Smith Creek Drainage Basin Planning Study

Job Number 8896.90
June 22, 2001

J-R ENGINEERING
A Subsidiary of Westrian

PRUDENT LINE CALCULATOR for DESIGN POINT No. 111

Storm	Q_p	d	$Vol_i=6Q_pd$	$Y_i=0.25Vol_i$	Y_m	Y_m x 1.67	Long Term Potential Lateral Migration PLM_{LT}	PLM_{LT}*30	Short Term Potential Lateral Migration PLM_{ST}
	cfs	hr.	cubic feet			cubic feet	feet	feet	feet
100	463	2.50	6945	1736	257	429	0	9	2
50	335	2.50	5025	1256					
25	241	2.50	3615	904					
10	157	2.25	2120	530					
5	98	2.25	1323	331					
2	30	3.75	675	169					

3' assumed bank height for channel erosion

$Y_m=0.015Y_{100}+0.015Y_{50}+0.04Y_{25}+0.08Y_{10}+0.2Y_5+0.4Y_2$

PLM_{LT} = Y_m x 1.67 x bank height/500

PLM_{ST} = Y_m x 1.67 x bank height/150

d=hydrograph duration (hrs)

The prudent line for sand channels is based on an enveloping curve considering the greater of (1) the 100 year flood plain, (2) the calculated setback based long term (30 year) erosion, (3) the calculated setback based short term (100-year flood) erosion, or (4) the setback based on the low flow channel top of bank (or the 10-year water surface when a low flow channel is not apparent) plus 50 feet.

Long term potential lateral migration is based on a 500' length.
Short term potential lateral migration is based on a 150' length.
The lateral migration numbers are estimates.

Setback from the low flow channel top of bank (or the 10-year water surface when a low flow channel is not apparent):

(1) 11'
(2) 9'
(3) 2'
(4) 50'

Therefore, the prudent line setback at this design point is 50 feet.

Smith Creek Drainage Basin Planning Study

Job Number 8896.90
June 22, 2001

J·R ENGINEERING
A Subsidiary of Westrian

PRUDENT LINE CALCULATOR for DESIGN POINT No. 109

Storm	Q_p	d	$Vol_i=6Q_pd$	$Y_i=0.25Vol_i$	Y_m	Y_m x 1.67	Long Term Potential Lateral Migration PLM_{LT}	PLM_{LT}*30	Short Term Potential Lateral Migration PLM_{ST}
	cfs	hr.	cubic feet			cubic feet	feet	feet	feet
100	382	2.50	5730	1433	203	340	0	11	3
50	268	2.50	4020	1005					
25	184	2.50	2760	690					
10	123	2.25	1661	415					
5	77	2.25	1040	260					
2	24	3.75	540	135					

2' assumed bank height for channel erosion

$Y_m=0.015Y_{100}+0.015Y_{50}+0.04Y_{25}+0.08Y_{10}+0.2Y_5+0.4Y_2$

$PLM_{LT} = Y_m$ x 1.67 x bank height/500

$PLM_{ST} = Y_m$ x 1.67 x bank height/150

d=hydrograph duration (hrs)

The prudent line for sand channels is based on an enveloping curve considering the greater of (1) the 100 year flood plain, (2) the calculated setback based long term (30 year) erosion, (3) the calculated setback based short term (100-year flood) erosion, or (4) the setback based on the low flow channel top of bank (or the 10-year water surface when a low flow channel is not apparent) plus 50 feet.

Long term potential lateral migration is based on a 500' length.
Short term potential lateral migration is based on a 150' length.
The lateral migration numbers are estimates.

Setback from the low flow channel top of bank (or the 10-year water surface when a low flow channel is not apparent):

(1) 195'
(2) 11'
(3) 3'
(4) 50'

Therefore, the prudent line setback at this design point is 195 feet.

Smith Creek Drainage Basin Planning Study

Job Number 8896.90
June 22, 2001

J·R ENGINEERING
A Subsidiary of Westrian

PRUDENT LINE CALCULATOR for DESIGN POINT No. 107B

Storm	Q_p	d	$Vol_i=6Q_pd$	$Y_i=0.25Vol_i$	Y_m	Y_m x 1.67	Long Term Potential Lateral Migration PLM_{LT}	PLM_{LT}*30	Short Term Potential Lateral Migration PLM_{ST}
	cfs	hr.	cubic feet			cubic feet	feet	feet	feet
100	281	2.50	4215	1054	156	261	0	6	2
50	197	2.50	2955	739					
25	140	2.50	2100	525					
10	94	2.25	1269	317					
5	59	2.25	797	199					
2	18	4.00	432	108					

3' assumed bank height for channel erosion

$Y_m=0.015Y_{100}+0.015Y_{50}+0.04Y_{25}+0.08Y_{10}+0.2Y_5+0.4Y_2$

PLM_{LT} = Y_m x 1.67 x bank height/500

PLM_{ST} = Y_m x 1.67 x bank height/150

d=hydrograph duration (hrs)

The prudent line for sand channels is based on an enveloping curve considering the greater of (1) the 100 year flood plain, (2) the calculated setback based long term (30 year) erosion, (3) the calculated setback based short term (100-year flood) erosion, or (4) the setback based on the low flow channel top of bank (or the 10-year water surface when a low flow channel is not apparent) plus 50 feet.

Long term potential lateral migration is based on a 500' length.
Short term potential lateral migration is based on a 150' length.
The lateral migration numbers are estimates.

Setback from the low flow channel top of bank (or the 10-year water surface when a low flow channel is not apparent):

(1) 140'
(2) 6'
(3) 2'
(4) 50'

Therefore, the prudent line setback at this design point is 140 feet.

Smith Creek Drainage Basin Planning Study

Job Number 8896.90
June 22, 2001

J-R ENGINEERING
A Subsidiary of Westrian

PRUDENT LINE CALCULATOR for DESIGN POINT No. 107A

Storm	Q_p	d	$Vol_i=6Q_pd$	$Y_i=0.25Vol_i$	Y_m	Y_m x 1.67	Long Term Potential Lateral Migration PLM_{LT}	PLM_{LT}*30	Short Term Potential Lateral Migration PLM_{ST}
	cfs	hr.	cubic feet			cubic feet	feet	feet	feet
100	263	2.75	4340	1085	148	247	0	2	1
50	184	2.75	3036	759					
25	132	2.50	1980	495					
10	90	2.25	1215	304					
5	56	2.25	756	189					
2	17	3.75	383	96					

8' assumed bank height for channel erosion

$Y_m=0.015Y_{100}+0.015Y_{50}+0.04Y_{25}+0.08Y_{10}+0.2Y_5+0.4Y_2$

$PLM_{LT} = Y_m$ x 1.67 x bank height/500

$PLM_{ST} = Y_m$ x 1.67 x bank height/150

d=hydrograph duration (hrs)

The prudent line for sand channels is based on an enveloping curve considering the greater of (1) the 100 year flood plain, (2) the calculated setback based long term (30 year) erosion, (3) the calculated setback based short term (100-year flood) erosion, or (4) the setback based on the low flow channel top of bank (or the 10-year water surface when a low flow channel is not apparent) plus 50 feet.

Long term potential lateral migration is based on a 500' length.
Short term potential lateral migration is based on a 150' length.
The lateral migration numbers are estimates.

Setback from the low flow channel top of bank (or the 10-year water surface when a low flow channel is not apparent):

(1) 33'
(2) 2'
(3) 1'
(4) 50'

Therefore, the prudent line setback at this design point is 50 feet.

Smith Creek Drainage Basin Planning Study

Job Number 8896.90
June 22, 2001

J-R ENGINEERING
A Subsidiary of Westrian

PRUDENT LINE CALCULATOR for DESIGN POINT No. 105

Storm	Q_p	d	$Vol_i=6Q_pd$	$Y_i=0.25Vol_i$	Y_m	Y_m x 1.67	Long Term Potential Lateral Migration PLM_{LT}	PLM_{LT}*30	Short Term Potential Lateral Migration PLM_{ST}
	cfs	hr.	cubic feet			cubic feet	feet	feet	feet
100	167	2.75	2756	689	101	169	0	3	1
50	114	2.75	1881	470					
25	87	2.75	1436	359					
10	61	2.50	915	229					
5	36	2.50	540	135					
2	10	4.00	240	60					

4' assumed bank height for channel erosion

$Y_m=0.015Y_{100}+0.015Y_{50}+0.04Y_{25}+0.08Y_{10}+0.2Y_5+0.4Y_2$

PLM_{LT} = Y_m x 1.67 x bank height/500

PLM_{ST} = Y_m x 1.67 x bank height/150

d=hydrograph duration (hrs)

The prudent line for sand channels is based on an enveloping curve considering the greater of (1) the 100 year flood plain, (2) the calculated setback based long term (30 year) erosion, (3) the calculated setback based short term (100-year flood) erosion, or (4) the setback based on the low flow channel top of bank (or the 10-year water surface when a low flow channel is not apparent) plus 50 feet.

Long term potential lateral migration is based on a 500' length.
Short term potential lateral migration is based on a 150' length.
The lateral migration numbers are estimates.

Setback from the low flow channel top of bank (or the 10-year water surface when a low flow channel is not apparent):

(1) 40'
(2) 3'
(3) 1'
(4) 50'

Therefore, the prudent line setback at this design point is 50 feet.

HEC-1 COMPUTATIONS

HEC-1 COMPUTER FILES

EXISTING CONDITIONS

PATH: 889690/HYDRO/HEC-1/EXISTING/

FREQUENCY	RAINFALL	INPUT	OUTPUT	MODIFIED OUTPUT
2YR	2"	2EX.NET	2EX.OUT	2EX.TXT
5YR	2.6"	5EX.NET	5EX.OUT	5EX.TXT
10YR	3"	10EX.NET	10EX.OUT	10EX.TXT
50YR	4"	50EX.NET	50EX.OUT	50EX.TXT
100YR	4.6"	100EX.NET	100EX.OUT	100EX.TXT

FUTURE CONDITIONS- ALTERNATIVE 1

PATH: 889690/HYDRO/HEC-1/FUTURE/ALT1/

FREQUENCY	RAINFALL	INPUT	OUTPUT	MODIFIED OUTPUT
2YR	2"	2FUT1.NET	2FUT1.OUT	2FUT1.TXT
5YR	2.6"	5FUT1.NET	5FUT1.OUT	5FUT1.TXT
10YR	3"	10FUT1.NET	10FUT1.OUT	10FUT1.TXT
50YR	4"	50FUT1.NET	50FUT1.OUT	50FUT1.TXT
100YR	4.6"	100FUT1.NET	100FUT1.OUT	100FUT1.TXT

FUTURE CONDITIONS- ALTERNATIVE 2

PATH: 889690/HYDRO/HEC-1/FUTURE/ALT2/

FREQUENCY	RAINFALL	INPUT	OUTPUT	MODIFIED OUTPUT
2YR	2"	2FUT2.NET	2FUT2.OUT	2FUT2.TXT
5YR	2.6"	5FUT2.NET	5FUT2.OUT	5FUT2.TXT
10YR	3"	10FUT2.NET	10FUT2.OUT	10FUT2.TXT
50YR	4"	50FUT2.NET	50FUT2.OUT	50FUT2.TXT
100YR	4.6"	100FUT2.NET	100FUT2.OUT	100FUT2.TXT

FUTURE CONDITIONS- ALTERNATIVE 3

PATH: 889690/HYDRO/HEC-1/FUTURE/ALT3/

FREQUENCY	RAINFALL	INPUT	OUTPUT	MODIFIED OUTPUT
2YR	2"	2FUT3.NET	2FUT3.OUT	2FUT3.TXT
5YR	2.6"	5FUT3.NET	5FUT3.OUT	5FUT3.TXT
10YR	3"	10FUT3.NET	10FUT3.OUT	10FUT3.TXT
50YR	4"	50FUT3.NET	50FUT3.OUT	50FUT3.TXT
100YR	4.6"	100FUT3.NET	100FUT3.OUT	100FUT3.TXT

FUTURE CONDITIONS- ALTERNATIVE 3 HYDROGRAPH PLOTS

PATH: 889690/HYDRO/HEC-1/FUTURE/ALT3/

FREQUENCY	RAINFALL	INPUT	OUTPUT
2YR	2"	2FUT3.NET	2FUT3H.OUT
5YR	2.6"	5FUT3.NET	5FUT3H.OUT
10YR	3"	10FUT3.NET	10FUT3H.OUT
25YR	3.5"	25FUT3.NET	25FUT3H.OUT
50YR	4"	50FUT3.NET	50FUT3H.OUT
100YR	4.6"	100FUT3.NET	100FUT3H.OUT

BASIN	SQ. MI
101	0.0920
103	0.1670
105A	0.0693
105B	0.0686
107A	0.1367
107B	0.0408
109	0.1637
111	0.1894
201	0.1216
203	0.1113
205	0.0970
207	0.1200
209	0.1351
211	0.0799
213	0.1243
215	0.0589
217	0.0547
219	0.1298
301	0.1196
303	0.1300
305	0.0629
307	0.1081
309	0.1240
311	0.1064
313	0.1520
315	0.0886
401	0.1524
403	0.1007
405	0.0677
407	0.1685
501	0.1219
503	0.1193
505	0.1923
507	0.0958
509	0.1514
511	0.0907
601	0.0633
603	0.2514
605	0.1283
607	0.0840
609	0.1389
611	0.1095
613	0.1233
615A	0.0567
615B	0.0313
617A	0.0701
617B	0.0215
701	0.0722
703	0.1305
705	0.0869

	TOTAL:	5.48 SQ. MI.
DP603	TRIB A:	0.31 SQ. MI.
DP111	TRIB B:	0.93 SQ. MI.
DP505	PLIER RD.	0.43 SQ. MI.
DP315	TRIB C:	0.89 SQ. MI.
DP217	TRIB D:	0.29 SQ. MI.

Future Basin Changes

From Basin 617A:

618	0.0070 SQ. MI.
617A	0.0149 SQ. MI.
617C	0.0482 SQ. MI.

From Basin 605:

605A	0.0505 SQ. MI.
605B	0.0778 SQ. MI.

Client: _____ Job No: 8896.90

Project: _____ By: _____ Chk. By: _____ Date: 6-1-01

Subject: _____ Sheet No: 1 of 9

J·R ENGINEERING
A Subsidiary of Westrian

Existing Pond

Pond 106

Location: The Ridge at Fox Run Fil. No. 3
N. of Baptist Road, E of Fox Run Lane & Longmeadow Lane intersection

OUTLET - TWO 36" RCP Culverts

Size	7320	Ac-Ft Vol	cfs
		0	0
	22	1.4	50
	24	2.6	80
	26	4.0	100
	28	5.8 ac-ft	190 cfs (172 cfs existing)

estimates

Maintained by The Ridge at Fox Run HOA

Peak runoff into pond (Q100) 75.2 cfs

Client: _____ Job No: _____

Project: _____ By: _____ Chk. By: _____ Date: _____

Subject: _____ Sheet No: 2 of 9

J·R ENGINEERING
A Subsidiary of Westrian

Existing Pond

Pond 108

PER COSTIN Engineering's FOR Fox Run Ridge at Foxrun 1 F.L No. 1 Rev Jan 7, 1996

Volume	Elevation	Discharge
0.0	7340	0
0.20	7342	20
0.68	7344	48
1.35	7346	220
2.32	7348	522

Client: _____ Job No: _____

Project: _____ By: _____ Chk. By: _____ Date: _____

Subject: _____ Sheet No: 3 of 9

J·R ENGINEERING
A Subsidiary of Westrian

EXISTING POND

POND 610

Area	Elev	Discharge
2.2 AC	6822	0
2.7	6823	11
3.3	6824	701
3.8	6825	2361
4.4	6826	4843
5.1	6827	10331
5.8	6828	16010

POND 612

Area	Elev	Discharge
1.82 AC	6762	0
2.77	6763	150
3.72	6764	510
4.5	6765	1160
5.28	6766	2120
5.78	6766.5	2680

Client: _____ Job No: 881-70

Project: _____ By: _____ Chk. By: _____ Date: 5-23-01

Subject: _____ Sheet No: 4 of 9

J·R ENGINEERING
A Subsidiary of Westrian

Existing Condition Detention Ponds

Pond 614

Location: Ridge Point Subdivision N. of Northgate Road, east of Stuyvesant

Outlet 24" RCP @ 2.56% w/ 7 3/4" Dia. orifice plate

Size	Stage	Volume	Discharge	Q cfs
	6724	0.067 Ac-ft		4
	6726	0.32		6
	6728	0.67		10
Max. Surface	6730	1.16 ac-ft		13.3 (10yr)
Release Rate		13.3 cfs (10yr)	+ 2.0 cfs (2yr, restricted)	
		3.99 (10yr)	+ 1.0 cfs (10yr)	

2.22' deep max. 100yr ponding

Tributary Area 13.3 acres onsite + 16 to pond
2.4 acres offsite routed

Client: _____ Job No: _____

Project: _____ By: _____ Chk. By: _____ Date: _____

Subject: _____ Sheet No: 5 of 9

J·R ENGINEERING
A Subsidiary of Westrian

EXISTING POND

Pond 613

Location: West of Northern Highlands
Near end of Nor Wester Road

	Area	Elevation	Discharge
0.12	5142	6794	4.67 cfs
0.96	41980	6796	7.44
1.09	47369	6798	9.43
1.21	52795	6800	22.99
1.34	58414	6802	29.35
1.47ac	64325	6804	34.42

Client: _____ Job No: _____

Project: _____ By: _____ Chk. By: _____ Date: _____

Subject: _____ Sheet No: 6 of 9

J·R ENGINEERING
A Subsidiary of Westrian

Future Pond

Pond 605

Elevation	Storage	Discharge
6818	0	0
19	0.099	5.18
20	0.218	19.37
21	0.36	40.40
22	0.526	65.78
23	0.718	93.88
24	0.937	119.33
25	1.185	143.30
26	1.463	162.05
27	1.773	176.76
28	2.117	190.32
29	2.496	202.97
30	2.912 ac-ft	214.91

Pond 615

Elevation	Storage	Discharge
6726	0	0
6728	1	5
6730	2	10
6732	2.5 ac-ft	16.7

Pond 617

Elevation	Storage	Discharge
6740	0	0
6745	0.5	30
6748	1.0	40
6750	1.3 ac-ft	63

Pond 618

Elevation	Storage	Discharge
6768	0 ac-ft	0
6770	0.5 ac-ft	3
6772	1.0 ac-ft	6

Pond 604

Elevation	Storage	Discharge
6990	0	0
92	0.041	460
94	0.16	650
96	0.3	800
98	0.5	1200
7000	0.8	1500
02	1.2	1700
04	1.7	1900

Client: Picclan Inc   Job No: 8896.90

Project: Smith Creek DBPS   By: LDR   Chk. By: Date: 6-12-01

Subject: Sheet No: 7 of 9

J·R ENGINEERING
A Subsidiary of Westrian

Proposed Regional Pond No. 1 Basin 407

Elevation	Storage	Release
6990	0	0
6992	0.44	10
6994	1.49	25
6996	2.93	50
6998	4.75	75
7000	6.91	450
7002	9.41	800
7004	12.27	1000
7006	15.50	1900

7005.96 ac   1882 cfs

SA = 1.70 AC @ HWL

Locate at existing driveway embankment w/ 36" RCP culvert

407A   407B

407A - Pond   Pond - 506

665'   340'

0.0210

SMITH CREEK DBPS POND CALCULATIONS

Pond 407

ELEVATIONS	SF	CF	AF	SUM
6990	0			
		18949.00	0.44	
6992	18949			0.44
		46055.00	1.06	
6994	27106			1.49
		62782.00	1.44	
6996	35676			2.93
		79075.00	1.82	
6998	43399			4.75
		93993.00	2.16	
7000	50594			6.91
		109064.00	2.50	
7002	58470			9.41
		124705.00	2.86	
7004	66235			12.27
		140482.00	3.23	
7006	74247			15.50

TOTAL	**675105.00**	**15.50**

/dept/common/land dev/rubey_team/pond calcs/pond calc template.xls

Client: _____ Job No: 8896.90

Project: _____ By: _____ Chk. By: _____ Date: 6-12-01

Subject: _____ Sheet No: 8 of 9

J·R ENGINEERING
A Subsidiary of Westrian

Proposed Regional Pond No. 2 Rev 3/6

Elevation	Storage	Surface Area
7164	Vac-ft	ac-ft
7166	0.72 ac-ft	10
7168	2.42 ac-ft	35
7170	4.57 ac-ft	90
7172	7.19 ac-ft	360
7174	10.29 ac-ft	1225

7173.99 HWL 1219 m

SA = 1.66 AC @ HWL

Locate at confluence of Trib C and Smith creek

SMITH CREEK DBPS POND CALCULATIONS

Pond 316

ELEVATIONS	SF	CF	AF	SUM
7164	0			
		31411.00	0.72	
7166	31411			0.72
		73877.00	1.70	
7168	42466			2.42
		93868.00	2.15	
7170	51402			4.57
		114019.00	2.62	
7172	62617			7.19
		135004.00	3.10	
7174	72387			10.29

TOTAL	**448179.00**	**10.29**

/dept/common/land dev/rubey_team/pond calcs/pond calc template.xls

Client: [illegible] Job No: 8896.90

Project: [illegible] By: [illegible] Chk. By: Date: 6-12-01

Subject: Sheet No: 9 of 9

J·R ENGINEERING
A Subsidiary of Westrian

Proposed Regional Pond No. 3 Res Co19

Elevation		Storage	Release
6712		0	0
6714		2 ac-ft	800
6716		4 ac-ft	1200
6718		6 ac-ft	1500
6720		8 ac-ft	1600
6722	3.06 ac	11 ac-ft	1,800
6724		13 ac-ft	1920

6723.85 HWL 1966 cfs

NOT USED

Locate at existing culvert at Northgate Road & Smith Creek

2 year existing
HEC1 S/N 1343001909 HMVersion: 6.33 Data File: C:\WINNT\TEMP\~vbh2660.TMP

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**************************************
*                                    *
*                                    *
*   FLOOD HYDROGRAPH PACKAGE (HEC-1)   *
U.S. ARMY CORPS OF ENGINEERS      *
*                MAY  1991          *
HYDROLOGIC ENGINEERING CENTER     *
*             VERSION 4.0.1E        *
609 SECOND STREET           *
*                                    *
DAVIS, CALIFORNIA 95616        *
*  RUN DATE  06/19/2001  TIME  16:44:04 *
(916) 756-1104              *
*                                    *
*                                    *
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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
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:::         Haestad Methods, Inc.         :::
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37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

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. THIS IS THE FORTRAN77 VERSION

NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE*, SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,

DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION

KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

HEC-1 INPUT

```
ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
    1  ID  Type IIA storm
    2  IT      15       0       0     288
    3  IO       5

    4  KK  SC205
    5  KM  Smith Creek 205 Runoff
    6  KO                                      22
    7  BA  0.0970
    8  PB       2
    9  IN      15
   10  PC  0.0005  0.0015  0.0030  0.0045  0.0060  0.0080  0.0100  0.0120  0.0143
0.0165
   11  PC  0.0188  0.0210  0.0233  0.0255  0.0278  0.0320  0.0390  0.0460  0.0530
0.0600
   12  PC  0.0750  0.1000  0.4000  0.7000  0.7250  0.7500  0.7650  0.7800  0.7900
0.8000
   13  PC  0.8100  0.8200  0.8250  0.8300  0.8350  0.8400  0.8450  0.8500  0.8550
0.8600
   14  PC  0.8638  0.8675  0.8713  0.8750  0.8788  0.8825  0.8863  0.8900  0.8938
0.8975
   15  PC  0.9013  0.9050  0.9083  0.9115  0.9148  0.9180  0.9210  0.9240  0.9270
0.9300
   16  PC  0.9325  0.9350  0.9375  0.9400  0.9425  0.9450  0.9475  0.9500  0.9525
0.9550
   17  PC  0.9575  0.9600  0.9625  0.9650  0.9675  0.9700  0.9725  0.9750  0.9775
0.9800
   18  PC  0.9813  0.9825  0.9838  0.9850  0.9863  0.9875  0.9888  0.9900  0.9913
0.9925
   19  PC  0.9938  0.9950  0.9963  0.9975  0.9988  1.0000
   20  LS       0      64
   21  UD   0.257

   22  KK  RT205
   23  KM  Smith Creek Route 205 to 213
   24  KO                                      22
   25  RK    1530  0.0431   0.055            TRAP              2

   26  KK  SC207
   27  KM  Smith Creek 207 Runoff
   28  KO                                      22
   29  BA   0.120
   30  PB       2
   31  LS       0      65
   32  UD   0.367

   33  KK  SC213
   34  KM  Smith Creek 213 Runoff
   35  KO                                      22
   36  BA  0.1243
   37  PB       2
   38  LS       0      66
   39  UD   0.382

   40  KK  DP213
   41  KM  Combine RT205 SC207 and SC213
   42  KO                                      22
   43  HC       3

   44  KK  RT213
   45  KM  Smith Creek Route 213 to 215
   46  KO                                      22
   47  RK    1360  0.0493   0.055            TRAP              2
```

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

 48          KK  SC209
 49          KM  Smith Creek 209 Runoff
 50          KO                                          22
 51          BA  0.1351
 52          PB       2
 53          LS       0       61
 54          UD   0.336

 55          KK  SC211
 56          KM  Smith Creek 211 Runoff
 57          KO                                          22
 58          BA  0.0799
 59          PB       2
 60          LS       0       62
 61          UD   0.418

 62          KK  SC215
 63          KM  Smith Creek 215 Runoff
 64          KO                                          22
 65          BA  0.0589
 66          PB       2
 67          LS       0       62
 68          UD   0.227

 69          KK  DP215
 70          KM  Combine RT213 SC209 SC211 and SC215
 71          KO                                          22
 72          HC       4

 73          KK  RT215
 74          KM  Smith Creek Route 215 to 219
 75          KO                                          22
 76          RK    2110  0.0446  0.0745             TRAP              2

 77          KK  SC219
 78          KM  Smith Creek 219 Runoff
 79          KO                                          22
 80          BA  0.1298
 81          PB       2
 82          LS       0       61
 83          UD   0.362

 84          KK  DP219
 85          KM  Combine RT215 and SC219
 86          KO                                          22
 87          HC       2

 88          KK  SC201
 89          KM  Smith Creek 201 Runoff
 90          KO                                          22
 91          BA  0.1216
 92          PB       2
 93          LS       0       62
 94          UD   0.340
```

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

    95        KK   RT201
    96        KM   Tributary Route 201 to 203
    97        KO                                          22
    98        RK    1650   0.0509    0.055              TRAP                  2

    99        KK   SC203
   100        KM   Smith Creek 203 Runoff
   101        KO                                          22
   102        BA   0.1113
   103        PB        2
   104        LS        0        61
   105        UD    0.223

   106        KK   DP203
   107        KM   Combine RT201 and SC203
   108        KO                                          22
   109        HC        2

   110        KK   RT203
   111        KM   Tributary Route 203 to 217
   112        KO                                          22
   113        RK     2010  0.0557  0.0698               TRAP                  2

   114        KK   SC217
   115        KM   Smith Creek 217 Runoff
   116        KO                                          22
   117        BA   0.0547
   118        PB        2
   119        LS        0        61
   120        UD    0.211

   121        KK   DP217
   122        KM   Combine RT203 and SC217
   123        KO                                          22
   124        HC        2

   125        KK   DP220
   126        KM   Combine DP217 and DP219
   127        KO                                          22
   128        HC        2

   129        KK   RT220
   130        KM   Smith Creek Route 220 to 316
   131        KO                                          22
   132        RK      646  0.0313  0.0829               TRAP        1         2

   133        KK   SC301
   134        KM   Smith Creek 301 Runoff
   135        KO                                          22
   136        BA   0 1196
   137        PB        2
   138        LS        0        64
   139        UD    0.265
```

HEC-1 INPUT

```
ID.....1...2.....3.....4.....5.....6.....7.....8.....9.....10
  140          KK  SC303
  141          KM  Smith Creek 303 Runoff
  142          KO                                        22
  143          BA  0.1300
  144          PB       2
  145          LS       0       64
  146          UD   0.322

  147          KK  DP303
  148          KM  Combine SC301 and SC303
  149          KO                                        22
  150          HC       2

  151          KK  RT303
  152          KM  Tributary Route 303 to 305
  153          KO                                        22
  154          RK     940  0.0372   0.055            TRAP                2

  155          KK  SC305
  156          KM  Smith Creek 305 Runoff
  157          KO                                        22
  158          BA  0.0629
  159          PB       2
  160          LS       0       64
  161          UD   0.331

  162          KK  DP305
  163          KM  Combine RT303 and SC305
  164          KO                                        22
  165          HC       2

  166          KK  RT305
  167          KM  Tributary Route 305 to 311
  168          KO                                        22
  169          RK    2150  0.0414   0.055            TRAP                2

  170          KK  SC307
  171          KM  Smith Creek 307 Runoff
  172          KO                                        22
  173          BA  0.1081
  174          PB       2
  175          LS       0       64
  176          UD   0.455

  177          KK  SC309
  178          KM  Smith Creek 309 Runoff
  179          KO                                        22
  180          BA  0.1240
  181          PB       2
  182          LS       0       64
  183          UD   0.383
```

HEC-1 INPUT

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

  184          KK  SC311
  185          KM  Smith Creek 311 Runoff
  186          KO                                                22
  187          BA  0.1064
  188          PB       2
  189          LS       0       64
  190          UD   0.295

  191          KK  DP311
  192          KM  Combine RT305 SC307 SC309 and SC311
  193          KO                                                22
  194          HC       4

  195          KK  RT311
  196          KM  Tributary Route 311 to 315
  197          KO                                                22
  198          RK    2860  0.0448  0.0888             TRAP                2

  199          KK  SC313
  200          KM  Smith Creek 313 Runoff
  201          KO                                                22
  202          BA  0.1520
  203          PB       2
  204          LS       0       64
  205          UD   0.373

  206          KK  SC315
  207          KM  Smith Creek 315 Runoff
  208          KO                                                22
  209          BA  0.0886
  210          PB       2
  211          LS       0       64
  212          UD   0.350

  213          KK  DP315
  214          KM  Combine RT311 SC313 and SC315
  215          KO                                                22
  216          HC       3

  217          KK  DP316
  218          KM  Combine RT220 and DP315
  219          KO                                                22
  220          HC       2

  221          KK  RT316
  222          KM  Smith Creek Route 316 to 401
  223          KO                                                22
  224          RK    2575  0.0361   0.120             TRAP        1       2
```

HEC-1 INPUT

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

  225          KK  SC401
  226          KM  Smith Creek 401 Runoff
  227          KO                                                  22
  228          BA  0.1524
  229          PB       2
  230          LS       0       65
  231          UD   0.437

  232          KK  DP401
  233          KM  Combine RT316 and SC401
  234          KO                                                  22
  235          HC       2

  236          KK  RT401
  237          KM  Smith Creek Route 401 to 405
  238          KO                                                  22
  239          RK     660  0.0548    0.120                 TRAP        1        2

  240          KK  SC403
  241          KM  Smith Creek 403 Runoff
  242          KO                                                  22
  243          BA  0.1007
  244          PB       2
  245          LS       0       66
  246          UD   0.333

  247          KK  SC405
  248          KM  Smith Creek 405 Runoff
  249          KO                                                  22
  250          BA  0.0677
  251          PB       2
  252          LS       0       64
  253          UD   0.356

  254          KK  DP405
  255          KM  Combine RT401 SC403 and SC405
  256          KO                                                  22
  257          HC       3

  258          KK  RT405
  259          KM  Smith Creek Route 405 to 407
  260          KO                                                  22
  261          RK    1500  0.0210    0.120                 TRAP        1        2

  262          KK  SC101
  263          KM  Smith Creek 101 Runoff
  264          KO                                                  22
  265          BA  0.0920
  266          PB       2
  267          LS       0       64
  268          UD   0.353
```

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

  269          KK  RT101
  270          KM  Tributary Route 101 to 103
  271          KO                                          22
  272          RK    2050  0.0424   0.055           TRAP              2

  273          KK  SC103
  274          KM  Smith Creek 103 Runoff
  275          KO                                          22
  276          BA  0.1670
  277          PB       2
  278          LS       0      65
  279          UD   0.348

  280          KK  SC105A
  281          KM  Smith Creek 105A Runoff
  282          KO                                          22
  283          BA  0.0693
  284          PB       2
  285          LS       0      69
  286          UD   0.345

  287          KK  DP103
  288          KM  Combine RT101 SC105A and SC103
  289          KO                                          22
  290          HC       3

  291          KK  RES106
  292          KM  Exisitng Detention Pond 106
  293          KO                                          22
  294          RS       1    STOR      -1
  295          SA    0.43    0.54    0.65    0.80    0.94    1.00
  296          SE    7320    7322    7324    7326    7328    7330
  297          SQ       0      50      80     100     190     250
  298          SE    7320    7322    7324    7326    7328    7330

  299          KK  RT103
  300          KM  Tributary Route RES106 to 105
  301          KO                                          22
  302          RK    1150  0.0478   0.055           TRAP              2

  303          KK  SC105B
  304          KM  Smith Creek 105B Runoff
  305          KO                                          22
  306          BA  0.0686
  307          PB       2
  308          LS       0      69
  309          UD   0.345

  310          KK  DP105
  311          KM  Combine RT103 and SC105B
  312          KO                                          22
  313          HC       2
```

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

  314          KK  RT105A
  315          KM  Tributary Route 105 to 107A
  316          KO                                          22
  317          RK    1000  0.0395  0.0727            TRAP              2

  318          KK  SC107A
  319          KM  Smith Creek 107A Runoff
  320          KO                                          22
  321          BA  0.1367
  322          PB       2
  323          LS       0       68
  324          UD   0.287

  325          KK  RES108
  326          KM  EXISTING DETENTION POND 108
  327          KO                                          22
  328          RS       1     STOR       -1
  329          SV       0     0.20     0.68     1.35     2.32
  330          SE    7340     7342     7344     7346     7348
  331          SQ       0       20       48      220      822
  332          SE    7340     7342     7344     7346     7348

  333          KK  DP107A
  334          KM  Combine RES108 and RT105A
  335          KO                                          22
  336          HC       2

  337          KK  RT105B
  338          KM  TRIBUTARY ROUTE 107A TO 107B
  339          KO                                          22
  340          RK    1000  0.0395  0.0727            TRAP              2

  341          KK  SC107B
  342          KM  SMITH CREEK 107B RUNOFF
  343          KO                                          22
  344          BA  0.0408
  345          PB       2
  346          LS       0       68
  347          UD   0.287

  348          KK  DP107B
  349          KM  COMBINE RT105B AND SC107B
  350          KO                                          22
  351          HC       2

  352          KK  RT107
  353          KM  Tributary Route 107B to 109
  354          KO                                          22
  355          RK    1420  0.0359   0.120            TRAP              2
```

HEC-1 INPUT

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

356         KK  SC109
357         KM  Smith Creek 109 Runoff
358         KO                                              22
359         BA  0.1637
360         PB       2
361         LS       0       68
362         UD   0.398

363         KK  DP109
364         KM  Combine RT107 and SC109
365         KO                                              22
366         HC       2

367         KK  RT109
368         KM  Tributary Route 109 to 111
369         KO                                              22
370         RK    3840  0.0453   0.120            TRAP                2

371         KK  SC111
372         KM  Smith Creek 111 Runoff
373         KO                                              22
374         BA  0.1894
375         PB       2
376         LS       0       69
377         UD   0.382

378         KK  DP111
379         KM  Combine RT109 and SC111
380         KO                                              22
381         HC       2

382         KK  SC407
383         KM  Smith Creek 407 Runoff
384         KO                                              22
385         BA  0.1685
386         PB       2
387         LS       0       65
388         UD   0.455

389         KK  DP407
390         KM  Combine DP111 RT405 and SC407
391         KO                                              22
392         HC       3

393         KK  RT407
394         KM  SMITH CREEK ROUTE 407 TO 506
395         KO                                              22
396         RK    1105  0.0210   0.120            TRAP        1       2
```

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

  397          KK  SC501
  398          KM  Smith Creek 501 Runoff
  399          KO                                                22
  400          BA  0.1219
  401          PB       2
  402          LS       0       65
  403          UD   0.313

  404          KK  SC503
  405          KM  Smith Creek 503 Runoff
  406          KO                                                22
  407          BA  0.1193
  408          PB       2
  409          LS       0       64
  410          UD   0.382

  411          KK  SC505
  412          KM  Smith Creek 505 Runoff
  413          KO                                                22
  414          BA  0.1923
  415          PB       2
  416          LS       0       65
  417          UD   0.380

  418          KK  DP505
  419          KM  Combine SC501 SC503 and SC505
  420          KO                                                22
  421          HC       3

  422          KK  DP506
  423          KM  Combine RT407 and DP505
  424          KO                                                22
  425          HC       2

  426          KK  RT506
  427          KM  Smith Creek Route 506 to 507
  428          KO                                                22
  429          RK     750  0.0067  0.0978            TRAP       2        1

  430          KK  SC507
  431          KM  Smith Creek 507 Runoff
  432          KO                                                22
  433          BA  0.0958
  434          PB       2
  435          LS       0       68
  436          UD   0.267

  437          KK  DP507
  438          KM  Combine RT506 and SC507
  439          KO                                                22
  440          HC       2
```

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

         441            KK  RT507
         442            KM  Smith Creek Route 507 to 509
         443            KO                                            22
         444            RK     2010   0 0268   0 0978               TRAP         2         1

         445            KK  SC509
         446            KM  Smith Creek 509 Runoff
         447            KO                                            22
         448            BA  0. 1514
         449            PB        2
         450            LS        0        69
         451            UD   0 411

         452            KK  DP509
         453            KM  Combine RT507 and SC509
         454            KO                                            22
         455            HC        2

         456            KK  RT509
         457            KM  Smith Creek Route 509 to 511
         458            KO                                            22
         459            RK     2650   0.0160   0.0978               TRAP         2         1

         460            KK  SC511
         461            KM  Smith Creek 511 Runoff
         462            KO                                            22
         463            BA  0.0907
         464            PB        2
         465            LS        0        68
         466            UD   0.313

         467            KK  DP511
         468            KM  Combine RT509 and SC511
         469            KO                                            22
         470            HC        2

         471            KK  RT511
         472            KM  Smith Creek Route 511 to 604
         473            KO                                            22
         474            RK      670   0.0373   0.0978               TRAP         2         1

         475            KK  SC601
         476            KM  Smith Creek 601 Runoff
         477            KO                                            22
         478            BA  0.0633
         479            PB        2
         480            LS        0        69
         481            UD   0.302
```

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

           482        KK  RT601
           483        KM  Tributary Route 601 to 603
           484        KO                                         22
           485        RK    1170  0.0359   0.090               TRAP                   2

           486        KK  SC603
           487        KM  Smith Creek 603 Runoff
           488        KO                                         22
           489        BA  0.2514
           490        PB       2
           491        LS       0       68
           492        UD   0.325

           493        KK  DP603
           494        KM  Combine RT601 and SC603
           495        KO                                         22
           496        HC       2

           497        KK  DP604
           498        KM  Combine RT511 and DP603
           499        KO                                         22
           500        HC       2

           501        KK  RT604
           502        KM  Smith Creek Route 604 to 609
           503        KO                                         22
           504        RK    1380  0.0236  0.0928               TRAP         2         1

           505        KK  SC605
           506        KM  Smith Creek 605 Runoff
           507        KO                                         22
           508        BA  0.1283
           509        PB       2
           510        LS       0       69
           511        UD   0.494

           512        KK  SC607
           513        KM  Smith Creek 607 Runoff
           514        KO                                         22
           515        BA  0.0840
           516        PB       2
           517        LS       0       69
           518        UD   0.270

           519        KK  SC609
           520        KM  Smith Creek 609 Runoff
           521        KO                                         22
           522        BA  0.1389
           523        PB       2
           524        LS       0       69
           525        UD   0.342
```

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

526         KK  DP609
527         KM  Combine RT604 SC605 SC607 and SC609
528         KO                                          22
529         HC       4

530         KK  RES610
531         KM  Smith Creek Reservoir Route 610
532         KO                                          22
533         RS       1    STOR      -1
534         SA     2.2     2.7     3.3     3.8     4.4     5.1     5.8
535         SE    6822    6823    6824    6825    6826    6827    6828
536         SQ       0      11     701    2361    4843   10331   16010

537         KK  RT610
538         KM  Smith Creek Route 610 to 611
539         KO                                          22
540         RK    3200  0.0226   0.090             TRAP       2       1

541         KK  SC611
542         KM  Smith Creek 611 Runoff
543         KO                                          22
544         BA  0.1095
545         PB       2
546         LS       0      69
547         UD   0.229

548         KK  DP611
549         KM  Combine RT610 and SC611
550         KO                                          22
551         HC       2

552         KK  RES612
553         KM  Smith Creek Reservoir Route 612
554         KO                                          22
555         RS       1    STOR      -1
556         SA    1.82    2.77    3.72     4.5    5.28    5.78
557         SE    6762    6763    6764    6765    6766  6766.5
558         SQ       0     150     510    1160    2120    2680

559         KK  RT612
560         KM  Smith Creek Route 612 to 613
561         KO                                          22
562         RK    2250  0.0240  0.0866             TRAP       2       1

563         KK  SC613
564         KM  Smith Creek 613 Runoff
565         KO                                          22
566         BA  0.1233
567         PB       2
568         LS       0      69
569         UD     .30
```

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

570          KK  RT613
571          KM  SMITH CREEK ROUTE 613 TO DP 613
572          KO                                                22
573          RK    2000  0.0360   0.030             TRAP        2        4

574          KK  SC615B
575          KM  Smith Creek 615B Runoff
576          KO                                                22
577          BA  0.0313
578          PB       2
579          LS       0       78
580          UD   0.160

581          KK  RES614
582          KM  EXISTING POND 614
583          KO                                                22
584          RS       1    STOR       -1
585          SV       0   0.067    0.32    0.67    1.16     1.5
586          SE    6722    6724    6726    6728    6730    6732
587          SQ       0       4       6      10    13.3      20
588          SE    6722    6724    6726    6728    6730    6732

589          KK  SC617A
590          KM
591          KO                                                22
592          BA  0.0701
593          PB       2
594          LS       0       69
595          UD   0.258

596          KK  SC615A
597          KM  SMITH CREEK 615A
598          KO                                                22
599          BA  0.0567
600          PB       2
601          LS       0       69
602          UD   0.180

603          KK  DP613
604          KM  COMBINE RT612 SC615A SC617A RT613 RES614
605          KO                                                22
606          HC       5

607          KK  RT614
608          KM  SMITH CREEK ROUTE 613 TO 617
609          KO                                                22
610          RK    1200   0.022   0.030             TRAP        2        4

611          KK  SC617B
612          KM  Smith Creek 617B Runoff
613          KO                                                22
614          BA  0.0215
615          PB       2
616          LS       0       69
```

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ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10.
 617          UD   0.228

 618          KK  DP617
 619          KM  Combine RT614 SC617B
 620          KO                                          22
 621          HC       2

 622          KK  RT617
 623          KM  Smith Creek Route 617 to 703
 624          KO                                          22
 625          RK    1470  0.0061   0.085           TRAP       2        1

 626          KK  SC701
 627          KM  Smith Creek 701 Runoff
 628          KO                                          22
 629          BA  0.0722
 630          PB       2
 631          LS       0       92
 632          UD   0.360

 633          KK  SC703
 634          KM  Smith Creek 703 Runoff
 635          KO                                          22
 636          BA  0.1305
 637          PB       2
 638          LS       0       77
 639          UD   0.092

 640          KK  DP703
 641          KM  Combine RT617 SC701 and SC703
 642          KO                                          22
 643          HC       3

 644          KK  RT703
 645          KM  Smith Creek Route 703 to 705
 646          KO                                          22
 647          RK    2780  0.0338  0.0786           TRAP       3        1

 648          KK  SC705
 649          KM  Smith Creek 705 Runoff
 650          KO                                          22
 651          BA  0.0869
 652          PB       2
 653          LS       0       69
 654          UD   0.329

 655          KK  DP705
 656          KM  Combine RT703 and SC705
 657          KO                                          22
 658          HC       2
 659          ZZ
```

HEC1 S/N: 1343001909 HMVersion: 6 33 Data File: C:\WINNT\TEMP\~vbh2660.TMP

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

MAXIMUM STAGE	TIME OF OPERATION MAX STAGE	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA
	HYDROGRAPH AT	SC205	2	6.00	1	0.	0.	0.10
	ROUTED TO	RT205	2.	6.25	1.	0.	0.	0.10
	HYDROGRAPH AT	SC207	3.	6.00	1.	0.	0.	0.12
	HYDROGRAPH AT	SC213	3.	6.00	1.	1.	0.	0.12
	3 COMBINED AT	DP213	7.	6.25	3	1	0.	0.34
	ROUTED TO	RT213	7.	6.25	3.	1.	0.	0.34
	HYDROGRAPH AT	SC209	1.	6.50	0.	0.	0.	0.14
	HYDROGRAPH AT	SC211	1.	6.50	0.	0.	0	0.08
	HYDROGRAPH AT	SC215	1.	6.25	0.	0.	0.	0.06
	4 COMBINED AT	DP215	9.	6.25	4.	2.	1.	0.62
	ROUTED TO	RT215	9.	6.50	4.	2.	1.	0.62
	HYDROGRAPH AT	SC219	1.	6.50	0.	0.	0.	0.13
	2 COMBINED AT	DP219	9.	6.50	4.	2.	1.	0.75
	HYDROGRAPH AT	SC201	1.	6.50	1.	0.	0.	0.12
	ROUTED TO	RT201	1.	6.50	1.	0.	0.	0.12
	HYDROGRAPH AT	SC203	1.	6.25	0	0.	0.	0.11
	2 COMBINED AT	DP203	2.	6.50	1.	1.	0.	0.23
	ROUTED TO	RT203	2.	6.75	1	1.	0.	0.23
	HYDROGRAPH AT	SC217	0	6.25	0	0.	0.	0.05
	2 COMBINED AT	DP217	2.	6.75	1	1	0.	0.29
	2 COMBINED AT	DP220	11.	6.50	6.	3	1.	1.03
	ROUTED TO	RT220	11.	6.50	6	3.	1.	1.03
	HYDROGRAPH AT	SC301	2.	6.00	1	0.	0.	0.12

HYDROGRAPH AT	SC303	2.	6.00	1.	0.	0.	0.13
2 COMBINED AT	DP303	4.	6.00	2.	1.	0.	0.25
ROUTED TO	RT303	4.	6.00	2	1.	0.	0.25
HYDROGRAPH AT	SC305	1.	6.00	0	0.	0.	0.06
2 COMBINED AT	DP305	5.	6.00	2.	1.	0.	0.31
ROUTED TO	RT305	5.	6.25	2.	1.	0.	0.31
HYDROGRAPH AT	SC307	2.	6.25	1	0.	0.	0.11
HYDROGRAPH AT	SC309	2.	6.25	1.	0.	0.	0.12
HYDROGRAPH AT	SC311	2.	6.00	1	0.	0.	0.11
4 COMBINED AT	DP311	10.	6.25	4.	2.	1.	0.65
ROUTED TO	RT311	10.	6.50	4.	2.	1.	0.65
HYDROGRAPH AT	SC313	2.	6.25	1.	0.	0.	0.15
HYDROGRAPH AT	SC315	1.	6.25	1.	0.	0.	0.09
3 COMBINED AT	DP315	13.	6.50	6.	3.	1.	0.89
2 COMBINED AT	DP316	25.	6.50	12.	6.	2.	1.92
ROUTED TO	RT316	24.	6.50	12.	6.	2.	1.92
HYDROGRAPH AT	SC401	3.	6.25	1.	1.	0.	0.15
2 COMBINED AT	DP401	27.	6.50	13.	6.	2.	2.08
ROUTED TO	RT401	26.	6.75	13.	6.	2.	2.08
HYDROGRAPH AT	SC403	3.	6.00	1.	0.	0.	0.10
HYDROGRAPH AT	SC405	1.	6.25	0.	0.	0.	0.07
3 COMBINED AT	DP405	29.	6.50	14	7.	2.	2.25
ROUTED TO	RT405	29.	6.75	14	7.	2.	2.25
HYDROGRAPH AT	SC101	1.	6.25	1.	0.	0.	0.09
ROUTED TO	RT101	1.	6.25	1.	0.	0.	0.09
HYDROGRAPH AT	SC103	4.	6.00	1	1.	0.	0.17
HYDROGRAPH AT							

		SC105A	4	6.00	1.	0.	0	0.07
	3 COMBINED AT							
		DP103	9	6.00	3.	1	0	0.33
	ROUTED TO							
		RES106	7	6.50	3.	1	0.	0.33
7320.29	6.50							
	ROUTED TO							
		RT103	7	6.50	3.	1	0.	0.33
	HYDROGRAPH AT							
		SC105B	4	6.00	1.	0.	0.	0.07
	2 COMBINED AT							
		DP105	10.	6.25	4.	2.	1.	0.40
	ROUTED TO							
		RT105A	10.	6.50	4.	2.	1.	0.40
	HYDROGRAPH AT							
		SC107A	7.	6.00	2.	1.	0.	0.14
	ROUTED TO							
		RES108	6.	6.25	2.	1.	0.	0.14
7340.59	6.25							
	2 COMBINED AT							
		DP107A	15.	6.25	6.	2.	1.	0.53
	ROUTED TO							
		RT105B	15.	6.25	6.	2.	1.	0.53
	HYDROGRAPH AT							
		SC107B	2.	6.00	1.	0.	0.	0.04
	2 COMBINED AT							
		DP107B	16.	6.25	6.	3.	1.	0.57
	ROUTED TO							
		RT107	16.	6.50	6.	3.	1.	0.57
	HYDROGRAPH AT							
		SC109	7.	6.00	2.	1.	0.	0.16
	2 COMBINED AT							
		DP109	22.	6.25	8.	3.	1.	0.74
	ROUTED TO							
		RT109	21	6.50	8.	3.	1.	0.74
	HYDROGRAPH AT							
		SC111	10.	6.00	3.	1.	0.	0.19
	2 COMBINED AT							
		DP111	28.	6.50	11.	5	2.	0.93
	HYDROGRAPH AT							
		SC407	3.	6.25	1.	1.	0.	0.17
	3 COMBINED AT							
		DP407	56	6.50	26.	12.	4.	3.34
	ROUTED TO							
		RT407	56	6.75	26.	12.	4.	3.34
	HYDROGRAPH AT							
		SC501	3.	6.00	1.	0.	0.	0.12
	HYDROGRAPH AT							
		SC503	2	6.25	1.	0	0.	0.12
	HYDROGRAPH AT							
		SC505	4.	6.25	2.	1.	0	0.19
	3 COMBINED AT							
		DP505	8.	6.00	3.	2.	1.	0.43

2 COMBINED AT	DP506	62.	6 75	29.	13.	4.	3 77
ROUTED TO	RT506	62.	6 75	29.	13	4.	3 77
HYDROGRAPH AT	SC507	5.	6 00	1.	1.	0.	0. 10
2 COMBINED AT	DP507	63	6. 75	30.	14.	5.	3. 87
ROUTED TO	RT507	62.	6 75	30.	14.	5	3. 87
HYDROGRAPH AT	SC509	7.	6 00	2.	1.	0.	0. 15
2 COMBINED AT	DP509	66.	6. 75	32.	15.	5.	4. 02
ROUTED TO	RT509	65.	7. 00	32.	15.	5.	4. 02
HYDROGRAPH AT	SC511	5.	6. 00	1.	0.	0.	0. 09
2 COMBINED AT	DP511	67	7. 00	33.	15.	5.	4. 11
ROUTED TO	RT511	66.	7. 00	33.	15.	5.	4. 11
HYDROGRAPH AT	SC601	4.	6. 00	1.	0.	0.	0. 06
ROUTED TO	RT601	3.	6. 00	1.	0.	0.	0. 06
HYDROGRAPH AT	SC603	12	6. 00	3.	1.	0.	0 25
2 COMBINED AT	DP603	16.	6. 00	4.	2.	1.	0. 31
2 COMBINED AT	DP604	72	7. 00	37.	17.	6	4. 43
ROUTED TO	RT604	71.	7. 00	37.	17.	6.	4. 43
HYDROGRAPH AT	SC605	6.	6. 25	2.	1.	0.	0. 13
HYDROGRAPH AT	SC607	5.	6. 00	1.	0.	0.	0. 08
HYDROGRAPH AT	SC609	8.	6. 00	2.	1.	0.	0. 14
4 COMBINED AT	DP609	79.	7. 00	41.	19.	6.	4. 78
ROUTED TO	RES610	95	6. 75	39.	19.	6.	4. 78
6823 12 6. 75							
ROUTED TO	RT610	82	7. 00	38.	19.	6.	4. 78
HYDROGRAPH AT	SC611	7.	6. 00	2.	1.	0.	0 11
2 COMBINED AT	DP611	84.	7 00	39.	19.	7.	4. 89
ROUTED TO	RES612	76.	7 25	39.	19.	7.	4. 89

6762.50	7.25						
	ROUTED TO	RT612	75.	7.50	39.	19	7.	4.89
	HYDROGRAPH AT	SC613	8.	6.00	2	1	0	0.12
	ROUTED TO	RT613	7.	6.00	2.	1	0.	0.12
	HYDROGRAPH AT	SC615B	9.	5.75	1.	0.	0.	0.03
	ROUTED TO	RES614	4	6.00	1	0.	0.	0.03
6724.48	6.00						
	HYDROGRAPH AT	SC617A	4.	6.00	1.	0.	0.	0.07
	HYDROGRAPH AT	SC615A	4	5.75	1.	0.	0.	0.06
	5 COMBINED AT	DP613	80.	7.50	41.	21.	7.	5.17
	ROUTED TO	RT614	79.	7.50	41.	21.	7.	5.17
	HYDROGRAPH AT	SC617B	1.	6.00	0.	0.	0.	0.02
	2 COMBINED AT	DP617	79.	7.50	42.	21.	7.	5.19
	ROUTED TO	RT617	78.	7.75	42.	21.	7.	5.19
	HYDROGRAPH AT	SC701	46.	6.00	8.	2.	1.	0.07
	HYDROGRAPH AT	SC703	40.	5.75	5.	2.	1.	0.13
	3 COMBINED AT	DP703	85.	7.75	52.	25.	9.	5.39
	ROUTED TO	RT703	84.	7.75	51.	25.	9.	5.39
	HYDROGRAPH AT	SC705	5.	6.00	1.	1.	0.	0.09
	2 COMBINED AT	DP705	85.	7.75	53.	26.	9.	5.48

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

	ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
			(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
	RT205	MANE	2.71	1.76	366.57	0.12	15.00	1.60	375.00	0.12

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6094E+00 EXCESS=0.0000E+00 OUTFLOW=0.6091E+00 BASIN STORAGE= 0.5891E-09 PERCENT ERROR= 0.0

	RT213	MANE	1.75	7.39	376.62	0.14	15.00	7.38	375.00	0.14

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2491E+01 EXCESS=0.0000E+00 OUTFLOW=0.2491E+01 BASIN STORAGE= 0.2187E-08 PERCENT ERROR= 0.0

	RT215	MANE	3.16	9.15	380.60	0.11	15.00	8.68	390.00	0.11

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3666E+01 EXCESS=0.0000E+00 OUTFLOW=0.3664E+01 BASIN STORAGE= 0.1627E-07 PERCENT ERROR= 0.1

	RT201	MANE	3.28	1.02	394.87	0.09	15.00	1.01	390.00	0.09

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5631E+00 EXCESS=0.0000E+00 OUTFLOW=0.5629E+00 BASIN STORAGE= 0.8940E-09 PERCENT ERROR= 0.0

	RT203	MANE	3.96	1.70	397.89	0.08	15.00	1.67	405.00	0.08

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9964E+00 EXCESS=0.0000E+00 OUTFLOW=0.9961E+00 BASIN STORAGE= 0.8250E-08 PERCENT ERROR= 0.0

	RT220	MANE	1.13	11.42	391.55	0.10	15.00	11.38	390.00	0.10

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5375E+01 EXCESS=0.0000E+00 OUTFLOW=0.5376E+01 BASIN STORAGE= 0.2047E-07 PERCENT ERROR= 0.0

	RT303	MANE	1.43	4.33	363.74	0.12	15.00	4.00	360.00	0.12

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1568E+01 EXCESS=0.0000E+00 OUTFLOW=0.1568E+01 BASIN STORAGE= 0.1453E-09 PERCENT ERROR= 0.0

	RT305	MANE	3.08	5.02	368.21	0.12	15.00	4.98	375.00	0.12

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1967E+01 EXCESS=0.0000E+00 OUTFLOW=0.1966E+01 BASIN STORAGE= 0.3429E-08 PERCENT ERROR= 0.0

	RT311	MANE	4.64	10.10	382.99	0.12	15.00	9.87	390.00	0.12

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4089E+01 EXCESS=0.0000E+00 OUTFLOW=0.4088E+01 BASIN STORAGE=
0.7901E-07 PERCENT ERROR= 0.0

RT316	MANE	4.62	24.38	396.26	0.11	15.00	23.93	390.00
0.11								

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1098E+02 EXCESS=0.0000E+00 OUTFLOW=0.1097E+02 BASIN STORAGE=
0.5349E-06 PERCENT ERROR= 0.1

RT401	MANE	1.15	26.57	393.23	0.11	15.00	26.11	405.00
0.11								

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1206E+02 EXCESS=0.0000E+00 OUTFLOW=0.1206E+02 BASIN STORAGE=
0.1769E-06 PERCENT ERROR= 0.0

RT405	MANE	3.16	28.62	398.25	0.11	15.00	28.59	405.00
0.11								

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1332E+02 EXCESS=0.0000E+00 OUTFLOW=0.1331E+02 BASIN STORAGE=
0.8449E-06 PERCENT ERROR= 0.0

RT101	MANE	3.92	1.45	381.61	0.12	15.00	1.44	375.00
0.12								

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5779E+00 EXCESS=0.0000E+00 OUTFLOW=0.5776E+00 BASIN STORAGE=
0.2828E-08 PERCENT ERROR= 0.1

RT103	MANE	1.40	7.23	392.78	0.15	15.00	7.23	390.00
0.15								

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2581E+01 EXCESS=0.0000E+00 OUTFLOW=0.2581E+01 BASIN STORAGE=
0.4253E-08 PERCENT ERROR= 0.0

RT105A	MANE	1.56	9.80	379.28	0.16	15.00	9.55	390.00
0.16								

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3378E+01 EXCESS=0.0000E+00 OUTFLOW=0.3378E+01 BASIN STORAGE=
0.8132E-08 PERCENT ERROR= 0.0

RT105B	MANE	1.43	15.29	378.21	0.17	15.00	14.85	375.00
0.17								

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4801E+01 EXCESS=0.0000E+00 OUTFLOW=0.4801E+01 BASIN STORAGE=
0.1447E-07 PERCENT ERROR= 0.0

RT107	MANE	2.75	16.13	379.80	0.17	15.00	15.53	390.00
0.17								

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5234E+01 EXCESS=0.0000E+00 OUTFLOW=0.5231E+01 BASIN STORAGE=
0.6475E-07 PERCENT ERROR= 0.0

RT109	MANE	6.35	21.54	388.84	0.18	15.00	21.45	390.00
0.18								

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6924E+01 EXCESS=0.0000E+00 OUTFLOW=0.6918E+01 BASIN STORAGE=
0.8610E-06 PERCENT ERROR= 0.1

RT407	MANE	1.93	56.12	394.22	0.13	15.00	56.10	405.00
0.13								

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2364E+02 EXCESS=0.0000E+00 OUTFLOW=0.2364E+02 BASIN STORAGE=
0.1329E-05 PERCENT ERROR= 0.0

RT506 MANE 1.60 61.99 408.09 0.13 15.00 61.51 405.00
0.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2666E+02 EXCESS=0.0000E+00 OUTFLOW=0.2666E+02 BASIN STORAGE=
0.1715E-05 PERCENT ERROR= 0.0

RT507 MANE 2.53 63.11 410.94 0.13 15.00 61.77 405.00
0.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2767E+02 EXCESS=0.0000E+00 OUTFLOW=0.2766E+02 BASIN STORAGE=
0.3425E-05 PERCENT ERROR= 0.0

RT509 MANE 4.02 65.78 413.58 0.14 15.00 64.98 420.00
0.14

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2941E+02 EXCESS=0.0000E+00 OUTFLOW=0.2939E+02 BASIN STORAGE=
0.9226E-05 PERCENT ERROR= 0.0

RT511 MANE 0.72 66.50 421.37 0.14 15.00 66.24 420.00
0.14

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3032E+02 EXCESS=0.0000E+00 OUTFLOW=0.3032E+02 BASIN STORAGE=
0.2158E-05 PERCENT ERROR= 0.0

RT601 MANE 2.70 3.81 366.32 0.22 15.00 3.31 360.00
0.22

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7321E+00 EXCESS=0.0000E+00 OUTFLOW=0.7316E+00 BASIN STORAGE=
0.1146E-08 PERCENT ERROR= 0.1

RT604 MANE 1.79 71.70 422.58 0.14 15.00 71.35 420.00
0.14

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3367E+02 EXCESS=0.0000E+00 OUTFLOW=0.3367E+02 BASIN STORAGE=
0.5933E-05 PERCENT ERROR= 0.0

RT610 MANE 3.53 94.42 412.39 0.15 15.00 82.25 420.00
0.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3774E+02 EXCESS=0.0000E+00 OUTFLOW=0.3773E+02 BASIN STORAGE=
0.2207E-04 PERCENT ERROR= 0.0

RT612 MANE 2.63 75.61 442.59 0.15 15.00 75.44 450.00
0.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3891E+02 EXCESS=0.0000E+00 OUTFLOW=0.3891E+02 BASIN STORAGE=
0.2231E-04 PERCENT ERROR= 0.0

RT613 MANE 2.09 7.48 364.64 0.22 15.00 6.79 360.00
0.22

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1426E+01 EXCESS=0.0000E+00 OUTFLOW=0.1426E+01 BASIN STORAGE=
0.1212E-08 PERCENT ERROR= 0.0

RT614 MANE 0.87 79.64 451.83 0.15 15.00 79.12 450.00
0.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4262E+02 EXCESS=0.0000E+00 OUTFLOW=0 4262E+02 BASIN STORAGE=
0.7101E-05 PERCENT ERROR= 0.0

RT617 MANE 2.69 79.20 456.80 0.15 15 00 78.09 465.00
0 15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4289E+02 EXCESS=0.0000E+00 OUTFLOW=0 4288E+02 BASIN STORAGE=
0.3317E-04 PERCENT ERROR= 0.0

RT703 MANE 2.52 84.43 470.22 0.18 15.00 84.25 465.00
0.18

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5075E+02 EXCESS=0.0000E+00 OUTFLOW=0.5073E+02 BASIN STORAGE=
0.4694E-04 PERCENT ERROR= 0.0

*** NORMAL END OF HEC-1 ***

5 year existing
HEC1 S/N: 1343001909 HMVersion 6.33 Data File: C:\WINNT\TEMP\~vbh0800.TMP

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*                                      *
*                                      *
*   FLOOD HYDROGRAPH PACKAGE (HEC-1)   *
U.S. ARMY CORPS OF ENGINEERS      *
*               MAY  1991              *
HYDROLOGIC ENGINEERING CENTER     *
*           VERSION 4.0.1E             *
609 SECOND STREET           *
*                                      *
DAVIS, CALIFORNIA 95616         *
*  RUN DATE  06/19/2001  TIME  16:43:37 *
(916) 756-1104              *
*                                      *
*                                      *
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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
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:: ::::::::::::::::::::::::::::::::::::::
:::                                    :::
:::  Full Microcomputer Implementation :::
:::              by                    :::
:::        Haestad Methods, Inc        :::
:::                                    :::
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37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

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. THIS IS THE FORTRAN77 VERSION

NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,

DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION

KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

HEC-1 INPUT

```
ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
LINE
    1  ID  Type IIA storm
    2  IT      15       0       0     288
    3  IO       5

    4  KK  SC205
    5  KM  Smith Creek 205 Runoff
    6  KO                                      22
    7  BA  0 0970
    8  PB     2.6
    9  IN      15
   10  PC  0.0005  0.0015  0.0030  0 0045  0.0060  0.0080  0.0100  0.0120  0.0143
0.0165
   11  PC  0 0188  0 0210  0.0233  0.0255  0.0278  0.0320  0.0390  0.0460  0.0530
0 0600
   12  PC  0.0750  0.1000  0.4000  0.7000  0.7250  0.7500  0.7650  0.7800  0.7900
0.8000
   13  PC  0.8100  0.8200  0.8250  0.8300  0.8350  0.8400  0.8450  0.8500  0.8550
0.8600
   14  PC  0.8638  0.8675  0.8713  0.8750  0.8788  0.8825  0.8863  0.8900  0.8938
0.8975
   15  PC  0.9013  0.9050  0.9083  0.9115  0.9148  0 9180  0.9210  0.9240  0.9270
0 9300
   16  PC  0.9325  0.9350  0.9375  0.9400  0.9425  0.9450  0.9475  0.9500  0.9525
0.9550
   17  PC  0.9575  0.9600  0.9625  0.9650  0.9675  0.9700  0.9725  0.9750  0.9775
0.9800
   18  PC  0.9813  0.9825  0.9838  0.9850  0.9863  0.9875  0.9888  0.9900  0.9913
0.9925
   19  PC  0.9938  0 9950  0.9963  0.9975  0.9988  1.0000
   20  LS      0      64
   21  UD  0.257

   22  KK  RT205
   23  KM  Smith Creek Route 205 to 207
   24  KO                                      22
   25  RK    1530  0.0431   0.055            TRAP              2

   26  KK  SC207
   27  KM  Smith Creek 207 Runoff
   28  KO                                      22
   29  BA    0.12
   30  PB     2.6
   31  LS      0      65
   32  UD  0.367

   33  KK  SC213
   34  KM  Smith Creek 213 Runoff
   35  KO                                      22
   36  BA  0.1243
   37  PB     2.6
   38  LS      0      66
   39  UD  0.382

   40  KK  DP213
   41  KM  Combine RT205 SC207 and SC213
   42  KO                                      22
   43  HC       3

   44  KK  RT213
   45  KM  Smith Creek Route 213 to 215
   46  KO                                      22
   47  RK    1360  0.0493   0.055            TRAP              2
```

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

     48    KK  SC209
     49    KM  Smith Creek 209 Runoff
     50    KO                                          22
     51    BA  0.1351
     52    PB     2.6
     53    LS       0       61
     54    UD   0.336

     55    KK  SC211
     56    KM  Smith Creek 211 Runoff
     57    KO                                          22
     58    BA  0.0799
     59    PB     2.6
     60    LS       0       62
     61    UD   0.418

     62    KK  SC215
     63    KM  Smith Creek 215 Runoff
     64    KO                                          22
     65    BA  0.0589
     66    PB     2.6
     67    LS       0       62
     68    UD   0.227

     69    KK  DP215
     70    KM  Combine RT213 SC209 SC211 and SC215
     71    KO                                          22
     72    HC       4

     73    KK  RT215
     74    KM  Smith Creek Route 215 to 219
     75    KO                                          22
     76    RK    2110  0.0446  0.0745          TRAP              2

     77    KK  SC219
     78    KM  Smith Creek 219 Runoff
     79    KO                                          22
     80    BA  0.1298
     81    PB     2.6
     82    LS       0       61
     83    UD   0.362

     84    KK  DP219
     85    KM  Combine RT215 and SC219
     86    KO                                          22
     87    HC       2

     88    KK  SC201
     89    KM  Smith Creek 201 Runoff
     90    KO                                          22
     91    BA  0.1216
     92    PB     2.6
     93    LS       0       62
     94    UD   0.340
```

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

       95         KK  RT201
       96         KM  Tributary Route 201 to 203
       97         KO                                        22
       98         RK    1650  0.0509   0.055              TRAP                2

       99         KK  SC203
      100         KM  Smith Creek 203 Runoff
      101         KO                                        22
      102         BA  0.1113
      103         PB     2.6
      104         LS       0       61
      105         UD   0.223

      106         KK  DP203
      107         KM  Combine RT201 and SC203
      108         KO                                        22
      109         HC       2

      110         KK  RT203
      111         KM  Tributary Route 203 to 217
      112         KO                                        22
      113         RK    2010  0.0557  0.0698              TRAP                2

      114         KK  SC217
      115         KM  Smith Creek 217 Runoff
      116         KO                                        22
      117         BA  0.0547
      118         PB     2.6
      119         LS       0       61
      120         UD   0.211

      121         KK  DP217
      122         KM  Combine RT203 and SC217
      123         KO                                        22
      124         HC       2

      125         KK  DP220
      126         KM  Combine DP217 and DP219
      127         KO                                        22
      128         HC       2

      129         KK  RT220
      130         KM  Smith Creek Route 220 to 316
      131         KO                                        22
      132         RK     646  0.0313  0.0829              TRAP        1       2

      133         KK  SC301
      134         KM  Smith Creek 301 Runoff
      135         KO                                        22
      136         BA  0.1196
      137         PB     2.6
      138         LS       0       64
      139         UD   0.265
```

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

  140          KK  SC303
  141          KM  Smith Creek 303 Runoff
  142          KO                                          22
  143          BA  0.1300
  144          PB     2.6
  145          LS       0       64
  146          UD   0.322

  147          KK  DP303
  148          KM  Combine SC301 and SC303
  149          KO                                          22
  150          HC       2

  151          KK  RT303
  152          KM  Tributary Route 303 to 305
  153          KO                                          22
  154          RK     940  0.0372   0.055          TRAP                2

  155          KK  SC305
  156          KM  Smith Creek 305 Runoff
  157          KO                                          22
  158          BA  0.0629
  159          PB     2.6
  160          LS       0       64
  161          UD   0.331

  162          KK  DP305
  163          KM  Combine RT303 and SC305
  164          KO                                          22
  165          HC       2

  166          KK  RT305
  167          KM  Tributary Route 305 to 311
  168          KO                                          22
  169          RK    2150  0.0414   0.055          TRAP                2

  170          KK  SC307
  171          KM  Smith Creek 307 Runoff
  172          KO                                          22
  173          BA  0.1081
  174          PB     2.6
  175          LS       0       64
  176          UD   0.455

  177          KK  SC309
  178          KM  Smith Creek 309 Runoff
  179          KO                                          22
  180          BA  0.1240
  181          PB     2.6
  182          LS       0       64
  183          UD   0.383
```

HEC-1 INPUT

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

  184          KK  SC311
  185          KM  Smith Creek 311 Runoff
  186          KO                                          22
  187          BA  0.1064
  188          PB     2.6
  189          LS       0       64
  190          UD   0.295

  191          KK  DP311
  192          KM  Combine RT305 SC307 SC309 and SC311
  193          KO                                          22
  194          HC       4

  195          KK  RT311
  196          KM  Tributary Route 311 to 315
  197          KO                                          22
  198          RK    2860  0.0448  0.0888            TRAP                2

  199          KK  SC313
  200          KM  Smith Creek 313 Runoff
  201          KO                                          22
  202          BA  0.1520
  203          PB     2.6
  204          LS       0       64
  205          UD   0.373

  206          KK  SC315
  207          KM  Smith Creek 315 Runoff
  208          KO                                          22
  209          BA  0.0886
  210          PB     2.6
  211          LS       0       64
  212          UD   0.350

  213          KK  DP315
  214          KM  Combine RT311 SC313 and SC315
  215          KO                                          22
  216          HC       3

  217          KK  DP316
  218          KM  Combine RT220 and DP315
  219          KO                                          22
  220          HC       2
  ...
  221          KK  RT316
  222          KM  Smith Creek Route 316 to 401
  223          KO                                          22
  224          RK    2575  0.0361   0.120            TRAP        1       2
```

HEC-1 INPUT

```
ID . .  LINE  1. . . . 2 . . 3. . . . 4 . . . . . 5 . . . 6. . . . 7. . . . 8. . . . . 9. . . . 10
          225          KK  SC401
          226          KM  Smith Creek 401 Runoff
          227          KO                                                  22
          228          BA  0.1524
          229          PB     2.6
          230          LS        0       65
          231          UD   0.437

          232          KK  DP401
          233          KM  Combine RT316 and SC401
          234          KO                                                  22
          235          HC        2

          236          KK  RT401
          237          KM  Smith Creek Route 401 to 405
          238          KO                                                  22
          239          RK      840  0.0548    0.120              TRAP        1         2

          240          KK  SC403
          241          KM  Smith Creek 403 Runoff
          242          KO                                                  22
          243          BA  0.1007
          244          PB     2.6
          245          LS        0       66
          246          UD   0.333

          247          KK  SC405
          248          KM  Smith Creek 405 Runoff
          249          KO                                                  22
          250          BA  0.0677
          251          PB     2.6
          252          LS        0       64
          253          UD   0.356

          254          KK  DP405
          255          KM  Combine RT401 SC403 and SC405
          256          KO                                                  22
          257          HC        3

          258          KK  RT405
          259          KM  Smith Creek Route 405 to 407
          260          KO                                                  22
          261          RK     1500  0.0210    0.120              TRAP        1         2

          262          KK  SC101
          263          KM  Smith Creek 101 Runoff
          264          KO                                                  22
          265          BA  0.0920
          266          PB     2.6
          267          LS        0       64
          268          UD   0.353
```

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

       269        KK  PT101
       270        KM  Tributary Route 101 to 103
       271        KO                                           22
       272        RK     2050  0.0424   0.055                TRAP                2

       273        KK  SC103
       274        KM  Smith Creek 103 Runoff
       275        KO                                           22
       276        BA  0 1670
       277        PB     2.6
       278        LS       0       65
       279        UD   0 348

       280        KK  SC105A
       281        KM  Smith Creek 105A Runoff
       282        KO                                           22
       283        BA  0.0693
       284        PB     2.6
       285        LS       0       69
       286        UD   0.345

       287        KK  DP103
       288        KM  Combine RT101 SC105A and SC103
       289        KO                                           22
       290        HC       3

       291        KK  RES106
       292        KM  Exisitng Detention Pond 106
       293        KO                                           22
       294        RS       1     STOR      -1
       295        SA    0 43     0.54     0.65     0.80     0.94     1.00
       296        SE    7320     7322     7324     7326     7328     7330
       297        SQ       0       50       80      100      190      250
       298        SE    7320     7322     7324     7326     7328     7330

       299        KK  RT103
       300        KM  Tributary Route RES106 to DP105
       301        KO                                           22
       302        RK     1150  0.0478   0.055                TRAP                2

       303        KK  SC105B
       304        KM  Smith Creek 105B Runoff
       305        KO                                           22
       306        BA  0.0686
       307        PB     2 6
       308        LS       0       69
       309        UD   0.345

       310        KK  DP105
       311        KM  Combine RES106 and SC105B
       312        KO                                           22
       313        HC       2
```

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

314         KK  RT105A
315         KM  Tributary Route 105 to 107A
316         KO                                                22
317         RK    1000  0.0395  0.0727                TRAP              2

318         KK  SC107A
319         KM  Smith Creek 107A Runoff
320         KO                                                22
321         BA  0.1367
322         PB     2.6
323         LS       0       68
324         UD   0.287

325         KK  RES108
326         KM  EXISTING DETENTION POND 108
327         KO                                                22
328         RS       1     STOR       -1
329         SV       0     0.20     0.68     1.35     2.32
330         SE    7340     7342     7344     7346     7348
331         SQ       0       20       48      220      822
332         SE    7340     7342     7344     7346     7348

333         KK  DP107A
334         KM  Combine RT105A and RES108
335         KO                                                22
336         HC       2

337         KK  RT105B
338         KM  TRIBUTARY ROUTE 107A TO 107B
339         KO                                                22
340         RK    1000  0.0395  0.0727                TRAP              2

341         KK  SC107B
342         KM  SMITH CREEK 107B RUNOFF
343         KO                                                22
344         BA  0.0408
345         PB     2.6
346         LS       0       68
347         UD   0.287

348         KK  DP107B
349         KM  COMBINE RT105B AND SC107B
350         KO                                                22
351         HC       2

352         KK  RT107
353         KM  Tributary Route 107B to 109
354         KO                                                22
355         RK    1420  0.0359   0.120                TRAP              2
```

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

356         KK  SC109
357         KM  Smith Creek 109 Runoff
358         KO                                          22
359         BA  0.1637
360         PB     2.6
361         LS       0       68
362         UD   0.398

363         KK  DP109
364         KM  Combine RT107 and SC109
365         KO                                          22
366         HC       2

367         KK  RT109
368         KM  Tributary Route 109 to 111
369         KO                                          22
370         RK    3840  0.0453   0.120          TRAP                2

371         KK  SC111
372         KM  Smith Creek 111 Runoff
373         KO                                          22
374         BA  0.1894
375         PB     2.6
376         LS       0       69
377         UD   0.382

378         KK  DP111
379         KM  Combine RT109 and SC111
380         KO                                          22
381         HC       2

382         KK  SC407
383         KM  Smith Creek 407 Runoff
384         KO                                          22
385         BA  0.1685
386         PB     2.6
387         LS       0       65
388         UD   0.455

389         KK  DP407
390         KM  Combine DP111 and SC407
391         KO                                          22
392         HC       3

393         KK  RT407
394         KM  SMITH CREEK ROUTE 407 TO 506
395         KO                                          22
396         RK    1105  0.0210   0.120          TRAP        1       2
```

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

          397       KK  SC501
          398       KM  Smith Creek 501 Runoff
          399       KO                                      22
          400       BA  0.1219
          401       PB     2.6
          402       LS       0      65
          403       UD   0.313

          404       KK  SC503
          405       KM  Smith Creek 503 Runoff
          406       KO                                      22
          407       BA  0.1193
          408       PB     2.6
          409       LS       0      64
          410       UD   0.382

          411       KK  SC505
          412       KM  Smith Creek 505 Runoff
          413       KO                                      22
          414       BA  0.1923
          415       PB     2.6
          416       LS       0      65
          417       UD   0.380

          418       KK  DP505
          419       KM  Combine SC501 SC503 and SC505
          420       KO                                      22
          421       HC       3

          422       KK  DP506
          423       KM  Combine  RT407 and DP505
          424       KO                                      22
          425       HC       2

          426       KK  RT506
          427       KM  Smith Creek Route 506 to 507
          428       KO                                      22
          429       RK     750  0.0067  0.0978            TRAP        2       1

          430       KK  SC507
          431       KM  Smith Creek 507 Runoff
          432       KO                                      22
          433       BA  0.0958
          434       PB     2.6
          435       LS       0      68
          436       UD   0.267

          437       KK  DP507
          438       KM  Combine RT506 and SC507
          439       KO                                      22
          440       HC       2
```

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

                    KK   RT507
                    KM   Smith Creek Route 507 to 509
                    KO                                           22
                    RK     2010   0 0268   0.0978              TRAP       2        1

                    KK   SC509
                    KM   Smith Creek 509 Runoff
                    KO                                           22
                    BA   0.1514
                    PB      2 6
                    LS        0        69
                    UD    0.411

                    KK   DP509
                    KM   Combine RT507 and SC509
                    KO                                           22
                    HC        2

                    KK   RT509
                    KM   Smith Creek Route 509 to 511
                    KO                                           22
                    RK     2650   0.0160   0.0978              TRAP       2        1

                    KK   SC511
                    KM   Smith Creek 511 Runoff
                    KO                                           22
                    BA   0.0907
                    PB      2.6
                    LS        0        68
                    UD    0.313

                    KK   DP511
                    KM   Combine RT509 and SC511
                    KO                                           22
                    HC        2

                    KK   RT511
                    KM   Smith Creek Route 511 to 604
                    KO                                           22
                    RK      670   0.0373   0.0978              TRAP       2        1

                    KK   SC601
                    KM   Smith Creek 601 Runoff
                    KO                                           22
                    BA   0.0633
                    PB      2.6
                    LS        0        69
                    UD    0.302
```

HEC-1 INPUT

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

  482          KK  RT601
  483          KM  Tributary Route 601 to 603
  484          KO                                          22
  485          RK    1170  0 0359   0 090                TRAP                2

  486          KK  SC603
  487          KM  Smith Creek 603 Runoff
  488          KO                                          22
  489          BA  0.2514
  490          PB     2.6
  491          LS       0       68
  492          UD   0.325

  493          KK  DP603
  494          KM  Combine RT601 and SC603
  495          KO                                          22
  496          HC       2

  497          KK  DP604
  498          KM  Combine RT511 and DP603
  499          KO                                          22
  500          HC       2

  501          KK  RT604
  502          KM  Smith Creek Route 604 to 609
  503          KO                                          22
  504          RK    1380  0.0236  0.0928                TRAP        2       1

  505          KK  SC605
  506          KM  Smith Creek 605 Runoff
  507          KO                                          22
  508          BA  0.1283
  509          PB     2.6
  510          LS       0       69
  511          UD   0.494

  512          KK  SC607
  513          KM  Smith Creek 607 Runoff
  514          KO                                          22
  515          BA  0.0840
  516          PB     2.6
  517          LS       0       69
  518          UD   0.270

  519          KK  SC609
  520          KM  Smith Creek 609 Runoff
  521          KO                                          22
  522          BA  0.1389
  523          PB     2.6
  524          LS       0       69
  525          UD   0.342
```

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

526         KK  DP609
527         KM  Combine RT604 SC605 SC607 and SC609
528         KO                                          22
529         HC       4

530         KK  RES610
531         KM  Smith Creek Reservoir Route 610
532         KO                                          22
533         RS       1     STOR       -1
534         SA     2.2     2.7      3.3      3.8      4.4      5.1      5.8
535         SE    6822    6823     6824     6825     6826     6827     6828
536         SQ       0      11      701     2361     4843    10331    16010

537         KK  RT610
538         KM  Smith Creek Route 610 to 611
539         KO                                          22
540         RK    3200  0.0226   0.090                TRAP        2        1

541         KK  SC611
542         KM  Smith Creek 611 Runoff
543         KO                                          22
544         BA  0.1095
545         PB     2.6
546         LS       0       69
547         UD   0.229

548         KK  DP611
549         KM  Combine RT610 and SC611
550         KO                                          22
551         HC       2

552         KK  RES612
553         KM  Smith Creek Reservoir Route 612
554         KO                                          22
555         RS       1     STOR       -1
556         SA    1.82     2.77     3.72      4.5     5.28     5.78
557         SE    6762     6763     6764     6765     6766   6766.5
558         SQ       0      150      510     1160     2120     2680

559         KK  RT612
560         KM  Smith Creek Route RES612 to 613
561         KO                                          22
562         RK    2250  0.0240   0.0866                TRAP        2        1

563         KK  SC613
564         KM  Smith Creek 613 Runoff
565         KO                                          22
566         BA  0.1233
567         PB     2.6
568         LS       0       69
569         UD    0.30
```

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

570          KK  RT613
571          KM  SMITH CREEK ROUTE 613 TO DP 613
572          KO                                                  22
573          RK    2000   0.0360    0.030              TRAP        2         4

574          KK  SC615B
575          KM  Smith Creek 615B Runoff
576          KO                                                  22
577          BA  0.0313
578          PB     2.6
579          LS       0        78
580          UD   0.160

581          KK  RES614
582          KM  EXISTING POND 614
583          KO                                                  22
584          RS       1     STOR        -1
585          SV       0    0.067     0.32     0.67     1.16      1.5
586          SE    6722     6724     6726     6728     6730     6732
587          SQ       0        4        6       10     13.3       20
588          SE    6722     6724     6726     6728     6730     6732

589          KK  SC617A
590          KM
591          KO                                                  22
592          BA  0.0701
593          PB     2.6
594          LS       0        69
595          UD   0.258

596          KK  SC615A
597          KM  SMITH CREEK 615A
598          KO                                                  22
599          BA  0.0567
600          PB     2.6
601          LS       0        69
602          UD   0.180

603          KK  DP613
604          KM  COMBINE RT612 SC615A SC617A RT613 RES614
605          KO                                                  22
606          HC       5

607          KK  RT614
608          KM  SMITH CREEK ROUTE 613 TO 617
609          KO                                                  22
610          RK    1200   0.022    0.030              TRAP        2         4

611          KK  SC617B
612          KM  Smith Creek 617B Runoff
613          KO                                                  22
614          BA  0.0215
615          PB     2.6
616          LS       0        69
```

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

          617            UD   0.228

          618            KK   DP617
          619            KM   Combine RT614 AND SC617B
          620            KO                                         22
          621            HC        2

          622            KK   RT617
          623            KM   Smith Creek Route 617 to 703
          624            KO                                         22
          625            RK     1470   0.0061    0.085              TRAP          2          1

          626            KK   SC701
          627            KM   Smith Creek 701 Runoff
          628            KO                                         22
          629            BA   0.0722
          630            PB      2.6
          631            LS        0         92
          632            UD    0.360

          633            KK   SC703
          634            KM   Smith Creek 703 Runoff
          635            KO                                         22
          636            BA   0.1305
          637            PB      2.6
          638            LS        0         77
          639            UD    0.092

          640            KK   DP703
          641            KM   Combine RT617 SC701 and SC703
          642            KO                                         22
          643            HC        3

          644            KK   RT703
          645            KM   Smith Creek Route 703 to 705
          646            KO                                         22
          647            RK     2780   0.0338   0.0786              TRAP          3          1

          648            KK   SC705
          649            KM   Smith Creek 705 Runoff
          650            KO                                         22
          651            BA   0.0869
          652            PB      2.6
          653            LS        0         69
          654            UD    0.329

          655            KK   DP705
          656            KM   Combine RT703 and SC705
          657            KO                                         22
          658            HC        2
          659            ZZ
```

HEC1 S/N: 1343001909 HMVersion 6.33 Data File: C:\WINNT\TEMP\~vbh0800.TMP

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

MAXIMUM STAGE	TIME OF OPERATION MAX STAGE	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA
	HYDROGRAPH AT	SC205	9.	6.00	2.	1.	0.	0.10
	ROUTED TO	RT205	9.	6.00	2.	1	0.	0.10
	HYDROGRAPH AT	SC207	12.	6.00	3.	1	0.	0.12
	HYDROGRAPH AT	SC213	13.	6.00	3.	1.	0.	0.12
	3 COMBINED AT	DP213	34.	6.00	8.	3.	1.	0.34
	ROUTED TO	RT213	31.	6.00	8	3.	1	0.34
	HYDROGRAPH AT	SC209	7.	6.00	2	1.	0.	0.14
	HYDROGRAPH AT	SC211	4.	6.25	1.	1.	0.	0.08
	HYDROGRAPH AT	SC215	4.	6.00	1.	0.	0.	0.06
	4 COMBINED AT	DP215	46.	6.00	13.	5	2.	0.62
	ROUTED TO	RT215	42.	6.25	12.	5.	2.	0.62
	HYDROGRAPH AT	SC219	6.	6.00	2.	1.	0.	0.13
	2 COMBINED AT	DP219	48.	6.25	14.	6.	2.	0.75
	HYDROGRAPH AT	SC201	7.	6.00	2.	1.	0.	0 12
	ROUTED TO	RT201	6.	6.00	2.	1.	0.	0.12
	HYDROGRAPH AT	SC203	6.	6.00	2.	1.	0.	0.11
	2 COMBINED AT	DP203	12.	6.00	4.	2.	1.	0.23
	ROUTED TO	RT203	11.	6.25	4	2.	1.	0 23
	HYDROGRAPH AT	SC217	3.	6.00	1.	0	0.	0.05
	2 COMBINED AT	DP217	14.	6.00	4	2	1.	0.29
	2 COMBINED AT	DP220	61.	6.25	19.	8.	3.	1 03
	ROUTED TO	RT220	61.	6.25	19	8.	3.	1.03
	HYDROGRAPH AT	SC301	11.	6.00	3	1.	0.	0.12

HYDROGRAPH AT	SC303	12	6.00	3	1	0.	0.13
2 COMBINED AT	DP303	23.	6.00	5.	2.	1.	0.25
ROUTED TO	RT303	22.	6.00	5.	2.	1.	0.25
HYDROGRAPH AT	SC305	6.	6.00	1.	1	0	0.06
2 COMBINED AT	DP305	28.	6.00	7.	3	1.	0.31
ROUTED TO	RT305	24.	6.00	7.	3	1.	0.31
HYDROGRAPH AT	SC307	8.	6.25	2	1.	0.	0.11
HYDROGRAPH AT	SC309	10.	6.00	3.	1.	0.	0.12
HYDROGRAPH AT	SC311	10.	6.00	2.	1.	0.	0.11
4 COMBINED AT	DP311	51.	6.00	14.	5	2.	0.65
ROUTED TO	RT311	48.	6.25	14.	5.	2.	0.65
HYDROGRAPH AT	SC313	12.	6.00	3.	1.	0.	0.15
HYDROGRAPH AT	SC315	8.	6.00	2.	1.	0.	0.09
3 COMBINED AT	DP315	65.	6.25	19.	7.	2.	0.89
2 COMBINED AT	DP316	125.	6.25	38.	15.	5.	1.92
ROUTED TO	RT316	121.	6.25	37.	15.	5.	1.92
HYDROGRAPH AT	SC401	13.	6.25	4.	1.	0.	0.15
2 COMBINED AT	DP401	133.	6.25	41.	16.	5.	2.08
ROUTED TO	RT401	128.	6.25	41.	16.	5.	2.08
HYDROGRAPH AT	SC403	12.	6.00	3.	1.	0.	0.10
HYDROGRAPH AT	SC405	6.	6.00	1.	1.	0.	0.07
3 COMBINED AT	DP405	142.	6.25	45.	18.	6.	2.25
ROUTED TO	RT405	133.	6.50	45.	18.	6.	2.25
HYDROGRAPH AT	SC101	8.	6.00	2	1.	0.	0.09
ROUTED TO	RT101	7.	6.25	2	1.	0.	0.09
HYDROGRAPH AT	SC103	17.	6.00	4.	2.	1	0.17
HYDROGRAPH AT							

	SC105A	12.	6.00	2	1	0	0.07
3 COMBINED AT							
	DP103	35.	6.00	8	3.	1	0.33
ROUTED TO							
	RES106	28	6.25	8.	3	1	0.33
7321.12	6.25						
ROUTED TO							
	RT103	27.	6.25	8.	3	1.	0.33
HYDROGRAPH AT							
	SC105B	12.	6.00	2	1.	0.	0.07
2 COMBINED AT							
	DP105	35.	6.25	11	4.	1.	0.40
ROUTED TO							
	RT105A	34.	6.25	11.	4.	1.	0.40
HYDROGRAPH AT							
	SC107A	22.	6.00	4	2.	1.	0.14
ROUTED TO							
	RES108	19.	6.00	4.	2.	1.	0.14
7341.89	6.00						
2 COMBINED AT							
	DP107A	52.	6.25	15.	6.	2.	0.53
ROUTED TO							
	RT105B	51.	6.25	15.	6.	2.	0.53
HYDROGRAPH AT							
	SC107B	7.	6.00	1.	0.	0.	0.04
2 COMBINED AT							
	DP107B	55.	6.25	16.	6.	2.	0.57
ROUTED TO							
	RT107	53.	6.25	16.	6.	2.	0.57
HYDROGRAPH AT							
	SC109	22.	6.00	5.	2.	1.	0.16
2 COMBINED AT							
	DP109	73.	6.25	21.	8.	3.	0.74
ROUTED TO							
	RT109	69.	6.50	21.	8.	3.	0.74
HYDROGRAPH AT							
	SC111	30.	6.00	7.	2.	1.	0.19
2 COMBINED AT							
	DP111	91.	6.25	28.	10.	3.	0.93
HYDROGRAPH AT							
	SC407	14.	6.25	4.	2.	1	0.17
3 COMBINED AT							
	DP407	233	6.25	76	30.	10.	3.34
ROUTED TO							
	RT407	229.	6.50	76.	30.	10.	3.34
HYDROGRAPH AT							
	SC501	13.	6.00	3	1.	0.	0.12
HYDROGRAPH AT							
	SC503	9	6.00	3	1.	0	0.12
HYDROGRAPH AT							
	SC505	18.	6.00	5	2.	1.	0.19
3 COMBINED AT							
	DP505	40.	6.00	10	4	1	0.43

2 COMBINED AT	DP506	252	6 50	86.	34	11.	3. 77
ROUTED TO	RT506	252.	6 50	86.	34.	11.	3. 77
HYDROGRAPH AT	SC507	16	6 00	3.	1	0.	0. 10
2 COMBINED AT	DP507	257.	6 50	89.	35	12	3. 87
ROUTED TO	RT507	254	6 50	89.	35.	12.	3. 87
HYDROGRAPH AT	SC509	22.	6. 00	5.	2	1.	0. 15
2 COMBINED AT	DP509	268.	6. 50	94.	37.	12.	4. 02
ROUTED TO	RT509	258.	6. 50	93.	37	12.	4. 02
HYDROGRAPH AT	SC511	15.	6. 00	3.	1.	0.	0. 09
2 COMBINED AT	DP511	264.	6. 50	96.	38	13.	4. 11
ROUTED TO	RT511	261.	6. 50	96.	38.	13.	4. 11
HYDROGRAPH AT	SC601	11.	6. 00	2.	1	0.	0. 06
ROUTED TO	RT601	10.	6. 00	2.	1.	0.	0. 06
HYDROGRAPH AT	SC603	40.	6. 00	8.	3	1.	0. 25
2 COMBINED AT	DP603	50.	6. 00	10.	4.	1.	0. 31
2 COMBINED AT	DP604	284.	6. 50	106.	41.	14.	4. 43
ROUTED TO	RT604	277.	6. 50	106.	42	14.	4. 43
HYDROGRAPH AT	SC605	17.	6. 25	4.	2.	1.	0. 13
HYDROGRAPH AT	SC607	16.	6. 00	3.	1.	0.	0. 08
HYDROGRAPH AT	SC609	24.	6. 00	5.	2.	1.	0. 14
4 COMBINED AT	DP609	306.	6. 50	117.	46.	15.	4. 78
ROUTED TO	RES610	307.	6. 75	114.	46.	15.	4. 78
6823. 43	6 75						
ROUTED TO	RT610	298	6 75	114.	46	15.	4. 78
HYDROGRAPH AT	SC611	20.	6. 00	4.	1	0.	0. 11
2 COMBINED AT	DP611	303.	6. 75	116.	47	16	4. 89
ROUTED TO	RES612	302	6. 75	116.	47	16.	4 89

6763.42	6.75							
	ROUTED TO	RT612	293	7.00	115.	47.	16.	4.89
	HYDROGRAPH AT	SC613	22.	6.00	4.	2.	1.	0.12
	ROUTED TO	RT613	21.	6.00	4.	2.	1.	0.12
	HYDROGRAPH AT	SC615B	18.	5.75	2.	1.	0.	0.03
	ROUTED TO	RES614	6.	6.25	2.	1.	0.	0.03
6726.20	6.25							
	HYDROGRAPH AT	SC617A	13.	6.00	2.	1.	0.	0.07
	HYDROGRAPH AT	SC615A	13.	5.75	2.	1.	0.	0.06
	5 COMBINED AT	DP613	307.	7.00	124.	51.	17.	5.17
	ROUTED TO	RT614	307.	7.00	124.	51.	17.	5.17
	HYDROGRAPH AT	SC617B	4.	6.00	1.	0.	0.	0.02
	2 COMBINED AT	DP617	308.	7.00	125.	51.	17.	5.19
	ROUTED TO	RT617	305.	7.00	125.	51.	17.	5.19
	HYDROGRAPH AT	SC701	68.	6.00	12.	3.	1.	0.07
	HYDROGRAPH AT	SC703	79.	5.75	9.	3.	1.	0.13
	3 COMBINED AT	DP703	320.	7.00	142.	57.	19.	5.39
	ROUTED TO	R1703	315.	7.00	141.	57.	19.	5.39
	HYDROGRAPH AT	SC705	15.	6.00	3.	1.	0.	0.09
	2 COMBINED AT	DP705	319.	7.00	144.	58.	20.	5.48

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

	ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	DT	INTERPOLATED TO COMPUTATION INTERVAL PEAK	TIME TO PEAK	VOLUME
			(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
	RT205	MANE	1.84	9.09	362.92	0.31	15.00	8.67	360.00	0.31

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1585E+01 EXCESS=0.0000E+00 OUTFLOW=0.1585E+01 BASIN STORAGE= 0.9607E-09 PERCENT ERROR= 0.0

	RT213	MANE	1.21	33.35	362.23	0.34	15.00	31.00	360.00	0.34

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6175E+01 EXCESS=0.0000E+00 OUTFLOW=0.6175E+01 BASIN STORAGE= 0.2334E-08 PERCENT ERROR= 0.0

	RT215	MANE	2.18	45.48	364.86	0.30	15.00	42.31	375.00	0.30

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9692E+01 EXCESS=0.0000E+00 OUTFLOW=0.9689E+01 BASIN STORAGE= 0.1776E-07 PERCENT ERROR= 0.0

	RT201	MANE	1.93	7.37	364.44	0.25	15.00	6.42	360.00	0.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1632E+01 EXCESS=0.0000E+00 OUTFLOW=0.1632E+01 BASIN STORAGE= 0.6762E-09 PERCENT ERROR= 0.0

	RT203	MANE	2.47	12.33	365.62	0.24	15.00	11.04	375.00	0.24

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2980E+01 EXCESS=0.0000E+00 OUTFLOW=0.2979E+01 BASIN STORAGE= 0.6994E-08 PERCENT ERROR= 0.0

	RT220	MANE	0.87	60.68	375.70	0.27	15.00	60.61	375.00	0.27

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1492E+02 EXCESS=0.0000E+00 OUTFLOW=0.1492E+02 BASIN STORAGE= 0.1850E-07 PERCENT ERROR= 0.0

	RT303	MANE	0.98	22.89	362.26	0.31	15.00	22.04	360.00	0.31

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4079E+01 EXCESS=0.0000E+00 OUTFLOW=0.4079E+01 BASIN STORAGE= 0.1669E-09 PERCENT ERROR= 0.0

	RT305	MANE	2.06	27.25	364.73	0.31	15.00	24.39	360.00	0.31

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5123E+01 EXCESS=0.0000E+00 OUTFLOW=0.5121E+01 BASIN STORAGE= 0.3647E-08 PERCENT ERROR= 0.0

	RT311	MANE	3.18	51.18	366.43	0.31	15.00	48.01	375.00	0.31

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1067E+02 EXCESS=0.0000E+00 OUTFLOW=0.1067E+02 BASIN STORAGE=
0.7116E-07 PERCENT ERROR= 0.1

RT316 MANE 3.13 124.26 380.07 0.29 15.00 120.66 375.00
0.29

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2951E+02 EXCESS=0.0000E+00 OUTFLOW=0.2948E+02 BASIN STORAGE=
0.5156E-06 PERCENT ERROR= 0.1

RT401 MANE 0.87 133.21 376.79 0.29 15.00 128.32 375.00
0.29

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3215E+02 EXCESS=0.0000E+00 OUTFLOW=0.3215E+02 BASIN STORAGE=
0.2247E-06 PERCENT ERROR= 0.0

RT405 MANE 2.17 141.15 379.21 0.29 15.00 133.02 390.00
0.29

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3529E+02 EXCESS=0.0000E+00 OUTFLOW=0.3529E+02 BASIN STORAGE=
0.9137E-06 PERCENT ERROR= 0.0

RT101 MANE 2.50 7.74 365.60 0.31 15.00 6.83 375.00
0.31

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1504E+01 EXCESS=0.0000E+00 OUTFLOW=0.1503E+01 BASIN STORAGE=
0.2943E-08 PERCENT ERROR= 0.1

RT103 MANE 1.08 27.89 377.31 0.36 15.00 26.82 375.00
0.36

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6220E+01 EXCESS=0.0000E+00 OUTFLOW=0.6220E+01 BASIN STORAGE=
0.4515E-08 PERCENT ERROR= 0.0

RT105A MANE 1.09 35.22 377.44 0.38 15.00 34.43 375.00
0.38

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7943E+01 EXCESS=0.0000E+00 OUTFLOW=0.7943E+01 BASIN STORAGE=
0.9605E-08 PERCENT ERROR= 0.0

RT105B MANE 1.00 52.17 376.77 0.39 15.00 51.38 375.00
0.39

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1111E+02 EXCESS=0.0000E+00 OUTFLOW=0.1111E+02 BASIN STORAGE=
0.1345E-07 PERCENT ERROR= 0.0

RT107 MANE 2.15 55.01 379.70 0.39 15.00 53.34 375.00
0.39

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1208E+02 EXCESS=0.0000E+00 OUTFLOW=0.1208E+02 BASIN STORAGE=
0.7878E-07 PERCENT ERROR= 0.0

RT109 MANE 4.69 73.22 384.37 0.40 15.00 69.03 390.00
0.40

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1587E+02 EXCESS=0.0000E+00 OUTFLOW=0.1586E+02 BASIN STORAGE=
0.6500E-06 PERCENT ERROR= 0.0

RT40? MANE 1.35 233.08 378.44 0.33 15.00 229.22 390.00
0.33

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5887E+02 EXCESS=0.0000E+00 OUTFLOW=0.5886E+02 BASIN STORAGE=
0.1321E-05 PERCENT ERROR= 0.0

	RT506	MANE	1.18	251.70	390.88	0.33	15.00	251.52	390.00
0.33									

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6656E+02 EXCESS=0.0000E+00 OUTFLOW=0.6655E+02 BASIN STORAGE=
0.1764E-05 PERCENT ERROR= 0.0

	RT507	MANE	1.78	256.90	393.50	0.33	15.00	254.21	390.00
0.33									

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6889E+02 EXCESS=0.0000E+00 OUTFLOW=0.6888E+02 BASIN STORAGE=
0.3587E-05 PERCENT ERROR= 0.0

	RT509	MANE	2.84	266.33	395.17	0.34	15.00	258.27	390.00
0.34									

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7275E+02 EXCESS=0.0000E+00 OUTFLOW=0.7272E+02 BASIN STORAGE=
0.9400E-05 PERCENT ERROR= 0.0

	RT511	MANE	0.63	263.95	391.69	0.34	15.00	260.89	390.00
0.34									

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7478E+02 EXCESS=0.0000E+00 OUTFLOW=0.7478E+02 BASIN STORAGE=
0.2261E-05 PERCENT ERROR= 0.0

	RT601	MANE	2.03	11.36	363.59	0.47	15.00	10.33	360.00
0.47									

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1578E+01 EXCESS=0.0000E+00 OUTFLOW=0.1578E+01 BASIN STORAGE=
0.1279E-08 PERCENT ERROR= 0.0

	RT604	MANE	1.21	283.67	392.45	0.35	15.00	276.80	390.00
0.35									

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8223E+02 EXCESS=0.0000E+00 OUTFLOW=0.8223E+02 BASIN STORAGE=
0.5834E-05 PERCENT ERROR= 0.0

	RT610	MANE	2.65	304.15	408.54	0.36	15.00	298.31	405.00
0.36									

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9110E+02 EXCESS=0.0000E+00 OUTFLOW=0.9105E+02 BASIN STORAGE=
0.2469E-04 PERCENT ERROR= 0.1

	RT612	MANE	1.85	301.86	408.86	0.36	15.00	293.15	420.00
0.36									

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9385E+02 EXCESS=0.0000E+00 OUTFLOW=0.9384E+02 BASIN STORAGE=
0.2385E-04 PERCENT ERROR= 0.0

	RT613	MANE	1.64	22.20	363.36	0.47	15.00	20.81	360.00
0.47									

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3073E+01 EXCESS=0.0000E+00 OUTFLOW=0.3073E+01 BASIN STORAGE=
0.1642E-08 PERCENT ERROR= 0.0

	RT614	MANE	0.55	307.11	420.80	0.37	15.00	306.95	420.00
0.37									

CONTINUITY SUMMARY (AC-FT) - INFLOW=0 1016E+03 EXCESS=0.0000E+00 OUTFLOW=0.1016E+03 BASIN STORAGE=
0.7237E-05 PERCENT ERROR= 0 0

RT617 MANE 1.96 306.96 423.06 0 37 15.00 305 49 420.00
0.37

CONTINUITY SUMMARY (AC-FT) - INFLOW=0 1022E+03 EXCESS=0.0000E+00 OUTFLOW=0.1022E+03 BASIN STORAGE=
0.3398E-04 PERCENT ERROR= 0 0

RT703 MANE 1 80 319.96 423.58 0.40 15.00 315.36 420.00
0.40

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1147E+03 EXCESS=0.0000E+00 OUTFLOW=0.1147E+03 BASIN STORAGE=
0.5277E-04 PERCENT ERROR= 0 0

*** NORMAL END OF HEC-1 ***

10 year existing
HEC1 S/N: 1343001909   HMVersion: 6.33   Data File: C:\WINNT\TEMP\~vbh2A2B.TMP

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*                                      *
*
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
U.S. ARMY CORPS OF ENGINEERS       *
*              MAY  1991               *
HYDROLOGIC ENGINEERING CENTER      *
*           VERSION 4.0.1E             *
609 SECOND STREET            *
*                                      *
DAVIS, CALIFORNIA 95616          *
* RUN DATaE  06/19/2001  TIME  16:43:07 *
(916) 756-1104           *
*                                      *
*
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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
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:::::::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::::::
:::                                       :::
:::   Full Microcomputer Implementation   :::
:::                 by                    :::
:::         Haestad Methods, Inc.         :::
:::                                       :::
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37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

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. THIS IS THE FORTRAN77 VERSION

NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,

DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION

KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

HEC-1 INPUT

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

    1     ID  Type IIA storm
    2     IT      15       0       0     288
    3     IO       5

    4     KK  SC205
    5     KM  Smith Creek 205 Runoff
    6     KO                                          22
    7     BA  0.0970
    8     PB       3
    9     IN      15
   10     PC  0.0005  0.0015  0.0030  0.0045  0.0060  0.0080  0.0100  0.0120  0.0143
0.0165
   11     PC  0.0188  0.0210  0.0233  0.0255  0.0278  0.0320  0.0390  0.0460  0.0530
0.0600
   12     PC  0.0750  0.1000  0.4000  0.7000  0.7250  0.7500  0.7650  0.7800  0.7900
0.8000
   13     PC  0.8100  0.8200  0.8250  0.8300  0.8350  0.8400  0.8450  0.8500  0.8550
0.8600
   14     PC  0.8638  0.8675  0.8713  0.8750  0.8788  0.8825  0.8863  0.8900  0.8938
0.8975
   15     PC  0.9013  0.9050  0.9083  0.9115  0.9148  0.9180  0.9210  0.9240  0.9270
0.9300
   16     PC  0.9325  0.9350  0.9375  0.9400  0.9425  0.9450  0.9475  0.9500  0.9525
0.9550
   17     PC  0.9575  0.9600  0.9625  0.9650  0.9675  0.9700  0.9725  0.9750  0.9775
0.9800
   18     PC  0.9813  0.9825  0.9838  0.9850  0.9863  0.9875  0.9888  0.9900  0.9913
0.9925
   19     PC  0.9938  0.9950  0.9963  0.9975  0.9988  1.0000
   20     LS       0      64
   21     UD   0.257

   22     KK  RT205
   23     KM  Smith Creek Route 205 to 213
   24     KO                                          22
   25     RK    1530  0.0431   0.055            TRAP              2

   26     KK  SC207
   27     KM  Smith Creek 207 Runoff
   28     KO                                          22
   29     BA   0.120
   30     PB       3
   31     LS       0      65
   32     UD   0.367

   33     KK  SC213
   34     KM  Smith Creek 213 Runoff
   35     KO                                          22
   36     BA  0.1243
   37     PB       3
   38     LS       0      66
   39     UD   0.382

   40     KK  DP213
   41     KM  Combine RT205 SC207 and SC213
   42     KO                                          22
   43     HC       3

   44     KK  RT213
   45     KM  Smith Creek Route 213 to 215
   46     KO                                          22
   47     RK    1360  0.0493   0.055            TRAP              2
```

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

48          KK  SC209
49          KM  Smith Creek 209 Runoff
50          KO                                              22
51          BA  0.1351
52          PB       3
53          LS       0       61
54          UD   0.336

55          KK  SC211
56          KM  Smith Creek 211 Runoff
57          KO                                              22
58          BA  0.0799
59          PB       3
60          LS       0       62
61          UD   0.418

62          KK  SC215
63          KM  Smith Creek 215 Runoff
64          KO                                              22
65          BA  0.0589
66          PB       3
67          LS       0       62
68          UD   0.227

69          KK  DP215
70          KM  Combine RT213 SC209 SC211 and SC215
71          KO                                              22
72          HC       4

73          KK  RT215
74          KM  Smith Creek Route 215 to 219
75          KO                                              22
76          RK    2110  0.0446  0.0745            TRAP                2

77          KK  SC219
78          KM  Smith Creek 219 Runoff
79          KO                                              22
80          BA  0.1298
81          PB       3
82          LS       0       61
83          UD   0.362

84          KK  DP219
85          KM  Combine RT215 and SC219
86          KO                                              22
87          HC       2

88          KK  SC201
89          KM  Smith Creek 201 Runoff
90          KO                                              22
91          BA  0.1216
92          PB       3
93          LS       0       62
94          UD   0.340
```

HEC-1 INPUT

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

  95          KK  RT201
  96          KM  Tributary Route 201 to 203
  97          KO                                          22
  98          RK    1650  0.0509   0.055          TRAP             2

  99          KK  SC203
 100          KM  Smith Creek 203 Runoff
 101          KO                                          22
 102          BA  0.1113
 103          PB       3
 104          LS       0       61
 105          UD   0.223

 106          KK  DP203
 107          KM  Combine RT201 and SC203
 108          KO                                          22
 109          HC       2

 110          KK  RT203
 111          KM  Tributary Route 203 to 217
 112          KO                                          22
 113          RK    2010  0.0557  0.0698          TRAP             2

 114          KK  SC217
 115          KM  Smith Creek 217 Runoff
 116          KO                                          22
 117          BA  0.0547
 118          PB       3
 119          LS       0       61
 120          UD   0.211

 121          KK  DP217
 122          KM  Combine RT203 and SC217
 123          KO                                          22
 124          HC       2

 125          KK  DP220
 126          KM  Combine DP217 and DP219
 127          KO                                          22
 128          HC       2

 129          KK  RT220
 130          KM  Smith Creek Route 220 to 316
 131          KO                                          22
 132          RK     646  0.0313  0.0829          TRAP     1       2

 133          KK  SC301
 134          KM  Smith Creek 301 Runoff
 135          KO                                          22
 136          BA  0.1196
 137          PB       3
 138          LS       0       64
 139          UD   0.265
```

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

140          KK  SC303
141          KM  Smith Creek 303 Runoff
142          KO                                        22
143          BA  0.1300
144          PB       3
145          LS       0       64
146          UD   0.322

147          KK  DP303
148          KM  Combine SC301 and SC303
149          KO                                        22
150          HC       2

151          KK  RT303
152          KM  Tributary Route 303 to 305
153          KO                                        22
154          RK     940  0.0372   0.055          TRAP              2

155          KK  SC305
156          KM  Smith Creek 305 Runoff
157          KO                                        22
158          BA  0.0629
159          PB       3
160          LS       0       64
161          UD   0.331

162          KK  DP305
163          KM  Combine RT303 and SC305
164          KO                                        22
165          HC       2

166          KK  RT305
167          KM  Tributary Route 305 to 311
168          KO                                        22
169          RK    2150  0.0414   0.055          TRAP              2

170          KK  SC307
171          KM  Smith Creek 307 Runoff
172          KO                                        22
173          BA  0.1081
174          PB       3
175          LS       0       64
176          UD   0.455

177          KK  SC309
178          KM  Smith Creek 309 Runoff
179          KO                                        22
180          BA  0.1240
181          PB       3
182          LS       0       64
183          UD   0.383
```

HEC-1 INPUT

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

  184          KK  SC311
  185          KM  Smith Creek 311 Runoff
  186          KO                                                22
  187          BA  0 1064
  188          PB       3
  189          LS       0       64
  190          UD   0.295

  191          KK  DP311
  192          KM  Combine RT305 SC307 SC309 and SC311
  193          KO                                                22
  194          HC       4

  195          KK  RT311
  196          KM  Tributary Route 311 to 315
  197          KO                                                22
  198          RK    2860  0.0448  0.0888             TRAP                2

  199          KK  SC313
  200          KM  Smith Creek 313 Runoff
  201          KO                                                22
  202          BA  0.1520
  203          PB       3
  204          LS       0       64
  205          UD   0.373

  206          KK  SC315
  207          KM  Smith Creek 315 Runoff
  208          KO                                                22
  209          BA  0.0886
  210          PB       3
  211          LS       0       64
  212          UD   0.350

  213          KK  DP315
  214          KM  Combine RT311 SC313 and SC315
  215          KO                                                22
  216          HC       3

  217          KK  DP316
  218          KM  Combine RT220 and DP315
  219          KO                                                22
  220          HC       2

  221          KK  RT316
  222          KM  Smith Creek Route 316 to 401
  223          KO                                                22
  224          RK    2575  0.0361   0 120             TRAP        1       2
```

```
ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
 225          KK  SC401
 226          KM  Smith Creek 401 Runoff
 227          KO                                          22
 228          BA  0.1524
 229          PB       3
 230          LS       0       65
 231          UD   0.437

 232          KK  DP401
 233          KM  Combine RT316 and SC401
 234          KO                                          22
 235          HC       2

 236          KK  RT401
 237          KM  Smith Creek Route 401 to 405
 238          KO                                          22
 239          RK     840   0.0548    0.120          TRAP        1         2

 240          KK  SC403
 241          KM  Smith Creek 403 Runoff
 242          KO                                          22
 243          BA  0.1007
 244          PB       3
 245          LS       0       66
 246          UD   0.333

 247          KK  SC405
 248          KM  Smith Creek 405 Runoff
 249          KO                                          22
 250          BA  0.0677
 251          PB       3
 252          LS       0       64
 253          UD   0.356

 254          KK  DP405
 255          KM  Combine RT401 SC403 and SC405
 256          KO                                          22
 257          HC       3

 258          KK  RT405
 259          KM  Smith Creek Route 405 to 407
 260          KO                                          22
 261          RK    1500   0.0210    0.120          TRAP        1         2

 262          KK  SC101
 263          KM  Smith Creek 101 Runoff
 264          KO                                          22
 265          BA  0.0920
 266          PB       3
 267          LS       0       64
 268          UD   0.353
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          LINE
ID .  . . 1. . . . . 2. . .   3 . . . . . . 4  . . . . 5. .     6  .     7    . . . 8 .      9. .   . 10

          269          KK  RT101
          270          KM  Tributary Route 101 to 103
          271          KO                                          22
          272          RK    2050  0.0424   0.055                 TRAP                  2

          273          KK  SC103
          274          KM  Smith Creek 103 Runoff
          275          KO                                          22
          276          BA   0.167
          277          PB       3
          278          LS       0        65
          279          UD   0.348

          280          KK  SC105A
          281          KM  Smith Creek 105A Runoff
          282          KO                                          22
          283          BA  0.0693
          284          PB       3
          285          LS       0        69
          286          UD   0.345

          287          KK  DP103
          288          KM  Combine RT101 SC105A and SC103
          289          KO                                          22
          290          HC       3

          291          KK  RES106
          292          KM  Exisitng Detention Pond 106
          293          KO                                          22
          294          RS       1      STOR      -1
          295          SA    0.43      0.54    0.65    0.80     0.94    1.00
          296          SE    7320      7322    7324    7326     7328    7330
          297          SQ       0        50      80     100      190     250
          298          SE    7320      7322    7324    7326     7328    7330

          299          KK  RT103
          300          KM  Tributary Route RES106 to DP105
          301          KO                                          22
          302          RK    1150  0.0478   0.055                 TRAP                  2

          303          KK  SC105B
          304          KM  Smith Creek 105B Runoff
          305          KO                                          22
          306          BA  0.0686
          307          PB       3
          308          LS       0        69
          309          UD   0.345

          310          KK  DP105
          311          KM  Combine RT103 and SC105B
          312          KO                                          22
          313          HC       2
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HEC-1 INPUT

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

  314          KK  RT105A
  315          KM  Tributary Route 105 to 107A
  316          KO                                          22
  317          RK    1000  0.0395  0.0727            TRAP              2

  318          KK  SC107A
  319          KM  Smith Creek 107A Runoff
  320          KO                                          22
  321          BA  0.1367
  322          PB       3
  323          LS       0       68
  324          UD   0.287

  325          KK  RES108
  326          KM  EXISTING DETENTION POND 108
  327          KO                                          22
  328          RS       1     STOR       -1
  329          SV       0      0.2      0.68      1.35     2.32
  330          SE    7340     7342     7344      7346     7348
  331          SQ       0       20       48       220      822
  332          SE    7340     7342     7344      7346     7348

  333          KK  DP107A
  334          KM  Combine RT105A and RES108
  335          KO                                          22
  336          HC       2

  337          KK  RT105B
  338          KM  TRIBUTARY ROUTE 107A TO 107B
  339          KO                                          22
  340          RK    1000  0.0395  0.0727            TRAP              2

  341          KK  SC107B
  342          KM  SMITH CREEK 107B RUNOFF
  343          KO                                          22
  344          BA  0.0408
  345          PB       3
  346          LS       0       68
  347          UD   0.287

  348          KK  DP107B
  349          KM  COMBINE RT105B AND SC107B
  350          KO                                          22
  351          HC       2

  352          KK  RT107
  353          KM  Tributary Route 107B to 109
  354          KO                                          22
  355          RK    1420  0.0359   0.120            TRAP              2
```

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

356         KK  SC109
357         KM  Smith Creek 109 Runoff
358         KO                                          22
359         BA  0.1637
360         PB       3
361         LS       0       68
362         UD   0.398

363         KK  DP109
364         KM  Combine RT107 and SC109
365         KO                                          22
366         HC       2

367         KK  RT109
368         KM  Tributary Route 109 to 111
369         KO                                          22
370         RK    3840  0.0453   0.120          TRAP                2

371         KK  SC111
372         KM  Smith Creek 111 Runoff
373         KO                                          22
374         BA  0.1894
375         PB       3
376         LS       0       69
377         UD   0.382

378         KK  DP111
379         KM  Combine RT109 and SC111
380         KO                                          22
381         HC       2

382         KK  SC407
383         KM  Smith Creek 407 Runoff
384         KO                                          22
385         BA  0.1685
386         PB       3
387         LS       0       65
388         UD   0.455

389         KK  DP407
390         KM  Combine RT111 RT405 and SC407
391         KO                                          22
392         HC       3

393         KK  RT407
394         KM  SMITH CREEK ROUTE 407 TO 506
395         KO                                          22
396         RK    1105  0.0210   0.120          TRAP        1       2
```

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

  397           KK  SC501
  398           KM  Smith Creek 501 Runoff
  399           KO                                          22
  400           BA  0.1219
  401           PB        3
  402           LS        0       65
  403           UD   0.313

  404           KK  SC503
  405           KM  Smith Creek 503 Runoff
  406           KO                                          22
  407           BA  0.1193
  408           PB        3
  409           LS        0       64
  410           UD   0.382

  411           KK  SC505
  412           KM  Smith Creek 505 Runoff
  413           KO                                          22
  414           BA  0.1923
  415           PB        3
  416           LS        0       65
  417           UD   0.380

  418           KK  DP505
  419           KM  Combine SC501 SC503 and SC505
  420           KO                                          22
  421           HC        3

  422           KK  DP506
  423           KM  Combine RT407 and DP505
  424           KO                                          22
  425           HC        2

  426           KK  RT506
  427           KM  Smith Creek Route 506 to 507
  428           KO                                          22
  429           RK      750  0.0067  0.0978            TRAP        2         1

  430           KK  SC507
  431           KM  Smith Creek 507 Runoff
  432           KO                                          22
  433           BA  0.0958
  434           PB        3
  435           LS        0       68
  436           UD   0.267

  437           KK  DP507
  438           KM  Combine RT506 and SC507
  439           KO                                          22
  440           HC        2
```

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

       441          KK  RT507
       442          KM  Smith Creek Route 507 to 509
       443          KO                                          22
       444          RK    2010  0.0268  0.0978                TRAP        2        1

       445          KK  SC509
       446          KM  Smith Creek 509 Runoff
       447          KO                                          22
       448          BA  0.1514
       449          PB       3
       450          LS       0       69
       451          UD   0.411

       452          KK  DP509
       453          KM  Combine RT507 and SC509
       454          KO                                          22
       455          HC       2

       456          KK  RT509
       457          KM  Smith Creek Route 509 to 511
       458          KO                                          22
       459          RK    2650  0.0160  0.0978                TRAP        2        1

       460          KK  SC511
       461          KM  Smith Creek 511 Runoff
       462          KO                                          22
       463          BA  0.0907
       464          PB       3
       465          LS       0       68
       466          UD   0.313

       467          KK  DP511
       468          KM  Combine RT509 and SC511
       469          KO                                          22
       470          HC       2

       471          KK  RT511
       472          KM  Smith Creek Route 511 to 604
       473          KO                                          22
       474          RK     670  0.0373  0.0978                TRAP        2        1

       475          KK  SC601
       476          KM  Smith Creek 601 Runoff
       477          KO                                          22
       478          BA  0.0633
       479          PB       3
       480          LS       0       69
       481          UD   0.302
```

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

  482          KK  RT601
  483          KM  Tributary Route 601 to 603
  484          KO                                                  22
  485          RK    1170  0.0359   0.090                TRAP                  2

  486          KK  SC603
  487          KM  Smith Creek 603 Runoff
  488          KO                                                  22
  489          BA  0.2514
  490          PB        3
  491          LS        0       68
  492          UD   0.325

  493          KK  DP603
  494          KM  Combine RT601 and SC603
  495          KO                                                  22
  496          HC        2

  497          KK  DP604
  498          KM  Combine RT511 and DP603
  499          KO                                                  22
  500          HC        2

  501          KK  RT604
  502          KM  Smith Creek Route 604 to 609
  503          KO                                                  22
  504          RK    1380  0.0236  0.0928                TRAP        2         1

  505          KK  SC605
  506          KM  Smith Creek 605 Runoff
  507          KO                                                  22
  508          BA  0.1283
  509          PB        3
  510          LS        0       69
  511          UD   0.494

  512          KK  SC607
  513          KM  Smith Creek 607 Runoff
  514          KO                                                  22
  515          BA  0.0840
  516          PB        3
  517          LS        0       69
  518          UD   0.270

  519          KK  SC609
  520          KM  Smith Creek 609 Runoff
  521          KO                                                  22
  522          BA  0.1389
  523          PB        3
  524          LS        0       69
  525          UD   0.342
```

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

526          KK  DP609
527          KM  Combine RT604 SC605 SC607 and SC609
528          KO                                                22
529          HC       4

530          KK  RES610
531          KM  Smith Creek Reservoir Route 610
532          KO                                                22
533          RS       1     STOR       -1
534          SA     2.2     2.7      3.3      3.8      4.4      5.1      5.8
535          SE    6822    6823     6824     6825     6826     6827     6828
536          SQ       0      11      701     2361     4843    10331    16010

537          KK  RT610
538          KM  Smith Creek Route RES610 to 611
539          KO                                                22
540          RK    3200   0.0226    0.090             TRAP        2        1

541          KK  SC611
542          KM  Smith Creek 611 Runoff
543          KO                                                22
544          BA  0.1095
545          PB       3
546          LS       0       69
547          UD   0.229

548          KK  DP611
549          KM  Combine RT610 and SC611
550          KO                                                22
551          HC       2

552          KK  RES612
553          KM  Smith Creek Reservoir Route 612
554          KO                                                22
555          RS       1     STOR       -1
556          SA    1.82     2.77     3.72      4.5     5.28     5.78
557          SE    6762     6763     6764     6765     6766   6766.5
558          SQ       0      150      510     1160     2120     2680

559          KK  RT612
560          KM  Smith Creek Route 612 to 613
561          KO                                                22
562          RK    2250   0.0240   0.0866             TRAP        2        1

563          KK  SC613
564          KM  Smith Creek 613 Runoff
565          KO                                                22
566          BA  0.1233
567          PB       3
568          LS       0       69
569          UD    0.30
```

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

570         KK  RT613
571         KM  SMITH CREEK ROUTE 613 TO DP 613
572         KO                                                    22
573         RK    2000   0.0360    0.030                TRAP        2         4

574         KK  SC615B
575         KM  Smith Creek 615B Runoff
576         KO                                                    22
577         BA  0.0313
578         PB        3
579         LS        0        78
580         UD   0.160

581         KK  RES614
582         KM  EXISTING POND 614
583         KO                                                    22
584         RS        1     STOR        -1
585         SV        0    0.067     0.32     0.67     1.16      1.5
586         SE     6722     6724     6726     6728     6730     6732
587         SQ        0        4        6       10     13.3       20
588         SE     6722     6724     6726     6728     6730     6732

589         KK  SC617A
590         KM
591         KO                                                    22
592         BA  0.0701
593         PB        3
594         LS        0        69
595         UD   0.258

596         KK  SC615A
597         KM  SMITH CREEK 615A
598         KO                                                    22
599         BA  0.0567
600         PB        3
601         LS        0        69
602         UD   0.180

603         KK  DP613
604         KM  COMBINE SC615A SC617A RT613 RES614 AND RT612
605         KO                                                    22
606         HC        5

607         KK  RT614
608         KM  SMITH CREEK ROUTE 613 TO 617
609         KO                                                    22
610         RK    1200    0.022    0.030                TRAP        2         4

611         KK  SC617B
612         KM  Smith Creek 617B Runoff
613         KO                                                    22
614         BA  0.0215
615         PB        3
616         LS        0        69
```

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LINE
ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
  617          UD   0.228

  618          KK  DP617
  619          KM  Combine RT614 AND SC617B
  620          KO                                          22
  621          HC       2

  622          KK  RT617
  623          KM  Smith Creek Route 617 to 703
  624          KO                                          22
  625          RK    1470  0.0061   0.085          TRAP       2        1

  626          KK  SC701
  627          KM  Smith Creek 701 Runoff
  628          KO                                          22
  629          BA  0.0722
  630          PB       3
  631          LS       0       92
  632          UD   0.360

  633          KK  SC703
  634          KM  Smith Creek 703 Runoff
  635          KO                                          22
  636          BA  0.1305
  637          PB       3
  638          LS       0       77
  639          UD   0.092

  640          KK  DP703
  641          KM  Combine RT617 SC701 and SC703
  642          KO                                          22
  643          HC       3

  644          KK  RT703
  645          KM  Smith Creek Route 703 to 705
  646          KO                                          22
  647          RK    2780  0.0338  0.0786          TRAP       3        1

  648          KK  SC705
  649          KM  Smith Creek 705 Runoff
  650          KO                                          22
  651          BA  0.0869
  652          PB       3
  653          LS       0       69
  654          UD   0.329

  655          KK  DP705
  656          KM  Combine RT703 and SC705
  657          KO                                          22
  658          HC       2
  659          ZZ
```

HEC1 S/N: 1343001909 HMVersion: 6.33 Data File: C:\WINNT\TEMP\~vbh2A2B.TMP

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

MAXIMUM STAGE	TIME OF OPERATION MAX STAGE	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA
	HYDROGRAPH AT	SC205	17	6.00	3.	1.	0.	0.10
	ROUTED TO	RT205	16.	6.00	3.	1.	0.	0.10
	HYDROGRAPH AT	SC207	21.	6.00	5.	2.	1.	0.12
	HYDROGRAPH AT	SC213	23.	6.00	5.	2.	1.	0.12
	3 COMBINED AT	DP213	60.	6.00	13.	5.	2.	0.34
	ROUTED TO	RT213	56.	6.00	13.	5.	2.	0.34
	HYDROGRAPH AT	SC209	15	6.00	3.	1.	0.	0.14
	HYDROGRAPH AT	SC211	8.	6.00	2.	1.	0.	0.08
	HYDROGRAPH AT	SC215	8.	6.00	2.	1.	0.	0.06
	4 COMBINED AT	DP215	86.	6.00	20.	8.	3.	0.62
	ROUTED TO	RT215	76.	6.00	20.	8.	3.	0.62
	HYDROGRAPH AT	SC219	13.	6.00	3.	1.	0.	0.13
	2 COMBINED AT	DP219	89.	6.00	24.	9.	3.	0.75
	HYDROGRAPH AT	SC201	15.	6.00	3.	1.	0.	0.12
	ROUTED TO	RT201	13.	6.00	3.	1.	0.	0.12
	HYDROGRAPH AT	SC203	13.	6.00	3.	1.	0.	0.11
	2 COMBINED AT	DP203	26.	6.00	6	2.	1.	0.23
	ROUTED TO	RT203	24.	6.00	6.	2.	1.	0.23
	HYDROGRAPH AT	SC217	6.	5.75	1.	1.	0.	0.05
	2 COMBINED AT	DP217	30.	6.00	8.	3	1.	0.29
	2 COMBINED AT	DP220	119.	6.00	31	12	4	1.03
	ROUTED TO	RT220	113.	6.00	31.	12.	4.	1.03
	HYDROGRAPH AT	SC301	21.	6.00	4	2.	1.	0.12

HYDROGRAPH AT	SC303	22.	6.00	4.	2.	1.	0.13
2 COMBINED AT	DP303	42.	6.00	9.	3.	1.	0.25
ROUTED TO	RT303	41.	6.00	9.	3.	1.	0.25
HYDROGRAPH AT	SC305	10.	6.00	2.	1.	0.	0.06
2 COMBINED AT	DP305	51.	6.00	11.	4.	1.	0.31
ROUTED TO	RT305	46.	6.00	11.	4.	1.	0.31
HYDROGRAPH AT	SC307	14.	6.25	4.	1.	0.	0.11
HYDROGRAPH AT	SC309	18.	6.00	4.	2.	1	0.12
HYDROGRAPH AT	SC311	18	6.00	4.	1.	0.	0.11
4 COMBINED AT	DP311	96.	6.00	22.	8.	3.	0.65
ROUTED TO	RT311	86	6.25	22.	8.	3.	0.65
HYDROGRAPH AT	SC313	23.	6.00	5.	2.	1.	0.15
HYDROGRAPH AT	SC315	14.	6.00	3.	1.	0.	0.09
3 COMBINED AT	DP315	115.	6.25	30.	11.	4.	0.89
2 COMBINED AT	DP316	228.	6.00	62.	23.	8.	1.92
ROUTED TO	RT316	227.	6.25	61.	23.	8.	1.92
HYDROGRAPH AT	SC401	22.	6.00	6.	2.	1.	0.15
2 COMBINED AT	DP401	249.	6.25	67.	25.	8.	2.08
ROUTED TO	RT401	244.	6.25	67.	25.	8.	2.08
HYDROGRAPH AT	SC403	21.	6.00	4.	1	0.	0.10
HYDROGRAPH AT	SC405	11	6.00	2.	1.	0.	0.07
3 COMBINED AT	DP405	267.	6.25	73.	27	9.	2.25
ROUTED TO	RT405	253	6.25	73.	28.	9.	2.25
HYDROGRAPH AT	SC101	14	6.00	3.	1	0.	0.09
ROUTED TO	RT101	12	6.00	3.	1	0.	0.09
HYDROGRAPH AT	SC103	30	6.00	6.	2	1	0.17
HYDROGRAPH AT							

		SC105A	19.	6.00	4	1.	0.	0.07
	3 COMBINED AT							
		DP103	61	6.00	13.	5.	2.	0.33
	ROUTED TO							
		RES106	48.	6.25	13	5.	2	0.33
7321.92	6.25							
	ROUTED TO							
		RT103	46.	6.25	13	5.	2	0.33
	HYDROGRAPH AT							
		SC105B	18.	6.00	4	1.	0.	0.07
	2 COMBINED AT							
		DP105	59.	6.25	16.	6.	2.	0.40
	ROUTED TO							
		RT105A	58.	6.25	16.	6.	2.	0.40
	HYDROGRAPH AT							
		SC107A	36.	6.00	7.	2.	1.	0.14
	ROUTED TO							
		RES108	28	6.25	7.	2.	1.	0.14
7342.58	6.25							
	2 COMBINED AT							
		DP107A	86.	6.25	23.	8	3.	0.53
	ROUTED TO							
		RT105B	85.	6.25	23.	8.	3.	0.53
	HYDROGRAPH AT							
		SC107B	11.	6.00	2.	1.	0.	0.04
	2 COMBINED AT							
		DP107B	91.	6.25	25.	9	3.	0.57
	ROUTED TO							
		RT107	88.	6.25	25.	9.	3.	0.57
	HYDROGRAPH AT							
		SC109	36.	6.00	8.	3.	1.	0.16
	2 COMBINED AT							
		DP109	119.	6.25	33	12.	4.	0.74
	ROUTED TO							
		RT109	111.	6.50	32.	12.	4.	0.74
	HYDROGRAPH AT							
		SC111	47.	6.00	10.	3.	1.	0.19
	2 COMBINED AT							
		DP111	149.	6.25	42	15.	5.	0.93
	HYDROGRAPH AT							
		SC407	24	6.25	6	2.	1.	0.17
	3 COMBINED AT							
		DP407	426	6.25	121	45.	15.	3.34
	ROUTED TO							
		RT407	406	6.25	121.	45	15.	3.34
	HYDROGRAPH AT							
		SC501	23.	6.00	5.	2.	1.	0.12
	HYDROGRAPH AT							
		SC503	18	6.00	4	2	1.	0.12
	HYDROGRAPH AT							
		SC505	32	6.00	7.	3	1.	0.19
	3 COMBINED AT							
		DP505	73.	6.00	16.	6	2.	0.43

2 COMBINED AT	DP506	463	6.25	137.	51.	17.	3.77
ROUTED TO	RT506	446.	6.25	137	51.	17.	3.77
HYDROGRAPH AT	SC507	25.	6.00	5.	2.	1.	0.10
2 COMBINED AT	DP507	460.	6.25	141.	53.	18.	3.87
ROUTED TO	RT507	444	6.50	142.	53.	18.	3.87
HYDROGRAPH AT	SC509	36.	6.00	8.	3.	1.	0.15
2 COMBINED AT	DP509	464.	6.50	149.	55.	19.	4.02
ROUTED TO	RT509	464.	6.50	149.	55.	19.	4.02
HYDROGRAPH AT	SC511	23.	6.00	4.	2.	1.	0.09
2 COMBINED AT	DP511	473.	6.50	153.	57.	19.	4.11
ROUTED TO	RT511	470.	6.50	153.	57.	19.	4.11
HYDROGRAPH AT	SC601	18.	6.00	3.	1.	0.	0.06
ROUTED TO	RT601	16	6.00	3.	1.	0.	0.06
HYDROGRAPH AT	SC603	64.	6.00	12.	4.	1.	0.25
2 COMBINED AT	DP603	80.	6.00	15	5.	2.	0.31
2 COMBINED AT	DP604	504.	6.50	167.	62.	21.	4.43
ROUTED TO	RT604	499.	6.50	168.	62.	21.	4.43
HYDROGRAPH AT	SC605	27.	6.25	7.	2.	1.	0.13
HYDROGRAPH AT	SC607	24.	6.00	4.	2.	1.	0.08
HYDROGRAPH AT	SC609	38.	6.00	7.	3.	1.	0.14
4 COMBINED AT	DP609	543.	6.50	185.	69.	23.	4.78
ROUTED TO	RES610	533.	6.50	182.	68.	23.	4.78
6823.76	6.50						
ROUTED TO	RT610	527.	6.50	180.	68.	23.	4.78
HYDROGRAPH AT	SC611	30.	6.00	6	2.	1.	0.11
2 COMBINED AT	DP611	536.	6.50	185.	70.	24.	4.89
ROUTED TO	RES612	533.	6.75	185	70.	24.	4.89

6764.03	6.75							
	ROUTED TO	RT612	526.	6.75	185.	70.	24	4.89
	HYDROGRAPH AT	SC613	35.	6.00	6.	2.	1.	0.12
	ROUTED TO	RT613	33.	6.00	6.	2.	1	0.12
	HYDROGRAPH AT	SC615B	24.	5.75	3.	1.	0.	0.03
	ROUTED TO	RES614	8.	6.25	3.	1.	0.	0.03
6727.18	6.25							
	HYDROGRAPH AT	SC617A	20.	6.00	4	1.	0.	0.07
	HYDROGRAPH AT	SC615A	21.	5.75	3.	1.	0.	0.06
	5 COMBINED AT	DP613	550.	6.75	198.	76.	26.	5.17
	ROUTED TO	RT614	546.	6.75	198.	76.	26.	5.17
	HYDROGRAPH AT	SC617B	6.	5.75	1.	0.	0	0.02
	2 COMBINED AT	DP617	547.	6.75	199.	76.	26.	5.19
	ROUTED TO	RT617	532.	6.75	199.	76.	26.	5.19
	HYDROGRAPH AT	SC701	83	6.00	14.	4.	1.	0.07
	HYDROGRAPH AT	SC703	108.	5.75	12.	4.	1.	0 13
	3 COMBINED AT	DP703	559.	6.75	221.	84.	28.	5.39
	ROUTED TO	RT703	541.	6.75	221.	84.	28.	5.39
	HYDROGRAPH AT	SC705	24.	6.00	5.	2.	1.	0.09
	2 COMBINED AT	DP705	548.	6.75	225.	86.	29.	5.48

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
RT205	MANE	1.64	16.63	362.72	0.47	15.00	16.05	360.00	0.47

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2425E+01 EXCESS=0.0000E+00 OUTFLOW=0.2425E+01 BASIN STORAGE= 0.5913E-09 PERCENT ERROR= 0.0

RT213	MANE	1.04	59.02	362.59	0.51	15.00	55.83	360.00	0.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9293E+01 EXCESS=0.0000E+00 OUTFLOW=0.9293E+01 BASIN STORAGE= 0.2106E-08 PERCENT ERROR= 0.0

RT215	MANE	1.76	85.88	363.96	0.45	15.00	75.92	360.00	0.46

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1491E+02 EXCESS=0.0000E+00 OUTFLOW=0.1491E+02 BASIN STORAGE= 0.1986E-07 PERCENT ERROR= 0.0

RT201	MANE	1.62	15.02	363.27	0.40	15.00	13.38	360.00	0.40

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2583E+01 EXCESS=0.0000E+00 OUTFLOW=0.2583E+01 BASIN STORAGE= 0.6813E-09 PERCENT ERROR= 0.0

RT203	MANE	2.06	25.80	364.34	0.38	15.00	23.66	360.00	0.39

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4763E+01 EXCESS=0.0000E+00 OUTFLOW=0.4762E+01 BASIN STORAGE= 0.8281E-08 PERCENT ERROR= 0.0

RT220	MANE	0.65	118.58	361.24	0.42	15.00	113.48	360.00	0.42

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2335E+02 EXCESS=0.0000E+00 OUTFLOW=0.2335E+02 BASIN STORAGE= 0.1972E-07 PERCENT ERROR= 0.0

RT303	MANE	0.88	41.97	361.36	0.47	15.00	40.80	360.00	0.47

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6240E+01 EXCESS=0.0000E+00 OUTFLOW=0.6241E+01 BASIN STORAGE= 0.1044E-09 PERCENT ERROR= 0.0

RT305	MANE	1.67	50.57	363.87	0.47	15.00	46.23	360.00	0.47

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7837E+01 EXCESS=0.0000E+00 OUTFLOW=0.7836E+01 BASIN STORAGE= 0.4208E-08 PERCENT ERROR= 0.0

RT311	MANE	2.61	94.90	366.16	0.47	15.00	85.77	375.00	0.47

CONTINUITY SUMMARY (AC-FT) - INFLOW=0 1634E+02 EXCESS=0 0000E+00 OUTFLOW=0 1634E+02 BASIN STORAGE=
0 6761E-07 PERCENT ERROR= 0 0

RT316 MANE 2 72 227 58 367 68 0 45 15 00 227 30 375 00
0 44

CONTINUITY SUMMARY (AC-FT) - INFLOW=0 4573E+02 EXCESS=0 0000E+00 OUTFLOW=0 4570E+02 BASIN STORAGE=
0 4493E-06 PERCENT ERROR= 0 1

RT401 MANE 0 84 248 01 376 49 0 45 15 00 244 16 375 00
0 45

CONTINUITY SUMMARY (AC-FT) - INFLOW=0 4974E+02 EXCESS=0 0000E+00 OUTFLOW=0 4974E+02 BASIN STORAGE=
0 2308E-06 PERCENT ERROR= 0 0

RT405 MANE 1 89 263 69 378 04 0 45 15 00 253 31 375 00
0 46

CONTINUITY SUMMARY (AC-FT) - INFLOW=0 5446E+02 EXCESS=0 0000E+00 OUTFLOW=0 5446E+02 BASIN STORAGE=
0 8243E-06 PERCENT ERROR= 0 0

RT101 MANE 2 15 14 22 363 91 0 47 15 00 12 19 360 00
0 47

CONTINUITY SUMMARY (AC-FT) - INFLOW=0 2300E+01 EXCESS=0 0000E+00 OUTFLOW=0 2300E+01 BASIN STORAGE=
0 1952E-08 PERCENT ERROR= 0 0

RT103 MANE 0 92 47 87 376 95 0 53 15 00 46 42 375 00
0 53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0 9288E+01 EXCESS=0 0000E+00 OUTFLOW=0 9288E+01 BASIN STORAGE=
0 3917E-08 PERCENT ERROR= 0 0

RT105A MANE 0 93 59 33 376 84 0 56 15 00 58 16 375 00
0 56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0 1176E+02 EXCESS=0 0000E+00 OUTFLOW=0 1176E+02 BASIN STORAGE=
0 9075E-08 PERCENT ERROR= 0 0

RT105B MANE 0 99 85 80 376 56 0 57 15 00 84 80 375 00
0 58

CONTINUITY SUMMARY (AC-FT) - INFLOW=0 1635E+02 EXCESS=0 0000E+00 OUTFLOW=0 1635E+02 BASIN STORAGE=
0 1615E-07 PERCENT ERROR= 0 0

RT107 MANE 1 85 90 34 378 00 0 58 15 00 88 08 375 00
0 58

CONTINUITY SUMMARY (AC-FT) - INFLOW=0 1775E+02 EXCESS=0 0000E+00 OUTFLOW=0 1775E+02 BASIN STORAGE=
0 6437E-07 PERCENT ERROR= 0 0

RT109 MANE 4 15 117 90 382 12 0 59 15 00 110 68 390 00
0 59

CONTINUITY SUMMARY (AC-FT) - INFLOW=0 2327E+02 EXCESS=0 0000E+00 OUTFLOW=0 2325E+02 BASIN STORAGE=
0 6371E-06 PERCENT ERROR= 0 1

RT407 MANE 1 18 425 78 377 47 0 50 15 00 405 73 375 00
0 50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8907E+02 EXCESS=0.0000E+00 OUTFLOW=0.8908E+02 BASIN STORAGE=
0.1351E-05 PERCENT ERROR= 0.0

RT506 MANE 0.91 462.34 376.95 0.50 15.00 445.90 375.00
0.50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1008E+03 EXCESS=0.0000E+00 OUTFLOW=0.1008E+03 BASIN STORAGE=
0.1757E-05 PERCENT ERROR= 0.0

RT507 MANE 1.53 459.25 378.15 0.50 15.00 444.18 390.00
0.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1042E+03 EXCESS=0.0000E+00 OUTFLOW=0.1042E+03 BASIN STORAGE=
0.3967E-05 PERCENT ERROR= 0.0

RT509 MANE 2.49 463.80 392.69 0.51 15.00 463.79 390.00
0.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1098E+03 EXCESS=0.0000E+00 OUTFLOW=0.1098E+03 BASIN STORAGE=
0.9444E-05 PERCENT ERROR= 0.0

RT511 MANE 0.58 471.82 390.83 0.51 15.00 470.18 390.00
0.52

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1128E+03 EXCESS=0.0000E+00 OUTFLOW=0.1128E+03 BASIN STORAGE=
0.2267E-05 PERCENT ERROR= 0.0

RT601 MANE 1.88 17.54 364.39 0.67 15.00 16.48 360.00
0.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2261E+01 EXCESS=0.0000E+00 OUTFLOW=0.2261E+01 BASIN STORAGE=
0.1358E-08 PERCENT ERROR= 0.0

RT604 MANE 1.13 502.55 391.79 0.52 15.00 499.34 390.00
0.52

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1236E+03 EXCESS=0.0000E+00 OUTFLOW=0.1236E+03 BASIN STORAGE=
0.6074E-05 PERCENT ERROR= 0.0

RT610 MANE 2.26 532.57 394.39 0.53 15.00 526.56 390.00
0.54

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1364E+03 EXCESS=0.0000E+00 OUTFLOW=0.1363E+03 BASIN STORAGE=
0.2356E-04 PERCENT ERROR= 0.0

RT612 MANE 1.55 531.09 407.51 0.54 15.00 526.25 405.00
0.54

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1403E+03 EXCESS=0.0000E+00 OUTFLOW=0.1403E+03 BASIN STORAGE=
0.2299E-04 PERCENT ERROR= 0.0

RT613 MANE 1.36 34.35 361.93 0.67 15.00 32.94 360.00
0.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4404E+01 EXCESS=0.0000E+00 OUTFLOW=0.4404E+01 BASIN STOPAGE=
0.1157E-08 PERCENT ERROR= 0.0

RT614 MANE 0.60 548.89 405.87 0.55 15.00 546.19 405.00
0.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1513E+03 EXCESS=0.0000E+00 OUTFLOW=0.1513E+03 BASIN STORAGE=
0.7474E-05 PERCENT ERROR= 0.0

RT617 MANE 1.59 547.34 408.23 0.55 15.00 532.30 405.00
0.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1522E+03 EXCESS=0.0000E+00 OUTFLOW=0.1522E+03 BASIN STORAGE=
0.3537E-04 PERCENT ERROR= 0.0

RT703 MANE 1.63 556.50 409.26 0.58 15.00 541.13 405.00
0.58

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1681E+03 EXCESS=0.0000E+00 OUTFLOW=0.1681E+03 BASIN STORAGE=
0.5148E-04 PERCENT ERROR= 0.0

*** NORMAL END OF HEC-1 ***

50 year existing
HEC1 S/N: 1343001909 HMVersion: 6.33 Data File C:\WINNT\TEMP\~vbh0C39.TMP

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*                                    *
*                                    *
*   FLOOD HYDROGRAPH PACKAGE (HEC-1) *
U.S. ARMY CORPS OF ENGINEERS      *
*               MAY 1991             *
HYDROLOGIC ENGINEERING CENTER     *
*            VERSION 4.0 1E          *
609 SECOND STREET           *
*                                    *
DAVIS, CALIFORNIA 95616         *
*  RUN DATE 06/19/2001  TIME  16:42:40 *
(916) 756-1104              *
*                                    *
*                                    *
**************************************
**************************************
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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
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::::::::::::::: :::::::::::::::::::::::::::::
:::                                       :::
:::  Full Microcomputer Implementation    :::
:::              by                       :::
:::        Haestad Methods, Inc.          :::
:::.                                      :::
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37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

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. THIS IS THE FORTRAN77 VERSION

NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS: WRITE STAGE FREQUENCY,

DSS: READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE: GREEN AND AMPT INFILTRATION

KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

HEC-1 INPUT

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

    1     ID  Type IIA storm
    2     IT      15       0       0     288
    3     IO       5

    4     KK  SC205
    5     KM  Smith Creek 205 Runoff
    6     KO                                      22
    7     BA  0.0970
    8     PB       4
    9     IN      15
   10     PC  0.0005  0.0015  0.0030  0.0045  0.0060  0.0080  0.0100  0.0120  0.0143
0.0165
   11     PC  0.0188  0.0210  0.0233  0.0255  0.0278  0.0320  0.0390  0.0460  0.0530
0.0600
   12     PC  0.0750  0.1000  0.4000  0.7000  0.7250  0.7500  0.7650  0.7800  0.7900
0.8000
   13     PC  0.8100  0.8200  0.8250  0.8300  0.8350  0.8400  0.8450  0.8500  0.8550
0.8600
   14     PC  0.8638  0.8675  0.8713  0.8750  0.8788  0.8825  0.8863  0.8900  0.8938
0.8975
   15     PC  0.9013  0.9050  0.9083  0.9115  0.9148  0.9180  0.9210  0.9240  0.9270
0.9300
   16     PC  0.9325  0.9350  0.9375  0.9400  0.9425  0.9450  0.9475  0.9500  0.9525
0.9550
   17     PC  0.9575  0.9600  0.9625  0.9650  0.9675  0.9700  0.9725  0.9750  0.9775
0.9800
   18     PC  0.9813  0.9825  0.9838  0.9850  0.9863  0.9875  0.9888  0.9900  0.9913
0.9925
   19     PC  0.9938  0.9950  0.9963  0.9975  0.9988  1.0000
   20     LS       0      64
   21     UD   0.257

   22     KK  RT205
   23     KM  Smith Creek Route 205 to 213
   24     KO                                      22
   25     RK    1530  0.0431   0.055            TRAP                2

   26     KK  SC207
   27     KM  Smith Creek 207 Runoff
   28     KO                                      22
   29     BA    0.12
   30     PB       4
   31     LS       0      65
   32     UD   0.367

   33     KK  SC213
   34     KM  Smith Creek 213 Runoff
   35     KO                                      22
   36     BA  0.1243
   37     PB       4
   38     LS       0      66
   39     UD   0.382

   40     KK  DP213
   41     KM  Combine RT205 SC207 and SC213
   42     KO                                      22
   43     HC       3

   44     KK  RT213
   45     KM  Smith Creek Route 213 to 215
   46     KO                                      22
   47     RK    1360  0.0493   0.055            TRAP                2
```

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

  48          KK  SC209
  49          KM  Smith Creek 209 Runoff
  50          KO                                          22
  51          BA  0.1351
  52          PB       4
  53          LS       0       61
  54          UD   0.336

  55          KK  SC211
  56          KM  Smith Creek 211 Runoff
  57          KO                                          22
  58          BA  0.0799
  59          PB       4
  60          LS       0       62
  61          UD   0.418

  62          KK  SC215
  63          KM  Smith Creek 215 Runoff
  64          KO                                          22
  65          BA  0.0589
  66          PB       4
  67          LS       0       62
  68          UD   0.227

  69          KK  DP215
  70          KM  Combine RT213 SC209 SC211 and SC215
  71          KO                                          22
  72          HC       4

  73          KK  RT215
  74          KM  Smith Creek Route 215 to 219
  75          KO                                          22
  76          RK    2110  0.0446  0.0745          TRAP              2

  77          KK  SC219
  78          KM  Smith Creek 219 Runoff
  79          KO                                          22
  80          BA  0.1298
  81          PB       4
  82          LS       0       61
  83          UD   0.362

  84          KK  DP219
  85          KM  Combine RT215 and SC219
  86          KO                                          22
  87          HC       2

  88          KK  SC201
  89          KM  Smith Creek 201 Runoff
  90          KO                                          22
  91          BA  0.1216
  92          PB       4
  93          LS       0       62
  94          UD   0.340
```

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

            95        KK   RT201
            96        KM   Tributary Route 201 to 203
            97        KO                                            22
            98        RK      1650   0.0509    0.055              TRAP              2

            99        KK   SC203
           100        KM   Smith Creek 203 Runoff
           101        KO                                            22
           102        BA   0.1113
           103        PB       4
           104        LS       0         61
           105        UD    0.223

           106        KK   DP203
           107        KM   Combine RT201 and SC203
           108        KO                                            22
           109        HC       2

           110        KK   RT203
           111        KM   Tributary Route 203 to 217
           112        KO                                            22
           113        RK      2010   0.0557   0.0698              TRAP              2

           114        KK   SC217
           115        KM   Smith Creek 217 Runoff
           116        KO                                            22
           117        BA   0.0547
           118        PB       4
           119        LS       0         61
           120        UD    0.211

           121        KK   DP217
           122        KM   Combine RT203 and SC217
           123        KO                                            22
           124        HC       2

           125        KK   DP220
           126        KM   Combine DP217 and DP219
           127        KO                                            22
           128        HC       2

           129        KK   RT220
           130        KM   Smith Creek Route 220 to 316
           131        KO                                            22
           132        RK       646   0.0313   0.0829              TRAP       1      2

           133        KK   SC301
           134        KM   Smith Creek 301 Runoff
           135        KO                                            22
           136        BA   0.1196
           137        PB       4
           138        LS       0         64
           139        UD    0.265
```

HEC-1 INPUT

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ID.....LINE 1.....2.....3.....4.....5.....6.....7.....8.....9.....10
  140          KK  SC303
  141          KM  Smith Creek 303 Runoff
  142          KO                                          22
  143          BA  0.1300
  144          PB       4
  145          LS       0       64
  146          UD   0.322

  147          KK  DP303
  148          KM  Combine SC301 and SC303
  149          KO                                          22
  150          HC       2

  151          KK  RT303
  152          KM  Tributary Route 303 to 305
  153          KO                                          22
  154          RK     940  0.0372   0.055          TRAP                2

  155          KK  SC305
  156          KM  Smith Creek 305 Runoff
  157          KO                                          22
  158          BA  0.0629
  159          PB       4
  160          LS       0       64
  161          UD   0.331

  162          KK  DP305
  163          KM  Combine RT303 and SC305
  164          KO                                          22
  165          HC       2

  166          KK  RT305
  167          KM  Tributary Route 305 to 311
  168          KO                                          22
  169          RK    2150  0.0414   0.055          TRAP                2

  170          KK  SC307
  171          KM  Smith Creek 307 Runoff
  172          KO                                          22
  173          BA  0.1081
  174          PB       4
  175          LS       0       64
  176          UD   0.455

  177          KK  SC309
  178          KM  Smith Creek 309 Runoff
  179          KO                                          22
  180          BA  0.1240
  181          PB       4
  182          LS       0       64
  183          UD   0.383
```

```
ID.....LINE 1.....2.....3.....4.....5.....6.....7.....8.....9.....10
  184     KK  SC311
  185     KM  Smith Creek 311 Runoff
  186     KO                                                  22
  187     BA  0.1064
  188     PB       4
  189     LS       0       64
  190     UD   0.295

  191     KK  DP311
  192     KM  Combine RT305 SC307 SC309 and SC311
  193     KO                                                  22
  194     HC       4

  195     KK  RT311
  196     KM  Tributary Route 311 to 315
  197     KO                                                  22
  198     RK     2860  0.0448  0.0888              TRAP                  2

  199     KK  SC313
  200     KM  Smith Creek 313 Runoff
  201     KO                                                  22
  202     BA  0.1520
  203     PB       4
  204     LS       0       64
  205     UD   0.373

  206     KK  SC315
  207     KM  Smith Creek 315 Runoff
  208     KO                                                  22
  209     BA  0.0866
  210     PB       4
  211     LS       0       64
  212     UD   0.350

  213     KK  DP315
  214     KM  Combine RT311 SC313 and SC315
  215     KO                                                  22
  216     HC       3

  217     KK  DP316
  218     KM  Combine RT220 and DP315
  219     KO                                                  22
  220     HC       2

  221     KK  RT316
  222     KM  Smith Creek Route 316 to 401
  223     KO                                                  22
  224     RK     2575  0.0361   0.120              TRAP        1         2
```