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1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* SEPTEMBER 1990 *
* VERSION 4.0 *
*
* RUN DATE 05/07/2001 TIME 07:23:13 *
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*
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
* (916) 756-1104 *
*
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X X XXXXXXX XXXXX X
X X X X X XX
X X X X X X
XXXXXXX XXXX X XXXXX X
X X X X X X
X X X X X X
X X XXXXXXX XXXXX XXX

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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

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

*** FREE ***

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*DIAGRAM
1 ID Sippo reservoir
2 ID May 2001
3 ID Using Muskingum-Cunge, 8-pt est. from consult.#
4 ID
5 ID Doug and Keith
6 IT 20 0 0 300
* IT based on a UD of 1.25 - most basins ~1.5 squ miles
7 IN 15
8 IO 5 0
9 JR FLOW 1 .5 .25 .1 .08 .06 .04 .03 .02

10 KK Hyd1
11 BA 0.18
12 PB 32
* 10 squ mile 24-hour pmp
13 PI 0.064 0.096 0.096 0.096 0.096 0.096 0.096 0.096 0.096 0.096
14 PI 0.096 0.096 0.096 0.096 0.096 0.128 0.128 0.128 0.128 0.128
15 PI 0.128 0.128 0.128 0.128 0.160 0.160 0.160 0.160 0.160 0.160
16 PI 0.160 0.160 0.192 0.224 0.224 0.224 0.256 0.256 0.288 0.288
17 PI 0.320 0.384 0.480 0.576 0.672 0.832 3.328 8.832 1.408 0.896
18 PI 0.736 0.576 0.480 0.416 0.352 0.320 0.288 0.256 0.224 0.224
19 PI 0.224 0.192 0.192 0.192 0.192 0.192 0.160 0.160 0.160 0.160
20 PI 0.160 0.128 0.128 0.128 0.128 0.128 0.128 0.128 0.128 0.096
21 PI 0.096 0.096 0.096 0.096 0.096 0.096 0.096 0.096 0.096 0.096
22 PI 0.096 0.096 0.096 0.096 0.096 0.096 0.064
23 LS 0 74
24 UD 0.44
* lag times are estimated by consultant submittal
* lags appear a bit long bec. slope slightly under estimated, ok to est. flood

25 KK Eric
26 RS 1 ELEV 1116.5
27 SA 3.7 3.9 4.2 6.2 8.1
28 SE 1116.5 1118 1120 1125 1130
29 SQ 0 3 17 40 69 600 1130
30 SE 1116.5 1117 1118 1119 1120 1121 1121.5
31 ST 1120 150 2.8 1.5
* 1121.5 1121
* fictitious tod info

32 KK HYD2
33 BA 0.42
34 LS 0 75
35 UD 0.65

36 KK Conf1
37 HC 2

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

38	KK	Ospr								
39	RS	1	ELEV	1106						
40	SA	0	27	30	40	44				
41	SE	1104.2	1106.	1108.7	1110	1112.9				
42	SQ	0	60	180	300	1240	3930			
43	SE	1106	1107	1108	1108.7	1109	1110			
44	ST	1108.7	150	2.8	1.5					
			* fictitious tod info							
45	KK	HYD3								
46	BA	2.19								
47	LS	0	70							
48	UD	2.26								
49	KK	Conf2								
50	HC	2								
51	KK	Cable								
52	RS	1	ELEV	1097.4						
53	SA	0	220	296	316.7	405	500			
54	SE	1080	1097.4	1099.5	1100	1103	1104			
55	SQ	0	7	14	71	242	262	347		
56	SE	1096.4	1097	1097.4	1098	1099	1099.1	1099.5		
57	ST	1099.5	1000	2.8	1.5					
58	KK	Chan5								
59	RD									
60	RC	0.06	0.05	0.06	8800	0.024	1085			
61	RX	0	200	465	494	500	530	900	1000	
62	RY	1085	1078	1076	1069	1069	1076	1077	1085	
63	KK	HYD4								
64	BA	1.68								
65	LS	0	68							
66	UD	1.28								
67	KK	Conf3								
68	HC	2								
69	KK	Chan7								
70	RD									
71	RC	0.06	0.05	0.06	5900	0.0017	1080			
72	RX	0	100	350	460	490	500	550	700	1000
73	RY	1080	1065	1052	1045	1033	1033	1045	1052	1075
74	KK	HYD6								
75	BA	1.67								
76	LS	0	69							
77	UD	1.55								

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

78	KK	Conf4								
79	HC	2								
80	KK	HYD11								
81	BA	1.21								
82	LS	0	67							
83	UD	1.29								
84	KK	Conf5								
85	HC	2								
86	KK	HYD8								
87	BA	3.07								
88	LS	0	75							
89	UD	1.56								
90	KK	SippoLake								
91	RS	1	ELEV	1027						
92	SA	0	88	106	126					
93	SE	1022	1027	1029.3	1036					
94	SQ	0	350	1380	4210	7150	12300	16350		
95	SE	1027	1029.3	1030.3	1031	1032.3	1033	1035		
96	ST	1029.3	450	2.8	1.5					
			* TOD from inventory							
97	KK	Chan10								
98	RD									
99	RC	0.06	0.05	0.06	4100	0.003	1032			
100	RX	0	190	485	495	505	515	820	900	1000
101	RY	1032	1024	1022	1017	1017	1022	1024	1027	1032

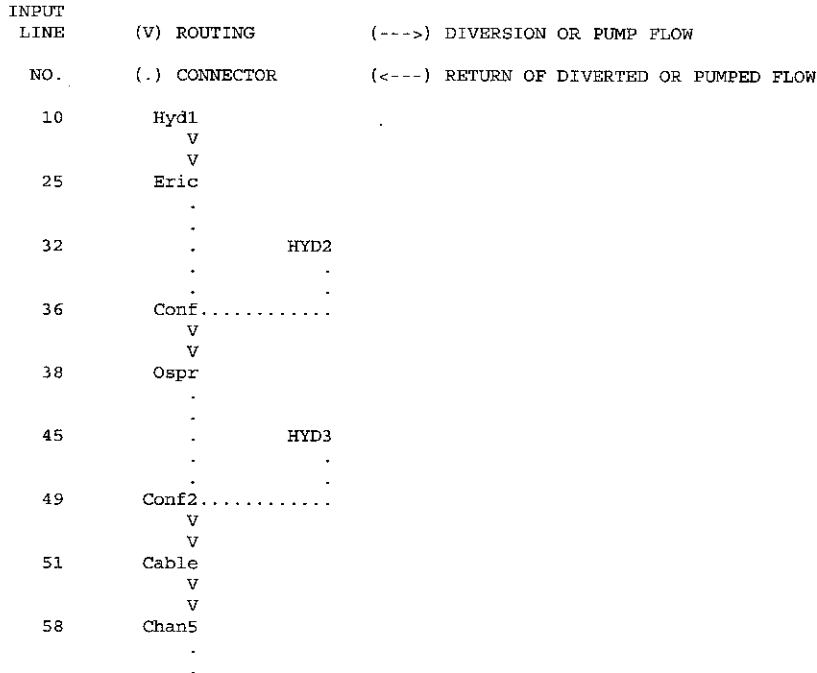
102	KK	HYD9									
103	BA	1.02									
104	LS	0	67								
105	UD	1.51									
106	KK	Conf6									
107	HC	2									
108	KK	Conf7									
109	HC	2									
110	KK	Chan15									
111	RD										
112	RC	0.06	0.05	0.06	8800	0.001	1060				
113	RX	0	300	470	493	507	520	630	750	1000	
114	RY	1060	1026	1023	1017	1017	1020	1022	1037	1038	
115	KK	HYD13									
116	BA	1.15									
117	LS	0	75								
118	UD	0.72									

HEC-1 INPUT

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

119	KK	HYD12									
120	BA	1.13									
121	LS	0	74								
122	UD	1.1									
123	KK	Conf8									
124	HC	3									
125	KK	Chan16									
126	RD										
127	RC	0.06	0.05	0.06	7500	0.001	1055				
128	RX	0	220	350	470	493	505	590	700	800	
129	RY	1032	1030	1012	1012	1006	1006	1026	1034	1055	
130	KK	HYD14									
131	BA	1.06									
132	LS	0	80								
133	UD	0.78									
134	KK	Conf19									
135	HC	2									
136	KK	SipRes									
137	RS	1	ELEV	997							
138	SA	0	4.4	34	40	75	100	105			
139	SE	983	997	1000.6	1004	1010	1015	1016			
140	SQ	0	110	305	561	864	1207	3415			
141	SE	997	998	999	1000	1001	1002	1007			
142	ST	1000.6	265	2.8	1.5						
143	ZZ										

SCHEMATIC DIAGRAM OF STREAM NETWORK



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63      .      HYD4
      .
      .
67      Conf.....
      V
      V
69      Chan7
      .
      .
74      .      HYD6
      .
      .
78      Conf4.....
      .
      .
80      .      HYD11
      .
      .
84      Conf5.....
      .
      .
86      .      HYD8
      .      V
      .      V
90      .      Sippo
      .      V
      .      V
97      .      Chan10
      .
      .
102     .      .      HYD9
      .      .
      .
106     .      Conf6.....
      .
      .
108     Conf7.....
      V
      V
110     Chan15
      .
      .
115     .      HYD13
      .
      .
119     .      .      HYD12
      .      .
      .
123     Conf8.....
      V
      V
125     Chan16
      .
      .
130     .      HYD
      .
      .
134     Conf19.....
      V
      V
136     SipRes

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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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*      SEPTEMBER 1990 *
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Sippo reservoir
May 2001
Using Muskingum-Cunge, 8-pt est. from consult.#

Doug and Keith

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

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IT      HYDROGRAPH TIME DATA
          NMIN      20 MINUTES IN COMPUTATION INTERVAL

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IDATE 1 0 STARTING DATE
 ITIME 0000 STARTING TIME
 NQ 300 NUMBER OF HYDROGRAPH ORDINATES
 NDDATE 5 0 ENDING DATE
 NDTIME 0340 ENDING TIME
 ICENT 19 CENTURY MARK

COMPUTATION INTERVAL .33 HOURS
 TOTAL TIME BASE 99.67 HOURS

ENGLISH UNITS

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

JP MULTI-PLAN OPTION
 NPLAN 1 NUMBER OF PLANS

JR MULTI-RATIO OPTION
 RATIOS OF RUNOFF
 1.00 .50 .25 .10 .08 .06 .04 .03 .02

1

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

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO FLOWS								
					RATIO 1	RATIO 2	RATIO 3	RATIO 4	RATIO 5	RATIO 6	RATIO 7	RATIO 8	RATIO 9
					1.00	.50	.25	.10	.08	.06	.04	.03	.02
HYDROGRAPH AT													
+	Hyd1	.18	1	FLOW	1731.	866.	433.	173.	138.	104.	69.	52.	35.
				TIME	12.33	12.33	12.33	12.33	12.33	12.33	12.33	12.33	12.33
ROUTED TO													
+	Eric	.18	1	FLOW	1761.	835.	426.	59.	44.	30.	17.	12.	7.
				TIME	12.33	12.33	12.33	13.00	13.00	13.33	13.33	13.33	13.67
				** PEAK STAGES IN FEET **									
			1	STAGE	1121.42	1120.84	1120.44	1119.67	1119.13	1118.58	1117.98	1117.64	1117.29
				TIME	12.33	12.33	12.33	13.00	13.00	13.33	13.33	13.33	13.67
HYDROGRAPH AT													
+	HYD2	.42	1	FLOW	3171.	1586.	793.	317.	254.	190.	127.	95.	63.
				TIME	12.33	12.33	12.33	12.33	12.33	12.33	12.33	12.33	12.33
2 COMBINED AT													
+	Conf	.60	1	FLOW	4932.	2420.	1218.	364.	287.	213.	139.	103.	68.
				TIME	12.33	12.33	12.33	12.67	12.67	12.67	12.67	12.67	12.67
ROUTED TO													
+	Ospr	.60	1	FLOW	4663.	2400.	949.	112.	81.	54.	35.	26.	17.
				TIME	12.67	12.67	13.00	14.00	14.33	14.33	14.33	14.33	14.33
				** PEAK STAGES IN FEET **									
			1	STAGE	1110.03	1109.35	1108.90	1107.43	1107.18	1106.89	1106.58	1106.43	1106.28
				TIME	12.67	12.67	13.00	14.00	14.33	14.33	14.33	14.33	14.33
HYDROGRAPH AT													
+	HYD3	2.19	1	FLOW	7527.	3764.	1882.	753.	602.	452.	301.	226.	151.
				TIME	14.33	14.33	14.33	14.33	14.33	14.33	14.33	14.33	14.33
2 COMBINED AT													
+	Conf2	2.79	1	FLOW	8606.	4283.	2169.	864.	683.	505.	336.	252.	168.
				TIME	13.67	13.67	14.00	14.33	14.33	14.33	14.33	14.33	14.33
ROUTED TO													
+	Cable	2.79	1	FLOW	7660.	3087.	693.	152.	116.	80.	53.	42.	30.
				TIME	14.67	15.33	17.67	20.33	20.67	21.33	21.33	21.00	20.67
				** PEAK STAGES IN FEET **									
			1	STAGE	1101.33	1100.44	1099.72	1098.47	1098.26	1098.05	1097.82	1097.69	1097.57
				TIME	14.67	15.33	17.67	20.33	20.67	21.33	21.33	21.00	20.67
ROUTED TO													
+	Chan5	2.79	1	FLOW	7583.	3068.	690.	152.	116.	80.	53.	42.	30.
				TIME	15.00	15.67	18.00	20.67	21.33	22.00	22.00	21.67	21.33
HYDROGRAPH AT													
+	HYD4	1.68	1	FLOW	8314.	4157.	2079.	831.	665.	499.	333.	249.	166.
				TIME	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
2 COMBINED AT													
+	Conf	4.47	1	FLOW	11765.	4358.	2125.	854.	684.	515.	347.	263.	180.

				TIME	13.67	13.33	13.00	13.00	13.00	13.00	13.00	13.00	13.00
ROUTED TO													
+	Chan7	4.47	1	FLOW	11676.	4148.	2058.	828.	661.	494.	330.	247.	167.
				TIME	14.00	15.67	13.67	13.67	13.67	13.67	13.67	14.00	14.00
HYDROGRAPH AT													
+	HYD6	1.67	1	FLOW	7381.	3690.	1845.	738.	590.	443.	295.	221.	148.
				TIME	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33
2 COMBINED AT													
+	Conf4	6.14	1	FLOW	18542.	7648.	3867.	1552.	1240.	929.	619.	458.	300.
				TIME	13.67	13.67	13.67	13.67	13.67	13.67	13.67	13.67	13.67
HYDROGRAPH AT													
+	HYD11	1.21	1	FLOW	5915.	2958.	1479.	592.	473.	355.	237.	177.	118.
				TIME	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
2 COMBINED AT													
+	Conf5	7.35	1	FLOW	23762.	10342.	5307.	2100.	1668.	1242.	828.	615.	404.
				TIME	13.67	13.33	13.33	13.33	13.33	13.67	13.67	13.67	13.67
HYDROGRAPH AT													
+	HYD8	3.07	1	FLOW	13900.	6950.	3475.	1390.	1112.	834.	556.	417.	278.
				TIME	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33
ROUTED TO													
+	Sippo	3.07	1	FLOW	13503.	6842.	3171.	564.	317.	241.	163.	123.	83.
				TIME	13.67	13.67	14.00	15.33	16.00	16.00	16.00	16.00	16.00
				** PEAK STAGES IN FEET **									
			1	STAGE	1032.26	1030.98	1030.39	1029.44	1029.08	1028.58	1028.07	1027.81	1027.55
				TIME	13.67	13.67	14.00	15.33	16.00	16.00	16.00	16.00	16.00
ROUTED TO													
+	Chan10	3.07	1	FLOW	13353.	6745.	3174.	551.	316.	241.	163.	123.	83.
				TIME	14.00	14.00	14.33	16.00	16.33	16.33	16.33	16.33	16.33
HYDROGRAPH AT													
+	HYD9	1.02	1	FLOW	4555.	2277.	1139.	455.	364.	273.	182.	137.	91.
				TIME	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33	13.33
2 COMBINED AT													
+	Conf6	4.09	1	FLOW	17367.	8910.	3978.	684.	530.	398.	265.	197.	130.
				TIME	13.67	13.67	14.33	15.67	14.00	14.00	14.00	14.00	14.00
2 COMBINED AT													
+	Conf7	11.44	1	FLOW	41129.	19168.	7795.	2736.	2186.	1638.	1090.	809.	532.
				TIME	13.67	13.67	14.33	13.67	13.67	13.67	13.67	13.67	13.67
ROUTED TO													
+	Chan15	11.44	1	FLOW	38500.	17186.	7281.	2399.	1907.	1422.	937.	697.	461.
				TIME	14.00	14.33	14.67	14.67	14.67	14.67	15.00	15.00	15.00
HYDROGRAPH AT													
+	HYD13	1.15	1	FLOW	8367.	4184.	2092.	837.	669.	502.	335.	251.	167.
				TIME	12.67	12.67	12.67	12.67	12.67	12.67	12.67	12.67	12.67
HYDROGRAPH AT													
+	HYD12	1.13	1	FLOW	6428.	3214.	1607.	643.	514.	386.	257.	193.	129.
				TIME	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
3 COMBINED AT													
+	Conf8	13.72	1	FLOW	44157.	19571.	8123.	2778.	2179.	1624.	1059.	777.	514.
				TIME	14.00	14.00	14.67	14.33	14.33	14.67	14.67	15.00	15.00
ROUTED TO													
+	Chan16	13.72	1	FLOW	41472.	18816.	7926.	2650.	2063.	1498.	968.	726.	484.
				TIME	14.33	14.33	15.00	15.00	15.33	15.67	16.00	16.00	16.00
HYDROGRAPH AT													
+	HYD	1.06	1	FLOW	7588.	3794.	1897.	759.	607.	455.	304.	228.	152.
				TIME	12.67	12.67	12.67	12.67	12.67	12.67	12.67	12.67	12.67
2 COMBINED AT													
+	Conf19	14.78	1	FLOW	43164.	19662.	8188.	2755.	2132.	1544.	994.	746.	497.
				TIME	14.33	14.33	15.00	15.00	15.33	15.33	15.67	16.00	16.00
ROUTED TO													
+	SipRes	14.78	1	FLOW	42422.	19439.	8159.	2720.	2098.	1517.	960.	681.	459.
				TIME	14.67	14.67	15.00	15.33	15.67	16.00	16.33	16.67	16.67
				** PEAK STAGES IN FEET **									
			1	STAGE	1013.89	1008.19	1004.55	1002.16	1001.79	1001.39	1000.90	1000.40	999.60
				TIME	14.67	14.67	15.00	15.33	15.67	16.00	16.33	16.67	16.67

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

INTERPOLATED TO
COMPUTATION INTERVAL

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
FOR PLAN = 1	RATIO=	.00							
Chan5	MANE	18.54	7627.54	908.54	27.51	20.00	7583.22	900.00	27.48
CONTINUITY SUMMARY (AC-FT) - INFLOW= .4090E+04 EXCESS= .0000E+00 OUTFLOW= .4093E+04 BASIN STORAGE= .2424E+00 PERCENT ERROR= -.1									
FOR PLAN = 1	RATIO=	.00							
Chan5	MANE	12.01	3068.29	948.65	13.74	20.00	3067.50	940.00	13.74
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2045E+04 EXCESS= .0000E+00 OUTFLOW= .2045E+04 BASIN STORAGE= .1730E+00 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
Chan5	MANE	18.17	691.48	1072.09	6.87	20.00	690.10	1080.00	6.87
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1023E+04 EXCESS= .0000E+00 OUTFLOW= .1023E+04 BASIN STORAGE= .9039E-01 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
Chan5	MANE	20.00	151.60	1240.00	2.85	20.00	151.60	1240.00	2.85
CONTINUITY SUMMARY (AC-FT) - INFLOW= .4249E+03 EXCESS= .0000E+00 OUTFLOW= .4250E+03 BASIN STORAGE= -.6465E-01 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
Chan5	MANE	20.00	116.14	1280.00	2.33	20.00	116.14	1280.00	2.33
CONTINUITY SUMMARY (AC-FT) - INFLOW= .3472E+03 EXCESS= .0000E+00 OUTFLOW= .3473E+03 BASIN STORAGE= -.8711E-01 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
Chan5	MANE	20.00	80.09	1320.00	1.82	20.00	80.09	1320.00	1.82
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2714E+03 EXCESS= .0000E+00 OUTFLOW= .2716E+03 BASIN STORAGE= -.1175E+00 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
Chan5	MANE	20.00	53.48	1320.00	1.34	20.00	53.48	1320.00	1.34
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1995E+03 EXCESS= .0000E+00 OUTFLOW= .1997E+03 BASIN STORAGE= -.1676E+00 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
Chan5	MANE	20.00	41.83	1300.00	1.11	20.00	41.83	1300.00	1.11
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1653E+03 EXCESS= .0000E+00 OUTFLOW= .1655E+03 BASIN STORAGE= -.2008E+00 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
Chan5	MANE	20.00	29.95	1280.00	.89	20.00	29.95	1280.00	.89
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1326E+03 EXCESS= .0000E+00 OUTFLOW= .1329E+03 BASIN STORAGE= -.2440E+00 PERCENT ERROR= -.1									
FOR PLAN = 1	RATIO=	.00							
Chan7	MANE	20.00	11676.43	840.00	27.35	20.00	11676.43	840.00	27.35
CONTINUITY SUMMARY (AC-FT) - INFLOW= .6506E+04 EXCESS= .0000E+00 OUTFLOW= .6521E+04 BASIN STORAGE= .3531E+00 PERCENT ERROR= -.2									
FOR PLAN = 1	RATIO=	.00							
Chan7	MANE	20.00	4147.99	940.00	13.60	20.00	4147.99	940.00	13.60
CONTINUITY SUMMARY (AC-FT) - INFLOW= .3253E+04 EXCESS= .0000E+00 OUTFLOW= .3243E+04 BASIN STORAGE= .2474E+00 PERCENT ERROR= .3									
FOR PLAN = 1	RATIO=	.00							
Chan7	MANE	20.00	2057.81	820.00	6.82	20.00	2057.81	820.00	6.82
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1627E+04 EXCESS= .0000E+00 OUTFLOW= .1626E+04 BASIN STORAGE= .1543E+00 PERCENT ERROR= .1									
FOR PLAN = 1	RATIO=	.00							

Chan7	MANE	20.00	827.91	820.00	2.80	20.00	827.91	820.00	2.80
CONTINUITY SUMMARY (AC-FT) - INFLOW= .6666E+03 EXCESS= .0000E+00 OUTFLOW= .6670E+03 BASIN STORAGE=-.7783E-01 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO= .00									
Chan7	MANE	20.00	660.66	820.00	2.27	20.00	660.66	820.00	2.27
CONTINUITY SUMMARY (AC-FT) - INFLOW= .5407E+03 EXCESS= .0000E+00 OUTFLOW= .5410E+03 BASIN STORAGE=-.1071E+00 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO= .00									
Chan7	MANE	20.00	494.35	820.00	1.75	20.00	494.35	820.00	1.75
CONTINUITY SUMMARY (AC-FT) - INFLOW= .4166E+03 EXCESS= .0000E+00 OUTFLOW= .4170E+03 BASIN STORAGE=-.1454E+00 PERCENT ERROR= -.1									
FOR PLAN = 1 RATIO= .00									
Chan7	MANE	20.00	329.52	820.00	1.24	20.00	329.52	820.00	1.24
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2964E+03 EXCESS= .0000E+00 OUTFLOW= .2970E+03 BASIN STORAGE=-.2111E+00 PERCENT ERROR= -.1									
FOR PLAN = 1 RATIO= .00									
Chan7	MANE	20.00	246.78	840.00	1.00	20.00	246.78	840.00	1.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2380E+03 EXCESS= .0000E+00 OUTFLOW= .2384E+03 BASIN STORAGE=-.2549E+00 PERCENT ERROR= -.1									
FOR PLAN = 1 RATIO= .00									
Chan7	MANE	20.00	167.17	840.00	.76	20.00	167.17	840.00	.76
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1813E+03 EXCESS= .0000E+00 OUTFLOW= .1817E+03 BASIN STORAGE=-.3105E+00 PERCENT ERROR= -.1									
FOR PLAN = 1 RATIO= .00									
Chan10	MANE	16.74	13444.47	837.05	28.32	20.00	13352.73	840.00	28.33
CONTINUITY SUMMARY (AC-FT) - INFLOW= .4636E+04 EXCESS= .0000E+00 OUTFLOW= .4637E+04 BASIN STORAGE= .1391E-01 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO= .00									
Chan10	MANE	20.00	6745.07	840.00	14.18	20.00	6745.07	840.00	14.18
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2318E+04 EXCESS= .0000E+00 OUTFLOW= .2321E+04 BASIN STORAGE= .1391E-01 PERCENT ERROR= -.1									
FOR PLAN = 1 RATIO= .00									
Chan10	MANE	20.00	3174.28	860.00	7.08	20.00	3174.28	860.00	7.08
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1160E+04 EXCESS= .0000E+00 OUTFLOW= .1159E+04 BASIN STORAGE= .1391E-01 PERCENT ERROR= .1									
FOR PLAN = 1 RATIO= .00									
Chan10	MANE	16.02	550.97	961.13	2.83	20.00	550.95	960.00	2.83
CONTINUITY SUMMARY (AC-FT) - INFLOW= .4640E+03 EXCESS= .0000E+00 OUTFLOW= .4640E+03 BASIN STORAGE= .1391E-01 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO= .00									
Chan10	MANE	18.81	316.48	978.32	2.27	20.00	316.37	980.00	2.27
CONTINUITY SUMMARY (AC-FT) - INFLOW= .3714E+03 EXCESS= .0000E+00 OUTFLOW= .3713E+03 BASIN STORAGE= .1391E-01 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO= .00									
Chan10	MANE	20.00	241.02	980.00	1.70	20.00	241.02	980.00	1.70
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2786E+03 EXCESS= .0000E+00 OUTFLOW= .2786E+03 BASIN STORAGE= .1391E-01 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO= .00									
Chan10	MANE	20.00	163.22	980.00	1.14	20.00	163.22	980.00	1.14
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1860E+03 EXCESS= .0000E+00 OUTFLOW= .1860E+03 BASIN STORAGE= .1391E-01 PERCENT ERROR= .0									

FOR PLAN = 1	RATIO= .00								
Chan10	MANE	20.00	123.39	980.00	.85	20.00	123.39	980.00	.85
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1396E+03 EXCESS= .0000E+00 OUTFLOW= .1396E+03 BASIN STORAGE= .1391E-01 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO= .00								
Chan10	MANE	20.00	82.96	980.00	.57	20.00	82.96	980.00	.57
CONTINUITY SUMMARY (AC-FT) - INFLOW= .9328E+02 EXCESS= .0000E+00 OUTFLOW= .9328E+02 BASIN STORAGE= .1391E-01 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO= .00								
Chan15	MANE	20.00	38500.09	840.00	27.46	20.00	38500.09	840.00	27.46
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1676E+05 EXCESS= .0000E+00 OUTFLOW= .1675E+05 BASIN STORAGE= .8149E+00 PERCENT ERROR= .1									
FOR PLAN = 1	RATIO= .00								
Chan15	MANE	20.00	17185.76	860.00	13.69	20.00	17185.76	860.00	13.69
CONTINUITY SUMMARY (AC-FT) - INFLOW= .8366E+04 EXCESS= .0000E+00 OUTFLOW= .8354E+04 BASIN STORAGE= .6076E+00 PERCENT ERROR= .1									
FOR PLAN = 1	RATIO= .00								
Chan15	MANE	20.00	7281.03	880.00	6.85	20.00	7281.03	880.00	6.85
CONTINUITY SUMMARY (AC-FT) - INFLOW= .4186E+04 EXCESS= .0000E+00 OUTFLOW= .4178E+04 BASIN STORAGE= .4758E+00 PERCENT ERROR= .2									
FOR PLAN = 1	RATIO= .00								
Chan15	MANE	20.00	2398.99	880.00	2.77	20.00	2398.99	880.00	2.77
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1691E+04 EXCESS= .0000E+00 OUTFLOW= .1689E+04 BASIN STORAGE=-.1052E+00 PERCENT ERROR= .2									
FOR PLAN = 1	RATIO= .00								
Chan15	MANE	20.00	1907.05	880.00	2.22	20.00	1907.05	880.00	2.22
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1361E+04 EXCESS= .0000E+00 OUTFLOW= .1358E+04 BASIN STORAGE=-.1591E+00 PERCENT ERROR= .2									
FOR PLAN = 1	RATIO= .00								
Chan15	MANE	20.00	1421.79	880.00	1.69	20.00	1421.79	880.00	1.69
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1032E+04 EXCESS= .0000E+00 OUTFLOW= .1030E+04 BASIN STORAGE=-.2325E+00 PERCENT ERROR= .2									
FOR PLAN = 1	RATIO= .00								
Chan15	MANE	20.00	936.57	900.00	1.16	20.00	936.57	900.00	1.16
CONTINUITY SUMMARY (AC-FT) - INFLOW= .7071E+03 EXCESS= .0000E+00 OUTFLOW= .7065E+03 BASIN STORAGE=-.3643E+00 PERCENT ERROR= .1									
FOR PLAN = 1	RATIO= .00								
Chan15	MANE	20.00	696.90	900.00	.89	20.00	696.90	900.00	.89
CONTINUITY SUMMARY (AC-FT) - INFLOW= .5462E+03 EXCESS= .0000E+00 OUTFLOW= .5464E+03 BASIN STORAGE=-.4496E+00 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO= .00								
Chan15	MANE	20.00	460.75	900.00	.64	20.00	460.75	900.00	.64
CONTINUITY SUMMARY (AC-FT) - INFLOW= .3871E+03 EXCESS= .0000E+00 OUTFLOW= .3890E+03 BASIN STORAGE=-.5577E+00 PERCENT ERROR= -.3									
FOR PLAN = 1	RATIO= .00								
Chan16	MANE	19.73	41523.02	868.03	27.50	20.00	41472.00	860.00	27.49
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2018E+05 EXCESS= .0000E+00 OUTFLOW= .2012E+05 BASIN STORAGE= .7262E+00 PERCENT ERROR= .3									
FOR PLAN = 1	RATIO= .00								
Chan16	MANE	20.00	18815.78	860.00	13.75	20.00	18815.78	860.00	13.75
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1007E+05 EXCESS= .0000E+00 OUTFLOW= .1006E+05 BASIN STORAGE= .5791E+00 PERCENT ERROR= .1									

FOR PLAN = 1 RATIO= .00
 Chan16 MANE 20.00 7926.37 900.00 6.90 20.00 7926.37 900.00 6.90

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5037E+04 EXCESS= .0000E+00 OUTFLOW= .5046E+04 BASIN STORAGE= .5216E+00 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
 Chan16 MANE 20.00 2650.26 900.00 2.78 20.00 2650.26 900.00 2.78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2032E+04 EXCESS= .0000E+00 OUTFLOW= .2034E+04 BASIN STORAGE=-.6456E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
 Chan16 MANE 20.00 2062.74 920.00 2.23 20.00 2062.74 920.00 2.23

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1632E+04 EXCESS= .0000E+00 OUTFLOW= .1632E+04 BASIN STORAGE=-.1064E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
 Chan16 MANE 20.00 1497.83 940.00 1.69 20.00 1497.83 940.00 1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1236E+04 EXCESS= .0000E+00 OUTFLOW= .1235E+04 BASIN STORAGE=-.1666E+00 PERCENT ERROR= .2

FOR PLAN = 1 RATIO= .00
 Chan16 MANE 20.00 967.67 960.00 1.15 20.00 967.67 960.00 1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8438E+03 EXCESS= .0000E+00 OUTFLOW= .8430E+03 BASIN STORAGE=-.2763E+00 PERCENT ERROR= .1

FOR PLAN = 1 RATIO= .00
 Chan16 MANE 20.00 725.89 960.00 .89 20.00 725.89 960.00 .89

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6493E+03 EXCESS= .0000E+00 OUTFLOW= .6504E+03 BASIN STORAGE=-.3450E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
 Chan16 MANE 20.00 484.12 960.00 .63 20.00 484.12 960.00 .63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4576E+03 EXCESS= .0000E+00 OUTFLOW= .4589E+03 BASIN STORAGE=-.4339E+00 PERCENT ERROR= -.2

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SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION Eric
 (PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1		INITIAL VALUE	SPILLWAY CREST	TOP OF DAM				
	ELEVATION	1116.50	1120.00	1120.00				
	STORAGE	0.	14.	14.				
	OUTFLOW	0.	69.	69.				
	RATIO OF PMP	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
	1.00	1121.42	1.42	20.	1761.	7.67	12.33	.00
	.50	1120.84	.84	17.	835.	3.00	12.33	.00
	.25	1120.44	.44	16.	426.	1.67	12.33	.00
	.10	1119.67	.00	12.	59.	.00	13.00	.00
	.08	1119.13	.00	10.	44.	.00	13.00	.00
	.06	1118.58	.00	8.	30.	.00	13.33	.00
	.04	1117.98	.00	6.	17.	.00	13.33	.00
	.03	1117.64	.00	4.	12.	.00	13.33	.00
	.02	1117.29	.00	3.	7.	.00	13.67	.00

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SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION Ospr
 (PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1106.00	1108.70	1108.70
STORAGE	16.	93.	93.
OUTFLOW	0.	300.	300.

RATIO OF PMP	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1110.03	1.33	140.	4663.	5.33	12.67	.00
.50	1109.35	.65	114.	2400.	2.67	12.67	.00
.25	1108.90	.20	99.	949.	1.00	13.00	.00
.10	1107.43	.00	56.	112.	.00	14.00	.00
.08	1107.18	.00	49.	81.	.00	14.33	.00
.06	1106.89	.00	41.	54.	.00	14.33	.00
.04	1106.58	.00	32.	35.	.00	14.33	.00
.03	1106.43	.00	28.	26.	.00	14.33	.00
.02	1106.28	.00	24.	17.	.00	14.33	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION Cable
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1097.40	1099.50	1099.50
STORAGE	1276.	1816.	1816.
OUTFLOW	14.	347.	347.

RATIO OF PMP	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1101.33	1.83	2415.	7660.	16.67	14.67	.00
.50	1100.44	.94	2110.	3087.	13.67	15.33	.00
.25	1099.72	.22	1883.	693.	7.67	17.67	.00
.10	1098.47	.00	1531.	152.	.00	20.33	.00
.08	1098.26	.00	1479.	116.	.00	20.67	.00
.06	1098.05	.00	1427.	80.	.00	21.33	.00
.04	1097.82	.00	1370.	53.	.00	21.33	.00
.03	1097.69	.00	1342.	42.	.00	21.00	.00
.02	1097.57	.00	1313.	30.	.00	20.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION Sippo
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1027.00	1029.30	1029.30
STORAGE	147.	369.	369.
OUTFLOW	0.	350.	350.

RATIO OF PMP	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1032.26	2.96	696.	13503.	16.67	13.67	.00
.50	1030.98	1.68	551.	6842.	13.00	13.67	.00
.25	1030.39	1.09	487.	3171.	7.33	14.00	.00
.10	1029.44	.14	385.	564.	2.67	15.33	.00
.08	1029.08	.00	346.	317.	.00	16.00	.00
.06	1028.58	.00	296.	241.	.00	16.00	.00
.04	1028.07	.00	245.	163.	.00	16.00	.00
.03	1027.81	.00	221.	123.	.00	16.00	.00
.02	1027.55	.00	196.	83.	.00	16.00	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION SipRes
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	997.00	1000.60	1000.60
STORAGE	21.	81.	81.
OUTFLOW	0.	743.	743.

RATIO OF PMP	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1013.89	13.29	875.	42422.	23.67	14.67	.00
.50	1008.19	7.59	421.	19439.	21.00	14.67	.00
.25	1004.55	3.95	230.	8159.	17.33	15.00	.00
.10	1002.16	1.56	136.	2720.	10.33	15.33	.00
.08	1001.79	1.19	123.	2098.	8.33	15.67	.00
.06	1001.39	.79	109.	1517.	6.00	16.00	.00
.04	1000.90	.30	92.	960.	3.00	16.33	.00
.03	1000.40	.00	75.	681.	.00	16.67	.00
.02	999.60	.00	53.	459.	.00	16.67	.00