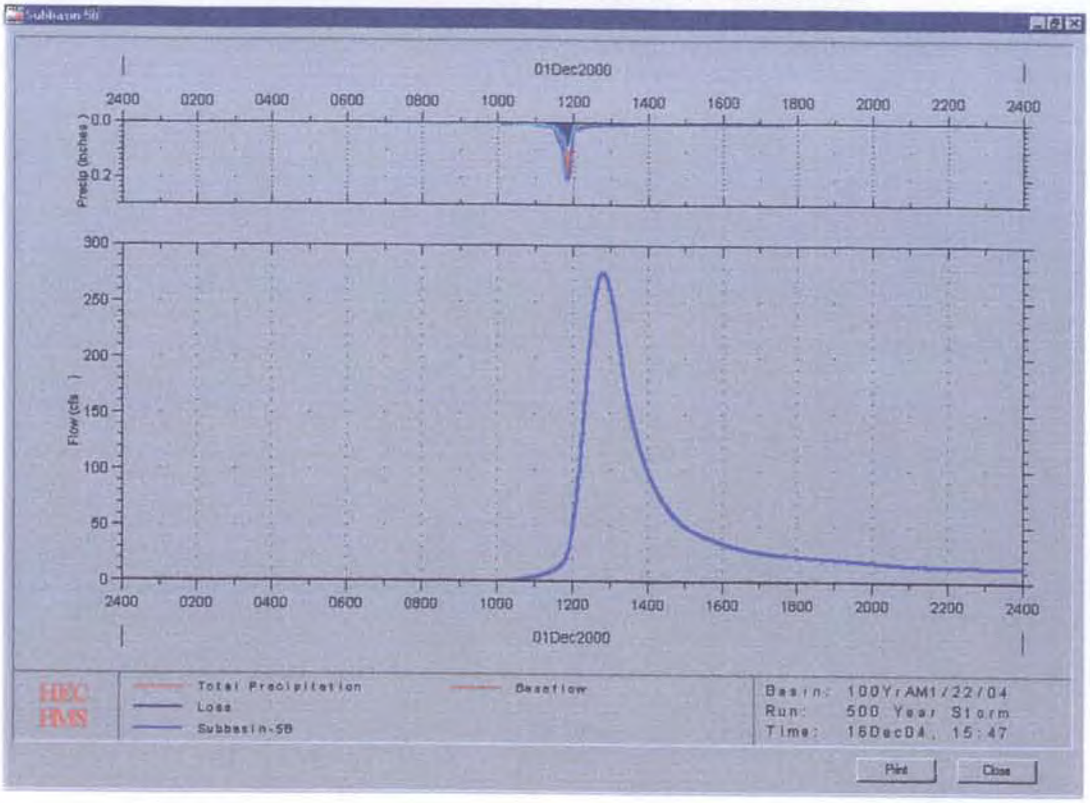
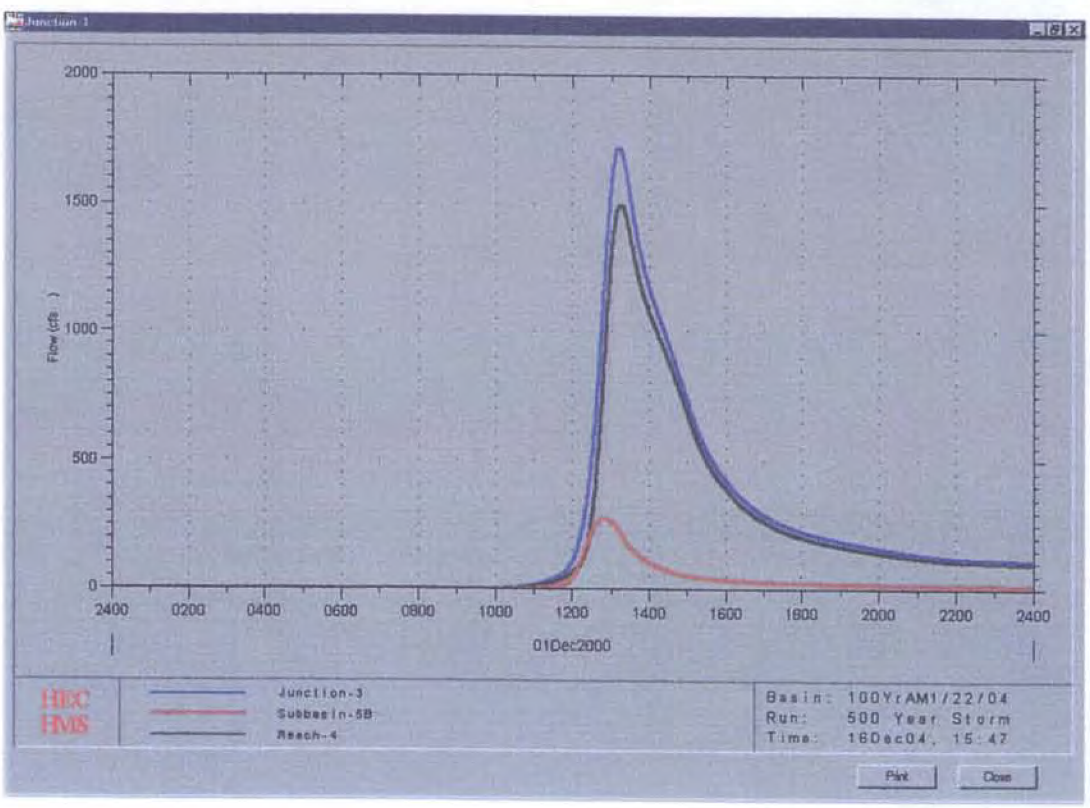
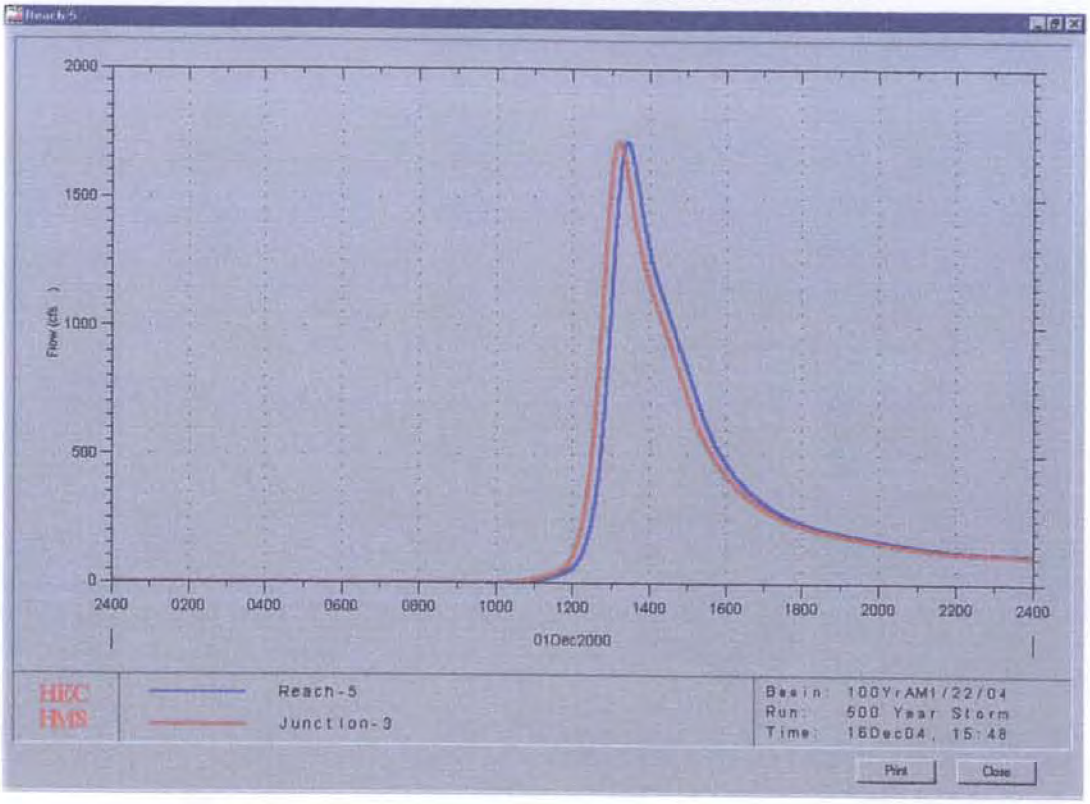
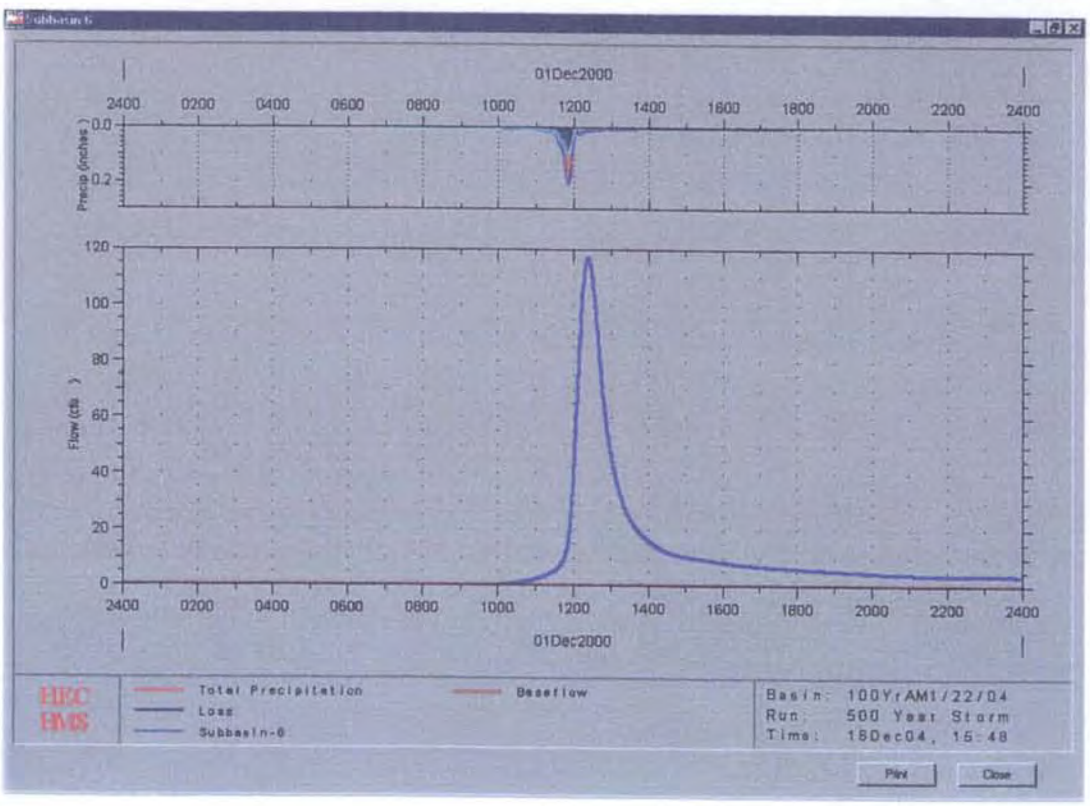
WCS FACILITY
FLOOD PLAIN STUDY HYDROGRAPHS



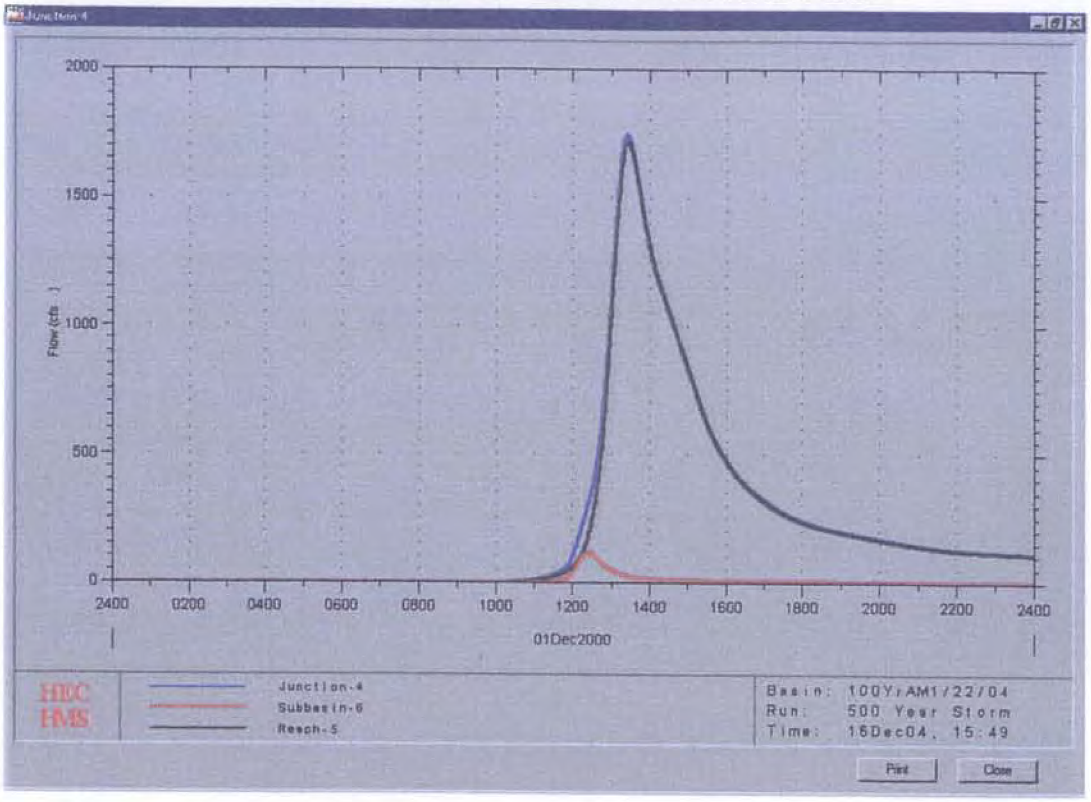


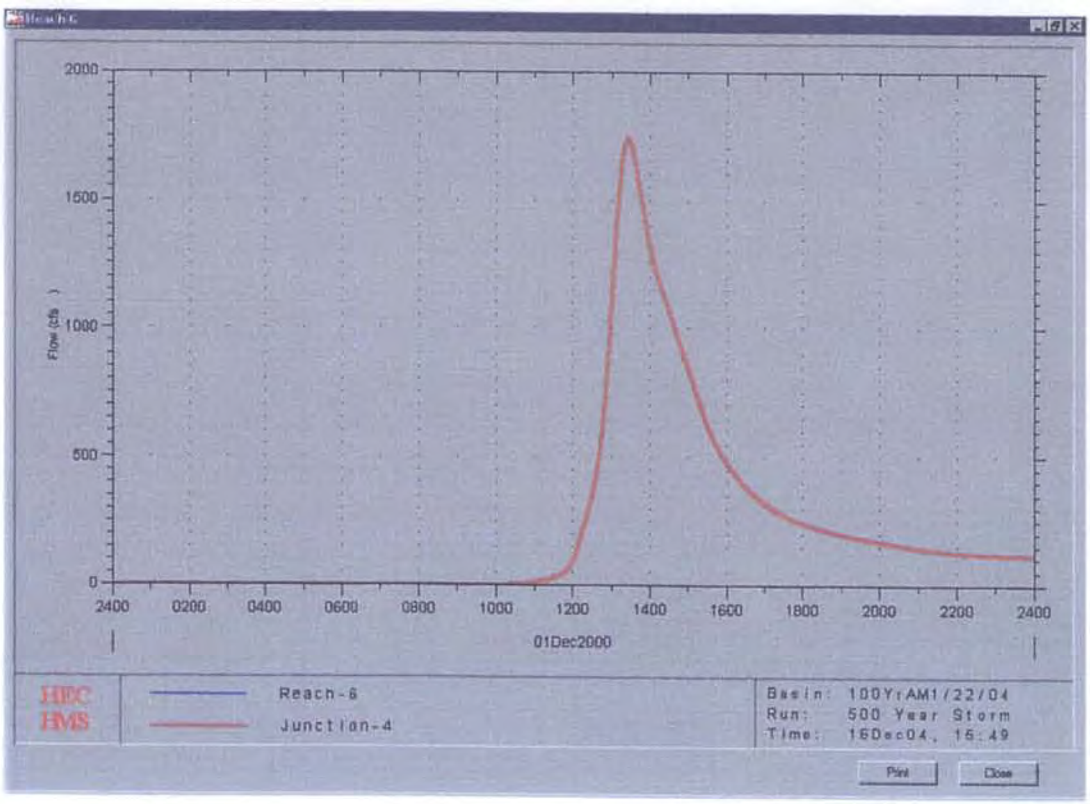
WCS FACILITY
FLOOD PLAIN STUDY HYDROGRAPHS



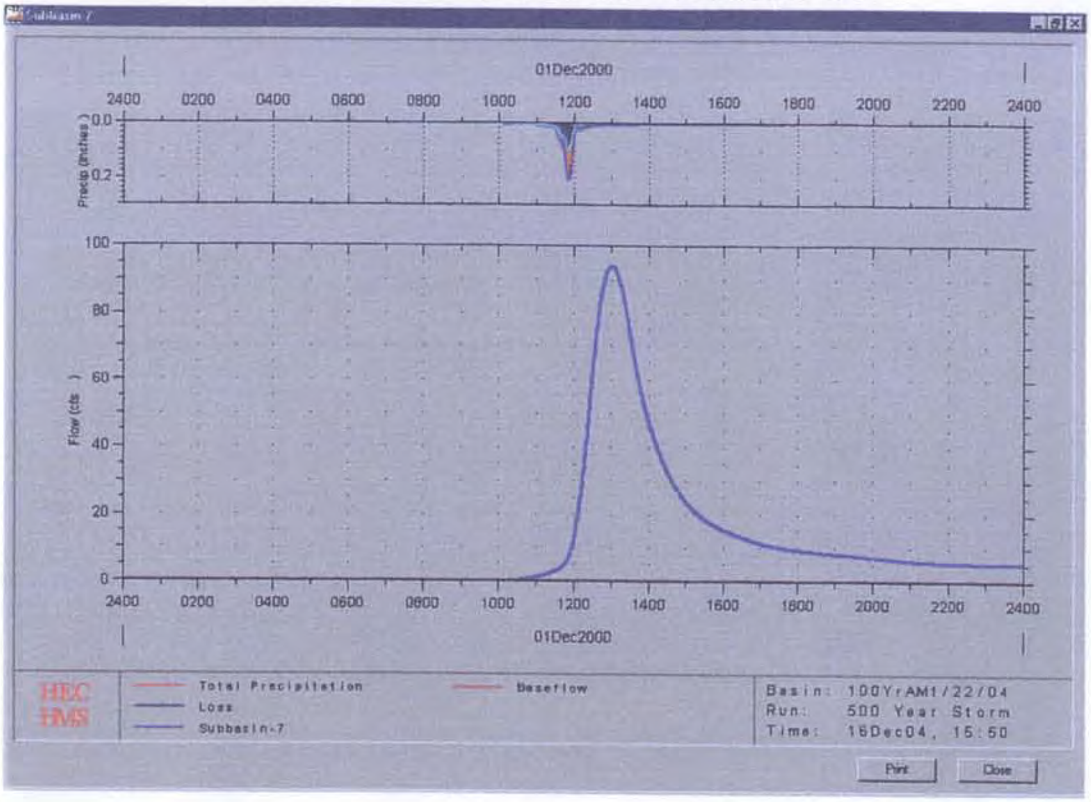


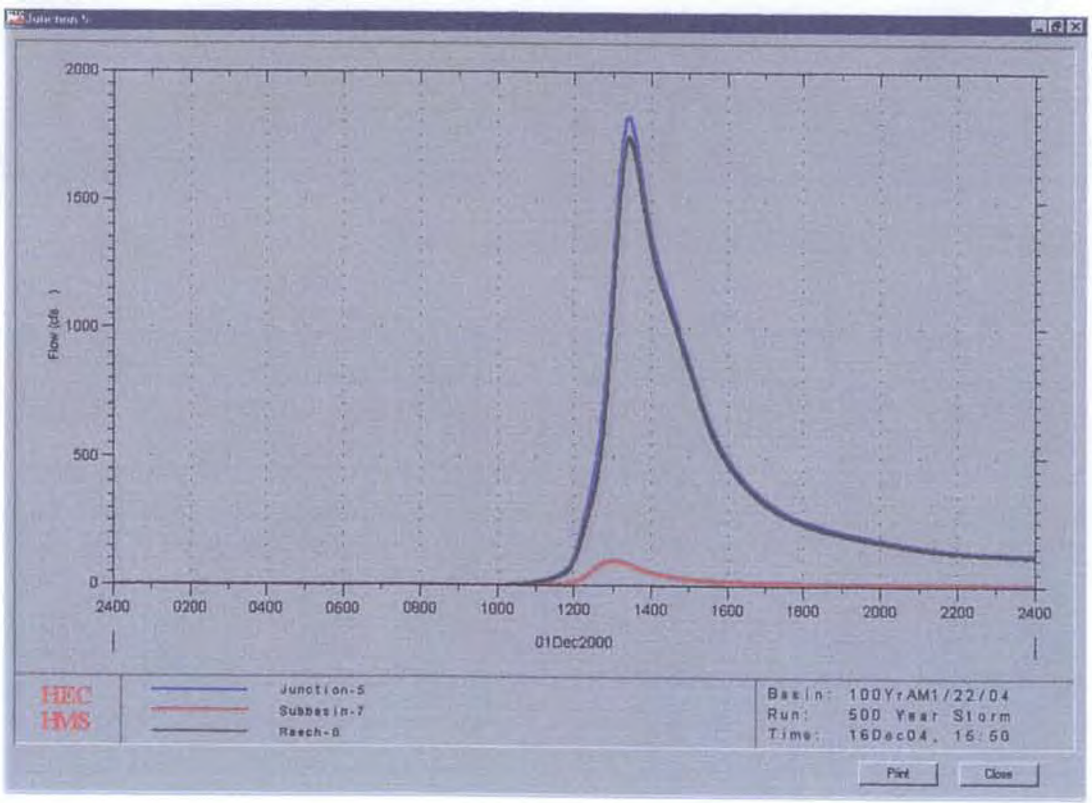
WCS FACILITY
FLOOD PLAIN STUDY HYDROGRAPHS





WCS FACILITY
FLOOD PLAIN STUDY HYDROGRAPHS





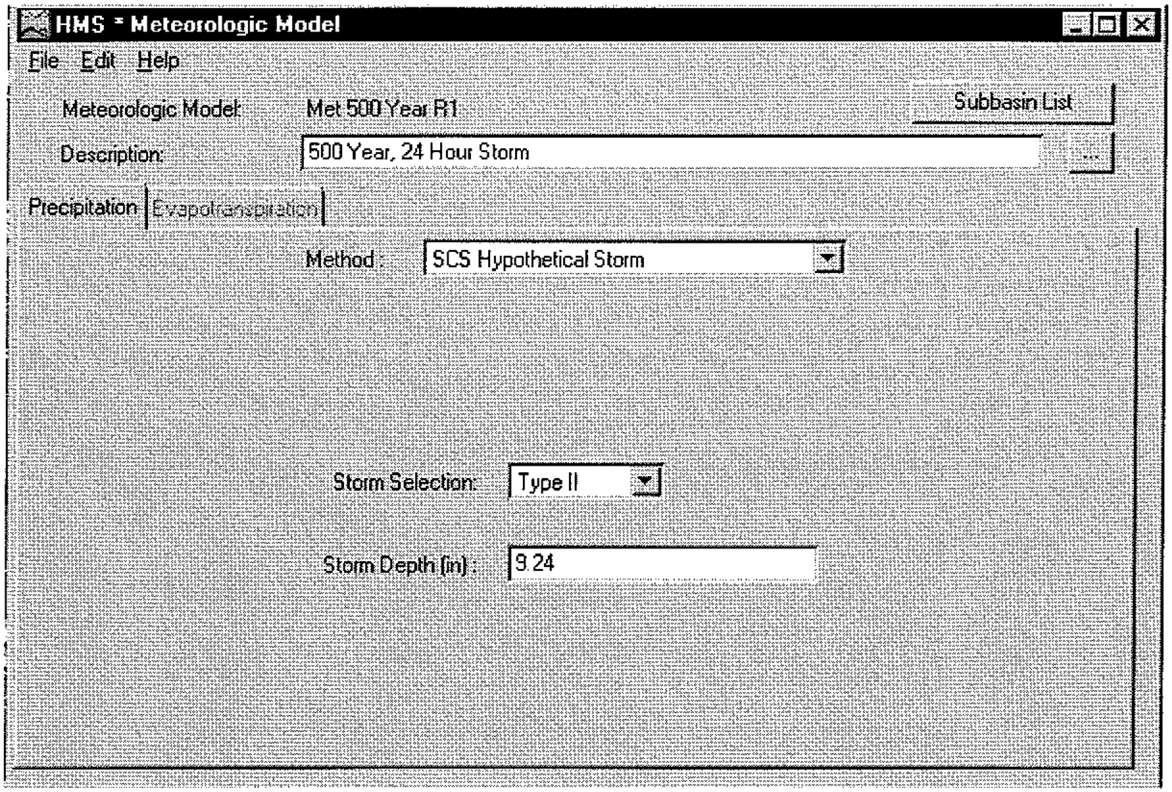
HMS * Summary of Results

Project : WCS   Run Name : 500 Year R1

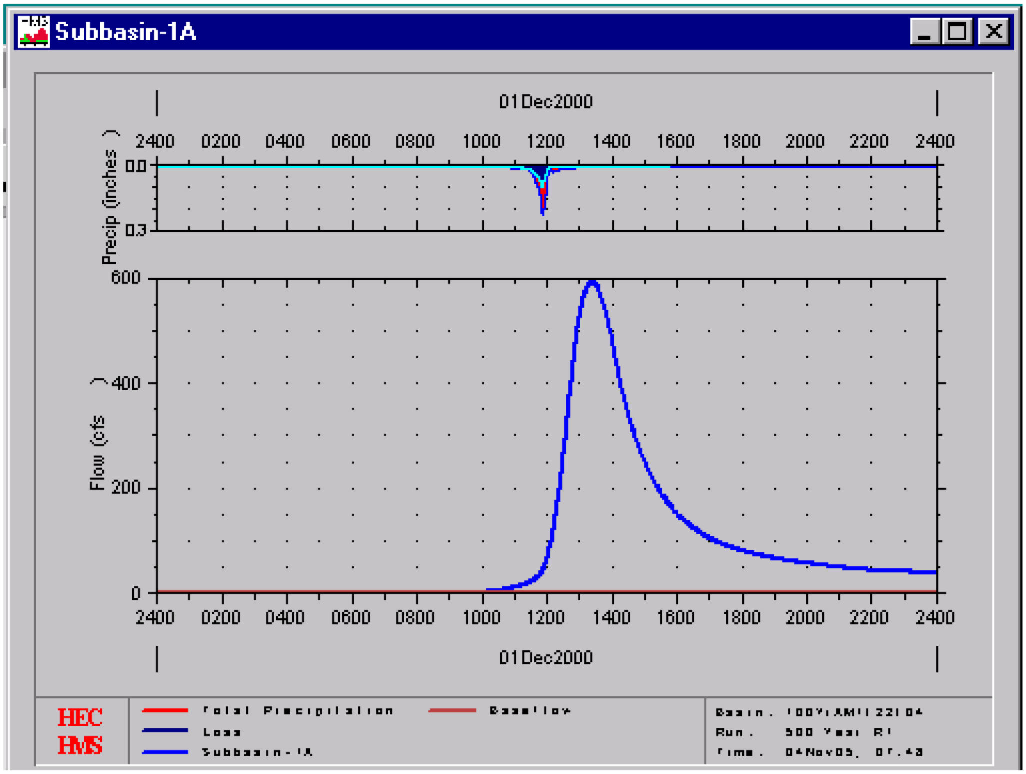
Start of Run	: 01Dec00 0000	Basin Model	:	100YrAM1/22/04
End of Run	: 02Dec00 0000	Met. Model	:	Met 500 Year R1
Execution Time	: 03Nov05 1631	Control Specs	:	Control 1

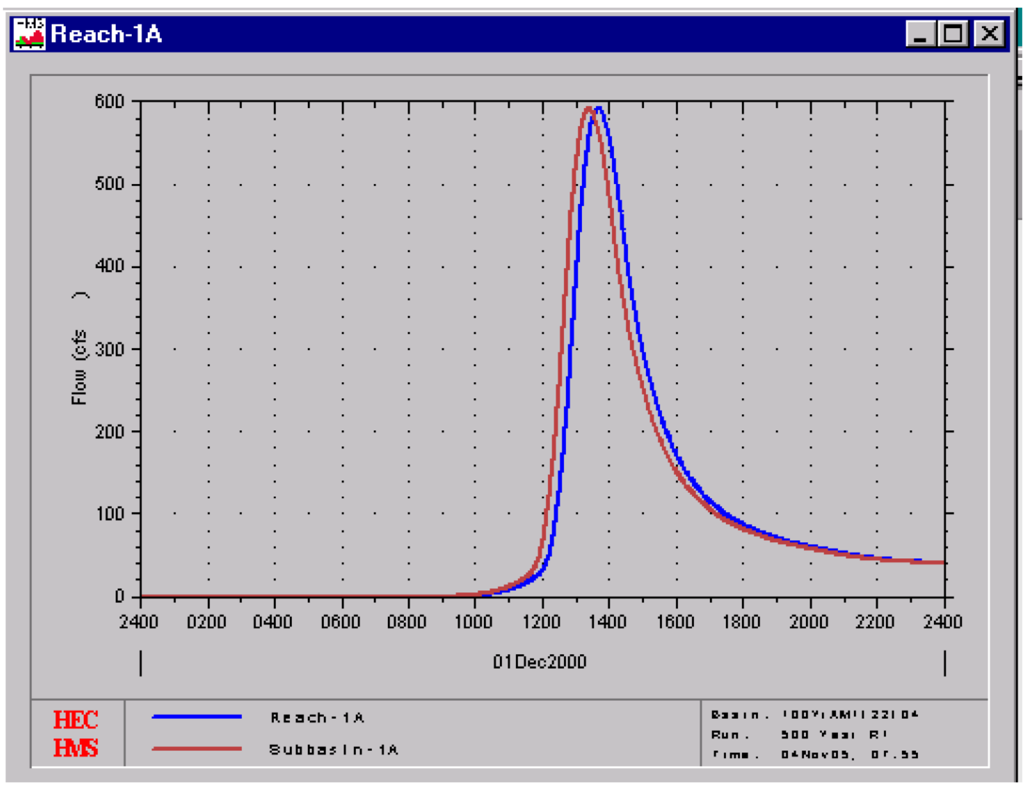
Hydrologic Element	Discharge Peak (cfs)	Time of Peak	Volume (ac ft)	Drainage Area (sq mi)
Subbasin-4	714.02	01 Dec 00 1233	110.29	0.490
Reach-2	714.02	01 Dec 00 1248	109.75	0.490
Subbasin-2	1057.3	01 Dec 00 1302	236.57	1.063
playa	0.0	30 Nov 00 2400	0.0	1.063
Reach-1	0.0	30 Nov 00 2400	0.0	1.063
Subbasin-1A	591.53	01 Dec 00 1325	161.43	0.691
Reach-1A	591.53	01 Dec 00 1342	160.49	0.691
Subbasin-1B	418.70	01 Dec 00 1239	70.527	0.314
Junction-1A	750.62	01 Dec 00 1327	231.02	1.005
Reach-1B	750.62	01 Dec 00 1330	230.78	1.005
Subbasin-3	208.01	01 Dec 00 1239	35.039	0.156
Junction-1	857.40	01 Dec 00 1300	265.82	2.224
Reach-3	857.40	01 Dec 00 1317	264.27	2.224
Subbasin-5A	285.12	01 Dec 00 1232	43.236	0.192
Junction-2	1668.0	01 Dec 00 1253	417.25	2.906
Reach-4	1668.0	01 Dec 00 1314	414.24	2.906
Subbasin-5B	307.55	01 Dec 00 1249	59.289	0.265
Junction-3	1913.6	01 Dec 00 1312	473.53	3.171
Reach-5	1913.6	01 Dec 00 1326	471.22	3.171
Subbasin-6	130.23	01 Dec 00 1223	16.721	0.074
Junction-4	1942.7	01 Dec 00 1325	487.94	3.245
Reach-6	1942.7	01 Dec 00 1325	487.94	3.245
Subbasin-7	104.67	01 Dec 00 1301	23.156	0.104
Junction-5	2031.8	01 Dec 00 1325	511.09	3.349

Meteorologic Model Input - 500-Year Storm

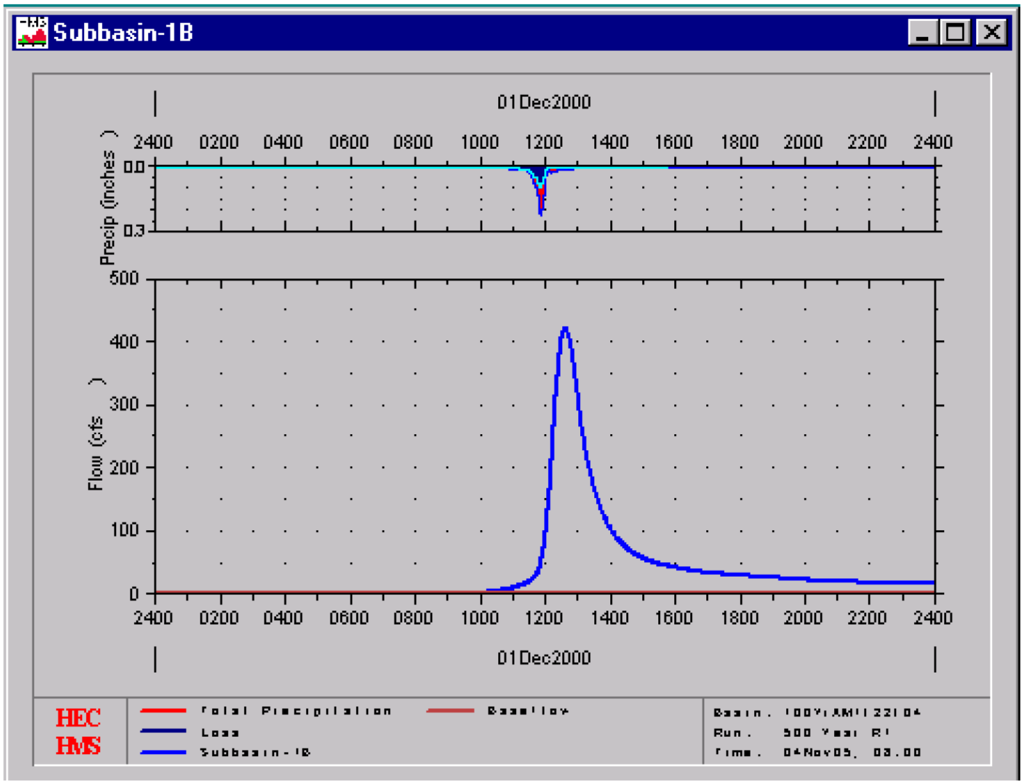


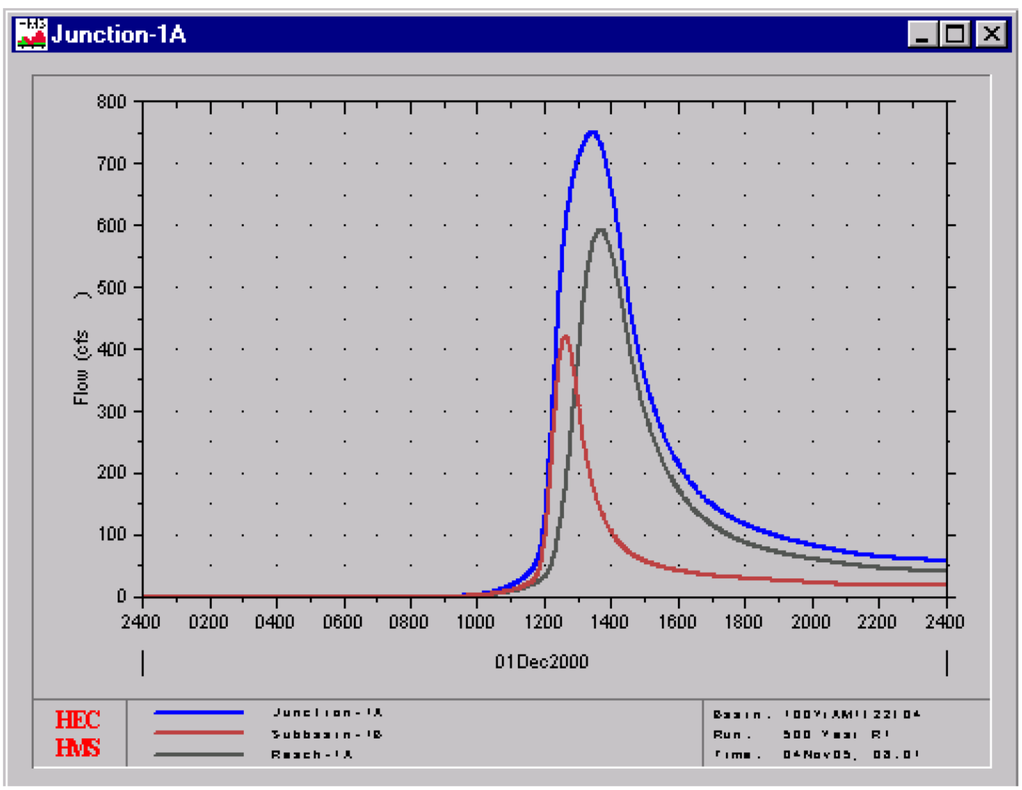
WCS FACILITY
FLOOD PLAIN STUDY HYDROGRAPHS



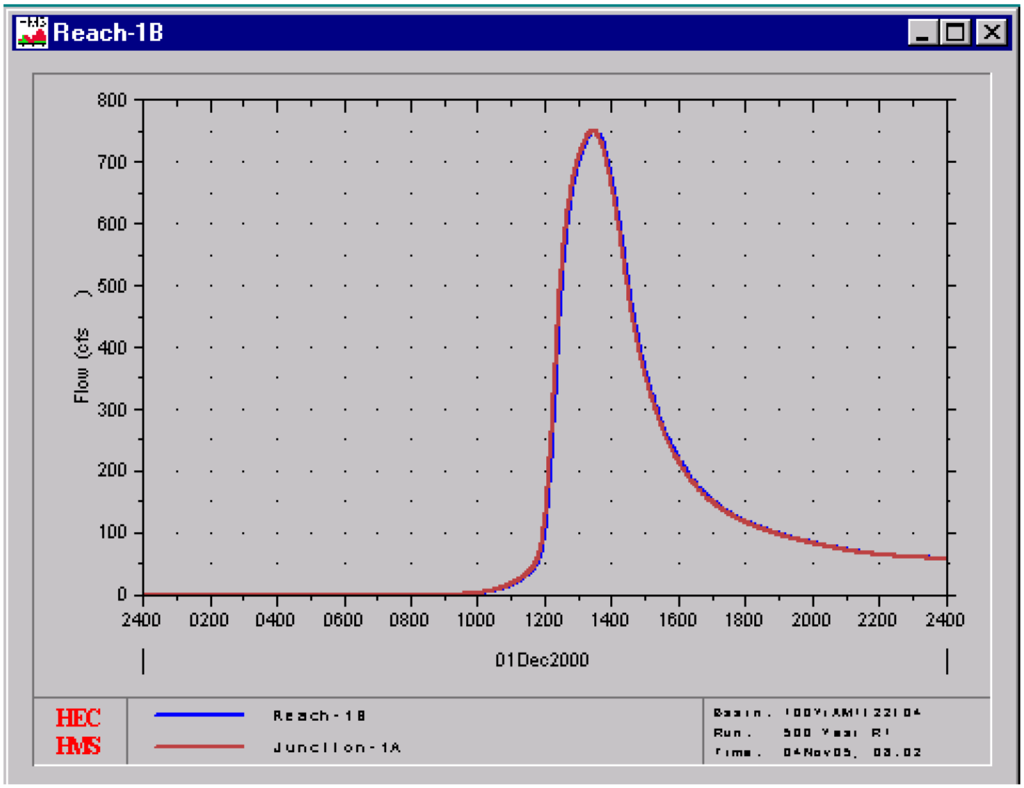


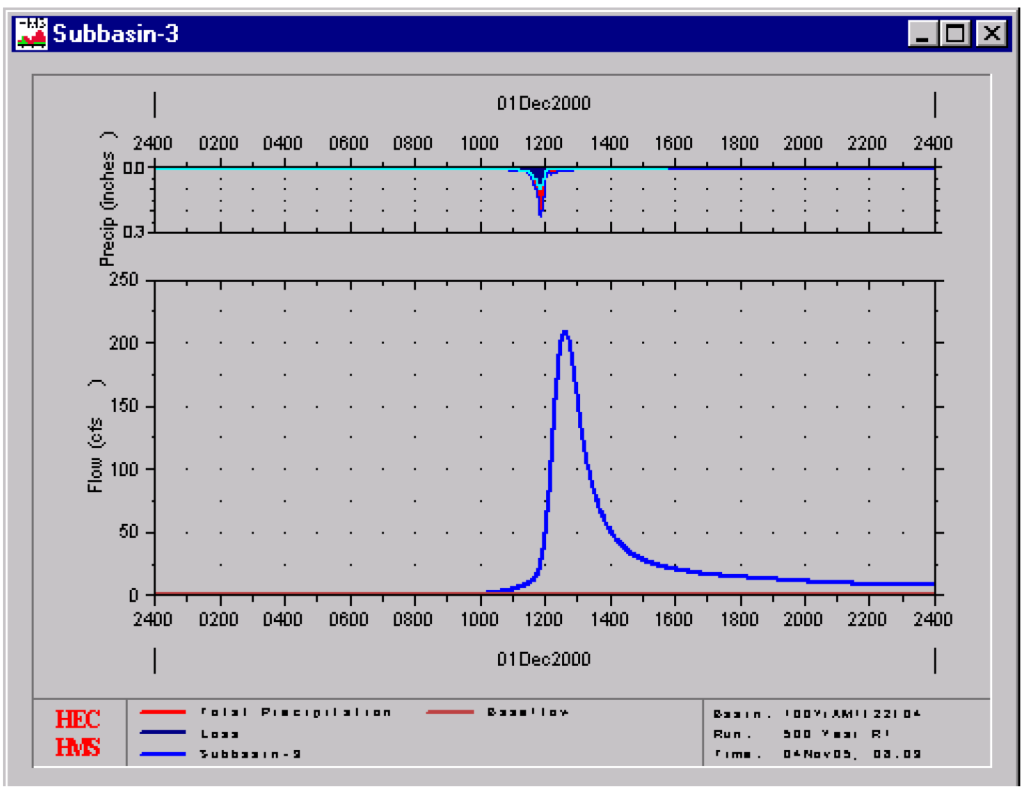
WCS FACILITY
FLOOD PLAIN STUDY HYDROGRAPHS





WCS FACILITY
FLOOD PLAIN STUDY HYDROGRAPHS





WCS FACILITY
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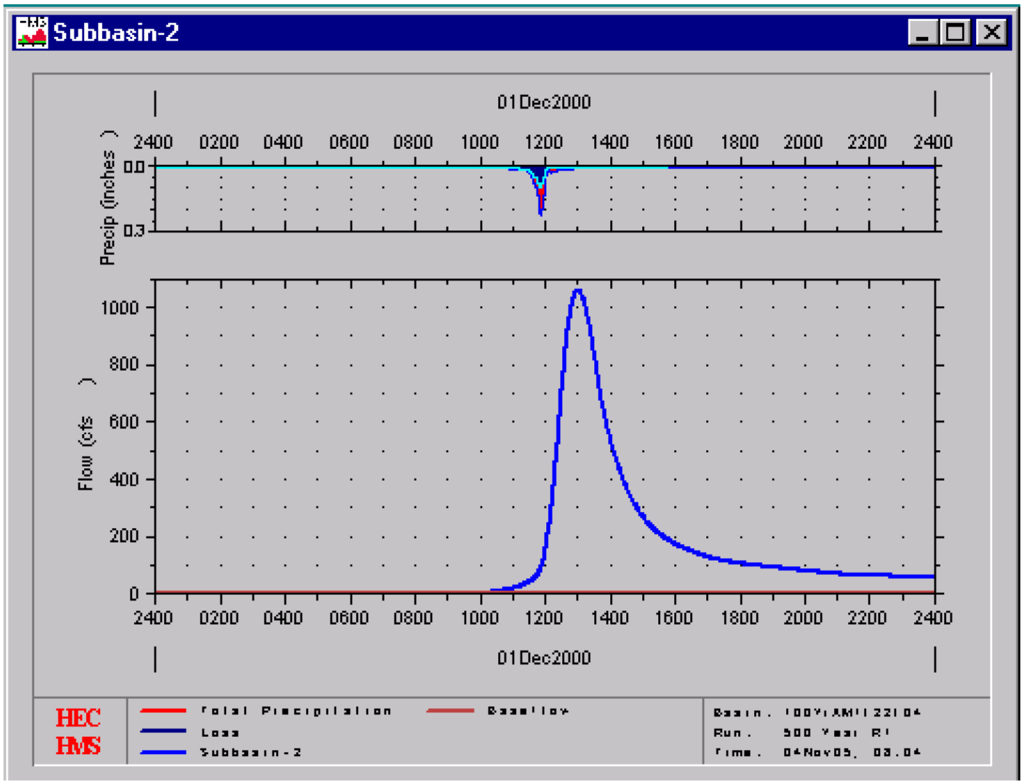
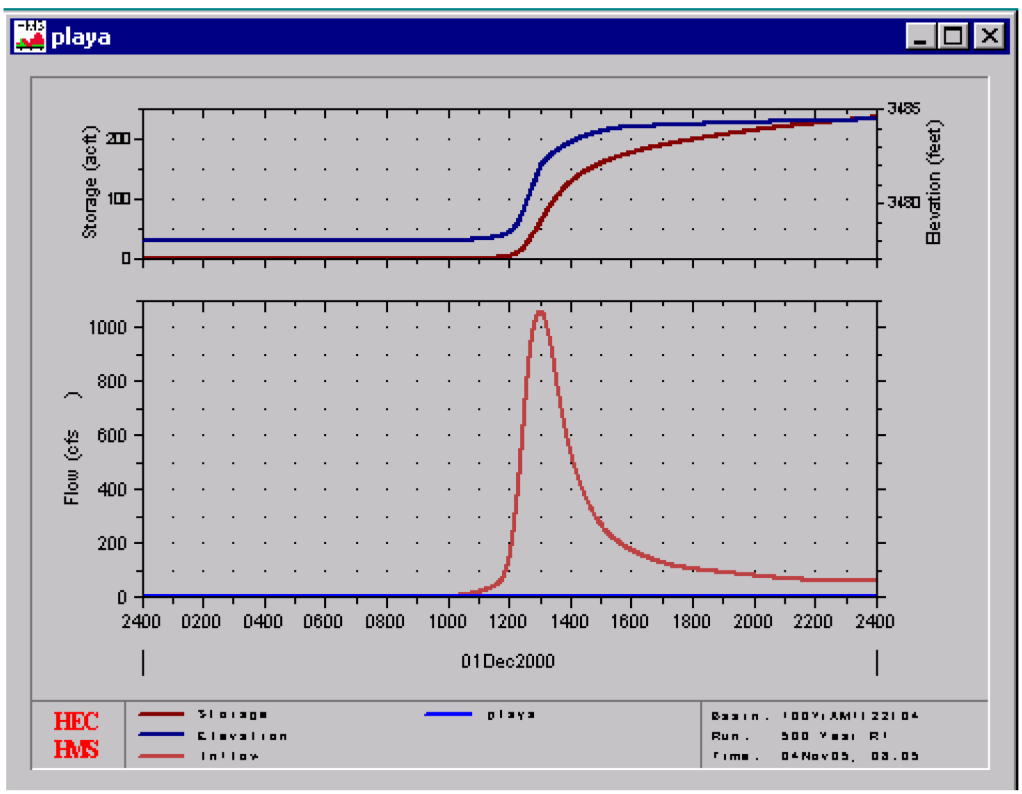
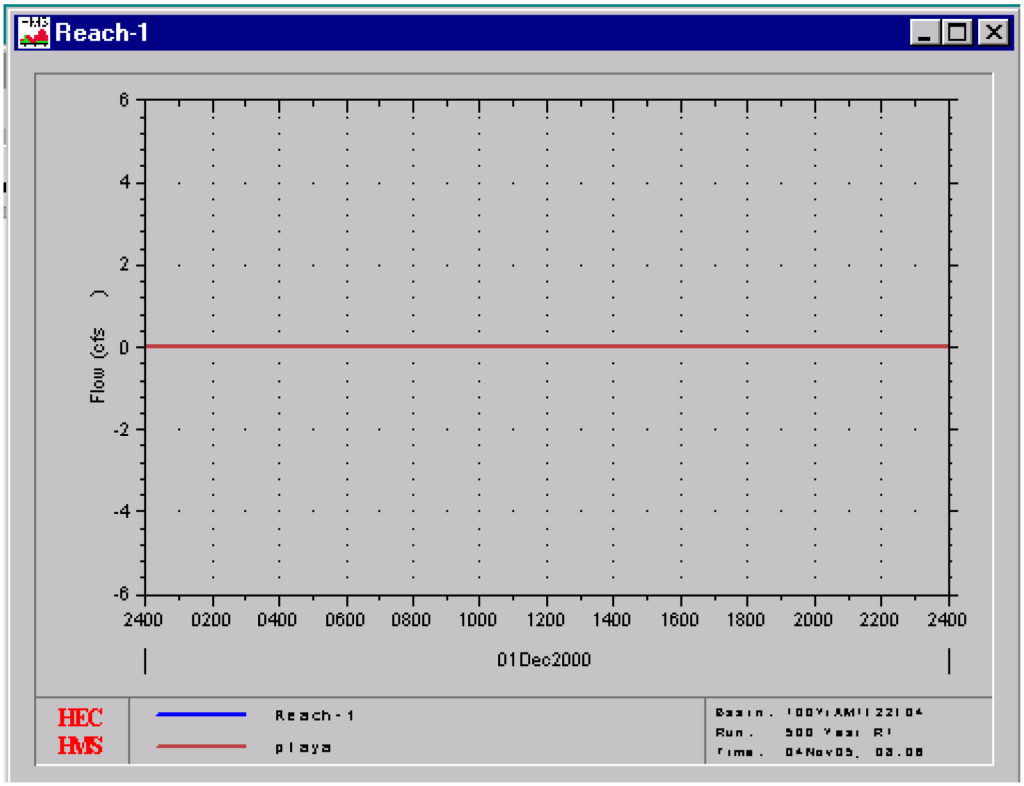
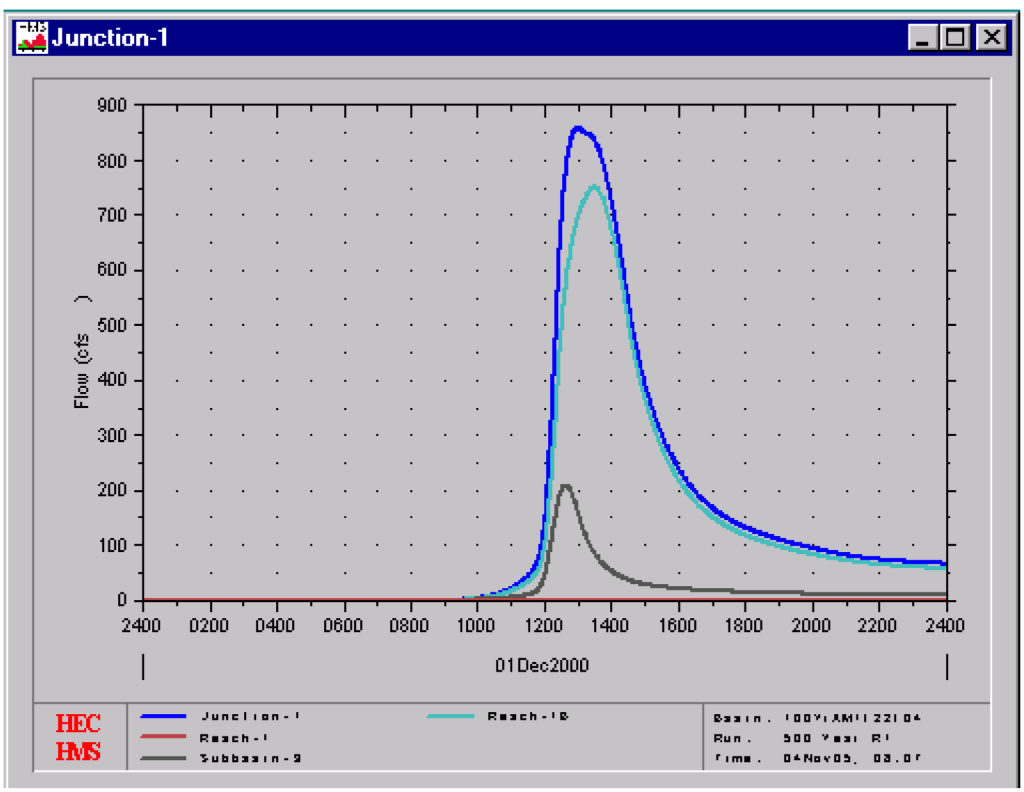


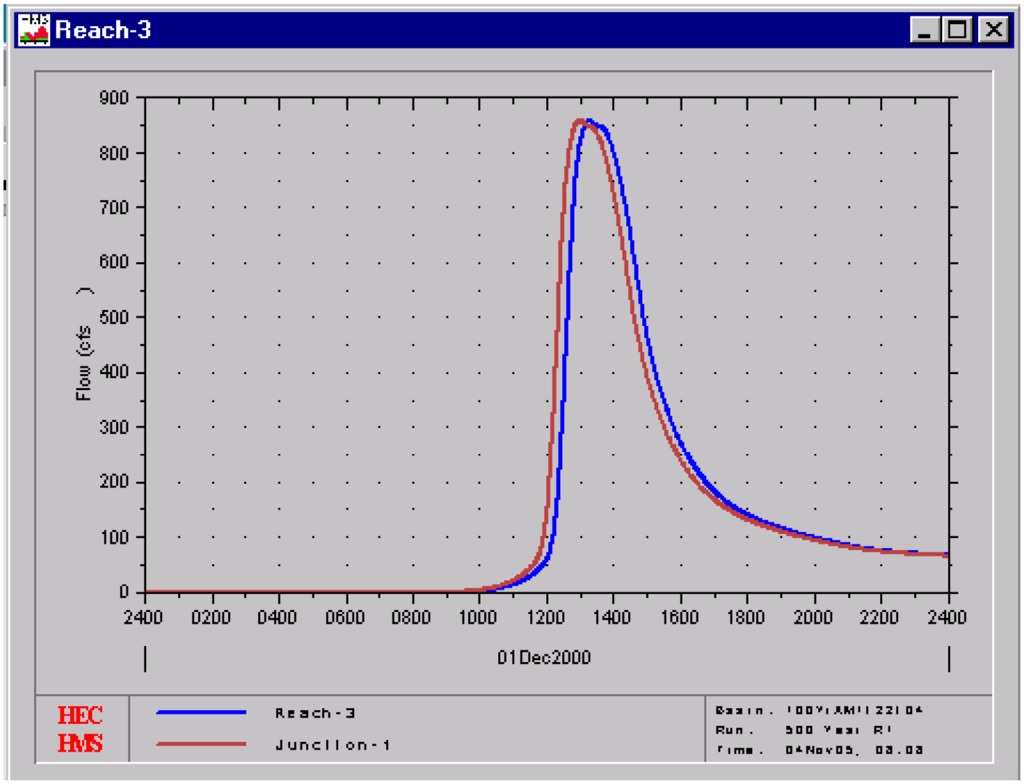


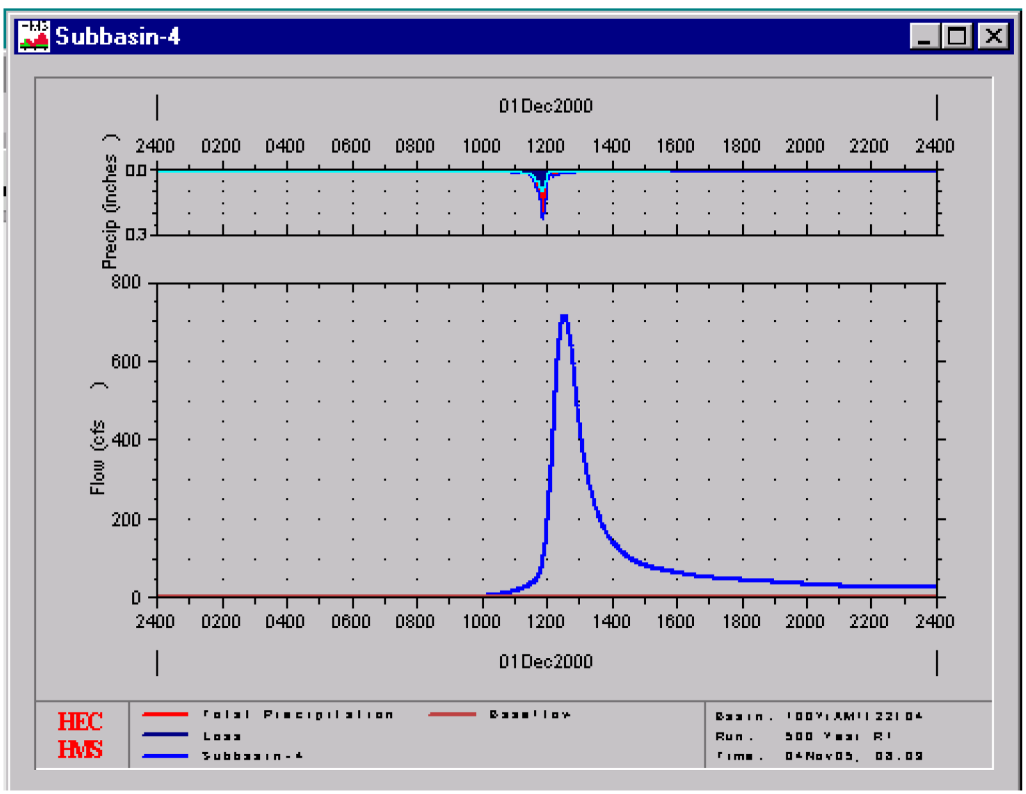
WCS FACILITY
FLOOD PLAIN STUDY HYDROGRAPHS



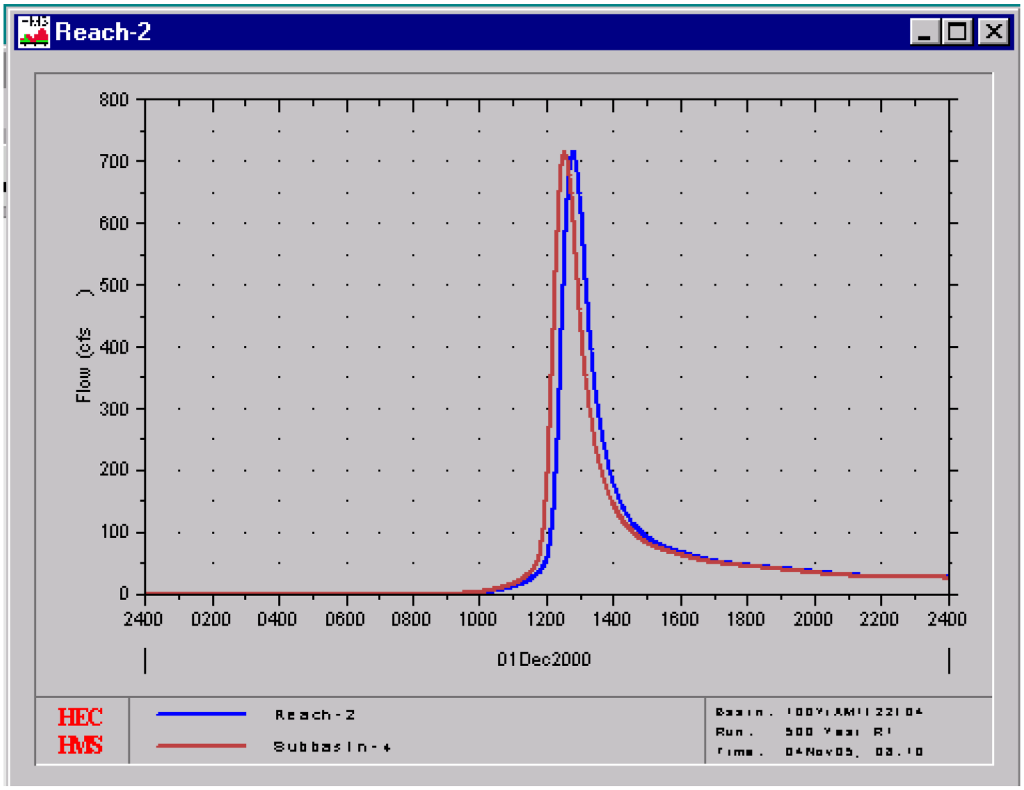


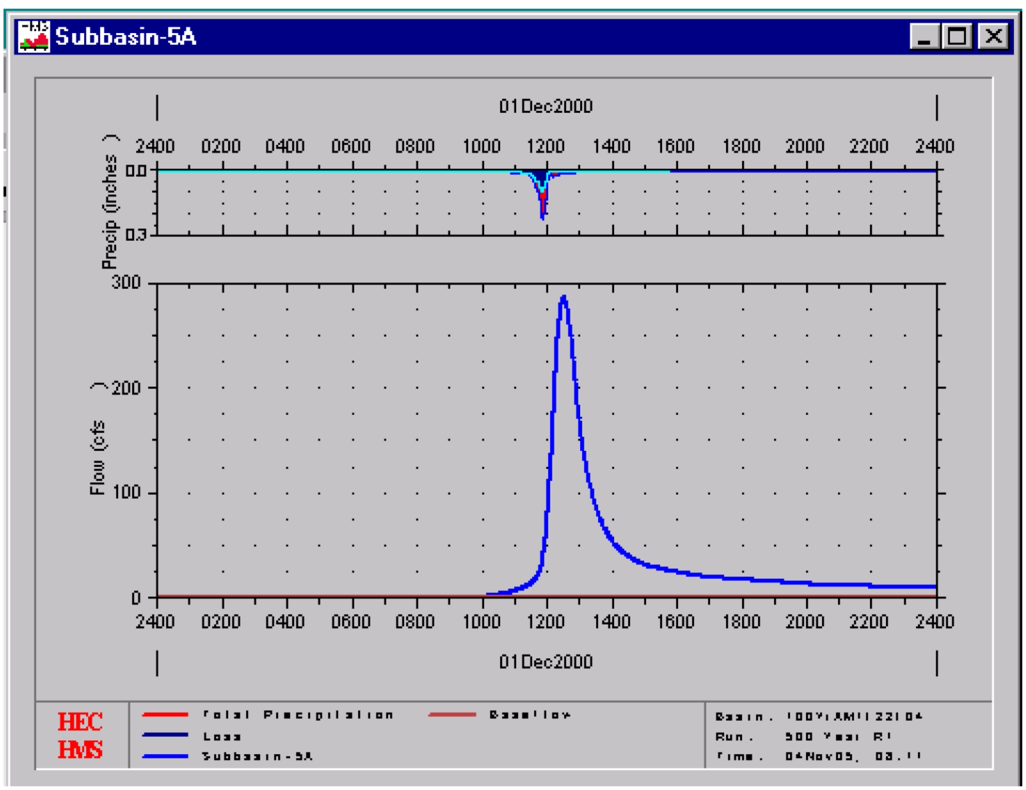
WCS FACILITY
FLOOD PLAIN STUDY HYDROGRAPHS



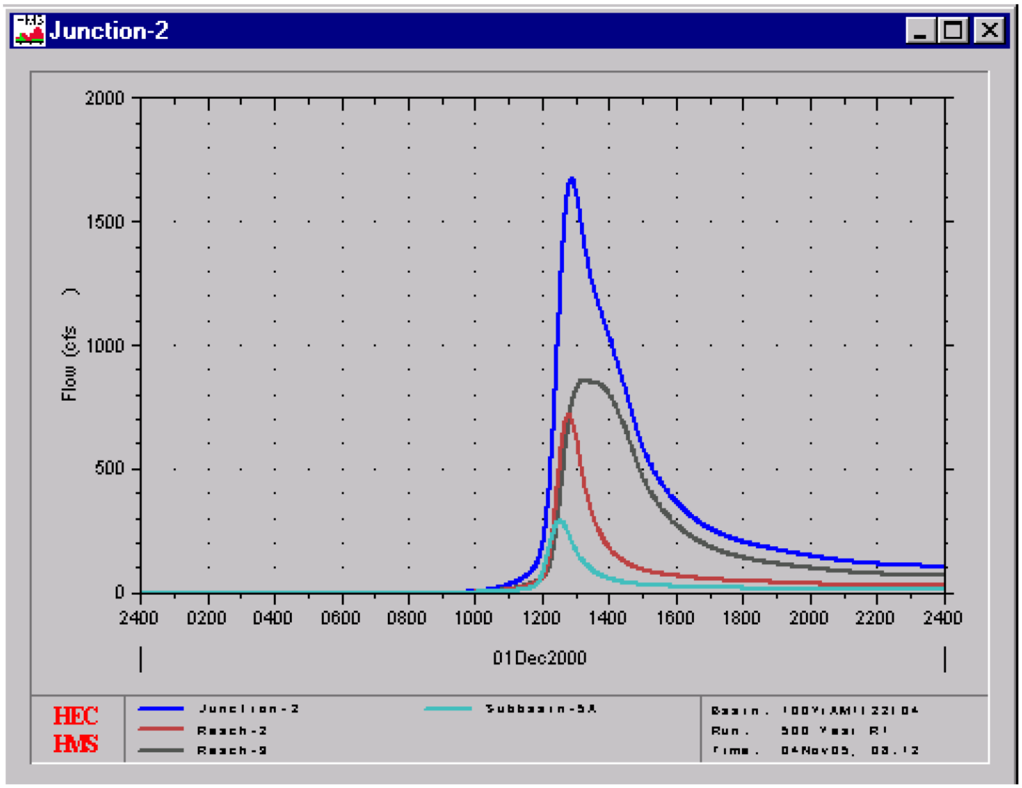


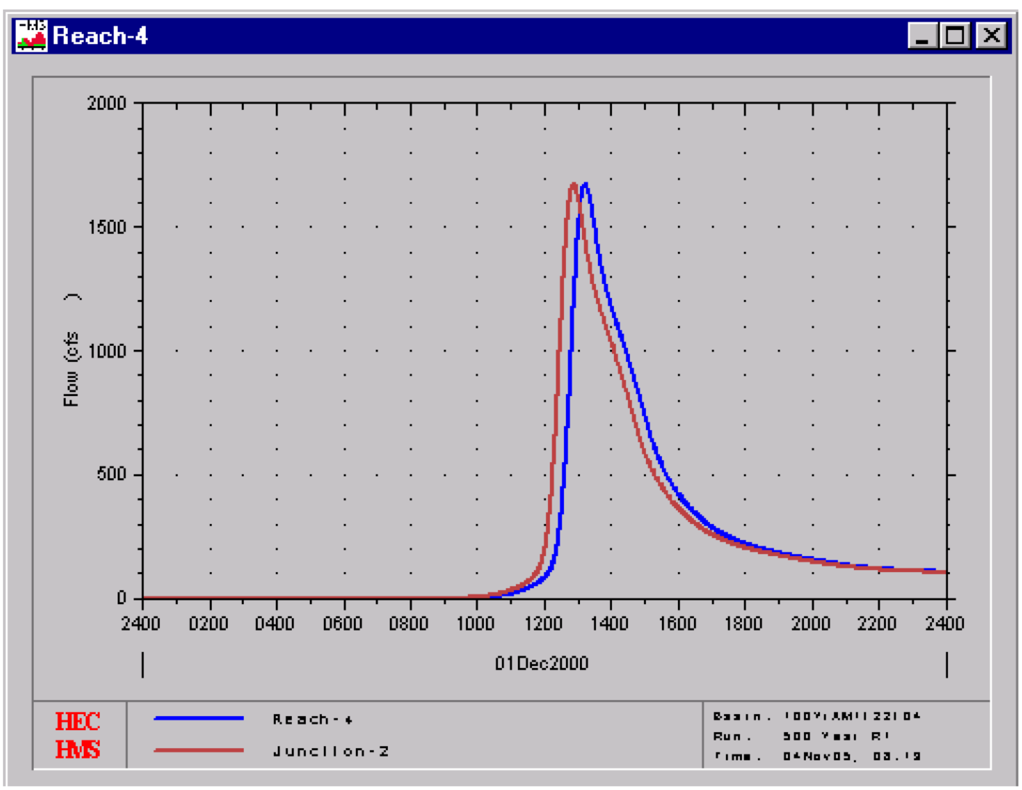
WCS FACILITY
FLOOD PLAIN STUDY HYDROGRAPHS



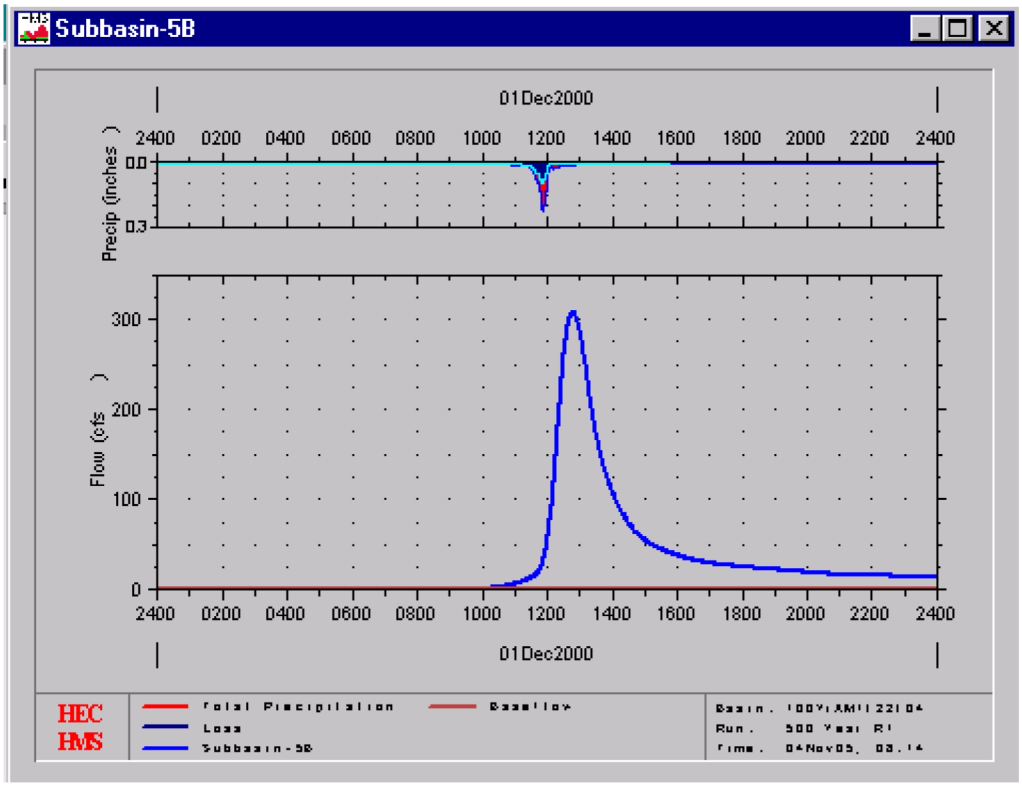


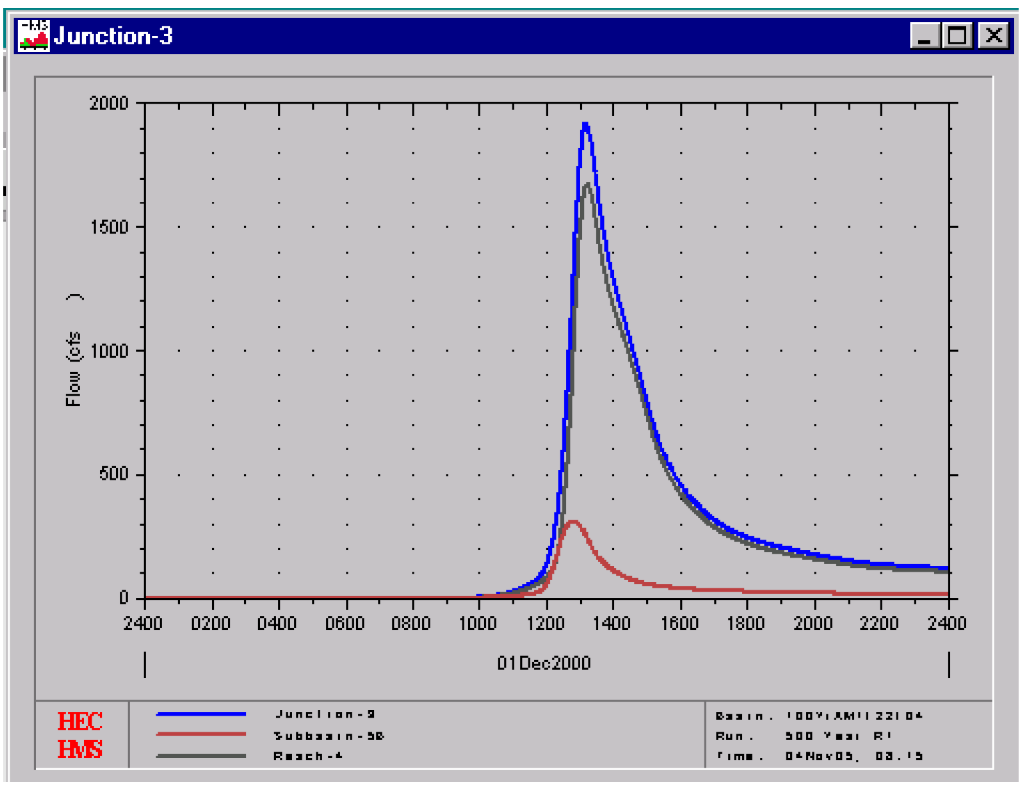
WCS FACILITY
FLOOD PLAIN STUDY HYDROGRAPHS



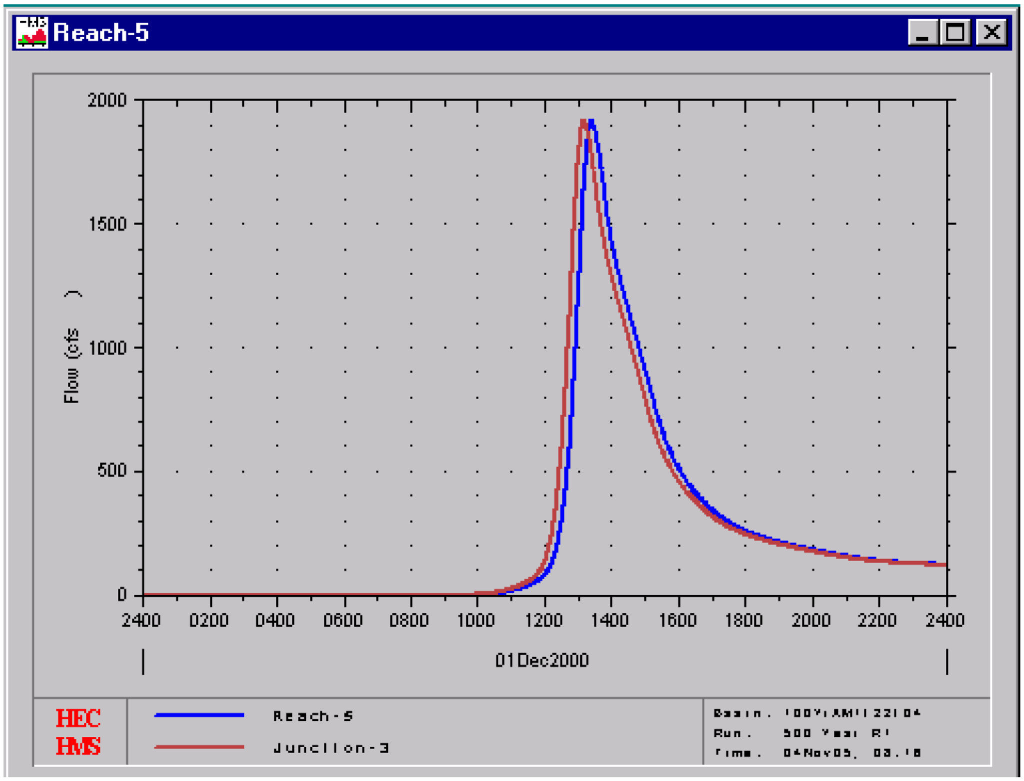


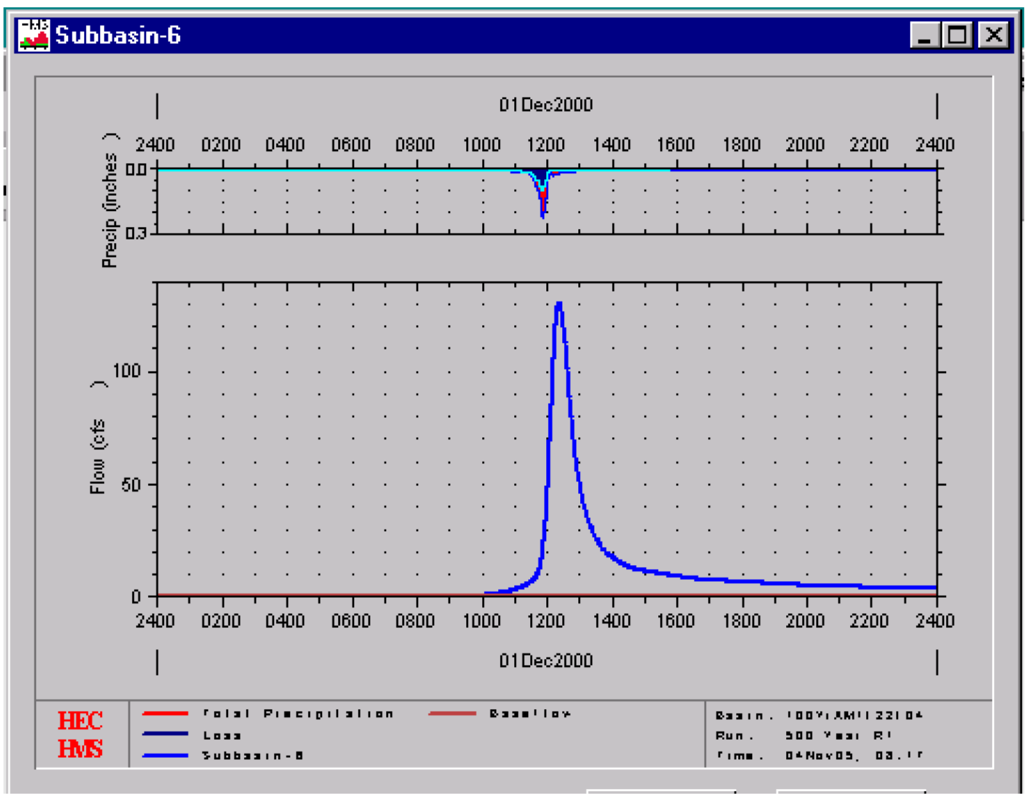
WCS FACILITY
FLOOD PLAIN STUDY HYDROGRAPHS



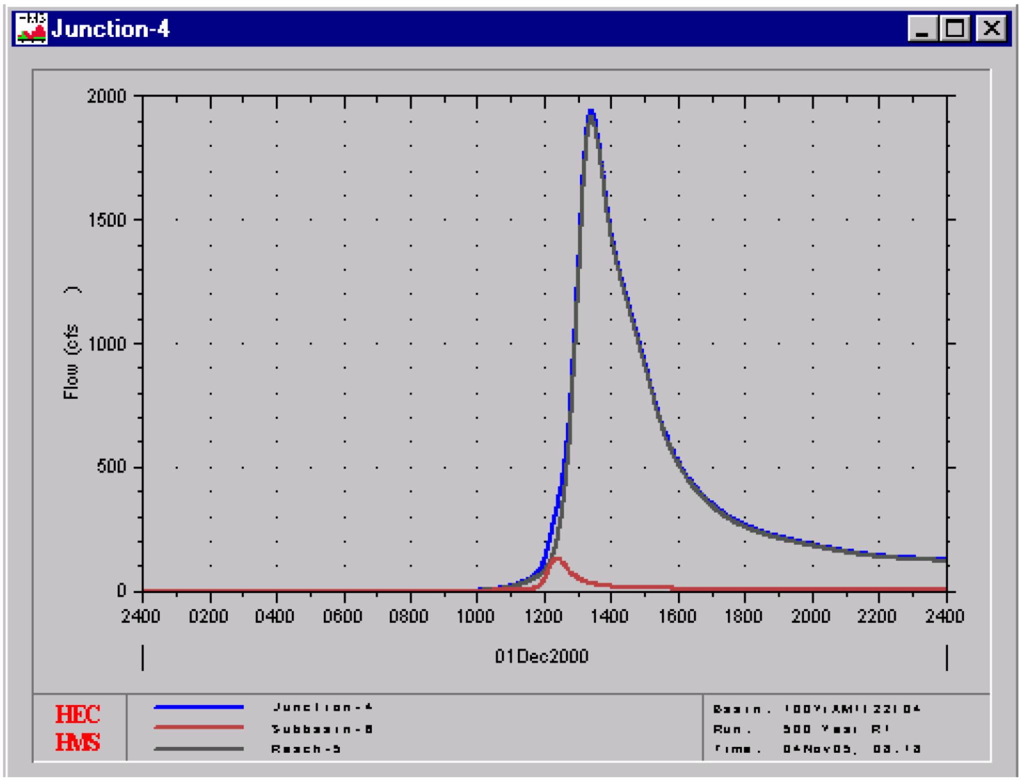


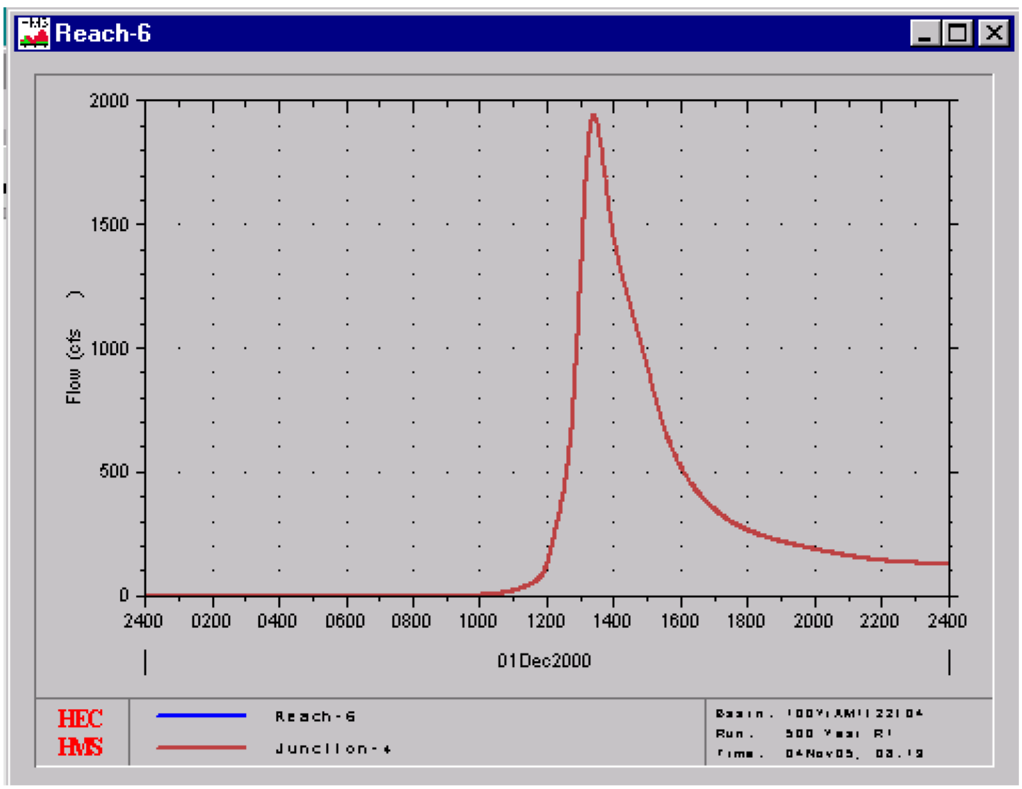
WCS FACILITY
FLOOD PLAIN STUDY HYDROGRAPHS



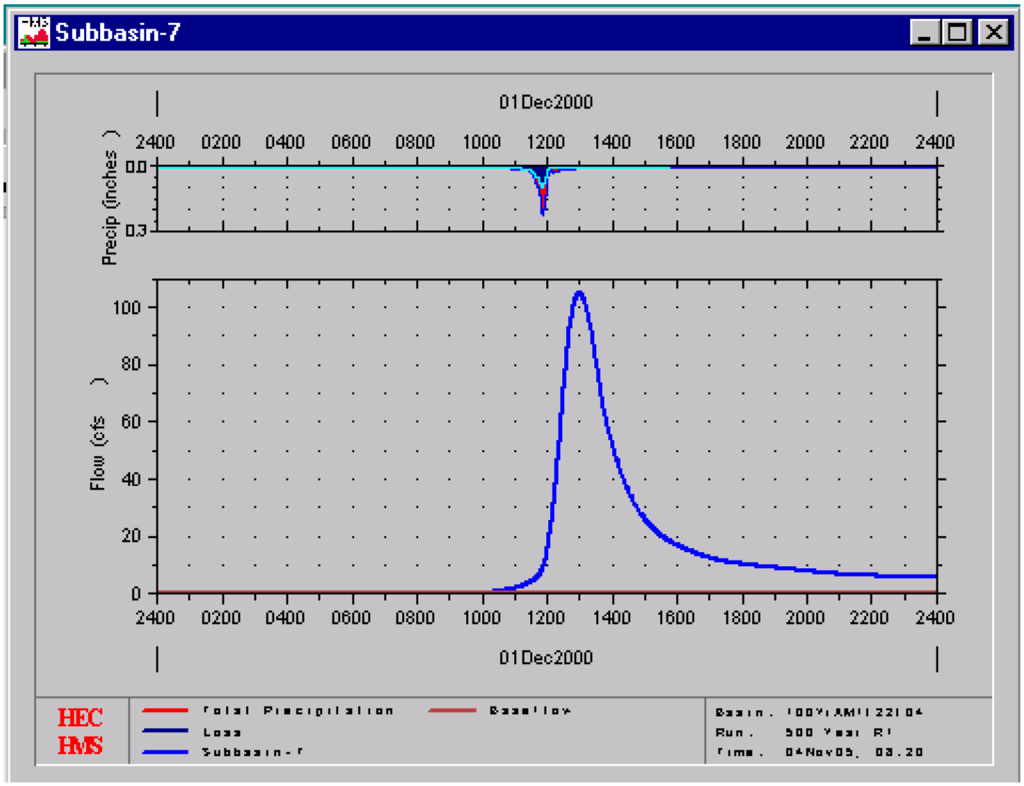


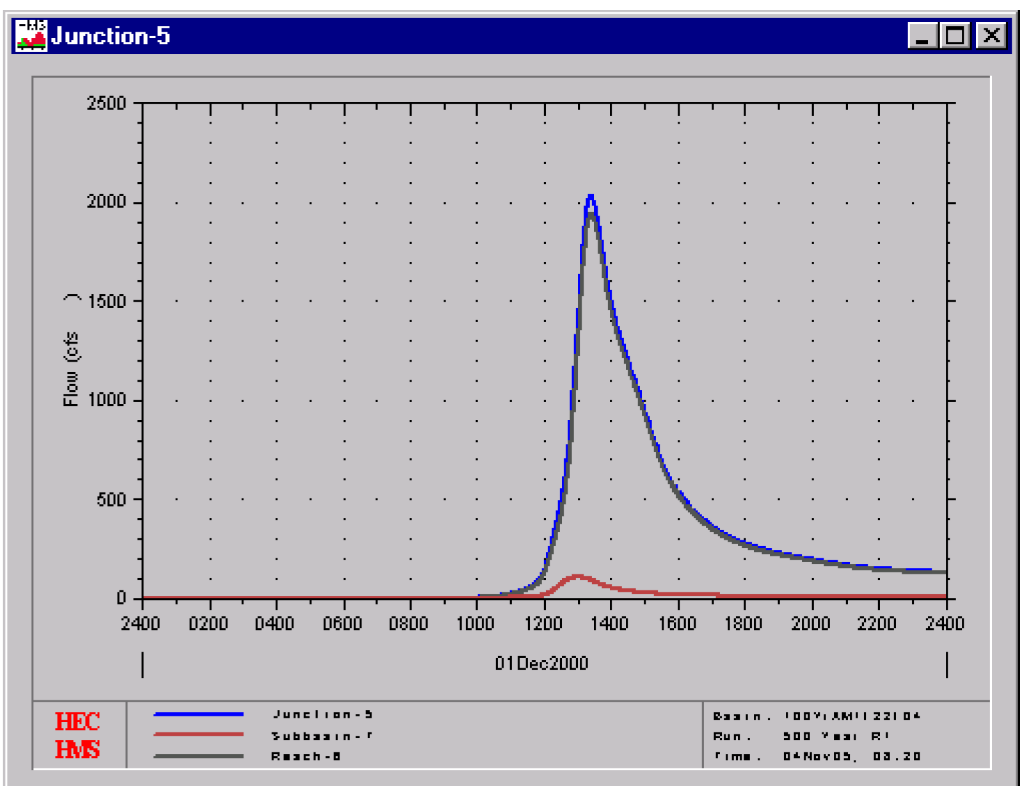
WCS FACILITY
FLOOD PLAIN STUDY HYDROGRAPHS





WCS FACILITY
FLOOD PLAIN STUDY HYDROGRAPHS





APPENDIX E

HEC-HMS MODEL FOR THE CALCULATION OF THE PMP PEAK DISCHARGES

STATE OF TEXAS
FREDERICK H. HAAS
55490
REGISTERED PROFESSIONAL ENGINEER

12/17/04

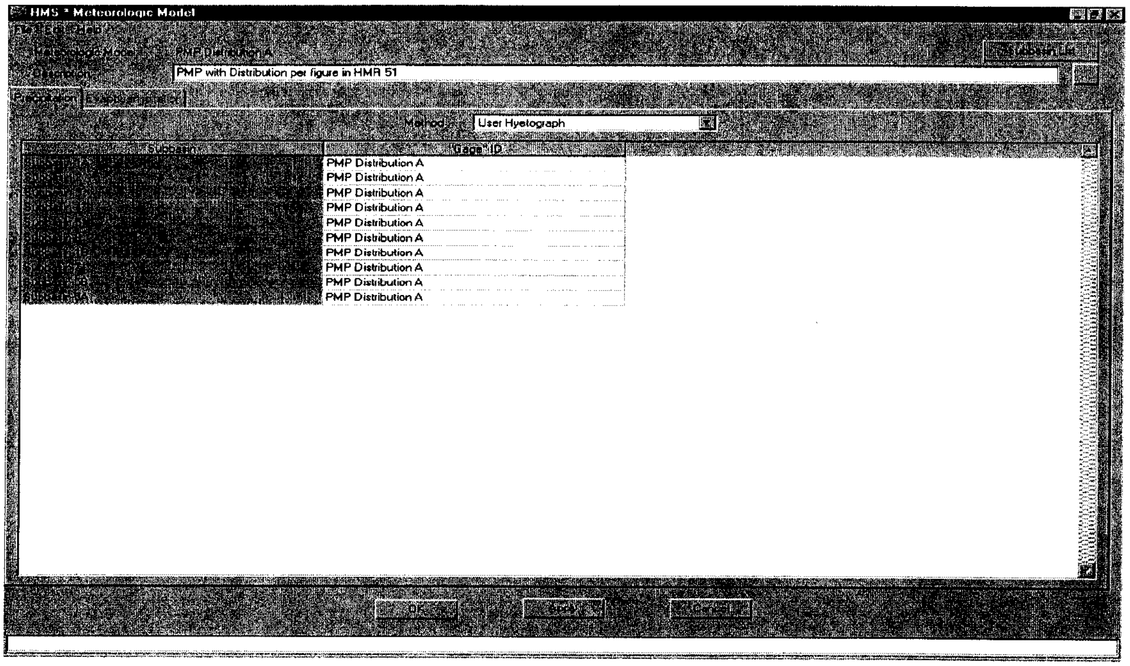
HMS * Summary of Results

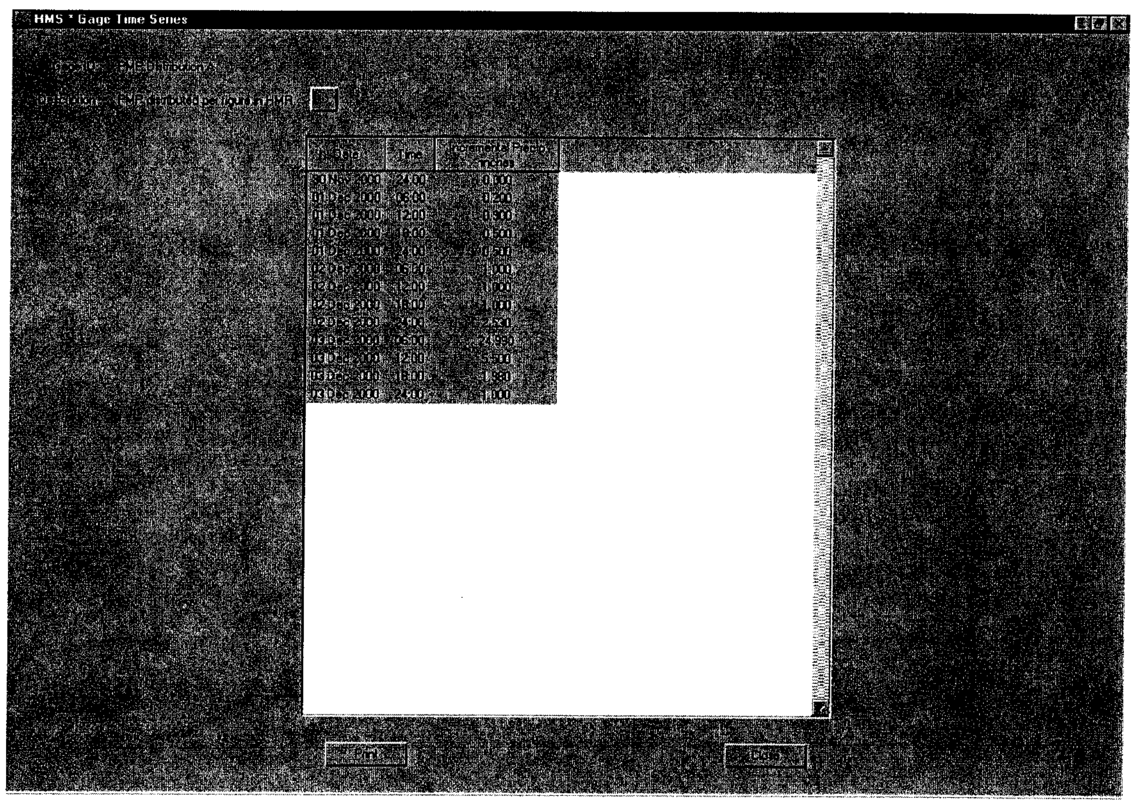
Project : WCS   Run Name : PMP Dist A

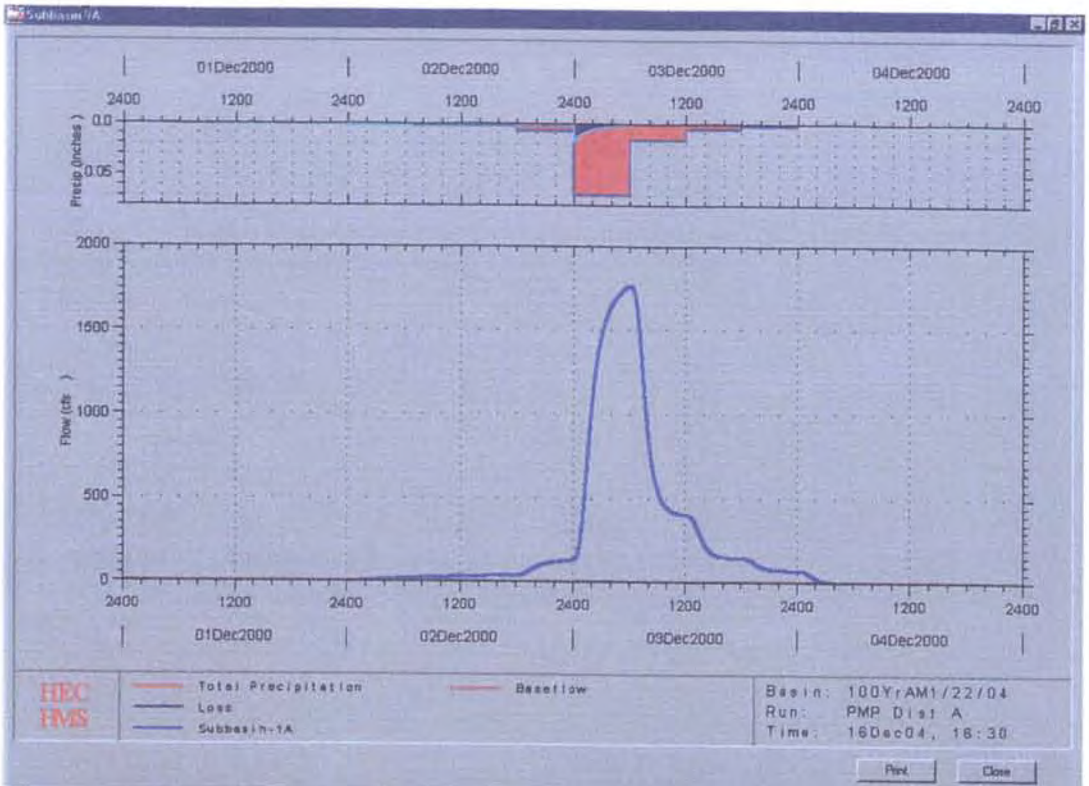
Start of Run : 01Dec00 0000   Basin Model : 100YrAM1/22/04
End of Run : 05Dec00 0000   Met. Model : PMP Distribution A
Execution Time : 15Dec04 1355   Control Specs : Control PMP

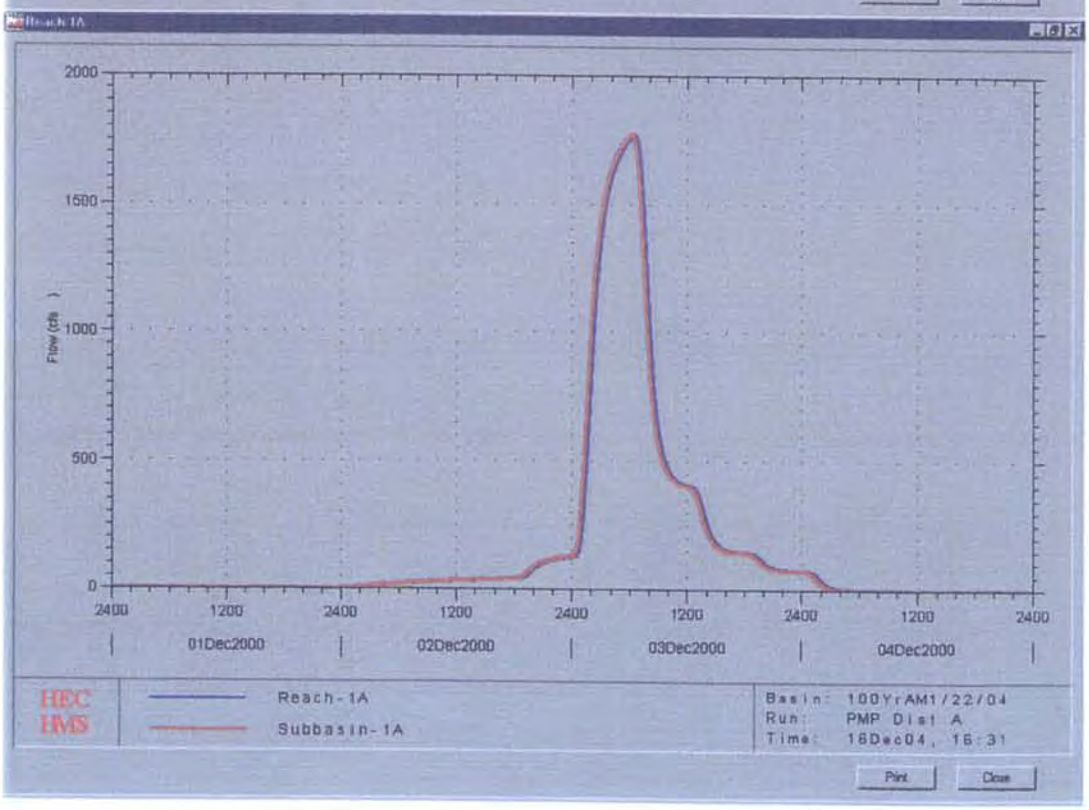
Hydrologic Element	Discharge Peak (cfs)	Time of Peak	Volume (ac ft)	Drainage Area (sq mi)
Subbasin-4	1265.5	03 Dec 00 0601	874.67	0.490
Reach-2	1265.5	03 Dec 00 0616	874.67	0.490
Subbasin-2	2726.0	03 Dec 00 0605	1897.5	1.063
playa	2194.2	03 Dec 00 0655	1440.5	1.063
Reach-1	2194.2	03 Dec 00 0730	1440.5	1.063
Subbasin-1A	1767.9	03 Dec 00 0610	1252.0	0.691
Reach-1A	1767.9	03 Dec 00 0627	1252.0	0.691
Subbasin-1B	809.97	03 Dec 00 0601	560.51	0.314
Junction-1A	2567.7	03 Dec 00 0606	1812.5	1.005
Reach-1B	2567.7	03 Dec 00 0609	1812.5	1.005
Subbasin-3	402.41	03 Dec 00 0601	278.47	0.156
Junction-1	4793.3	03 Dec 00 0625	3531.4	2.224
Reach-3	4793.3	03 Dec 00 0642	3531.4	2.224
Subbasin-5A	495.98	03 Dec 00 0601	342.73	0.192
Junction-2	6408.8	03 Dec 00 0625	4748.8	2.906
Reach-4	6408.8	03 Dec 00 0646	4748.8	2.906
Subbasin-5B	681.99	03 Dec 00 0603	473.04	0.265
Junction-3	6969.3	03 Dec 00 0639	5221.9	3.171
Reach-5	6969.3	03 Dec 00 0653	5221.9	3.171
Subbasin-6	191.50	03 Dec 00 0600	132.09	0.074
Junction-4	7042.0	03 Dec 00 0651	5354.0	3.245
Reach-6	7042.0	03 Dec 00 0651	5354.0	3.245
Subbasin-7	266.78	03 Dec 00 0604	185.65	0.104
Junction-5	7267.5	03 Dec 00 0647	5539.6	3.349

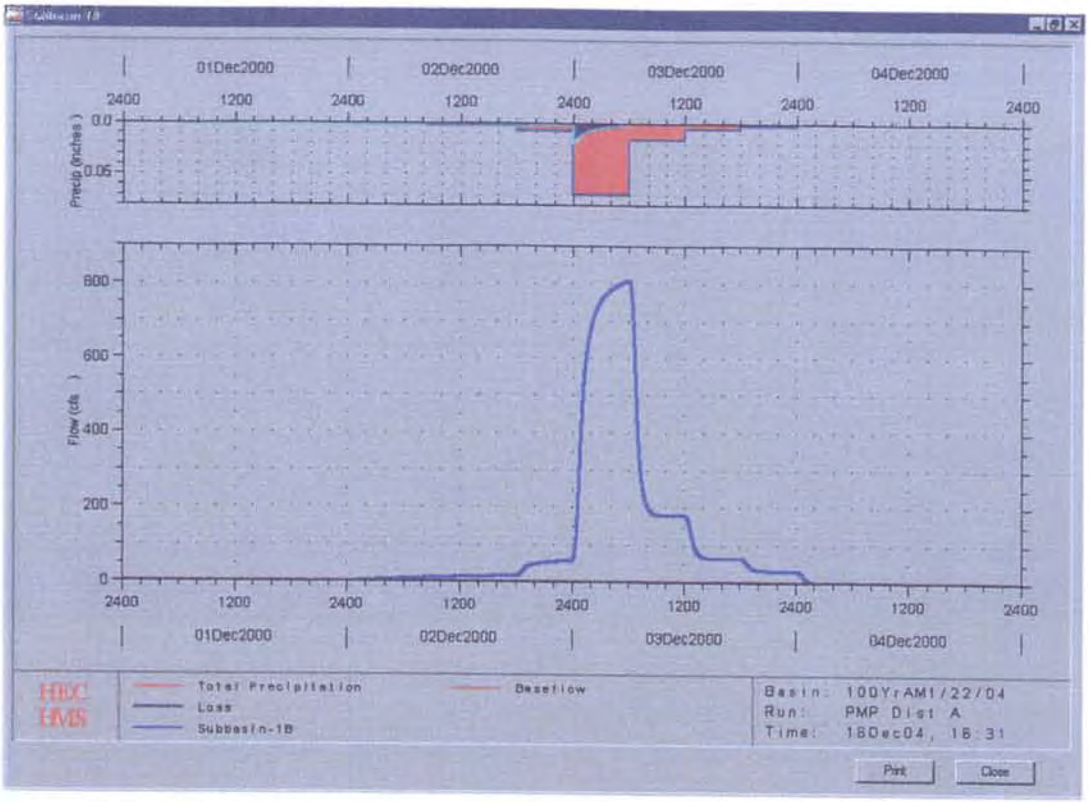
Meteorologic Model Input

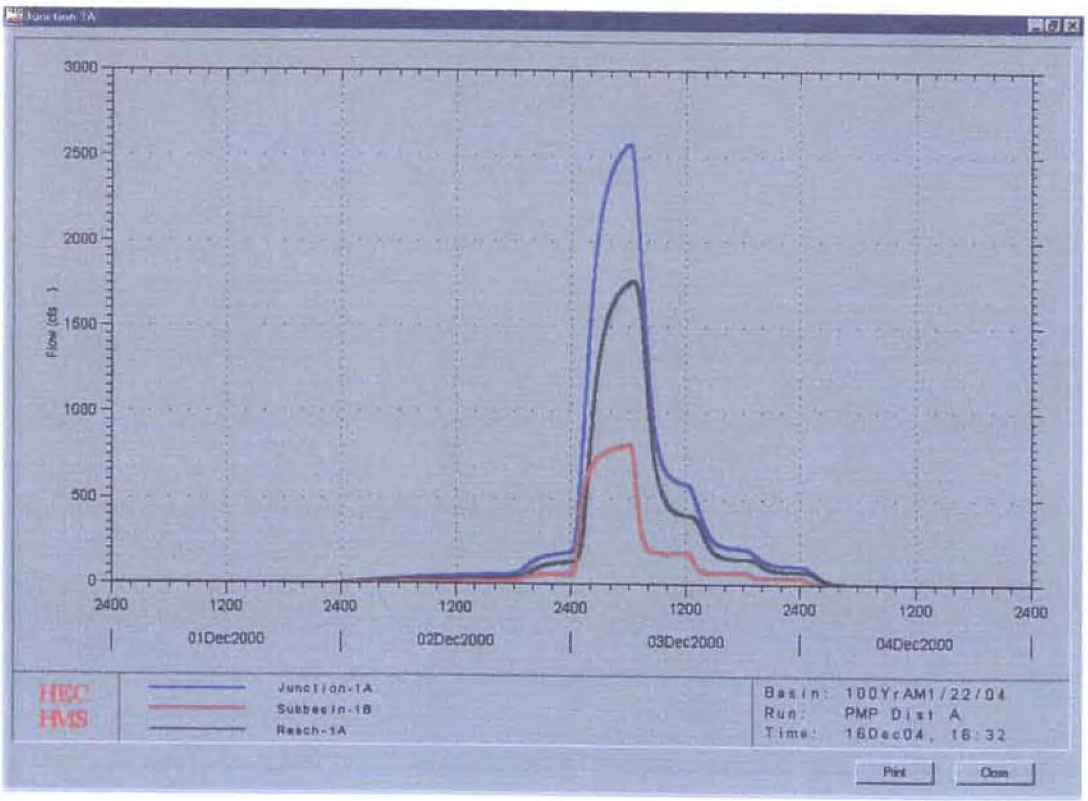


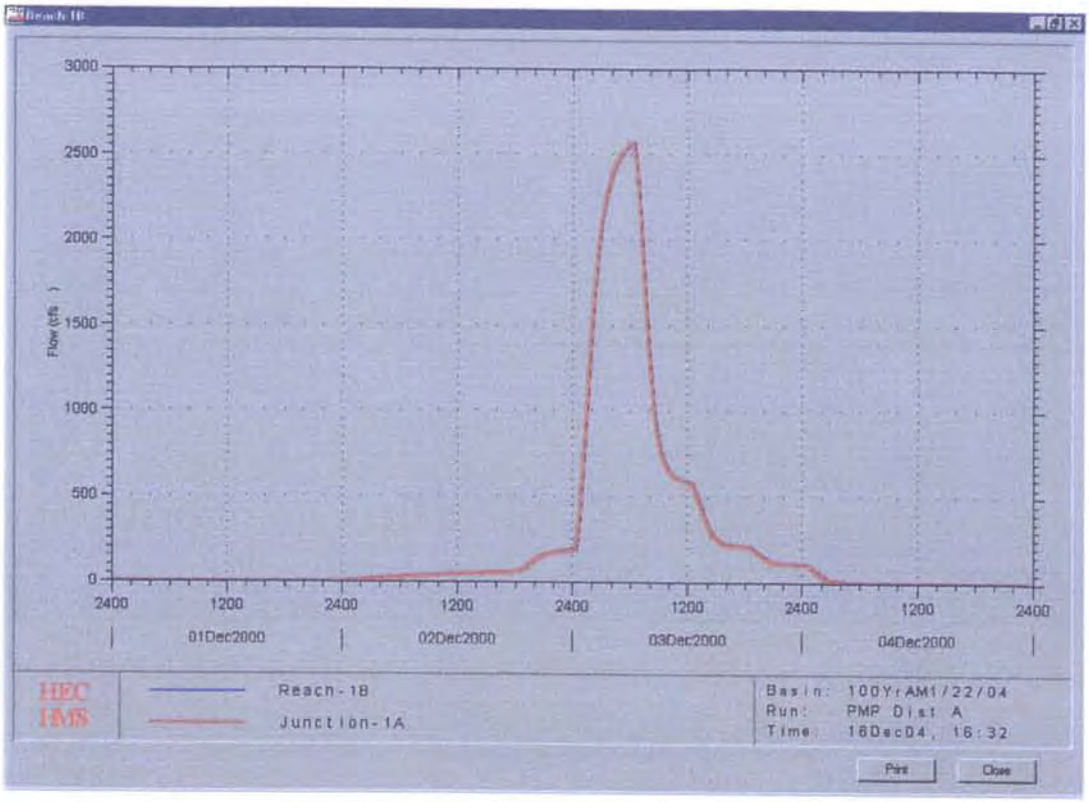


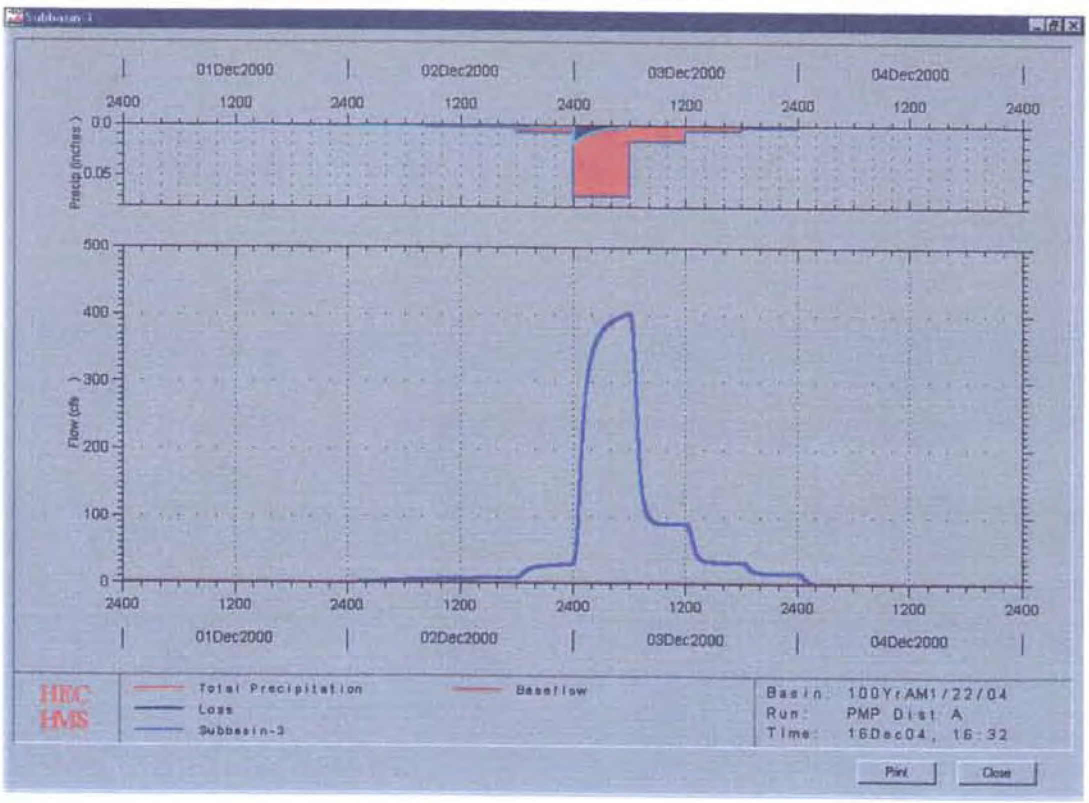

Subbasin-1A
01Dec2000
02Dec2000
03Dec2000
04Dec2000
Precip (inches)
Flow (cfs)
Total Precipitation
Loss
Subbasin-1A
Baseflow
Basin: 100YrAM1/22/04
Run: PMP Dist A
Time: 16Dec04, 16:30
Print
Close

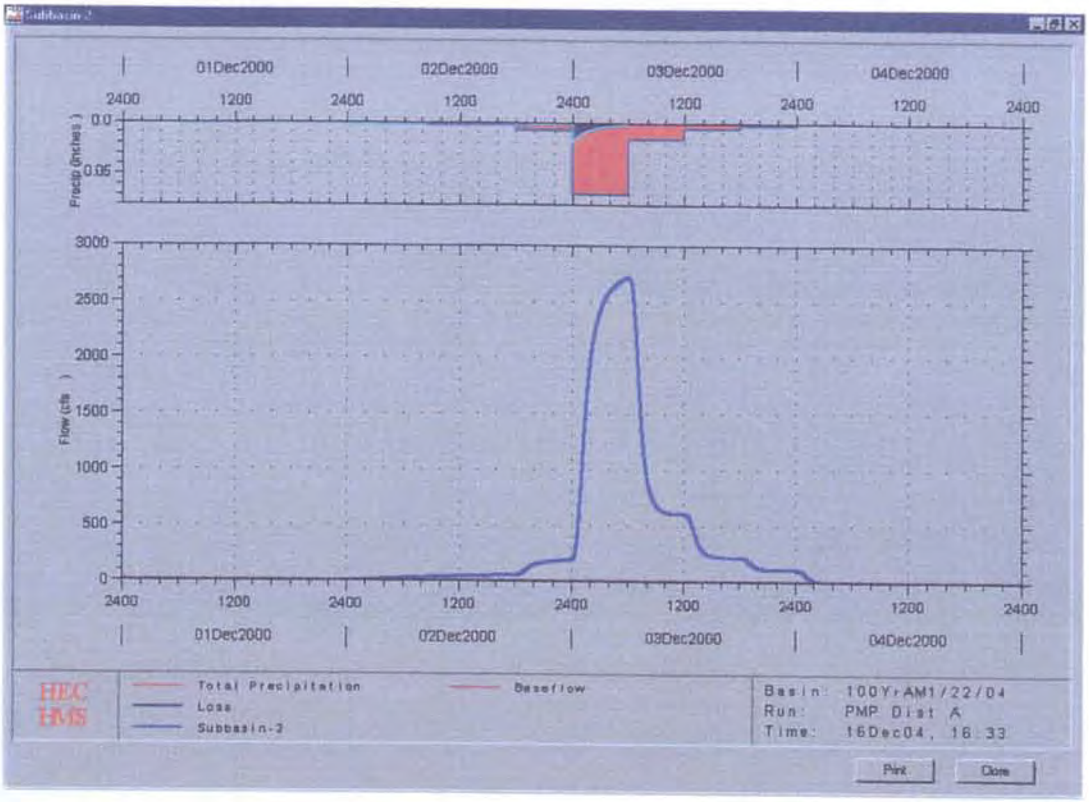

Reach-1A
01Dec2000
02Dec2000
03Dec2000
04Dec2000
Flow (cfs)
Reach-1A
Subbasin-1A
Basin: 100YrAM1/22/04
Run: PMP Dist A
Time: 16Dec04, 16:31
Print
Close

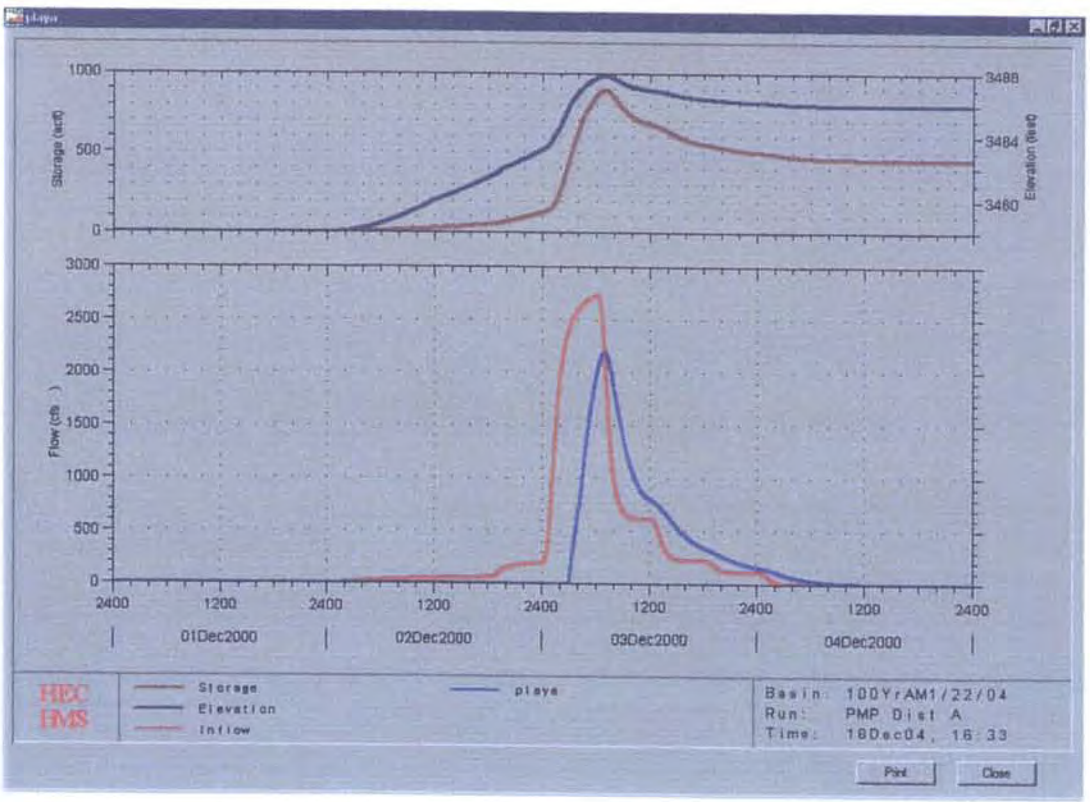

01Dec2000
02Dec2000
03Dec2000
04Dec2000
Precip (inches)
Flow (cfs)
HEC HMS
Total Precipitation
Loss
Subbasin-1B
Baseflow
Basin: 100YrAM1/22/04
Run: PMP Dist A
Time: 16Dec04, 16:31
Print
Close


Junction 1A
Flow (cfs)
01Dec2000
02Dec2000
03Dec2000
04Dec2000
HEC HMS
Junction-1A
Subbasin-1B
Reach-1A
Basin: 100YrAM1/22/04
Run: PMP Dist A
Time: 16Dec04, 16:32
Print
Close


Reach-1B
3000
2500
2000
Flow (cfs)
1500
1000
500
0
2400
1200
2400
1200
2400
1200
2400
1200
2400
01Dec2000
02Dec2000
03Dec2000
04Dec2000
HEC
HMS
Reach-1B
Junction-1A
Basin: 100YrAM1/22/04
Run: PMP Dist A
Time: 16Dec04, 16:32
Print
Close


Subbasin-3
01Dec2000
02Dec2000
03Dec2000
04Dec2000
2400
1200
2400
1200
2400
1200
2400
1200
2400
Precip (inches)
0.0
0.05
500
400
300
Flow (cfs)
200
100
0
HEC
HMS
Total Precipitation
Loss
Subbasin-3
Baseflow
Basin: 100YrAM1/22/04
Run: PMP Dist A
Time: 16Dec04, 16:32
Print
Close


Subbasin-2
01Dec2000
02Dec2000
03Dec2000
04Dec2000
Precip (inches)
Flow (cfs)
Total Precipitation
Loss
Subbasin-2
Baseflow
Basin: 100Yr AM1/22/04
Run: PMP Dist A
Time: 16Dec04, 16:33
Print
Close


playa
Storage (ac-ft)
Elevation (feet)
Flow (cfs)
01Dec2000
02Dec2000
03Dec2000
04Dec2000
Storage
Elevation
Inflow
playa
Basin: 100YrAM1/22/04
Run: PMP Dist A
Time: 16Dec04, 16:33
Print
Close