.
				TIME	5.50	5.50
ROUTED TO	R104	17.50	1	FLOW	20571.	41143.
				TIME	6.00	6.00
HYDROGRAPH AT	7	.61	1	FLOW	1295.	2589.
				TIME	5.00	5.00
HYDROGRAPH AT	6	7.86	1	FLOW	10170.	20341.
				TIME	5.67	5.67
3 COMBINED AT	106	25.97	1	FLOW	29515.	59030.
				TIME	6.00	6.00
ROUTED TO	R106	25.97	1	FLOW	28965.	57930.
				TIME	6.17	6.17
HYDROGRAPH AT	3N	2.89	1	FLOW	5706.	11413.
				TIME	5.00	5.00
ROUTED TO	CLLV	2.89	1	FLOW	5483.	10955.
				TIME	5.17	5.17
			** PEAK STAGES IN FEET **			
			1	STAGE	1671.61	1677.08

ROUTED TO	RCLLV	2.89	1	FLOW	5058.	10083.
				TIME	5.67	5.67
HYDROGRAPH AT	3S	2.39	1	FLOW	4623.	9247.
				TIME	5.17	5.17
2 COMBINED AT	103	5.28	1	FLOW	8181.	16228.
				TIME	5.33	5.33
HYDROGRAPH AT	3A	1.20	1	FLOW	2402.	4805.
				TIME	5.00	5.00
2 COMBINED AT	CP103	6.48	1	FLOW	10431.	20634.
				TIME	5.17	5.17
2 COMBINED AT	W103	32.45	1	FLOW	33218.	66438.
				TIME	6.00	6.00
ROUTED TO	RW103	32.45	1	FLOW	33002.	66025.
				TIME	6.17	6.17
2 COMBINED AT	FLD	47.07	1	FLOW	40927.	79709.
				TIME	6.33	6.33
ROUTED TO	RES	47.07	1	FLOW	17451.	77819.
				TIME	7.83	6.50

** PEAK STAGES IN FEET **

1	STAGE	1588.03	1590.49
	TIME	7.83	6.50

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BE

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1654.27	4.27	223.	10899.	2.67	6.17	.00
1.00	1656.98	6.98	282.	18303.	4.17	6.17	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BW

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1632.91	2.91	42.	1390.	1.83	5.00	.00
1.00	1634.87	4.87	54.	2822.	3.50	5.00	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDROUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1629.94	.00	25.	1100.	.00	5.50	.00
1.00	1630.06	.06	26.	1218.	.33	5.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	5941.	8955.
OUTFLOW	75.	165.	22798.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1588.03	.00	8345.	17451.	.00	7.83	.00
1.00	1590.49	1.39	9742.	77819.	2.50	6.50	.00

```
*** NORMAL END OF HEC-1 ***
STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING          1-NOV-88        14:48:05

PROCESS 78 TERMINATED

ELAPSED TIME  0:00:52, CPU TIME  00:00:00.091, I/O BLOCKS  58
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF         1-NOV-88        14:48:04

****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix F

HEC-1 Output

Excavate - Increase in Storage
of the Powerline F.R.S.
100 year, 24 hour Storm

```
+1111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111+

$   $  $   $  $$$$          $   $   $$$   $   $
$   $  $   $  $   $         $   $  $   $  $$ $$
$   $   $ $   $   $         $   $  $      $ $ $
$$$$$    $    $   $         $ $ $   $$$   $ $ $
$   $    $    $   $         $ $ $      $  $   $
$   $    $    $   $   $$    $$ $$  $   $  $   $
$   $    $    $$$$    $$    $   $   $$$   $   $

DEST=HYD.WSM  USER=HYD.WSM  QUEUE=LPT  DEVICE=@LPB
SEQ=24608  QPRI=128  CPL=132  LPP=66  COPIES=1  PAGES=66

CREATED:  01-NOV-88  15:00:00
ENQUEUED:  01-NOV-88  15:23:28
PRINTING:  01-NOV-88  15:26:34

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:STORPOWER100.OUT

 $$$   $$$$$   $$$   $$$$   $$$$   $$$   $   $  $$$$$  $$$$     $     $$$    $$$          $$$   $   $  $$$$$
$   $   $    $   $  $   $  $   $  $   $  $   $  $      $   $   $$    $   $  $   $        $   $  $   $  $
$       $    $   $  $   $  $   $  $   $  $   $  $      $   $  $ $    $  $$  $  $$        $   $  $   $  $
 $$$    $    $   $  $$$$   $$$$   $   $  $ $ $  $$$$   $$$$    $    $ $ $ $ $ $         $   $  $   $  $
    $   $    $   $  $ $    $      $   $  $ $ $  $      $ $     $    $$  $  $$  $         $   $  $   $  $
$   $   $    $   $  $  $   $      $   $  $$ $$  $      $  $    $    $   $  $   $    $$   $   $  $   $  $
 $$$    $     $$$   $   $  $       $$$   $   $  $$$$$  $   $  $$$$$  $$$    $$$     $$    $$$    $$$    $

+1111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111+

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00
```

```
**** AOS/VS REV 7.62.00.00 / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00   1-NOV-88        15:00:00
QPRI=128          SEQ=24585
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?71.CLI.00007.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.24585

--------
LAST MESSAGE CHANGE      25-OCT-86        0:36:12


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


--------
MOST RECENT LOGON         1-NOV-88        14:47:12

AOS/VS CLI   REV 07.62.00.00      1-NOV-88        15:00:03
) SEARCHLIST :UTIL/:MACROS/:UDD:HYD.WSM/:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM/OWARE
)
)
) LISTFILE STORPOWER100.OUT
) DATAFILE STORPOWER100.DAT
) SEA :UTIL:HEC1.DIR/[!SEA]
) X HEC1_START
```

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            FEBRUARY 1981             *
*          REVISED 31 JAN 85           *
*                                      *
* RUN DATE11/ 1/1988   TIME15: 0: 4 *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
* (916) 440-3285 OR (FTS) 448-3285 *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X       XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX        XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID     WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID     CONVERSION OF MODEL FROM TR-20
  3           ID                 100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
  4           ID                 DEVELOPMENT, MUSKINGUM ROUTING
  5           ID        CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  6           ID                         POINT OF WEEKES WASH AT JUNCTION ROAD.
  7           ID                      2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  8           ID                         AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
  9           ID                         LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 10           ID                      3: SUPERSTITION FREEWAY IN PLACE.
 11           ID                      4: ADJUSTED WATERSHED AREAS.
 12           ID                      5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 13           ID                      6: MODIFICATIONS TO POWERLINE F.R.S. - EXTRA STORAGE
              *DIAGRAM
 14           IT      10       0       0     400
 15           IO       5

 16           KK      15  WATERSHED 15
 17           KM      HYDROGRAPH FOR WATERSHED 15
 18           PB    3.85
 19           IN      60
 20           PC       0    .002    .005    .008    .011    .014    .017    .020    .023    .026
 21           PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
 22           PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
 23           PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
 24           PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
 25           PC    .735    .758    .766    .791    .804    .815    .825    .834    .842    .849
 26           PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
 27           PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
 28           PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
 29           PC    .983    .986    .992    .995    .998   1.000   1.000   1.000
 30           BA    1.76
 31           LS       0      80
 32           UD     .18

 33           KK     R15 ROUTE HYDROGRAPH FROM WS 15
 34           KM     ROUTE HYDROGRAPH FROM WATERSHED 15
 35           RM       1     .11      .3

 36           KK      14 WATERSHED 14
 37           KM     HYDROGRAPH FOR WATERSHED 14
 38           BA    1.11
 39           LS       0      79
 40           UD     .15

 41           KK      16 WATERSHED 16
 42           KM     HYDROGRAPH FOR WATERSHED 16
 43           BA    2.16
 44           LS       0      82
 45           UD     .35
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 46           KK     114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
 47           KM     COMBINE ALL THREE HYDROGRAPHS AT CP 114
 48           HC       3

 49           KK    R114 ROUTE CP 114
 50           KM     ROUTE HYDROGRAPH FROM CP114 TO CP 113
 51           RM       1      .17       .3

 52           KK      13 WATERSHED 13
 53           KM     HYDROGRAPH FOR WATERSHED 13
 54           BA    1.29
 55           LS       0       83
 56           UD    .126

 57           KK     113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
 58           KM     COMBINE HYDROGRAPHS CP 114 AND WS 13
 59           HC       2

 60           KK    R113 ROUTE CP 113 TO CP 112
 61           KM     ROUTE HYDROGRAPH FOR CP 113
 62           RM       1      .19       .3

 63           KK      12 WATERSHED 12
 64           KM     HYDROGRAPH FOR WATERSHED 12
 65           BA    1.32
 66           LS       0       86
 67           UD     .27

 68           KK     112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
 69           KM     COMBINE HYDROGRAPH FROM CP 113 AND WS 12
 70           HC       2

 71           KK    R112 ROUTE CP 112 TO CP 111
 72           KM     ROUTE HYDROGRAPH CP 112 TO CP 111
 73           RM       1      .07       .3

 74           KK      11 WATERSHED 11
 75           KM     HYDROGRAPH FOR WATERSHED 11
 76           BA     .70
 77           LS       0       89
 78           UD    .186

 79           KK      17 WATERSHED 17
 80           KM     HYDROGRAPH FOR WATERSHED 17
 81           BA     .37
 82           LS       0       79
 83           UD    .138

 84           KK      10   WATERSHED 10
 85           KM     HYDROGRAPH FOR WATERSHED 10
 86           BA     .54
 87           LS       0       79
 88           UD     .14
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 89           KK     111 CONCENTRATION PT. 111
 90           KM     COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
 91           HC       4

 92           KK   RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
 93           KM     ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
 94           RM       5      .64       .3

 95           KK      2A  WATERSHED 2A
 96           KM      HYDROGRAPH FOR WATERSHED 2A
 97           BA    1.09
 98           LS       0       82
 99           UD     .22

100           KK    CP2A  CONCENTRATION POINT 2A
101           KM    COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
102           HC       2

103           KK    FLOW    POINT OF DIVERSION FOR WEEKES WASH
104           DT  DIVERT
105           DI       0    6500    7000    9000   10000   15000
106           DQ       0       0     260    1300    1880    4600

107           KK    PR2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREWAY
108           KM     ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
109           RM       2      .42       .3

110           KK     2BE WATERSHED 2B EAST
111           KM     HYDROGRAPH FOR WATERSHED 2B EAST
112           BA    1.22
113           LS       0       82
114           UD     .48

115           KK    1C2B  CONCENTRATION POINT NORTH OF FREEWAY
116           KM     CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
117           HC       2

118           KK  DET2BE   ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
119           KM      ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
120           KM      PRINCIPLE OUTLET IS 2-12 X 12 (FOOT) BOX CULVERTS
121           KM      INVERT IS AT 1636; EMERGENCY SPILLWAY CREST IS AT 1650.
122           RS       1    ELEV    1636
123           SV       0     6.0    13.0    29.0    47.0    69.0    93.0   122.0   153.0   184.0
124           SV     217     239
125           SE    1636    1637    1638    1640    1642    1644    1646    1648    1650    1652
126           SE    1654    1655
127           SQ       0      22     194     584    1050    1604    2236    2900    3534    4108
128           SQ    4622    4860
129           ST    1650     320     2.2     1.5
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 130          KK   FRWAY
 131          KM    DIVERT ALL FLOWS FROM EMERGENCY SPILLWAY
 132          DT   SPILL
 133          DI       0     3665     5000    10000    15000
 134          DQ       0        0     1335     6335    11335

 135          KK    CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 136          KM     ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 137          RM       1       .1       .3

 138          KK    WASH   ROUTE FLOWS THROUGH THE WASH
 139          KM      ROUTE FLOWS THROUGH THE NATURAL WASH SYSTEM
 140          RM       2      .50       .3

 141          KK  RSPILL
 142          KM    RETRIEVE FLOW DIVERTED FROM THE EMERGENCY SPILLWAY
 143          DR   SPILL

 144          KK   IDAHO
 145          KM    ROUTE THE RETRIEVED FLOW DOWN IDAHO RD.
 146          RM       1       .1       .3

 147          KK      WW
 148          KM     COMBINE ALL FLOWS FROM FREEWAY
 149          HC       2

 150          KK     RWW
 151          KM     ROUTE FLOWS TO POWERLINE F.R.S.
 152          RM       4      .98       .3

 153          KK    2BWW  WATERSHED 2B WEST, WEST
 154          KM      HYDROGRAPH FOR WATERSHED 2B WEST, WEST
 155          BA     .45
 156          LS       0       82
 157          UD      .4

 158          KK    2BWE  WATERSHED 2B WEST, EAST
 159          KM     RUNOFF FROM EAST OF IDAHO ROAD 2B WEST, EAST
 160          BA     .70
 161          LS       0       82
 162          UD      .3

 163          KK  DET2BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 164          KM      ROUTE FLOWS THROUGH THE DETENTION NORTH OF THE SUPERSTITION FREEWAY
 165          RS       1    ELEV  1623.5
 166          SV       0      .6      8.3     17.5     28.2     36.0     48.6
 167          SE  1623.5  1624.0  1626.0  1628.0  1630.0  1632.0  1634.0
 168          SQ       0       0      31      93     135     169     208
 169          ST  1630.0     110     2.2     1.5
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 170          KK    CC04  COMBINE FLOWS JUST NORTH OF FREEWAY
 171          KM    COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 172          HC       2

 173          KK    NDIV
 174          KM    DIVERSION OF FLOW OVER THE NORTH DIVERSION DAM.
 175          DT    EXIT
 176          DI       0    1218    5000   10000
 177          DQ       0       0    3782    8782

 178          KK  NDRCUT  ROUTE THROUGH THE FREEWAY
 179          KM    ROUTE COMBINED FLOW THROUGH 2 - 10  X 8  BOX CULVERTS
 180          RS       1    ELEV  1622.6
 181          SV       0    0.02    0.16    1.12    4.17   25.42
 182          SE  1622.6  1623.0  1624.0  1626.0  1628.0  1630.0
 183          SQ       0       0     101     372     738    1111
 184          ST  1630.0    2875     2.2     1.5

 185          KK    R2BW  ROUTE TO CP102
 186          KM     ROUTE THE FLOWS FROM DETENTION POND TO CP102 (POWERLINE F.R.S.)
 187          RM       2     .40      .3

 188          KK     2BS  WATERSHED 2B SOUTH OF SUPERTITION FREEWAY
 189          KM     HYDROGRAPH FOR WATERSHED 2B SOUTH
 190          BA    1.91
 191          LS       0      80
 192          UD     .32

 193          KK     102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 194          KM     COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 195          HC       3

 196          KK       5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 197          KM     HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 198          BA    5.65
 199          LS       0      85
 200          UD     .71

 201          KK      R5 ROUTE HYDROGRAPH FROM WS 5 TO CP 104
 202          KM      ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 203          RM       1     .07      .3

 204          KK       4 WATERSHED 4
 205          KM      HYDROGRAPH FOR WATERSHED 4
 206          BA   11.85
 207          LS       0      86
 208          UD    1.30

 209          KK     104  CONCENTRATION POINT 104
 210          KM     COMBINE HYDROGRAPHS AT CP 104
 211          HC       2
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 212          KK    R104
 213          KM    RCUTE CP 104 TO 106
 214          RM       2      .50       .3

 215          KK       7  WATERSHED 7
 216          KM    HYDROGRAPH FOR WATERSHED 7
 217          BA     .61
 218          LS       0        86
 219          UD      .3

 220          KK       6 WATERSHED 6
 221          KM      HYDROGRAPH FOR WATERSHED 6
 222          BA    7.86
 223          LS       0        83
 224          UD    1.08

 225          KK     106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 226          KM      COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 227          HC       3

 228          KK    R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
 229          KM      ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 230          RM       1      .27       .3

 231          KK      3N WATERSHED 3N
 232          KM      HYDROGRAPH FOR WATERSHED 3N
 233          BA    2.89
 234          LS       0        85
 235          UD     .41

 236          KK    CULV   ROUTE FLOWS THROUGH CULVERTS
 237          KM     ROUTE FLOWS THROUGH THE CULVERTS
 238          RS     1.0     ELEV     1665
 239          SV       0      .15      .60      1.5      3.1      5.6      9.1     13.7    19.45    26.35
 240          SE    1665  1665.5     1666   1666.5     1667   1667.5     1668   1668.5     1669   1669.5
 241          SQ       0      119      375      688     1063     1462     1938     2375     2875     3375

 242          KK   RCULV  ROUTE FLOWS TO W103
 243          KM     ROUTE THE FLOWS TO CONCENTRATION POINT W103
 244          RM       2       .5       .3

 245          KK      3S  WATERSHED 3 SOUTH
 246          KM      HYDROGRAPH FOR WATERSHED 3 SOUTH
 247          BA    2.39
 248          LS       0        85
 249          UD    .436

 250          KK     103
 251          HC       2
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 252          KK      3A   WATERSHED 3A
 253          KM     HYDROGRAPH FOR WATERSHED 3A
 254          BA    1.20
 255          LS       0       86
 256          UD      .4

 257          KK   CP103
 258          KM     CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
 259          HC       2

 260          KK    W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 261          KM      COMBINE HYDROGRAPHS FROM CP 104 AND WS 3 - SIPHON DRAW WATERSHED
 262          HC       2

 263          KK   RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 264          KM      ROUTE THE HYDROGRAPH TO POWERLINE DAM
 265          RM       1      .16       .3

 266          KK     PLD CONCENTRATION PT. AT POWERLINE DAM
 267          KM     COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 268          HC       2

 269          KK     RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 270          KM     RESERVOIR RATING CURVE
 271          RS       1     ELEV  1568.2
 272          SV       0      175      380     1768     3465     5268     5941     7196     9465
 273          SQ       0       75       92      119      141      159      165     7360    27280
 274          SE  1568.1   1568.2   1570.0   1574.0   1578.0   1582.0   1583.3   1586.0   1590.0
 275          SS  1583.3        0        0        0
 276          ST  1589.1    13358      2.2      1.5
 277          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

(V) ROUTING (--->) DIVERSION OR PUMP FLOW

(.) CONNECTOR (<---) RETURN OF DIVERTED OR PUMPED FLOW

```
INPUT
 LINE
 NO.

 17          15
              V
              V
 25         R15
             .
             .
 28          .          14
             .           .
             .           .
 33          .           .          16
             .           .           .
             .           .           .
 38         114.........................
              V
              V
 41        R114
             .
             .
 44          .          13
             .           .
             .           .
 49         113............
              V
              V
 52        R113
             .
             .
 55          .          12
             .           .
             .           .
 60         112............
              V
              V
 63        R112
             .
             .
 66          .          11
             .           .
             .           .
 71          .           .          17
             .           .           .
             .           .           .
 76          .           .           .          10
             .           .           .           .
             .           .           .           .
 81         111.......................................
              V
              V
 84        RD111
             .
             .
 87          .          2A
             .           .
             .           .
 92        CP2A............
```

```
 95        FLOW
              V
              V
 99        RR2A
              .
              .
102           .          2BE
              .           .
              .           .
107        102E............
              V
              V
110      DET2BE
              .
              .
124           .-------->   SPILL
122       FRWAY
              V
              V
127        CHAN
              V
              V
130        WASH
              .
              .
135           .           .<-------   SPILL
133           .      RSPILL
              .           V
              .           V
136           .       IDAHO
              .           .
              .           .
139          WW............
              V
              V
142         RWW
              .
              .
145           .        2BWW
              .           .
              .           .
150           .           .        2BWE
              .           .           V
              .           .           V
155           .           .      DET2BW
              .           .           .
              .           .           .
162           .        COO4............
              .           .
              .           .
167           .           .-------->    EXIT
165           .        NDIV
              .           V
              .           V
170           .      NDROUT
              .           V
              .           V
177           .        R2BW
              .           .
              .           .
180           .           .         2BS
```

```
185        102.......................
             .
             .
188          .          5
             .          V
             .          V
193          .         R5
             .          .
             .          .
196          .          .          4
             .          .          .
             .          .          .
201          .        104..........
             .          V
             .          V
204          .       R104
             .          .
             .          .
207          .          .          7
             .          .          .
             .          .          .
212          .          .          .          c
             .          .          .          .
             .          .          .          .
217          .        106.......................
             .          V
             .          V
220          .       R106
             .          .
             .          .
223          .          .         3N
             .          .          V
             .          .          V
228          .          .       CULV
             .          .          V
             .          .          V
234          .          .      RCULV
             .          .          .
             .          .          .
237          .          .          .          3S
             .          .          .          .
             .          .          .          .
242          .          .        103..........
             .          .          .
             .          .          .
244          .          .          .          3A
             .          .          .          .
             .          .          .          .
249          .          .      CP103..........
             .          .          .
             .          .          .
252          .       W103..........
             .          V
             .          V
255          .      RW103
             .          .
             .          .
258        PLD..........
             V
             V
261        RES
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

(***) RUNOFF ALSC COMPUTED AT THIS LCCATION

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*             FEBRUARY 1981            *
*           REVISED 31 JAN 85          *
*                                      *
* RUN DATE11/ 1/1988   TIME15: 0:16 *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
* (916) 440-3285 OR (FTS) 448-3285 *
*                                      *
****************************************
```

```
                    WEEKES WASH - POWERLINE F.R.S  ANALYSIS
                    CONVERSION OF MODEL FROM TR-20
                              100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
                              DEVELOPMENT, MUSKINGUM ROUTING
                        CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
                                         POINT OF WEEKES WASH AT JUNCTION ROAD.
                                      2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
                                         AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
                                         LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
                                      3: SUPERSTITION FREEWAY IN PLACE.
                                      4: ADJUSTED WATERSHED AREAS.
                                      5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
                                      6: MODIFICATIONS TO POWERLINE F.R.S. - EXTRA STORAGE

 15 IO        OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

    IT        HYDROGRAPH TIME DATA
                    NMIN          10  MINUTES IN COMPUTATION INTERVAL
                   IDATE      1    0  STARTING DATE
                   ITIME        0000  STARTING TIME
                      NQ         400  NUMBER OF HYDROGRAPH ORDINATES
                  NDDATE      3    0  ENDING DATE
                  NDTIME       1830  ENDING TIME

                COMPUTATION INTERVAL     .17 HOURS
                     TOTAL TIME BASE   66.50 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO     1462.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
```

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	15	936.	48.00	251.	88.	33.	1.76		
ROUTED TO	R15	909.	48.00	251.	88.	33.	1.76		
HYDROGRAPH AT	14	579.	48.00	152.	54.	20.	1.11		
HYDROGRAPH AT	16	1126.	48.00	331.	116.	43.	2.16		
3 COMBINED AT	114	2614.	48.00	734.	257.	96.	5.03		
ROUTED TO	R114	2538.	48.17	734.	257.	96.	5.03		
HYDROGRAPH AT	13	759.	48.00	205.	72.	27.	1.29		
2 COMBINED AT	113	3206.	48.00	938.	329.	123.	6.32		
ROUTED TO	R113	3105.	48.17	938.	329.	122.	6.32		
HYDROGRAPH AT	12	803.	48.00	231.	80.	31.	1.32		
2 COMBINED AT	112	3824.	48.17	1167.	409.	153.	7.64		
ROUTED TO	R112	3800.	48.17	1168.	409.	153.	7.64		
HYDROGRAPH AT	11	468.	48.00	134.	46.	18.	.70		
HYDROGRAPH AT	17	194.	48.00	51.	18.	7.	.37		
HYDROGRAPH AT	10	282.	48.00	74.	26.	10.	.54		
4 COMBINED AT	111	4498.	48.00	1425.	499.	187.	9.25		
ROUTED TO	RD111	4251.	48.67	1424.	498.	186.	9.25		
HYDROGRAPH AT	2A	606.	48.00	167.	58.	22.	1.09		
2 COMBINED AT	CP2A	4385.	48.67	1588.	557.	208.	10.34		
DIVERSION TO	DIVERT	0.	48.67	0.	0.	0.	10.34		
HYDROGRAPH AT	FLOW	4385.	48.67	1588.	557.	208.	10.34		
ROUTED TO	RR2A	4200.	49.17	1587.	556.	207.	10.34		
HYDROGRAPH AT	2BE	598.	48.17	187.	65.	24.	1.22		
2 COMBINED AT	102B	4379.	49.00	1770.	621.	232.	11.56		
ROUTED TO	DET2BE	4055.	49.33	1761.	620.	230.	11.56	1650.62	49.33
DIVERSION TO	SPILL	390.	49.17	21.	5.	2.	11.56		
HYDROGRAPH AT	FRWAY	3665.	49.17	1739.	615.	228.	11.56		

ROUTED TO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
ROUTED TO	WASH	3605.	50.00	1736.	613.	226.	11.56		
HYDROGRAPH AT	RSPILL	390.	49.33	21.	5.	2.	.00		
ROUTED TO	IDAHO	358.	49.50	22.	5.	2.	.00		
2 COMBINED AT	WW	3618.	49.67	1758.	618.	228.	11.56		
ROUTED TO	RWW	3504.	50.83	1754.	615.	226.	11.56		
HYDROGRAPH AT	2BWW	227.	48.00	69.	24.	9.	.45		
HYDROGRAPH AT	2BWE	375.	48.00	107.	38.	14.	.70		
ROUTED TO	DET2BW	180.	48.50	95.	37.	13.	.70	1630.30	48.50
2 COMBINED AT	CC04	356.	48.17	160.	61.	22.	1.15		
DIVERSION TO	EXIT	0.	48.17	0.	0.	0.	1.15		
HYDROGRAPH AT	NDIV	356.	48.17	160.	61.	22.	1.15		
ROUTED TO	NDRCUT	352.	48.17	160.	61.	22.	1.15	1625.85	48.17
ROUTED TO	R2BW	342.	48.67	160.	61.	22.	1.15		
HYDROGRAPH AT	2BS	949.	48.00	272.	96.	35.	1.91		
3 COMBINED AT	102	3729.	50.83	2095.	771.	283.	14.62		
HYDROGRAPH AT	5	2690.	48.33	953.	333.	126.	5.65		
ROUTED TO	R5	2678.	48.33	953.	333.	126.	5.65		
HYDROGRAPH AT	4	4353.	48.83	2035.	720.	273.	11.85		
2 COMBINED AT	104	6649.	48.50	2983.	1053.	399.	17.50		
ROUTED TO	R104	6400.	49.17	2978.	1052.	397.	17.50		
HYDROGRAPH AT	7	367.	48.00	107.	37.	14.	.61		
HYDROGRAPH AT	6	2904.	48.67	1232.	434.	162.	7.86		
3 COMBINED AT	106	9082.	49.00	4305.	1524.	574.	25.97		
ROUTED TO	R106	8926.	49.17	4302.	1523.	572.	25.97		
HYDROGRAPH AT	3N	1590.	48.00	489.	171.	65.	2.89		
ROUTED TO	CULV	1585.	48.17	489.	171.	65.	2.89	1667.63	48.17
ROUTED TO	RCULV	1470.	48.50	489.	171.	65.	2.89		
HYDROGRAPH AT	3S	1302.	48.17	405.	141.	54.	2.39		
2 COMBINED AT	103	2493.	48.33	892.	312.	118.	5.28		
HYDROGRAPH AT	3A	684.	48.00	210.	73.	28.	1.20		

2 COMBINED AT	W103	10310.	49.00	5367.	1907.	718.	32.45		
ROUTED TO	PW103	10264.	49.17	5366.	1906.	717.	32.45		
2 COMBINED AT	PLD	11759.	49.33	7441.	2677.	1001.	47.07		
ROUTED TO	RES	159.	66.50	157.	135.	79.	47.07	1581.96	66.50

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BE

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1650.62	.62	163.	4055.	.67	49.33	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BW

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1630.30	.30	29.	180.	.67	48.50	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDROUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1625.85	.00	1.	352.	.00	48.17	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	5941.	8955.
OUTFLOW	75.	165.	22798.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1581.96	.00	5248.	159.	.00	66.50	.00

```
*** NORMAL END OF HEC-1 ***
STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING          1-NOV-88      15:00:44

PROCESS 54 TERMINATED

ELAPSED TIME  0:00:42, CPU TIME  00:00:00.091, I/O BLOCKS  58
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF         1-NOV-88        15:00:44

****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix G

HEC-1 Output

Alternative B
Raise the Powerline F.R.S. to
Increase Storage Capacity
Probable Maximum Flood

DEST=HYD.WSM USER=HYD.WSM QUEUE=LPT DEVICE=@LPB
SEQ=24606 QPRI=128 CPL=132 LPP=66 COPIES=1 PAGES=68

CREATED: 01-NOV-88 14:38:02
ENQUEUED: 01-NOV-88 15:23:26
PRINTING: 01-NOV-88 15:23:28

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:RAISEPOWER.OUT

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00

```
**** AOS/VS REV 7.62.00.00 / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00   1-NOV-88        14:38:04
QPRI=128          SEQ=24566
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?71.CLI.00005.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.24566

--------
LAST MESSAGE CHANGE     25-OCT-86        0:36:12

--------
MOST RECENT LOGON        1-NOV-88        14:36:06

AOS/VS CLI   REV 07.62.00.00     1-NOV-88        14:38:06
) SEARCHLIST :UTIL/:MACROS/:UDD:HYD.WSM/:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM/OWARE
)
)
) LISTFILE RAISEPOWER.OUT
) DATAFILE RAISEPOWER.DAT
) SEA :UTIL:HEC1.DIR/[!SEA]
) X HEC1_START
```

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****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*             FEBRUARY 1981            *
*           REVISED 31 JAN 85          *
*                                      *
*  RUN DATE11/ 1/1988   TIME14:38:10 * 
*                                      *
****************************************
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****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285    *
*                                      *
****************************************
```

```
X      X  XXXXXXX   XXXXX            X
X      X  X         X     X         XX
X      X  X         X               X
XXXXXXX   XXXX      X        XXXXX  X
X      X  X         X               X
X      X  X         X     X         X
X      X  XXXXXXX   XXXXX           XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID     WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID     CONVERSION OF MODEL FROM TR-2C
  3           ID                  1/2 PMF, & FULL PMF ;SCS EXCESS & HYDROGRAPH
  4           ID                  DEVELOPMENT, MUSKINGUM ROUTING
  5           ID        CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  6           ID                         POINT OF WEEKES WASH AT JUNCTION ROAD.
  7           ID                      2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  8           ID                         AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
  9           ID                         LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 10           ID                      3: SUPERSTITION FREEWAY IN PLACE.
 11           ID                      4: ADJUSTED WATERSHED AREAS.
 12           ID                      5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 13           ID                      6: MODIFICATIONS TO POWERLINE F.R.S. -  RAISE
              *DIAGRAM
 14           IT      10      0       0     400
 15           IO       5
 16           JR    FLOW      .5     1.0

 17           KK      15  WATERSHED 15
 18           KM      HYDROGRAPH FOR WATERSHED 15
 19           PB   11.08
 20           IN      60
 21           PI     .81     .75    1.71     .47    7.02     .32
 22           BA    1.76
 23           LS       0      80
 24           UD     .18

 25           KK     R15 ROUTE HYDROGRAPH FROM WS 15
 26           KM     ROUTE HYDROGRAPH FROM WATERSHED 15
 27           RM       1     .11      .3

 28           KK      14 WATERSHED 14
 29           KM     HYDROGRAPH FOR WATERSHED 14
 30           BA    1.11
 31           LS       0      79
 32           UD     .15

 33           KK      16 WATERSHED 16
 34           KM     HYDROGRAPH FOR WATERSHED 16
 35           BA    2.16
 36           LS       0      82
 37           UD     .35

 38           KK     114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
 39           KM     COMBINE ALL THREE HYDROGRAPHS AT CP 114
 40           HC       3

 41           KK    R114 ROUTE CP 114
 42           KM     ROUTE HYDROGRAPH FROM CP114 TO CP 113
 43           RM       1     .17      .3
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  44          KK      13 WATERSHED 13
  45          KM     HYDROGRAPH FOR WATERSHED 13
  46          BA    1.29
  47          LS       0       83
  48          UD    .126

  49          KK     113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
  50          KM     COMBINE HYDROGRAPHS CP 114 AND WS 13
  51          HC       2

  52          KK    R113 ROUTE CP 113 TO CP 112
  53          KM     ROUTE HYDROGRAPH FOR CP 113
  54          RM       1      .19       .3

  55          KK      12 WATERSHED 12
  56          KM     HYDROGRAPH FOR WATERSHED 12
  57          BA    1.32
  58          LS       0       86
  59          UD     .27

  60          KK     112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
  61          KM     COMBINE HYDROGRAPH FROM CP 113 AND WS 12
  62          HC       2

  63          KK    R112 ROUTE CP 112 TO CP 111
  64          KM     ROUTE HYDROGRAPH CP 112 TO CP 111
  65          RM       1      .07       .3

  66          KK      11 WATERSHED 11
  67          KM     HYDROGRAPH FOR WATERSHED 11
  68          BA     .70
  69          LS       0       89
  70          UD    .186

  71          KK      17 WATERSHED 17
  72          KM     HYDROGRAPH FOR WATERSHED 17
  73          BA     .37
  74          LS       0       79
  75          UD    .138

  76          KK      10   WATERSHED 10
  77          KM      HYDROGRAPH FOR WATERSHED 10
  78          BA     .54
  79          LS       0       79
  80          UD     .14

  81          KK     111 CONCENTRATION PT. 111
  82          KM     COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
  83          HC       4
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  84          KK   RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
  85          KM     ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
  86          RM       5     .64      .3

  87          KK      2A  WATERSHED 2A
  88          KM      HYDROGRAPH FOR WATERSHED 2A
  89          BA    1.09
  90          LS       0       82
  91          UD     .22

  92          KK    CP2A  CONCENTRATION POINT 2A
  93          KM    COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
  94          HC       2

  95          KK    FLOW    POINT OF DIVERSION FOR WEEKES WASH
  96          DT  DIVERT
  97          DI       0    6500    7000    9000   10000   15000
  98          DQ       0       0     260    1300    1880    4600

  99          KK    RR2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREWAY
 100          KM     ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
 101          RM       2     .42      .3

 102          KK     2BE WATERSHED 2B EAST
 103          KM     HYDROGRAPH FOR WATERSHED 2B EAST
 104          BA    1.22
 105          LS       0       82
 106          UD     .48

 107          KK    1C2B  CONCENTRATION POINT NORTH OF FREEWAY
 108          KM     CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
 109          HC       2

 110          KK  DET2BE   ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
 111          KM      ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
 112          KM      PRINCIPLE OUTLET IS 2-12 X 12 (FOOT) BOX CULVERTS
 113          KM      INVERT IS AT 1636; EMERGENCY SPILLWAY CREST IS AT 1650.
 114          RS       1    ELEV    1636
 115          SV       0     6.0    13.0    29.0    47.0    69.0    93.0   122.0   153.0   184.0
 116          SV     217     239
 117          SE    1636    1637    1638    1640    1642    1644    1646    1648    1650    1652
 118          SE    1654    1655
 119          SQ       0      22     194     584    1050    1604    2236    2900    3534    4108
 120          SQ    4622    4860
 121          ST    1650     320     2.2     1.5

 122          KK   FRWAY
 123          KM    DIVERT ALL FLOWS FROM EMERGENCY SPILLWAY
 124          DT   SPILL
 125          DI       0    3665    5000   10000   15000
 126          DQ       0       0    1335    6335   11335
```

1	0820	51	.01	.01	.00	0.	*	2	0100	151	.00	.00	.00	0.
1	0830	52	.01	.01	.00	0.	*	2	0110	152	.00	.00	.00	0.
1	0840	53	.01	.01	.00	0.	*	2	0120	153	.00	.00	.00	0.
1	0850	54	.01	.01	.00	0.	*	2	0130	154	.00	.00	.00	0.
1	0900	55	.01	.01	.00	0.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	0.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	0.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	0.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	1.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	1.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	2.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.02	.02	.00	3.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.02	.02	.00	4.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.02	.02	.00	5.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.03	.03	.00	7.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.03	.03	.01	9.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.04	.03	.01	12.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.04	.03	.01	15.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.05	.04	.01	19.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.05	.04	.01	25.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.20	.14	.07	48.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.37	.20	.17	131.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.54	.22	.32	310.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.09	.03	.06	453.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.07	.02	.05	387.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.05	.02	.04	259.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.05	.01	.03	181.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.03	.01	.02	131.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.01	94.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.05	.01	.03	73.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.04	.01	.03	73.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.02	72.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.02	.01	.02	62.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.02	.01	.01	52.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.02	.01	.01	46.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.01	42.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.01	39.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.01	36.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.01	.00	.01	33.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.01	.00	.01	31.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.01	.00	.01	29.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.01	.00	.01	28.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.01	.00	.01	27.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.01	.00	.01	26.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.01	.00	.01	25.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.01	.00	.01	24.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.01	.00	.01	24.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.01	.00	.01	24.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.01	.00	.01	24.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.01	.00	.01	24.	*	2	0910	200	.00	.00	.00	0.
							*							

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TOTAL RAINFALL = 2.94, TOTAL LOSS = 1.61, TOTAL EXCESS = 1.33

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
453.	12.17	(CFS)	82.	25.	18.	18.
		(INCHES)	1.084	1.332	1.332	1.332
		(AC-FT)	40.	50.	50.	50.

HYDROGRAPH AT 2BWE
TRANSPOSITION AREA 50.0 SQ MI

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	1		1640	101	.01	.00	.01	20.
1		0010	2	.00	.00	.00	0.	1		1650	102	.01	.00	.01	19.
1		0020	3	.00	.00	.00	0.	1		1700	103	.01	.00	.01	18.
1		0030	4	.01	.01	.00	0.	1		1710	104	.01	.00	.01	18.
1		0040	5	.01	.01	.00	0.	1		1720	105	.01	.00	.01	18.
1		0050	6	.01	.01	.00	0.	1		1730	106	.01	.00	.01	17.
1		0100	7	.01	.01	.00	0.	1		1740	107	.01	.00	.01	17.
1		0110	8	.01	.01	.00	0.	1		1750	108	.01	.00	.01	17.
1		0120	9	.01	.01	.00	0.	1		1800	109	.01	.00	.01	16.
1		0130	10	.01	.01	.00	0.	1		1810	110	.01	.00	.01	15.
1		0140	11	.01	.01	.00	0.	1		1820	111	.01	.00	.01	15.
1		0150	12	.01	.01	.00	0.	1		1830	112	.01	.00	.01	14.
1		0200	13	.01	.01	.00	0.	1		1840	113	.01	.00	.01	14.
1		0210	14	.01	.01	.00	0.	1		1850	114	.01	.00	.01	14.
1		0220	15	.01	.01	.00	0.	1		1900	115	.01	.00	.01	14.
1		0230	16	.01	.01	.00	0.	1		1910	116	.01	.00	.01	14.
1		0240	17	.01	.01	.00	0.	1		1920	117	.01	.00	.01	14.
1		0250	18	.01	.01	.00	0.	1		1930	118	.01	.00	.01	14.
1		0300	19	.01	.01	.00	0.	1		1940	119	.01	.00	.01	14.
1		0310	20	.01	.01	.00	0.	1		1950	120	.01	.00	.00	14.
1		0320	21	.01	.01	.00	0.	1		2000	121	.01	.00	.00	13.
1		0330	22	.01	.01	.00	0.	1		2010	122	.01	.00	.00	12.
1		0340	23	.01	.01	.00	0.	1		2020	123	.01	.00	.00	11.
1		0350	24	.01	.01	.00	0.	1		2030	124	.01	.00	.00	11.
1		0400	25	.01	.01	.00	0.	1		2040	125	.01	.00	.00	11.
1		0410	26	.01	.01	.00	0.	1		2050	126	.01	.00	.00	11.
1		0420	27	.01	.01	.00	0.	1		2100	127	.01	.00	.00	11.
1		0430	28	.01	.01	.00	0.	1		2110	128	.01	.00	.00	11.
1		0440	29	.01	.01	.00	0.	1		2120	129	.01	.00	.00	11.
1		0450	30	.01	.01	.00	0.	1		2130	130	.01	.00	.00	11.
1		0500	31	.01	.01	.00	0.	1		2140	131	.01	.00	.00	11.
1		0510	32	.01	.01	.00	0.	1		2150	132	.01	.00	.00	11.
1		0520	33	.01	.01	.00	0.	1		2200	133	.01	.00	.00	11.
1		0530	34	.01	.01	.00	0.	1		2210	134	.01	.00	.00	11.
1		0540	35	.01	.01	.00	0.	1		2220	135	.01	.00	.00	11.
1		0550	36	.01	.01	.00	0.	1		2230	136	.01	.00	.00	11.
1		0600	37	.01	.01	.00	0.	1		2240	137	.01	.00	.00	11.
1		0610	38	.01	.01	.00	0.	1		2250	138	.01	.00	.01	11.
1		0620	39	.01	.01	.00	0.	1		2300	139	.01	.00	.01	14.
1		0630	40	.01	.01	.00	0.	1		2310	140	.01	.00	.00	16.
1		0640	41	.01	.01	.00	0.	1		2320	141	.01	.00	.00	15.
1		0650	42	.01	.01	.00	0.	1		2330	142	.01	.00	.00	13.
1		0700	43	.01	.01	.00	0.	1		2340	143	.00	.00	.00	11.
1		0710	44	.01	.01	.00	0.	1		2350	144	.00	.00	.00	9.
1		0720	45	.01	.01	.00	0.	2		0000	145	.00	.00	.00	6.
1		0730	46	.01	.01	.00	0.	2		0010	146	.00	.00	.00	4.
1		0740	47	.01	.01	.00	0.	2		0020	147	.00	.00	.00	2.
1		0750	48	.01	.01	.00	0.	2		0030	148	.00	.00	.00	1.
1		0800	49	.01	.01	.00	0.	2		0040	149	.00	.00	.00	0.
1		0810	50	.01	.01	.00	0.	2		0050	150	.00	.00	.00	0.
1		0820	51	.01	.01	.00	0.	2		0100	151	.00	.00	.00	0.

1	0850	54	.01	.01	.00	0.	*	2	0130	154	.00	.00	.00	0.		
1	0900	55	.01	.01	.00	0.	*	2	0140	155	.00	.00	.00	0.		
1	0910	56	.01	.01	.00	0.	*	2	0150	156	.00	.00	.00	0.		
1	0920	57	.01	.01	.00	0.	*	2	0200	157	.00	.00	.00	0.		
1	0930	58	.01	.01	.00	0.	*	2	0210	158	.00	.00	.00	0.		
1	0940	59	.02	.02	.00	0.	*	2	0220	159	.00	.00	.00	0.		
1	0950	60	.02	.02	.00	0.	*	2	0230	160	.00	.00	.00	0.		
1	1000	61	.02	.02	.00	0.	*	2	0240	161	.00	.00	.00	0.		
1	1010	62	.02	.02	.00	1.	*	2	0250	162	.00	.00	.00	0.		
1	1020	63	.02	.02	.00	2.	*	2	0300	163	.00	.00	.00	0.		
1	1030	64	.02	.02	.00	2.	*	2	0310	164	.00	.00	.00	0.		
1	1040	65	.03	.02	.00	4.	*	2	0320	165	.00	.00	.00	0.		
1	1050	66	.03	.03	.00	5.	*	2	0330	166	.00	.00	.00	0.		
1	1100	67	.03	.03	.00	7.	*	2	0340	167	.00	.00	.00	0.		
1	1110	68	.04	.03	.01	10.	*	2	0350	168	.00	.00	.00	0.		
1	1120	69	.04	.03	.01	13.	*	2	0400	169	.00	.00	.00	0.		
1	1130	70	.05	.04	.01	18.	*	2	0410	170	.00	.00	.00	0.		
1	1140	71	.18	.13	.05	36.	*	2	0420	171	.00	.00	.00	0.		
1	1150	72	.34	.20	.14	103.	*	2	0430	172	.00	.00	.00	0.		
1	1200	73	.49	.22	.27	253.	*	2	0440	173	.00	.00	.00	0.		
1	1210	74	.08	.03	.05	376.	*	2	0450	174	.00	.00	.00	0.		
1	1220	75	.06	.02	.04	324.	*	2	0500	175	.00	.00	.00	0.		
1	1230	76	.05	.02	.03	218.	*	2	0510	176	.00	.00	.00	0.		
1	1240	77	.04	.01	.03	153.	*	2	0520	177	.00	.00	.00	0.		
1	1250	78	.03	.01	.02	111.	*	2	0530	178	.00	.00	.00	0.		
1	1300	79	.01	.00	.01	80.	*	2	0540	179	.00	.00	.00	0.		
1	1310	80	.04	.01	.03	62.	*	2	0550	180	.00	.00	.00	0.		
1	1320	81	.03	.01	.02	62.	*	2	0600	181	.00	.00	.00	0.		
1	1330	82	.02	.01	.02	62.	*	2	0610	182	.00	.00	.00	0.		
1	1340	83	.02	.01	.01	53.	*	2	0620	183	.00	.00	.00	0.		
1	1350	84	.02	.01	.01	45.	*	2	0630	184	.00	.00	.00	0.		
1	1400	85	.02	.01	.01	40.	*	2	0640	185	.00	.00	.00	0.		
1	1410	86	.02	.00	.01	36.	*	2	0650	186	.00	.00	.00	0.		
1	1420	87	.02	.00	.01	33.	*	2	0700	187	.00	.00	.00	0.		
1	1430	88	.01	.00	.01	31.	*	2	0710	188	.00	.00	.00	0.		
1	1440	89	.01	.00	.01	29.	*	2	0720	189	.00	.00	.00	0.		
1	1450	90	.01	.00	.01	26.	*	2	0730	190	.00	.00	.00	0.		
1	1500	91	.01	.00	.01	25.	*	2	0740	191	.00	.00	.00	0.		
1	1510	92	.01	.00	.01	24.	*	2	0750	192	.00	.00	.00	0.		
1	1520	93	.01	.00	.01	24.	*	2	0800	193	.00	.00	.00	0.		
1	1530	94	.01	.00	.01	23.	*	2	0810	194	.00	.00	.00	0.		
1	1540	95	.01	.00	.01	22.	*	2	0820	195	.00	.00	.00	0.		
1	1550	96	.01	.00	.01	21.	*	2	0830	196	.00	.00	.00	0.		
1	1600	97	.01	.00	.01	21.	*	2	0840	197	.00	.00	.00	0.		
1	1610	98	.01	.00	.01	21.	*	2	0850	198	.00	.00	.00	0.		
1	1620	99	.01	.00	.01	21.	*	2	0900	199	.00	.00	.00	0.		
1	1630	100	.01	.00	.01	21.	*	2	0910	200	.00	.00	.00	0.		

****

TOTAL RAINFALL = 2.66, TOTAL LOSS = 1.54, TOTAL EXCESS = 1.12

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
376.	12.17	(CFS)	69.	21.	15.	15.
		(INCHES)	.910	1.117	1.117	1.117
		(AC-FT)	34.	42.	42.	42.

CUMULATIVE AREA = .70 SQ MI

[redacted] INTERPOLATED HYDROGRAPH AT [redacted] 2EWE [redacted]

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		0820	51	0.	1		1640	101	30.	2		0100	151	0.
1		0010	2	0.	1		0830	52	1.	1		1650	102	29.	2		0110	152	0.
1		0020	3	0.	1		0840	53	1.	1		1700	103	27.	2		0120	153	0.
1		0030	4	0.	1		0850	54	1.	1		1710	104	27.	2		0130	154	0.
1		0040	5	0.	1		0900	55	2.	1		1720	105	26.	2		0140	155	0.
1		0050	6	0.	1		0910	56	3.	1		1730	106	26.	2		0150	156	0.
1		0100	7	0.	1		0920	57	3.	1		1740	107	26.	2		0200	157	0.
1		0110	8	0.	1		0930	58	4.	1		1750	108	26.	2		0210	158	0.
1		0120	9	0.	1		0940	59	5.	1		1800	109	25.	2		0220	159	0.
1		0130	10	0.	1		0950	60	6.	1		1810	110	23.	2		0230	160	0.
1		0140	11	0.	1		1000	61	7.	1		1820	111	22.	2		0240	161	0.
1		0150	12	0.	1		1010	62	8.	1		1830	112	21.	2		0250	162	0.
1		0200	13	0.	1		1020	63	10.	1		1840	113	21.	2		0300	163	0.
1		0210	14	0.	1		1030	64	12.	1		1850	114	21.	2		0310	164	0.
1		0220	15	0.	1		1040	65	14.	1		1900	115	21.	2		0320	165	0.
1		0230	16	0.	1		1050	66	18.	1		1910	116	21.	2		0330	166	0.
1		0240	17	0.	1		1100	67	22.	1		1920	117	21.	2		0340	167	0.
1		0250	18	0.	1		1110	68	28.	1		1930	118	21.	2		0350	168	0.
1		0300	19	0.	1		1120	69	34.	1		1940	119	21.	2		0400	169	0.
1		0310	20	0.	1		1130	70	42.	1		1950	120	21.	2		0410	170	0.
1		0320	21	0.	1		1140	71	76.	1		2000	121	20.	2		0420	171	0.
1		0330	22	0.	1		1150	72	197.	1		2010	122	18.	2		0430	172	0.
1		0340	23	0.	1		1200	73	444.	1		2020	123	17.	2		0440	173	0.
1		0350	24	0.	1		1210	74	631.	1		2030	124	16.	2		0450	174	0.
1		0400	25	0.	1		1220	75	533.	1		2040	125	16.	2		0500	175	0.
1		0410	26	0.	1		1230	76	353.	1		2050	126	16.	2		0510	176	0.
1		0420	27	0.	1		1240	77	245.	1		2100	127	16.	2		0520	177	0.
1		0430	28	0.	1		1250	78	176.	1		2110	128	16.	2		0530	178	0.
1		0440	29	0.	1		1300	79	125.	1		2120	129	16.	2		0540	179	0.
1		0450	30	0.	1		1310	80	96.	1		2130	130	16.	2		0550	180	0.
1		0500	31	0.	1		1320	81	96.	1		2140	131	16.	2		0600	181	0.
1		0510	32	0.	1		1330	82	95.	1		2150	132	16.	2		0610	182	0.
1		0520	33	0.	1		1340	83	81.	1		2200	133	16.	2		0620	183	0.
1		0530	34	0.	1		1350	84	69.	1		2210	134	16.	2		0630	184	0.
1		0540	35	0.	1		1400	85	61.	1		2220	135	16.	2		0640	185	0.
1		0550	36	0.	1		1410	86	55.	1		2230	136	16.	2		0650	186	0.
1		0600	37	0.	1		1420	87	50.	1		2240	137	16.	2		0700	187	0.
1		0610	38	0.	1		1430	88	47.	1		2250	138	17.	2		0710	188	0.
1		0620	39	0.	1		1440	89	43.	1		2300	139	20.	2		0720	189	0.
1		0630	40	0.	1		1450	90	40.	1		2310	140	23.	2		0730	190	0.
1		0640	41	0.	1		1500	91	38.	1		2320	141	22.	2		0740	191	0.
1		0650	42	0.	1		1510	92	37.	1		2330	142	19.	2		0750	192	0.
1		0700	43	0.	1		1520	93	36.	1		2340	143	17.	2		0800	193	0.
1		0710	44	0.	1		1530	94	34.	1		2350	144	14.	2		0810	194	0.
1		0720	45	0.	1		1540	95	33.	2		0000	145	10.	2		0820	195	0.
1		0730	46	0.	1		1550	96	32.	2		0010	146	5.	2		0830	196	0.
1		0740	47	0.	1		1600	97	31.	2		0020	147	3.	2		0840	197	0.
1		0750	48	0.	1		1610	98	31.	2		0030	148	1.	2		0850	198	0.
1		0800	49	0.	1		1620	99	31.	2		0040	149	1.	2		0900	199	0.
1		0810	50	0.	1		1630	100	31.	2		0050	150	0.	2		0910	200	0.

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR

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                    CUMULATIVE AREA =      .70 SQ MI

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO     1462.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
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RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	15	1599.	12.00	252.	77.	56.	1.76		
ROUTED TO	R15	1601.	12.17	252.	77.	56.	1.76		
HYDROGRAPH AT	14	1099.	12.00	155.	47.	34.	1.11		
HYDROGRAPH AT	16	1678.	12.17	334.	103.	74.	2.16		
3 COMBINED AT	114	4015.	12.17	715.	220.	159.	5.03		
ROUTED TO	R114	3709.	12.33	715.	220.	159.	5.03		
HYDROGRAPH AT	13	1673.	12.00	211.	65.	47.	1.29		
2 COMBINED AT	113	4186.	12.33	910.	280.	203.	6.32		
ROUTED TO	R113	3990.	12.50	909.	280.	203.	6.32		
HYDROGRAPH AT	12	1446.	12.17	242.	75.	54.	1.32		
2 COMBINED AT	112	4742.	12.33	1132.	350.	253.	7.64		
ROUTED TO	R112	4715.	12.50	1131.	350.	253.	7.64		
HYDROGRAPH AT	11	938.	12.00	145.	45.	33.	.70		
HYDROGRAPH AT	17	399.	12.00	53.	16.	12.	.37		
HYDROGRAPH AT	10	570.	12.00	77.	24.	17.	.54		
4 COMBINED AT	111	5365.	12.33	1376.	426.	308.	9.25		
ROUTED TO	RD111	5014.	13.00	1374.	426.	308.	9.25		
HYDROGRAPH AT	2A	1071.	12.17	172.	53.	38.	1.09		
2 COMBINED AT	CP2A	5101.	13.00	1516.	471.	341.	10.34		
DIVERSION TO	FLOW	0.	.17	0.	0.	0.	10.34		
HYDROGRAPH AT	DIVERT	5101.	13.00	1516.	471.	341.	10.34		
ROUTED TO	RR2A	4777.	13.50	1513.	471.	341.	10.34		
HYDROGRAPH AT	2BE	827.	12.33	192.	59.	43.	1.22		
2 COMBINED AT	1C2B	4851.	13.50	1650.	515.	373.	11.56		
ROUTED TO	DET2BE	4348.	13.67	1636.	515.	372.	11.56	1647.43	13.83
DIVERSION TO	SPILL	751.	13.67	45.	11.	8.	11.56		

ROUTED TO	CPAN	3602.	14.00	1589.	503.	364.	11.56		
ROUTED TO	WASH	3520.	14.33	1585.	503.	364.	11.56		
HYDROGRAPH AT	RSPILL	751.	13.67	45.	11.	8.	11.56		
ROUTED TO	IDAHO	741.	13.83	45.	11.	8.	11.56		
2 COMBINED AT	WW	3663.	14.00	1631.	515.	372.	11.56		
ROUTED TO	RWW	3433.	15.33	1622.	514.	372.	11.56		
HYDROGRAPH AT	2BWW	346.	12.33	73.	23.	16.	.45		
HYDROGRAPH AT	2BWE	631.	12.17	112.	35.	25.	.70		
ROUTED TO	DET2BW	194.	12.67	97.	34.	25.	.70	1627.96	13.00
2 COMBINED AT	CC04	446.	12.33	164.	55.	40.	1.15		
DIVERSION TO	EXIT	0.	.17	0.	0.	0.	1.15		
HYDROGRAPH AT	NDIV	446.	12.33	164.	55.	40.	1.15		
ROUTED TO	NDROUT	435.	12.50	164.	55.	40.	1.15	1625.15	12.33
ROUTED TO	R2BW	406.	12.83	164.	55.	40.	1.15		
HYDROGRAPH AT	2BS	1456.	12.17	273.	84.	61.	1.91		
3 COMBINED AT	102	3491.	15.33	1792.	612.	443.	14.62		
HYDROGRAPH AT	5	3247.	12.67	952.	296.	214.	5.65		
ROUTED TO	R5	3263.	12.67	952.	296.	214.	5.65		
HYDROGRAPH AT	4	4484.	13.17	1957.	616.	446.	11.85		
2 COMBINED AT	104	6398.	13.00	2661.	835.	604.	17.50		
ROUTED TO	R104	6107.	13.50	2656.	835.	604.	17.50		
HYDROGRAPH AT	7	652.	12.17	114.	35.	26.	.61		
HYDROGRAPH AT	6	3094.	13.00	1200.	374.	271.	7.86		
3 COMBINED AT	106	7930.	13.33	3502.	1103.	798.	25.97		
ROUTED TO	R106	7721.	13.67	3498.	1103.	798.	25.97		
HYDROGRAPH AT	3N	2361.	12.33	499.	154.	112.	2.89		
ROUTED TO	CLLV	2206.	12.33	499.	154.	112.	2.89	1667.53	12.33
ROUTED TO	RCLLV	1936.	12.83	498.	154.	112.	2.89		
HYDROGRAPH AT	3S	1913.	12.33	415.	128.	93.	2.39		
2 COMBINED AT	103	2884.	12.67	893.	277.	200.	5.28		
HYDROGRAPH AT	3A	1054.	12.33	221.	68.	50.	1.20		

2 COMBINED AT	W103	8352.	13.50	4134.	1308.	947.	32.45		
ROUTED TO	RW103	8302.	13.67	4131.	1308.	947.	32.45		
2 COMBINED AT	PLD	7954.	13.83	4951.	1610.	1165.	47.07		
ROUTED TO	RES	153.	27.17	153.	133.	114.	47.07	1580.54	27.17

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BE

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1651.75	1.75	180.	5937.	1.00	13.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1650.90	.90	167.	4531.	.67	13.67	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1648.99	.00	137.	3214.	.00	13.83	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1647.43	.00	114.	2711.	.00	13.83	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET28W

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1630.74	.74	31.	300.	1.00	12.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1629.83	.00	27.	131.	.00	13.00	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1628.65	.00	21.	107.	.00	13.00	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1627.96	.00	17.	92.	.00	13.00	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDPOUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.87	.00	2.	530.	.00	12.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.14	.00	1.	398.	.00	12.33	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1625.59	.00	1.	317.	.00	12.33	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1625.15	.00	1.	257.	.00	12.33	.00

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 127          KK    CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 128          KM     ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 129          RM       1       .1       .3

 130          KK    WASH   ROUTE FLOWS THROUGH THE WASH
 131          KM      ROUTE FLOWS THROUGH THE NATURAL WASH SYSTEM
 132          RM       2      .50       .3

 133          KK  RSPILL
 134          KM    RETRIEVE FLOW DIVERTED FROM THE EMERGENCY SPILLWAY
 135          DR   SPILL

 136          KK   IDAHO
 137          KM    ROUTE THE RETRIEVED FLOW DOWN IDAHO RD.
 138          RM       1       .1       .3

 139          KK      WW
 140          KM     COMBINE ALL FLOWS FROM FREEWAY
 141          HC       2

 142          KK     RWW
 143          KM     ROUTE FLOWS TO POWERLINE F.P.S.
 144          RM       4      .98       .3

 145          KK    2EWW  WATERSHED 2E WEST, WEST
 146          KM      HYDROGRAPH FOR WATERSHED 2B WEST, WEST
 147          BA     .45
 148          LS       0       82
 149          UD      .4

 150          KK    2EWE  WATERSHED 2E WEST, EAST
 151          KM     RUNOFF FROM EAST OF IDAHO ROAD 2B WEST, EAST
 152          EA     .70
 153          LS       0       82
 154          UD      .3

 155          KK  DET2BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 156          KM      ROUTE FLOWS THROUGH THE DETENTION NORTH OF THE SUPERSTITION FREEWAY
 157          RS       1    ELEV  1623.5
 158          SV       0      .6      8.3     17.5     28.2     36.0     48.6
 159          SE  1623.5  1624.0  1626.0  1628.0  1630.0  1632.0  1634.0
 160          SQ       0       0      31      93      135      169      208
 161          ST  1630.0     110     2.2     1.5

 162          KK    CC04  COMBINE FLOWS JUST NORTH OF FREEWAY
 163          KM    COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 164          HC       2

 165          KK    NDIV
 166          KM    DIVERSION OF FLOW OVER THE NORTH DIVERSION DAM.
 167          DT    EXIT
 168          DI       0    1218    5000   10000
 169          DQ       0       0    3782    8782
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 170          KK  NDPCUT  ROUTE THROUGH THE FREEWAY
 171          KM    RCUTE COMBINED FLOW THROUGH 2 - 10  X 8  BOX CULVERTS
 172          RS       1    ELEV  1622.6
 173          SV       C    0.02    0.16    1.12    4.17   25.42
 174          SE  1622.6  1623.0  1624.0  1626.0  1628.0  1630.0
 175          SQ       0       0     101     372     738    1111
 176          ST  1630.0    2875     2.2     1.5

 177          KK    R2RW  ROUTE TO CP102
 178          KM     ROUTE THE FLOWS FROM DETENTION POND TO CP102 (POWERLINE F.R.S.)
 179          RM       2     .40      .3

 180          KK     2BS  WATERSHED 2B SOUTH OF SUPERTITION FREEWAY
 181          KM     HYDROGRAPH FOR WATERSHED 2B SOUTH
 182          BA    1.91
 183          LS       0      80
 184          UD     .32

 185          KK     102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 186          KM     COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 187          HC       3

 188          KK       5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 189          KM     HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 190          BA    5.65
 191          LS       0      85
 192          UD     .71

 193          KK      R5 ROUTE HYDROGRAPH FROM WS 5 TO CP 104
 194          KM      ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 195          RM       1     .07      .3

 196          KK       4 WATERSHED 4
 197          KM      HYDROGRAPH FOR WATERSHED 4
 198          BA   11.85
 199          LS       0      86
 200          UD    1.30

 201          KK     104  CONCENTRATION POINT 104
 202          KM     COMBINE HYDROGRAPHS AT CP 104
 203          HC       2

 204          KK    R104
 205          KM    ROUTE CP 104 TO 106
 206          RM       2     .50      .3

 207          KK       7  WATERSHED 7
 208          KM    HYDROGRAPH FOR WATERSHED 7
 209          BA     .61
 210          LS       0      86
 211          UD      .3
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 212          KK       6 WATERSHED 6
 213          KM      HYDROGRAPH FOR WATERSHED 6
 214          BA    7.86
 215          LS       0       83
 216          UD    1.08

 217          KK     106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 218          KM      COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 219          HC       3

 220          KK    R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
 221          KM      ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 222          RM       1      .27      .3

 223          KK      3N WATERSHED 3N
 224          KM      HYDROGRAPH FOR WATERSHED 3N
 225          BA    2.39
 226          LS       0       85
 227          UD     .41

 228          KK    CULV   ROUTE FLOWS THROUGH CULVERTS
 229          KM     ROUTE FLOWS THROUGH THE CULVERTS
 230          RS     1.0    ELEV    1665
 231          SV       0     .15     .60     1.5     3.1     5.6     9.1    13.7   19.45   26.35
 232          SE    1665  1665.5    1666  1666.5    1667  1667.5    1668  1668.5    1669  1669.5
 233          SQ       0     119     375     688    1063    1462    1938    2375    2875    3375

 234          KK   RCULV  ROUTE FLOWS TO W103
 235          KM     ROUTE THE FLOWS TO CONCENTRATION POINT W103
 236          RM       2      .5      .3

 237          KK      3S  WATERSHED 3 SOUTH
 238          KM      HYDROGRAPH FOR WATERSHED 3 SOUTH
 239          BA    2.39
 240          LS       0       85
 241          UD    .436

 242          KK     103
 243          HC       2

 244          KK      3A   WATERSHED 3A
 245          KM     HYDROGRAPH FOR WATERSHED 3A
 246          BA    1.20
 247          LS       0       86
 248          UD      .4

 249          KK    CP103
 250          KM     CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
 251          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 252          KK    W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 253          KM      COMBINE HYDRCGRAPHS FROM CP 104 AND WS 3 - SIPHCN DRAW WATERSHED
 254          HC       2

 255          KK   RW103 RCUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 256          KM      ROUTE THE HYDROGRAPH TO POWERLINE DAM
 257          RM       1     .16      .3

 258          KK     PLD CONCENTRATION PT. AT POWERLINE DAM
 259          KM     COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 260          HC       2

 261          KK     RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 262          KM     RESERVOIR RATING CURVE
 263          RS       1    ELEV  1568.2
 264          SV       0     175     380     700    1100    1600    2175    2875    3675    4200
 265          SV    4600    5525    6725    7925   13200
 266          SQ       0      75      92     106     119     130     141     150     159     165
 267          SQ    1228    7360   16800   27280   39200
 268          SE  1568.1  1568.2  1570.0  1572.1  1574.1  1576.1  1578.1  1580.1  1582.1  1583.3
 269          SE  1584.1  1586.1  1588.1  1590.1  1591.6
 270          SS  1583.3       0       0       0
 271          ST  1591.6   13358     2.2     1.5
 272          ZZ
```

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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO     1462.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
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*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             FEBRUARY 1981             *
*           REVISED 31 JAN 85           *
*                                       *
*  RUN DATE11/ 1/1988   TIME14:38:22 *
*                                       *
*****************************************
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*  (916) 440-3285 OR (FTS) 448-3285   *
*                                       *
*****************************************
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                    WEEKES WASH - POWERLINE F.R.S  ANALYSIS
                    CONVERSION OF MODEL FROM TR-20
                                 1/2 PMF, & FULL PMF ;SCS EXCESS & HYDROGRAPH
                                 DEVELOPMENT, MUSKINGUM ROUTING
                          CONDITIONS:- 1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
                                          POINT OF WEEKES WASH AT JUNCTION ROAD.
                                       2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
                                          AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
                                          LOTS, WITH NO DETENTION REQUIREMENTS.  WORST-CASE SCENA
                                       3: SUPERSTITION FREEWAY IN PLACE.
                                       4: ADJUSTED WATERSHED AREAS.
                                       5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
                                       6: MODIFICATIONS TO POWERLINE F.R.S. -  RAISE

 15 IO          OUTPUT CONTROL VARIABLES
                      IPRNT            5  PRINT CONTROL
                      IPLOT            0  PLOT CONTROL
                      QSCAL           0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN           10  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1     0  STARTING DATE
                      ITIME         0000  STARTING TIME
                         NQ          400  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      3     0  ENDING DATE
                     NDTIME         1830  ENDING TIME

                  COMPUTATION INTERVAL     .17 HOURS
                       TOTAL TIME BASE   66.50 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

    JP          MULTI-PLAN OPTION
                      NPLAN            1  NUMBER OF PLANS

    JR          MULTI-RATIO OPTION
                    RATIOS OF RUNOFF
                    .50      1.00

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

(V) ROUTING (---->) DIVERSION OR PUMP FLOW

(.) CONNECTOR (<---) RETURN OF DIVERTED OR PUMPED FLOW

```
INPUT
 LINE
 NO.

 17          15
              V
              V
 25         R15
              .
              .
 28           .          14
              .           .
              .           .
 33           .           .          16
              .           .           .
              .           .           .
 38         114.......................
              V
              V
 41        R114
              .
              .
 44           .          13
              .           .
              .           .
 49         113............
              V
              V
 52        R113
              .
              .
 55           .          12
              .           .
              .           .
 60         112............
              V
              V
 63        R112
              .
              .
 66           .          11
              .           .
              .           .
 71           .           .          17
              .           .           .
              .           .           .
 76           .           .           .          10
              .           .           .           .
              .           .           .           .
 81         111.......................................
              V
              V
 84       RD111
              .
              .
 87           .          2A
              .           .
              .           .
 92       CP2A............
```

```
                .
                .-------->  VER
 95          FLOW
                V
                V
 99          RR2A
                .
                .
102             .          2BE
                .           .
                .           .
107          102B.............
                V
                V
110        DET2BE
                .
                .
124             .-------->   SPILL
122         FRWAY
                V
                V
127          CHAN
                V
                V
130          WASH
                .
                .
135             .           .<-------    SPILL
133             .       RSPILL
                .           V
                .           V
136             .        IDAHO
                .           .
                .           .
139            WW.............
                V
                V
142           RWW
                .
                .
145             .        2BWW
                .           .
                .           .
150             .           .        2BWE
                .           .           V
                .           .           V
155             .           .      DET2BW
                .           .           .
                .           .           .
162             .        C004.............
                .           .
                .           .
167             .           .-------->    EXIT
165             .        NDIV
                .           V
                .           V
170             .      NDROUT
                .           V
                .           V
177             .        R2BW
                .           .
                .           .
180             .           .         2BS
```

```
183        102.......................
           .
188        .          5
           .          V
           .          V
193        .         R5
           .          .
           .          .
196        .          .          4
           .          .          .
           .          .          .
201        .        104..........
           .          V
           .          V
204        .       R104
           .          .
           .          .
207        .          .          7
           .          .          .
           .          .          .
212        .          .          .          6
           .          .          .          .
           .          .          .          .
217        .        106.......................
           .          V
           .          V
220        .       R106
           .          .
           .          .
223        .          .         3N
           .          .          V
           .          .          V
228        .          .       CULV
           .          .          V
           .          .          V
234        .          .      RCULV
           .          .          .
           .          .          .
237        .          .          .          3S
           .          .          .          .
           .          .          .          .
242        .          .        103..........
           .          .          .
           .          .          .
244        .          .          .          3A
           .          .          .          .
           .          .          .          .
249        .          .      CP103..........
           .          .          .
           .          .          .
252        .       W103..........
           .          V
           .          V
255        .      RW103
           .          .
           .          .
258      PLD..........
           V
           V
261      RES
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO FLOWS RATIO 1 .50	RATIO 2 1.00
HYDROGRAPH AT	15	1.76	1	FLOW	3760.	7520.
				TIME	5.00	5.00
ROUTED TO	R15	1.76	1	FLOW	3709.	7419.
				TIME	5.00	5.00
HYDROGRAPH AT	14	1.11	1	FLOW	2371.	4743.
				TIME	5.00	5.00
HYDROGRAPH AT	16	2.16	1	FLOW	4360.	8720.
				TIME	5.00	5.00
3 COMBINED AT	114	5.03	1	FLOW	10441.	20881.
				TIME	5.00	5.00
ROUTED TO	R114	5.03	1	FLOW	10105.	20210.
				TIME	5.17	5.17
HYDROGRAPH AT	13	1.29	1	FLOW	2819.	5638.
				TIME	5.00	5.00
2 COMBINED AT	113	6.32	1	FLOW	12728.	25455.
				TIME	5.00	5.00
ROUTED TO	R113	6.32	1	FLOW	12291.	24582.
				TIME	5.17	5.17
HYDROGRAPH AT	12	1.32	1	FLOW	2836.	5672.
				TIME	5.00	5.00
2 COMBINED AT	112	7.64	1	FLOW	14756.	29511.
				TIME	5.17	5.17
ROUTED TO	R112	7.64	1	FLOW	14704.	29408.
				TIME	5.17	5.17
HYDROGRAPH AT	11	.70	1	FLOW	1554.	3108.
				TIME	5.00	5.00
HYDROGRAPH AT	17	.37	1	FLOW	792.	1583.
				TIME	5.00	5.00
HYDROGRAPH AT	10	.54	1	FLOW	1155.	2310.
				TIME	5.00	5.00
4 COMBINED AT	111	9.25	1	FLOW	17167.	34335.
				TIME	5.00	5.00
ROUTED TO	RD111	9.25	1	FLOW	16004.	32007.
				TIME	5.67	5.67

HYDROGRAPH AT	2A	1.09	1	FLOW	2332.	4665.
				TIME	5.00	5.00
2 COMBINED AT	CF2A	10.34	1	FLOW	16244.	32489.
				TIME	5.67	5.67
DIVERSION TO	DIVERT	10.34	1	FLOW	5277.	14114.
				TIME	5.67	5.67
HYDROGRAPH AT	FLOW	10.34	1	FLOW	10967.	18375.
				TIME	5.67	5.67
ROUTED TO	RR2A	10.34	1	FLOW	10575.	17591.
				TIME	6.17	6.17
HYDROGRAPH AT	2BE	1.22	1	FLOW	2281.	4561.
				TIME	5.17	5.17
2 COMBINED AT	1C2B	11.56	1	FLOW	10964.	18374.
				TIME	6.00	6.00
ROUTED TO	DET2BE	11.56	1	FLOW	10899.	18303.
				TIME	6.17	6.17
			** PEAK STAGES IN FEET **			
			1	STAGE	1654.27	1656.98
				TIME	6.17	6.17
DIVERSION TO	SPILL	11.56	1	FLOW	7234.	14638.
				TIME	6.17	6.17
HYDROGRAPH AT	FRWAY	11.56	1	FLOW	3665.	3665.
				TIME	4.67	5.67
ROUTED TO	CHAN	11.56	1	FLOW	3685.	3668.
				TIME	4.83	3.83
ROUTED TO	WASH	11.56	1	FLOW	3665.	3665.
				TIME	7.17	6.33
HYDROGRAPH AT	RSPILL	.00	1	FLOW	7234.	14638.
				TIME	6.17	6.17
ROUTED TO	IDAHO	.00	1	FLOW	7157.	14456.
				TIME	6.33	6.17
2 COMBINED AT	WW	11.56	1	FLOW	10821.	18121.
				TIME	6.33	6.17
ROUTED TO	RWW	11.56	1	FLOW	10310.	17192.
				TIME	7.17	7.17
HYDROGRAPH AT	2EWW	.45	1	FLOW	878.	1756.
				TIME	5.00	5.00
HYDROGRAPH AT	2EWE	.70	1	FLOW	1453.	2906.
				TIME	5.00	5.00
ROUTED TO	DET2BW	.70	1	FLOW	1390.	2822.
				TIME	5.00	5.00

** PEAK STAGES IN FEET **

2 COMBINED AT	CC04	1.15	1	FLOW	2268.	4578.
				TIME	5.00	5.00
DIVERSION TO	EXIT	1.15	1	FLOW	1050.	3360.
				TIME	5.00	5.00
HYDROGRAPH AT	NDIV	1.15	1	FLOW	1218.	1218.
				TIME	4.67	4.33
ROUTED TO	NDRCUT	1.15	1	FLOW	1100.	1218.
				TIME	5.50	5.67
			** PEAK STAGES IN FEET **			
			1	STAGE	1629.94	1630.06
				TIME	5.50	5.67
ROUTED TO	R2BW	1.15	1	FLOW	1074.	1182.
				TIME	5.83	6.00
HYDROGRAPH AT	2BS	1.91	1	FLOW	3869.	7738.
				TIME	5.00	5.00
3 COMBINED AT	102	14.62	1	FLOW	10459.	17405.
				TIME	7.17	7.17
HYDROGRAPH AT	5	5.65	1	FLOW	9317.	18635.
				TIME	5.33	5.33
ROUTED TO	R5	5.65	1	FLOW	9278.	18555.
				TIME	5.33	5.33
HYDROGRAPH AT	4	11.85	1	FLOW	13890.	27780.
				TIME	5.83	5.83
2 COMBINED AT	104	17.50	1	FLOW	21576.	43152.
				TIME	5.50	5.50
ROUTED TO	R104	17.50	1	FLOW	20571.	41143.
				TIME	6.00	6.00
HYDROGRAPH AT	7	.61	1	FLOW	1295.	2589.
				TIME	5.00	5.00
HYDROGRAPH AT	6	7.86	1	FLOW	10170.	20341.
				TIME	5.67	5.67
3 COMBINED AT	106	25.97	1	FLOW	29515.	59030.
				TIME	6.00	6.00
ROUTED TO	R106	25.97	1	FLOW	28965.	57930.
				TIME	6.17	6.17
HYDROGRAPH AT	3N	2.89	1	FLOW	5706.	11413.
				TIME	5.00	5.00
ROUTED TO	CULV	2.89	1	FLOW	5483.	10955.
				TIME	5.17	5.17
			** PEAK STAGES IN FEET **			
			1	STAGE	1671.61	1677.08

ROUTED TO	RCLLV	2.89	1	FLOW	5058.	10083.
				TIME	5.67	5.67
HYDROGRAPH AT	3S	2.39	1	FLOW	4623.	9247.
				TIME	5.17	5.17
2 COMBINED AT	1C3	5.28	1	FLOW	8181.	16228.
				TIME	5.33	5.33
HYDROGRAPH AT	3A	1.20	1	FLOW	2402.	4805.
				TIME	5.00	5.00
2 COMBINED AT	CP1C3	6.48	1	FLOW	10431.	20634.
				TIME	5.17	5.17
2 COMBINED AT	W1C3	32.45	1	FLOW	33218.	66438.
				TIME	6.00	6.00
ROUTED TO	RW1C3	32.45	1	FLOW	33002.	66025.
				TIME	6.17	6.17
2 COMBINED AT	FLD	47.07	1	FLOW	40927.	79709.
				TIME	6.33	6.33
ROUTED TO	RES	47.07	1	FLOW	22008.	37904.
				TIME	7.67	7.67

** PEAK STAGES IN FEET **

1	STAGE	1589.09	1591.44
	TIME	7.67	7.67

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BE

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1654.27	4.27	223.	10899.	2.67	6.17	.00
1.00	1656.98	6.98	282.	18303.	4.17	6.17	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET28W

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1632.91	2.91	42.	1390.	1.83	5.00	.00
1.00	1634.87	4.87	54.	2822.	3.50	5.00	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDROUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1629.94	.00	25.	1100.	.00	5.50	.00
1.00	1630.06	.06	26.	1218.	.33	5.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1591.60
STORAGE	175.	4200.	13200.
OUTFLOW	75.	165.	39200.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1589.09	.00	7321.	22008.	.00	7.67	.00
1.00	1591.44	.00	12626.	37904.	.00	7.67	.00

```
*** NORMAL END OF HEC-1 ***
STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING          1-NOV-88        14:38:55

PROCESS 69 TERMINATED

ELAPSED TIME  0:00:50, CPU TIME  00:00:00.091, I/O BLOCKS  61
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF         1-NOV-88        14:38:54

****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix H

HEC-1 Output

Combine Alternative
Excave and Raise the Powerline F.R.S.
Probable Maximum Flood

```
$   $  $   $  $$$$          $   $   $$$   $   $
$   $  $   $  $   $         $   $  $   $  $$ $$
$   $   $ $   $   $         $   $  $      $ $ $
$$$$$    $    $   $         $ $ $   $$$   $ $ $
$   $    $    $   $         $ $ $      $  $   $
$   $    $    $   $    $$   $$ $$  $   $  $   $
$   $    $    $$$$    $$    $   $   $$$   $   $

DEST=HYD.WSM  USER=HYD.WSM  QUEUE=LPT  DEVICE=@LP8
SEQ=24593  QPRI=128  CPL=132  LPP=66  COPIES=1  PAGES=68

CREATED:  01-NOV-88  14:30:30
ENQUEUED:  01-NOV-88  15:12:12
PRINTING:  01-NOV-88  15:12:14

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:MCDPOWER.OUT

$   $   $$$   $$$$   $$$$    $$$   $   $  $$$$$  $$$$          $$$   $   $  $$$$$
$$ $$  $   $  $   $  $   $  $   $  $   $  $      $   $         $   $  $   $    $
$ $ $  $   $  $   $  $   $  $   $  $   $  $      $   $         $   $  $   $    $
$ $ $  $   $  $   $  $$$$   $   $  $ $ $  $$$$   $$$$          $   $  $   $    $
$   $  $   $  $   $  $      $   $  $ $ $  $      $ $           $   $  $   $    $
$   $  $   $  $   $  $      $   $  $$ $$  $      $  $     $$   $   $  $   $    $
$   $   $$$   $$$$   $       $$$   $   $  $$$$$  $   $    $$    $$$    $$$     $

555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555555+

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00
```

```
**** AOS/VS REV 7.62.00.00 / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00   1-NOV-88        14:30:32
QPRI=128        SEQ=24560
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?71.CLI.00001.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.24560

--------
LAST MESSAGE CHANGE      25-OCT-86        0:36:12

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


--------
MOST RECENT LOGON        1-NOV-88        14:26:34

AOS/VS CLI   REV 07.62.00.00      1-NOV-88        14:30:34
) SEARCHLIST :UTIL/:MACROS/:UDD:HYD.WSM/:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM/OWARE
)
)
) LISTFILE MODPOWER.OUT
) DATAFILE MODPOWER.DAT
) SEA :UTIL:HEC1.DIR/[!SEA]
) X HEC1_START
```

```
FLOOD HYDROGRAPH PACKAGE (HEC-1)
        FEBRUARY 1981
        REVISED 31 JAN 85

RUN DATE11/ 1/1988    TIME14:30:37
```


U. ARMY CORPS OF ENGINEERS
THE HYDROLOGIC ENGINEERING CENTER
609 SECOND STREET
DAVIS, CALIFORNIA 95616
(916) 440-3285 OR (FTS) 448-3285


```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX        XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID     WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID     CONVERSION OF MODEL FROM TR-2C
  3           ID                  1/2 PMF, & FULL PMF ;SCS EXCESS & HYDROGRAPH
  4           ID                  DEVELOPMENT, MUSKINGUM ROUTING
  5           ID        CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  6           ID                         POINT OF WEEKES WASH AT JUNCTION ROAD.
  7           ID                      2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  8           ID                         AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
  9           ID                         LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 10           ID                      3: SUPERSTITION FREEWAY IN PLACE.
 11           ID                      4: ADJUSTED WATERSHED AREAS.
 12           ID                      5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 13           ID                      6: MODIFICATIONS TO POWERLINE F.R.S. - RAISE AND STORAGE
              *DIAGRAM
 14           IT      10       0       0     400
 15           IO       5
 16           JR    FLOW      .5     1.0

 17           KK      15  WATERSHED 15
 18           KM      HYDROGRAPH FOR WATERSHED 15
 19           PB   11.08
 20           IN      60
 21           PI     .81     .75    1.71     .47    7.02     .32
 22           BA    1.76
 23           LS       0      80
 24           UD     .18

 25           KK     R15 ROUTE HYDROGRAPH FROM WS 15
 26           KM     ROUTE HYDROGRAPH FROM WATERSHED 15
 27           RM       1     .11      .3

 28           KK      14 WATERSHED 14
 29           KM     HYDROGRAPH FOR WATERSHED 14
 30           BA    1.11
 31           LS       0      79
 32           UD     .15

 33           KK      16 WATERSHED 16
 34           KM     HYDROGRAPH FOR WATERSHED 16
 35           BA    2.16
 36           LS       0      82
 37           UD     .35

 38           KK     114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
 39           KM     COMBINE ALL THREE HYDROGRAPHS AT CP 114
 40           HC       3

 41           KK    R114 ROUTE CP 114
 42           KM     ROUTE HYDROGRAPH FROM CP114 TO CP 113
 43           RM       1     .17      .3
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 44           KK      13 WATERSHED 13
 45           KM     HYDROGRAPH FOR WATERSHED 13
 46           BA    1.29
 47           LS       0       83
 48           UD    .126

 49           KK     113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
 50           KM     COMBINE HYDROGRAPHS CP 114 AND WS 13
 51           HC       2

 52           KK    R113 ROUTE CP 113 TO CP 112
 53           KM     ROUTE HYDROGRAPH FOR CP 113
 54           RM       1      .19      .3

 55           KK      12 WATERSHED 12
 56           KM     HYDROGRAPH FOR WATERSHED 12
 57           BA    1.32
 58           LS       0       86
 59           UD     .27

 60           KK     112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
 61           KM     COMBINE HYDROGRAPH FROM CP 113 AND WS 12
 62           HC       2

 63           KK    R112 ROUTE CP 112 TO CP 111
 64           KM     ROUTE HYDROGRAPH CP 112 TO CP 111
 65           RM       1      .07      .3

 66           KK      11 WATERSHED 11
 67           KM     HYDROGRAPH FOR WATERSHED 11
 68           BA     .70
 69           LS       0       89
 70           UD    .186

 71           KK      17 WATERSHED 17
 72           KM     HYDROGRAPH FOR WATERSHED 17
 73           BA     .37
 74           LS       0       79
 75           UD    .138

 76           KK      10   WATERSHED 10
 77           KM     HYDROGRAPH FOR WATERSHED 10
 78           BA     .54
 79           LS       0       79
 80           UD     .14

 81           KK     111 CONCENTRATION PT. 111
 82           KM     COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
 83           HC       4
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 84           KK   RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
 85           KM     ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
 86           RM       5      .64       .3

 87           KK      2A  WATERSHED 2A
 88           KM      HYDROGRAPH FOR WATERSHED 2A
 89           BA    1.09
 90           LS       0       82
 91           UD     .22

 92           KK    CP2A  CONCENTRATION POINT 2A
 93           KM    COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
 94           HC       2

 95           KK    FLOW    POINT OF DIVERSION FOR WEEKES WASH
 96           DT  DIVERT
 97           DI       0    6500    7000    9000   10000   15000
 98           DQ       0       0     260    1300    1880    4600

 99           KK    RR2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREWAY
100           KM     ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
101           RM       2      .42       .3

102           KK     2BE WATERSHED 2B EAST
103           KM     HYDROGRAPH FOR WATERSHED 2B EAST
104           BA    1.22
105           LS       0       82
106           UD     .48

107           KK    1C2B  CONCENTRATION POINT NORTH OF FREEWAY
108           KM     CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
109           HC       2

110           KK  DET2BE   ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
111           KM      ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
112           KM      PRINCIPLE OUTLET IS 2-12 X 12 (FOOT) BOX CULVERTS
113           KM      INVERT IS AT 1636; EMERGENCY SPILLWAY CREST IS AT 1650.
114           RS       1    ELEV    1636
115           SV       0     6.0    13.0    29.0    47.0    69.0    93.0   122.0   153.0   184.0
116           SV     217     239
117           SE    1636    1637    1638    1640    1642    1644    1646    1648    1650    1652
118           SE    1654    1655
119           SQ       0      22     194     584    1050    1604    2236    2900    3534    4108
120           SQ    4622    4860
121           ST    1650     320     2.2     1.5

122           KK   FRWAY
123           KM    DIVERT ALL FLOWS FROM EMERGENCY SPILLWAY
124           DT   SPILL
125           DI       0    3665    5000   10000   15000
126           DQ       0       0    1335    6335   11335
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 127          KK    CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 128          KM     ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 129          RM       1       .1       .3

 130          KK    WASH   ROUTE FLOWS THROUGH THE WASH
 131          KM      ROUTE FLOWS THROUGH THE NATURAL WASH SYSTEM
 132          RM       2      .50       .3

 133          KK  RSPILL
 134          KM    RETRIEVE FLOW DIVERTED FROM THE EMERGENCY SPILLWAY
 135          DR   SPILL

 136          KK   IDAHO
 137          KM    ROUTE THE RETRIEVED FLOW DOWN IDAHO RD.
 138          RM       1       .1       .3

 139          KK      WW
 140          KM     COMBINE ALL FLOWS FROM FREEWAY
 141          HC       2

 142          KK     RWW
 143          KM     ROUTE FLOWS TO POWERLINE F.R.S.
 144          RM       4      .98       .3

 145          KK    2BWW  WATERSHED 2B WEST, WEST
 146          KM      HYDROGRAPH FOR WATERSHED 2B WEST, WEST
 147          BA     .45
 148          LS       0       82
 149          UD      .4

 150          KK    2BWE  WATERSHED 2B WEST, EAST
 151          KM     RUNOFF FROM EAST OF IDAHO ROAD 2B WEST, EAST
 152          BA     .70
 153          LS       0       82
 154          UD      .3

 155          KK  DET2BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 156          KM      ROUTE FLOWS THROUGH THE DETENTION NORTH OF THE SUPERSTITION FREEWAY
 157          RS       1    ELEV  1623.5
 158          SV       0       .6      8.3     17.5     28.2     36.0     48.6
 159          SE  1623.5  1624.0  1626.0  1628.0  1630.0  1632.0  1634.0
 160          SQ       0       0      31      93     135     169     208
 161          ST  1630.0     110     2.2     1.5

 162          KK    CC04  COMBINE FLOWS JUST NORTH OF FREEWAY
 163          KM    COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 164          HC       2

 165          KK    NDIV
 166          KM    DIVERSION OF FLOW OVER THE NORTH DIVERSION DAM.
 167          DT    EXIT
 168          DI       0    1218    5000   10000
 169          DQ       0       0    3782    8782
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 170          KK  NDRCUT  ROUTE THROUGH THE FREEWAY
 171          KM    RCUTE COMBINED FLOW THROUGH 2 - 10  X 8  BOX CULVERTS
 172          RS       1     ELEV  1622.6
 173          SV       0     0.02     0.16     1.12     4.17    25.42
 174          SE  1622.6  1623.0  1624.0  1626.0  1628.0  1630.0
 175          SQ       0        0      101      372      738     1111
 176          ST  1630.0     2875      2.2      1.5

 177          KK    R2BW  ROUTE TO CP102
 178          KM     ROUTE THE FLOWS FROM DETENTION POND TO CP102 (POWERLINE F.R.S.)
 179          RM       2     .40      .3

 180          KK     2BS  WATERSHED 2B SOUTH OF SUPERTITION FREEWAY
 181          KM     HYDROGRAPH FOR WATERSHED 2B SOUTH
 182          BA    1.91
 183          LS       0      80
 184          UD     .32

 185          KK     102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 186          KM     COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 187          HC       3

 188          KK       5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 189          KM     HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 190          BA    5.65
 191          LS       0      85
 192          UD     .71

 193          KK      R5 ROUTE HYDROGRAPH FROM WS 5 TO CP 104
 194          KM      ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 195          RM       1     .07      .3

 196          KK       4 WATERSHED 4
 197          KM      HYDROGRAPH FOR WATERSHED 4
 198          BA   11.85
 199          LS       0      86
 200          UD    1.30

 201          KK     104  CONCENTRATION POINT 104
 202          KM     COMBINE HYDROGRAPHS AT CP 104
 203          HC       2

 204          KK    R104
 205          KM    RCUTE CP 104 TO 106
 206          RM       2     .50      .3

 207          KK       7  WATERSHED 7
 208          KM    HYDROGRAPH FOR WATERSHED 7
 209          BA     .61
 210          LS       0      86
 211          UD      .3
```

```
LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9.......10

212         KK        6 WATERSHED 6
213         KM       HYDROGRAPH FOR WATERSHED 6
214         BA     7.86
215         LS        0       83
216         UD     1.08

217         KK      106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
218         KM       COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
219         HC        3

220         KK     R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
221         KM       ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
222         RM        1      .27       .3

223         KK       3N WATERSHED 3N
224         KM       HYDROGRAPH FOR WATERSHED 3N
225         BA     2.89
226         LS        0       85
227         UD      .41

228         KK     CULV   ROUTE FLOWS THROUGH CULVERTS
229         KM      ROUTE FLOWS THROUGH THE CULVERTS
230         RS      1.0     ELEV     1665
231         SV        0      .15      .60      1.5      3.1      5.6      9.1     13.7    19.45    26.35
232         SE     1665   1665.5     1666   1666.5     1667   1667.5     1668   1668.5     1669   1669.5
233         SQ        0      119      375      688     1063     1462     1938     2375     2875     3375

234         KK    RCULV  ROUTE FLOWS TO W103
235         KM      ROUTE THE FLOWS TO CONCENTRATION POINT W103
236         RM        2       .5       .3

237         KK       3S  WATERSHED 3 SOUTH
238         KM       HYDROGRAPH FOR WATERSHED 3 SOUTH
239         BA     2.39
240         LS        0       85
241         UD     .436

242         KK      103
243         HC        2

244         KK       3A   WATERSHED 3A
245         KM      HYDROGRAPH FOR WATERSHED 3A
246         BA     1.20
247         LS        0       86
248         UD       .4

249         KK     CP103
250         KM      CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
251         HC        2
```

HEC-1 INPUT

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 252          KK    W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 253          KM      COMBINE HYDROGRAPHS FROM CP 104 AND WS 3 - SIPHON DRAW WATERSHED
 254          HC       2

 255          KK   RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 256          KM      ROUTE THE HYDROGRAPH TO POWERLINE DAM
 257          RM       1      .16       .3

 258          KK     PLD CONCENTRATION PT. AT POWERLINE DAM
 259          KM     COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 260          HC       2

 261          KK     RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 262          KM     RESERVOIR RATING CURVE
 263          RS       1     ELEV  1568.2
 264          SV       0      175      380     1768     3465     5268     5941     7196     9465    14740
 265          SQ       0       75       92      119      141      159      165     7360    27280    39200
 266          SE  1568.1   1568.2   1570.0   1574.0   1578.0   1582.0   1583.3   1586.0   1590.0   1591.6
 267          SS  1583.3        0        0        0
 268          ST  1591.6    13358      2.2      1.5
 269          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

 NO.       (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

 17          15
              V
              V
 25         R15
              .
              .
 28           .          14
              .           .
              .           .
 33           .           .          16
              .           .           .
              .           .           .
 38         114.......................
              V
              V
 41        R114
              .
              .
 44           .          13
              .           .
              .           .
 49         113............
              V
              V
 52        R113
              .
              .
 55           .          12
              .           .
              .           .
 60         112............
              V
              V
 63        R112
              .
              .
 66           .          11
              .           .
              .           .
 71           .           .          17
              .           .           .
              .           .           .
 76           .           .           .          10
              .           .           .           .
              .           .           .           .
 81         111.......................................
              V
              V
 84       RD111
              .
              .
 87           .          2A
              .           .
              .           .
 92       CP2A............
```

```
 96          .-------> DIVERT
 95       FLOW
             V
             V
 99       RR2A
             .
             .
102          .          2BE
             .           .
             .           .
107       102B.............
             V
             V
110      DET2BE
             .
             .
124          .-------> SPILL
122      FRWAY
             V
             V
127       CHAN
             V
             V
130       WASH
             .
             .
135          .<-------   SPILL
133          .      RSPILL
             .           V
             .           V
136          .       IDAHC
             .           .
             .           .
139        WW.............
             V
             V
142       RWW
             .
             .
145          .        2BWW
             .           .
             .           .
150          .           .        2BWE
             .           .           V
             .           .           V
155          .           .      DET2BW
             .           .           .
             .           .           .
162          .       C004.............
             .           .
             .           .
167          .           .-------> EXIT
165          .       NDIV
             .           V
             .           V
170          .     NDROUT
             .           V
             .           V
177          .       R2BW
             .           .
             .           .
180          .           .        2BS
```

```
185   102
188          5
193         R5
196                4
201        104
204       R104
207                7
212                          6
217        106
220       R106
223                3N
228               CULV
234              RCULV
237                          3S
242               103
244                          3A
249              CP103
252       W103
255      RW103
258   PLD
261   RES
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*            FEBRUARY 1981          *
*          REVISED 31 JAN 85        *
*                                   *
*  RUN DATE11/ 1/1988   TIME14:30:49 *
*                                   *
*************************************
```

```
*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*  THE HYDROLOGIC ENGINEERING CENTER *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*  (916) 440-3285 OR (FTS) 448-3285 *
*                                   *
*************************************
```

```
                    WEEKES WASH - POWERLINE F.R.S  ANALYSIS
                    CONVERSION OF MODEL FROM TR-20
                                 1/2 PMF, & FULL PMF ;SCS EXCESS & HYDROGRAPH
                                 DEVELOPMENT, MUSKINGUM ROUTING
                       CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
                                        POINT OF WEEKES WASH AT JUNCTION ROAD.
                                     2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
                                        AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
                                        LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
                                     3: SUPERSTITION FREEWAY IN PLACE.
                                     4: ADJUSTED WATERSHED AREAS.
                                     5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
                                     6: MODIFICATIONS TO POWERLINE F.R.S. - RAISE AND STORAGE

 15 IO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN         10  MINUTES IN COMPUTATION INTERVAL
                      IDATE     1    0  STARTING DATE
                      ITIME       0000  STARTING TIME
                         NQ        400  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE     3    0  ENDING DATE
                     NDTIME      1830  ENDING TIME

                  COMPUTATION INTERVAL     .17 HOURS
                       TOTAL TIME BASE   66.50 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

    JP            MULTI-PLAN OPTION
                      NPLAN          1  NUMBER OF PLANS

    JR            MULTI-RATIO OPTION
                     RATIOS OF RUNOFF
                     .50      1.00

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
```

```
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO     1462.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
```

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO FLOWS RATIO 1 .50	RATIO 2 1.00
HYDROGRAPH AT	15	1.76	1	FLOW	3760.	7520.
				TIME	5.00	5.00
ROUTED TO	R15	1.76	1	FLOW	3709.	7419.
				TIME	5.00	5.00
HYDROGRAPH AT	14	1.11	1	FLOW	2371.	4743.
				TIME	5.00	5.00
HYDROGRAPH AT	16	2.16	1	FLOW	4360.	8720.
				TIME	5.00	5.00
3 COMBINED AT	114	5.03	1	FLOW	10441.	20881.
				TIME	5.00	5.00
ROUTED TO	R114	5.03	1	FLOW	10105.	20210.
				TIME	5.17	5.17
HYDROGRAPH AT	13	1.29	1	FLOW	2819.	5638.
				TIME	5.00	5.00
2 COMBINED AT	113	6.32	1	FLOW	12728.	25455.
				TIME	5.00	5.00
ROUTED TO	R113	6.32	1	FLOW	12291.	24582.
				TIME	5.17	5.17
HYDROGRAPH AT	12	1.32	1	FLOW	2836.	5672.
				TIME	5.00	5.00
2 COMBINED AT	112	7.64	1	FLOW	14756.	29511.
				TIME	5.17	5.17
ROUTED TO	R112	7.64	1	FLOW	14704.	29408.
				TIME	5.17	5.17
HYDROGRAPH AT	11	.70	1	FLOW	1554.	3108.
				TIME	5.00	5.00
HYDROGRAPH AT	17	.37	1	FLOW	792.	1583.
				TIME	5.00	5.00
HYDROGRAPH AT	10	.54	1	FLOW	1155.	2310.
				TIME	5.00	5.00
4 COMBINED AT	111	9.25	1	FLOW	17167.	34335.
				TIME	5.00	5.00
ROUTED TO	RD111	9.25	1	FLOW	16004.	32007.
				TIME	5.67	5.67

2 COMBINED AT	CP2A	10.34	1	FLOW	16244.	32489.
				TIME	5.67	5.67
DIVERSION TO	DIVERT	10.34	1	FLOW	5277.	14114.
				TIME	5.67	5.67
HYDROGRAPH AT	FLOW	10.34	1	FLOW	10967.	18375.
				TIME	5.67	5.67
ROUTED TO	RR2A	10.34	1	FLOW	10575.	17591.
				TIME	6.17	6.17
HYDROGRAPH AT	2BE	1.22	1	FLOW	2281.	4561.
				TIME	5.17	5.17
2 COMBINED AT	1C2B	11.56	1	FLOW	10964.	18374.
				TIME	6.00	6.00
ROUTED TO	DET2BE	11.56	1	FLOW	10899.	18303.
				TIME	6.17	6.17
			** PEAK STAGES IN FEET **			
			1	STAGE	1654.27	1656.98
				TIME	6.17	6.17
DIVERSION TO	SPILL	11.56	1	FLOW	7234.	14638.
				TIME	6.17	6.17
HYDROGRAPH AT	FRWAY	11.56	1	FLOW	3665.	3665.
				TIME	4.67	5.67
ROUTED TO	CHAN	11.56	1	FLOW	3685.	3668.
				TIME	4.83	3.83
ROUTED TO	WASH	11.56	1	FLOW	3665.	3665.
				TIME	7.17	6.33
HYDROGRAPH AT	RSPILL	.00	1	FLOW	7234.	14638.
				TIME	6.17	6.17
ROUTED TO	IDAHO	.00	1	FLOW	7157.	14456.
				TIME	6.33	6.17
2 COMBINED AT	WW	11.56	1	FLOW	10821.	18121.
				TIME	6.33	6.17
ROUTED TO	RWW	11.56	1	FLOW	10310.	17192.
				TIME	7.17	7.17
HYDROGRAPH AT	2BWW	.45	1	FLOW	878.	1756.
				TIME	5.00	5.00
HYDROGRAPH AT	2BWE	.70	1	FLOW	1453.	2906.
				TIME	5.00	5.00
ROUTED TO	DET2BW	.70	1	FLOW	1390.	2822.
				TIME	5.00	5.00
			** PEAK STAGES IN FEET **			
			1	STAGE	1632.91	1634.87
				TIME	5.00	5.00

2 COMBINED AT	CC04	1.15	1	FLOW	2268.	4578.
				TIME	5.00	5.00
DIVERSION TO	EXIT	1.15	1	FLOW	1050.	3360.
				TIME	5.00	5.00
HYDROGRAPH AT	NDIV	1.15	1	FLOW	1218.	1218.
				TIME	4.67	4.33
ROUTED TO	NDRCUT	1.15	1	FLOW	1100.	1218.
				TIME	5.50	5.67
			** PEAK STAGES IN FEET **			
			1	STAGE	1629.94	1630.06
				TIME	5.50	5.67
ROUTED TO	R2BW	1.15	1	FLOW	1074.	1182.
				TIME	5.83	6.00
HYDROGRAPH AT	2BS	1.91	1	FLOW	3869.	7738.
				TIME	5.00	5.00
3 COMBINED AT	102	14.62	1	FLOW	10459.	17405.
				TIME	7.17	7.17
HYDROGRAPH AT	5	5.65	1	FLOW	9317.	18635.
				TIME	5.33	5.33
ROUTED TO	R5	5.65	1	FLOW	9278.	18555.
				TIME	5.33	5.33
HYDROGRAPH AT	4	11.85	1	FLOW	13890.	27780.
				TIME	5.83	5.83
2 COMBINED AT	104	17.50	1	FLOW	21576.	43152.
				TIME	5.50	5.50
ROUTED TO	R104	17.50	1	FLOW	20571.	41143.
				TIME	6.00	6.00
HYDROGRAPH AT	7	.61	1	FLOW	1295.	2589.
				TIME	5.00	5.00
HYDROGRAPH AT	6	7.86	1	FLOW	10170.	20341.
				TIME	5.67	5.67
3 COMBINED AT	106	25.97	1	FLOW	29515.	59030.
				TIME	6.00	6.00
ROUTED TO	R106	25.97	1	FLOW	28965.	57930.
				TIME	6.17	6.17
HYDROGRAPH AT	3N	2.89	1	FLOW	5706.	11413.
				TIME	5.00	5.00
ROUTED TO	CULV	2.89	1	FLOW	5483.	10955.
				TIME	5.17	5.17
			** PEAK STAGES IN FEET **			
			1	STAGE	1671.61	1677.08
				TIME	5.17	5.17

ROUTED TO	RCULV	2.89	1	FLOW	5058.	10083.
				TIME	5.67	5.67
HYDROGRAPH AT	3S	2.39	1	FLOW	4623.	9247.
				TIME	5.17	5.17
2 COMBINED AT	103	5.28	1	FLOW	8181.	16228.
				TIME	5.33	5.33
HYDROGRAPH AT	3A	1.20	1	FLOW	2402.	4805.
				TIME	5.00	5.00
2 COMBINED AT	CP103	6.48	1	FLOW	10431.	20634.
				TIME	5.17	5.17
2 COMBINED AT	W103	32.45	1	FLOW	33218.	66438.
				TIME	6.00	6.00
ROUTED TO	RW103	32.45	1	FLOW	33002.	66025.
				TIME	6.17	6.17
2 COMBINED AT	FLD	47.07	1	FLOW	40927.	79709.
				TIME	6.33	6.33
ROUTED TO	RES	47.07	1	FLOW	17451.	36423.
				TIME	7.83	7.67

** PEAK STAGES IN FEET **

1	STAGE	1588.03	1591.23
	TIME	7.83	7.67

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DE12BE

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1654.27	4.27	223.	10899.	2.67	6.17	.00
1.00	1656.98	6.98	282.	18303.	4.17	6.17	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BW

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1632.91	2.91	42.	1390.	1.83	5.00	.00
1.00	1634.87	4.87	54.	2822.	3.50	5.00	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDROUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1629.94	.00	25.	1100.	.00	5.50	.00
1.00	1630.06	.06	26.	1218.	.33	5.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1591.60
STORAGE	175.	5941.	14740.
OUTFLOW	75.	165.	39200.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1588.03	.00	8345.	17451.	.00	7.83	.00
1.00	1591.23	.00	13511.	36423.	.00	7.67	.00

```
*** NORMAL END OF HEC-1 ***
STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING          1-NOV-88        14:31:33

PROCESS 82 TERMINATED

ELAPSED TIME  0:01:00, CPU TIME  00:00:00.090, I/O BLOCKS  58
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF         1-NOV-88        14:31:32

****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix I

HEC-1 Output

Combine Alternatives
Excavate and Raise the Powerline F.R.S.
100 year, 24 hour Storm

+6666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666+

```
$   $  $   $  $$$$          $   $   $$$   $   $
$   $  $   $  $   $         $   $  $   $  $$ $$
$   $   $ $   $   $         $   $  $      $ $ $
$$$$$    $    $   $         $ $ $   $$$   $ $ $
$   $    $    $   $         $ $ $      $  $   $
$   $    $    $   $   $$    $$ $$  $   $  $   $
$   $    $    $$$$    $$    $   $   $$$   $   $
```

DEST=HYD.WSM USER=HYD.WSM QUEUE=LPT DEVICE=@LPB
SEQ=24599 QPRI=128 CPL=132 LPP=66 COPIES=1 PAGES=83

CREATED: 01-NOV-88 14:32:06
ENQUEUED: 01-NOV-88 15:12:12
PRINTING: 01-NOV-88 15:13:47

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:MCDPOWER1CO.OUT

```
$   $   $$$   $$$$   $$$$    $$$   $   $  $$$$$  $$$$     $     $$$    $$$          $$$   $   $  $$$$$
$$ $$  $   $  $   $  $   $  $   $  $   $  $      $   $   $$    $   $  $   $        $   $  $   $    $
$ $ $  $   $  $   $  $   $  $   $  $   $  $      $   $  $ $    $  $$  $  $$        $   $  $   $    $
$ $ $  $   $  $   $  $$$$   $   $  $ $ $  $$$$   $$$$     $    $ $ $  $ $ $        $   $  $   $    $
$   $  $   $  $   $  $      $   $  $ $ $  $      $ $      $    $$  $  $$  $        $   $  $   $    $
$   $  $   $  $   $  $      $   $  $$ $$  $      $  $     $    $   $  $   $   $$   $   $  $   $    $
$   $   $$$   $$$$   $       $$$   $   $  $$$$$  $   $  $$$$$   $$$    $$$    $$    $$$    $$$     $
```

+6666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666666+

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00

```
**** AOS/VS REV 7.62.00.00 / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00   1-NOV-88       14:32:06
QPRI=128        SEQ=24563
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?71.CLI.00002.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.24563

--------
LAST MESSAGE CHANGE     25-OCT-86        0:36:12


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


--------
MOST RECENT LOGON        1-NOV-88       14:30:32

AOS/VS CLI   REV 07.62.00.00     1-NOV-88       14:32:08
) SEARCHLIST :UTIL/:MACROS/:UDD:HYD.WSM/:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM/OWARE
)
)
) LISTFILE MODPOWER1CO.OUT
) DATAFILE MODPOWER1CO.DAT
) SEA :UTIL:HEC1.DIR/[!SEA]
) X HEC1_START
```

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*             FEBRUARY 1981            *
*           REVISED 31 JAN 85          *
*                                      *
*  RUN DATE11/ 1/1988   TIME14:32:10 * 
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285    *
*                                      *
****************************************
```

```
X      X  XXXXXXX   XXXXX            X
X      X  X         X     X         XX
X      X  X         X                X
XXXXXXX   XXXX      X        XXXXX   X
X      X  X         X                X
X      X  X         X     X          X
X      X  XXXXXXX   XXXXX           XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID      WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID      CONVERSION OF MODEL FROM TR-20
  3           ID                  100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
  4           ID                  DEVELOPMENT, MUSKINGUM ROUTING
  5           ID         CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  6           ID                          POINT OF WEEKES WASH AT JUNCTION ROAD.
  7           ID                       2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  8           ID                          AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
  9           ID                          LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 10           ID                       3: SUPERSTITION FREEWAY IN PLACE.
 11           ID                       4: ADJUSTED WATERSHED AREAS.
 12           ID                       5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 13           ID                       6: MODIFICATIONS TO POWERLINE F.R.S. - RAISE AND STORAGE
              *DIAGRAM
 14           IT      10       0       0     200
 15           IO       5

 16           KK       15  WATERSHED 15
 17           KM       HYDROGRAPH FOR WATERSHED 15
 18           PB     3.85
 19           IN       15
 20           PC        0     .002    .005    .008    .011    .014    .017    .020    .023    .026
 21           PC     .029     .032    .035    .038    .041    .044    .048    .052    .056    .060
 22           PC     .064     .068    .072    .076    .080    .085    .090    .095    .100    .105
 23           PC     .110     .115    .120    .126    .133    .140    .147    .155    .163    .172
 24           PC     .181     .191    .203    .218    .236    .257    .283    .387    .663    .707
 25           PC     .735     .758    .766    .791    .804    .815    .825    .834    .842    .849
 26           PC     .856     .863    .869    .875    .881    .887    .893    .898    .903    .908
 27           PC     .913     .918    .922    .926    .930    .934    .938    .942    .946    .950
 28           PC     .953     .956    .959    .962    .965    .968    .971    .974    .977    .980
 29           PC     .983     .986    .992    .995    .998   1.000   1.000   1.000   1.000   1.000
 30           BA     1.76
 31           LS        0       80
 32           UD      .18

 33           KK      R15 ROUTE HYDROGRAPH FROM WS 15
 34           KM      ROUTE HYDROGRAPH FROM WATERSHED 15
 35           RM        1      .11       .3

 36           KK       14 WATERSHED 14
 37           KM      HYDROGRAPH FOR WATERSHED 14
 38           BA     1.11
 39           LS        0       79
 40           UD      .15

 41           KK       16 WATERSHED 16
 42           KM      HYDROGRAPH FOR WATERSHED 16
 43           BA     2.16
 44           LS        0       82
 45           UD      .35
```

```
LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 46         KK     114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
 47         KM     COMBINE ALL THREE HYDROGRAPHS AT CP 114
 48         HC       3

 49         KK    R114 ROUTE CP 114
 50         KM     ROUTE HYDROGRAPH FROM CP114 TO CP 113
 51         RM       1      .17       .3

 52         KK      13 WATERSHED 13
 53         KM     HYDROGRAPH FOR WATERSHED 13
 54         BA    1.29
 55         LS       0       83
 56         UD    .126

 57         KK     113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
 58         KM     COMBINE HYDROGRAPHS CP 114 AND WS 13
 59         HC       2

 60         KK    R113 ROUTE CP 113 TO CP 112
 61         KM     ROUTE HYDROGRAPH FOR CP 113
 62         RM       1      .19       .3

 63         KK      12 WATERSHED 12
 64         KM     HYDROGRAPH FOR WATERSHED 12
 65         BA    1.32
 66         LS       0       86
 67         UD     .27

 68         KK     112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
 69         KM     COMBINE HYDROGRAPH FROM CP 113 AND WS 12
 70         HC       2

 71         KK    R112 ROUTE CP 112 TO CP 111
 72         KM     ROUTE HYDROGRAPH CP 112 TO CP 111
 73         RM       1      .07       .3

 74         KK      11 WATERSHED 11
 75         KM     HYDROGRAPH FOR WATERSHED 11
 76         BA     .70
 77         LS       0       89
 78         UD    .186

 79         KK      17 WATERSHED 17
 80         KM     HYDROGRAPH FOR WATERSHED 17
 81         BA     .37
 82         LS       0       79
 83         UD    .138

 84         KK      10   WATERSHED 10
 85         KM     HYDROGRAPH FOR WATERSHED 10
 86         BA     .54
 87         LS       0       79
 88         UD     .14
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  89          KK     111 CONCENTRATION PT. 111
  90          KM     COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
  91          HC       4

  92          KK   RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
  93          KM     ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
  94          RM       5     .64      .3

  95          KK      2A  WATERSHED 2A
  96          KM      HYDROGRAPH FOR WATERSHED 2A
  97          BA    1.09
  98          LS       0      82
  99          UD     .22

 100          KK    CP2A  CONCENTRATION POINT 2A
 101          KM    COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
 102          HC       2

 103          KK  DIVERT    POINT OF DIVERSION FOR WEEKES WASH
 104          DT    FLOW
 105          DI       0    6500    7000    9000   10000   15000
 106          DQ       0       0     260    1300    1380    4600

 107          KK    RR2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREWAY
 108          KM     ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
 109          RM       2     .42      .3

 110          KK     2BE WATERSHED 2B EAST
 111          KM     HYDROGRAPH FOR WATERSHED 2B EAST
 112          BA    1.22
 113          LS       0      82
 114          UD     .48

 115          KK    1C2B  CONCENTRATION POINT NORTH OF FREEWAY
 116          KM     CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
 117          HC       2

 118          KK  DET2BE   ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
 119          KM      ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
 120          RS       1    ELEV    1636
 121          SV       0     6.0    13.0    29.0    47.0    69.0    93.0   122.0   153.0   184.0
 122          SV     217     239
 123          SE    1636    1637    1638    1640    1642    1644    1646    1648    1650    1652
 124          SE    1654    1655
 125          SQ       0      22     194     584    1050    1604    2236    2900    3534    4408
 126          SQ    4622    4860
 127          ST    1650     320     2.2     1.5

 128          KK   FRWAY
 129          KM    DIVERT ALL FLOW THAT GO UNDER THE ROAD
 130          DT   SPILL
 131          DI       0    3665    5000   10000   15000
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9.......10

 133          KK    CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 134          KM     ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 135          RM       1       .1       .3

 136          KK    WASH   ROUTE FLOWS THROUGH THE WASH
 137          KM      ROUTE FLOWS THROUGH THE NATURAL WASH SYSTEM
 138          RM       2      .50       .3

 139          KK  RSPILL
 140          KM     RETRIEVE FLOW DEIVERTED FROM THE EMERGENCY SPILLWAY
 141          DR   SPILL

 142          KK   IDAHO
 143          KM    ROUTE THE RETRIEVED FLOW DOWN IDAYO ROAD.
 144          RM       1       .1       .3

 145          KK      WW
 146          KM    COMBINE ALL THE FLOW FROM THE FREEWAY
 147          HC       2

 148          KK     RWW
 149          KM    ROUTE THE FLOW TO POWERLINE F.R.S.
 150          RM       4      .98       .3

 151          KK    2EWW  WATERSHED 2E WEST, WEST
 152          KM      HYDROGRAPH FOR WATERSHED 2E WEST, WEST
 153          BA     .45
 154          LS       0       82
 155          UD      .4

 156          KK    2EWE  WATERSHED 2E WEST, EAST
 157          KM     RUNOFF FROM EAST OF IDAHO ROAD 2E WEST, EAST
 158          KO       1
 159          BA     .70
 160          LS       0       82
 161          UD      .3

 162          KK  DET2BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 163          KM      ROUTE FLOWS THROUGH THE DETENTION NORTH OF THE SUPERSTITION FREEWAY
 164          RS       1     ELEV  1623.5
 165          SV       0       .6      8.3     17.5     28.2     36.0     48.6
 166          SE  1623.5  1624.0  1626.0  1628.0  1630.0  1632.0  1634.0
 167          SQ       0       0      .31      93      135      169      208
 168          ST  1630.0     110      2.2     1.5

 169          KK    CC04  COMBINE FLOWS JUST NORTH OF FREEWAY
 170          KM    COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 171          HC       2
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 172          KK    NDIV
 173          DT    EXIT
 174          DI       0     1218     5000    10000
 175          DQ       0        0     3782     8782

 176          KK  NDRCUT  ROUTE THROUGH THE FREEWAY
 177          KM    RCUTE COMBINED FLOW THROUGH 3 BBL. 6 X 8 BOX CULVERTS
 178          RS       1     ELEV  1622.6
 179          SV       0      .02      .16     1.12     4.17    25.42
 180          SE  1622.6  1623.0  1624.0  1626.0  1628.0  1630.0
 181          SQ       0        0      101      372      738     1111
 182          ST  1630.0     2875      2.2      1.5

 183          KK    R2BW  ROUTE TO CP102
 184          KM     ROUTE THE FLOWS FROM DETENTION POND TO CP102 (POWERLINE F.R.S.)
 185          RM       2      .40       .3

 186          KK     2BS  WATERSHED 2B SOUTH OF SUPERTITION FREEWAY
 187          KM     HYDROGRAPH FOR WATERSHED 2B SOUTH
 188          BA    1.91
 189          LS       0       80
 190          UD     .32

 191          KK     102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 192          KM     COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 193          HC       3

 194          KK       5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 195          KM     HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 196          BA    5.65
 197          LS       0       85
 198          UD     .71

 199          KK      R5 RCUTE HYDROGRAPH FROM WS 5 TO CP 104
 200          KM      ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 201          RM       1      .07       .3

 202          KK       4 WATERSHED 4
 203          KM      HYDROGRAPH FOR WATERSHED 4
 204          BA   11.85
 205          LS       0       86
 206          UD    1.30

 207          KK     104  CONCENTRATION POINT 104
 208          KM     COMBINE HYDROGRAPHS AT CP 104
 209          HC       2

 210          KK    R104
 211          KM    ROUTE CP 104 TO 106
 212          RM       2      .50       .3
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```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 213          KK        7  WATERSHED 7
 214          KM     HYDROGRAPH FOR WATERSHED 7
 215          BA      .61
 216          LS        0       86
 217          UD      .3

 218          KK        6 WATERSHED 6
 219          KM       HYDROGRAPH FOR WATERSHED 6
 220          BA    7.86
 221          LS        0       83
 222          UD    1.08

 223          KK      106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 224          KM       COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 225          HC        3

 226          KK     R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
 227          KM       ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 228          RM        1      .27       .3

 229          KK       3N WATERSHED 3N
 230          KM       HYDROGRAPH FOR WATERSHED 3N
 231          BA    2.89
 232          LS        0       85
 233          UD      .41

 234          KK     CULV   ROUTE FLOWS THROUGH CULVERTS
 235          KM      ROUTE FLOWS THROUGH THE CULVERTS
 236          RS      1.0     ELEV    1665
 237          SV        0      .15      .60      1.5      3.1      5.6      9.1     13.7    19.45    26.35
 238          SE     1665  1665.5     1666   1666.5     1667   1667.5     1668   1668.5     1669   1669.5
 239          SQ        0      119      375      688     1063     1462     1938     2375     2875     3375

 240          KK    RCULV  ROUTE FLOWS TO W103
 241          KM      ROUTE THE FLOWS TO CONCENTRATION POINT W103
 242          RM        2       .5       .3

 243          KK       3S  WATERSHED 3 SOUTH
 244          KM       HYDROGRAPH FOR WATERSHED 3 SOUTH
 245          BA    2.39
 246          LS        0       85
 247          UD    .436

 248          KK      103
 249          HC        2

 250          KK       3A   WATERSHED 3A
 251          KM      HYDROGRAPH FOR WATERSHED 3A
 252          BA    1.20
 253          LS        0       86
 254          UD       .4
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 255          KK   CP103
 256          KM     CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
 257          HC       2

 258          KK    W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 259          KM      COMBINE HYDROGRAPHS FROM CP 104 AND WS 3 - SIPHON DRAW WATERSHED
 260          HC       2

 261          KK   RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 262          KM      ROUTE THE HYDROGRAPH TO POWERLINE DAM
 263          RM       1     .16      .3

 264          KK     PLD CONCENTRATION PT. AT POWERLINE DAM
 265          KM     COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 266          HC       2

 267          KK     RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 268          KM     RESERVOIR RATING CURVE
 269          RS       1    ELEV  1568.2
 270          SV       0     175      380     1768     3465     5268     5941     7196     9465    14740
 271          SQ       0      75       92      119      141      159      165     7360    27280    39200
 272          SE  1568.1  1568.2  1570.0  1574.0  1578.0  1582.0  1583.3  1586.0  1590.0  1591.6
 273          SS  1583.3       0       0       0
 274          ST  1591.6   13358     2.2     1.5
 275          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

(V) ROUTING (--->) DIVERSION OR PUMP FLOW

(.) CONNECTOR (<---) RETURN OF DIVERTED OR PUMPED FLOW

```
INPUT
 LINE
 NO.

 17          15
              V
              V
 25         R15
              .
              .
 28           .          14
              .           .
              .           .
 33           .           .          16
              .           .           .
              .           .           .
 38         114..........................
              V
              V
 41        R114
              .
              .
 44           .          13
              .           .
              .           .
 49         113............
              V
              V
 52        R113
              .
              .
 55           .          12
              .           .
              .           .
 60         112............
              V
              V
 63        R112
              .
              .
 66           .          11
              .           .
              .           .
 71           .           .          17
              .           .           .
              .           .           .
 76           .           .           .          1C
              .           .           .           .
              .           .           .           .
 81         111.......................................
              V
              V
 84       RD111
              .
              .
 87           .          2A
              .           .
              .           .
 92       CP2A............
```

```
 95        FLOW
              V
              V
 99        RR2A
              .
              .
102           .          2BE
              .           .
              .           .
107        102E............
              V
              V
110      DET2BE
              .
              .
124           .-------->   SPILL
122       FRWAY
              V
              V
127        CHAN
              V
              V
130        WASH
              .
              .
135           .           .<-------   SPILL
133           .      RSPILL
              .           V
              .           V
136           .       IDAHO
              .           .
              .           .
139          WW............
              V
              V
142         RWW
              .
              .
145           .        2BWW
              .           .
              .           .
150           .           .        2BWE
              .           .           V
              .           .           V
155           .           .      DET2BW
              .           .           .
              .           .           .
162           .        C004............
              .           .
              .           .
167           .           .-------->    EXIT
165           .        NDIV
              .           V
              .           V
170           .      NDROUT
              .           V
              .           V
177           .        R2BW
              .           .
              .           .
180           .           .         2BS
```

```
185        102.......................
             .
188          .          5
             .          V
             .          V
193          .         R5
             .          .
             .          .
196          .          .          4
             .          .          .
             .          .          .
201          .        104...........
             .          V
             .          V
204          .       R104
             .          .
             .          .
207          .          .          7
             .          .          .
             .          .          .
212          .          .          .          6
             .          .          .          .
             .          .          .          .
217          .        106.......................
             .          V
             .          V
220          .       R106
             .          .
             .          .
223          .          .         3N
             .          .          V
             .          .          V
228          .          .       CULV
             .          .          V
             .          .          V
234          .          .      RCULV
             .          .          .
             .          .          .
237          .          .          .          3S
             .          .          .          .
             .          .          .          .
242          .          .        103...........
             .          .          .
             .          .          .
244          .          .          .         3A
             .          .          .          .
             .          .          .          .
249          .          .      CP103...........
             .          .          .
             .          .          .
252          .       W103...........
             .          V
             .          V
255          .      RW103
             .          .
             .          .
258        PLD...........
             V
             V
261        RES
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

(***) RUNOFF ALSC COMPUTED AT THIS LOCATION

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            FEBRUARY 1981             *
*          REVISED 31 JAN 85           *
*                                      *
*  RUN DATE11/ 1/1988   TIME14:32:23 *
*                                      *
****************************************
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```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285    *
*                                      *
****************************************
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                    WEEKES WASH - POWERLINE F.R.S  ANALYSIS
                    CONVERSION OF MODEL FROM TR-20
                                 100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
                                 DEVELOPMENT, MUSKINGUM ROUTING
                       CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
                                        POINT OF WEEKES WASH AT JUNCTION ROAD.
                                     2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
                                        AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
                                        LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
                                     3: SUPERSTITION FREEWAY IN PLACE.
                                     4: ADJUSTED WATERSHED AREAS.
                                     5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
                                     6: MODIFICATIONS TO POWERLINE F.R.S. - RAISE AND STORAGE

 15 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN          10  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         200  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME        0910  ENDING TIME

                 COMPUTATION INTERVAL     .17 HOURS
                      TOTAL TIME BASE   33.17 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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

              **************
              *            *
  156 KK      *     2BWE   *        WATERSHED 2B WEST, EAST
              *            *
              **************

  158 KO            OUTPUT CONTROL VARIABLES
                          IPRNT            1  PRINT CONTROL
                          IPLOT            0  PLOT CONTROL
                          QSCAL           0.  HYDROGRAPH PLOT SCALE

                 SUBBASIN RUNOFF DATA

  159 BA            SUBBASIN CHARACTERISTICS
                          TAREA          .70  SUBBASIN AREA

                    PRECIPITATION DATA

   18 PB                  STORM         3.85  BASIN TOTAL PRECIPITATION

   20 PI              INCREMENTAL PRECIPITATION PATTERN
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .01       .01       .01       .01       .01       .01
                        .01       .01       .01       .01       .01       .01       .01       .02       .02       .07
                        .13       .18       .03       .02       .02       .02       .01       .01       .02       .01
                        .01       .01       .01       .01       .01       .01       .01       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00
                        .00       .00       .00

  160 LS            SCS LOSS RATE
                          STRTL          .44  INITIAL ABSTRACTION
                         CRVNBR        82.00  CURVE NUMBER
                          RTIMP          .00  PERCENT IMPERVICUS AREA

  161 UD            SCS DIMENSIONLESS UNITGRAPH
                          TLAG          .30  LAG
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***

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

UNIT HYDROGRAPH
11 END-OF-PERIOD ORDINATES

325. 864. 762. 385. 193. 94. 46. 23. 11. 6.
2.

****

HYDROGRAPH AT STATION 2BWE

****

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	*	1		1640	101	.01	.00	.01	34.
1		0010	2	.01	.01	.00	0.	*	1		1650	102	.01	.00	.01	32.
1		0020	3	.01	.01	.00	0.	*	1		1700	103	.01	.00	.01	30.
1		0030	4	.01	.01	.00	0.	*	1		1710	104	.01	.00	.01	29.
1		0040	5	.01	.01	.00	0.	*	1		1720	105	.01	.00	.01	29.
1		0050	6	.01	.01	.00	0.	*	1		1730	106	.01	.00	.01	29.
1		0100	7	.01	.01	.00	0.	*	1		1740	107	.01	.00	.01	29.
1		0110	8	.01	.01	.00	0.	*	1		1750	108	.01	.00	.01	28.
1		0120	9	.01	.01	.00	0.	*	1		1800	109	.01	.00	.01	27.
1		0130	10	.01	.01	.00	0.	*	1		1810	110	.01	.00	.01	25.
1		0140	11	.01	.01	.00	0.	*	1		1820	111	.01	.00	.01	24.
1		0150	12	.01	.01	.00	0.	*	1		1830	112	.01	.00	.01	24.
1		0200	13	.01	.01	.00	0.	*	1		1840	113	.01	.00	.01	23.
1		0210	14	.01	.01	.00	0.	*	1		1850	114	.01	.00	.01	23.
1		0220	15	.01	.01	.00	0.	*	1		1900	115	.01	.00	.01	23.
1		0230	16	.01	.01	.00	0.	*	1		1910	116	.01	.00	.01	23.
1		0240	17	.01	.01	.00	0.	*	1		1920	117	.01	.00	.01	23.
1		0250	18	.01	.01	.00	0.	*	1		1930	118	.01	.00	.01	23.
1		0300	19	.01	.01	.00	0.	*	1		1940	119	.01	.00	.01	23.
1		0310	20	.01	.01	.00	0.	*	1		1950	120	.01	.00	.01	23.
1		0320	21	.01	.01	.00	0.	*	1		2000	121	.01	.00	.01	22.
1		0330	22	.01	.01	.00	0.	*	1		2010	122	.01	.00	.01	20.
1		0340	23	.01	.01	.00	0.	*	1		2020	123	.01	.00	.01	19.
1		0350	24	.01	.01	.00	0.	*	1		2030	124	.01	.00	.01	18.
1		0400	25	.01	.01	.00	0.	*	1		2040	125	.01	.00	.01	18.
1		0410	26	.01	.01	.00	0.	*	1		2050	126	.01	.00	.01	18.
1		0420	27	.01	.01	.00	0.	*	1		2100	127	.01	.00	.01	18.
1		0430	28	.01	.01	.00	0.	*	1		2110	128	.01	.00	.01	18.
1		0440	29	.01	.01	.00	0.	*	1		2120	129	.01	.00	.01	18.
1		0450	30	.01	.01	.00	0.	*	1		2130	130	.01	.00	.01	18.
1		0500	31	.01	.01	.00	0.	*	1		2140	131	.01	.00	.01	18.
1		0510	32	.01	.01	.00	0.	*	1		2150	132	.01	.00	.01	18.
1		0520	33	.01	.01	.00	0.	*	1		2200	133	.01	.00	.01	18.
1		0530	34	.01	.01	.00	0.	*	1		2210	134	.01	.00	.01	18.
1		0540	35	.01	.01	.00	0.	*	1		2220	135	.01	.00	.01	18.
1		0550	36	.01	.01	.00	0.	*	1		2230	136	.01	.00	.01	18.
1		0600	37	.01	.01	.00	0.	*	1		2240	137	.01	.00	.01	18.
1		0610	38	.01	.01	.00	0.	*	1		2250	138	.01	.00	.01	19.
1		0620	39	.01	.01	.00	0.	*	1		2300	139	.02	.00	.01	23.
1		0630	40	.01	.01	.00	0.	*	1		2310	140	.01	.00	.01	26.
1		0640	41	.01	.01	.00	0.	*	1		2320	141	.01	.00	.01	24.
1		0650	42	.01	.01	.00	0.	*	1		2330	142	.01	.00	.01	21.
1		0700	43	.01	.01	.00	0.	*	1		2340	143	.01	.00	.00	18.
1		0710	44	.01	.01	.00	0.	*	1		2350	144	.00	.00	.00	15.

1	0750	48	.01	.01	.00	0.	*	2	0030	148	.00	.00	.00	1.
1	0800	49	.01	.01	.00	0.	*	2	0040	149	.00	.00	.00	1.
1	0810	50	.02	.01	.00	0.	*	2	0050	150	.00	.00	.00	0.
1	0820	51	.02	.02	.00	1.	*	2	0100	151	.00	.00	.00	0.
1	0830	52	.02	.02	.00	1.	*	2	0110	152	.00	.00	.00	0.
1	0840	53	.02	.02	.00	2.	*	2	0120	153	.00	.00	.00	0.
1	0850	54	.02	.02	.00	3.	*	2	0130	154	.00	.00	.00	0.
1	0900	55	.02	.02	.00	3.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	4.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	5.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	6.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	7.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	9.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	10.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.03	.02	.01	11.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.03	.02	.01	13.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.03	.02	.01	15.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.04	.03	.01	18.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.04	.03	.01	23.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.05	.03	.01	28.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.05	.04	.02	34.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.06	.04	.02	41.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.07	.04	.03	50.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.27	.15	.12	90.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.49	.21	.28	230.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.71	.22	.49	509.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.11	.03	.08	716.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.09	.02	.07	602.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.07	.02	.06	398.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.06	.01	.05	275.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.04	.01	.03	197.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.02	140.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.06	.01	.05	108.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.05	.01	.04	107.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.03	105.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.03	.01	.02	91.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.03	.01	.02	76.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.03	.01	.02	67.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.02	61.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.02	56.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.02	52.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.02	.00	.01	48.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.02	.00	.01	44.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.02	.00	.01	42.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.02	.00	.01	41.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.02	.00	.01	40.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.02	.00	.01	38.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.02	.00	.01	36.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.02	.00	.01	35.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.02	.00	.01	35.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.02	.00	.01	34.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.02	.00	.01	34.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.02	.00	.01	34.	*	2	0910	200	.00	.00	.00	0.
							*							

****

TOTAL RAINFALL = 3.85, TOTAL LOSS = 1.77, TOTAL EXCESS = 2.08

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
716	12.17	(CFS)	127.	39.	28.	28.

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                    CUMULATIVE AREA =      .7C SQ MI

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR CUTFLOWS BETWEEN        0. TO     1462.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR CSCILLATIONS OR CUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CCRRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LCNGER REACH.)

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
```

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	15	1890.	12.00	295.	91.	66.	1.76		
ROUTED TO	R15	1886.	12.17	295.	91.	66.	1.76		
HYDROGRAPH AT	14	1280.	12.00	179.	55.	40.	1.11		
HYDROGRAPH AT	16	1979.	12.17	391.	121.	87.	2.16		
3 COMBINED AT	114	4890.	12.17	865.	266.	193.	5.03		
ROUTED TO	R114	4521.	12.33	865.	266.	193.	5.03		
HYDROGRAPH AT	13	1922.	12.00	242.	75.	54.	1.29		
2 COMBINED AT	113	5124.	12.33	1106.	341.	247.	6.32		
ROUTED TO	R113	4890.	12.50	1106.	341.	247.	6.32		
HYDROGRAPH AT	12	1646.	12.17	275.	86.	62.	1.32		
2 COMBINED AT	112	5838.	12.33	1379.	427.	309.	7.64		
ROUTED TO	R112	5795.	12.50	1379.	427.	309.	7.64		
HYDROGRAPH AT	11	1040.	12.00	161.	50.	37.	.70		
HYDROGRAPH AT	17	447.	12.00	60.	18.	13.	.37		
HYDROGRAPH AT	10	647.	12.00	87.	27.	19.	.54		
4 COMBINED AT	111	6621.	12.33	1684.	522.	378.	9.25		
ROUTED TO	RD111	6187.	13.00	1682.	522.	378.	9.25		
HYDROGRAPH AT	2A	1227.	12.17	197.	61.	44.	1.09		
2 COMBINED AT	CP2A	6348.	13.00	1874.	583.	422.	10.34		
DIVERSION TO	FLOW	0.	13.00	0.	0.	0.	10.34		
HYDROGRAPH AT	DIVERT	6348.	13.00	1874.	583.	422.	10.34		
ROUTED TO	RR2A	5940.	13.50	1872.	583.	422.	10.34		
HYDROGRAPH AT	2BE	957.	12.33	220.	68.	49.	1.22		
2 COMBINED AT	1C2B	6160.	13.50	2087.	651.	471.	11.56		
ROUTED TO	DET2BE	5937.	13.67	2071.	651.	471.	11.56	1651.75	13.67
DIVERSION TO	SPILL	2272.	13.33	232.	58.	42.	11.56		
HYDROGRAPH AT	FRWAY	3665.	13.33	1840.	593.	429.	11.56		
ROUTED TO	CHAN	3681.	13.50	1840.	593.	429.	11.56		

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	15	1890.	12.00	295.	91.	66.	1.76		
ROUTED TO	R15	1886.	12.17	295.	91.	66.	1.76		
HYDROGRAPH AT	14	1280.	12.00	179.	55.	40.	1.11		
HYDROGRAPH AT	16	1979.	12.17	391.	121.	87.	2.16		
3 COMBINED AT	114	4890.	12.17	865.	266.	193.	5.03		
ROUTED TO	R114	4521.	12.33	865.	266.	193.	5.03		
HYDROGRAPH AT	13	1922.	12.00	242.	75.	54.	1.29		
2 COMBINED AT	113	5124.	12.33	1106.	341.	247.	6.32		
ROUTED TO	R113	4890.	12.50	1106.	341.	247.	6.32		
HYDROGRAPH AT	12	1646.	12.17	275.	86.	62.	1.32		
2 COMBINED AT	112	5838.	12.33	1379.	427.	309.	7.64		
ROUTED TO	R112	5795.	12.50	1379.	427.	309.	7.64		
HYDROGRAPH AT	11	1040.	12.00	161.	50.	37.	.70		
HYDROGRAPH AT	17	447.	12.00	60.	18.	13.	.37		
HYDROGRAPH AT	10	647.	12.00	87.	27.	19.	.54		
4 COMBINED AT	111	6621.	12.33	1684.	522.	378.	9.25		
ROUTED TO	RD111	6187.	13.00	1682.	522.	378.	9.25		
HYDROGRAPH AT	2A	1227.	12.17	197.	61.	44.	1.09		
2 COMBINED AT	CP2A	6348.	13.00	1874.	583.	422.	10.34		
DIVERSION TO	FLOW	0.	13.00	0.	0.	0.	10.34		
HYDROGRAPH AT	DIVERT	6348.	13.00	1874.	583.	422.	10.34		
ROUTED TO	RR2A	5940.	13.50	1872.	583.	422.	10.34		
HYDROGRAPH AT	2BE	957.	12.33	220.	68.	49.	1.22		
2 COMBINED AT	1C2B	6160.	13.50	2087.	651.	471.	11.56		
ROUTED TO	DET2BE	5937.	13.67	2071.	651.	471.	11.56	1651.75	13.67
DIVERSION TO	SPILL	2272.	13.33	232.	58.	42.	11.56		
HYDROGRAPH AT	FRWAY	3665.	13.33	1840.	593.	429.	11.56		
ROUTED TO	CHAN	3441.	13.50	1840.	593.	429.	11.56		

ROUTED TO	WASH	3650.	14.50	1835.	593.	429.	11.56		
HYDROGRAPH AT	RSFILL	2272.	13.67	232.	58.	42.	.00		
ROUTED TO	IDAHO	2333.	13.67	232.	58.	42.	.00		
2 COMBINED AT	WW	5416.	13.83	2066.	651.	471.	11.56		
ROUTED TO	RWW	4543.	14.83	2058.	651.	471.	11.56		
HYDROGRAPH AT	2BWW	387.	12.33	81.	25.	18.	.45		
HYDROGRAPH AT	2BWE	716.	12.17	127.	39.	28.	.70		
ROUTED TO	DET2BW	300.	12.67	111.	39.	28.	.70	1630.74	12.67
2 COMBINED AT	CC04	537.	12.50	190.	64.	46.	1.15		
DIVERSION TO	EXIT	0.	12.50	0.	0.	0.	1.15		
HYDROGRAPH AT	NDIV	537.	12.50	190.	64.	46.	1.15		
ROUTED TO	NDRCUT	530.	12.67	190.	64.	46.	1.15	1626.87	12.67
ROUTED TO	R2BW	506.	13.00	190.	64.	46.	1.15		
HYDROGRAPH AT	2BS	1724.	12.17	320.	99.	71.	1.91		
3 COMBINED AT	102	4817.	14.83	2414.	813.	588.	14.62		
HYDROGRAPH AT	5	3882.	12.67	1134.	353.	256.	5.65		
ROUTED TO	R5	3907.	12.67	1134.	353.	256.	5.65		
HYDROGRAPH AT	4	5614.	13.17	2433.	768.	556.	11.85		
2 COMBINED AT	104	8660.	12.83	3564.	1121.	811.	17.50		
ROUTED TO	R104	8251.	13.50	3558.	1121.	811.	17.50		
HYDROGRAPH AT	7	727.	12.17	127.	40.	29.	.61		
HYDROGRAPH AT	6	3788.	13.00	1459.	456.	330.	7.86		
3 COMBINED AT	106	11740.	13.33	5127.	1617.	1170.	25.97		
ROUTED TO	R106	11406.	13.67	5120.	1617.	1170.	25.97		
HYDROGRAPH AT	3N	2763.	12.33	582.	181.	131.	2.89		
ROUTED TO	CULV	2537.	12.33	582.	181.	131.	2.89	1668.66	12.33
ROUTED TO	RCULV	2246.	12.83	581.	181.	131.	2.89		
HYDROGRAPH AT	3S	2227.	12.33	481.	149.	108.	2.39		
2 COMBINED AT	103	3399.	12.67	1061.	330.	239.	5.28		
HYDROGRAPH AT	3A	1197.	12.33	250.	78.	56.	1.20		
2 COMBINED AT	CP103	4327.	12.50	1311.	408.	295.	6.48		

2 COMBINED AT	W103	13110.	13.50	6394.	2024.	1465.	32.45		
ROUTED TO	RW103	13027.	13.67	6388.	2024.	1465.	32.45		
2 COMBINED AT	PLD	14312.	13.67	8802.	2837.	2053.	47.07		
ROUTED TO	RES	161.	27.50	161.	141.	120.	47.07	1582.52	27.50

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BE

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1651.75	1.75	180.	5937.	1.00	13.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BW

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1630.74	.74	31.	300.	1.00	12.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDROUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.87	.00	2.	530.	.00	12.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1591.60
STORAGE	175.	5941.	14740.
OUTFLOW	75.	165.	39200.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1582.52	.00	5538.	161.	.00	27.50	.00

```
*** NORMAL END OF HEC-1 ***
STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING          1-NOV-88        14:32:49

PROCESS 82 TERMINATED

ELAPSED TIME  0:00:42, CPU TIME  00:00:00.091, I/O BLOCKS  61
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF         1-NOV-88        14:32:48

****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

THIS RUN EXECUTED 11/22/88 11: 6:13

```
**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
**************************************************
```

```
STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING        22-NOV-88        11:06:15

PROCESS 81 TERMINATED

ELAPSED TIME  0:02:56, CPU TIME  00:00:00.084, I/O BLOCKS  52
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF       22-NOV-88        11:06:14

****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix J

HEC-2 Output

Powerline F.R.S. Emergency Spillway
Rating Curve

```
+4444444444444444444444444444444444444444444444444444444444444444444444444444+

                 $   $   $   $  $$$$            $   $   $$$   $   $
                 $   $   $   $  $   $            $   $  $   $  $$ $$
                 $   $   $ $    $   $            $   $  $      $ $ $
                 $$$$$     $    $   $            $ $ $   $$$   $ $ $
                 $   $     $    $   $            $ $ $       $  $   $
                 $   $     $    $   $     $$     $$ $$  $   $  $   $
                 $   $     $    $$$$     $$     $   $   $$$   $   $

              DEST=HYD.WSM  USER=HYD.WSM  QUEUE=LPT  DEVICE=@LPB
            SEQ=591  QPRI=128  CPL=80  LPP=66  COPIES=1  PAGES=76

                          CREATED:  21-NOV-88  14:36:36
                         ENQUEUED:  22-NOV-88  11:29:50
                         PRINTING:  22-NOV-88  14:05:55

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:SPILL.O

          $$$   $$$$   $$$$$  $       $              $$$   $   $  $$$$$
         $   $  $   $    $    $       $             $   $  $   $    $
         $      $   $    $    $       $             $   $  $   $    $
          $$$   $$$$     $    $       $             $   $  $   $    $
             $  $        $    $       $             $   $  $   $    $
         $   $  $        $    $       $        $$   $   $  $   $    $
          $$$   $      $$$$$  $$$$$  $$$$$    $$    $$$    $$$     $

+4444444444444444444444444444444444444444444444444444444444444444444444444444+
```

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00

```
**** AOS/VS REV 7.62.00.00 / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00  21-NOV-88        14:36:36
QPRI=128          SEQ=414
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DI
LIST FILE  -- :QUEUE:HYD.WSM.LIST.414

--------
LAST MESSAGE CHANGE     17-NOV-88       14:55:52


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


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MOST RECENT LOGON       21-NOV-88       14:34:36

AOS/VS CLI   REV 07.62.00.00    21-NOV-88       14:36:39
) SEARCHLIST :UTIL/:MACROS/:UDD:HYD.WSM/:PER/:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM/OWARE
)
) LISTFILE SPILL.OUT
) DATAFILE SPILL.DAT
)
) X :UTIL:HEC2.NEW.DIR:MAIN.PR
```

```
*****************************************************
*  WATER SURFACE PROFILES                           *
*  VERSION OF NOVEMBER 1976                         *
*  UPDATED MAY 1984                                 *
*                                                   *
*  RUN DATE 11/21/1988    TIME14:36:42 *
*****************************************************
```

```
X      X  XXXXXXX   XXXXX
X      X  X         X     X
X      X  X         X
XXXXXXX   XXXX      X          XXXXX
X      X  X         X
X      X  X         X     X
X      X  XXXXXXX   XXXXX
```

11/21/88 14:34:42

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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
*************************************************

T1   POWERLINE F.R.S. SPILLWAY ANALYSIS
T2   BY MARICOPA COUNTY FCD  VALERIE RICE  JULY 11, 1988
T3       POWERLINE SPILLWAY

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q

      0.       2.        0.        0.   .006030      .00       1.5       0.

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW

     1.000     .000    -1.000     .000      .000      .000      .000      .00

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

   150.000     .000      .000      .000      .000      .000      .000      .00


QT      8.000  1000.000  3000.000  6000.000  9000.000 13000.000 18000.
NC       .000     .000      .000      .100      .300      .000      .
NH      3.000     .022    700.000     .025  1300.000     .022    1301.
X1      1.000    4.000    698.700  1301.300     .000      .000      .
GR   1579.900  698.700  1575.900   700.000  1575.900  1300.000  1579.

NH      3.000     .022    700.000     .025  1300.000     .022    1301.
X1      2.000    4.000    698.600  1301.400   385.000   385.000   385.
GR   1582.500  698.600  1578.200   700.000  1578.200  1300.000  1582.

NH      3.000     .022    700.000     .025  1300.000     .022    1301.
X1      3.000    4.000    698.400  1301.600   500.000   500.000   500.
GR   1585.900  698.400  1581.200   700.000  1581.200  1300.000  1585.

NH      3.000     .022    700.000     .025  1300.000     .022    1301.
X1      4.000    4.000    698.400  1301.600   350.000   350.000   350.
GR   1588.200  698.400  1583.300   700.000  1583.300  1300.000  1588.

NH      3.000     .022    700.000     .025  1300.000     .022    1301.
X1      4.500     .000      .000      .000    50.000    50.000    50.

X1      4.700     .000      .000      .000    50.000    50.000    50.

NH      3.000     .022    700.000     .025  1300.000     .022    1302.
X1      5.000    4.000    698.000  1302.000   120.000    1.000    50.
GR   1588.300  698.000  1582.200   700.000  1582.200  1300.000  1588.
```

11/21/88 14:36:42

NH	3.000	.022	700.000	.025	1300.000	.022	1302.
X1	6.000	4.000	697.900	1302.100	430.000	250.000	80.
GR	1588.400	697.900	1582.200	700.000	1582.200	1300.000	1588.
NH	3.000	.025	700.000	.025	1300.000	.022	1302.
X1	7.000	4.000	697.900	1302.100	550.000	310.000	100.
GR	1588.600	697.900	1582.200	700.000	1582.200	1300.000	1588.
EJ	.000	.000	.000	.000	.000	.000	.

11/21/88 14:36:42

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWI

*PROF 1

CCHV=    .100 CEHV=    .300
1490 NH CARD USED
*SECNO 1.000
     1.00       .55  1576.45       .00  1576.50  1576.59       .15       .00        .0
    1000.        0.    1000.        0.       0.     327.        0.        0.         0
      .00       .00     3.06       .00      .000     .022      .000      .000     1575.9
  .005940        0.       0.        0.        0        0         4       .00      600.3

1490 NH CARD USED
*SECNO 2.000
     2.00       .54  1578.74       .00       .00  1578.89       .15      2.30        .0
    1000.        0.    1000.        0.       0.     326.        0.        3.         5
      .03       .00     3.07       .00      .000     .022      .000      .000     1578.2
  .006002      385.     385.      385.        2        0         0       .00      600.3

1490 NH CARD USED
*SECNO 3.000
     3.00       .55  1581.75       .00       .00  1581.89       .15      3.00        .0
    1000.        0.    1000.        0.       0.     326.        0.        7.        12
      .08       .00     3.07       .00      .000     .022      .000      .000     1581.2
  .006011      500.     500.      500.        0        0         0       .00      600.3

1490 NH CARD USED
*SECNO 4.000
     4.00       .54  1583.84       .00       .00  1583.99       .15      2.10        .0
    1000.        0.    1000.        0.       0.     327.        0.        9.        17
      .11       .00     3.06       .00      .000     .022      .000      .000     1583.3
  .005975      350.     350.      350.        2        0         0       .00      600.3

1490 NH CARD USED
*SECNO 4.500
     4.50       .78  1584.08       .00       .00  1584.15       .07       .15        .0
    1000.        0.    1000.        0.       0.     464.        0.       10.        18
      .12       .00     2.16       .00      .000     .022      .000      .000     1583.3
  .001855       50.      50.       50.        2        0         0       .00      600.5
```

11/21/88 14:36:42

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWI

*SECNO 4.700

4.70	1.86	1584.16	.00	.00	1584.17	.01	.01	.0
1000.	0.	1000.	0.	0.	1115.	0.	11.	18
.13	.00	.90	.00	.000	.022	.000	.000	1582.3
.000100	50.	50.	50.	3	0	0	.00	601.2

1490 NH CARD USED

*SECNO 5.000

5.00	1.96	1584.16	.00	.00	1584.17	.01	.00	.0
1000.	0.	1000.	0.	0.	1179.	0.	12.	19
.15	.00	.85	.00	.000	.022	.000	.000	1582.2
.000083	120.	50.	1.	2	0	0	.00	601.2

1490 NH CARD USED

*SECNO 6.000

6.00	1.97	1584.17	.00	.00	1584.18	.01	.01	.0
1000.	0.	1000.	0.	0.	1179.	0.	14.	20
.18	.00	.85	.00	.000	.022	.000	.000	1582.2
.000083	430.	80.	250.	0	0	0	.00	601.3

1490 NH CARD USED

*SECNO 7.000

7.00	1.98	1584.18	.00	.00	1584.19	.01	.01	.0
1000.	0.	1000.	0.	0.	1183.	0.	17.	22
.21	.00	.85	.00	.000	.022	.000	.000	1582.2
.000082	550.	100.	310.	0	0	0	.00	601.2

11/21/88 14:36:42

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
**************************************************
```

T1
T2 POWERLINE SPILLWAY
T3 3000 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q
	0.	3.	0.	0.	.006030	.00	1.5	0.

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW
	2.000	.000	-1.000	.000	.000	.000	.000	.00

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11/21/88     14:36:42

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWI

*PROF 2

CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 1.000
     1.00      1.05  1576.95       .00  1577.00  1577.30       .35       .00        .0
    3000.        0.     3000.        0.       0.     629.        0.        0.         0
      .00       .00      4.77       .00      .000     .022      .000      .000    1575.9
  .006044        0.        0.        0.         0        0         3       .00     600.6

1490 NH CARD USED
*SECNO 2.000
     2.00      1.06  1579.26       .00       .00  1579.60       .35      2.30        .0
    3000.        0.     3000.        0.        0.     633.        0.        6.         5
      .02       .00      4.74       .00      .000     .022      .000      .000    1578.2
  .005915      385.      385.      385.         2        0         0       .00     600.6

1490 NH CARD USED
*SECNO 3.000
     3.00      1.05  1582.25       .00       .00  1582.60       .35      3.00        .0
    3000.        0.     3000.        0.        0.     629.        0.       13.        12
      .05       .00      4.77       .00      .000     .022      .000      .000    1581.2
  .006068      500.      500.      500.         2        0         0       .00     600.7

1490 NH CARD USED
*SECNO 4.000
     4.00      1.05  1584.35       .00       .00  1584.70       .35      2.10        .0
    3000.        0.     3000.        0.        0.     633.        0.       18.        17
      .07       .00      4.74       .00      .000     .022      .000      .000    1583.3
  .005942      350.      350.      350.         2        0         0       .00     600.6

1490 NH CARD USED
*SECNO 4.500
     4.50      1.39  1584.69       .00       .00  1584.89       .20       .18        .0
    3000.        0.     3000.        0.        0.     837.        0.       19.        18
      .08       .00      3.58       .00      .000     .022      .000      .000    1583.3
  .002337       50.       50.       50.         3        0         0       .00     600.9
```

11/21/88 14:36:42

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWI

*SECNO 4.700

4.70	2.58	1584.88	.00	.00	1584.94	.06	.03	.0
3000.	0.	3000.	0.	0.	1552.	0.	20.	18
.08	.00	1.93	.00	.000	.022	.000	.000	1582.3
.000299	50.	50.	50.	3	0	0	.00	601.6

1490 NH CARD USED

*SECNO 5.000

5.00	2.70	1584.90	.00	.00	1584.96	.05	.01	.0
3000.	0.	3000.	0.	0.	1624.	0.	22.	19
.09	.00	1.85	.00	.000	.022	.000	.000	1582.2
.000257	120.	50.	1.	2	0	0	.00	601.7

1490 NH CARD USED

*SECNO 6.000

6.00	2.72	1584.92	.00	.00	1584.98	.05	.02	.0
3000.	0.	3000.	0.	0.	1637.	0.	25.	20
.10	.00	1.83	.00	.000	.022	.000	.000	1582.2
.000251	430.	80.	250.	2	0	0	.00	601.8

1490 NH CARD USED

*SECNO 7.000

7.00	2.75	1584.95	.00	.00	1585.00	.05	.02	.0
3000.	0.	3000.	0.	0.	1652.	0.	29.	22
.12	.00	1.82	.00	.000	.022	.000	.000	1582.2
.000244	550.	100.	310.	2	0	0	.00	601.8

11/21/88 14:36:42

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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T1
T2 POWERLINE SPILLWAY
T3 6000 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q
	0.	4.	0.	0.	.006030	.00	1.5	0.
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW
	3.000	.000	-1.000	.000	.000	.000	.000	.00

11/21/88 14:36:42

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA
TIME	VLOB	VCH	VRCB	XNL	XNCH	XNR	WTN	ELMIN
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWI

*PROF 3

CCHV= .100 CEHV= .300

1490 NH CARD USED

*SECNO 1.000

1.00	1.59	1577.49	.00	1577.50	1578.10	.61	.00	.0
6000.	0.	6000.	0.	0.	954.	0.	0.	0
.00	.00	6.29	.00	.000	.022	.000	.000	1575.9
.006048	0.	0.	0.	0	0	3	.00	601.0

1490 NH CARD USED

*SECNO 2.000

2.00	1.59	1579.79	.00	.00	1580.40	.60	2.29	.0
6000.	0.	6000.	0.	0.	963.	0.	8.	5
.02	.00	6.23	.00	.000	.022	.000	.000	1578.2
.005872	385.	385.	385.	1	0	0	.00	601.0

1490 NH CARD USED

*SECNO 3.000

3.00	1.58	1582.78	.00	.00	1583.40	.62	3.00	.0
6000.	0.	6000.	0.	0.	950.	0.	19.	12
.04	.00	6.31	.00	.000	.022	.000	.000	1581.2
.006126	500.	500.	500.	2	0	0	.00	601.0

1490 NH CARD USED

*SECNO 4.000

4.00	1.60	1584.90	.00	.00	1585.50	.60	2.09	.0
6000.	0.	6000.	0.	0.	964.	0.	27.	17
.05	.00	6.23	.00	.000	.022	.000	.000	1583.3
.005848	350.	350.	350.	1	0	0	.00	601.0

1490 NH CARD USED

*SECNO 4.500

4.50	2.03	1585.33	.00	.00	1585.71	.38	.19	.0
6000.	0.	6000.	0.	0.	1218.	0.	28.	18
.06	.00	4.92	.00	.000	.022	.000	.000	1583.3
.002678	50.	50.	50.	3	0	0	.00	601.3

11/21/88 14:36:42

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWI
*SECNO 4.700								
4.70	3.35	1585.65	.00	.00	1585.78	.14	.05	.0
6000.	0.	6000.	0.	0.	2009.	0.	30.	18
.06	.00	2.99	.00	.000	.022	.000	.000	1582.3
.000507	50.	50.	50.	3	0	0	.00	602.1
1490 NH CARD USED								
*SECNO 5.000								
5.00	3.48	1585.68	.00	.00	1585.81	.13	.02	.0
6000.	0.	6000.	0.	0.	2093.	0.	33.	19
.07	.00	2.87	.00	.000	.022	.000	.000	1582.2
.000442	120.	50.	1.	2	0	0	.00	602.2
1490 NH CARD USED								
*SECNO 6.000								
6.00	3.52	1585.72	.00	.00	1585.84	.12	.03	.0
6000.	0.	6000.	0.	0.	2115.	0.	36.	20
.07	.00	2.84	.00	.000	.022	.000	.000	1582.2
.000427	430.	80.	250.	2	0	0	.00	602.3
1490 NH CARD USED								
*SECNO 7.000								
7.00	3.56	1585.76	.00	.00	1585.89	.12	.04	.0
6000.	0.	6000.	0.	0.	2143.	0.	41.	22
.08	.00	2.80	.00	.000	.022	.000	.000	1582.2
.000411	550.	100.	310.	2	0	0	.00	602.3

11/21/88 14:36:42

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
**************************************************
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T1
T2 POWERLINE SPILLWAY
T3 9000 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q
	0.	5.	0.	0.	.006030	.00	1.5	0.
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW
	4.000	.000	-1.000	.000	.000	.000	.000	.00

11/21/88 14:36:42

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWI

*PROF 4

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 1.000

1.00	2.03	1577.93	.00	1578.00	1578.78	.85	.00	.0
9000.	0.	9000.	0.	0.	1218.	0.	0.	0
.00	.00	7.39	.00	.000	.022	.000	.000	1575.9
.006031	0.	0.	0.	0	0	5	.00	601.3

1490 NH CARD USED
*SECNO 2.000

2.00	2.04	1580.24	.00	.00	1581.08	.84	2.30	.0
9000.	0.	9000.	0.	0.	1225.	0.	11.	5
.01	.00	7.35	.00	.000	.022	.000	.000	1578.2
.005924	385.	385.	385.	1	0	0	.00	601.3

1490 NH CARD USED
*SECNO 3.000

3.00	2.03	1583.23	.00	.00	1584.08	.85	2.99	.0
9000.	0.	9000.	0.	0.	1217.	0.	25.	12
.03	.00	7.40	.00	.000	.022	.000	.000	1581.2
.006055	500.	500.	500.	2	0	0	.00	601.3

1490 NH CARD USED
*SECNO 4.000

4.00	2.04	1585.34	.00	.00	1586.18	.84	2.10	.0
9000.	0.	9000.	0.	0.	1222.	0.	35.	17
.05	.00	7.36	.00	.000	.022	.000	.000	1583.3
.005962	350.	350.	350.	1	0	0	.00	601.3

1490 NH CARD USED
*SECNO 4.500

4.50	2.58	1585.88	.00	.00	1586.40	.52	.19	.0
9000.	0.	9000.	0.	0.	1550.	0.	36.	18
.05	.00	5.81	.00	.000	.022	.000	.000	1583.3
.002705	50.	50.	50.	4	0	0	.00	601.6

11/21/88 14:36:42

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS
Q	QLOB	QCH	QRCB	ALOB	ACH	AROB	VOL	TWA
TIME	VLOB	VCH	VRCB	XNL	XNCH	XNR	WTN	ELMIN
SLOPE	XLOBL	XLCH	XLCBR	ITRIAL	IDC	ICONT	CORAR	TOPWI

*SECNO 4.700

4.70	3.97	1586.27	.00	.00	1586.49	.22	.06	.0
9000.	0.	9000.	0.	0.	2384.	0.	38.	18
.05	.00	3.77	.00	.000	.022	.000	.000	1582.3
.000645	50.	50.	50.	3	0	0	.00	602.5

1490 NH CARD USED

*SECNO 5.000

5.00	4.12	1586.32	.00	.00	1586.52	.20	.03	.0
9000.	0.	9000.	0.	0.	2477.	0.	41.	19
.06	.00	3.63	.00	.000	.022	.000	.000	1582.2
.000568	120.	50.	1.	2	0	0	.00	602.7

1490 NH CARD USED

*SECNO 6.000

6.00	4.17	1586.37	.00	.00	1586.57	.20	.04	.0
9000.	0.	9000.	0.	0.	2507.	0.	46.	20
.06	.00	3.59	.00	.000	.022	.000	.000	1582.2
.000546	430.	80.	250.	2	0	0	.00	602.8

1490 NH CARD USED

*SECNO 7.000

7.00	4.23	1586.43	.00	.00	1586.62	.19	.05	.0
9000.	0.	9000.	0.	0.	2543.	0.	52.	22
.07	.00	3.54	.00	.000	.022	.000	.000	1582.2
.000524	550.	100.	310.	2	0	0	.00	602.7

11/21/85 14:36:42

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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T1
T2 POWERLINE SPILLWAY
T3 13,000 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q
	0.	6.	0.	0.	.006030	.00	1.5	0.
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW
	5.000	.000	-1.000	.000	.000	.000	.000	.00

11/21/88 14:36:42

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWI

*PROF 5

CCHV= .100 CEHV= .300

1490 NH CARD USED

*SECNO 1.000

1.00	2.54	1578.44	.00	1578.50	1579.57	1.13	.00	.0
13000.	0.	13000.	0.	0.	1526.	0.	0.	0
.00	.00	8.52	.00	.000	.022	.000	.000	1575.9
.005941	0.	0.	0.	0	0	4	.00	601.6

1490 NH CARD USED

*SECNO 2.000

2.00	2.53	1580.73	.00	.00	1581.87	1.13	2.30	.0
13000.	0.	13000.	0.	0.	1522.	0.	13.	5
.01	.00	8.54	.00	.000	.022	.000	.000	1578.2
.005991	385.	385.	385.	1	0	0	.00	601.6

1490 NH CARD USED

*SECNO 3.000

3.00	2.53	1583.73	.00	.00	1584.86	1.13	3.00	.0
13000.	0.	13000.	0.	0.	1522.	0.	31.	12
.03	.00	8.54	.00	.000	.022	.000	.000	1581.2
.005997	500.	500.	500.	0	0	0	.00	601.7

1490 NH CARD USED

*SECNO 4.000

4.00	2.53	1585.83	.00	.00	1586.97	1.14	2.10	.0
13000.	0.	13000.	0.	0.	1520.	0.	43.	17
.04	.00	8.55	.00	.000	.022	.000	.000	1583.3
.006024	350.	350.	350.	0	0	0	.00	601.6

1490 NH CARD USED

*SECNO 4.500

4.50	3.19	1586.49	.00	.00	1587.21	.72	.20	.0
13000.	0.	13000.	0.	0.	1915.	0.	45.	18
.04	.00	6.79	.00	.000	.022	.000	.000	1583.3
.002789	50.	50.	50.	4	0	0	.00	602.0

11/21/88 14:36:42

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN
SLOPE	XLOBL	XLCH	XLCBR	ITRIAL	IDC	ICONT	CORAR	TOPWI

*SECNO 4.700

4.70	4.68	1586.98	.00	.00	1587.31	.33	.07	.0
13000.	0.	13000.	0.	0.	2815.	0.	48.	18
.05	.00	4.62	.00	.000	.022	.000	.000	1582.3
.000774	50.	50.	50.	4	0	0	.00	603.0

1490 NH CARD USED

*SECNO 5.000

5.00	4.84	1587.04	.00	.00	1587.35	.31	.04	.0
13000.	0.	13000.	0.	0.	2912.	0.	51.	19
.05	.00	4.46	.00	.000	.022	.000	.000	1582.2
.000692	120.	50.	1.	2	0	0	.00	603.1

1490 NH CARD USED

*SECNO 6.000

6.00	4.90	1587.10	.00	.00	1587.40	.30	.05	.0
13000.	0.	13000.	0.	0.	2950.	0.	57.	20
.05	.00	4.41	.00	.000	.022	.000	.000	1582.2
.000663	430.	80.	250.	2	0	0	.00	603.3

1490 NH CARD USED

*SECNO 7.000

7.00	4.98	1587.18	.00	.00	1587.47	.29	.06	.0
13000.	0.	13000.	0.	0.	2995.	0.	63.	22
.06	.00	4.34	.00	.000	.022	.000	.000	1582.2
.000635	550.	100.	310.	2	0	0	.00	603.2

11/21/88 14:36:42

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  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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T1
T2 POWERLINE SPILLWAY
T3 18000 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q
	0.	7.	0.	0.	.006030	.00	1.5	0.

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW
	6.000	.000	-1.000	.000	.000	.000	.000	.00

11/21/88 14:36:42

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWI

*PROF 6

CCHV= .100 CEHV= .300

1490 NH CARD USED

*SECNO 1.000

1.00	3.07	1578.97	1578.93	1579.00	1580.45	1.48	.00	.0
18000.	0.	18000.	0.	0.	1842.	0.	0.	0
.00	.00	9.77	.00	.000	.022	.000	.000	1575.9
.006082	0.	0.	0.	0	8	0	.00	601.9

1490 NH CARD USED

*SECNO 2.000

2.00	3.10	1581.30	.00	.00	1582.75	1.45	2.30	.0
18000.	0.	18000.	0.	0.	1863.	0.	16.	5
.01	.00	9.66	.00	.000	.022	.000	.000	1578.2
.005862	385.	385.	385.	2	0	0	.00	602.0

1490 NH CARD USED

*SECNO 3.000

3.00	3.06	1584.26	1584.23	.00	1585.75	1.48	2.99	.0
18000.	0.	18000.	0.	0.	1842.	0.	38.	12
.03	.00	9.77	.00	.000	.022	.000	.000	1581.2
.006085	500.	500.	500.	2	8	0	.00	602.0

1490 NH CARD USED

*SECNO 4.000

4.00	3.09	1586.39	1586.32	.00	1587.85	1.46	2.10	.0
18000.	0.	18000.	0.	0.	1857.	0.	53.	17
.04	.00	9.69	.00	.000	.022	.000	.000	1583.3
.005927	350.	350.	350.	4	5	0	.00	602.0

1490 NH CARD USED

*SECNO 4.500

4.50	3.87	1587.17	.00	.00	1588.10	.93	.20	.0
18000.	0.	18000.	0.	0.	2327.	0.	55.	18
.04	.00	7.73	.00	.000	.022	.000	.000	1583.3
.002796	50.	50.	50.	5	0	0	.00	602.5

11/21/88 14:36:42

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN
SLOPE	XLOBL	XLCH	XLCSR	ITRIAL	IDC	ICONT	CORAR	TOPWI

*SECNO 4.700
3280 CROSS SECTION 4.70 EXTENDED .55 FEET

4.70	5.45	1587.75	.00	.00	1588.22	.47	.07	.0
18000.	0.	18000.	0.	0.	3279.	0.	58.	18
.04	.00	5.49	.00	.000	.022	.000	.000	1582.3
.000893	50.	50.	50.	4	0	0	.00	603.2

1490 NH CARD USED
*SECNO 5.000

5.00	5.62	1587.82	.00	.00	1588.26	.44	.04	.0
18000.	0.	18000.	0.	0.	3385.	0.	62.	19
.04	.00	5.32	.00	.000	.022	.000	.000	1582.2
.000804	120.	50.	1.	2	0	0	.00	603.6

1490 NH CARD USED
*SECNO 6.000

6.00	5.70	1587.90	.00	.00	1588.33	.43	.06	.0
18000.	0.	18000.	0.	0.	3430.	0.	68.	20
.05	.00	5.25	.00	.000	.022	.000	.000	1582.2
.000770	430.	80.	250.	2	0	0	.00	603.8

1490 NH CARD USED
*SECNO 7.000

7.00	5.79	1587.99	.00	.00	1588.40	.41	.08	.0
18000.	0.	18000.	0.	0.	3484.	0.	76.	22
.05	.00	5.17	.00	.000	.022	.000	.000	1582.2
.000737	550.	100.	310.	2	0	0	.00	603.8

11/21/88 14:36:42

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  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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T1
T2 POWERLINE SPILLWAY
T3 23,000 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q
	0.	8.	0.	0.	.006030	.00	1.5	0.

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW
	7.000	.000	-1.000	.000	.000	.000	.000	.00

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11/21/88     14:36:42

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWI

*PROF 7

CCHV=    .100 CEHV=    .300
1490 NH CARD USED
*SECNO 1.000
3720 CRITICAL DEPTH ASSUMED
     1.00      3.55  1579.45  1579.45  1579.50  1581.25      1.80       .00        .0
   23000.        0.   23000.       0.       0.    2137.       0.        0.         0
      .00       .00    10.76      .00     .000     .022      .000      .000    1575.9
  .006066        0.       0.       0.        0        5         0       .00     602.3

1490 NH CARD USED
*SECNO 2.000
     2.00      3.59  1581.79  1581.76      .00  1583.55      1.76      2.30        .0
   23000.        0.   23000.       0.       0.    2158.       0.        19.         5
      .01       .00    10.66      .00     .000     .022      .000      .000    1578.2
  .005866      385.     385.     385.        4        5         0       .00     602.3

1490 NH CARD USED
*SECNO 3.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     3.00      3.56  1584.76  1584.76      .00  1586.55      1.80      2.98        .0
   23000.        0.   23000.       0.       0.    2138.       0.        44.        12
      .02       .00    10.76      .00     .000     .022      .000      .000    1581.2
  .006054      500.     500.     500.        2        5         0       .00     602.4

1490 NH CARD USED
*SECNO 4.000
     4.00      3.58  1586.28  1586.86      .00  1588.66      1.79      2.11        .0
   23000.        0.   23000.       0.       0.    2145.       0.        61.        17
      .03       .00    10.72      .00     .000     .022      .000      .000    1583.3
  .005990      350.     350.     350.        2        5         0       .00     602.3

1490 NH CARD USED
*SECNO 4.500
     4.50      4.51  1587.51      .00      .00  1588.92      1.12       .19        .0
   23000.        0.   23000.       0.       0.    2713.       0.        64.        13
      .01       .00    [illegible]  .00     [illegible]  .022      .000      .000    1587.3
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11/21/88 14:36:42

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN
SLOPE	XLOBL	XLCH	XLCBR	ITRIAL	IDC	ICONT	CORAR	TOPWI

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*SECNO 4.700
3280 CROSS SECTION       4.70 EXTENDED       1.25 FEET

     4.70      6.15  1588.45       .00       .00  1589.05       .60       .08        .0
   23000.        0.   23000.        0.        0.    3704.        0.       67.        18
      .04       .00     6.21       .00      .000      .022      .000      .000    1582.3
  .000972       50.      50.       50.         4         0         0       .00     603.2

1490 NH CARD USED
*SECNO 5.000
3280 CROSS SECTION       5.00 EXTENDED        .24 FEET

     5.00      6.34  1588.54       .00       .00  1589.10       .56       .05        .0
   23000.        0.   23000.        0.        0.    3817.        0.       72.        19
      .04       .00     6.03       .00      .000      .022      .000      .000    1582.2
  .000880      120.      50.        1.         2         0         0       .00     604.0

1490 NH CARD USED
*SECNO 6.000
3280 CROSS SECTION       6.00 EXTENDED        .22 FEET

     6.00      6.42  1588.62       .00       .00  1589.17       .55       .07        .0
   23000.        0.   23000.        0.        0.    3868.        0.       79.        20
      .04       .00     5.95       .00      .000      .022      .000      .000    1582.2
  .000842      430.      80.      250.         2         0         0       .00     604.2

1490 NH CARD USED
*SECNO 7.000
3280 CROSS SECTION       7.00 EXTENDED        .12 FEET

     7.00      6.52  1588.72       .00       .00  1589.26       .53       .08        .0
   23000.        0.   23000.        0.        0.    3929.        0.       88.        22
      .05       .00     5.85       .00      .000      .022      .000      .000    1582.2
  .000808      550.     100.      310.         2         0         0       .00     604.2
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11/21/88 14:36:42

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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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T1
T2 POWERLINE SPILLWAY
T3 29,000 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q
	0.	9.	0.	0.	.006030	.00	1.5	0.

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW
	15.000	.000	-1.000	.000	.000	.000	.000	.00

11/21/88 14:36:42

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS
Q	GLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWI

*PROF 8

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 1.000
3280 CROSS SECTION 1.00 EXTENDED .15 FEET

3720 CRITICAL DEPTH ASSUMED

1.00	4.15	1580.05	1580.05	1579.90	1582.15	2.09	.00	.0
29000.	0.	29000.	0.	0.	2498.	0.	0.	0
.00	.00	11.61	.00	.000	.022	.000	.000	1575.9
.005732	0.	0.	0.	0	8	0	.00	602.6

1490 NH CARD USED
*SECNO 2.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

2.00	4.16	1582.36	1582.36	.00	1584.45	2.09	2.20	.0
29000.	0.	29000.	0.	0.	2501.	0.	22.	5
.01	.00	11.60	.00	.000	.022	.000	.000	1578.2
.005711	385.	385.	385.	2	5	0	.00	602.7

1490 NH CARD USED
*SECNO 3.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3.00	4.16	1585.35	1585.35	.00	1587.45	2.09	2.86	.0
29000.	0.	29000.	0.	0.	2499.	0.	51.	12
.02	.00	11.61	.00	.000	.022	.000	.000	1581.2
.005728	500.	500.	500.	2	5	0	.00	602.8

1490 NH CARD USED
*SECNO 4.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

4.00	4.16	1587.46	1587.46	.00	1589.55	2.09	2.00	.0
29000.	0.	29000.	0.	0.	2500.	0.	71.	17
.03	.00	11.60	.00	.000	.022	.000	.000	1583.3
.005716	350.	350.	350.	2	5	0	.00	602.7

11/21/88 14:36:42

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWI

1490 NH CARD USED
*SECNO 4.500
3280 CROSS SECTION 4.50 EXTENDED .27 FEET

4.50	5.16	1588.46	.00	.00	1589.81	1.35	.19	.0
29000.	0.	29000.	0.	0.	3109.	0.	74.	18
.03	.00	9.33	.00	.000	.022	.000	.000	1583.3
.002766	50.	50.	50.	5	0	0	.00	603.2

*SECNO 4.700
3280 CROSS SECTION 4.70 EXTENDED 1.99 FEET

4.70	6.89	1589.19	.00	.00	1589.95	.76	.08	.0
29000.	0.	29000.	0.	0.	4151.	0.	78.	18
.03	.00	6.99	.00	.000	.022	.000	.000	1582.3
.001058	50.	50.	50.	4	0	0	.00	603.2

1490 NH CARD USED
*SECNO 5.000
3280 CROSS SECTION 5.00 EXTENDED .99 FEET

5.00	7.09	1589.29	.00	.00	1590.01	.72	.05	.0
29000.	0.	29000.	0.	0.	4272.	0.	83.	19
.04	.00	6.79	.00	.000	.022	.000	.000	1582.2
.000962	120.	50.	1.	2	0	0	.00	604.0

1490 NH CARD USED
*SECNO 6.000
3280 CROSS SECTION 6.00 EXTENDED .99 FEET

6.00	7.19	1589.39	.00	.00	1590.08	.70	.08	.0
29000.	0.	29000.	0.	0.	4331.	0.	91.	20
.04	.00	6.70	.00	.000	.022	.000	.000	1582.2
.000919	430.	80.	250.	2	0	0	.00	604.2

1490 NH CARD USED
3280 CROSS SECTION 7.00 EXTENDED .90 FEET

11/21/88 14:36:42

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN
SLOPE	XLOBL	XLCH	XLCBR	ITRIAL	IDC	ICONT	CORAR	TOPWI
7.00	7.30	1589.50	.00	.00	1590.18	.68	.09	.0
29000.	0.	29000.	0.	0.	4398.	0.	101.	22
.04	.00	6.59	.00	.000	.022	.000	.000	1582.2
.000883	550.	100.	310.	2	0	0	.00	604.2

11/21/88 14:36:42

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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
*************************************************
```

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY

POWERLINE SPILLWAY

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIW
	1.000	.00	.00	.00	1575.90	1000.00	1576.45	.
	1.000	.00	.00	.00	1575.90	3000.00	1576.95	.
	1.000	.00	.00	.00	1575.90	6000.00	1577.49	.
	1.000	.00	.00	.00	1575.90	9000.00	1577.93	.
	1.000	.00	.00	.00	1575.90	13000.00	1578.44	.
	1.000	.00	.00	.00	1575.90	18000.00	1578.97	1578.
*	1.000	.00	.00	.00	1575.90	23000.00	1579.45	1579.
*	1.000	.00	.00	.00	1575.90	29000.00	1580.05	1580.
	2.000	385.00	.00	.00	1578.20	1000.00	1578.74	.
	2.000	385.00	.00	.00	1578.20	3000.00	1579.26	.
	2.000	385.00	.00	.00	1578.20	6000.00	1579.79	.
	2.000	385.00	.00	.00	1578.20	9000.00	1580.24	.
	2.000	385.00	.00	.00	1578.20	13000.00	1580.73	.
	2.000	385.00	.00	.00	1578.20	18000.00	1581.30	.
	2.000	385.00	.00	.00	1578.20	23000.00	1581.79	1581.
*	2.000	385.00	.00	.00	1578.20	29000.00	1582.36	1582.
	3.000	500.00	.00	.00	1581.20	1000.00	1581.75	.
	3.000	500.00	.00	.00	1581.20	3000.00	1582.25	.
	3.000	500.00	.00	.00	1581.20	6000.00	1582.78	.
	3.000	500.00	.00	.00	1581.20	9000.00	1583.23	.
	3.000	500.00	.00	.00	1581.20	13000.00	1583.73	.
	3.000	500.00	.00	.00	1581.20	18000.00	1584.26	1584.
*	3.000	500.00	.00	.00	1581.20	23000.00	1584.76	1584.
*	3.000	500.00	.00	.00	1581.20	29000.00	1585.35	1585.

11/21/88 14:36:42

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIW
	4.000	350.00	.00	.00	1583.30	1000.00	1583.84	.
	4.000	350.00	.00	.00	1583.30	3000.00	1584.35	.
	4.000	350.00	.00	.00	1583.30	6000.00	1584.90	.
	4.000	350.00	.00	.00	1583.30	9000.00	1585.34	.
	4.000	350.00	.00	.00	1583.30	13000.00	1585.83	.
	4.000	350.00	.00	.00	1583.30	18000.00	1586.39	1586.
	4.000	350.00	.00	.00	1583.30	23000.00	1586.88	1586.
*	4.000	350.00	.00	.00	1583.30	29000.00	1587.46	1587.
	4.500	50.00	.00	.00	1583.30	1000.00	1584.08	.
	4.500	50.00	.00	.00	1583.30	3000.00	1584.69	.
	4.500	50.00	.00	.00	1583.30	6000.00	1585.33	.
	4.500	50.00	.00	.00	1583.30	9000.00	1585.88	.
	4.500	50.00	.00	.00	1583.30	13000.00	1586.49	.
	4.500	50.00	.00	.00	1583.30	18000.00	1587.17	.
	4.500	50.00	.00	.00	1583.30	23000.00	1587.81	.
	4.500	50.00	.00	.00	1583.30	29000.00	1588.46	.
	4.700	50.00	.00	.00	1582.30	1000.00	1584.16	.
	4.700	50.00	.00	.00	1582.30	3000.00	1584.88	.
	4.700	50.00	.00	.00	1582.30	6000.00	1585.65	.
	4.700	50.00	.00	.00	1582.30	9000.00	1586.27	.
	4.700	50.00	.00	.00	1582.30	13000.00	1586.98	.
	4.700	50.00	.00	.00	1582.30	18000.00	1587.75	.
	4.700	50.00	.00	.00	1582.30	23000.00	1588.45	.
	4.700	50.00	.00	.00	1582.30	29000.00	1589.19	.
	5.000	50.00	.00	.00	1582.20	1000.00	1584.16	.
	5.000	50.00	.00	.00	1582.20	3000.00	1584.90	.
	5.000	50.00	.00	.00	1582.20	6000.00	1585.68	.
	5.000	50.00	.00	.00	1582.20	9000.00	1586.32	.
	5.000	50.00	.00	.00	1582.20	13000.00	1587.04	.
	5.000	50.00	.00	.00	1582.20	18000.00	1587.82	.
	5.000	50.00	.00	.00	1582.20	23000.00	1588.54	.
	5.000	50.00	.00	.00	1582.20	29000.00	1589.29	.
	6.000	80.00	.00	.00	1582.20	1000.00	1584.17	.
	6.000	80.00	.00	.00	1582.20	3000.00	1584.92	.
	6.000	80.00	.00	.00	1582.20	6000.00	1585.72	.
	6.000	80.00	.00	.00	1582.20	9000.00	1586.37	.
	6.000	80.00	.00	.00	1582.20	13000.00	1587.10	.
	6.000	80.00	.00	.00	1582.20	18000.00	1587.90	.
	6.000	80.00	.00	.00	1582.20	23000.00	1588.62	.
	6.000	80.00	.00	.00	1582.20	29000.00	1589.39	.

11/21/88 14:36:42

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIW
7.000	100.00	.00	.00	1582.20	1000.00	1584.18	.
7.000	100.00	.00	.00	1582.20	3000.00	1584.95	.
7.000	100.00	.00	.00	1582.20	6000.00	1585.76	.
7.000	100.00	.00	.00	1582.20	9000.00	1586.43	.
7.000	100.00	.00	.00	1582.20	13000.00	1587.18	.
7.000	100.00	.00	.00	1582.20	18000.00	1587.99	.
7.000	100.00	.00	.00	1582.20	23000.00	1588.72	.
7.000	100.00	.00	.00	1582.20	29000.00	1589.50	.

11/21/88 14:36:42

POWERLINE SPILLWAY

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	1.000	1000.00	1576.45	.00	.00	-.05	600.35	.
	1.000	3000.00	1576.95	.50	.00	-.05	600.68	.
	1.000	6000.00	1577.49	.54	.00	-.01	601.03	.
	1.000	9000.00	1577.93	.44	.00	-.07	601.32	.
	1.000	13000.00	1578.44	.51	.00	-.06	601.65	.
	1.000	18000.00	1578.97	.53	.00	-.03	601.99	.
*	1.000	23000.00	1579.45	.49	.00	-.05	602.31	.
*	1.000	29000.00	1580.05	.60	.00	.15	602.60	.
	2.000	1000.00	1578.74	.00	2.30	.00	600.35	385.
	2.000	3000.00	1579.26	.51	2.31	.00	600.69	385.
	2.000	6000.00	1579.79	.54	2.31	.00	601.04	385.
	2.000	9000.00	1580.24	.44	2.31	.00	601.33	385.
	2.000	13000.00	1580.73	.49	2.29	.00	601.65	385.
	2.000	18000.00	1581.30	.57	2.33	.00	602.02	385.
	2.000	23000.00	1581.79	.49	2.34	.00	602.34	385.
*	2.000	29000.00	1582.36	.57	2.31	.00	602.71	385.
	3.000	1000.00	1581.75	.00	3.00	.00	600.37	500.
	3.000	3000.00	1582.25	.50	2.99	.00	600.71	500.
	3.000	6000.00	1582.78	.54	2.99	.00	601.08	500.
	3.000	9000.00	1583.23	.44	2.99	.00	601.38	500.
	3.000	13000.00	1583.73	.50	3.00	.00	601.72	500.
	3.000	18000.00	1584.26	.53	2.96	.00	602.09	500.
*	3.000	23000.00	1584.76	.49	2.97	.00	602.42	500.
*	3.000	29000.00	1585.35	.60	3.00	.00	602.83	500.
	4.000	1000.00	1583.84	.00	2.10	.00	600.36	350.
	4.000	3000.00	1584.35	.51	2.11	.00	600.69	350.
	4.000	6000.00	1584.90	.54	2.11	.00	601.05	350.
	4.000	9000.00	1585.34	.44	2.11	.00	601.33	350.
	4.000	13000.00	1585.83	.49	2.10	.00	601.65	350.
	4.000	18000.00	1586.39	.56	2.13	.00	602.02	350.
	4.000	23000.00	1586.88	.49	2.12	.00	602.33	350.
*	4.000	29000.00	1587.46	.58	2.10	.00	602.72	350.
	4.500	1000.00	1584.08	.00	.23	.00	600.50	50.
	4.500	3000.00	1584.69	.62	.34	.00	600.91	50.
	4.500	6000.00	1585.33	.64	.44	.00	601.32	50.
	4.500	9000.00	1585.88	.55	.54	.00	601.68	50.
	4.500	13000.00	1586.49	.61	.66	.00	602.08	50.
	4.500	18000.00	1587.17	.68	.78	.00	602.53	50.

11/21/88 14:36:42

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
4.700	1000.00	1584.16	.00	.08	.00	601.21	50.
4.700	3000.00	1584.88	.73	.19	.00	601.69	50.
4.700	6000.00	1585.65	.76	.31	.00	602.18	50.
4.700	9000.00	1586.27	.63	.39	.00	602.59	50.
4.700	13000.00	1586.98	.71	.49	.00	603.06	50.
4.700	18000.00	1587.75	.77	.58	.00	603.20	50.
4.700	23000.00	1588.45	.70	.65	.00	603.20	50.
4.700	29000.00	1589.19	.74	.73	.00	603.20	50.
5.000	1000.00	1584.16	.00	.01	.00	601.29	50.
5.000	3000.00	1584.90	.74	.02	.00	601.77	50.
5.000	6000.00	1585.68	.78	.04	.00	602.28	50.
5.000	9000.00	1586.32	.64	.05	.00	602.70	50.
5.000	13000.00	1587.04	.72	.06	.00	603.17	50.
5.000	18000.00	1587.82	.78	.07	.00	603.69	50.
5.000	23000.00	1588.54	.71	.08	.00	604.00	50.
5.000	29000.00	1589.29	.75	.10	.00	604.00	50.
6.000	1000.00	1584.17	.00	.01	.00	601.33	80.
6.000	3000.00	1584.92	.75	.02	.00	601.85	80.
6.000	6000.00	1585.72	.80	.04	.00	602.38	80.
6.000	9000.00	1586.37	.65	.05	.00	602.82	80.
6.000	13000.00	1587.10	.73	.06	.00	603.32	80.
6.000	18000.00	1587.90	.80	.08	.00	603.86	80.
6.000	23000.00	1588.62	.72	.09	.00	604.20	80.
6.000	29000.00	1589.39	.76	.10	.00	604.20	80.
7.000	1000.00	1584.18	.00	.01	.00	601.29	100.
7.000	3000.00	1584.95	.77	.03	.00	601.80	100.
7.000	6000.00	1585.76	.81	.05	.00	602.34	100.
7.000	9000.00	1586.43	.66	.06	.00	602.78	100.
7.000	13000.00	1587.18	.75	.07	.00	603.27	100.
7.000	18000.00	1587.99	.81	.09	.00	603.80	100.
7.000	23000.00	1588.72	.74	.10	.00	604.20	100.
7.000	29000.00	1589.50	.78	.11	.00	604.20	100.

11/21/88 14:36:42

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION	SECNO=	1.000	PROFILE= 7	CRITICAL DEPTH ASSUMED
CAUTION	SECNO=	1.000	PROFILE= 8	CRITICAL DEPTH ASSUMED
CAUTION	SECNO=	2.000	PROFILE= 8	CRITICAL DEPTH ASSUMED
CAUTION	SECNO=	2.000	PROFILE= 8	MINIMUM SPECIFIC ENERGY
CAUTION	SECNO=	3.000	PROFILE= 7	CRITICAL DEPTH ASSUMED
CAUTION	SECNO=	3.000	PROFILE= 7	MINIMUM SPECIFIC ENERGY
CAUTION	SECNO=	3.000	PROFILE= 8	CRITICAL DEPTH ASSUMED
CAUTION	SECNO=	3.000	PROFILE= 8	MINIMUM SPECIFIC ENERGY
CAUTION	SECNO=	4.000	PROFILE= 8	CRITICAL DEPTH ASSUMED
CAUTION	SECNO=	4.000	PROFILE= 8	MINIMUM SPECIFIC ENERGY

```
11/21/88    14:36:57

**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
**************************************************

STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING        21-NOV-88       14:36:58

PROCESS 57 TERMINATED

ELAPSED TIME  0:00:20, CPU TIME  00:00:00.084, I/O BLOCKS  52
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF       21-NOV-88       14:36:58

****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix K

HEC-2 Output

Upper Weekes Wash
Breakout Rating Curve

```
333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333

$   $ $   $ $$$$       $   $  $$$  $   $
$   $ $   $ $   $      $   $ $   $ $$ $$
$   $  $ $  $   $      $   $ $     $ $ $
$$$$$   $   $   $      $ $ $  $$$  $ $ $
$   $   $   $   $      $ $ $     $ $   $
$   $   $   $   $ $$   $$ $$ $   $ $   $
$   $   $   $$$$  $$   $   $  $$$  $   $
```

DEST=HYD.WSM   USER=HYD.WSM   QUEUE=LPT   DEVICE=@LPB
SEQ=349   QPRI=128   CPL=132   LPP=66   COPIES=1   PAGES=92

CREATED: 22-NOV-88   11:03:16
ENQUEUED: 23-NOV-88   12:28:20
PRINTING: 23-NOV-88   12:28:21

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:WWBOUT.OUT

```
$   $ $   $ $$$$   $$$  $   $ $$$$$       $$$  $   $ $$$$$
$   $ $   $ $   $ $   $ $   $   $        $   $ $   $   $
$   $ $   $ $   $ $   $ $   $   $        $   $ $   $   $
$ $ $ $ $ $ $$$$  $   $ $   $   $        $   $ $   $   $
$ $ $ $ $ $ $   $ $   $ $   $   $        $   $ $   $   $
$$ $$ $$ $$ $   $ $   $ $   $   $     $$ $   $ $   $   $
$   $ $   $ $$$$   $$$   $$$    $     $$  $$$   $$$    $

333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333
```

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00

```
**** AOS/VS REV 7.62.00.00 / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00  22-NOV-88        11:03:18
QPRI=128          SEQ=580
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:23c.CLI.00001.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.580

--------
LAST MESSAGE CHANGE      17-NOV-88        14:55:52

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

--------
MOST RECENT LOGON        22-NOV-88        11:00:42

AOS/VS CLI   REV 07.62.00.00    22-NOV-88        11:03:20
) SEARCHLIST :UTIL/:MACROS/:UDD:HYD.WSM/:PER/:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM/OWARE
)
) LISTFILE WWBOUT.OUT
) DATAFILE WWBOUT.DAT
)
) X :UTIL:HEC2.NEW.DIR:MAIN.PR
```

```
*****************************************************
*  WATER SURFACE PROFILES                           *
*  VERSION OF NOVEMBER 1976                         *
*  UPDATED MAY 1984                                 *
*                                                   *
*  RUN DATE 11/22/1988   TIME11: 3:26 *
*****************************************************
```

```
*************************************
*  U.S. ARMY CORPS OF ENGINEERS     *
*  THE HYDROLOGIC ENGINEERING CENTER *
*  609 SECOND STREET, SUITE D       *
*  DAVIS, CALIFORNIA 95616          *
*  (916) 440-2105 (FTS) 448-2105    *
*************************************
```

```
X      X  XXXXXXX   XXXXX              XXXXX
X      X  X         X     X            X     X
X      X  X         X                        X
XXXXXXX  XXXX       X           XXXXX    XXXXX
X      X  X         X                  X
X      X  X         X     X            X
X      X  XXXXXXX   XXXXX              XXXXXXX
```

THIS RUN EXECUTED 11/22/88 11: 3:28

```
**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
**************************************************
```

SPLIT FLOW BEING PERFORMED

SF BREAKOUT AREA

```
JC
JP

TW WEIR OVERFLOW BETWEEN 1 AND 2, ROAD WIDTH OF 30 FT MODELED AS A WEIR.
WS      4       1       2      -1     2.7
WC      0    1005       5    1002      35    1002     255    1006

TW WEIR OVERFLOW BETWEEN 2 AND 3
WS      2       2       3      -1     2.7
WC      0    1006     400    1011

TW WEIR OVERFLOW BETWEEN 3 AND 4
WS      2       3       4      -1     2.7
WC      0    1011     400    1015

TW WEIR OVERFLOW BETWEEN 4 AND 5
WS      2       4       5      -1     2.7
WC      0    1015     215  1017.5

TW WEIR OVERFLOW BETWEEN 5 AND 6
WS      2       5       6      -1     2.7
WC      0  1017.5     170    1020
```

```
C
T1          WEEKES WASH BREAKOUT - CROSS SECTIONS SURVEYED BY Z&H ENGINEERING
T2          IN-HOUSE STUDY BY AMIR MOTAMEDI AND VALERIE RICE
T3          MARCH 1988, 100 YEAR FLOW
```

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	-10.	2.	0.	0.	-1.000000	.00	1.5	0.	1005.000	.000
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

38.000	1.000	39.000	42.000	8.000	4.000	27.000	28.000	21.000	22.000
53.000	54.000	50.000	38.000	5.000	1.000	3.000	61.000	11.000	12.000
10.000	55.000	26.000	56.000	51.000	33.000	38.000	43.000	13.000	14.000
15.000	35.000	60.000	59.000	16.000	17.000	18.000	58.000	.000	.000

```
SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*PROF 1

CCHV=    .100 CEHV=    .300
1490 NH CARD USED
*SECNO 1.000
3280 CROSS SECTION      1.00 EXTENDED      3.57 FEET

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    8150.0   10300.0  TYPE=     1  TARGET=    2150.000
         THIS STUDY WAS DONE TO ESTIMATE THE BREAKOUT FOR THE WEEKES WASH AREA
         THE CROSS SECTIONS ARE FROM THE SURVEY BY THE Z & H COMPANY #88044
         THE CROSS SECTIONS WERE CODED AS THE CENTER OF 10,000
         THE MOST DOWN STREAM CROSS SECTION IS #1
         THE RIGHT BANK WAS ASSUMED TO BE THE CREST FOR THE BREAKOUT
         ET CARDS WERE USED TO ADJUST THE HEAD FOR THE WEIR OVER FLOW
         JUNCTION DR.
    1.00      1.57  1003.57  1003.57  1003.57  1003.95      .38      .00      .00  1008.00
    592.        0.     592.       0.       0.     119.       0.       0.       0.   1002.00
     .00       .00     4.96      .00     .000     .035     .000     .000  1002.00 10065.39
 .005054        0.       0.       0.        0       10        0      .00   159.61 10225.00

1490 NH CARD USED
*SECNO 2.000

3265 DIVIDED FLOW

3280 CROSS SECTION      2.00 EXTENDED      3.63 FEET

3470 ENCROACHMENT STATIONS=    9400.0   10300.0  TYPE=     1  TARGET=     900.000
    2.00      3.63  1004.13      .00  1004.13  1004.16      .02      .17      .04  1008.50
   1000.        0.    1000.       0.       0.     862.       0.       3.       2.   1006.30
     .06       .00     1.16      .00     .000     .035     .000     .000  1000.50  9537.80
 .000339      245.     260.     290.        5        0        0      .00   475.90 10202.48

1490 NH CARD USED
*SECNO 3.000
```

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


3265 DIVIDED FLOW

3280 CROSS SECTION      3.00 EXTENDED      4.28 FEET

3685 20 TRIALS ATTEMPTED WSEL/CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9200.0   10119.0  TYPE=      1  TARGET=     919.000
     3.00      2.58  1010.58  1010.58  1010.58  1010.94      .36       .36       .10  1011.20
    1000.        0.    1000.       0.       0.      209.      0.        7.        5.   1011.00
      .08       .33     4.79      .00      .070     .035     .000      .000  1008.00  9354.51
  .017689     320.     345.     400.       20        14        0       .00   277.51 10114.65


1490 NH CARD USED
*SECNO 4.000

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=    9300.0   10130.0  TYPE=      1  TARGET=     830.000
     4.00      3.44  1014.44      .00  1014.44  1014.69      .25      3.74       .01  1014.50
    1000.       41.     959.       0.       67.     236.      0.       10.        8.   1014.80
      .11       .61     4.06      .00      .070     .035     .000      .000  1011.00  9638.39
  .005782     370.     400.     400.        4         0        0       .00   462.50 10118.30


1490 NH CARD USED
*SECNO 5.000

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10150.0  TYPE=      1  TARGET=     850.000
     5.00      1.43  1016.93  1016.93  1016.93  1017.29      .37      2.09       .04  1017.50
    1000.      204.     796.       0.       82.     150.      0.       11.       10.   1017.60
      .12      2.49     5.30      .00      .057     .035     .000      .000  1015.50  9409.80
  .018665     245.     215.     215.        6        18        0       .00   343.69 10107.78
```

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLCBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

1490 NH CARD USED
*SECNO 6.000

3470 ENCROACHMENT STATIONS=    9300.0   10260.0  TYPE=     1  TARGET=     960.000
        SCENIC STREET
     6.00      1.57  1019.37      .00  1019.37  1019.51      .14      2.20      .02  1020.50
    1000.        0.     1000.       0.       0.     329.       0.       12.      12.  1020.30
      .14       .00      3.04      .00     .057     .035     .000      .000  1017.80  9837.92
  .005800      360.      215.     170.        4        0        0       .00   360.52 10198.43
```

TW WEIR OVERFLOW BETWEEN 1 AND 2, ROAD WIDTH OF 30 FT MODELED AS A WEIR.

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
408.42	407.17	.31	408.42	407.17	.31	5	1003.570	1004.134	1.000	2.000

TW WEIR OVERFLOW BETWEEN 2 AND 3

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
.00	.00	.00	408.42	407.17	.31	5	1004.134	1010.581	2.000	3.000

TW WEIR OVERFLOW BETWEEN 3 AND 4

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
.00	.00	.00	408.42	407.17	.31	5	1010.581	1014.443	3.000	4.000

TW WEIR OVERFLOW BETWEEN 4 AND 5

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
.00	.00	.00	408.42	407.17	.31	5	1014.443	1016.927	4.000	5.000

TW WEIR OVERFLOW BETWEEN 5 AND 6

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
.00	.00	.00	408.42	407.17	.31	5	1016.927	1019.370	5.000	6.000

THIS RUN EXECUTED 11/22/88 11: 3:49

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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
*************************************************
```

T1
T2
T3 3000 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	3.	0.	0.	-1.000000	.00	1.5	0.	1005.000	.000
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*PROF 2


CCHV=    .100 CEHV=    .300
1490 NH CARD USED
*SECNO 1.000
3280 CROSS SECTION      1.00 EXTENDED      4.35 FEET

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    8150.0   10300.0  TYPE=     1  TARGET=    2150.000
         THIS STUDY WAS DONE TO ESTIMATE THE BREAKOUT FOR THE WEEKES WASH AREA
         THE CROSS SECTIONS ARE FROM THE SURVEY BY THE Z & H COMPANY #88044
         THE CROSS SECTIONS WERE CODED AS THE CENTER OF 10,000
         THE MOST DOWN STREAM CROSS SECTION IS #1
         THE RIGHT BANK WAS ASSUMED TO BE THE CREST FOR THE BREAKOUT
         ET CARDS WERE USED TO ADJUST THE HEAD FOR THE WEIR OVER FLOW
         JUNCTION DR.
     1.00      2.35  1004.35  1004.35  1004.35  1004.78       .43       .00       .00  1008.00
    1836.        0.    1836.       0.       0.     349.        0.        0.        0.  1002.00
      .00       .00     5.26       .00     .000     .035      .000      .000   1002.00  9849.06
  .004240        0.       0.       0.        0       13         0       .00    375.94 10225.00


1490 NH CARD USED
*SECNO 2.000

3265 DIVIDED FLOW

3280 CROSS SECTION      2.00 EXTENDED      4.56 FEET


3470 ENCROACHMENT STATIONS=    9400.0   10300.0  TYPE=     1  TARGET=     900.000
     2.00      4.56  1005.06       .00  1005.06  1005.13       .07       .32       .04  1008.50
    2811.        0.    2811.       0.       0.    1326.        0.        5.        3.  1006.30
      .03       .00     2.12       .00     .000     .035      .000      .000   1000.50  9531.91
  .000718      245.     260.      290.        4        0         0       .00    518.61 10203.55


1490 NH CARD USED
*SECNO 3.000
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


3265 DIVIDED FLOW

3280 CROSS SECTION      3.00 EXTENDED      5.02 FEET

3685 20 TRIALS ATTEMPTED WSEL/CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9200.0   10119.0  TYPE=      1  TARGET=     919.000
     3.00      3.32  1011.32  1011.32  1011.32  1011.88      .57       .50       .15  1011.20
    2831.       39.    2792.       0.       51.     459.       0.       12.       7.   1011.00
      .05       .75     6.08      .00      .070     .035     .000      .000  1008.00  9304.75
  .004374      320.     345.     400.       20       13        0       .00    559.53 10118.00


1490 NH CARD USED
*SECNO 4.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10130.0  TYPE=      1  TARGET=     830.000
     4.00      4.13  1015.13  1015.13  1015.13  1015.88      .75      1.39       .06  1014.50
    2947.      341.    2606.       0.      352.     353.       0.       18.      12.   1014.80
      .07       .97     7.39      .00      .070     .035     .000      .000  1011.00  9453.27
  .002883      370.     400.     400.       12       11        0       .00    666.73 10120.00


1490 NH CARD USED
*SECNO 5.000

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL/CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10150.0  TYPE=      1  TARGET=     850.000
     5.00      2.06  1017.56  1017.56  1017.56  1018.24      .69      1.40       .01  1017.50
    2964.      891.    2072.       0.      252.     272.       0.       21.      16.   1017.60
      .08      3.53     7.62      .00      .054     .035     .000      .000  1015.50  9394.77
  .023502      245.     215.     215.       20       12        0       .00    640.01 10142.52
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

1490 NH CARD USED
*SECNO 6.000

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3710 WSEL ASSUMED BASED ON MIN DIFF

3470 ENCROACHMENT STATIONS=    9300.0   10260.0  TYPE=     1  TARGET=     960.000
        SCENIC STREET
     6.00      2.50  1020.30  1019.79  1020.30  1020.55      .25      2.46      2.26  1020.50
    3000.        7.     2993.       0.      14.     739.       0.       25.       20.  1020.30
      .09       .46      4.05      .00     .070     .035     .000      .000   1017.80  9465.76
  .005873      360.      215.     170.       20        8        0       .00    628.67 10249.99
```

TW WEIR OVERFLOW BETWEEN 1 AND 2, ROAD WIDTH OF 30 FT MODELED AS A WEIR.

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
974.19	974.42	.02	974.19	974.42	.02	13	1004.349	1005.061	1.000	2.000

TW WEIR OVERFLOW BETWEEN 2 AND 3

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
19.96	19.68	1.41	994.15	994.10	.01	13	1005.061	1011.319	2.000	3.000

TW WEIR OVERFLOW BETWEEN 3 AND 4

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
116.79	116.29	.43	1110.94	1110.39	.05	13	1011.319	1015.127	3.000	4.000

TW WEIR OVERFLOW BETWEEN 4 AND 5

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
16.29	16.30	.03	1127.23	1126.69	.05	13	1015.127	1017.555	4.000	5.000

TW WEIR OVERFLOW BETWEEN 5 AND 6

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
36.40	36.40	.00	1163.63	1163.09	.05	13	1017.555	1020.300	5.000	6.000

THIS RUN EXECUTED 11/22/88 11: 4:16

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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T1
T2 WEEKES WASH
T3 5000 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	4.	0.	0.	-1.000000	.00	.0	0.	1005.000	.000
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	3.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*PROF 3

CCHV=    .100 CEHV=    .300
1490 NH CARD USED
*SECNO 1.000
3280 CROSS SECTION      1.00 EXTENDED      4.53 FEET

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    8150.0   10300.0  TYPE=     1  TARGET=    2150.000
         THIS STUDY WAS DONE TO ESTIMATE THE BREAKOUT FOR THE WEEKES WASH AREA
         THE CROSS SECTIONS ARE FROM THE SURVEY BY THE Z & H COMPANY #88044
         THE CROSS SECTIONS WERE CODED AS THE CENTER OF 10,000
         THE MOST DOWN STREAM CROSS SECTION IS #1
         THE RIGHT BANK WAS ASSUMED TO BE THE CREST FOR THE BREAKOUT
         ET CARDS WERE USED TO ADJUST THE HEAD FOR THE WEIR OVER FLOW
         JUNCTION DR.
    1.00      2.53  1004.53  1004.53  1004.58  1005.10      .57      .00      .00  1008.00
   2539.        0.    2539.       0.       0.     418.       0.       0.       0.  1002.00
     .00       .00     6.08      .00     .000     .035     .000     .000  1002.00  9840.70
 .004611        0.       0.       0.        0       14        0      .00   384.30 10225.00

1490 NH CARD USED
*SECNO 2.000

3265 DIVIDED FLOW

3280 CROSS SECTION      2.00 EXTENDED      4.92 FEET

3470 ENCROACHMENT STATIONS=    9400.0   10300.0  TYPE=     1  TARGET=     900.000
    2.00      4.93  1005.43      .00  1005.41  1005.52      .10      .37      .05  1008.50
   3760.        0.    3760.       0.       0.    1518.       0.       6.       3.  1006.30
     .03       .00     2.48      .00     .000     .035     .000     .000  1000.50  9529.58
 .000845      245.     260.     290.        4        0        0      .00   530.65 10203.98

1490 NH CARD USED
*SECNO 3.000
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```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


3265 DIVIDED FLOW

3280 CROSS SECTION       3.00 EXTENDED       5.33 FEET


3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9200.0   10119.0  TYPE=      1  TARGET=      919.000
     3.00      3.63  1011.63  1011.63  1011.64  1012.26      .62       .54       .16  1011.20
    3874.       95.     3780.       0.     121.     590.       0.       15.       8.   1011.00
      .04       .79      6.40      .00     .070     .035     .000      .000  1008.00  9283.44
  .003614      320.      345.     400.       20       14        0       .00   704.74 10118.00


1490 NH CARD USED
*SECNO 4.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10130.0  TYPE=      1  TARGET=      830.000
     4.00      4.66  1015.66  1015.66  1015.66  1016.52      .87      1.20       .07  1014.50
    4432.      792.     3640.       0.     620.     443.       0.       22.      14.   1014.80
      .06      1.28      8.22      .00     .070     .035     .000      .000  1011.00  9439.09
  .002634      370.      400.     400.       20       13        0       .00   680.91 10120.00


1490 NH CARD USED
*SECNO 5.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10150.0  TYPE=      1  TARGET=      850.000
     5.00      2.82  1018.32  1018.32  1018.32  1019.11      .79       .69       .01  1017.50
    4799.     1221.     3578.       0.     636.     438.       0.       28.      18.   1017.60
      .07      1.92      8.17      .00     .055     .035     .000      .000  1015.50  9376.46
  .003639      245.      215.     215.       20       14        0       .00   768.54 10145.00
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLCRR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

1490 NH CARD USED
*SECNO 6.000

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10260.0  TYPE=     1  TARGET=     960.000
         SCENIC STREET
     6.00      2.51  1020.31  1020.31  1020.31  1021.01      .70      .89      .01  1020.50
    5000.        6.     4994.       0.      16.     744.       0.      34.      22.  1020.30
      .08       .39      6.71      .00     .070     .035     .000     .000  1017.80  9465.27
  .004002      360.      215.     170.        2       11        0      .00   633.42 10250.00
```

TW WEIR OVERFLOW BETWEEN 1 AND 2, ROAD WIDTH OF 30 FT MODELED AS A WEIR.

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1221.03	1200.85	1.67	1221.03	1200.85	1.67	20	1004.528	1005.426	1.000	2.000

TW WEIR OVERFLOW BETWEEN 2 AND 3

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
114.49	114.53	.04	1335.52	1315.38	1.52	20	1005.426	1011.634	2.000	3.000

TW WEIR OVERFLOW BETWEEN 3 AND 4

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
557.33	561.56	.76	1892.85	1876.95	.84	20	1011.634	1015.659	3.000	4.000

TW WEIR OVERFLOW BETWEEN 4 AND 5

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
367.26	369.89	.71	2260.12	2246.84	.59	20	1015.659	1018.321	4.000	5.000

TW WEIR OVERFLOW BETWEEN 5 AND 6

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
200.92	200.10	.41	2461.04	2446.94	.57	20	1018.321	1020.310	5.000	6.000

THIS RUN EXECUTED 11/22/88 11: 4:51

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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T1
T2 WEEKES WASH
T3 6000 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	5.	0.	0.	-1.000000	.00	.0	0.	1005.000	.000
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	4.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*PROF 4

CCHV=    .100 CEHV=    .300
1490 NH CARD USED
*SECNO 1.000
3280 CROSS SECTION      1.00 EXTENDED      4.62 FEET

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    8150.0   10300.0  TYPE=     1  TARGET=    2150.000
         THIS STUDY WAS DONE TO ESTIMATE THE BREAKOUT FOR THE WEEKES WASH AREA
         THE CROSS SECTIONS ARE FROM THE SURVEY BY THE Z & H COMPANY #88044
         THE CROSS SECTIONS WERE CODED AS THE CENTER OF 10,000
         THE MOST DOWN STREAM CROSS SECTION IS #1
         THE RIGHT BANK WAS ASSUMED TO BE THE CREST FOR THE BREAKOUT
         ET CARDS WERE USED TO ADJUST THE HEAD FOR THE WEIR OVER FLOW
         JUNCTION DR.
    1.00      2.62  1004.62  1004.62  1004.62  1005.24      .61      .00      .00  1008.00
   2862.        0.    2862.       0.       0.     455.       0.       0.       0.   1002.00
     .00       .00     6.29      .00     .000     .035     .000     .000  1002.00  9836.20
 .017825        0.       0.       0.        0       14        0      .00   388.80 10225.00

1490 NH CARD USED
*SECNO 2.000

3265 DIVIDED FLOW

3280 CROSS SECTION      2.00 EXTENDED      5.15 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=    9400.0   10300.0  TYPE=     1  TARGET=     900.000
    2.00      5.15  1005.65      .00  1005.65  1005.76      .10      .46      .05  1008.50
   4203.        0.    4203.       0.       0.    1639.       1.       6.       3.   1006.30
     .03       .00     2.56      .11     .000     .035     .070     .000  1000.50  9528.13
 .000832      245.     260.      290.        5        0        0      .00   545.54 10249.54
```

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

1490 NH CARD USED
*SECNO 3.000

3265 DIVIDED FLOW

3280 CROSS SECTION      3.00 EXTENDED      5.46 FEET


3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9200.0   10119.0  TYPE=      1  TARGET=      919.000
     3.00      3.76  1011.76  1011.76  1011.75  1012.42      .66       .52       .17  1011.20
    4392.      130.     4262.       0.      160.     642.       0.       16.       8.   1011.00
      .04       .82      6.64      .00      .070     .035     .070      .000  1008.00  9275.07
  .003471      320.      345.     400.       20       14        0       .00    757.13 10118.00


1490 NH CARD USED
*SECNO 4.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10130.0  TYPE=      1  TARGET=      830.000
     4.00      4.89  1015.89  1015.89  1015.84  1016.81      .92      1.16       .08  1014.50
    5165.     1031.     4134.       0.      736.     482.       0.       25.      14.   1014.80
      .06      1.40      8.58      .00      .070     .035     .070      .000  1011.00  9433.05
  .002575      370.      400.     400.       20       13        0       .00    686.95 10120.00


1490 NH CARD USED
*SECNO 5.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10150.0  TYPE=      1  TARGET=      850.000
     5.00      3.01  1018.51  1018.51  1018.51  1019.38      .87       .68       .01  1017.50
    5689.     1533.     4155.       0.      743.     480.       0.       31.      18.   1017.60
      .07      2.06      8.66      .00      .056     .035     .070      .000  1015.50  9371.86
  .003624      245.      215.     215.       20       14        0       .00    773.14 10145.00
```

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

1490 NH CARD USED
*SECNO 6.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10260.0  TYPE=     1  TARGET=     960.000
         SCENIC STREET
     6.00      2.72  1020.52  1020.52  1020.52  1021.27      .75      .87      .01  1020.50
    6000.       26.     5974.       0.       48.     858.       0.      38.      23.   1020.30
      .08       .54      6.96      .00      .070     .035     .070     .000  1017.80  9455.41
  .003806      360.      215.     170.        2       15        0      .00   794.59 10250.00
```

TW WEIR OVERFLOW BETWEEN 1 AND 2, ROAD WIDTH OF 30 FT MODELED AS A WEIR.

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1340.24	1351.77	.86	1340.24	1351.77	.86	13	1004.624	1005.653	1.000	2.000

TW WEIR OVERFLOW BETWEEN 2 AND 3

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
189.72	195.72	3.12	1529.95	1547.49	1.14	13	1005.653	1011.758	2.000	3.000

TW WEIR OVERFLOW BETWEEN 3 AND 4

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
772.61	805.52	4.17	2302.56	2353.01	2.17	13	1011.758	1015.886	3.000	4.000

TW WEIR OVERFLOW BETWEEN 4 AND 5

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
523.58	537.36	2.60	2826.14	2890.37	2.25	13	1015.886	1018.513	4.000	5.000

TW WEIR OVERFLOW BETWEEN 5 AND 6

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
311.48	311.39	.03	3137.63	3201.76	2.02	13	1018.513	1020.518	5.000	6.000

THIS RUN EXECUTED 11/22/88 11: 5:16

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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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```

T1
T2 WEEKES WASH
T3 7000 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	6.	0.	0.	-1.000000	.00	1.5	0.	1005.000	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	5.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*PROF 5

CCHV=    .100 CEHV=    .300
1490 NH CARD USED
*SECNO 1.000
3280 CROSS SECTION      1.00 EXTENDED      4.71 FEET

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    8150.0   10300.0  TYPE=     1  TARGET=    2150.000
         THIS STUDY WAS DONE TO ESTIMATE THE BREAKOUT FOR THE WEEKES WASH AREA
         THE CROSS SECTIONS ARE FROM THE SURVEY BY THE Z & H COMPANY #88044
         THE CROSS SECTIONS WERE CODED AS THE CENTER OF 10,000
         THE MOST DOWN STREAM CROSS SECTION IS #1
         THE RIGHT BANK WAS ASSUMED TO BE THE CREST FOR THE BREAKOUT
         ET CARDS WERE USED TO ADJUST THE HEAD FOR THE WEIR OVER FLOW
         JUNCTION DR.
    1.00      2.71  1004.71  1004.71  1004.72  1005.36      .65      .00      .00  1008.00
   3167.        0.    3167.       0.       0.     488.       0.       0.       0.   1002.00
     .00       .00     6.49      .00     .000     .035     .000     .000  1002.00  9832.23
 .017483        0.       0.       0.        0       14        0      .00   392.78 10225.00

1490 NH CARD USED
*SECNO 2.000

3265 DIVIDED FLOW

3280 CROSS SECTION      2.00 EXTENDED      5.29 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=    9400.0   10300.0  TYPE=     1  TARGET=     900.000
    2.00      5.29  1005.79      .00  1005.80  1005.91      .11      .49      .05  1008.50
   4640.        0.    4640.       0.       0.    1715.       2.       7.       3.   1006.30
     .03       .00     2.71      .17     .000     .035     .070     .000  1000.50  9527.24
 .000883      245.     260.     290.        5        0        0      .00   556.95 10253.73
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

1490 NH CARD USED
*SECNO 3.000

3265 DIVIDED FLOW

3280 CROSS SECTION       3.00 EXTENDED       5.55 FEET


3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL/CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9200.0   10119.0  TYPE=      1  TARGET=     919.000
     3.00      3.85  1011.85  1011.85  1011.85  1012.58      .73       .55       .19  1011.20
    4913.      165.     4748.       0.     192.     680.       0.       17.       8.   1011.00
      .04       .86      6.99      .00     .070     .035     .070      .000  1008.00  9269.00
  .003564      320.      345.     400.       20       16        0       .00   795.09 10118.00


1490 NH CARD USED
*SECNO 4.000
3685 20 TRIALS ATTEMPTED WSEL/CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10130.0  TYPE=      1  TARGET=     830.000
     4.00      5.03  1016.03  1016.03  1016.03  1017.07     1.04      1.23       .09  1014.50
    5893.     1244.     4649.       0.     809.     505.       0.       26.      15.   1014.80
      .06      1.54      9.20      .00     .070     .035     .070      .000  1011.00  9429.56
  .002776      370.      400.     400.       20       11        0       .00   690.44 10120.00


1490 NH CARD USED
*SECNO 5.000
3685 20 TRIALS ATTEMPTED WSEL/CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10150.0  TYPE=      1  TARGET=     850.000
     5.00      3.20  1018.70  1018.70  1018.70  1019.64      .94       .70       .01  1017.50
    6576.     1857.     4719.       0.     848.     521.       0.       34.      19.   1017.60
      .06      2.19      9.06      .00     .056     .035     .070      .000  1015.50  9367.34
  .003558      245.      215.     215.       20       14        0       .00   777.66 10145.00
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

1490 NH CARD USED
*SECNO 6.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10260.0  TYPE=     1  TARGET=     960.000
         SCENIC STREET
     6.00      2.88  1020.68  1020.68  1020.68  1021.50      .82      .85      .01  1020.50
    7000.       61.     6939.       0.      88.     952.       0.      41.      24.  1020.30
      .07       .69      7.29      .00     .070     .035     .070     .000  1017.80  9447.48
  .003639      360.      215.     170.       11       15        0      .00   802.52 10250.00
```

TW WEIR OVERFLOW BETWEEN 1 AND 2, ROAD WIDTH OF 30 FT MODELED AS A WEIR.

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1472.61	1470.76	.13	1472.61	1470.76	.13	8	1004.709	1005.792	1.000	2.000

TW WEIR OVERFLOW BETWEEN 2 AND 3

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
272.82	271.04	.65	1745.43	1741.79	.21	8	1005.792	1011.848	2.000	3.000

TW WEIR OVERFLOW BETWEEN 3 AND 4

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
980.37	980.30	.01	2725.80	2722.09	.14	8	1011.848	1016.025	3.000	4.000

TW WEIR OVERFLOW BETWEEN 4 AND 5

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
682.57	682.87	.04	3408.38	3404.96	.10	8	1016.025	1018.702	4.000	5.000

TW WEIR OVERFLOW BETWEEN 5 AND 6

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
424.19	424.53	.08	3832.57	3829.48	.08	8	1018.702	1020.685	5.000	6.000

THIS RUN EXECUTED 11/22/88 11: 5:30

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR.-  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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T1
T2 WEEKES WASH
T3 9000 CFS

J1	ICHECK	ING	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	7.	0.	0.	-1.000000	.00	1.5	0.	1005.000	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	6.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOFR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*PROF 6

CCHV=    .100 CEHV=    .300
1490 NH CARD USED
*SECNO 1.000
3280 CROSS SECTION      1.00 EXTENDED      4.84 FEET

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    8150.0   10300.0  TYPE=     1  TARGET=    2150.000
         THIS STUDY WAS DONE TO ESTIMATE THE BREAKOUT FOR THE WEEKES WASH AREA
         THE CROSS SECTIONS ARE FROM THE SURVEY BY THE Z & H COMPANY #88044
         THE CROSS SECTIONS WERE CODED AS THE CENTER OF 10,000
         THE MOST DOWN STREAM CROSS SECTION IS #1
         THE RIGHT BANK WAS ASSUMED TO BE THE CREST FOR THE BREAKOUT
         ET CARDS WERE USED TO ADJUST THE HEAD FOR THE WEIR OVER FLOW
         JUNCTION DR.
    1.00      2.84  1004.84  1004.84  1004.85  1005.55      .71      .00      .00  1008.00
   3659.        0.    3659.       0.       0.     541.       0.       0.       0.   1002.00
     .00       .00     6.76      .00     .000     .035     .000     .000  1002.00  9825.97
  .016895       0.       0.       0.        0       10        0      .00   399.04 10225.00

1490 NH CARD USED
*SECNO 2.000

3265 DIVIDED FLOW

3280 CROSS SECTION      2.00 EXTENDED      5.50 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=    9400.0   10300.0  TYPE=     1  TARGET=     900.000
    2.00      5.50  1006.00      .00  1006.01  1006.13      .13      .52      .06  1008.50
   5334.        0.    5333.       2.       0.    1830.       6.       7.       3.   1006.30
     .02       .00     2.91      .26     .000     .035     .070     .000  1000.50  9525.90
  .000957     245.     260.     290.        5        0        0      .00   574.16 10260.00
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

1490 NH CARD USED
*SECNO 3.000
3280 CROSS SECTION      3.00 EXTENDED      5.80 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9200.0   10119.0  TYPE=      1  TARGET=      919.000
     3.00      4.10  1012.10  1012.10  1012.10  1012.84      .74       .55       .18  1011.20
    5838.      276.    5562.       0.     300.     787.       0.       19.        9.   1011.00
      .04       .92     7.07      .00     .070     .035     .070      .000  1008.00  9251.70
  .003003      320.     345.     400.       20       14        0       .00   866.30 10118.00

1490 NH CARD USED
*SECNO 4.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10130.0  TYPE=      1  TARGET=      830.000
     4.00      5.37  1016.37  1016.37  1016.37  1017.55     1.18      1.14       .13  1014.50
    7322.     1726.    5596.       0.     987.     563.       0.       30.       15.   1014.80
      .05      1.75     9.93      .00     .070     .035     .070      .000  1011.00  9423.63
  .002804      370.     400.     400.       20       11        0       .00   696.37 10120.00

1490 NH CARD USED
*SECNO 5.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10150.0  TYPE=      1  TARGET=      850.000
     5.00      3.54  1019.04  1019.04  1019.05  1020.10     1.06       .70       .01  1017.50
    8342.     2529.    5814.       0.    1046.     595.       0.       39.       19.   1017.60
      .06      2.42     9.77      .00     .056     .035     .070      .000  1015.50  9339.79
  .003471      245.     215.     215.       20       14        0       .00   805.21 10145.00
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

1490 NH CARD USED
*SECNO 6.000
3280 CROSS SECTION       6.00 EXTENDED        .29 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10260.0  TYPE=      1  TARGET=      960.000
         SCENIC STREET
     6.00      3.19  1020.99  1020.99  1020.99  1021.94      .95      .82      .01  1020.50
    9000.      154.     8846.       0.     163.    1121.       0.      48.      25.   1020.30
      .07       .94      7.89      .00     .070     .035     .070     .000  1017.80  9433.14
  .003429      360.      215.     170.       20       15        0      .00   816.86 10250.00
```

TW WEIR OVERFLOW BETWEEN 1 AND 2, ROAD WIDTH OF 30 FT MODELED AS A WEIR.

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1675.25	1669.14	.37	1675.25	1669.14	.37	8	1004.844	1006.002	1.000	2.000

TW WEIR OVERFLOW BETWEEN 2 AND 3

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
503.61	502.34	.25	2178.86	2171.48	.34	8	1006.002	1012.104	2.000	3.000

TW WEIR OVERFLOW BETWEEN 3 AND 4

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1484.06	1484.97	.06	3662.92	3656.44	.18	8	1012.104	1016.366	3.000	4.000

TW WEIR OVERFLOW BETWEEN 4 AND 5

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1020.29	1019.12	.11	4683.21	4675.56	.16	8	1016.366	1019.043	4.000	5.000

TW WEIR OVERFLOW BETWEEN 5 AND 6

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
657.60	657.03	.09	5340.80	5332.59	.15	8	1019.043	1020.987	5.000	6.000

THIS RUN EXECUTED 11/22/88 11: 5:49

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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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T1
T2 WEEKES WASH
T3 10000 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	8.	0.	0.	-1.000000	.00	1.5	0.	1005.000	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         GLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*PROF 7

CCHV=    .100 CEHV=    .300
1490 NH CARD USED
*SECNO 1.000
3280 CROSS SECTION      1.00 EXTENDED      4.93 FEET

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    8150.0   10300.0  TYPE=     1  TARGET=    2150.000
         THIS STUDY WAS DONE TO ESTIMATE THE BREAKOUT FOR THE WEEKES WASH AREA
         THE CROSS SECTIONS ARE FROM THE SURVEY BY THE Z & H COMPANY #88044
         THE CROSS SECTIONS WERE CODED AS THE CENTER OF 10,000
         THE MOST DOWN STREAM CROSS SECTION IS #1
         THE RIGHT BANK WAS ASSUMED TO BE THE CREST FOR THE BREAKOUT
         ET CARDS WERE USED TO ADJUST THE HEAD FOR THE WEIR OVER FLOW
         JUNCTION DR.
    1.00      2.93  1004.93  1004.93  1004.93  1005.64      .72      .00      .00  1008.00
   3905.        0.    3905.       0.       0.     575.       0.       0.       0.   1002.00
     .00       .00     6.79      .00     .000     .035     .000     .000  1002.00  9821.98
 .015891        0.       0.       0.        0        7        0      .00   403.02 10225.00

1490 NH CARD USED
*SECNO 2.000

3265 DIVIDED FLOW

3280 CROSS SECTION      2.00 EXTENDED      5.60 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=    9400.0   10300.0  TYPE=     1  TARGET=     900.000
    2.00      5.61  1006.11      .00  1006.11  1006.25      .14      .55      .06  1008.50
   5698.        0.    5695.       3.       0.    1887.       9.       7.       3.   1006.30
     .02       .00     3.02      .32     .000     .035     .070     .000  1000.50  9525.25
 .001017      245.     260.     290.        5        0        0      .00   589.49 10260.00
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

1490 NH CARD USED
*SECNO 3.000

3265 DIVIDED FLOW

3280 CROSS SECTION       3.00 EXTENDED       5.90 FEET


3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL/CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9200.0   10119.0  TYPE=      1  TARGET=      919.000
     3.00      4.20  1012.20  1012.20  1012.20  1012.97      .77       .57       .19  1011.20
    6322.      336.    5987.       0.      343.     826.       0.       19.       9.   1011.00
      .04       .98     7.25      .00      .070     .035     .070      .000  1008.00  9200.00
  .002955      320.     345.     400.       20       14        0       .00   875.13 10118.00


1490 NH CARD USED
*SECNO 4.000
3685 20 TRIALS ATTEMPTED WSEL/CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10130.0  TYPE=      1  TARGET=      830.000
     4.00      5.53  1016.53  1016.53  1016.53  1017.78     1.25      1.14       .14  1014.50
    8048.     1980.    6068.       0.     1074.     591.       0.       32.      16.   1014.80
      .05      1.84    10.26      .00      .070     .035     .070      .000  1011.00  9420.77
  .002808      370.     400.     400.       20       11        0       .00   699.23 10120.00


1490 NH CARD USED
*SECNO 5.000
3685 20 TRIALS ATTEMPTED WSEL/CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=    9300.0   10150.0  TYPE=      1  TARGET=      850.000
     5.00      3.68  1019.18  1019.18  1019.18  1020.32     1.14       .71       .01  1017.50
    9232.     2867.    6365.       0.     1129.     625.       0.       41.      20.   1017.60
      .06      2.54    10.18      .00      .056     .035     .070      .000  1015.50  9336.77
  .003522      245.     215.     215.       20       19        0       .00   808.23 10145.00
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

1490 NH CARD USED
*SECNO 6.000
3280 CROSS SECTION       6.00 EXTENDED        .43 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     9300.0    10260.0  TYPE=      1  TARGET=      960.000
         SCENIC STREET
     6.00      3.33  1021.13  1021.13  1021.13  1022.14      1.01       .82       .01  1020.50
   10000.       209.     9791.       0.     200.     1199.       0.       51.       25.   1020.30
      .07      1.04      8.16      .00     .070      .035     .070      .000  1017.80  9426.47
  .003352       360.      215.     170.       20        15        0       .00   823.53 10250.00
```

TW WEIR OVERFLOW BETWEEN 1 AND 2, ROAD WIDTH OF 30 FT MODELED AS A WEIR.

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1792.31	1788.49	.21	1792.31	1788.49	.21	8	1004.929	1006.105	1.000	2.000

TW WEIR OVERFLOW BETWEEN 2 AND 3

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
624.78	620.60	.67	2417.09	2409.09	.33	8	1006.105	1012.199	2.000	3.000

TW WEIR OVERFLOW BETWEEN 3 AND 4

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1725.67	1725.28	.02	4142.75	4134.37	.20	8	1012.199	1016.531	3.000	4.000

TW WEIR OVERFLOW BETWEEN 4 AND 5

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1183.66	1183.23	.04	5326.41	5317.61	.17	8	1016.531	1019.184	4.000	5.000

TW WEIR OVERFLOW BETWEEN 5 AND 6

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
768.24	768.60	.05	6094.64	6086.21	.14	8	1019.184	1021.127	5.000	6.000

THIS RUN EXECUTED 11/22/88 11: 6: 9

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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

MARCH 1988, 100 YEAR

SUMMARY PRINTOUT

	SECNO	CWSEL	XLCH	ELMIN	DEPTH	TOPWID	STENCL	STENCR	STCHL	STCHR	SSTA	ENDST	DIFWSP
*	1.000	1003.57	.00	1002.00	1.57	159.61	8150.00	10300.00	9630.00	10225.00	10065.39	10225.00	.00
*	1.000	1004.35	.00	1002.00	2.35	375.94	8150.00	10300.00	9630.00	10225.00	9849.06	10225.00	.78
*	1.000	1004.53	.00	1002.00	2.53	384.30	8150.00	10300.00	9630.00	10225.00	9840.70	10225.00	.18
*	1.000	1004.62	.00	1002.00	2.62	388.80	8150.00	10300.00	9630.00	10225.00	9836.20	10225.00	.10
*	1.000	1004.71	.00	1002.00	2.71	392.78	8150.00	10300.00	9630.00	10225.00	9832.23	10225.00	.09
*	1.000	1004.84	.00	1002.00	2.84	399.04	8150.00	10300.00	9630.00	10225.00	9825.97	10225.00	.13
*	1.000	1004.93	.00	1002.00	2.93	403.02	8150.00	10300.00	9630.00	10225.00	9821.98	10225.00	.09
	2.000	1004.13	260.00	1000.50	3.63	475.90	9400.00	10300.00	9510.00	10230.00	9537.80	10202.48	.00
	2.000	1005.06	260.00	1000.50	4.56	518.61	9400.00	10300.00	9510.00	10230.00	9531.91	10203.55	.93
	2.000	1005.43	260.00	1000.50	4.93	530.65	9400.00	10300.00	9510.00	10230.00	9529.58	10203.98	.36
	2.000	1005.65	260.00	1000.50	5.15	545.54	9400.00	10300.00	9510.00	10230.00	9528.13	10249.54	.23
	2.000	1005.79	260.00	1000.50	5.29	556.95	9400.00	10300.00	9510.00	10230.00	9527.24	10253.73	.14
	2.000	1006.00	260.00	1000.50	5.50	574.16	9400.00	10300.00	9510.00	10230.00	9525.90	10260.00	.21
	2.000	1006.11	260.00	1000.50	5.61	589.49	9400.00	10300.00	9510.00	10230.00	9525.25	10260.00	.10
*	3.000	1010.58	345.00	1008.00	2.58	277.51	9200.00	10119.00	9700.00	10118.00	9354.51	10114.65	.00
*	3.000	1011.32	345.00	1008.00	3.32	559.53	9200.00	10119.00	9700.00	10118.00	9304.75	10118.00	.74
*	3.000	1011.63	345.00	1008.00	3.63	704.74	9200.00	10119.00	9700.00	10118.00	9283.44	10118.00	.32
*	3.000	1011.76	345.00	1008.00	3.76	757.13	9200.00	10119.00	9700.00	10118.00	9275.07	10118.00	.12
*	3.000	1011.85	345.00	1008.00	3.85	795.09	9200.00	10119.00	9700.00	10118.00	9269.00	10118.00	.09
*	3.000	1012.10	345.00	1008.00	4.10	866.30	9200.00	10119.00	9700.00	10118.00	9251.70	10118.00	.26
*	3.000	1012.20	345.00	1008.00	4.20	875.13	9200.00	10119.00	9700.00	10118.00	9200.00	10118.00	.09
	4.000	1014.44	400.00	1011.00	3.44	462.50	9300.00	10130.00	9950.00	10120.00	9638.39	10118.30	.00
*	4.000	1015.13	400.00	1011.00	4.13	666.73	9300.00	10130.00	9950.00	10120.00	9453.27	10120.00	.68
*	4.000	1015.66	400.00	1011.00	4.66	680.91	9300.00	10130.00	9950.00	10120.00	9439.09	10120.00	.53
*	4.000	1015.89	400.00	1011.00	4.89	686.95	9300.00	10130.00	9950.00	10120.00	9433.05	10120.00	.23
*	4.000	1016.03	400.00	1011.00	5.03	690.44	9300.00	10130.00	9950.00	10120.00	9429.56	10120.00	.14
*	4.000	1016.37	400.00	1011.00	5.37	696.37	9300.00	10130.00	9950.00	10120.00	9423.63	10120.00	.34
*	4.000	1016.53	400.00	1011.00	5.53	699.23	9300.00	10130.00	9950.00	10120.00	9420.77	10120.00	.16

	SECNO	CWSEL	XLCH	ELMIN	DEPTH	TOPWID	STENCL	STENCR	STCHL	STCHR	SSTA	ENDST	DIFWSP
*	5.000	1016.93	215.00	1015.50	1.43	343.69	9300.00	10150.00	9928.00	10145.00	9409.80	10107.78	.00
*	5.000	1017.56	215.00	1015.50	2.06	640.01	9300.00	10150.00	9928.00	10145.00	9394.77	10142.52	.63
*	5.000	1018.32	215.00	1015.50	2.82	768.54	9300.00	10150.00	9928.00	10145.00	9376.46	10145.00	.77
*	5.000	1018.51	215.00	1015.50	3.01	773.14	9300.00	10150.00	9928.00	10145.00	9371.86	10145.00	.19
*	5.000	1018.70	215.00	1015.50	3.20	777.66	9300.00	10150.00	9928.00	10145.00	9367.34	10145.00	.19
*	5.000	1019.04	215.00	1015.50	3.54	805.21	9300.00	10150.00	9928.00	10145.00	9339.79	10145.00	.34
*	5.000	1019.18	215.00	1015.50	3.68	808.23	9300.00	10150.00	9928.00	10145.00	9336.77	10145.00	.14
	6.000	1019.37	215.00	1017.80	1.57	360.52	9300.00	10260.00	9690.00	10250.00	9837.92	10198.43	.00
*	6.000	1020.30	215.00	1017.80	2.50	628.67	9300.00	10260.00	9690.00	10250.00	9465.76	10249.99	.93
*	6.000	1020.31	215.00	1017.80	2.51	633.42	9300.00	10260.00	9690.00	10250.00	9465.27	10250.00	.01
*	6.000	1020.52	215.00	1017.80	2.72	794.59	9300.00	10260.00	9690.00	10250.00	9455.41	10250.00	.21
*	6.000	1020.68	215.00	1017.80	2.88	802.52	9300.00	10260.00	9690.00	10250.00	9447.48	10250.00	.17
*	6.000	1020.99	215.00	1017.80	3.19	816.86	9300.00	10260.00	9690.00	10250.00	9433.14	10250.00	.30
*	6.000	1021.13	215.00	1017.80	3.33	823.53	9300.00	10260.00	9690.00	10250.00	9426.47	10250.00	.14

MARCH 1988, 100 YEAR

SUMMARY PRINTOUT

	SECNO	10K*S	CWSEL	EG	DIFEG	HL	OLOSS	HV	VLOB	VCH	VROB	DIFWSX	K*CHSL
*	1.000	50.54	1003.57	1003.95	.00	.00	.00	.38	.00	4.96	.00	.00	.00
*	1.000	42.40	1004.35	1004.78	.83	.00	.00	.43	.00	5.26	.00	.00	.00
*	1.000	46.11	1004.53	1005.10	1.15	.00	.00	.57	.00	6.08	.00	.00	.00
*	1.000	178.25	1004.62	1005.24	1.29	.00	.00	.61	.00	6.29	.00	.00	.00
*	1.000	174.83	1004.71	1005.36	1.41	.00	.00	.65	.00	6.49	.00	.00	.00
*	1.000	168.95	1004.84	1005.55	1.60	.00	.00	.71	.00	6.76	.00	.00	.00
*	1.000	158.91	1004.93	1005.64	1.69	.00	.00	.72	.00	6.79	.00	.00	.00
	2.000	3.39	1004.13	1004.16	.00	.17	.04	.02	.00	1.16	.00	.56	-5.77
	2.000	7.18	1005.06	1005.13	.98	.32	.04	.07	.00	2.12	.00	.71	-5.77
	2.000	8.45	1005.43	1005.52	1.37	.37	.05	.10	.00	2.48	.00	.90	-5.77
	2.000	8.32	1005.65	1005.76	1.60	.46	.05	.10	.00	2.56	.11	1.03	-5.77
	2.000	8.83	1005.79	1005.91	1.75	.49	.05	.11	.00	2.71	.17	1.08	-5.77
	2.000	9.57	1006.00	1006.13	1.98	.52	.06	.13	.00	2.91	.26	1.16	-5.77
	2.000	10.17	1006.11	1006.25	2.09	.55	.06	.14	.00	3.02	.32	1.18	-5.77
*	3.000	176.89	1010.58	1010.94	.00	.36	.10	.36	.33	4.79	.00	6.45	21.74
*	3.000	43.74	1011.32	1011.88	.95	.50	.15	.57	.75	6.08	.00	6.26	21.74
*	3.000	36.14	1011.63	1012.26	1.32	.54	.16	.62	.79	6.40	.00	6.21	21.74
*	3.000	34.71	1011.76	1012.42	1.48	.52	.17	.66	.82	6.64	.00	6.11	21.74
*	3.000	35.64	1011.85	1012.58	1.64	.55	.19	.73	.86	6.99	.00	6.06	21.74
*	3.000	30.03	1012.10	1012.84	1.91	.55	.18	.74	.92	7.07	.00	6.10	21.74
*	3.000	29.55	1012.20	1012.97	2.03	.57	.19	.77	.98	7.25	.00	6.09	21.74
	4.000	57.82	1014.44	1014.69	.00	3.74	.01	.25	.61	4.06	.00	3.86	7.50
*	4.000	28.83	1015.13	1015.88	1.19	1.39	.06	.75	.97	7.39	.00	3.81	7.50
*	4.000	26.34	1015.66	1016.52	1.84	1.20	.07	.87	1.28	8.22	.00	4.02	7.50
*	4.000	25.75	1015.89	1016.81	2.12	1.16	.08	.92	1.40	8.58	.00	4.13	7.50
*	4.000	27.76	1016.03	1017.07	2.38	1.23	.09	1.04	1.54	9.20	.00	4.18	7.50
*	4.000	28.04	1016.37	1017.55	2.86	1.14	.13	1.18	1.75	9.93	.00	4.26	7.50
*	4.000	28.08	1016.53	1017.78	3.09	1.14	.14	1.25	1.84	10.26	.00	4.33	7.50
*	5.000	186.65	1016.93	1017.29	.00	2.09	.04	.37	2.49	5.30	.00	2.48	20.93
*	5.000	235.02	1017.56	1018.24	.95	1.40	.01	.69	3.53	7.62	.00	2.43	20.93
*	5.000	36.39	1018.32	1019.11	1.81	.69	.01	.79	1.92	8.17	.00	2.66	20.93
*	5.000	36.24	1018.51	1019.38	2.09	.68	.01	.87	2.06	8.66	.00	2.63	20.93
*	5.000	35.58	1018.70	1019.64	2.34	.70	.01	.94	2.19	9.06	.00	2.68	20.93
*	5.000	34.71	1019.04	1020.10	2.81	.70	.01	1.06	2.42	9.77	.00	2.68	20.93
*	5.000	35.22	1019.18	1020.32	3.03	.71	.01	1.14	2.54	10.18	.00	2.65	20.93
	6.000	58.00	1019.37	1019.51	.00	2.20	.02	.14	.00	3.04	.00	2.44	10.70
*	6.000	58.73	1020.30	1020.55	1.04	2.46	2.26	.25	.46	4.05	.00	2.74	10.70
*	6.000	40.02	1020.31	1021.01	1.49	.89	.01	.70	.39	6.71	.00	1.99	10.70
*	6.000	38.06	1020.52	1021.27	1.75	.87	.01	.75	.54	6.96	.00	2.00	10.70
*	6.000	36.39	1020.68	1021.50	1.99	.85	.01	.82	.69	7.29	.00	1.98	10.70
*	6.000	34.29	1020.99	1021.94	2.42	.82	.01	.95	.94	7.89	.00	1.94	10.70
*	6.000	33.52	1021.13	1022.14	2.63	.82	.01	1.01	1.04	8.16	.00	1.94	10.70

MARCH 1988, 100 YEAR

SUMMARY PRINTOUT

	SECNO	Q	QLOB	QCH	QROB	QLOBP	QCHP	QROBP	K*XNL	K*XNCH	K*XNR	KRATIO
*	1.000	591.58	.00	591.58	.00	.00	100.00	.00	.01	.01	.01	.00
*	1.000	1836.37	.00	1836.37	.00	.00	100.00	.00	.01	.01	.01	.00
*	1.000	2538.96	.00	2538.96	.00	.00	100.00	.00	.01	.01	.01	.00
*	1.000	2862.37	.00	2862.37	.00	.00	100.00	.00	.01	.01	.01	.00
*	1.000	3167.43	.00	3167.43	.00	.00	100.00	.00	.01	.01	.01	.00
*	1.000	3659.19	.00	3659.19	.00	.00	100.00	.00	.01	.01	.01	.00
*	1.000	3905.36	.00	3905.36	.00	.00	100.00	.00	.01	.01	.01	.00
	2.000	1000.00	.00	1000.00	.00	.00	100.00	.00	.01	.01	.01	6.52
	2.000	2810.56	.00	2810.56	.00	.00	100.00	.00	.01	.01	.01	3.72
	2.000	3759.99	.00	3759.99	.00	.00	100.00	.00	.01	.01	.01	3.46
	2.000	4202.61	.00	4202.55	.06	.00	100.00	.00	.01	.01	.01	6.80
	2.000	4640.05	.00	4639.69	.36	.00	99.99	.01	.01	.01	.01	6.52
	2.000	5334.44	.00	5332.85	1.60	.00	99.97	.03	.01	.01	.01	6.13
	2.000	5697.67	.00	5694.84	2.83	.00	99.95	.05	.01	.01	.01	5.77
*	3.000	1000.00	.16	999.83	.00	.02	99.98	.00	.01	.01	.01	.14
*	3.000	2830.52	38.68	2791.84	.00	1.37	98.63	.00	.01	.01	.01	.41
*	3.000	3874.48	94.92	3779.55	.00	2.45	97.55	.00	.01	.01	.01	.50
*	3.000	4392.33	130.14	4262.18	.00	2.96	97.04	.00	.01	.01	.01	.51
*	3.000	4912.86	165.15	4747.71	.00	3.36	96.64	.00	.01	.01	.01	.53
*	3.000	5838.05	276.48	5561.57	.00	4.74	95.26	.00	.01	.01	.01	.62
*	3.000	6322.45	335.90	5986.55	.00	5.31	94.69	.00	.01	.01	.01	.65
	4.000	1000.00	41.11	958.89	.00	4.11	95.89	.00	.01	.01	.01	1.75
*	4.000	2947.31	341.08	2606.22	.00	11.57	88.43	.00	.01	.01	.01	1.28
*	4.000	4431.81	791.91	3639.90	.00	17.87	82.13	.00	.01	.01	.01	1.34
*	4.000	5164.94	1030.98	4133.96	.00	19.96	80.04	.00	.01	.01	.01	1.37
*	4.000	5893.23	1244.13	4649.11	.00	21.11	78.89	.00	.01	.01	.01	1.36
*	4.000	7322.11	1726.33	5595.78	.00	23.58	76.42	.00	.01	.01	.01	1.30
*	4.000	8048.11	1979.87	6068.24	.00	24.60	75.40	.00	.01	.01	.01	1.31
*	5.000	1000.00	203.71	796.29	.00	20.37	79.63	.00	.01	.01	.01	.56
*	5.000	2963.60	891.23	2072.36	.00	30.07	69.93	.00	.01	.01	.01	.35
*	5.000	4799.07	1221.22	3577.85	.00	25.45	74.55	.00	.01	.01	.01	.92
*	5.000	5688.52	1533.27	4155.25	.00	26.95	73.05	.00	.01	.01	.01	.93
*	5.000	6575.81	1857.11	4718.70	.00	28.24	71.76	.00	.01	.01	.01	.99
*	5.000	8342.40	2528.54	5813.86	.00	30.31	69.69	.00	.01	.01	.01	1.02
*	5.000	9231.77	2867.18	6364.59	.00	31.06	68.94	.00	.01	.01	.01	1.02
	6.000	1000.00	.00	1000.00	.00	.00	100.00	.00	.01	.01	.01	1.79
*	6.000	3000.00	6.65	2993.34	.00	.22	99.78	.00	.01	.01	.01	1.19
*	6.000	5000.00	6.01	4993.99	.00	.12	99.88	.00	.01	.01	.01	.99
*	6.000	6000.00	26.15	5973.85	.00	.44	99.56	.00	.01	.01	.01	1.03
*	6.000	7000.00	60.52	6939.48	.00	.86	99.14	.00	.01	.01	.01	1.05
*	6.000	9000.00	153.65	8846.35	.00	1.71	98.29	.00	.01	.01	.01	1.09
*	6.000	10000.00	208.58	9791.42	.00	2.09	97.91	.00	.01	.01	.01	1.11

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION  SECNO=     1.000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     1.000  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     1.000  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     1.000  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     1.000  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     1.000  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     1.000  PROFILE= 7  CRITICAL DEPTH ASSUMED

CAUTION  SECNO=     3.000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     3.000  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     3.000  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=     3.000  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     3.000  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     3.000  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=     3.000  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     3.000  PROFILE= 3  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     3.000  PROFILE= 3  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=     3.000  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     3.000  PROFILE= 4  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     3.000  PROFILE= 4  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=     3.000  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     3.000  PROFILE= 5  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     3.000  PROFILE= 5  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=     3.000  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     3.000  PROFILE= 6  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     3.000  PROFILE= 6  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=     3.000  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     3.000  PROFILE= 7  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     3.000  PROFILE= 7  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=     4.000  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     4.000  PROFILE= 2  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     4.000  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     4.000  PROFILE= 3  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     4.000  PROFILE= 3  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=     4.000  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     4.000  PROFILE= 4  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     4.000  PROFILE= 4  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=     4.000  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     4.000  PROFILE= 5  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     4.000  PROFILE= 5  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=     4.000  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     4.000  PROFILE= 6  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     4.000  PROFILE= 6  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=     4.000  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     4.000  PROFILE= 7  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     4.000  PROFILE= 7  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=     5.000  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=     5.000  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=     5.000  PROFILE= 2  CRITICAL DEPTH ASSUMED
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CAUTION  SECNO=   5.000  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   5.000  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   5.000  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   5.000  PROFILE= 3  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   5.000  PROFILE= 3  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   5.000  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   5.000  PROFILE= 4  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   5.000  PROFILE= 4  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   5.000  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   5.000  PROFILE= 5  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   5.000  PROFILE= 5  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   5.000  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   5.000  PROFILE= 6  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   5.000  PROFILE= 6  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   5.000  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   5.000  PROFILE= 7  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   5.000  PROFILE= 7  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=   6.000  PROFILE= 2  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   6.000  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   6.000  PROFILE= 3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   6.000  PROFILE= 3  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   6.000  PROFILE= 4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   6.000  PROFILE= 4  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   6.000  PROFILE= 5  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   6.000  PROFILE= 5  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   6.000  PROFILE= 6  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   6.000  PROFILE= 6  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   6.000  PROFILE= 6  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=   6.000  PROFILE= 7  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=   6.000  PROFILE= 7  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   6.000  PROFILE= 7  20 TRIALS ATTEMPTED TO BALANCE WSEL
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