VIII.3.3-API-SLC  SALT LAKE CITY (CBRFC) API-RUNOFF OPERATION


Identifier:  API-SLC


Operation Number:  34


Developed by:  Colorado Basin River Forecast Center


Parameter Array:  The FORTRAN identifier used for the parameter array is PO.  The contents of the PO array is:

| Position | Type | Contents |
|---|---|---|
| 1 | I*4 | Operation version number |
| 2-7 | R*4 | Area name |
| 8 | R*4 | API recession content |
| 9 | R*4 | API lower limit |
| 10 | I*4 | Initial carryover input read/no read flag |
| 11 | I*4 | Data time interval of rainfall/melt time series (units of HR) |
| 12-13 | R*4 | Internal identifier of rainfall/melt time series |
| 14 | R*4 | Data type code of rainfall/melt time series |
| 15 | I*4 | Data time interval of runoff time series (units of HR) |
| 16-17 | R*4 | Internal identifier of runoff time series |
| 18 | R*4 | Data type code of runoff time series |
| 19 | I*4 | Data time interval of areal snow cover time series (units of HR) |
| 20-21 | R*4 | Internal identifier of areal snow cover time series |
| 22 | R*4 | Data type code of areal snow cover time series |
| 23 | I*4 | Data time interval of API time series (units of HR) |
| 24-25 | R*4 | Internal identifier of API time series |
| 26 | R*4 | Data type code of API time series |

Position   Type   Contents

Positions 27-36 contain the API constants:

| Position | Type | Contents |
|---|---|---|
| 27 | R*4 | A - intercept of WN on the RI1 axis of the API relationship |
| 28 | R*4 | I - intercept of WX on the RI1 axis of the API relationship |
| 29 | I*4 | WN - wettest week of year |
| 30 | I*4 | WX - driest week of year |
| 31 | R*4 | E1 - curvature constant for WN |
| 32 | R*4 | E2 - curvature constant for WX |
| 33 | R*4 | CP - modifier to sine wave of the week of year relation |
| 34 | R*4 | K constant for duration curves |
| 35 | R*4 | M constant for duration curves |
| 36 | R*4 | POW constant for duration curves |
| 37 | R*4 | Significant precipitation level |
| 38-40 | R*4 | Not used (zeros) |

Carryover Array:  The FORTRAN identifier used for the carryover array is CO.  The contents of the CO array are:

| Position | Type | Contents |
|---|---|---|
| 1 | R*4 | Current API value |
| 2 | R*4 | Current percent areal snow cover |
| 3 | I*4 | Storm flag |
| 4 | I*4 | Storm duration value (6 hour increments) |

Subroutines Names and Functions:  Subroutines associated with this Operation are:

| Subroutine | Function |
|---|---|
| PIN34 | Input cards and store values in PO and CO array |
| PRP34 | Print information on PO array |
| PRC34 | Print information on CO array |

| Subroutine | Function |
|---|---|
| EX34 | Execute the Operation |
| COX34 | Perform carryover transfer |
| PUC34 | Punch cards with information from PO and CO arrays which can be used by the PIN routine |
| TAB34 | Make entry into Operations Table |

Subroutines PIN34, PRP34, PRC34, COX34, and PUC34 have the standard argument lists for these routines as described in Section VIII.4.3.

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SUBROUTINE EX34 (PO,CO,PX,RO,SC,AP)


Function:  This is the execution subroutine for Operation API-SLC.


Argument List:

          Input/
  Variable Output  Type  Dimension  Description

   PO      Input   R*4      40      Parameter array

   CO      Both    R*4       4      Carryover array

   PX      Input   R*4    Variable  Rainfall/melt time series data

   RO      Output  R*4    Variable  Runoff time series data

   SC      Input   R*4    Variable  Areal snow cover time series data

   AP      Output  R*4    Variable  API time series data
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SUBROUTINE TAB34 (TO,LEFT,IUSET,NXT,LPO,PO,LCO,TS,MTS,LWORK,IDT)


Function:  This is the Operations Table entry subroutine for
Operation API-SLC.


Arguments List:  The arguments for this subroutine are similar to the
arguments for the Operations Table entry subroutines for other
Operations.  A description of the arguments is contained in section
VIII.4.2-TAB.


Operation Table Array:  The contents of the TO array are:

   Position       Contents

       1           Operation number

       2           Location in the T array of the next Operation to be
                   executed

       3           Location of the parameter array for the Operation in
                   the P array

       4           Location of the carryover array for the Operation in
                   the C array

       5           Location of rain+melt data in the D array

       6           Location to put runoff data in the D array

       7           Location of areal snow cover data in the D array:
                       0 = if not used

       8           Location to put API data in the D array:
                       0 = if no API output