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Hydrologic Analysis

For

McMicken Dam

Prepared by

R.W. Cruff, P.E.

Flood Control District of Maricopa County

Engineering Division

Registered Professional Engineer (Civil)
CERTIFICATE NO.
25301
RUSSELL W.
CRUFF
Date Signed 3-14-2000
ARIZONA, U.S.A.

March 6, 2000

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P. HEC-1 Model PMP2CPMW.DAT, which modifies the outflow rating for the present weir location, based on a HECRAS analysis of the spillway channel, using present vegetation conditions and moving the weir to the upper end of the channel.

Q. HEC-1 Model PMP2CM06.DAT, which modifies the outflow rating for the present weir location, based on a HECRAS analysis of the spillway channel, using a natural vegetation condition ("n"=0.060) and moving the weir to the upper end of the channel.

1. Introduction

The growth of vegetation above the emergency spillway of McMicken Dam has become a concern. The vegetation may be affecting the ability of the emergency spillway to properly release excess storage water.

The purpose of this report is to document the hydrologic analysis for various modification alternatives for the Emergency spillway for McMicken Dam. The 72-hour Probable Maximum Precipitation (PMP) general storm was used in this hydrologic analysis. More specifically, the hydrologic analysis is conducted to investigate and compare the effects of clearing the vegetation, or moving or enlarging the emergency spillway of McMicken Dam. The results of the analysis are documented in Tables 1A, 1B, 1C, and 1D.

The HEC-1 models are developed by modifying a previous HEC-1 model (Zhao, 1996). The U.S. Army corps of Engineers HEC-1 (version 4.1, July 1997) is used to run the models. The results can be found in the HEC-1 output files in the attached computer diskette.

2. Previous Hydrologic Analysis

McMicken Dam is an earthen flood control structure designed and built by the U.S. Army corps of Engineers in 1955 and currently operated and maintained by the Flood Control District of Maricopa County. See Design Memorandum No. 2, Design Analysis for Trilby Wash Detention Basin and Outlet Channel, March 1954. It has a contributing watershed of 247 square miles. Design Memorandum No. 1, Hydrology and Hydraulic Design for Trilby Wash Detention Basin and Outlet Channel November 1953 prepared by the U.S. Army corps of Engineers was the basis for the design. Design Memorandum No. 1 shows that the peak inflow for the Standard Project Flood to be 35,000 cubic feet per second (cfs) and states that the Maximum Probable Flood is about 3.5 times as great as the Standard Project Flood.

In1983, Sergent, Hauskins & Beckwith, Consulting Geotechnical Engineers prepared a report for the Flood Control District of Maricopa County entitled "Surface Water Hydrologic Report, McMicken Dam Restoration Study, Maricopa County, Arizona". This study used HEC-1 (version 1981) model to determine a more detail analysis of the inflows to McMicken Dam and the outflows from the dam. This study used 8 hydrologic sub-basins in the analysis and developed a Maximum Probable Flood peak inflow of 120,000 cfs, with the peak outflow of 95,000 cfs at a reservoir elevation of 1360.0 feet.

Rumann and Sutko of the Flood Control District performed a more detailed hydrologic analysis, in 1987. They used 44 hydrologic sub-basins in their analysis. In their analysis the HAESTAD 900-ordinate HEC-1 (version 3.2c, 1985) was used and in future studies is designated PMP1.DAT. Their study developed a Probable Maximum Precipitation Flood inflow of 114,850 cfs, with an outflow of 90,105 cfs at a reservoir elevation of 1360.43 feet.

Bing Zhao of the Flood Control District, prepared a report dated December 30 1996, entitled "Hydrologic Analysis for McMicken Dam". In this report he updated the Rumann and Sutko 44 sub-basin HEC-1 model with an updated elevation-capacity curve for the McMicken Dam reservoir. He used the HAESTAD 900-ordinate HEC-1 model as was used by Rumann and Sutko, which is, designated PMP2.DAT. He also Developed Models for the addition of diverting flows from the south. These models have 46 sub-basins and a drainage area of 259 square miles. The 46 sub-basin HEC-1 models were run for the old elevation-capacity curve (PMP3.DAT) and the new elevation-capacity curve (PMP4.DAT). The results of the four HEC-1 models are compared on table 1 of the report.

3. Current Hydrologic Analysis

Problem

A notice of deficiencies-monthly status, was received by the Flood Control District of Maricopa County from the Arizona Department of Water Resources, Dam Safety Section, dated October 6, 1999. Copy enclosed as Appendix A. This notice identified the heavy vegetation obstructing the emergency spillway approach channel. It called for removal of the vegetation.

R.W. Cruff of the Flood Control District performed a HECRAS (step backwater) analysis of the approach channel to the emergency spillway and determined that the vegetation has a large affect on the spillway operation. See Appendix B for a copy of this analysis dated November 30, 1999. Based on this analysis of the vegetation, it was decided that various alternatives needed to be analyzed as possible alternatives to removal of the vegetation.

Alternatives

The U.S Army Corps of Engineers HEC-1 model (version 4.1, July 1997) was used for all alternatives studied in this analysis. The results of the various alternatives analyzed are presented in Tables 1A, 1B, 1C, and 1D.

1.) Model PMP2.DAT was run using the newer version of HEC-1 and was found to give slightly different results. This model is designated PMP2A.DAT. See Table 1A.

2.) A slightly different outflow rating for the present configuration was developed. This alternative does not take into account the affects of the vegetation above the weir at the outlet spillway. It adds the flows for two (2) small culverts, per the station file for the Flood Control Gage # 5448, on McMicken Dam, to the spillway and the main outlet flows determined from the U.S. Army Corps of Engineers Design Memorandum No.2. These flows are tabulated in Table 2. This HEC-1 model is designated PMP2A1.DAT and its input file is listed in Appendix D. It gives a very slight difference in results from PMP2A.DAT. The results are listed in Table 1A.

3.) The spillway channel above the weir was analyzed, and presented in a document dated November 30, 1999. See Appendix B. Flows developed by this analysis for the upper end of the spillway channel both for present vegetation growth and for clearing of the vegetation ("n"= 0.030) along with the flows for the culverts and for the main outlet are shown in Table 3. The HEC-1 models used to analyze these alternatives are for the present condition vegetation PMP2CP (its HEC-1 input file is listed in Appendix E) and PMP2C03 for the cleared channel using "n"=0.030 (its HEC-1 input file is listed in Appendix F). The results of these two conditions are also presented in Table 1C. It can be seen that the affect of the vegetation is to cause an overflow of the reservoir for the PMP storm. The clearing of the channel has results very similar to those using the weir analysis as presented in the original design and shown by HEC-1 model PMP2A.DAT.

4.) Extending the spillway in 500-foot increments from its present length of 2,000 feet to a length of 5,000 feet was analyzed. This would probably be accomplished by the removal of a section of the north end of the dam, where it connects to the spillway. The flows for the various spillway lengths were determined using the techniques described on Inclosure 2, page 43 of the U.S. Army Corps of Engineers Design Memorandum No. 2. It is assumed that for this alternative, that the vegetation above the present weir would have no affect and that standard weir analysis would be reasonable. The flows for the culverts and for the main outlet and the flows for the various spillway lengths are presented in Table 4.These flows are then added to develop outflow ratings for the various weir lengths. The HEC-1 models are designated PMP2B25.DAT, PMP2B30.DAT, PMP2B35.DAT, PMP2B40.DAT, PMP2B45.DAT, and PMP2B50.DAT, and their HEC-1 input files are listed in Appendix's G, H, I, J, K, and L respectively. The results for these alternatives are listed in Table 1B.

5.) Because it was not known what effect the vegetation would have if the weir were extended. It was decided to use the rating for the present condition for the present 2,000-foot weir and add it to a ratings developed using the weir computation methodology used in Design Memorandum N0. 2, for the 1,000, 2,000, or 3,000 feet extensions of the weir. These ratings are presented along with the flows for the culverts and the main outlets in Table 5. These flows are again added to develop outflow ratings for HEC-1 models PMP2D10.DAT, PMP2D20.DAT, and PMP2D30.DAT, respectively. The HEC-1 input data files are listed in Appendix'S-M, N, and O, respectively. The results for these alternatives are listed in Table 1C.

6.) Moving the spillway from its present location to the upper end of the spillway channel, was analyzed for present vegetation conditions in the channel and for a more natural vegetation of "n"=0.060. The ratings for these two conditions are shown in Table 6 and are added to the flows for the culverts and the main outlet. The results show that both alternatives cause an overflow of the reservoir for the PMP storm. The HEC-1 model for the present vegetation condition is designated PMP2CPMW.DAT and its input data file is listed in Appendix P. The HEC-1 model for "n"=0.060 is designated PMP2CM06.DAT and its input data file is listed in Appendix Q. The results for these alternatives are listed in table 1D.

Results

1.) The U.S. Army Corps of Engineers 900-ordinate HEC-1 model (version 4.1, July 1997) is used to run the models in this analysis. The model PMP2.DAT was found to have minor differences from the results of the HAESTAD model used in the December 30, 1996 study (see Table 1A).

2.) For the PMP storm to pass through the reservoir without overtopping in the present configuration, the channel would need to be cleared to near an "n"=0.030, (see Table 1A) which is basically the condition for which the reservoir and spillway were designed by the U.S. Army Corps of Engineers.

3.) It can be seen from Table 1B that as the spillway length increase, the maximum water surface elevation and the maximum storage decreases and the maximum outflow increases. These are not linear changes due to the fact that the weir computation equation is based on depth above the weir (H) to the 3/2 power. In order to have a 3-foot freeboard in the reservoir a 5,000-foot long weir would be required.

4.) It can be seen from Table 1C again that as the spillway length increases, the maximum water surface elevation and the maximum storage decreases and the maximum outflow increases. But in this case there is not as much freeboard in the reservoir as is shown in 3 above.

5.) The true case for extending the weir length is probably somewhere between the results for 3 and 4 above as shown in Tables 1B and 1C.

6.) If the spillway were removed from its present location, and reinstalled at the upper end of the outlet channel, it can be seen that the present vegetation would cause the weir to be drowned out and would cause the reservoir to overflow for the PMP storm. It also can be seen that thinning the vegetation to a more natural desert condition of "n"=0.060 would also cause the weir to be drowned out and the reservoir to overflow for the PMP storm.

Summary

1.) The vegetation would need to be totally cleared for the present configuration to contain the PMP storm.

2.) Extending the spillway weir should cause the PMP storm to be contained.

3.) Moving the weir to the upper end of the channel without removal of the vegetation would not solve the problem.

4. References

U.S. Army Corps of Engineers, March 1954, "Design Memorandum No.2, Design Analysis for Trilby Wash Detention Basin and Outlet Channel".

U.S. Army Corps of Engineers, November 1953, "Design Memorandum No.1, Hydrology and Hydraulic Design for Trilby Wash Detention Basin and Outlet Channel".

Sergent, Hauskins & Beckwith, Consulting Geotechnical Engineers, 1983, "Surface Water Hydrologic Report, McMicken Dam Restoration Study, Maricopa County, Arizona".

Rumann, J.M. and Sutko, T.E., 1987. "Report on A Hydrologic analysis of the McMicken Dam Watershed", Flood Control district of Maricopa County.

Flood Control District of Maricopa County, Engineering Division, Hydrology Branch (by Bing Zhao), December 30, 1996, "Hydrologic Analysis for McMicken Dam", Flood control district of Maricopa County.

TABLE 1A - HYDROLOGIC ANALYSIS FOR MCMICKEN DAM WITH 72-hour PMP

Results for present Weir location.

	Using Weir Analysis			HECRAS Analysis	
	12/30/96 1985 HEC-1	12/30/96 1997 HEC-1	Modified Outflow Rating	Upper end channel Present Condition	"n"=0.030
HEC-1 Filename	pmp2	PMP2A	PMP2A1	PMP2CP	PMP2C03
Maximum W.S. Elev, ft	1360.17	1360.61	1360.67	1361.43	1360.77
Maximum Depth over Dam, ft	0	0	0	0.43	0
Maximum Strorage ac-ft	36,991	38,251	38,428	40,633	38,731
Maximum Outflow, cfs	85,897	95,522	95,589	109,095	94,900
Duration of Overflow, Hrs	0	0	0	4.92	0
Time of Maximum Outrflow	19.92	19.58	19.58	18.92	19.58
Outflow at top of Dam Cfs	104,200	104,200	102,310	61,360	99,360

TABLE 1B - HYDROLOGIC ANALYSIS FOR MCMICKEN DAM WITH 72-hour PMP

Results for extension of the present weir

	Present Weir Rating	2500 ft Weir Rating	3000 ft Weir Rating	3500 ft Weir Rating	4000 ft Weir Rating	4500 ft Weir Rating	5000 ft Weir Rating
HEC-1 Filename	PMP2A1	PMP2B25	PMP2B30	PMP2B35	PMP2B40	PMP2B45	PMP2B50
Maximum W.S. Elev, ft	1360.67	1359.98	1359.43	1358.99	1358.62	1358.31	1358.07
Maximum Depth over Dam, ft	0	0	0	0	0	0	0
Maximum Strorage ac-ft	38,428	36,445	34,849	33,586	32,541	31,699	31,019
Maximum Outflow, cfs	96,589	100,361	104,504	107,344	110,136	111,823	112,908
Duration of Overflow, Hrs	0	0	0	0	0	0	0
Time of Maximum Outrflow	19.58	19.33	19.08	19.00	18.83	18.83	18.75
Outflow at top of Dam Cfs	102,310	125,740	149,820	173,880	197,960	222,040	246,120

TABLE 1C - HYDROLOGIC ANALYSIS FOR MCMICKEN DAM WITH 72-hour PMP

Results for Extended Weir using Weir Analysis combined with Present Weir using HECRAS

	Present 2,000 FT Weir Rating	Present 2,000 ft HECRAS Present Conditions	EXTENDED WEIR 1,000 FT Weir Rating	EXTENDED WEIR 2,000 FT Weir Rating	EXTENDED WEIR 3,000 FT Weir Rating
HEC-1 Filename	PMP2A1	PMP2CP	PMP2D10	PMP2D20	PMP2D30
Maximum W.S. Elev, ft	1360.67	1361.43	1360.42	1359.26	1358.5
Maximum Depth over Dam, ft	0	0.43	0	0	0
Maximum Strorage ac-ft	38,428	40,633	37,701	34,366	32,225
Maximum Outflow, cfs	95,589	109,095	97,099	105,496	110,552
Duration of Overflow, Hrs	0	4.92	0	0	0
Time of Maximum Outrflow	19.58	18.92	19.50	19.08	18.83
Outflow at top of Dam Cfs	102,310	61,360	109,500	157,660	205,820

TABLE 1D - HYDROLOGIC ANALYSIS FOR MCMICKEN DAM WITH 72-hour PMP

Results for moving the Weir to the upper end of the spillway channel

	HECRAS @ UPPER END OF CHANNEL		
	Present Location & "n"	MOVE WEIR Present "n"	"n"=0.060
HEC-1 Filename	PMP2CP	PMP2CPMW	PMP2CM06
Maximum W.S. Elev, ft	1361.43	1361.33	1361.15
Maximum Depth over Dam, ft	0.43	0.33	0.15
Maximum Strorage ac-ft	40,633	40,353	39,819
Maximum Outflow, cfs	109,095	102,965	94,150
Duration of Overflow, Hrs	4.92	3.67	1.83
Time of Maximum Outrflow	18.92	19.17	19.58
Outflow at top of Dam Cfs	61,360	69860	83,360

Table 2. - Outlet design discharges for the present configuration.

Elevation	Discharge, CFS Spillway (A)	Main Outlet (B)	Small Outlets (2) (C)	Total
1330	0	0	0	0
1335	0	0	35	35
1345	0	1,940	60	2,000
1353.9	0	4,590	75	4.660
1355	5,970	4,700	75	10,750
1356	15,890	4,760	80	20,730
1357	28,030	4,820	80	32,930
1358	42,510	4,930	80	47,520
1359	58,800	5,040	85	63,920
1360	76,840	5,165	85	82,090
1361	96,950	5,265	90	102,310

(A): From Design Memorandum 2; Design Analysis for Trilby Wash Detention Basin and Outlet channel, by the U.S. Army Corps of Engineers, March 1954 from Inclosure 2, Page 43.

(B): From Design Memorandum 2; Design Analysis for Trilby Wash Detention Basin and Outlet channel, by the U.S. Army Corps of Engineers, March 1954 from Inclosure 2, Page 5.

(C): From Station file for McMicken Dam, Flood Control Gage # 5448.

Table3 -Outlet discharges at upper end of spillway channel from HECRAS analysis.

Elev. Ft.	Discharge, CFS Main Outlet (A)	Small Out. (B)	@ upper end of spillway for conditions Weir @ Present Location (C) Present cond.	"n"=0.030
1330	0	0	0	0
1335	0	35	0	0
1345	1,940	60	0	0
1353.9	4,590	75	0	0
1355	4,700	75	4,500	5,700
1356	4,760	80	10,500	15,000
1357	4,820	80	17,200	26,900
1358	4,930	80	25,000	40,800
1359	5,040	85	34,400	56,500
1360	5,165	85	44,800	74,500
1361	5,265	90	56,000	94,000

(A): From Design Memorandum 2; Design Analysis for Trilby Wash Detention Basin and Outlet channel, by the U.S. Army Corps of Engineers, March 1954 from Inclosure 2, Page 5.

(B): From Station file for McMicken Dam, Flood Control Gage # 5448 (Located in Alert Room).

(C): From HECRAS analysis by R.W. Cruff of 12-06-99 using as-built drawings for Design Memorandum 2; Design Analysis for Trilby Wash Detention Basin and Outlet channel, by the U.S. Army Corps of Engineers, March 1954.

Table 4 - Outlet discharges for extending the spillway weir to various lengths.

	Discharge, CFS							
	Outlet							
Elev.	Main	Small	Spillway lengths, feet (C)					
Ft.	(A)	(B)	2500	3000	3500	4000	4500	5000
1330	0	0	0	0	0	0	0	0
1335	0	35	0	0	0	0	0	0
1345	1,940	60	0	0	0	0	0	0
1353.9	4,590	75	0	0	0	0	0	0
1355	4,700	75	7,510	9,020	10,510	12,020	13,520	15,020
1356	4,760	80	19,940	23,920	27,910	31,900	35,890	39,800
1357	4,820	80	35,000	42,000	49,000	56,000	63,000	70,000
1358	4,930	80	52,980	63,570	74,160	84,760	95,360	106,000
1359	5,040	85	73,220	87,870	102,520	117,760	131,800	146,400
1360	5,165	85	95,550	114,660	133,370	152,880	172,000	191,100
1361	5,265	90	120,380	144,460	168,530	192,610	216,680	240,760

(A): From Design Memorandum 2; Design Analysis for Trilby Wash Detention Basin and Outlet channel, by the U.S. Army Corps of Engineers, March 1954 from Inclosure 2, Page 5.

(B): From Station file for McMicken Dam, Flood Control Gage # 5448 (Located in Alert Room).

(C): From analysis (see Appendix C) using methodology from Design Memorandum 2; Design Analysis for Trilby Wash Detention Basin and Outlet channel, by the U.S. Army Corps of Engineers, March 1954 from Inclosure 2, Page 43.

Figure 5. - Outlet discharges for various spillway weir extension lengths combined with the HECRAS analysis of the existing spillway weir.

	Discharge, CFS					
	Outlet					
Elev.	Main	Small	HECRAS	Spillway extension lengths, ft (D)		
Ft.	(A)	(B)	Existing (C)	1,000	2,000	3,000
1330	0	0	0	0	0	0
1335	0	35	0	0	0	0
1345	1,940	60	0	0	0	0
1353.9	4,590	75	0	0	0	0
1355	4,700	75	4,500	3,010	6,010	9,020
1356	4,760	80	10,500	7,970	15,950	23,920
1357	4,820	80	17,200	14,000	28,000	42,000
1358	4,930	80	25,000	21,200	42,380	63,570
1359	5,040	85	34,400	29,290	58,580	87,870
1360	5,165	85	44,800	38,220	76,440	114,660
1361	5,265	90	56,000	48,150	96,300	144,460

(A): From Design Memorandum 2; Design Analysis for Trilby Wash Detention Basin and Outlet channel, by the U.S. Army Corps of Engineers, March 1954 from Inclosure 2, Page 5.

(B): From Station file for McMicken Dam, Flood Control Gage # 5448 (Located in Alert Room).

(C) From HECRAS analysis by R.W. Cruff of 12-06-99 using as-built drawings for Design Memorandum No. 2; Design Analysis for Trilby Wash Detention Basin and Outlet Channel, by the U.S. Army Corps of Engineers, March 1954.

(D): From analysis (see Appendix C) using methodology from Design Memorandum 2; Design Analysis for Trilby Wash Detention Basin and Outlet channel, by the U.S. Army Corps of Engineers, March 1954 from Inclosure 2, Page 43.

Table 6. - Outlet discharges if weir moved to the upper end of the spillway channel.

Elev. Ft.	Discharge, CFS Main Outlet (A)	Small Out. (B)	Weir @ the upper end of channel for conditions (C) Present cond.	"n"=0.06
1330	0	0	0	0
1335	0	35	0	0
1345	1,940	60	0	0
1353.9	4,590	75	0	0
1355	4,700	75	10,900	11,500
1356	4,760	80	19,000	23,900
1357	4,820	80	25,600	31,400
1358	4,930	80	33,700	40,700
1359	5,040	85	42,600	51,500
1360	5,165	85	53,000	64,500
1361	5,265	90	64,500	78,000

(A): From Design Memorandum 2; Design Analysis for Trilby Wash Detention Basin and Outlet channel, by the U.S. Army Corps of Engineers, March 1954 from Inclosure 2, Page 5.

(B): From Station file for McMicken Dam, Flood Control Gage # 5448 (Located in Alert Room).

(C): From HECRAS analysis by R.W. Cruff of 12-06-99 using as-built drawings for Design Memorandum 2; Design Analysis for Trilby Wash Detention Basin and Outlet channel, by the U.S. Army Corps of Engineers, March 1954, but moving the weir to the upstream end of the channel

APPENDIX A

Letter of October 6, 1999 from Arizona Department of Water Resources, Dam Safety Section, to, The Flood Control District of Msricopa County.

ARIZONA DEPARTMENT OF WATER RESOURCES
Dam Safety Section
500 North Third Street, Phoenix, Arizona 85004
Telephone (602) 417-2445
Fax (602) 417-2423

FLOOD CONTROL DISTRICT
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REMARKS

JANE DEE HULL
Governor

RITA P. PEARSON
Director

October 6, 1999

Mr. Tom Johnson, P.E
Assistant Director
Flood Control District of Maricopa County
2801 West Durango
Phoenix, Arizona 85009

Subject: **Buckeye FRS #1 Dam (07.42)**
August 10, 1999 and September 9, 1999 Inspection Report
McMicken Dam (07.21)
July 19, 1999 & August 10, 1999 Inspection Report
Notice of Safety Deficiencies – Monthly Status

Dear Mr. Johnson:

In compliance with Arizona Revised Statutes § 41-1009, this letter is the October monthly status update to the Arizona Department of Water Resources (Department) letters of September 3 and 23, 1999 notifying you that the above subject inspections found deficiencies which must be corrected. The Notices of Deficiency were delivered to you on September 9, 1999 for McMicken Dam and September 27, 1999 for Buckeye FRS #1 Dam.

The safety deficiency identified at Buckeye FRS #1 Dam is the problem of the embankment cracking. After an investigation in 1987, a partial central filter/drain was constructed to protect the embankment against piping and erosion failure. However, we believe that the partial central filter/drain may be inadequate. In addition, the holes and internal erosion features may potentially lead to the failure of the dam by degradation or failure of the central filter/drain.

It is our understanding that AGRA Earth and Environmental has been retained by the FCDMC and is preparing a draft scope of work for investigation, analysis and repair. Please provide the Department an opportunity to review and comment on the draft scope of work, and an anticipated schedule for completion of the work.

The safety deficiencies identified at McMicken Dam include (1) three breach locations in the dam section located left of the spillway that must be repaired, and (2) heavy vegetation obstructing the emergency spillway approach channel which must be removed. An application to repair McMicken Dam is required for repair of the breached dam section. A schedule for submitting a repair application and clearing of the emergency spillway approach channel was requested within **60 days** of receipt of the deficiency letter.

As required by State Statutes, we will continue to send you monthly status updates to the Notice of Deficiency until the deficiencies have satisfactorily been corrected or the Department takes further agency action. If you have any question concerning this letter please contact Michael Greenslade of the Dam Safety Section at (602) 417-2400 extension 7188.

Sincerely,

Jon M. Benoist, P.E.
Supervisor
Dam Safety Section

JMB:mdg

Cc: Carol Frazier – (ADWR)
Ernie Haner – (FCDMC)
Tom Renckly – (FCDMC)

APPENDIX B

Study of November 30, 1999, analyzing the effects of vegetation in the spillway channel, above the weir.

DRAFT

McMicken Dam Outlet Spillway

Problem

A notice of deficiencies – monthly status, was received by the Flood Control District from the Arizona Department of Water Resources, Dam Safety Section, and dated October 6, 1999. This notice identified the heavy vegetation obstructing the emergency spillway approach channel. It called for the removal of this vegetation.

Project Features of McMicken Dam

U.S. Army Corps of Engineers, Design manual No. 2, March 1954, Revised January 1955

Type of structure	Compacted Earthfill
Top of structure elevation	1361.0 feet
Length of structure	49,500 feet
Maximum height of structure	34 feet
Top crest width	12 feet
Emergency spillway crest elevation	1354.0 feet
Spillway capacity (Elevation 1356.0)	16,000 cfs
Maximum water surface elevation	1356.0 feet
Freeboard	5.0 feet
Spillway capacity (Elevation 1360.0)	76,800 cfs

Runoff and Flood Information

Sergent, Hauskins, & Beckwith, Consulting Geotechnical Engineers,
Surface Water Hydrology Report, February 1983.

SDF Outflow	22,000 cfs
SDF Outflow Elevation	1356.0 feet
MPF Outflow	95,000 cfs
MPF Outflow Elevation	1360.0 feet

Reconnaissance of the problem

On November 12, 1999, I visited the site and took 12 photographs showing the condition of the weir, the condition of the channel below the weir, and the condition of the approach channel above the weir. These photographs verified the heavy vegetation growth within about the first 500 feet above the spillway weir of the approach channel.

Design discharge curve

The design discharge-rating curve is based on critical depth, weir computation, over the spillway. The weir located at 1354.0 feet elevation, shows about 16,000 cubic feet per second at an elevation of 1356.0 (2.0 feet above the weir crest). This would be based on a dead water pool above the weir.

A copy of the As-Built "Exhibit 1" indicates there is a channel above the spillway weir 2,000 feet wide (the same as the weir) excavated to 1350.0 feet elevation. (See Exhibit 2). The As-Built design plans show that the channel makes approximately a 90 degree bend between its inlet and the weir, the left bank is about 4,000 feet long and the right bank about 1,200 feet long. Based on this, the water surface elevation controlling the flow of the weir may be anywhere from a short distance above the weir to the inlet of the approach channel. This may vary based on water surface elevation and roughness (Manning's "n") within the approach channel.

DRAFT

Analysis

It was decided to develop a HECRAS model, beginning 1350 feet downstream from the weir, crossing the weir, and continuing to the upper end of the approach channel. Which is about 2600 feet above the weir for the center of the channel based on a length of 4,000 feet along the left bank and a length of 1,200 feet along the Right Bank.

The HECRAS model was run for Discharges of 200, 1,000, 3,000, 6,000, 10,000, and 16,000 cubic feet per second. Based on the field visit and the photographs it was decided that a worst case would be with "n" values of 0.12 throughout the approach channel, and a best case would be with "n" values of 0.03 throughout the approach channel. The HECRAS model was then run for constant "n" values of 0.03, 0.04, 0.06, 0.08, 0.10, and 0.12 above the spillway weir. Also, based on the field visit and the photographs, it was decided that the following would approximate present conditions:

1.) "n" = 0.08 for the cross section 30 feet above the weir;
2.) "n"= 0.12 for the cross section 400 feet above the weir;
3) "n"= 0.08 for the cross section 800 feet above the weir;
3.) "n"= 0.06 upstream from there.

Because of the critical depth (for all discharges run) over the weir, "n" value changes below the weir had no effect. For the Present conditions run, the drop in water surface elevation from the Weir to 30 feet downstream were as follows:

For	16,000 CFS	Drop = 1.52 feet
For	22,000 CFS	Drop = 1.52 feet
For	76,800 CFS	Drop = 0.43 feet
For	95,000 CFS	Drop = 0.17 feet

Graphical presentation of the HECRAS Analysis

The results of the HECRAS analysis were then presented in several graphical presentations.

Page 1 of 9 presents changes in water surface elevation with change in "n" values for the cross section 2,600 feet above the weir (upper end of the approach channel) and for the cross section 1,200 feet above the weir (Weir Elevation = 1354.0 feet).

Page 2 of 9 presents changes in water surface elevation with change in "n" values for the cross section 1,200 feet above the weir (Weir Elevation = 1354.0 feet).

Page 3 - 6 of 9 presents the change in water surface elevation with distance upstream from the weir for "n" values of 0.03, 0.04, 0.08, and 0.12 for discharges of 16,000 22,000, 76,800, and 95,000 CFS (Station 0 = Top of Weir, Weir Elevation = 1354.0 feet).

Page 7 - 9 of 9 presents the change in water surface elevation for 16,000, 22,000, 76,800, and 95,000 CFS, with distance upstream from the weir, for different "n" value scenarios. These being:

1.) A worst case scenario with "n"=0.12 throughout the reach:
2.) An approximate best or design case scenario with "n"=0.04 throughout the reach;
3.) An approximate present case scenario with:
    a.) "n"= 0.08 for the cross section 30 feet above the weir;
    b.) "n"= 0.12 for the cross section 400 feet above the weir;
    c.) "n"= 0.08 for the cross section 800 feet above the weir;
    d.) "n"= 0.06 upstream from there.
4.) Clearing the heavy vegetation in the 1,200 feet of the approach channel above the weir.

Discussion of the results

From page 1and 2 of 9 of the graphical presentation (Exhibit 3), it can be seen that lower discharges cause very little change in water surface elevation 1,200 and 2,600 feet above the weir in the approach channel for different "n" values. It can also be seen that higher "n" values cause a gradual increase upstream throughout the approach channel for higher discharge rates, thus the controlling water surface elevation for the outflow is at the upper end of the channel for higher discharge values

From page 3 to 6 of 9 of the graphical presentation (Exhibit 3), it can be seen that an "n" value of 0.03 or 0.04 causes very little change in water surface elevation with distance above the weir in the approach channel. It can also be seen that higher "n" values cause a gradual increase upstream throughout the approach channel, thus the controlling water surface elevation for the outflow is at the upper end of the channel for higher "n" values. Using "n" = 0.04 as a design condition, it can be seen:

1.) For 16,000 CFS, the water surface elevation will be about 0.8 foot higher at the upper end of the channel for an "n" value of 0.08. It will also be about 1.5 feet higher at the upper end of the channel for an "n" value of 0.12.
2.) For 22,000 CFS, the water surface elevation will be about 1.0 foot higher at the upper end of the channel for an "n" value of 0.08. It will also be about 2.0 feet higher at the upper end of the channel for an "n" value of 0.12.
3.) For 76,800 CFS, the water surface elevation will be about 2.3 foot higher at the upper end of the channel for an "n" value of 0.08. It will also be about 4.5 feet higher at the upper end of the channel for an "n" value of 0.12.
4.) For 95,000 CFS, the water surface elevation will be about 2.6 foot higher at the upper end of the channel for an "n" value of 0.08. It will also be about 5.0 feet higher at the upper end of the channel for an "n" value of 0.12.

Page 7 to 9 of 9 of the graphical presentation (Exhibit 3) compares four scenarios of "n" values within the approach channel for discharges of 16,000, 22,000, 76,800, and 95,000 CFS.

1.) The best condition ("n" = 0.04) shows very little rise in water surface elevations through the approach channel and is used as the design value for this analysis.
2.) The scenario of vegetation removal in the lower 1,000 feet of the approach channel and no clearing above shows the following rises in the water surface elevation through the approach channel.

16,000 CFS	22,000 CFS	76,800CFS	95,000 CFS
0.2 ft.	0.25 ft.	0.7 ft.	0.8 ft.

3.) The approximate present condition scenario shows the following rises in the water surface elevation through the approach channel.

16,000 CFS	22,000 CFS	76,800CFS	95,000 CFS
0.6 ft.	0.8 ft.	2.0 ft.	2.2 ft.

4.) The worst condition ("n" = 0.12) shows the following rises in the water surface elevations through the approach channel.

16,000 CFS	22,000 CFS	76,800CFS	95,000 CFS
1.5 ft.	2.0 ft.	4.5 ft.	5.0 ft.

Summary

For 16,000 CFS to pass through the spillway:

1. To maintain design conditions would require an "n" value of about 0.04 in the approach channel.
2. If the lower 1,000 feet of the channel were cleared to conditions approximating an "n" value of 0.04 or lower, the upper portion of the channel would only cause a small increase in the water surface elevation (0.2 ft.).
3. Present conditions would probably cause nearly a 0.6 foot rise in the water surface elevation in the reservoir through the channel.
4. A worst case scenario (''n" = 0.12) throughout the channel, which could possibly occur, if the present heavy growth were to move upstream in the channel. This would cause a 1.5 foot rise in the water surface elevation.

For 22,000 CFS to pass through the spillway:

1.) To maintain design conditions would require an "n" value of about 0.04 in the approach channel.
2.) If the lower 1,000 feet of the channel were cleared to conditions approximating an "n" value of 0.04 or lower, the upper portion of the channel would only cause a small increase in the water surface elevation (0.25 ft.).
3.) Present conditions would probably cause nearly a 0.8 foot rise in the water surface elevation in the reservoir through the channel.
4.) A worst case scenario (''n" = 0.12) throughout the channel, which could possibly occur, if the present heavy growth were to move upstream in the channel. This would cause a 20foot rise in the water surface elevation.

2.0?

For 76,800 CFS to pass through the spillway:

1.) To maintain design conditions would require an "n" value of about 0.04 in the approach channel.
2.) If the lower 1,000 feet of the channel were cleared to conditions approximating an "n" value of 0.04 or lower, the upper portion of the channel would only cause a small increase in the water surface elevation (0.7ft.).
3.) Present conditions would probably cause nearly a 2.0 foot rise in the water surface elevation in the reservoir through the channel.
4.) A worst case scenario (''n" = 0.12) throughout the channel, which could possibly occur, if the present heavy growth were to move upstream in the channel. This would cause a 4.5 foot rise in the water surface elevation.

For 95,000 CFS to pass through the spillway:

1.) To maintain design conditions would require an "n" value of about 0.04 in the approach channel.
2.) If the lower 1,000 feet of the channel were cleared to conditions approximating an "n" value of 0.04 or lower, the upper portion of the channel would only cause a small increase in the water surface elevation (0.8 ft.).
3.) Present conditions would probably cause nearly a 2.2 foot rise in the water surface elevation in the reservoir through the channel.
4.) A worst case scenario (''n" = 0.12) throughout the channel, which could possibly occur, if the present heavy growth were to move upstream in the channel. This would cause a 5.0 foot rise in the water surface elevation.

Recommendation

For the 16,000 and 22,000 CFS discharges.

Maintain the spillway channel in design condition by removing vegetation as recommended in Summaries 1 and 2 above.

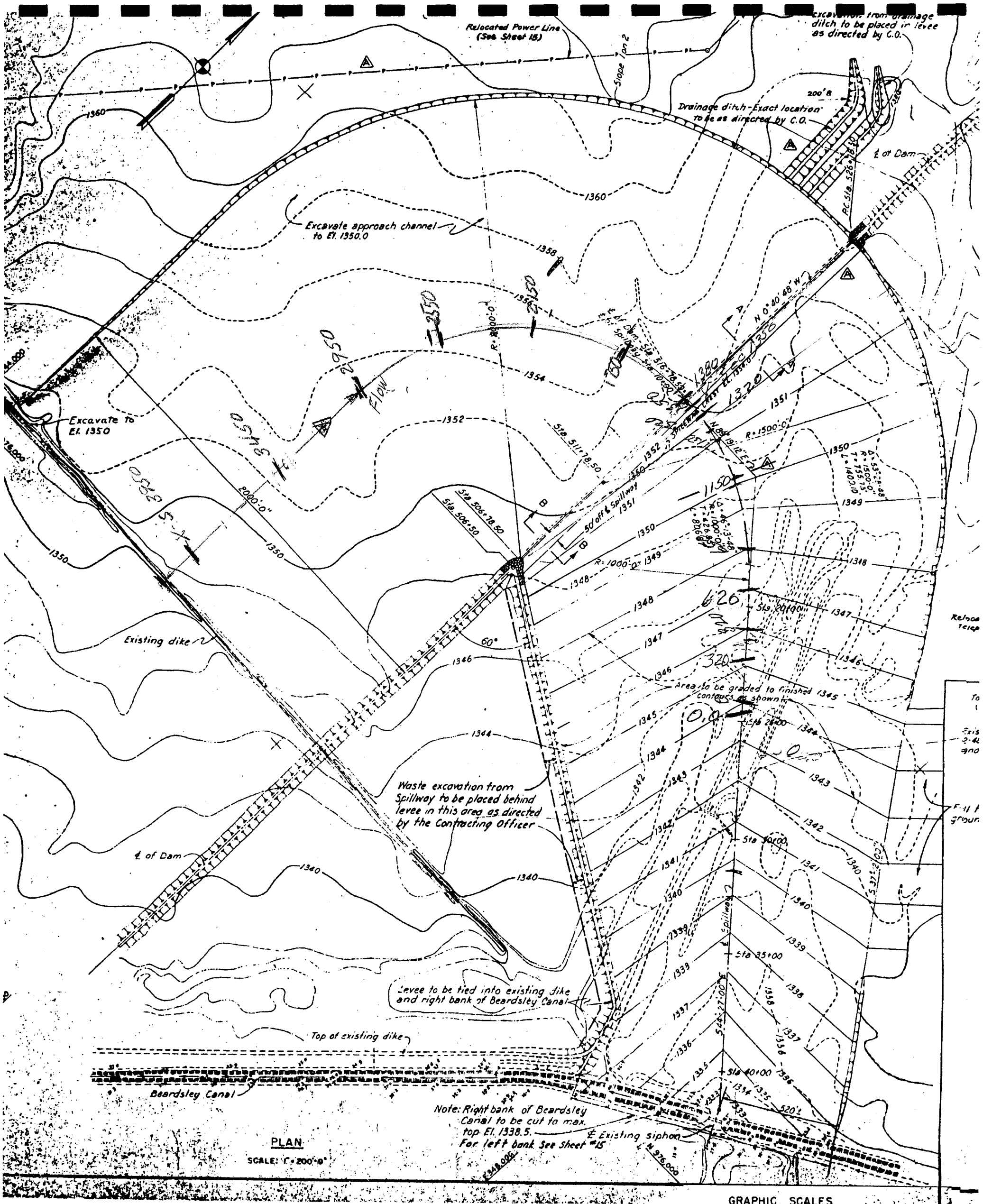
For the 76,800 CFS discharge.

The entire channel would need to be cleared to represent design conditions ("n" = 0.04 or less) as Shown in summary 1 above, to prevent the dam from overtopping.

For the 95,000 CFS discharge.

The entire channel would need to be cleared to conditions representing of "n" = 0.03and even then there may be overtopping of the dam.

R. W. Cruff, P.E.
November 30, 1999



GRAPHIC SCALES

1" = 200'-0" 0 100' 200' 400' 600' 800' 1000'

1" = 10'-0" 0 10' 20' 30' 40' 50'

REFERENCE DRAWINGS
1. For General Plan see sht. 2
2. For Details see sht. 20

Exhibit 1

DATUM IS MEAN SEA LEVEL

REVISION	DATE	DESCRIPTION	BY	
A	27 July 56	Reloc. Dr. Ditches, Reloc. Power & Tel. Lines Changed & add. El. Lines Add. Note		F.R.

CORPS OF ENGINEERS, U. S. ARMY
OFFICE OF THE DISTRICT ENGINEER
SACRAMENTO DISTRICT
SACRAMENTO, CALIFORNIA

DRAWN BY: SH
CHECKED BY: F.L.T.
PREPARED BY: CHIEF DESIGN UNIT
SUBMITTED: CHIEF STRUCTURES SECTION
APPROVED: CHIEF DESIGN BRANCH
APPROVED: CHIEF ENGINEERING DIVISION

GILA RIVER AND TRIBUTARIES, ARIZONA
AGUA FRIA PROJECT
LOWER AGUA FRIA RIVER
TRILBY WASH DETENTION BASIN
DAM & APPURTENANCES
SPILLWAY
PLAN, PROFILE AND SECTIONS

O.C.E. DWG. NO. 86-02-01
DATE: 19 Feb 54
SCALE: AS SHOWN

RECORD DRAWING-AS CONSTRUCTED
CONT. NO. 4376 REV. A DATE 27 July 56 BY F.R.
CONT. NO. ..... REV. ..... DATE ..... BY .....
CONT. NO. ..... REV. ..... DATE ..... BY .....

ORIGINAL FILE NO. 1269/69
CHANGED 30 Aug 1972
This series of drawings is on file in

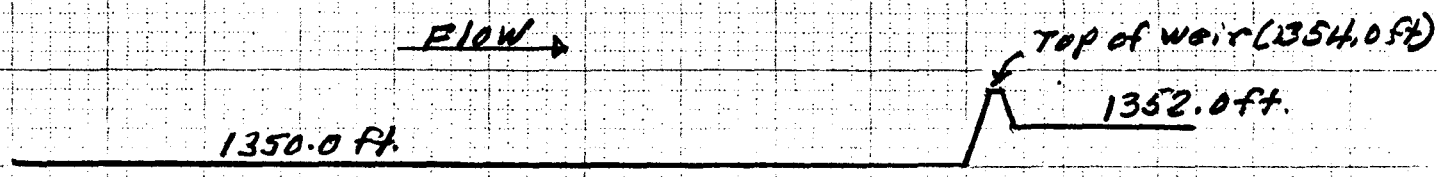
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam Spillway Outlet PAGE ____ OF ____

DETAIL Channel & Weir COMPUTED RWC DATE 11-30-

CHECKED BY ____ DATE ____

Exhibit 2



6910-153 4-90

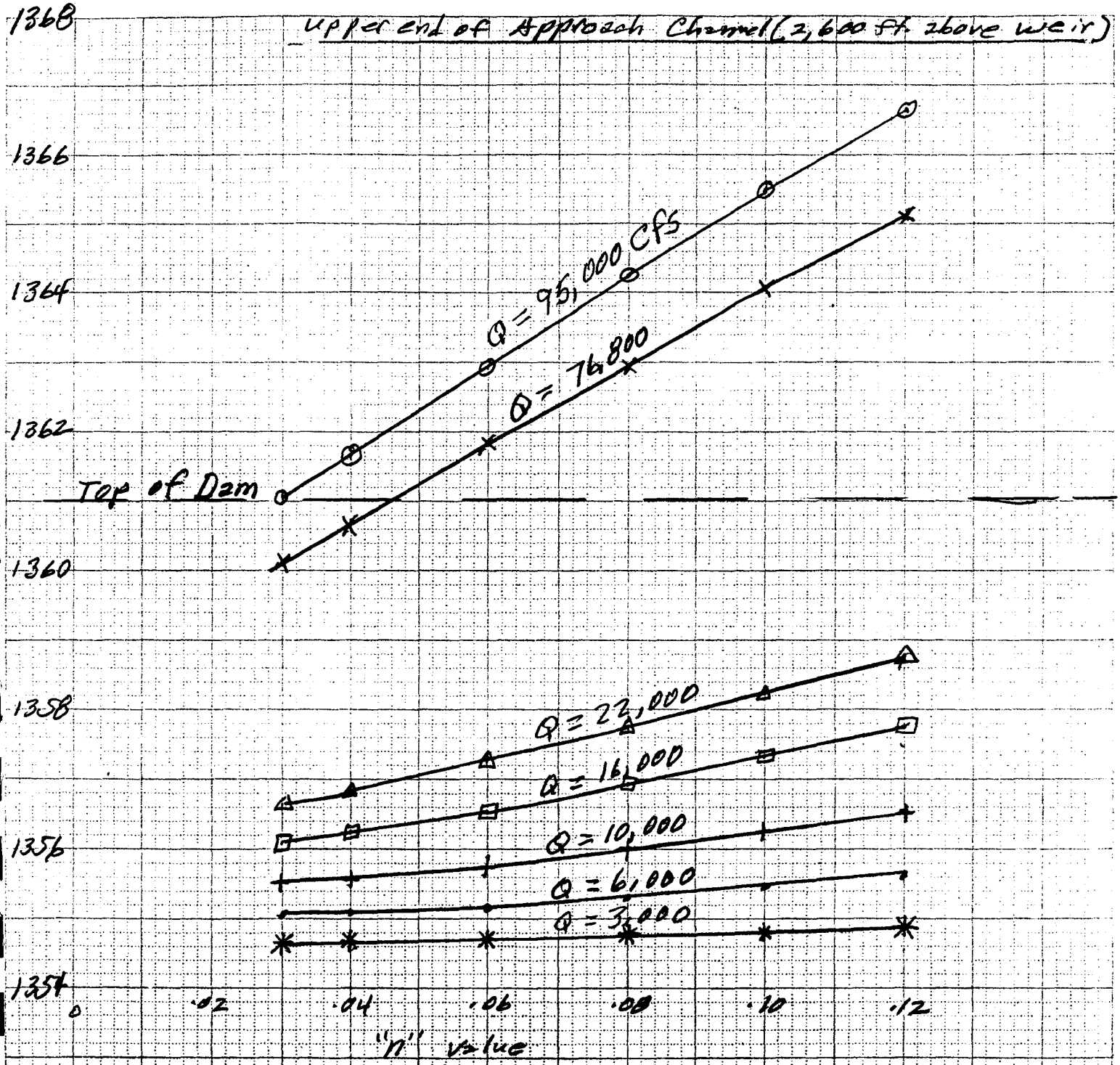
Exhibit 3

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam Outlet Spillway PAGE 1 OF 9

DETAIL W. S. Elevations within Channel above weir COMPUTED RWC DATE 11-29-

CHECKED BY _____ DATE _____



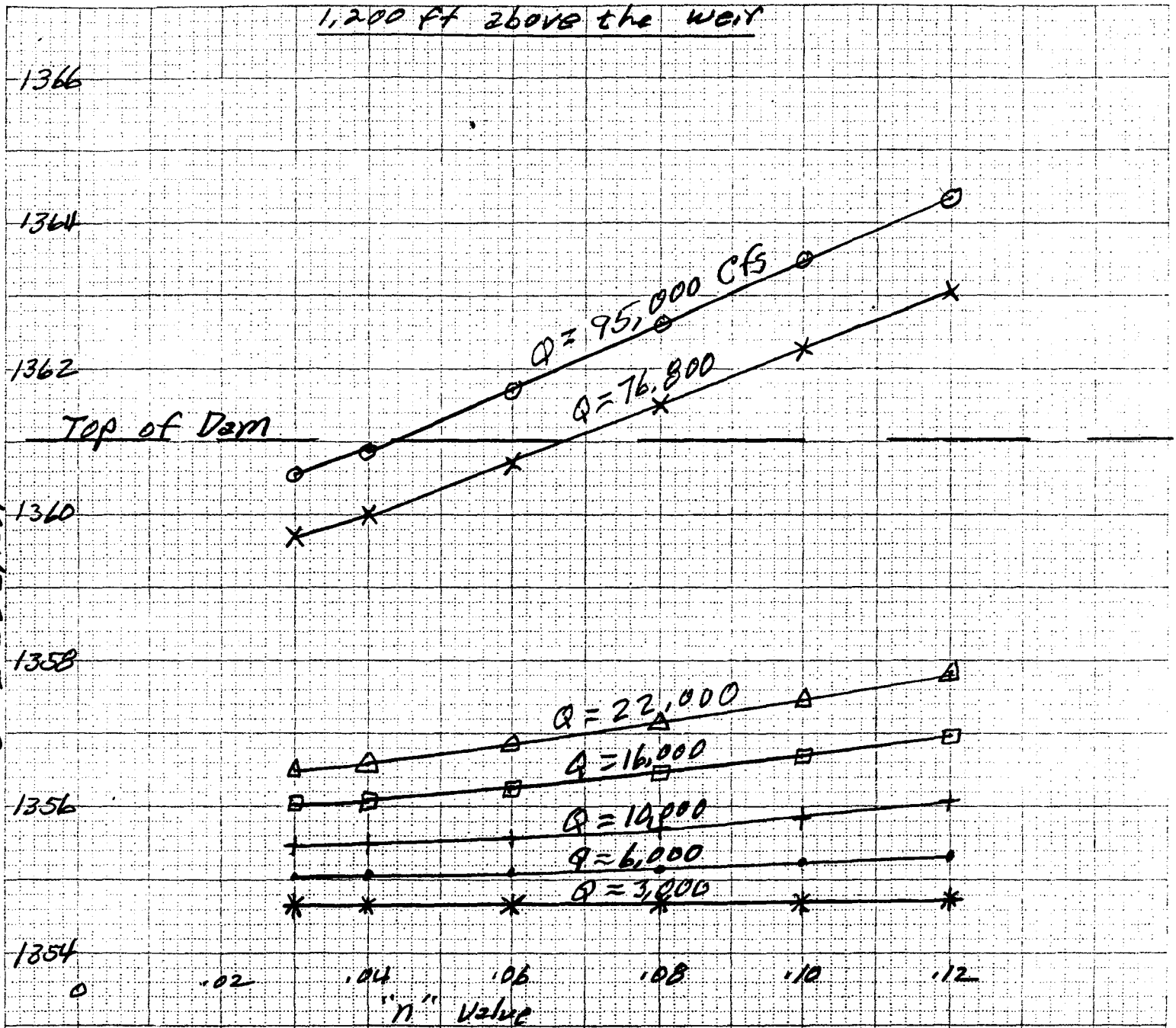
6910-153 4-90

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam Outlet Spillway PAGE 2 OF 9

DETAIL W.S. Elevations within Channel above weir COMPUTED RWC DATE 11-29-

CHECKED BY _____ DATE _____



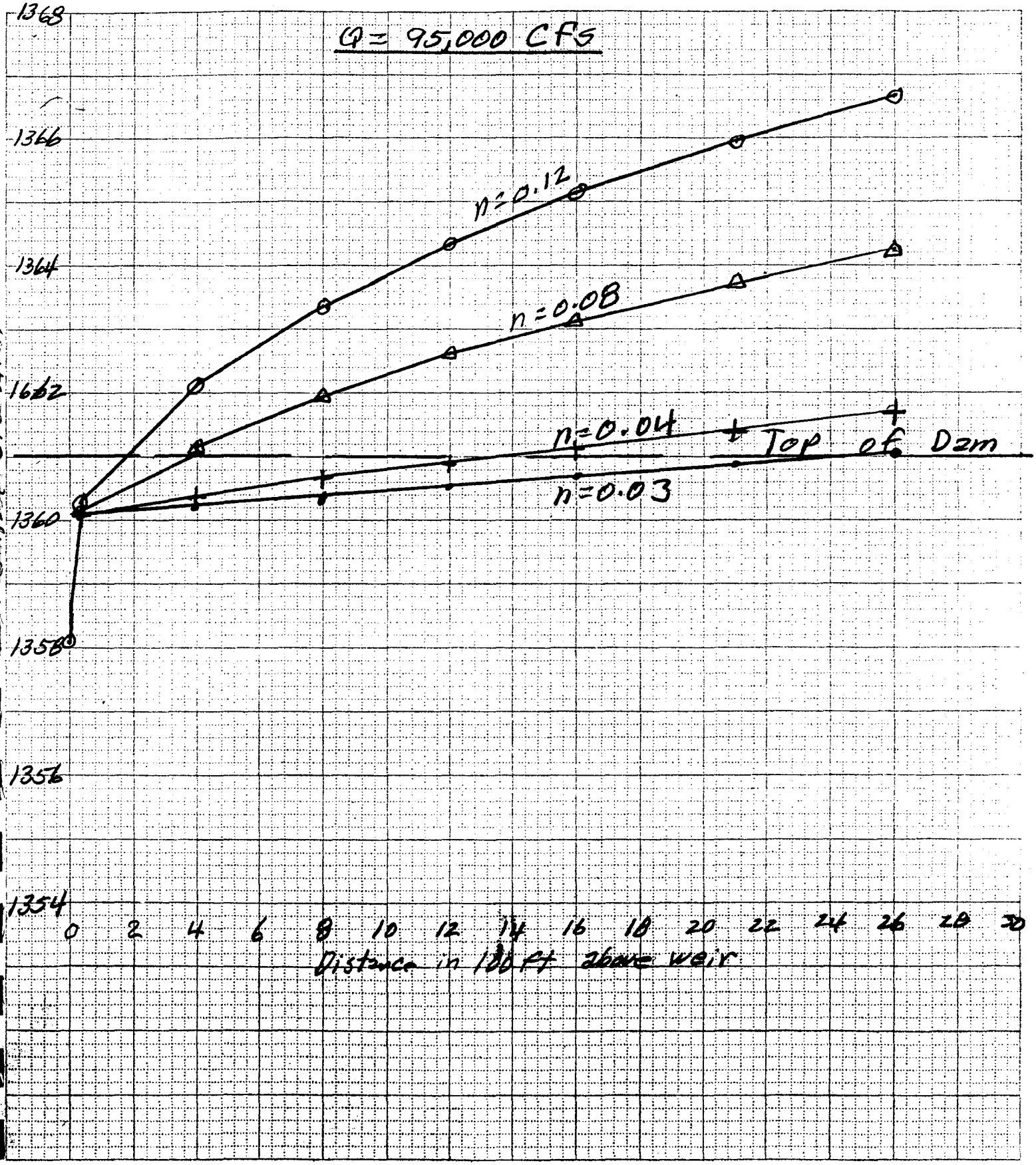
6910-153 4-90

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam Outlet Channel PAGE 3 OF 9

DETAIL W.S. Elevations within COMPUTED RWC DATE 11-29-91

Channel above weir CHECKED BY _____ DATE _____



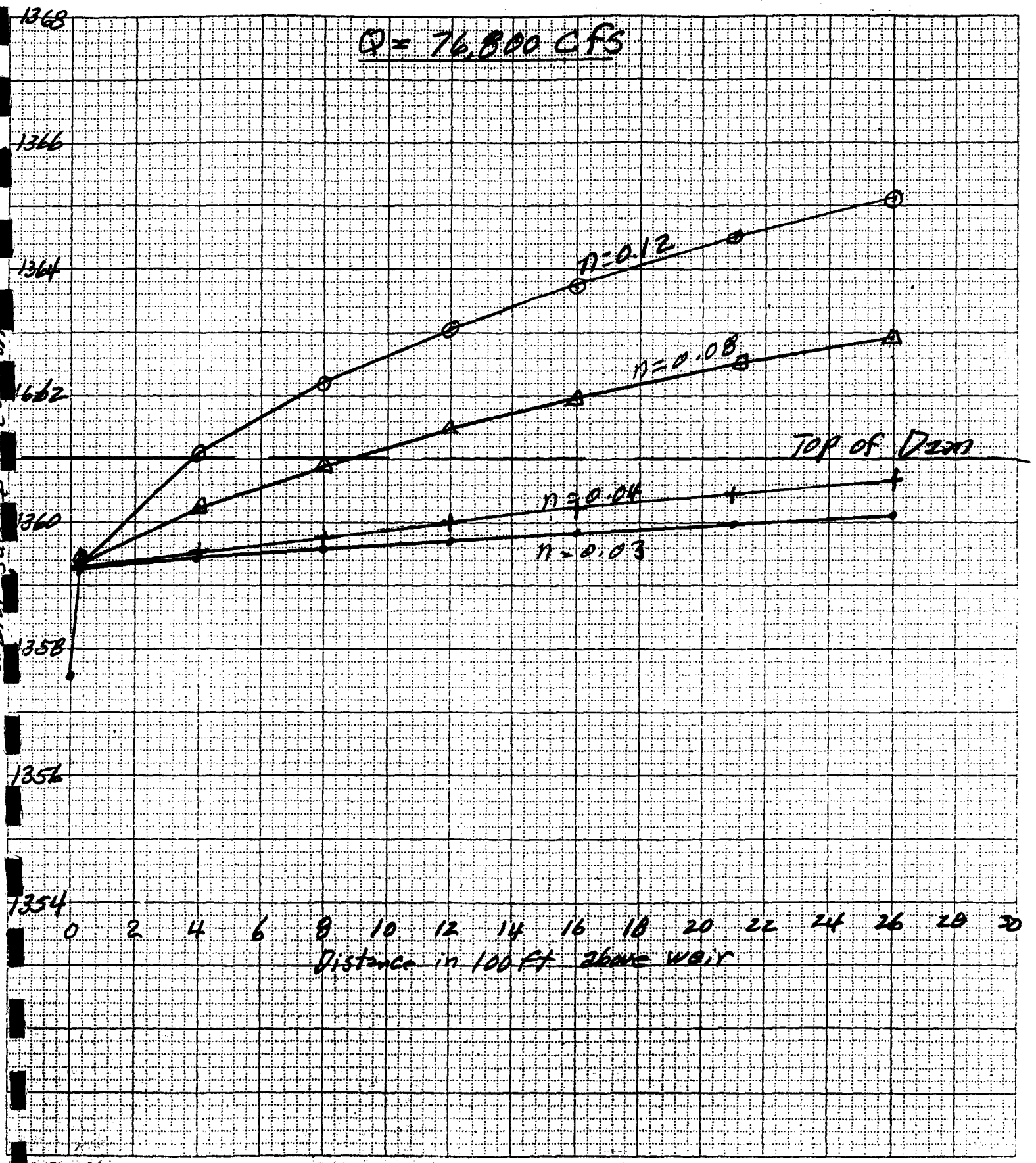
6910-153 4-90

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam Outlet Channel PAGE 4 OF 9

DETAIL W.S. Elevations within channel above weir COMPUTED RWC DATE 11-29-9

CHECKED BY _____ DATE _____



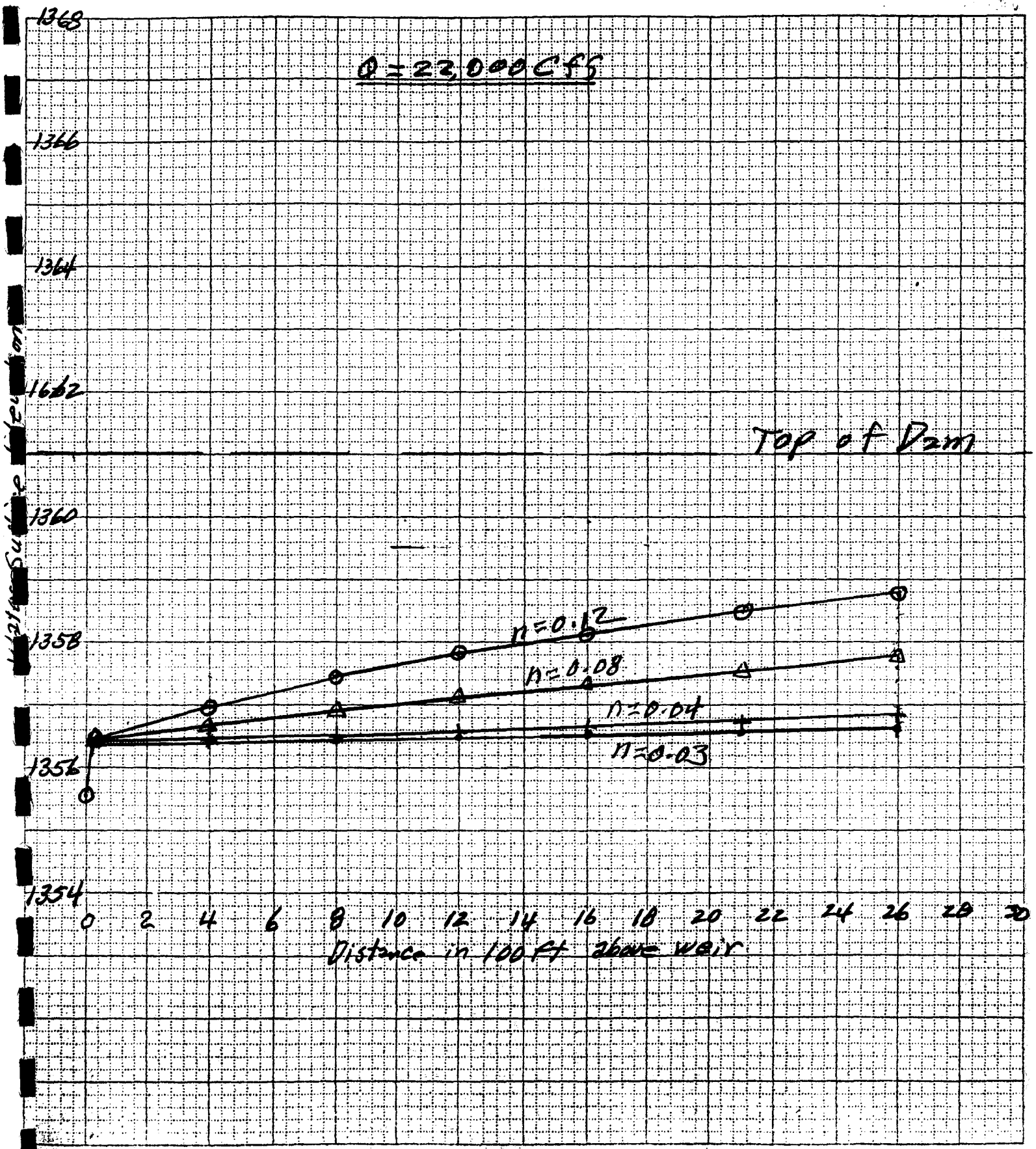
0-153 (4-90)

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam Outlet Channel PAGE 5 OF 9

DETAIL W.S. Elevations within Channel above weir COMPUTED RWC DATE 11-29-

CHECKED BY _____ DATE _____



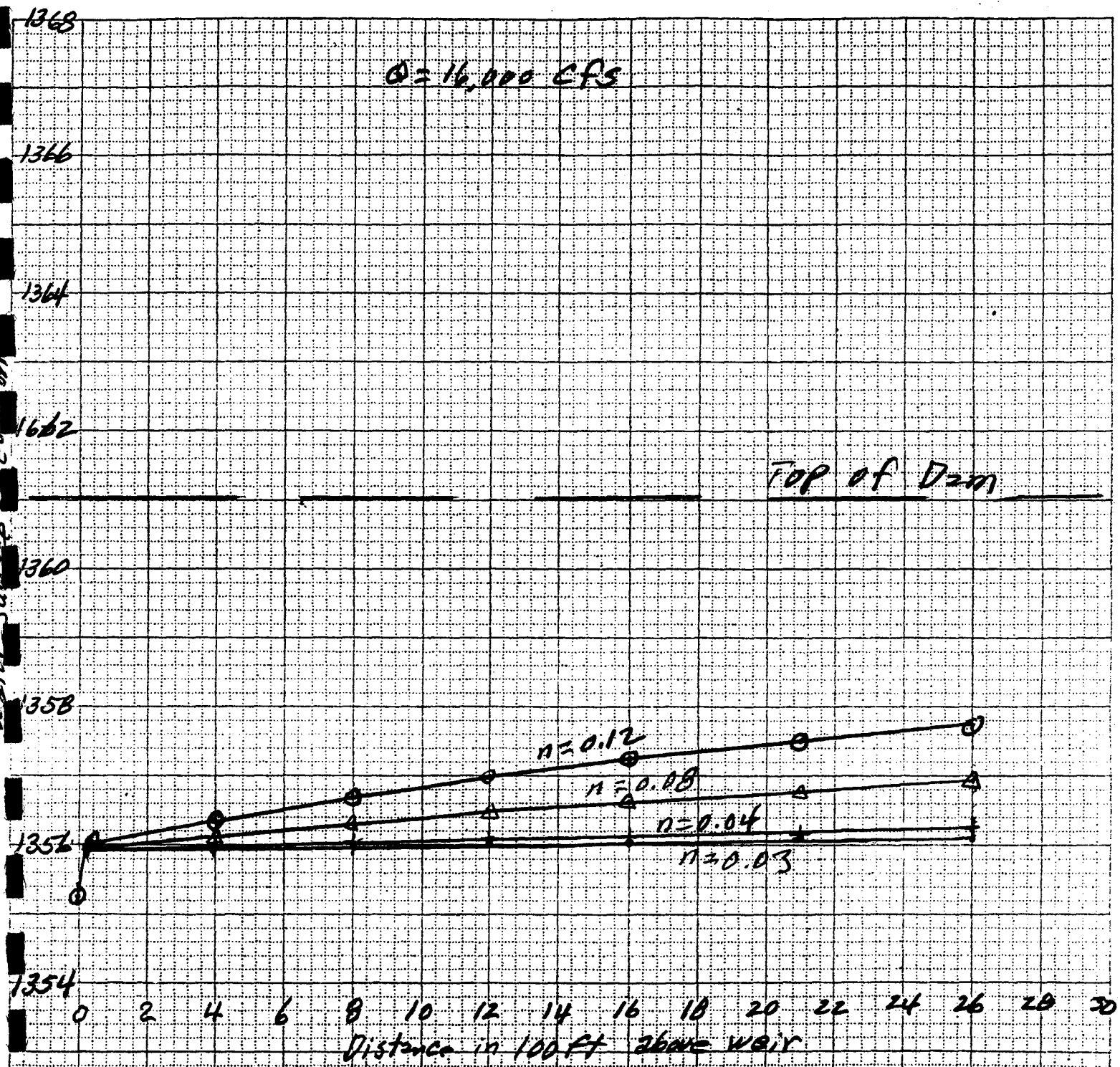
10-153

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam Outlet Channel PAGE 6 OF 9

DETAIL W.S. Elevations within Channel above weir COMPUTED RWC DATE 11-29-8

CHECKED BY _____ DATE _____



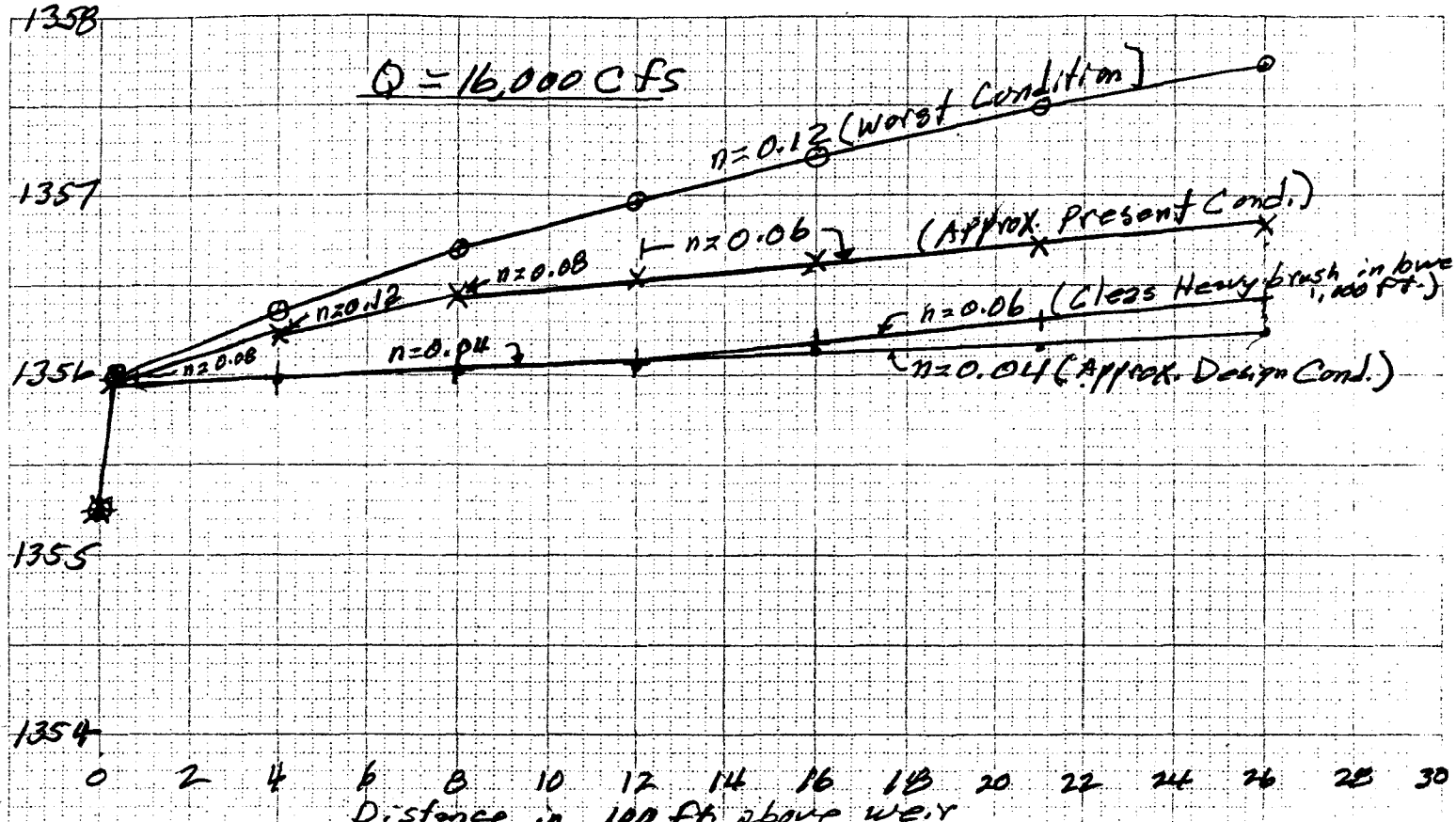
(C-130 4-84)

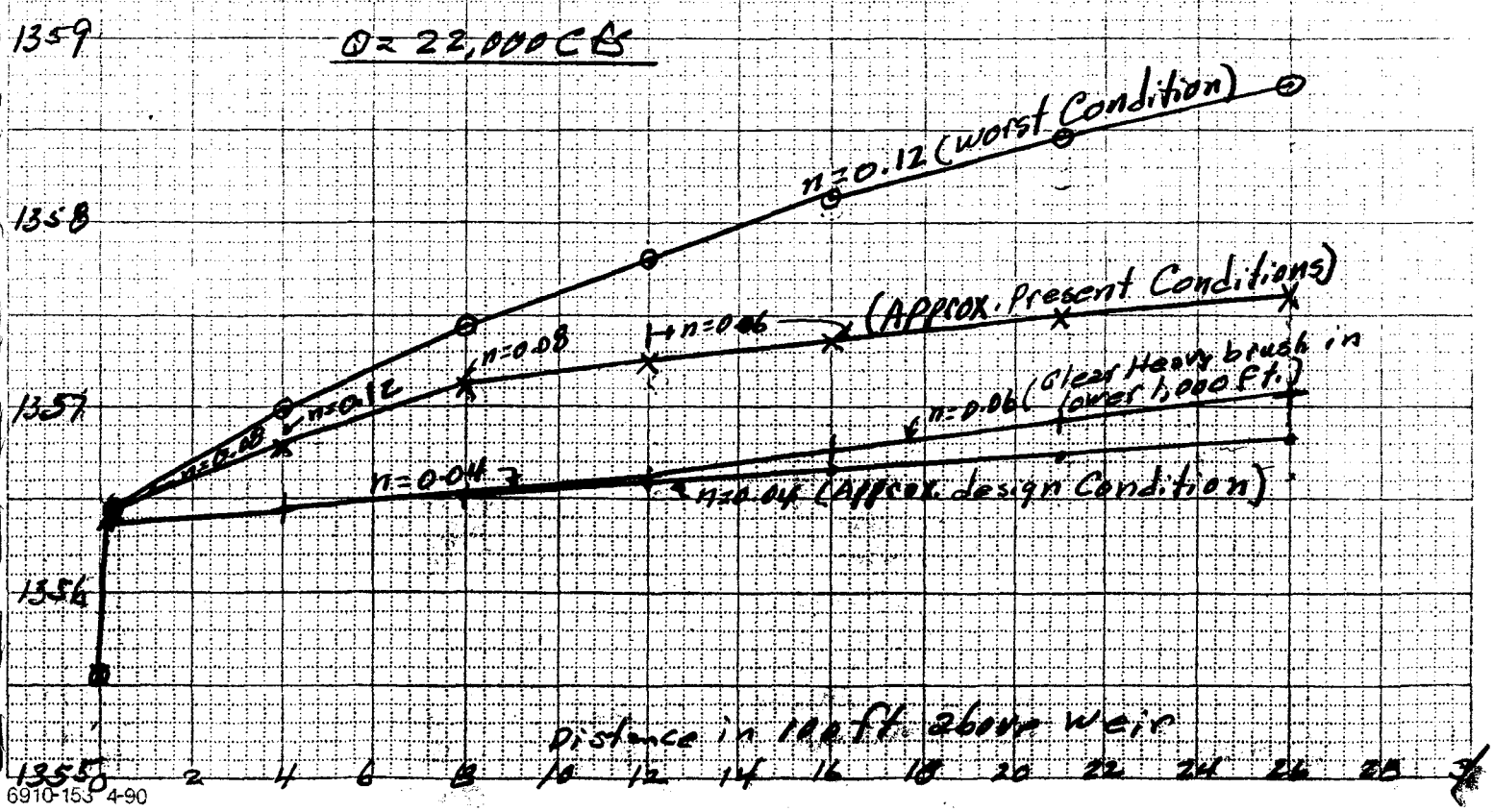
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam Outlet Channel PAGE 7 OF 9

DETAIL Water Surface Elevations COMPUTED RWC DATE 11-29-79

within Channel 26. Weir. CHECKED BY _____ DATE _____





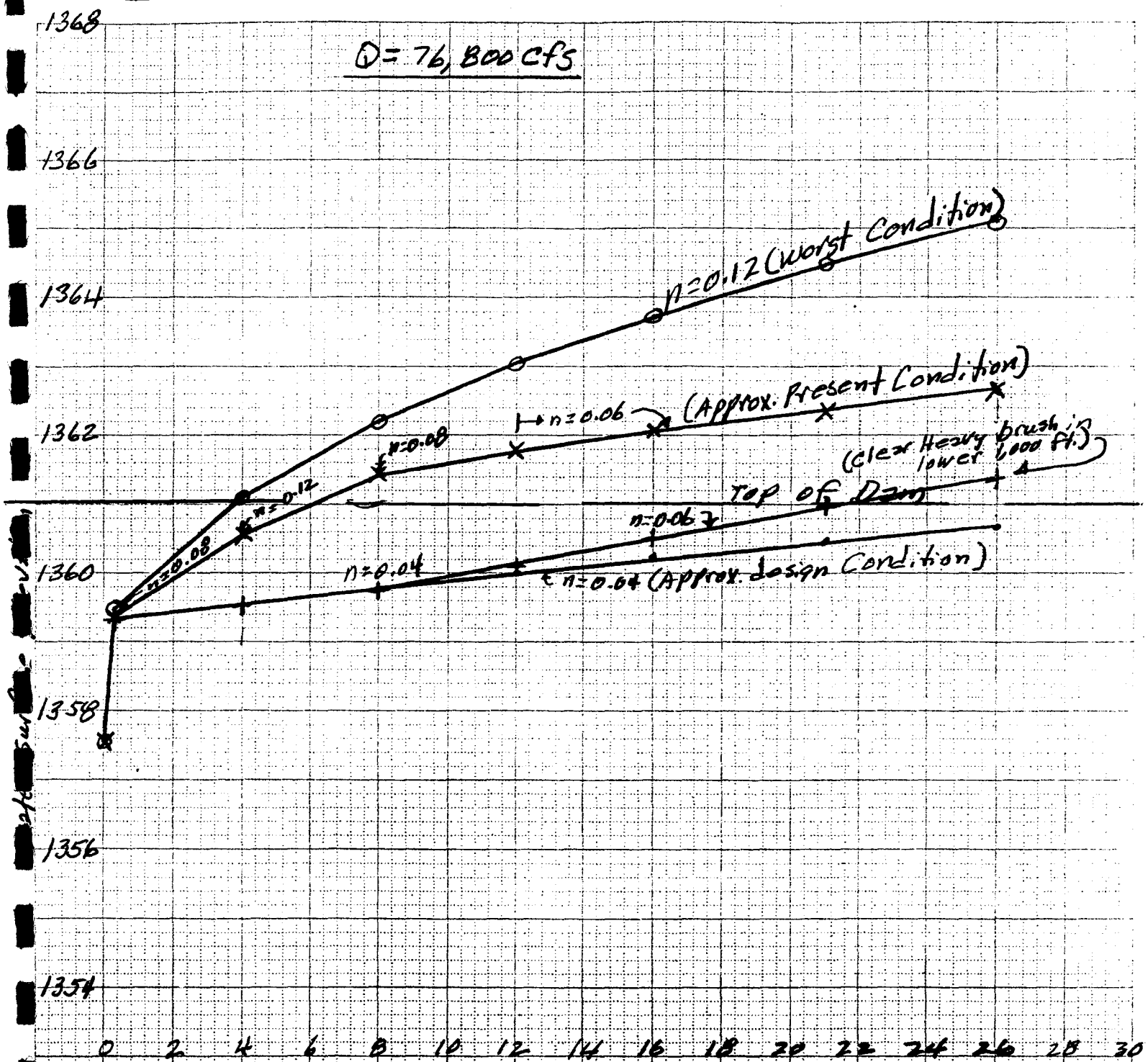
6910-153 4-90

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam Outlet Channel PAGE 8 OF 9

DETAIL W.S. elevations within channel above weir COMPUTED RWC DATE 11-27-91

CHECKED BY _____ DATE _____



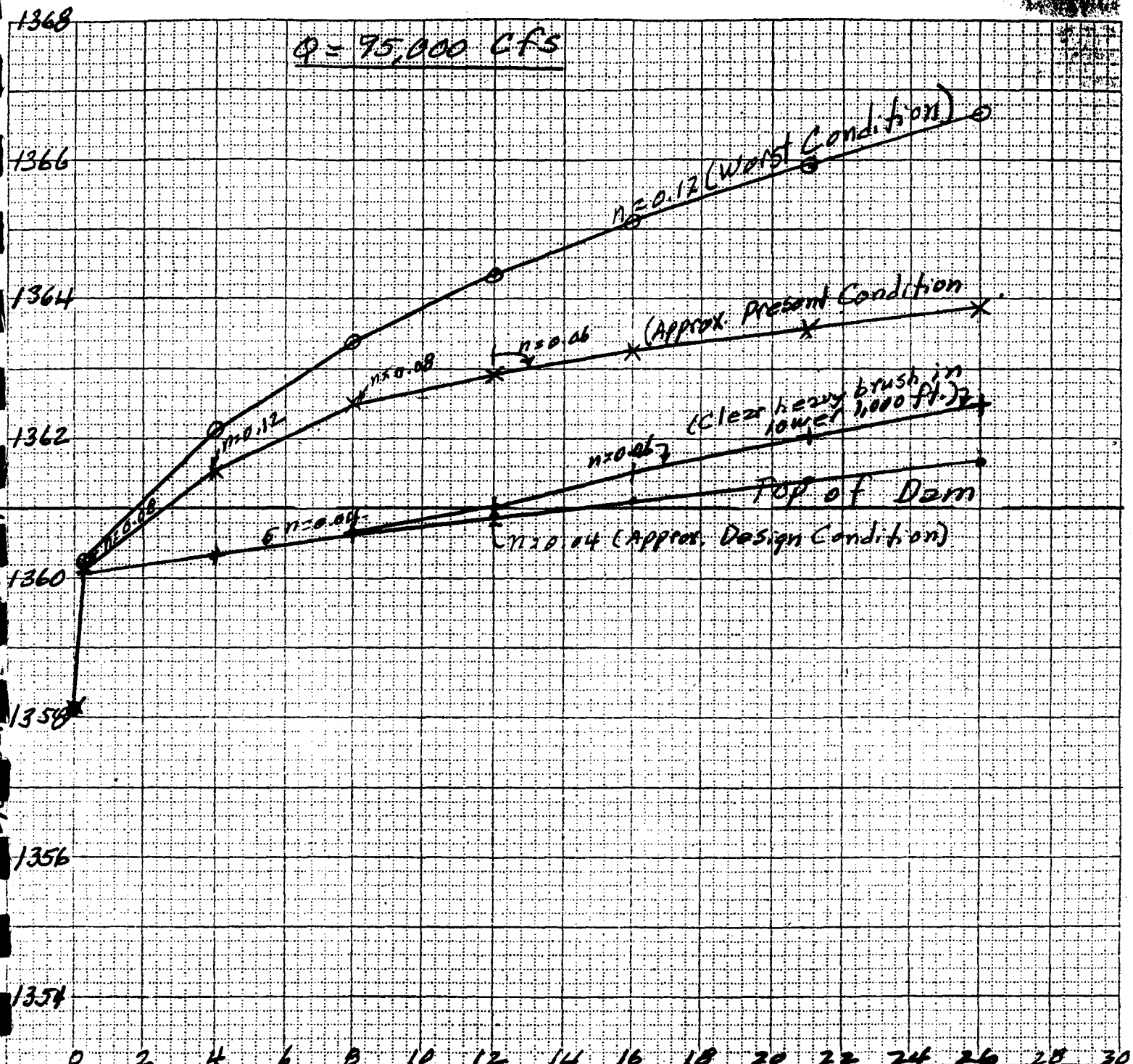
6910-153 4-80

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam Outlet Channel PAGE 9 OF 9

DETAIL W.S. Elevations within channel above weir COMPUTED RWC DATE 11-27-9

CHECKED BY _____ DATE _____



APPENDIX C

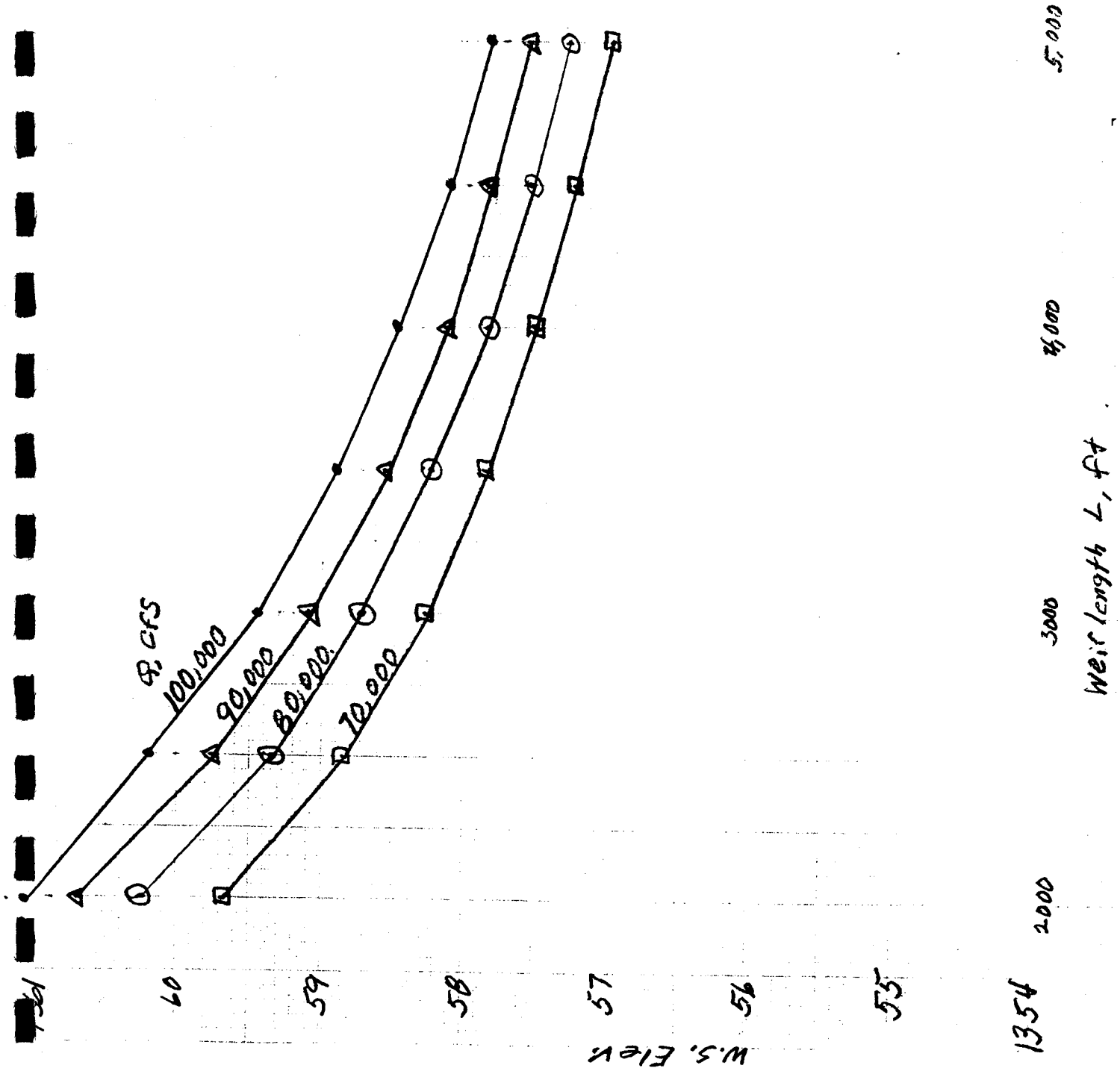
Computation notes for flow over the spillway weir, for different length weirs.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam - Outlet Spillway PAGE 1 OF 1

DETAIL Pool level Vs Weir Length COMPUTED PWC DATE 12-30-

for Various Q's CHECKED BY _____ DATE _____



Subject AGUA FRIA - Trilby Wash Detention Basin

Computation Spillway Discharge Rating — Sheet 4 of 6 sheet

Computed by AKL — Checked by — Date Jan '54

Discharge Rating at Spillway see page ____ .
Backwater Studies in approach channel see pages ____ to ____
Approach Channel El. 1350.0
Revise "C" in $Q = CLH^{3/2}$ to include losses in approach channel.

$$C = \frac{Q}{L(H')^{3/2}}$$

(H' = Energy Head upstream from approach channel).

Q (C.F.S.)	* Pool El.	H'	$(H')^{3/2}$	L	** C
2,160	1354.50	0.50	0.3536	1983	3.080
6,140	1355.02	1.02	1.0301	1987	3.000
17,400	1356.14	2.14	3.131	1993	2.788
32,100	1357.30	3.30	5.995	2000	2.677
69,400	1359.60	5.60	13.25	2009	2.607

* Note: Pool El. = Energy El. (Velocity head is negligable) see sheets 2 and 3. ** "C" is plotted on sheet 7.

Pool El.	H	$H^{3/2}$	***C	***L	****Q
1354.00	0		3.09	1980	0
1354.50	0.50	0.3536	3.08	1983.3	2,160
1355.00	1.00	1.0000	3.005	1986.5	5,969
1355.50	1.50	1.8370	2.920	1989.7	10,721
1356.00	2.00	2.8280	2.820	1992.5	15,890
1356.50	2.50	3.9530	2.730	1995.5	21,567
1357.00	3.00	5.1960	2.694	1998.4	28,027
1358.00	4.00	8.00	2.649	2003.3	42,507
1359.00	5.00	11.18	2.620	2007.3	58,800
1360.00	6.00	14.70	2.600	2010.3	76,800

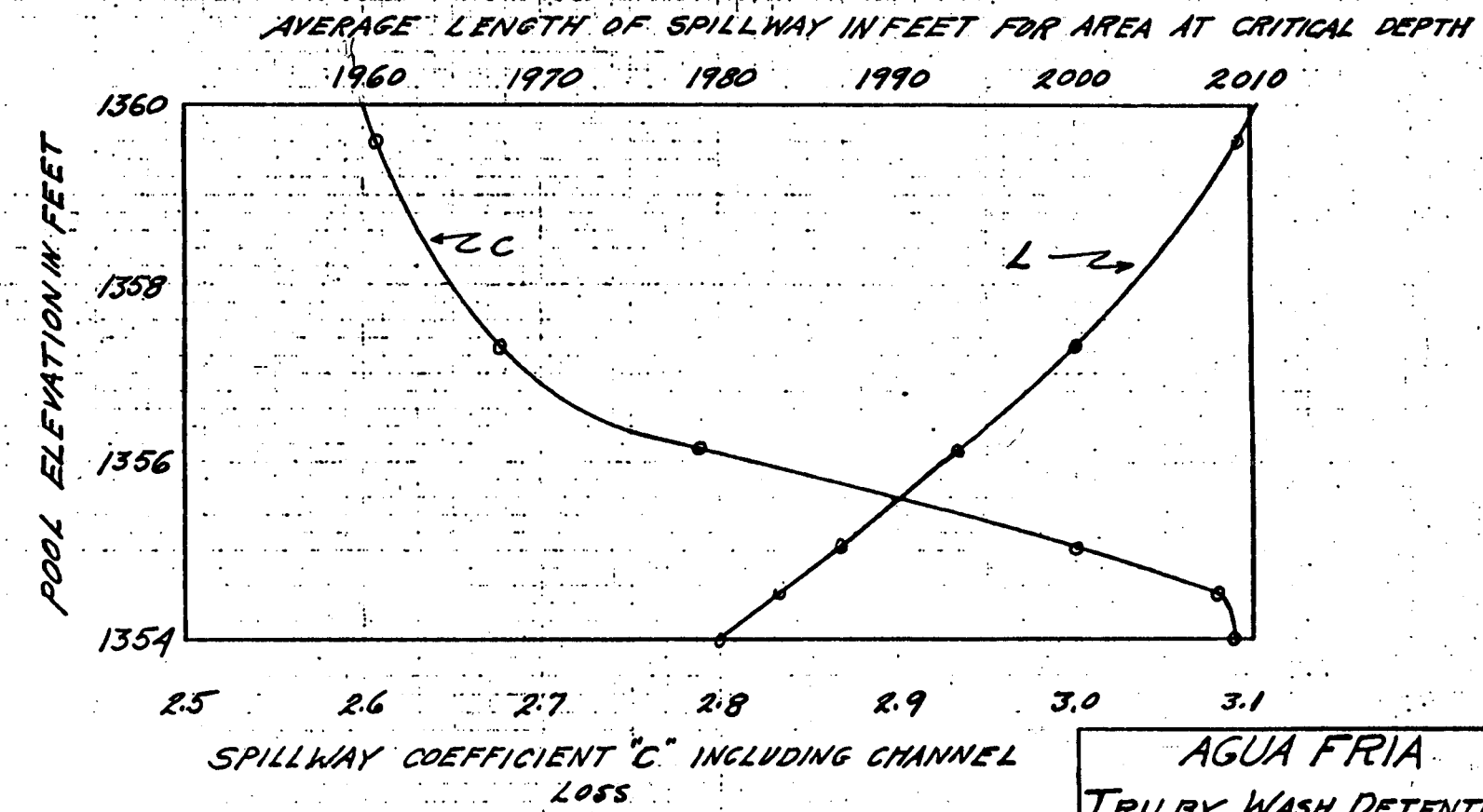
***** Note: "C" and "L" are taken from curves on sheet 7.
**** Q is plotted on sheet 8.

Subject AGUA FRIA - Trilby Wash Detention Basin
Computation Spillway Flood Routing Sheet 1 of 6 sheets
Computed by AKL Checked by Date Jan '54

I. S. D. TABLE

Top of Dam El. 1361.0
Spillway: Crest El 1354.00; L = 2000; Approach El. 1350.0
Outlets: 1-10' high by 20' Wide; Sill El. 1335.00
Rating: Outlet - page ___; Spillway - page ___.
Storage: Page 32 Design Memo No. 1, L.A. District.

Pool El.	Storage		ΔS	Outlets				Stge Ind.	ΔS.I.
	1000 Ac.Ft.	1000 1/24 d.s.f.		Outlet 1000 CFS	Spillway 1000 CFS	Total 1000 C.F.S.	ΔQ		
1335.00	0.00	0.0		0.0		0.0		0.0	
1337.00	0.00	0.0	0.0	0.2		0.2	0.2	0.1	0.1
1340.00	0.00	0.0	0.0	0.7		0.7	0.5	0.4	0.3
1342.00	0.70	8.4	8.4	1.1		1.1	0.4	9.0	8.6
1344.00	1.70	20.4	12.0	1.6		1.6	0.5	21.2	12.2
1346.00	3.46	41.5	21.1	2.2		2.2	0.6	42.6	21.4
1348.00	5.90	70.8	29.3	2.8		2.8	0.6	72.2	29.6
1350.00	8.96	107.5	36.7	3.4		3.4	0.6	109.2	37.0
1352.00	12.47	149.6	42.1	4.0		4.0	0.6	151.6	42.4
1354.00	16.66	199.9	50.3	4.4	0.0	4.4	0.4	202.1	50.5
1354.50	17.83	214.0	14.1	4.5	2.2	6.7	2.3	217.4	15.3
1355.00	19.00	228.0	14.0	4.7	6.0	10.7	4.0	233.4	16.0
1355.50	20.20	242.4	14.4	4.8	10.7	15.5	4.8	250.2	16.8
1356.00	21.40	256.8	14.4	4.9	15.9	20.8	5.3	267.2	17.0
1356.50	22.70	272.4	15.6	5.0	21.6	26.6	5.8	285.7	18.5
1357.00	24.00	288.0	15.6	5.1	28.0	33.1	6.5	304.6	18.9
1357.50		304.4	16.4	5.2	35.0	40.2	7.1	321.9	17.3
1358.00		320.9	16.5	5.3	42.5	47.8	7.6	344.8	22.9
1358.50		338.3	17.4	5.3	50.5	55.8	8.0	366.2	21.4
1359.00		355.8	17.5	5.4	58.8	64.2	8.4	387.9	21.7
1359.50		373.1	17.3	5.5	67.5	73.0	8.8	409.6	21.7
1360.00		390.5	17.4	5.6	76.5	82.1	9.1	431.5	21.9
1360.50		408.6	18.1	5.7	85.5	91.2	9.1	454.2	22.7
1361.00		427.2		5.8					



AGUA FRIA

TRILBY WASH DETENTION BASIN

SPILLWAY COEFFICIENT AND LENGTH

JAN. '54 by AKL Sheet 5 of 6

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam - Outlet spillway PAGE 1 OF 7

DETAIL Rating for 2,000 ft weir COMPUTED RWC DATE 12-29-97

C per Corps design CHECKED BY _____ DATE _____

Pool Elev	H	$H^{3/2}$	C	L	Q
1354.0	0	0	3.09	2,000	0
4.5	0.5	0.3536	3.08		2,180
5.0	1.0	1.000	3.005		6,010
5.5	1.5	1.837	2.92		10,730
6.0	2.0	2.828	2.82		15,950
6.5	2.5	3.953	2.73		21,580
7.0	3.0	5.196	2.694		28,000
7.5	3.5	6.548	2.67		34,970
8.0	4.0	8.000	2.649		42,380
8.5	4.5	9.546	2.625		50,310
9.0	5.0	11.18	2.62		58,580
9.5	5.5	12.90	2.61		67,340
1360.0	6.0	14.70	2.60		76,440
60.5	6.5	16.57	2.60		86,164
61.0	7.0	18.52	2.60		96,304

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam - Outlet Spillway PAGE 2 OF 7

DETAIL Rating for 2,500 ft weir COMPUTED RWC DATE 12-29-5

C per Corps design CHECKED BY _____ DATE _____

Pool Elev	H	$H^{3/2}$	C	L	Q
1354.0	0	0	3.09	2,500	0
4.5	0.5	0.3536	3.08		2,730
5.0	1.0	1.000	3.005		7,510
5.5	1.5	1.837	2.92		13,410
6.0	2.0	2.828	2.82		19,940
6.5	2.5	3.953	2.73		26,980
7.0	3.0	5.196	2.694		35,000
7.5	3.5	6.548	2.67		43,710
8.0	4.0	8.000	2.649		52,980
8.5	4.5	9.546	2.625		62,890
9.0	5.0	11.18	2.62		73,220
9.5	5.5	12.90	2.61		84,180
1360.0	6.0	14.70	2.60		95,550
61.0	7.0	18.52	2.60		120,380

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam - Outlet Spillway PAGE 3 OF 7

DETAIL Rating for 3,000 ft weir COMPUTED RWC DATE 12-29-9

C per Corps design CHECKED BY _____ DATE _____

Pool Elev.	H	$H^{3/2}$	C	L	Q
1354.0	0	0	3.09	3,000	0
4.5	0.5	0.3536	3.08		3,270
5.0	1.0	1.000	3.005		9,020
5.5	1.5	1.837	2.92		16,100
6.0	2.0	2.828	2.82		23,920
6.5	2.5	3.953	2.73		32,370
7.0	3.0	5.196	2.694		42,000
7.5	3.5	6.548	2.67		52,460
8.0	4.0	8.000	2.649		63,570
8.5	4.5	9.546	2.635		75,460
9.0	5.0	11.18	2.62		87,870
9.5	5.5	12.90	2.61		101,010
1360.0	6.0	14.70	2.60		114,660
61.0	7.0	18.52	2.60		144,456

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam - Outlet spillway PAGE 4 OF 7

DETAIL Rating for 3,500 ft weir COMPUTED RWC DATE 12-29-9

C per Corps design CHECKED BY _____ DATE _____

Pool Elev	H	$H^{3/2}$	C	L	Q
1354.0	0	0	3.09	3,500	0
4.5	0.5	0.3536	3.08		3,810
5.0	1.0	1.000	3.005		10,510
5.5	1.5	1.837	2.92		18,780
6.0	2.0	2.828	2.82		27,910
6.5	2.5	3.953	2.73		37,760
7.0	3.0	5.196	2.694		49,000
7.5	3.5	6.548	2.67		61,200
8.0	4.0	8.000	2.649		74,160
8.5	4.5	9.546	2.635		88,040
9.0	5.0	11.18	2.62		102,520
9.5	5.5	12.90	2.61		117,840
1360.0	6.0	14.70	2.60		133,370
61.0	7.0	18.52	2.60		168,532

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam - Outlet Spillway PAGE 5 OF 7

DETAIL Rating for 4,000 ft weir COMPUTED RWC DATE 12-29-9

Cper Corps design CHECKED BY _____ DATE _____

Pool Elev.	H	$H^{3/2}$	C	L	Q
1354.0	0	0	3.09	4,000	0
4.5	0.5	0.3536	3.08		4,360
5.0	1.0	1.000	3.005		12,020
5.5	1.5	1.837	2.92		21,460
6.0	2.0	2.828	2.82		31,900
6.5	2.5	3.953	2.73		43,160
7.0	3.0	5.196	2.694		56,000
7.5	3.5	6.548	2.67		69,940
8.0	4.0	8.000	2.649		84,760
8.5	4.5	9.546	2.625		100,620
9.0	5.0	11.18	2.62		117,160
9.5	5.5	12.90	2.61		134,680
1360.0	6.0	14.70	2.60		152,880
61.0	7.0	18.52	2.60		192,608

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam - Outlet spillway PAGE 6 OF 7

DETAIL Rating for 4,500 ft weir COMPUTED RWC DATE 12-29-9

C per Corps design CHECKED BY _____ DATE _____

Pool Elev	H	$H^{3/2}$	C	L	Q
1354.0	0	0	3.09	4,500	0
4.5	0.5	0.3536	3.08		4,900
5.0	1.0	1.000	3.005		13,520
5.5	1.5	1.837	2.92		24,140
6.0	2.0	2.828	2.82		35,890
6.5	2.5	3.953	2.73		48,560
7.0	3.0	5.196	2.694		63,000
7.5	3.5	6.548	2.67		78,680
8.0	4.0	8.000	2.649		95,360
8.5	4.5	9.546	2.635		113,200
9.0	5.0	11.18	2.62		131,800
9.5	5.5	12.90	2.61		151,500
1360.0	6.0	14.70	2.60		172,000
61.0	7.0	18.52	2.60		216,684

APPENDIX P - HEC-1 Model PMP2CPMW.DAT

```
ID filename: pmp2CPMW.DAT
ID McMicken Dam Watershed
ID Probable Maximum Flood
ID FCMCD Jan 87 J. Rumann
ID Sub Basins 1-44
ID TWO MORE SUB-BASINS WERE ADDED BY BING ZHAO
ID (01/09/1996). THEY ARE SUB-BASINS 45 AND 46.
ID
ID (2-14-2000) THE OHE MCMICKEN DAM OUTLET RATING CURVES MODIFIED BY RWC
ID      TO USE THE HECRAS RESULTS AT THE UPPER END OF THE SPILLWAY CHANNEL
ID              FOR PRESENT CONDITION "N"
ID                      BUT MOVING THE WEIR TO THE UPPER END OF CHANNEL
*DIAGRAM
IT     5       0       0     900
IO     3
KK     1
BA  9.60
IN   360
PB 15.70
PI   1.1     2.3     7.2     1.3     .65     .65     .65     .65     .30     .30
PI   .30     .30
LU  0.95    0.15
UI     0     241     489     761    1196    1767    2405    3022    3742    3889
UI  4131    4350    4350    4350    3744    3157    2953    2702    2265    2142
UI  2032    1842    1467    1402    1343    1086    1005     967     932     920
UI   900     869     580     562     545     529     514     319     295     274
UI   267     260     254     171     150     146     143     140     137     134
UI   131     129     126      67      66      65      64      62      61      60
UI    59      58      57      19       0
KK ROUTE1 TO 4
RM     1     0.7     0.2
KK     4
BA  3.42
PB 15.70
LU   .95     .15
UK   300    0.09    0.15     100
RK  7500    0.05    0.05     0.5    TRAP      25       3
RK 19500    0.05   0.035            TRAP      50       3      NO
KK CCOMBINE1 & 4
HC     2
KK     6
BA  5.79
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 10000    0.02    0.04     1.0    TRAP      25       3
RK 19500    0.02   0.035            TRAP      75       3     YES
KK  DAM2
KM TRILBY WASH @ S.R. 74
RS     1    STOR      -1
SA     0     0.9
SE  2050    2061
SQ     0   17600
ST  2061    3500       3     1.5
```

```
KK   ROUTEDAM2 TO 13
RM     1     1.1     0.2
KK    13
BA  6.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 21000    0.02   0.040     1.0    TRAP      25       3
RK 27000    0.02   0.035            TRAP      50       3      NO
KK COMBINEDAM 2 @ 13
HC     2
KK    DAM9
KM   TRILBY WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1850    1857
SQ     0   30300
ST  1857    9000       3     1.5
KK   ROUTEDAM9 TO 25
RM     1     2.6     0.2
KK    25
BA  9.36
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 20000   0.009   0.040     3.0    TRAP      50       3
RK 40750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM9 TO 25
HC     2
KK   DAM22
KM   TRILBY WASH @ C.A.P., STA. 609+0
RS     1    STOR      -1
SQ     0    6903
SE  1540  1548.5
SV     0    3436
ST  1554    2000       3     1.5
KK   ROUTEDAM22 TO 31
RM     1     2.7     0.2
KK     3
BA  4.43
PB  15.7
LU   .95     .15
UK   300    0.05    0.15     100
RK  6200    0.05   0.040     1.0    TRAP      50       3
RK 26500    0.04   0.035            TRAP      75       3      NO
KK     5
BA  2.98
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK  4500    0.03   0.040     1.0    TRAP      50       3
RK 13000    0.01   0.035            TRAP     100       3     YES
```

```
KK  DAM1
KM   IONA WASH @ S.R. 74
RS     1    STOR      -1
SA     0     1.1
SE  2040    2048
SQ     0    7300
ST  2048    6000       3     1.5
KK  ROUTEDAM1 TO 12           ,
RM     1     0.9     0.2
KK    12
BA  4.42
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  9300   0.015   0.040     1.0    TRAP      50       3
RK 13500   0.010   0.035            TRAP     100       3      NO
KK CCOMBINEDAM1 TO 12
HC     2
KK DAM8
KM IONA WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1920    1930
SQ     0   10500
ST  1930   70003     1.5
KK   ROUTEDAM8 TO 24
RM     1     3.3     0.2
KK    24
BA 17.92
PB  15.7
LU   .95     .15
UK   300   0.010    0.15     100
RK 16000   0.008   0.040     5.0    TRAP      75       3
RK 60250   0.007   0.035            TRAP     150       3      NO
KK COMBINEDAM8 TO 24
HC     2
KK DAM21
KM   IONA WASH @ C.A.P., STA. 572+5
RS     1    STOR      -1
SQ     0      72     505    1135    1914    2817
SE1545.2    1546    1548    1550    1552    1554
SV     0       7      31      69     288     518
ST  1553    2000       3     1.5
KK   ROUTEDAM 21 TO 31
RM     1     2.8     0.2
KK    31
BA  9.34
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     2.0    TRAP     100       3
RK 39750   0.005   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21 & 22 TO 31
HC     3
KK ROUTEDAMS 21 & 22/31 TO 32
RM     1     0.2     0.2
```

```
KK      7
BA   7.05
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK 12400      0.02    0.040      1.0    TRAP      25        3
RK 24750      0.03    0.035             TRAP      50        3       NO
KK  DAM3
KM  S.R. 74
RS      1     STOR       -1
SA      0      1.1
SE   2000     2008
SQ      0    10300
ST   2008     6000        3      1.5
KK   ROUTEDAM3 TO 14
RM      1      2.1      0.2
KK     14
BA   7.21
PB   15.7
LU    .95      .15
UK    300    0.020     0.15      100
RK 19000    0.015    0.040      2.0    TRAP      50        3
RK 32250    0.012    0.035             TRAP     100        3       NO
KK COMBINEDAM3 TO 14
HC      2
KK DAM10
KM GRAND AVE.
RS      1     STOR       -1
SA      0       50
SE   1670     1675
SQ      0     8740
ST   1681     4000        3      1.5
KK   ROUTEDAM10 TO 26
RM      1      1.2      0.2
KK     26
BA   8.42
PB   15.7
LU    .95      .15
UK    300    0.010     0.15      100
RK 20000    0.008    0.040      2.0    TRAP      75        3
RK 27750    0.008    0.035             TRAP     150        3       NO
KK COMBINEDAM 10 TO 26
HC      2
KK DAM23
KM   C.A.P., STA. 688+0
RS      1     STOR       -1
SQ      0      116      440      881     1414     2025     2705     3447
SE1544.3     1545     1546     1547     1548     1549     1550     1551
SV      0        3       10       19       31      139      292      498
ST1550.2     2000        3      1.5
* THE FOLLOWING CARDS WERE FROM SPF HEC-1 INPUT FILE IN THE 1987
* REPORT BECAUSE ONE PAGE IS MISSING IN THE PMP HEC-1 INPUT FILE
* IN THE 1987 REPORT.
KK ROUTEDAM23 TO 32
RM      1      2.7      0.2
```

```
KK    32
BA  8.42
PB  15.7
LU  0.95    0.15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     3.0    TRAP     100       3
RK 38250   0.006   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21,22,23 TO 32
HC     3
KK      ROUTEDAMS 21,22,23/31,32 TO 33
RM     1     0.6     0.2
KK     8
BA  3.38
PB  15.7
LU  0.95    0.15
UK   300    0.04    0.15     100
RK  6500    0.04   0.040     1.0    TRAP      25       3
RK 24500    0.03   0.035            TRAP      50       3      NO
KK  DAM4
KM   S.R. 74
RS     1    STOR      -1
SA     0    50.0
SE  1990    2000
SQ     0    1525
ST  2001    1500       3     1.5
KK  ROUTEDAM4 TO 15
RM     1     2.6     0.2
KK     9
BA  5.44
PB  15.7
LU  0.95    0.15
UK   300    0.05    0.15     100
RK 12000    0.05    0.04     1.0    TRAP      25       3
RK 27500    0.04   0.035            TRAP      75       3      NO
KK DAM5
KM S.R.74
RS     1    STOR      -1
SA     0     5.0
SE  1980    1988
SQ     0   12000
ST  1988    2500       3     1.5
KK TO 15
RM     1     2.6     0.2
KK    15
BA  6.65
PB  15.7
* THE ABOVE (UP TO *) CARDS ARE FROM SPF HEC-1 INPUT FILE
LU   .95     .15
UK   300    0.02    0.15     100
RK 11400    0.02    0.04     2.0    TRAP      50       3
RK 38000   0.011   0.035            TRAP     100       3      NO
KK COMBINEDAMS 4, 5 TO 15
HC     3
```

```
KK DAM11
KM GRAND AVE.
RS      1     STOR       -1
SA      0     50.0
SE   1560     1567
SQ      0     5000
ST   1568     5000        3      1.5
KK    ROUTEDAM 11 TO 27
RM      1     0.07      0.2
KK     27
BA   1.04
PB   15.7
LU    .95      .15
UK    300    0.009     0.15      100
RK 13500    0.008     0.04             TRAP       25        3       NO
KK COMBINEDAM11 TO 27
HC      2
KK DAM24
KM    C.A.P. STA. 804+5
RS      1     STOR       -1
SQ      0       54      233      608     1007     1469     1985     2550     3161     3814
SQ   4506     5236
SE1543.5     1544     1545     1546     1547     1548     1549     1550     1551     1552
SE   1553     1554
SV      0        0        0        0        1        3        9       18       44      114
SV    204      413
ST1552.8     2000        3      1.5
KK    ROUTEDAM24 TO 33
RM      1      2.4      0.2
KK     18
BA   0.87
PB   15.7
LU    .95      .15
UK    300     0.01     0.15      100
RK 17500    0.009     0.04             TRAP       50        3       NO
KK DAM14
KM GRAND AVE.
RS      1     STOR       -1
SA      0     0.30
SE   1520     1527
SQ      0     1500
ST   1527     1500        3      1.5
KK    ROUTEDAM14 TO 33
RM      1      2.4      0.2
KK     33
BA   7.48
PB   15.7
LU    .95      .15
UK    300    0.005     0.15      100
RK 13000    0.005     0.04      2.0    TRAP       75        3
RK 34750    0.006    0.035             TRAP      100        3       NO
KK COMBINEDAMS 21, 22, 23/31, 32 TO DAMS 14, 24/33
HC      4
KK    ROUTEALL TO 34
RM      1      0.3      0.2
```

```
KK      2
BA 17.02
PB  15.7
LU   .95     0.15
UK   300     0.09     0.15      100
RK  6800    0.071    0.040      2.0    TRAP      50        3
RK 48000    0.043    0.035             TRAP     100        3       NO
KK     11
BA  1.40
PB  15.7
LU   .95      .15
UK   300    0.030     0.15      100
RK  9000    0.022     0.04      0.5    TRAP      50        3
RK 11750    0.022    0.035             TRAP     100        3      YES
KK  DAM7
KM   ME WASH @ S.R. 74
RS      1     STOR      -1
SA      0       50
SE  1980     1988
SQ      0    15000
ST  1988     2500        3      1.5
KK   ROUTEDAM7 TO 17
RM      1      2.4      0.2
KK     10
BA  1.43
PB  15.7
LU   .95      .15
UK   300     0.03     0.15      100
RK  8500     0.28     0.04      0.5    TRAP      25        3
RK 17500    0.023    0.035             TRAP      50        3       NO
KK  DAM6
KM  S.R. 74
RS      1     STOR      -1
SA      0     0.20
SE  1980     1988
SQ      0     1325
ST  1988     1000        3      1.5
KK   ROUTEDAM6 TO 17
RM      1      2.4      0.2
KK     17
BA  6.70
PB  15.7
LU   .95      .15
UK   300    0.015     0.15      100
RK 18000    0.014     0.04      2.0    TRAP      50        3
RK 34250    0.013    0.035             TRAP     100        3       NO
KK COMBINEDAM56 & 7 TO 17
HC      3
KK DAM13
KM ME WASH @ C.A.P.
RS      1     STOR      -1
SQ      0       51      778     3740     5531     6875     7646     7773
SE  1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV      0        0        0       44      357      747     1024     1072
ST  1557     2000        3      1.5
KK   ROUTEDAM13 TO 21
RM      1      0.6      0.2
```

```
KK    16
BA  3.46
PB  15.7
LU   .95      .15
UK   300    0.015     0.15      100
RK  8500    0.014     0.04      1.0     TRAP       25        3
RK 35750    0.011    0.035              TRAP       75        3       NO
KK DAM12
KM C.A.P.
RS     1     STOR       -1
SQ     0       51      778     3740     5531     6875     7646     7773
SE  1540     1542     1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0        0        0       44      357      747     1024     1072
ST  1557      200        3      1.5
KK   ROUTEDAM12 TO 21
RM     1      0.6      0.2
KK    21
BA  1.04
PB  15.7
LU   .95      .15
UK   300    0.009     0.15      100
RK  8500    0.008     0.04              TRAP       25        3       NO
KK COMBINEDAMS 12, 13 TO 21
HC     3
KK   DAM17
KM GRAND AVE.
RS     1     STOR       -1
SA     0       50
SE  1480     1487
SQ     0    12000
ST  1488     3000        3      1.5
KK   ROUTEDAM 17 TO 34
RM     1      1.3      0.2
KK    19
BA  2.57
PB  15.7
LU   .95      .15
UK   300    0.013     0.15      100
RK 10000    0.012     0.04      1.0     TRAP       25        3
RK 19000    0.012    0.035              TRAP       50        3       NO
KK DAM15
KM C.A.P.
RS     1     STOR       -1
SQ     0       51      778     3740     5531     6875     7646     7773
SE  1540     1542     1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0        0        0       44      357      747     1024     1072
ST  1557     2000        3      1.5
KK   ROUTEDAM15 TO 22
RM     0        1      0.2
KK    22
BA  2.31
PB  15.7
LU   .95      .15
UK   300    0.009     0.15      100
RK 14750    0.008     0.04              TRAP       50        3       NO
KK COMBINEDAM15 TO 22
HC     2
```

```
KK DAM18
KM GRAND AVE.
RS      1    STOR      -1
SA      0   0.600
SE   1420    1427
SQ      0   10000
ST   1427    3500       3     1.5
KK ROUTEDAM18 TO 34
RM      1     0.8     0.2
KK COMBINEDAM 17 TO DAM 18
HC      2
KK     20
BA   1.08
PB   15.7
LU    .95     .15
UK    300    0.01    0.15     100
RK   6500    0.01    0.04     0.5    TRAP      25       3
RK  12250   0.011   0.035            TRAP      50       3      NO
KK DAM16
KM C.A.P.
RS      1    STOR      -1
SQ      0      51     778    3740    5531    6875    7646    7773
SE   1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV      0       0       0      44     357     747    1024    1072
ST   1557    2000       3     1.5
KK   ROUTEDAM16 TO 23
RM      1     1.6     0.2
KK     23
BA   3.71
PB   15.7
LU    .95     .15
UK    300   0.008    0.15     100
RK  12000   0.008    0.04     1.0    TRAP      50       3
RK  23500   0.007   0.035            TRAP      75       3      NO
KK COM8INEDAM16 TO 23
HC      2
KK DAM19
KM GRAND AVE.
RS      1    STOR      -1
SA      0   0.650
SE   1375    1382
SQ      0   10000
ST   1382    4000       3     1.5
KK   ROUTEDAM19 TO 34
RM      1     0.2     0.2
KK COMBINEDAMS 17, 18 TO DAM 19
HC      2
KK     34
BA   3.23
PB   15.7
LU    .95     .15
UK    300   0.008    0.15     100
RK  12000   0.008    0.04     1.0    TRAP      75       3
RK  24000   0.007   0.035            TRAP     100       3      NO
```

```
KK    44
BA   8.7
IN    60
PB  15.7
LU   .95     .15
UI     0     144     292     398     593     826    1097    1476    1794    2129
UI  2582    2587    2710    3037    3037    3037    3037    3037    2621    2242
UI  2127    2024    1883    1597    1529    1466    1409    1345    1040    1003
UI   969     938     802     715     694     674     655     637     620     604
UI   588     523     399     389     380     372     364     351     196     192
UI   188     184     184     181     177     174     110     104     102     100
UI    99      97      96      94      92      91      89      88      87      47
UI    46      45      45      44      44      43      42      42      41      41
UI    40      38       0       0
KK ROUTE44
KM ROUTE 44 TO 43
RK 12500   0.001    0.03            TRAP     100       3
KK    42
BA  5.46
PB  15.7
UI     0     144     292     466     723    1096    1469    1846    2256    2225
UI  2550    2550    2550    2549    1928    1795    1679    1431    1288    1218
UI  1189     875     834     797     684     595     572     550     530     511
UI   494     396     330     319     310     313     164     160     156     152
UI   148     157      87      85      83      81      80      78      76      75
UI    73      81      39      38      38      37      36      36      35      34
UI    34      16       0       0
KK   ROUTE42
KM   ROUTE 42 TO 43
RK 21000   0.013   0.035            TRAP     100       3
KK    43
BA  5.11
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6500    0.02    0.04       1    TRAP      20       3
RK 25500   0.017   0.035            TRAP      50       3
KK COM8INE
HC     3
KK   ROUTE
KM ROUTE COMBINED HYDROGRAPHS
KM    42 43 44 TO 41
RK  5000   0.001    0.03            TRAP     100       3
KK    41
BA  3.05
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6200    0.09    0.04       1    TRAP      20       3
RK 24750    0.09   0.035            TRAP      50       3
KK COMBINE
HC     2
KK   ROUTE41 TO 38
RK  7000   0.001    0.03            TRAP     100       3
```

```
KK    38
BA  7.18
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  8500    0.09    0.04       2    TRAP      20       3
RK 33750    0.06   0.035            TRAP      50       3
KK COMBINE
HC     2
KK    39
BA  2.77
PB  15.7
UI     0     137     308     595    1015    1468    1786    1776    1915    1829
UI  1393    1266     997     917     787     629     574     449     424     401
UI   380     318     246     235     201     121     116     112     105      65
UI    62      60      58      57      55      47      29      28      27      27
UI    26      24       0       0
KK   ROUTE39 TO 35
RK 24000    0.01   0.035            TRAP      50       3
KK    35
BA  2.57
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6000    0.02    0.04       1    TRAP      20       3
RK 24000    0.01   0.035            TRAP      50       3
KK    28
BA 17.59
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.007    0.04       6    TRAP      25       3
RK 44500   0.006   0.035            TRAP      50       3      NO
KK   DAM20
KM   C.A.P., STA. 466+0
RS     1    STOR      -1
SV     0       9      33      97     436     912
SE  1536    1538    1540    1542    1544    1546
SQ     0     432    1222    2245    3457    4830
ST  1546    2000       3     1.5
KK   ROUTE28 TO 29
RK 14000   0.005    0.03            TRAP      75       3
KK    29
BA 10.32
PB  15.7
LU   .95     .15
UK   300    0.04    0.15     100
RK 16000    0.06    0.04       3    TRAP      25       3
RK 44000    0.04   0.035            TRAP      75       3      NO
KK COMBINE28 TO 29
HC     2
KK COMBINE28, 29, 39 & 35
HC     3
KK   ROUTE
RK  6500   0.004   0.035            TRAP     100       3
```

```
KK    40
BA  2.15
PB  15.7
UI     0     168     397     786    1319    1870    2068    2259    2259    1805
UI  1532    1254    1095     949     743     665     526     494     466     462
UI   298     283     270     161     139     133     129      76      74      71
UI    69      66      74      35      33      33      32      31      30       4
UI     0
KK   ROUTE40 TO 36
RK 18000    0.01   0.035            TRAP      50       3
KK    36
BA  4.37
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6600    0.02    0.04       2    TRAP      20       3
RK 26500    0.01   0.035            TRAP      50       3
KK    30
BA  1.50
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.005   0.035            TRAP      25       3
KK COMBINE30, 35, 36, 39 & 40
HC     4
KK   ROUTETO 37
RK  5000    0.01   0.035            TRAP     100       3
KK    37
BA  2.94
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6700    0.09    0.04       1    TRAP      50       3
RK 26750    0.07   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE
RK 14500   0.005   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE MCM.SUB. TO 34
RK  3000   0.001    0.03            TRAP     100       3
KK COMBINE ALL TO 34
HC     4
KO     1       2
* KK MCMICKEN DAM
* RS     1    ELEV    1335
* SV     0       0    2200    8800   19000   32400   35500   49800
* SE  1335    1340    1345    1350    1355    1360    1361    1365
* SQ   0.0  1750.0  4600.0  10500.  20100.  47000.  63600.  81150.102200.0
* SE1335.0  1345.0  1353.9  1355.0  1356.0  1358.0  1359.0  1360.0  1361.0
* ST  1361   49500    3.05     1.5
```

```
KKNEW MCMICKEN DAM
KM NEW RATING CURVE FOR THE DAM WAS OBTAINED FROM JOE TRAM ON 01/09/1996
* RS      1     ELEV    1335
RS      1     ELEV    1327
SV      0        6      96     471    2196    6112   12926   20070   23126   28121
SV 30824   33615   36501
SE1327.0  1330.0 1332.55  1335.0  1340.0  1345.0  1350.0 1353.65  1355.0  1357.0
SE1358.0  1359.0  1360.0
* SAME SQ-SE RELATIONSHIP BECAUSE Q DEPENDS ON HEAD
SQ   0.0       35    2000    4660   15680   23840   30500   38710   47720   58250
SQ 69860
SE  1330    1335    1345  1353.9    1355    1356    1357    1358    1359    1360
SE  1361
ST  1361   49500    3.05     1.5
ZZ
2


1
```

pmp2CPMW.DAT

APPENDIX Q

HEC-1 Model PMP2CPCM06.DAT - Modifies outflow Rating for the present outlet spillway channel, based a HECRAS analysis of the spillway channel, using a natural vegetative condition ("n"=0.060) and by moving the weir to the upper end of the channel.

APPENDIX Q - HEC-1 Model PMP2M06.DAT

```
ID filename: pmp2CM06.DAT
ID McMicken Dam Watershed
ID Probable Maximum Flood
ID FCMCD Jan 87 J. Rumann
ID Sub Basins 1-44
ID TWO MORE SUB-BASINS WERE ADDED BY BING ZHAO
ID (01/09/1996). THEY ARE SUB-BASINS 45 AND 46.
ID
ID (2-14-2000) THE OHE MCMICKEN DAM OUTLET RATING CURVES MODIFIED BY RWC
ID      TO USE THE HECRAS RESULTS AT THE UPPER END OF THE SPILLWAY CHANNEL
ID              fOR "N"=0.060 IN CHANNEL
ID                      BUT MOVING THE WEIR TO THE UPPER END OF CHANNEL
*DIAGRAM
IT     5       0       0     900
IO     3
KK     1
BA  9.60
IN   360
PB 15.70
PI   1.1     2.3     7.2     1.3     .65     .65     .65     .65     .30     .30
PI   .30     .30
LU  0.95    0.15
UI     0     241     489     761    1196    1767    2405    3022    3742    3889
UI  4131    4350    4350    4350    3744    3157    2953    2702    2265    2142
UI  2032    1842    1467    1402    1343    1086    1005     967     932     920
UI   900     869     580     562     545     529     514     319     295     274
UI   267     260     254     171     150     146     143     140     137     134
UI   131     129     126      67      66      65      64      62      61      60
UI    59      58      57      19       0
KK ROUTE1 TO 4
RM     1     0.7     0.2
KK     4
BA  3.42
PB 15.70
LU   .95     .15
UK   300    0.09    0.15     100
RK  7500    0.05    0.05     0.5    TRAP      25       3
RK 19500    0.05   0.035            TRAP      50       3      NO
KK CCOMBINE1 & 4
HC     2
KK     6
BA  5.79
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 10000    0.02    0.04     1.0    TRAP      25       3
RK 19500    0.02   0.035            TRAP      75       3     YES
KK  DAM2
KM TRILBY WASH @ S.R. 74
RS     1    STOR      -1
SA     0     0.9
SE  2050    2061
SQ     0   17600
ST  2061    3500       3     1.5
```

```
KK   ROUTEDAM2 TO 13
RM     1     1.1     0.2
KK    13
BA  6.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 21000    0.02   0.040     1.0    TRAP      25       3
RK 27000    0.02   0.035            TRAP      50       3      NO
KK COMBINEDAM 2 @ 13
HC     2
KK    DAM9
KM   TRILBY WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1850    1857
SQ     0   30300
ST  1857    9000       3     1.5
KK   ROUTEDAM9 TO 25
RM     1     2.6     0.2
KK    25
BA  9.36
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 20000   0.009   0.040     3.0    TRAP      50       3
RK 40750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM9 TO 25
HC     2
KK   DAM22
KM   TRILBY WASH @ C.A.P., STA. 609+0
RS     1    STOR      -1
SQ     0    6903
SE  1540  1548.5
SV     0    3436
ST  1554    2000       3     1.5
KK   ROUTEDAM22 TO 31
RM     1     2.7     0.2
KK     3
BA  4.43
PB  15.7
LU   .95     .15
UK   300    0.05    0.15     100
RK  6200    0.05   0.040     1.0    TRAP      50       3
RK 26500    0.04   0.035            TRAP      75       3      NO
KK     5
BA  2.98
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK  4500    0.03   0.040     1.0    TRAP      50       3
RK 13000    0.01   0.035            TRAP     100       3     YES
```

```
KK  DAM1
KM   IONA WASH @ S.R. 74
RS     1    STOR      -1
SA     0     1.1
SE  2040    2048
SQ     0    7300
ST  2048    6000       3     1.5
KK  ROUTEDAM1 TO 12           ,
RM     1     0.9     0.2
KK    12
BA  4.42
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  9300   0.015   0.040     1.0    TRAP      50       3
RK 13500   0.010   0.035            TRAP     100       3      NO
KK CCOMBINEDAM1 TO 12
HC     2
KK DAM8
KM IONA WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1920    1930
SQ     0   10500
ST  1930   70003     1.5
KK   ROUTEDAM8 TO 24
RM     1     3.3     0.2
KK    24
BA 17.92
PB  15.7
LU   .95     .15
UK   300   0.010    0.15     100
RK 16000   0.008   0.040     5.0    TRAP      75       3
RK 60250   0.007   0.035            TRAP     150       3      NO
KK COMBINEDAM8 TO 24
HC     2
KK DAM21
KM   IONA WASH @ C.A.P., STA. 572+5
RS     1    STOR      -1
SQ     0      72     505    1135    1914    2817
SE1545.2    1546    1548    1550    1552    1554
SV     0       7      31      69     288     518
ST  1553    2000       3     1.5
KK   ROUTEDAM 21 TO 31
RM     1     2.8     0.2
KK    31
BA  9.34
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     2.0    TRAP     100       3
RK 39750   0.005   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21 & 22 TO 31
HC     3
KK ROUTEDAMS 21 & 22/31 TO 32
RM     1     0.2     0.2
```

```
KK      7
BA   7.05
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK 12400      0.02    0.040      1.0    TRAP      25        3
RK 24750      0.03    0.035             TRAP      50        3       NO
KK   DAM3
KM   S.R. 74
RS      1     STOR       -1
SA      0      1.1
SE   2000     2008
SQ      0    10300
ST   2008     6000        3      1.5
KK    ROUTEDAM3 TO 14
RM      1      2.1      0.2
KK     14
BA   7.21
PB   15.7
LU    .95      .15
UK    300    0.020     0.15      100
RK 19000    0.015    0.040      2.0    TRAP      50        3
RK 32250    0.012    0.035             TRAP     100        3       NO
KK COMBINEDAM3 TO 14
HC      2
KK DAM10
KM GRAND AVE.
RS      1     STOR       -1
SA      0       50
SE   1670     1675
SQ      0     8740
ST   1681     4000        3      1.5
KK    ROUTEDAM10 TO 26
RM      1      1.2      0.2
KK     26
BA   8.42
PB   15.7
LU    .95      .15
UK    300    0.010     0.15      100
RK 20000    0.008    0.040      2.0    TRAP      75        3
RK 27750    0.008    0.035             TRAP     150        3       NO
KK COMBINEDAM 10 TO 26
HC      2
KK DAM23
KM    C.A.P., STA. 688+0
RS      1     STOR       -1
SQ      0      116      440      881     1414     2025     2705     3447
SE1544.3     1545     1546     1547     1548     1549     1550     1551
SV      0        3       10       19       31      139      292      498
ST1550.2     2000        3      1.5
* THE FOLLOWING CARDS WERE FROM SPF HEC-1 INPUT FILE IN THE 1987
* REPORT BECAUSE ONE PAGE IS MISSING IN THE PMP HEC-1 INPUT FILE
* IN THE 1987 REPORT.
KK ROUTEDAM23 TO 32
RM      1      2.7      0.2
```

```
KK     32
BA   8.42
PB   15.7
LU   0.95     0.15
UK    300    0.007     0.15      100
RK 10000    0.006    0.040      3.0     TRAP      100        3
RK 38250    0.006    0.035             TRAP      175        3       NO
KK COMBINEDAMS 21,22,23 TO 32
HC      3
KK       ROUTEDAMS 21,22,23/31,32 TO 33
RM      1      0.6      0.2
KK      8
BA   3.38
PB   15.7
LU   0.95     0.15
UK    300     0.04     0.15      100
RK   6500     0.04    0.040      1.0     TRAP       25        3
RK 24500     0.03    0.035             TRAP       50        3       NO
KK   DAM4
KM    S.R. 74
RS      1     STOR       -1
SA      0     50.0
SE   1990     2000
SQ      0     1525
ST   2001     1500        3      1.5
KK   ROUTEDAM4 TO 15
RM      1      2.6      0.2
KK      9
BA   5.44
PB   15.7
LU   0.95     0.15
UK    300     0.05     0.15      100
RK 12000     0.05     0.04      1.0     TRAP       25        3
RK 27500     0.04    0.035             TRAP       75        3       NO
KK DAM5
KM S.R.74
RS      1     STOR       -1
SA      0      5.0
SE   1980     1988
SQ      0    12000
ST   1988     2500        3      1.5
KK TO 15
RM      1      2.6      0.2
KK     15
BA   6.65
PB   15.7
* THE ABOVE (UP TO *) CARDS ARE FROM SPF HEC-1 INPUT FILE
LU    .95      .15
UK    300     0.02     0.15      100
RK 11400     0.02     0.04      2.0     TRAP       50        3
RK 38000    0.011    0.035             TRAP      100        3       NO
KK COMBINEDAMS 4, 5 TO 15
HC      3
```

```
KK DAM11
KM GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1560    1567
SQ     0    5000
ST  1568    5000       3     1.5
KK   ROUTEDAM 11 TO 27
RM     1    0.07     0.2
KK    27
BA  1.04
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK 13500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAM11 TO 27
HC     2
KK DAM24
KM   C.A.P. STA. 804+5
RS     1    STOR      -1
SQ     0      54     233     608    1007    1469    1985    2550    3161    3814
SQ  4506    5236
SE1543.5    1544    1545    1546    1547    1548    1549    1550    1551    1552
SE  1553    1554
SV     0       0       0       0       1       3       9      18      44     114
SV   204     413
ST1552.8    2000       3     1.5
KK   ROUTEDAM24 TO 33
RM     1     2.4     0.2
KK    18
BA  0.87
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 17500   0.009    0.04            TRAP      50       3      NO
KK DAM14
KM GRAND AVE.
RS     1    STOR      -1
SA     0    0.30
SE  1520    1527
SQ     0    1500
ST  1527    1500       3     1.5
KK   ROUTEDAM14 TO 33
RM     1     2.4     0.2
KK    33
BA  7.48
PB  15.7
LU   .95     .15
UK   300   0.005    0.15     100
RK 13000   0.005    0.04     2.0    TRAP      75       3
RK 34750   0.006   0.035            TRAP     100       3      NO
KK COMBINEDAMS 21, 22, 23/31, 32 TO DAMS 14, 24/33
HC     4
KK   ROUTEALL TO 34
RM     1     0.3     0.2
```

```
KK      2
BA 17.02
PB  15.7
LU   .95     0.15
UK   300     0.09     0.15      100
RK  6800    0.071    0.040      2.0    TRAP      50        3
RK 48000    0.043    0.035             TRAP     100        3      NO
KK     11
BA  1.40
PB  15.7
LU   .95      .15
UK   300    0.030     0.15      100
RK  9000    0.022     0.04      0.5    TRAP      50        3
RK 11750    0.022    0.035             TRAP     100        3     YES
KK  DAM7
KM   ME WASH @ S.R. 74
RS      1     STOR      -1
SA      0       50
SE   1980     1988
SQ      0    15000
ST   1988     2500       3      1.5
KK   ROUTEDAM7 TO 17
RM      1      2.4     0.2
KK     10
BA  1.43
PB  15.7
LU   .95      .15
UK   300     0.03     0.15      100
RK  8500     0.28     0.04      0.5    TRAP      25        3
RK 17500    0.023    0.035             TRAP      50        3      NO
KK  DAM6
KM  S.R. 74
RS      1     STOR      -1
SA      0     0.20
SE   1980     1988
SQ      0     1325
ST   1988     1000       3      1.5
KK   ROUTEDAM6 TO 17
RM      1      2.4     0.2
KK     17
BA  6.70
PB  15.7
LU   .95      .15
UK   300    0.015     0.15      100
RK 18000    0.014     0.04      2.0    TRAP      50        3
RK 34250    0.013    0.035             TRAP     100        3      NO
KK COMBINEDAM56 & 7 TO 17
HC      3
KK DAM13
KM ME WASH @ C.A.P.
RS      1     STOR      -1
SQ      0       51      778     3740     5531     6875     7646     7773
SE   1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV      0        0        0       44      357      747     1024     1072
ST   1557     2000       3      1.5
KK   ROUTEDAM13 TO 21
RM      1      0.6     0.2
```

```
KK    16
BA  3.46
PB  15.7
LU   .95      .15
UK   300    0.015     0.15      100
RK  8500    0.014     0.04      1.0     TRAP       25        3
RK 35750    0.011    0.035              TRAP       75        3       NO
KK DAM12
KM C.A.P.
RS     1     STOR       -1
SQ     0       51      778     3740     5531     6875     7646     7773
SE  1540     1542     1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0        0        0       44      357      747     1024     1072
ST  1557      200        3      1.5
KK   ROUTEDAM12 TO 21
RM     1      0.6      0.2
KK    21
BA  1.04
PB  15.7
LU   .95      .15
UK   300    0.009     0.15      100
RK  8500    0.008     0.04              TRAP       25        3       NO
KK COMBINEDAMS 12, 13 TO 21
HC     3
KK   DAM17
KM GRAND AVE.
RS     1     STOR       -1
SA     0       50
SE  1480     1487
SQ     0    12000
ST  1488     3000        3      1.5
KK   ROUTEDAM 17 TO 34
RM     1      1.3      0.2
KK    19
BA  2.57
PB  15.7
LU   .95      .15
UK   300    0.013     0.15      100
RK 10000    0.012     0.04      1.0     TRAP       25        3
RK 19000    0.012    0.035              TRAP       50        3       NO
KK DAM15
KM C.A.P.
RS     1     STOR       -1
SQ     0       51      778     3740     5531     6875     7646     7773
SE  1540     1542     1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0        0        0       44      357      747     1024     1072
ST  1557     2000        3      1.5
KK   ROUTEDAM15 TO 22
RM     0        1      0.2
KK    22
BA  2.31
PB  15.7
LU   .95      .15
UK   300    0.009     0.15      100
RK 14750    0.008     0.04              TRAP       50        3       NO
KK COMBINEDAM15 TO 22
HC     2
```

```
KK DAM18
KM GRAND AVE.
RS     1    STOR      -1
SA     0   0.600
SE  1420    1427
SQ     0   10000
ST  1427    3500       3     1.5
KK ROUTEDAM18 TO 34
RM     1     0.8     0.2
KK COMBINEDAM 17 TO DAM 18
HC     2
KK    20
BA  1.08
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK  6500    0.01    0.04     0.5    TRAP      25       3
RK 12250   0.011   0.035            TRAP      50       3      NO
KK DAM16
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM16 TO 23
RM     1     1.6     0.2
KK    23
BA  3.71
PB  15.7
LU   .95     .15
UK   300   0.008    0.15     100
RK 12000   0.008    0.04     1.0    TRAP      50       3
RK 23500   0.007   0.035            TRAP      75       3      NO
KK COM8INEDAM16 TO 23
HC     2
KK DAM19
KM GRAND AVE.
RS     1    STOR      -1
SA     0   0.650
SE  1375    1382
SQ     0   10000
ST  1382    4000       3     1.5
KK   ROUTEDAM19 TO 34
RM     1     0.2     0.2
KK COMBINEDAMS 17, 18 TO DAM 19
HC     2
KK    34
BA  3.23
PB  15.7
LU   .95     .15
UK   300   0.008    0.15     100
RK 12000   0.008    0.04     1.0    TRAP      75       3
RK 24000   0.007   0.035            TRAP     100       3      NO
```

```
KK    44
BA   8.7
IN    60
PB  15.7
LU   .95     .15
UI     0     144     292     398     593     826    1097    1476    1794    2129
UI  2582    2587    2710    3037    3037    3037    3037    3037    2621    2242
UI  2127    2024    1883    1597    1529    1466    1409    1345    1040    1003
UI   969     938     802     715     694     674     655     637     620     604
UI   588     523     399     389     380     372     364     351     196     192
UI   188     184     184     181     177     174     110     104     102     100
UI    99      97      96      94      92      91      89      88      87      47
UI    46      45      45      44      44      43      42      42      41      41
UI    40      38       0       0
KK ROUTE44
KM ROUTE 44 TO 43
RK 12500   0.001    0.03            TRAP     100       3
KK    42
BA  5.46
PB  15.7
UI     0     144     292     466     723    1096    1469    1846    2256    2225
UI  2550    2550    2550    2549    1928    1795    1679    1431    1288    1218
UI  1189     875     834     797     684     595     572     550     530     511
UI   494     396     330     319     310     313     164     160     156     152
UI   148     157      87      85      83      81      80      78      76      75
UI    73      81      39      38      38      37      36      36      35      34
UI    34      16       0       0
KK   ROUTE42
KM   ROUTE 42 TO 43
RK 21000   0.013   0.035            TRAP     100       3
KK    43
BA  5.11
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6500    0.02    0.04       1    TRAP      20       3
RK 25500   0.017   0.035            TRAP      50       3
KK COM8INE
HC     3
KK   ROUTE
KM ROUTE COMBINED HYDROGRAPHS
KM    42 43 44 TO 41
RK  5000   0.001    0.03            TRAP     100       3
KK    41
BA  3.05
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6200    0.09    0.04       1    TRAP      20       3
RK 24750    0.09   0.035            TRAP      50       3
KK COMBINE
HC     2
KK   ROUTE41 TO 38
RK  7000   0.001    0.03            TRAP     100       3
```

```
KK    38
BA  7.18
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  8500    0.09    0.04       2    TRAP      20       3
RK 33750    0.06   0.035            TRAP      50       3
KK COMBINE
HC     2
KK    39
BA  2.77
PB  15.7
UI     0     137     308     595    1015    1468    1786    1776    1915    1829
UI  1393    1266     997     917     787     629     574     449     424     401
UI   380     318     246     235     201     121     116     112     105      65
UI    62      60      58      57      55      47      29      28      27      27
UI    26      24       0       0
KK   ROUTE39 TO 35
RK 24000    0.01   0.035            TRAP      50       3
KK    35
BA  2.57
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6000    0.02    0.04       1    TRAP      20       3
RK 24000    0.01   0.035            TRAP      50       3
KK    28
BA 17.59
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.007    0.04       6    TRAP      25       3
RK 44500   0.006   0.035            TRAP      50       3      NO
KK   DAM20
KM   C.A.P., STA. 466+0
RS     1    STOR      -1
SV     0       9      33      97     436     912
SE  1536    1538    1540    1542    1544    1546
SQ     0     432    1222    2245    3457    4830
ST  1546    2000       3     1.5
KK   ROUTE28 TO 29
RK 14000   0.005    0.03            TRAP      75       3
KK    29
BA 10.32
PB  15.7
LU   .95     .15
UK   300    0.04    0.15     100
RK 16000    0.06    0.04       3    TRAP      25       3
RK 44000    0.04   0.035            TRAP      75       3      NO
KK COMBINE28 TO 29
HC     2
KK COMBINE28, 29, 39 & 35
HC     3
KK   ROUTE
RK  6500   0.004   0.035            TRAP     100       3
```

```
KK    40
BA  2.15
PB  15.7
UI     0     168     397     786    1319    1870    2068    2259    2259    1805
UI  1532    1254    1095     949     743     665     526     494     466     462
UI   298     283     270     161     139     133     129      76      74      71
UI    69      66      74      35      33      33      32      31      30       4
UI     0
KK   ROUTE40 TO 36
RK 18000    0.01   0.035            TRAP      50       3
KK    36
BA  4.37
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6600    0.02    0.04       2    TRAP      20       3
RK 26500    0.01   0.035            TRAP      50       3
KK    30
BA  1.50
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.005   0.035            TRAP      25       3
KK COMBINE30, 35, 36, 39 & 40
HC     4
KK   ROUTETO 37
RK  5000    0.01   0.035            TRAP     100       3
KK    37
BA  2.94
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6700    0.09    0.04       1    TRAP      50       3
RK 26750    0.07   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE
RK 14500   0.005   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE MCM.SUB. TO 34
RK  3000   0.001    0.03            TRAP     100       3
KK COMBINE ALL TO 34
HC     4
KO     1       2
* KK MCMICKEN DAM
* RS     1    ELEV    1335
* SV     0       0    2200    8800   19000   32400   35500   49800
* SE  1335    1340    1345    1350    1355    1360    1361    1365
* SQ   0.0  1750.0  4600.0  10500.  20100.  47000.  63600.  81150.102200.0
* SE1335.0  1345.0  1353.9  1355.0  1356.0  1358.0  1359.0  1360.0  1361.0
* ST  1361   49500    3.05     1.5
```

```
KKNEW MCMICKEN DAM
KM NEW RATING CURVE FOR THE DAM WAS OBTAINED FROM JOE TRAM ON 01/09/1996
* RS      1     ELEV    1335
RS      1     ELEV    1327
SV      0        6      96     471    2196    6112   12926   20070   23126   28121
SV 30824   33615   36501
SE1327.0  1330.0 1332.55  1335.0  1340.0  1345.0  1350.0 1353.65  1355.0  1357.0
SE1358.0  1359.0  1360.0
* SAME SQ-SE RELATIONSHIP BECAUSE Q DEPENDS ON HEAD
SQ   0.0       35    2000    4660   16280   28740   36300   45710   56620   69750
SQ 83360
SE  1330     1335    1345  1353.9    1355    1356    1357    1358    1359    1360
SE  1361
ST  1361    49500    3.05     1.5
ZZ
```

pmp2CM06.DAT

Appendix M - HEC-1 Model PMP2DP10.DAT

```
ID filename: pmp2DP10.DAT
ID McMicken Dam Watershed
ID Probable Maximum Flood
ID FCMCD Jan 87 J. Rumann
ID Sub Basins 1-44
ID TWO MORE SUB-BASINS WERE ADDED BY BING ZHAO
ID
ID (2-22-2000) THE OHE MCMICKEN DAM OUTLET RATING CURVES MODIFIED BY RWC
ID      TO USE THE HECRAS RESULTS AT THE UPPER END OF THE SPILLWAY CHANNEL
ID              FOR PRESENT CONDITIONS  AND LENGTHENING THE WEIR
ID                      BY 1,000 FEET
ID
*DIAGRAM
IT     5       0       0     900
IO     3
KK     1
BA  9.60
IN   360
PB 15.70
PI   1.1     2.3     7.2     1.3     .65     .65     .65     .65     .30     .30
PI   .30     .30
LU  0.95    0.15
UI     0     241     489     761    1196    1767    2405    3022    3742    3889
UI  4131    4350    4350    4350    3744    3157    2953    2702    2265    2142
UI  2032    1842    1467    1402    1343    1086    1005     967     932     920
UI   900     869     580     562     545     529     514     319     295     274
UI   267     260     254     171     150     146     143     140     137     134
UI   131     129     126      67      66      65      64      62      61      60
UI    59      58      57      19       0
KK ROUTE1 TO 4
RM     1     0.7     0.2
KK     4
BA  3.42
PB 15.70
LU   .95     .15
UK   300    0.09    0.15     100
RK  7500    0.05    0.05     0.5    TRAP      25       3
RK 19500    0.05   0.035            TRAP      50       3      NO
KK CCOMBINE1 & 4
HC     2
KK     6
BA  5.79
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 10000    0.02    0.04     1.0    TRAP      25       3
RK 19500    0.02   0.035            TRAP      75       3     YES
KK  DAM2
KM TRILBY WASH @ S.R. 74
RS     1    STOR      -1
SA     0     0.9
SE  2050    2061
SQ     0   17600
ST  2061    3500       3     1.5
```

```
KK   ROUTEDAM2 TO 13
RM     1     1.1     0.2
KK    13
BA  6.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 21000    0.02   0.040     1.0    TRAP      25       3
RK 27000    0.02   0.035            TRAP      50       3      NO
KK COMBINEDAM 2 @ 13
HC     2
KK    DAM9
KM   TRILBY WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1850    1857
SQ     0   30300
ST  1857    9000       3     1.5
KK   ROUTEDAM9 TO 25
RM     1     2.6     0.2
KK    25
BA  9.36
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 20000   0.009   0.040     3.0    TRAP      50       3
RK 40750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM9 TO 25
HC     2
KK   DAM22
KM   TRILBY WASH @ C.A.P., STA. 609+0
RS     1    STOR      -1
SQ     0    6903
SE  1540  1548.5
SV     0    3436
ST  1554    2000       3     1.5
KK   ROUTEDAM22 TO 31
RM     1     2.7     0.2
KK     3
BA  4.43
PB  15.7
LU   .95     .15
UK   300    0.05    0.15     100
RK  6200    0.05   0.040     1.0    TRAP      50       3
RK 26500    0.04   0.035            TRAP      75       3      NO
KK     5
BA  2.98
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK  4500    0.03   0.040     1.0    TRAP      50       3
RK 13000    0.01   0.035            TRAP     100       3     YES
```

```
KK  DAM1
KM   IONA WASH @ S.R. 74
RS     1    STOR      -1
SA     0     1.1
SE  2040    2048
SQ     0    7300
ST  2048    6000       3     1.5
KK  ROUTEDAM1 TO 12           ,
RM     1     0.9     0.2
KK    12
BA  4.42
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  9300   0.015   0.040     1.0    TRAP      50       3
RK 13500   0.010   0.035            TRAP     100       3      NO
KK CCOMBINEDAM1 TO 12
HC     2
KK DAM8
KM IONA WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1920    1930
SQ     0   10500
ST  1930   70003     1.5
KK   ROUTEDAM8 TO 24
RM     1     3.3     0.2
KK    24
BA 17.92
PB  15.7
LU   .95     .15
UK   300   0.010    0.15     100
RK 16000   0.008   0.040     5.0    TRAP      75       3
RK 60250   0.007   0.035            TRAP     150       3      NO
KK COMBINEDAM8 TO 24
HC     2
KK DAM21
KM   IONA WASH @ C.A.P., STA. 572+5
RS     1    STOR      -1
SQ     0      72     505    1135    1914    2817
SE1545.2    1546    1548    1550    1552    1554
SV     0       7      31      69     288     518
ST  1553    2000       3     1.5
KK   ROUTEDAM 21 TO 31
RM     1     2.8     0.2
KK    31
BA  9.34
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     2.0    TRAP     100       3
RK 39750   0.005   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21 & 22 TO 31
HC     3
KK ROUTEDAMS 21 & 22/31 TO 32
RM     1     0.2     0.2
```

```
KK      7
BA   7.05
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK 12400      0.02    0.040      1.0     TRAP      25        3
RK 24750      0.03    0.035             TRAP      50        3       NO
KK   DAM3
KM   S.R. 74
RS      1     STOR       -1
SA      0      1.1
SE   2000     2008
SQ      0    10300
ST   2008     6000        3      1.5
KK    ROUTEDAM3 TO 14
RM      1      2.1      0.2
KK     14
BA   7.21
PB   15.7
LU    .95      .15
UK    300    0.020     0.15      100
RK 19000    0.015    0.040      2.0     TRAP      50        3
RK 32250    0.012    0.035             TRAP     100        3       NO
KK COMBINEDAM3 TO 14
HC      2
KK DAM10
KM GRAND AVE.
RS      1     STOR       -1
SA      0       50
SE   1670     1675
SQ      0     8740
ST   1681     4000        3      1.5
KK    ROUTEDAM10 TO 26
RM      1      1.2      0.2
KK     26
BA   8.42
PB   15.7
LU    .95      .15
UK    300    0.010     0.15      100
RK 20000    0.008    0.040      2.0     TRAP      75        3
RK 27750    0.008    0.035             TRAP     150        3       NO
KK COMBINEDAM 10 TO 26
HC      2
KK DAM23
KM    C.A.P., STA. 688+0
RS      1     STOR       -1
SQ      0      116      440      881     1414     2025     2705     3447
SE1544.3     1545     1546     1547     1548     1549     1550     1551
SV      0        3       10       19       31      139      292      498
ST1550.2     2000        3      1.5
* THE FOLLOWING CARDS WERE FROM SPF HEC-1 INPUT FILE IN THE 1987
* REPORT BECAUSE ONE PAGE IS MISSING IN THE PMP HEC-1 INPUT FILE
* IN THE 1987 REPORT.
KK ROUTEDAM23 TO 32
RM      1      2.7      0.2
```

```
KK    32
BA  8.42
PB  15.7
LU  0.95    0.15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     3.0    TRAP     100       3
RK 38250   0.006   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21,22,23 TO 32
HC     3
KK      ROUTEDAMS 21,22,23/31,32 TO 33
RM     1     0.6     0.2
KK     8
BA  3.38
PB  15.7
LU  0.95    0.15
UK   300    0.04    0.15     100
RK  6500    0.04   0.040     1.0    TRAP      25       3
RK 24500    0.03   0.035            TRAP      50       3      NO
KK  DAM4
KM   S.R. 74
RS     1    STOR      -1
SA     0    50.0
SE  1990    2000
SQ     0    1525
ST  2001    1500       3     1.5
KK  ROUTEDAM4 TO 15
RM     1     2.6     0.2
KK     9
BA  5.44
PB  15.7
LU  0.95    0.15
UK   300    0.05    0.15     100
RK 12000    0.05    0.04     1.0    TRAP      25       3
RK 27500    0.04   0.035            TRAP      75       3      NO
KK DAM5
KM S.R.74
RS     1    STOR      -1
SA     0     5.0
SE  1980    1988
SQ     0   12000
ST  1988    2500       3     1.5
KK TO 15
RM     1     2.6     0.2
KK    15
BA  6.65
PB  15.7
* THE ABOVE (UP TO *) CARDS ARE FROM SPF HEC-1 INPUT FILE
LU   .95     .15
UK   300    0.02    0.15     100
RK 11400    0.02    0.04     2.0    TRAP      50       3
RK 38000   0.011   0.035            TRAP     100       3      NO
KK COMBINEDAMS 4, 5 TO 15
HC     3
```

```
KK DAM11
KM GRAND AVE.
RS      1    STOR      -1
SA      0    50.0
SE   1560    1567
SQ      0    5000
ST   1568    5000       3     1.5
KK   ROUTEDAM 11 TO 27
RM      1    0.07     0.2
KK    27
BA   1.04
PB   15.7
LU    .95     .15
UK    300   0.009    0.15     100
RK 13500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAM11 TO 27
HC      2
KK DAM24
KM   C.A.P. STA. 804+5
RS      1    STOR      -1
SQ      0      54     233     608    1007    1469    1985    2550    3161    3814
SQ   4506    5236
SE1543.5    1544    1545    1546    1547    1548    1549    1550    1551    1552
SE   1553    1554
SV      0       0       0       0       1       3       9      18      44     114
SV    204     413
ST1552.8    2000       3     1.5
KK   ROUTEDAM24 TO 33
RM      1     2.4     0.2
KK    18
BA   0.87
PB   15.7
LU    .95     .15
UK    300    0.01    0.15     100
RK 17500   0.009    0.04            TRAP      50       3      NO
KK DAM14
KM GRAND AVE.
RS      1    STOR      -1
SA      0    0.30
SE   1520    1527
SQ      0    1500
ST   1527    1500       3     1.5
KK   ROUTEDAM14 TO 33
RM      1     2.4     0.2
KK    33
BA   7.48
PB   15.7
LU    .95     .15
UK    300   0.005    0.15     100
RK 13000   0.005    0.04     2.0    TRAP      75       3
RK 34750   0.006   0.035            TRAP     100       3      NO
KK COMBINEDAMS 21, 22, 23/31, 32 TO DAMS 14, 24/33
HC      4
KK   ROUTEALL TO 34
RM      1     0.3     0.2
```

```
KK      2
BA 17.02
PB  15.7
LU   .95     0.15
UK   300     0.09     0.15      100
RK  6800    0.071    0.040      2.0    TRAP      50        3
RK 48000    0.043    0.035             TRAP     100        3       NO
KK     11
BA  1.40
PB  15.7
LU   .95      .15
UK   300    0.030     0.15      100
RK  9000    0.022     0.04      0.5    TRAP      50        3
RK 11750    0.022    0.035             TRAP     100        3      YES
KK  DAM7
KM   ME WASH @ S.R. 74
RS      1     STOR      -1
SA      0       50
SE   1980     1988
SQ      0    15000
ST   1988     2500       3      1.5
KK   ROUTEDAM7 TO 17
RM      1      2.4     0.2
KK     10
BA  1.43
PB  15.7
LU   .95      .15
UK   300     0.03     0.15      100
RK  8500     0.28     0.04      0.5    TRAP      25        3
RK 17500    0.023    0.035             TRAP      50        3       NO
KK  DAM6
KM  S.R. 74
RS      1     STOR      -1
SA      0     0.20
SE   1980     1988
SQ      0     1325
ST   1988     1000       3      1.5
KK   ROUTEDAM6 TO 17
RM      1      2.4     0.2
KK     17
BA  6.70
PB  15.7
LU   .95      .15
UK   300    0.015     0.15      100
RK 18000    0.014     0.04      2.0    TRAP      50        3
RK 34250    0.013    0.035             TRAP     100        3       NO
KK COMBINEDAM56 & 7 TO 17
HC      3
KK DAM13
KM ME WASH @ C.A.P.
RS      1     STOR      -1
SQ      0       51      778     3740     5531     6875     7646     7773
SE   1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV      0        0        0       44      357      747     1024     1072
ST   1557     2000       3      1.5
KK   ROUTEDAM13 TO 21
RM      1      0.6     0.2
```

```
KK    16
BA  3.46
PB  15.7
LU   .95     .15
UK   300   0.015    0.15     100
RK  8500   0.014    0.04     1.0    TRAP      25       3
RK 35750   0.011   0.035            TRAP      75       3      NO
KK DAM12
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557     200       3     1.5
KK   ROUTEDAM12 TO 21
RM     1     0.6     0.2
KK    21
BA  1.04
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK  8500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAMS 12, 13 TO 21
HC     3
KK   DAM17
KM GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1480    1487
SQ     0   12000
ST  1488    3000       3     1.5
KK   ROUTEDAM 17 TO 34
RM     1     1.3     0.2
KK    19
BA  2.57
PB  15.7
LU   .95     .15
UK   300   0.013    0.15     100
RK 10000   0.012    0.04     1.0    TRAP      25       3
RK 19000   0.012   0.035            TRAP      50       3      NO
KK DAM15
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM15 TO 22
RM     0       1     0.2
KK    22
BA  2.31
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK 14750   0.008    0.04            TRAP      50       3      NO
KK COMBINEDAM15 TO 22
HC     2
```

```
KK DAM18
KM GRAND AVE.
RS     1    STOR      -1
SA     0   0.600
SE  1420    1427
SQ     0   10000
ST  1427    3500       3     1.5
KK ROUTEDAM18 TO 34
RM     1     0.8     0.2
KK COMBINEDAM 17 TO DAM 18
HC     2
KK    20
BA  1.08
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK  6500    0.01    0.04     0.5    TRAP      25       3
RK 12250   0.011   0.035            TRAP      50       3      NO
KK DAM16
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM16 TO 23
RM     1     1.6     0.2
KK    23
BA  3.71
PB  15.7
LU   .95     .15
UK   300   0.008    0.15     100
RK 12000   0.008    0.04     1.0    TRAP      50       3
RK 23500   0.007   0.035            TRAP      75       3      NO
KK COM8INEDAM16 TO 23
HC     2
KK DAM19
KM GRAND AVE.
RS     1    STOR      -1
SA     0   0.650
SE  1375    1382
SQ     0   10000
ST  1382    4000       3     1.5
KK   ROUTEDAM19 TO 34
RM     1     0.2     0.2
KK COMBINEDAMS 17, 18 TO DAM 19
HC     2
KK    34
BA  3.23
PB  15.7
LU   .95     .15
UK   300   0.008    0.15     100
RK 12000   0.008    0.04     1.0    TRAP      75       3
RK 24000   0.007   0.035            TRAP     100       3      NO
```

```
KK    44
BA   8.7
IN    60
PB  15.7
LU   .95     .15
UI     0     144     292     398     593     826    1097    1476    1794    2129
UI  2582    2587    2710    3037    3037    3037    3037    3037    2621    2242
UI  2127    2024    1883    1597    1529    1466    1409    1345    1040    1003
UI   969     938     802     715     694     674     655     637     620     604
UI   588     523     399     389     380     372     364     351     196     192
UI   188     184     184     181     177     174     110     104     102     100
UI    99      97      96      94      92      91      89      88      87      47
UI    46      45      45      44      44      43      42      42      41      41
UI    40      38       0       0
KK ROUTE44
KM ROUTE 44 TO 43
RK 12500   0.001    0.03            TRAP     100       3
KK    42
BA  5.46
PB  15.7
UI     0     144     292     466     723    1096    1469    1846    2256    2225
UI  2550    2550    2550    2549    1928    1795    1679    1431    1288    1218
UI  1189     875     834     797     684     595     572     550     530     511
UI   494     396     330     319     310     313     164     160     156     152
UI   148     157      87      85      83      81      80      78      76      75
UI    73      81      39      38      38      37      36      36      35      34
UI    34      16       0       0
KK   ROUTE42
KM   ROUTE 42 TO 43
RK 21000   0.013   0.035            TRAP     100       3
KK    43
BA  5.11
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6500    0.02    0.04       1    TRAP      20       3
RK 25500   0.017   0.035            TRAP      50       3
KK COM8INE
HC     3
KK   ROUTE
KM ROUTE COMBINED HYDROGRAPHS
KM    42 43 44 TO 41
RK  5000   0.001    0.03            TRAP     100       3
KK    41
BA  3.05
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6200    0.09    0.04       1    TRAP      20       3
RK 24750    0.09   0.035            TRAP      50       3
KK COMBINE
HC     2
KK   ROUTE41 TO 38
RK  7000   0.001    0.03            TRAP     100       3
```

```
KK     38
BA   7.18
PB   15.7
LU    .95      .15
UK    300     0.02     0.15      100
RK   8500     0.09     0.04        2    TRAP      20        3
RK  33750     0.06    0.035             TRAP      50        3
KK  COMBINE
HC      2
KK     39
BA   2.77
PB   15.7
UI      0      137      308      595     1015     1468     1786     1776     1915     1829
UI   1393     1266      997      917      787      629      574      449      424      401
UI    380      318      246      235      201      121      116      112      105       65
UI     62       60       58       57       55       47       29       28       27       27
UI     26       24        0        0
KK    ROUTE39 TO 35
RK  24000     0.01    0.035             TRAP      50        3
KK     35
BA   2.57
PB   15.7
LU    .95      .15
UK    300     0.02     0.15      100
RK   6000     0.02     0.04        1    TRAP      20        3
RK  24000     0.01    0.035             TRAP      50        3
KK     28
BA  17.59
PB   15.7
LU    .95      .15
UK    300    0.007     0.15      100
RK  19000    0.007     0.04        6    TRAP      25        3
RK  44500    0.006    0.035             TRAP      50        3       NO
KK    DAM20
KM    C.A.P., STA. 466+0
RS      1     STOR       -1
SV      0        9       33       97      436      912
SE   1536     1538     1540     1542     1544     1546
SQ      0      432     1222     2245     3457     4830
ST   1546     2000        3      1.5
KK    ROUTE28 TO 29
RK  14000    0.005     0.03             TRAP      75        3
KK     29
BA  10.32
PB   15.7
LU    .95      .15
UK    300     0.04     0.15      100
RK  16000     0.06     0.04        3    TRAP      25        3
RK  44000     0.04    0.035             TRAP      75        3       NO
KK  COMBINE28 TO 29
HC      2
KK  COMBINE28, 29, 39 & 35
HC      3
KK    ROUTE
RK   6500    0.004    0.035             TRAP     100        3
```

```
KK    40
BA  2.15
PB  15.7
UI     0     168     397     786    1319    1870    2068    2259    2259    1805
UI  1532    1254    1095     949     743     665     526     494     466     462
UI   298     283     270     161     139     133     129      76      74      71
UI    69      66      74      35      33      33      32      31      30       4
UI     0
KK   ROUTE40 TO 36
RK 18000    0.01   0.035            TRAP      50       3
KK    36
BA  4.37
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6600    0.02    0.04       2    TRAP      20       3
RK 26500    0.01   0.035            TRAP      50       3
KK    30
BA  1.50
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.005   0.035            TRAP      25       3
KK COMBINE30, 35, 36, 39 & 40
HC     4
KK   ROUTETO 37
RK  5000    0.01   0.035            TRAP     100       3
KK    37
BA  2.94
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6700    0.09    0.04       1    TRAP      50       3
RK 26750    0.07   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE
RK 14500   0.005   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE MCM.SUB. TO 34
RK  3000   0.001    0.03            TRAP     100       3
KK COMBINE ALL TO 34
HC     4
KO     1       2
* KK MCMICKEN DAM
* RS     1    ELEV    1335
* SV     0       0    2200    8800   19000   32400   35500   49800
* SE  1335    1340    1345    1350    1355    1360    1361    1365
* SQ   0.0  1750.0  4600.0  10500.  20100.  47000.  63600.  81150.102200.0
* SE1335.0  1345.0  1353.9  1355.0  1356.0  1358.0  1359.0  1360.0  1361.0
* ST  1361   49500    3.05     1.5
```

```
KKNEW MCMICKEN DAM
KM NEW RATING CURVE FOR THE DAM WAS OBTAINED FROM JOE TRAM ON 01/09/1996
* RS      1    ELEV    1335
RS      1    ELEV    1327
SV      0       6      96     471    2196    6112   12926   20070   23126   28121
SV 30824   33615   36501
SE1327.0  1330.0 1332.55  1335.0  1340.0  1345.0  1350.0 1353.65  1355.0  1357.0
SE1358.0  1359.0  1360.0
* SAME SQ-SE RELATIONSHIP BECAUSE Q DEPENDS ON HEAD
SQ   0.0      35    2000    4660   12280   23310   36100   51210   68815   88270
SQ109500
SE  1330    1335    1345  1353.9    1355    1356    1357    1358    1359    1360
SE  1361
ST  1361   49500    3.05     1.5
ZZ
```

pmp2DP10.DAT

APPENDIX N

HEC-1 Model PMP2DP20.DAT - Modifies the outflow spillway Rating curve for a 2,000 foot weir extension and use weir analysis for analysis for the extension and the HECRAS analysis for present vegetation for the existing 2,000 foot weir.

APPENIX N - Model PMP2DP20.DAT

```
ID filename: pmp2DP20.DAT
ID McMicken Dam Watershed
ID Probable Maximum Flood
ID FCMCD Jan 87 J. Rumann
ID Sub Basins 1-44
ID TWO MORE SUB-BASINS WERE ADDED BY BING ZHAO
ID
ID (2-22-2000) THE OHE MCMICKEN DAM OUTLET RATING CURVES MODIFIED BY RWC
ID      TO USE THE HECRAS RESULTS AT THE UPPER END OF THE SPILLWAY CHANNEL
ID              FOR PRESENT CONDITIONS  AND LENGTHENING THE WEIR
ID                      BY 2,000 FEET
ID
*DIAGRAM
IT     5       0       0     900
IO     3
KK     1
BA  9.60
IN   360
PB 15.70
PI   1.1     2.3     7.2     1.3     .65     .65     .65     .65     .30     .30
PI   .30     .30
LU  0.95    0.15
UI     0     241     489     761    1196    1767    2405    3022    3742    3889
UI  4131    4350    4350    4350    3744    3157    2953    2702    2265    2142
UI  2032    1842    1467    1402    1343    1086    1005     967     932     920
UI   900     869     580     562     545     529     514     319     295     274
UI   267     260     254     171     150     146     143     140     137     134
UI   131     129     126      67      66      65      64      62      61      60
UI    59      58      57      19       0
KK ROUTE1 TO 4
RM     1     0.7     0.2
KK     4
BA  3.42
PB 15.70
LU   .95     .15
UK   300    0.09    0.15     100
RK  7500    0.05    0.05     0.5    TRAP      25       3
RK 19500    0.05   0.035            TRAP      50       3      NO
KK CCOMBINE1 & 4
HC     2
KK     6
BA  5.79
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 10000    0.02    0.04     1.0    TRAP      25       3
RK 19500    0.02   0.035            TRAP      75       3     YES
KK  DAM2
KM TRILBY WASH @ S.R. 74
RS     1    STOR      -1
SA     0     0.9
SE  2050    2061
SQ     0   17600
ST  2061    3500       3     1.5
```

```
KK   ROUTEDAM2 TO 13
RM     1     1.1     0.2
KK    13
BA  6.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 21000    0.02   0.040     1.0    TRAP      25       3
RK 27000    0.02   0.035            TRAP      50       3      NO
KK COMBINEDAM 2 @ 13
HC     2
KK    DAM9
KM   TRILBY WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1850    1857
SQ     0   30300
ST  1857    9000       3     1.5
KK   ROUTEDAM9 TO 25
RM     1     2.6     0.2
KK    25
BA  9.36
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 20000   0.009   0.040     3.0    TRAP      50       3
RK 40750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM9 TO 25
HC     2
KK   DAM22
KM   TRILBY WASH @ C.A.P., STA. 609+0
RS     1    STOR      -1
SQ     0    6903
SE  1540  1548.5
SV     0    3436
ST  1554    2000       3     1.5
KK   ROUTEDAM22 TO 31
RM     1     2.7     0.2
KK     3
BA  4.43
PB  15.7
LU   .95     .15
UK   300    0.05    0.15     100
RK  6200    0.05   0.040     1.0    TRAP      50       3
RK 26500    0.04   0.035            TRAP      75       3      NO
KK     5
BA  2.98
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK  4500    0.03   0.040     1.0    TRAP      50       3
RK 13000    0.01   0.035            TRAP     100       3     YES
```

```
KK  DAM1
KM   IONA WASH @ S.R. 74
RS     1    STOR      -1
SA     0     1.1
SE  2040    2048
SQ     0    7300
ST  2048    6000       3     1.5
KK  ROUTEDAM1 TO 12            ,
RM     1     0.9     0.2
KK    12
BA  4.42
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  9300   0.015   0.040     1.0    TRAP      50       3
RK 13500   0.010   0.035            TRAP     100       3      NO
KK CCOMBINEDAM1 TO 12
HC     2
KK DAM8
KM IONA WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1920    1930
SQ     0   10500
ST  1930   70003     1.5
KK   ROUTEDAM8 TO 24
RM     1     3.3     0.2
KK    24
BA 17.92
PB  15.7
LU   .95     .15
UK   300   0.010    0.15     100
RK 16000   0.008   0.040     5.0    TRAP      75       3
RK 60250   0.007   0.035            TRAP     150       3      NO
KK COMBINEDAM8 TO 24
HC     2
KK DAM21
KM   IONA WASH @ C.A.P., STA. 572+5
RS     1    STOR      -1
SQ     0      72     505    1135    1914    2817
SE1545.2    1546    1548    1550    1552    1554
SV     0       7      31      69     288     518
ST  1553    2000       3     1.5
KK   ROUTEDAM 21 TO 31
RM     1     2.8     0.2
KK    31
BA  9.34
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     2.0    TRAP     100       3
RK 39750   0.005   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21 & 22 TO 31
HC     3
KK ROUTEDAMS 21 & 22/31 TO 32
RM     1     0.2     0.2
```

```
KK      7
BA   7.05
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK 12400      0.02    0.040      1.0     TRAP       25        3
RK 24750      0.03    0.035             TRAP       50        3       NO
KK   DAM3
KM   S.R. 74
RS      1     STOR       -1
SA      0      1.1
SE   2000     2008
SQ      0    10300
ST   2008     6000        3      1.5
KK    ROUTEDAM3 TO 14
RM      1      2.1      0.2
KK     14
BA   7.21
PB   15.7
LU    .95      .15
UK    300    0.020     0.15      100
RK 19000    0.015    0.040      2.0     TRAP       50        3
RK 32250    0.012    0.035             TRAP      100        3       NO
KK COMBINEDAM3 TO 14
HC      2
KK DAM10
KM GRAND AVE.
RS      1     STOR       -1
SA      0       50
SE   1670     1675
SQ      0     8740
ST   1681     4000        3      1.5
KK    ROUTEDAM10 TO 26
RM      1      1.2      0.2
KK     26
BA   8.42
PB   15.7
LU    .95      .15
UK    300    0.010     0.15      100
RK 20000    0.008    0.040      2.0     TRAP       75        3
RK 27750    0.008    0.035             TRAP      150        3       NO
KK COMBINEDAM 10 TO 26
HC      2
KK DAM23
KM    C.A.P., STA. 688+0
RS      1     STOR       -1
SQ      0      116      440      881     1414     2025     2705     3447
SE1544.3     1545     1546     1547     1548     1549     1550     1551
SV      0        3       10       19       31      139      292      498
ST1550.2     2000        3      1.5
* THE FOLLOWING CARDS WERE FROM SPF HEC-1 INPUT FILE IN THE 1987
* REPORT BECAUSE ONE PAGE IS MISSING IN THE PMP HEC-1 INPUT FILE
* IN THE 1987 REPORT.
KK ROUTEDAM23 TO 32
RM      1      2.7      0.2
```

```
KK    32
BA  8.42
PB  15.7
LU  0.95    0.15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     3.0    TRAP     100       3
RK 38250   0.006   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21,22,23 TO 32
HC     3
KK      ROUTEDAMS 21,22,23/31,32 TO 33
RM     1     0.6     0.2
KK     8
BA  3.38
PB  15.7
LU  0.95    0.15
UK   300    0.04    0.15     100
RK  6500    0.04   0.040     1.0    TRAP      25       3
RK 24500    0.03   0.035            TRAP      50       3      NO
KK  DAM4
KM   S.R. 74
RS     1    STOR      -1
SA     0    50.0
SE  1990    2000
SQ     0    1525
ST  2001    1500       3     1.5
KK  ROUTEDAM4 TO 15
RM     1     2.6     0.2
KK     9
BA  5.44
PB  15.7
LU  0.95    0.15
UK   300    0.05    0.15     100
RK 12000    0.05    0.04     1.0    TRAP      25       3
RK 27500    0.04   0.035            TRAP      75       3      NO
KK DAM5
KM S.R.74
RS     1    STOR      -1
SA     0     5.0
SE  1980    1988
SQ     0   12000
ST  1988    2500       3     1.5
KK TO 15
RM     1     2.6     0.2
KK    15
BA  6.65
PB  15.7
* THE ABOVE (UP TO *) CARDS ARE FROM SPF HEC-1 INPUT FILE
LU   .95     .15
UK   300    0.02    0.15     100
RK 11400    0.02    0.04     2.0    TRAP      50       3
RK 38000   0.011   0.035            TRAP     100       3      NO
KK COMBINEDAMS 4, 5 TO 15
HC     3
```

```
KK DAM11
KM GRAND AVE.
RS      1     STOR      -1
SA      0     50.0
SE   1560     1567
SQ      0     5000
ST   1568     5000       3      1.5
KK   ROUTEDAM 11 TO 27
RM      1     0.07      0.2
KK     27
BA   1.04
PB   15.7
LU    .95      .15
UK    300    0.009     0.15      100
RK 13500    0.008     0.04             TRAP      25        3       NO
KK COMBINEDAM11 TO 27
HC      2
KK DAM24
KM   C.A.P. STA. 804+5
RS      1     STOR      -1
SQ      0       54      233      608     1007     1469     1985     2550     3161     3814
SQ   4506     5236
SE1543.5     1544     1545     1546     1547     1548     1549     1550     1551     1552
SE   1553     1554
SV      0        0        0        0        1        3        9       18       44      114
SV    204      413
ST1552.8     2000       3      1.5
KK   ROUTEDAM24 TO 33
RM      1      2.4      0.2
KK     18
BA   0.87
PB   15.7
LU    .95      .15
UK    300     0.01     0.15      100
RK 17500    0.009     0.04             TRAP      50        3       NO
KK DAM14
KM GRAND AVE.
RS      1     STOR      -1
SA      0     0.30
SE   1520     1527
SQ      0     1500
ST   1527     1500       3      1.5
KK   ROUTEDAM14 TO 33
RM      1      2.4      0.2
KK     33
BA   7.48
PB   15.7
LU    .95      .15
UK    300    0.005     0.15      100
RK 13000    0.005     0.04      2.0    TRAP      75        3
RK 34750    0.006    0.035             TRAP     100        3       NO
KK COMBINEDAMS 21, 22, 23/31, 32 TO DAMS 14, 24/33
HC      4
KK   ROUTEALL TO 34
RM      1      0.3      0.2
```

```
KK      2
BA  17.02
PB   15.7
LU    .95     0.15
UK    300     0.09     0.15      100
RK   6800    0.071    0.040      2.0    TRAP      50        3
RK  48000    0.043    0.035             TRAP     100        3       NO
KK     11
BA   1.40
PB   15.7
LU    .95      .15
UK    300    0.030     0.15      100
RK   9000    0.022     0.04      0.5    TRAP      50        3
RK  11750    0.022    0.035             TRAP     100        3      YES
KK   DAM7
KM    ME WASH @ S.R. 74
RS      1     STOR      -1
SA      0       50
SE   1980     1988
SQ      0    15000
ST   1988     2500       3      1.5
KK    ROUTEDAM7 TO 17
RM      1      2.4     0.2
KK     10
BA   1.43
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK   8500     0.28     0.04      0.5    TRAP      25        3
RK  17500    0.023    0.035             TRAP      50        3       NO
KK   DAM6
KM   S.R. 74
RS      1     STOR      -1
SA      0     0.20
SE   1980     1988
SQ      0     1325
ST   1988     1000       3      1.5
KK    ROUTEDAM6 TO 17
RM      1      2.4     0.2
KK     17
BA   6.70
PB   15.7
LU    .95      .15
UK    300    0.015     0.15      100
RK  18000    0.014     0.04      2.0    TRAP      50        3
RK  34250    0.013    0.035             TRAP     100        3       NO
KK COMBINEDAM56 & 7 TO 17
HC      3
KK DAM13
KM ME WASH @ C.A.P.
RS      1     STOR      -1
SQ      0       51      778     3740    5531    6875    7646    7773
SE   1540     1542     1548  1549.03 1551.26 1552.82 1553.68 1553.82
SV      0        0        0       44     357     747    1024    1072
ST   1557     2000       3      1.5
KK    ROUTEDAM13 TO 21
RM      1      0.6     0.2
```

```
KK     16
BA   3.46
PB   15.7
LU    .95      .15
UK    300    0.015     0.15      100
RK   8500    0.014     0.04      1.0     TRAP       25        3
RK  35750    0.011    0.035              TRAP       75        3       NO
KK DAM12
KM C.A.P.
RS      1     STOR       -1
SQ      0       51      778     3740     5531     6875     7646     7773
SE   1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV      0        0        0       44      357      747     1024     1072
ST   1557      200        3      1.5
KK   ROUTEDAM12 TO 21
RM      1      0.6      0.2
KK     21
BA   1.04
PB   15.7
LU    .95      .15
UK    300    0.009     0.15      100
RK   8500    0.008     0.04              TRAP       25        3       NO
KK COMBINEDAMS 12, 13 TO 21
HC      3
KK   DAM17
KM GRAND AVE.
RS      1     STOR       -1
SA      0       50
SE   1480     1487
SQ      0    12000
ST   1488     3000        3      1.5
KK   ROUTEDAM 17 TO 34
RM      1      1.3      0.2
KK     19
BA   2.57
PB   15.7
LU    .95      .15
UK    300    0.013     0.15      100
RK  10000    0.012     0.04      1.0     TRAP       25        3
RK  19000    0.012    0.035              TRAP       50        3       NO
KK DAM15
KM C.A.P.
RS      1     STOR       -1
SQ      0       51      778     3740     5531     6875     7646     7773
SE   1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV      0        0        0       44      357      747     1024     1072
ST   1557     2000        3      1.5
KK   ROUTEDAM15 TO 22
RM      0        1      0.2
KK     22
BA   2.31
PB   15.7
LU    .95      .15
UK    300    0.009     0.15      100
RK  14750    0.008     0.04              TRAP       50        3       NO
KK COMBINEDAM15 TO 22
HC      2
```

```
KK DAM18
KM GRAND AVE.
RS     1    STOR      -1
SA     0   0.600
SE  1420    1427
SQ     0   10000
ST  1427    3500       3     1.5
KK ROUTEDAM18 TO 34
RM     1     0.8     0.2
KK COMBINEDAM 17 TO DAM 18
HC     2
KK    20
BA  1.08
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK  6500    0.01    0.04     0.5    TRAP      25       3
RK 12250   0.011   0.035            TRAP      50       3      NO
KK DAM16
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM16 TO 23
RM     1     1.6     0.2
KK    23
BA  3.71
PB  15.7
LU   .95     .15
UK   300   0.008    0.15     100
RK 12000   0.008    0.04     1.0    TRAP      50       3
RK 23500   0.007   0.035            TRAP      75       3      NO
KK COM8INEDAM16 TO 23
HC     2
KK DAM19
KM GRAND AVE.
RS     1    STOR      -1
SA     0   0.650
SE  1375    1382
SQ     0   10000
ST  1382    4000       3     1.5
KK   ROUTEDAM19 TO 34
RM     1     0.2     0.2
KK COMBINEDAMS 17, 18 TO DAM 19
HC     2
KK    34
BA  3.23
PB  15.7
LU   .95     .15
UK   300   0.008    0.15     100
RK 12000   0.008    0.04     1.0    TRAP      75       3
RK 24000   0.007   0.035            TRAP     100       3      NO
```

```
KK    44
BA   8.7
IN    60
PB  15.7
LU   .95     .15
UI     0     144     292     398     593     826    1097    1476    1794    2129
UI  2582    2587    2710    3037    3037    3037    3037    3037    2621    2242
UI  2127    2024    1883    1597    1529    1466    1409    1345    1040    1003
UI   969     938     802     715     694     674     655     637     620     604
UI   588     523     399     389     380     372     364     351     196     192
UI   188     184     184     181     177     174     110     104     102     100
UI    99      97      96      94      92      91      89      88      87      47
UI    46      45      45      44      44      43      42      42      41      41
UI    40      38       0       0
KK ROUTE44
KM ROUTE 44 TO 43
RK 12500   0.001    0.03            TRAP     100       3
KK    42
BA  5.46
PB  15.7
UI     0     144     292     466     723    1096    1469    1846    2256    2225
UI  2550    2550    2550    2549    1928    1795    1679    1431    1288    1218
UI  1189     875     834     797     684     595     572     550     530     511
UI   494     396     330     319     310     313     164     160     156     152
UI   148     157      87      85      83      81      80      78      76      75
UI    73      81      39      38      38      37      36      36      35      34
UI    34      16       0       0
KK   ROUTE42
KM   ROUTE 42 TO 43
RK 21000   0.013   0.035            TRAP     100       3
KK    43
BA  5.11
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6500    0.02    0.04       1    TRAP      20       3
RK 25500   0.017   0.035            TRAP      50       3
KK COM8INE
HC     3
KK   ROUTE
KM ROUTE COMBINED HYDROGRAPHS
KM    42 43 44 TO 41
RK  5000   0.001    0.03            TRAP     100       3
KK    41
BA  3.05
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6200    0.09    0.04       1    TRAP      20       3
RK 24750    0.09   0.035            TRAP      50       3
KK COMBINE
HC     2
KK   ROUTE41 TO 38
RK  7000   0.001    0.03            TRAP     100       3
```

```
KK    38
BA  7.18
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  8500    0.09    0.04       2    TRAP      20       3
RK 33750    0.06   0.035            TRAP      50       3
KK COMBINE
HC     2
KK    39
BA  2.77
PB  15.7
UI     0     137     308     595    1015    1468    1786    1776    1915    1829
UI  1393    1266     997     917     787     629     574     449     424     401
UI   380     318     246     235     201     121     116     112     105      65
UI    62      60      58      57      55      47      29      28      27      27
UI    26      24       0       0
KK   ROUTE39 TO 35
RK 24000    0.01   0.035            TRAP      50       3
KK    35
BA  2.57
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6000    0.02    0.04       1    TRAP      20       3
RK 24000    0.01   0.035            TRAP      50       3
KK    28
BA 17.59
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.007    0.04       6    TRAP      25       3
RK 44500   0.006   0.035            TRAP      50       3      NO
KK   DAM20
KM   C.A.P., STA. 466+0
RS     1    STOR      -1
SV     0       9      33      97     436     912
SE  1536    1538    1540    1542    1544    1546
SQ     0     432    1222    2245    3457    4830
ST  1546    2000       3     1.5
KK   ROUTE28 TO 29
RK 14000   0.005    0.03            TRAP      75       3
KK    29
BA 10.32
PB  15.7
LU   .95     .15
UK   300    0.04    0.15     100
RK 16000    0.06    0.04       3    TRAP      25       3
RK 44000    0.04   0.035            TRAP      75       3      NO
KK COMBINE28 TO 29
HC     2
KK COMBINE28, 29, 39 & 35
HC     3
KK   ROUTE
RK  6500   0.004   0.035            TRAP     100       3
```

```
KK     40
BA   2.15
PB   15.7
UI      0      168      397      786     1319     1870     2068     2259     2259     1805
UI   1532     1254     1095      949      743      665      526      494      466      462
UI    298      283      270      161      139      133      129       76       74       71
UI     69       66       74       35       33       33       32       31       30        4
UI      0
KK   ROUTE40 TO 36
RK 18000    0.01   0.035            TRAP      50        3
KK     36
BA   4.37
PB   15.7
LU    .95      .15
UK    300     0.02     0.15      100
RK   6600     0.02     0.04        2    TRAP      20        3
RK 26500     0.01    0.035            TRAP      50        3
KK     30
BA   1.50
PB   15.7
LU    .95      .15
UK    300    0.007     0.15      100
RK 19000    0.005    0.035            TRAP      25        3
KK COMBINE30, 35, 36, 39 & 40
HC      4
KK   ROUTETO 37
RK   5000     0.01    0.035            TRAP     100        3
KK     37
BA   2.94
PB   15.7
LU    .95      .15
UK    300     0.02     0.15      100
RK   6700     0.09     0.04        1    TRAP      50        3
RK 26750     0.07    0.035            TRAP     100        3
KK COMBINE
HC      2
KK ROUTE
RK 14500    0.005    0.035            TRAP     100        3
KK COMBINE
HC      2
KK ROUTE MCM.SUB. TO 34
RK   3000    0.001     0.03            TRAP     100        3
KK COMBINE ALL TO 34
HC      4
KO      1        2
* KK MCMICKEN DAM
* RS      1     ELEV     1335
* SV      0        0     2200     8800    19000    32400    35500    49800
* SE   1335     1340     1345     1350     1355     1360     1361     1365
* SQ    0.0   1750.0   4600.0   10500.   20100.   47000.   63600.   81150.102200.0
* SE1335.0   1345.0   1353.9   1355.0   1356.0   1358.0   1359.0   1360.0   1361.0
* ST   1361    49500     3.05      1.5
```

```
KKNEW MCMICKEN DAM
KM NEW RATING CURVE FOR THE DAM WAS OBTAINED FROM JOE TRAM ON 01/09/1996
* RS      1     ELEV     1335
RS      1     ELEV     1327
SV      0        6       96      471     2196     6112    12926    20070    23126    28121
SV 30824    33615    36501
SE1327.0  1330.0 1332.55  1335.0  1340.0  1345.0  1350.0 1353.65  1355.0  1357.0
SE1358.0  1359.0  1360.0
* SAME SQ-SE RELATIONSHIP BECAUSE Q DEPENDS ON HEAD
SQ    0.0       35     2000     4660    15280    31290    50100    72390    98105   126490
SQ157660
SE  1330     1335     1345   1353.9     1355     1356     1357     1358     1359     1360
SE  1361
ST  1361    49500     3.05      1.5
ZZ
```

APPENDIX O

HEC-1 Model PMP2DP30.DAT - Modifies the outflow spillway Rating curve for a 3,000 foot weir extension and use weir analysis for analysis for the extension and the HECRAS analysis for present vegetation for the existing 2,000 foot weir.

Appendix O - HEC-1 Model PMPDP30.DAT

```
ID filename: pmp2DP30.DAT
ID McMicken Dam Watershed
ID Probable Maximum Flood
ID FCMCD Jan 87 J. Rumann
ID Sub Basins 1-44
ID TWO MORE SUB-BASINS WERE ADDED BY BING ZHAO
ID
ID (2-22-2000) THE OHE MCMICKEN DAM OUTLET RATING CURVES MODIFIED BY RWC
ID      TO USE THE HECRAS RESULTS AT THE UPPER END OF THE SPILLWAY CHANNEL
ID              FOR PRESENT CONDITIONS  AND LENGTHENING THE WEIR
ID                      BY 3,000 FEET
ID
*DIAGRAM
IT     5       0       0     900
IO     3
KK     1
BA  9.60
IN   360
PB 15.70
PI   1.1     2.3     7.2     1.3     .65     .65     .65     .65     .30     .30
PI   .30     .30
LU  0.95    0.15
UI     0     241     489     761    1196    1767    2405    3022    3742    3889
UI  4131    4350    4350    4350    3744    3157    2953    2702    2265    2142
UI  2032    1842    1467    1402    1343    1086    1005     967     932     920
UI   900     869     580     562     545     529     514     319     295     274
UI   267     260     254     171     150     146     143     140     137     134
UI   131     129     126      67      66      65      64      62      61      60
UI    59      58      57      19       0
KK ROUTE1 TO 4
RM     1     0.7     0.2
KK     4
BA  3.42
PB 15.70
LU   .95     .15
UK   300    0.09    0.15     100
RK  7500    0.05    0.05     0.5    TRAP      25       3
RK 19500    0.05   0.035            TRAP      50       3      NO
KK CCOMBINE1 & 4
HC     2
KK     6
BA  5.79
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 10000    0.02    0.04     1.0    TRAP      25       3
RK 19500    0.02   0.035            TRAP      75       3     YES
KK  DAM2
KM TRILBY WASH @ S.R. 74
RS     1    STOR      -1
SA     0     0.9
SE  2050    2061
SQ     0   17600
ST  2061    3500       3     1.5
```

```
KK   ROUTEDAM2 TO 13
RM     1     1.1     0.2
KK    13
BA  6.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 21000    0.02   0.040     1.0    TRAP      25       3
RK 27000    0.02   0.035            TRAP      50       3      NO
KK COMBINEDAM 2 @ 13
HC     2
KK    DAM9
KM   TRILBY WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1850    1857
SQ     0   30300
ST  1857    9000       3     1.5
KK   ROUTEDAM9 TO 25
RM     1     2.6     0.2
KK    25
BA  9.36
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 20000   0.009   0.040     3.0    TRAP      50       3
RK 40750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM9 TO 25
HC     2
KK   DAM22
KM   TRILBY WASH @ C.A.P., STA. 609+0
RS     1    STOR      -1
SQ     0    6903
SE  1540  1548.5
SV     0    3436
ST  1554    2000       3     1.5
KK   ROUTEDAM22 TO 31
RM     1     2.7     0.2
KK     3
BA  4.43
PB  15.7
LU   .95     .15
UK   300    0.05    0.15     100
RK  6200    0.05   0.040     1.0    TRAP      50       3
RK 26500    0.04   0.035            TRAP      75       3      NO
KK     5
BA  2.98
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK  4500    0.03   0.040     1.0    TRAP      50       3
RK 13000    0.01   0.035            TRAP     100       3     YES
```

```
KK  DAM1
KM   IONA WASH @ S.R. 74
RS     1    STOR      -1
SA     0     1.1
SE  2040    2048
SQ     0    7300
ST  2048    6000       3     1.5
KK  ROUTEDAM1 TO 12            ,
RM     1     0.9     0.2
KK    12
BA  4.42
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  9300   0.015   0.040     1.0    TRAP      50       3
RK 13500   0.010   0.035            TRAP     100       3      NO
KK CCOMBINEDAM1 TO 12
HC     2
KK DAM8
KM IONA WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1920    1930
SQ     0   10500
ST  1930   70003     1.5
KK   ROUTEDAM8 TO 24
RM     1     3.3     0.2
KK    24
BA 17.92
PB  15.7
LU   .95     .15
UK   300   0.010    0.15     100
RK 16000   0.008   0.040     5.0    TRAP      75       3
RK 60250   0.007   0.035            TRAP     150       3      NO
KK COMBINEDAM8 TO 24
HC     2
KK DAM21
KM   IONA WASH @ C.A.P., STA. 572+5
RS     1    STOR      -1
SQ     0      72     505    1135    1914    2817
SE1545.2    1546    1548    1550    1552    1554
SV     0       7      31      69     288     518
ST  1553    2000       3     1.5
KK   ROUTEDAM 21 TO 31
RM     1     2.8     0.2
KK    31
BA  9.34
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     2.0    TRAP     100       3
RK 39750   0.005   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21 & 22 TO 31
HC     3
KK ROUTEDAMS 21 & 22/31 TO 32
RM     1     0.2     0.2
```

```
KK      7
BA   7.05
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK 12400      0.02    0.040      1.0    TRAP      25        3
RK 24750      0.03    0.035             TRAP      50        3       NO
KK  DAM3
KM  S.R. 74
RS      1     STOR       -1
SA      0      1.1
SE   2000     2008
SQ      0    10300
ST   2008     6000        3      1.5
KK   ROUTEDAM3 TO 14
RM      1      2.1      0.2
KK     14
BA   7.21
PB   15.7
LU    .95      .15
UK    300    0.020     0.15      100
RK 19000    0.015    0.040      2.0    TRAP      50        3
RK 32250    0.012    0.035             TRAP     100        3       NO
KK COMBINEDAM3 TO 14
HC      2
KK DAM10
KM GRAND AVE.
RS      1     STOR       -1
SA      0       50
SE   1670     1675
SQ      0     8740
ST   1681     4000        3      1.5
KK   ROUTEDAM10 TO 26
RM      1      1.2      0.2
KK     26
BA   8.42
PB   15.7
LU    .95      .15
UK    300    0.010     0.15      100
RK 20000    0.008    0.040      2.0    TRAP      75        3
RK 27750    0.008    0.035             TRAP     150        3       NO
KK COMBINEDAM 10 TO 26
HC      2
KK DAM23
KM   C.A.P., STA. 688+0
RS      1     STOR       -1
SQ      0      116      440      881     1414     2025     2705     3447
SE1544.3     1545     1546     1547     1548     1549     1550     1551
SV      0        3       10       19       31      139      292      498
ST1550.2     2000        3      1.5
* THE FOLLOWING CARDS WERE FROM SPF HEC-1 INPUT FILE IN THE 1987
* REPORT BECAUSE ONE PAGE IS MISSING IN THE PMP HEC-1 INPUT FILE
* IN THE 1987 REPORT.
KK ROUTEDAM23 TO 32
RM      1      2.7      0.2
```

```
KK    32
BA  8.42
PB  15.7
LU  0.95    0.15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     3.0    TRAP     100       3
RK 38250   0.006   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21,22,23 TO 32
HC     3
KK      ROUTEDAMS 21,22,23/31,32 TO 33
RM     1     0.6     0.2
KK     8
BA  3.38
PB  15.7
LU  0.95    0.15
UK   300    0.04    0.15     100
RK  6500    0.04   0.040     1.0    TRAP      25       3
RK 24500    0.03   0.035            TRAP      50       3      NO
KK  DAM4
KM   S.R. 74
RS     1    STOR      -1
SA     0    50.0
SE  1990    2000
SQ     0    1525
ST  2001    1500       3     1.5
KK  ROUTEDAM4 TO 15
RM     1     2.6     0.2
KK     9
BA  5.44
PB  15.7
LU  0.95    0.15
UK   300    0.05    0.15     100
RK 12000    0.05    0.04     1.0    TRAP      25       3
RK 27500    0.04   0.035            TRAP      75       3      NO
KK DAM5
KM S.R.74
RS     1    STOR      -1
SA     0     5.0
SE  1980    1988
SQ     0   12000
ST  1988    2500       3     1.5
KK TO 15
RM     1     2.6     0.2
KK    15
BA  6.65
PB  15.7
* THE ABOVE (UP TO *) CARDS ARE FROM SPF HEC-1 INPUT FILE
LU   .95     .15
UK   300    0.02    0.15     100
RK 11400    0.02    0.04     2.0    TRAP      50       3
RK 38000   0.011   0.035            TRAP     100       3      NO
KK COMBINEDAMS 4, 5 TO 15
HC     3
```

```
KK DAM11
KM GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1560    1567
SQ     0    5000
ST  1568    5000       3     1.5
KK   ROUTEDAM 11 TO 27
RM     1    0.07     0.2
KK    27
BA  1.04
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK 13500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAM11 TO 27
HC     2
KK DAM24
KM   C.A.P. STA. 804+5
RS     1    STOR      -1
SQ     0      54     233     608    1007    1469    1985    2550    3161    3814
SQ  4506    5236
SE1543.5    1544    1545    1546    1547    1548    1549    1550    1551    1552
SE  1553    1554
SV     0       0       0       0       1       3       9      18      44     114
SV   204     413
ST1552.8    2000       3     1.5
KK   ROUTEDAM24 TO 33
RM     1     2.4     0.2
KK    18
BA  0.87
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 17500   0.009    0.04            TRAP      50       3      NO
KK DAM14
KM GRAND AVE.
RS     1    STOR      -1
SA     0    0.30
SE  1520    1527
SQ     0    1500
ST  1527    1500       3     1.5
KK   ROUTEDAM14 TO 33
RM     1     2.4     0.2
KK    33
BA  7.48
PB  15.7
LU   .95     .15
UK   300   0.005    0.15     100
RK 13000   0.005    0.04     2.0    TRAP      75       3
RK 34750   0.006   0.035            TRAP     100       3      NO
KK COMBINEDAMS 21, 22, 23/31, 32 TO DAMS 14, 24/33
HC     4
KK   ROUTEALL TO 34
RM     1     0.3     0.2
```

```
KK      2
BA 17.02
PB  15.7
LU   .95     0.15
UK   300     0.09     0.15      100
RK  6800    0.071    0.040      2.0    TRAP      50        3
RK 48000    0.043    0.035             TRAP     100        3       NO
KK     11
BA  1.40
PB  15.7
LU   .95      .15
UK   300    0.030     0.15      100
RK  9000    0.022     0.04      0.5    TRAP      50        3
RK 11750    0.022    0.035             TRAP     100        3      YES
KK  DAM7
KM   ME WASH @ S.R. 74
RS      1     STOR      -1
SA      0       50
SE   1980     1988
SQ      0    15000
ST   1988     2500       3      1.5
KK   ROUTEDAM7 TO 17
RM      1      2.4     0.2
KK     10
BA  1.43
PB  15.7
LU   .95      .15
UK   300     0.03     0.15      100
RK  8500     0.28     0.04      0.5    TRAP      25        3
RK 17500    0.023    0.035             TRAP      50        3       NO
KK  DAM6
KM  S.R. 74
RS      1     STOR      -1
SA      0     0.20
SE   1980     1988
SQ      0     1325
ST   1988     1000       3      1.5
KK   ROUTEDAM6 TO 17
RM      1      2.4     0.2
KK     17
BA  6.70
PB  15.7
LU   .95      .15
UK   300    0.015     0.15      100
RK 18000    0.014     0.04      2.0    TRAP      50        3
RK 34250    0.013    0.035             TRAP     100        3       NO
KK COMBINEDAM56 & 7 TO 17
HC      3
KK DAM13
KM ME WASH @ C.A.P.
RS      1     STOR      -1
SQ      0       51      778     3740     5531     6875     7646     7773
SE   1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV      0        0        0       44      357      747     1024     1072
ST   1557     2000       3      1.5
KK   ROUTEDAM13 TO 21
RM      1      0.6     0.2
```

```
KK    16
BA  3.46
PB  15.7
LU   .95      .15
UK   300    0.015     0.15      100
RK  8500    0.014     0.04      1.0     TRAP       25        3
RK 35750    0.011    0.035              TRAP       75        3       NO
KK DAM12
KM C.A.P.
RS     1     STOR       -1
SQ     0       51      778     3740     5531     6875     7646     7773
SE  1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV     0        0        0       44      357      747     1024     1072
ST  1557      200        3      1.5
KK   ROUTEDAM12 TO 21
RM     1      0.6      0.2
KK    21
BA  1.04
PB  15.7
LU   .95      .15
UK   300    0.009     0.15      100
RK  8500    0.008     0.04              TRAP       25        3       NO
KK COMBINEDAMS 12, 13 TO 21
HC     3
KK   DAM17
KM GRAND AVE.
RS     1     STOR       -1
SA     0       50
SE  1480     1487
SQ     0    12000
ST  1488     3000        3      1.5
KK   ROUTEDAM 17 TO 34
RM     1      1.3      0.2
KK    19
BA  2.57
PB  15.7
LU   .95      .15
UK   300    0.013     0.15      100
RK 10000    0.012     0.04      1.0     TRAP       25        3
RK 19000    0.012    0.035              TRAP       50        3       NO
KK DAM15
KM C.A.P.
RS     1     STOR       -1
SQ     0       51      778     3740     5531     6875     7646     7773
SE  1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV     0        0        0       44      357      747     1024     1072
ST  1557     2000        3      1.5
KK   ROUTEDAM15 TO 22
RM     0        1      0.2
KK    22
BA  2.31
PB  15.7
LU   .95      .15
UK   300    0.009     0.15      100
RK 14750    0.008     0.04              TRAP       50        3       NO
KK COMBINEDAM15 TO 22
HC     2
```

```
KK DAM18
KM GRAND AVE.
RS      1    STOR      -1
SA      0   0.600
SE   1420    1427
SQ      0   10000
ST   1427    3500       3     1.5
KK ROUTEDAM18 TO 34
RM      1     0.8     0.2
KK COMBINEDAM 17 TO DAM 18
HC      2
KK     20
BA   1.08
PB   15.7
LU    .95     .15
UK    300    0.01    0.15     100
RK   6500    0.01    0.04     0.5    TRAP      25       3
RK  12250   0.011   0.035            TRAP      50       3      NO
KK DAM16
KM C.A.P.
RS      1    STOR      -1
SQ      0      51     778    3740    5531    6875    7646    7773
SE   1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV      0       0       0      44     357     747    1024    1072
ST   1557    2000       3     1.5
KK   ROUTEDAM16 TO 23
RM      1     1.6     0.2
KK     23
BA   3.71
PB   15.7
LU    .95     .15
UK    300   0.008    0.15     100
RK  12000   0.008    0.04     1.0    TRAP      50       3
RK  23500   0.007   0.035            TRAP      75       3      NO
KK COM8INEDAM16 TO 23
HC      2
KK DAM19
KM GRAND AVE.
RS      1    STOR      -1
SA      0   0.650
SE   1375    1382
SQ      0   10000
ST   1382    4000       3     1.5
KK   ROUTEDAM19 TO 34
RM      1     0.2     0.2
KK COMBINEDAMS 17, 18 TO DAM 19
HC      2
KK     34
BA   3.23
PB   15.7
LU    .95     .15
UK    300   0.008    0.15     100
RK  12000   0.008    0.04     1.0    TRAP      75       3
RK  24000   0.007   0.035            TRAP     100       3      NO
```

```
KK    44
BA   8.7
IN    60
PB  15.7
LU   .95      .15
UI     0      144      292      398      593      826     1097     1476     1794     2129
UI  2582     2587     2710     3037     3037     3037     3037     3037     2621     2242
UI  2127     2024     1883     1597     1529     1466     1409     1345     1040     1003
UI   969      938      802      715      694      674      655      637      620      604
UI   588      523      399      389      380      372      364      351      196      192
UI   188      184      184      181      177      174      110      104      102      100
UI    99       97       96       94       92       91       89       88       87       47
UI    46       45       45       44       44       43       42       42       41       41
UI    40       38        0        0
KK ROUTE44
KM ROUTE 44 TO 43
RK 12500   0.001    0.03            TRAP     100       3
KK    42
BA  5.46
PB  15.7
UI     0      144      292      466      723     1096     1469     1846     2256     2225
UI  2550     2550     2550     2549     1928     1795     1679     1431     1288     1218
UI  1189      875      834      797      684      595      572      550      530      511
UI   494      396      330      319      310      313      164      160      156      152
UI   148      157       87       85       83       81       80       78       76       75
UI    73       81       39       38       38       37       36       36       35       34
UI    34       16        0        0
KK   ROUTE42
KM   ROUTE 42 TO 43
RK 21000   0.013   0.035            TRAP     100       3
KK    43
BA  5.11
PB  15.7
LU   .95      .15
UK   300     0.02    0.15      100
RK  6500     0.02    0.04        1    TRAP      20       3
RK 25500    0.017   0.035            TRAP      50       3
KK COM8INE
HC     3
KK   ROUTE
KM ROUTE COMBINED HYDROGRAPHS
KM    42 43 44 TO 41
RK  5000   0.001    0.03            TRAP     100       3
KK    41
BA  3.05
PB  15.7
LU   .95      .15
UK   300     0.02    0.15      100
RK  6200     0.09    0.04        1    TRAP      20       3
RK 24750     0.09   0.035            TRAP      50       3
KK COMBINE
HC     2
KK   ROUTE41 TO 38
RK  7000   0.001    0.03            TRAP     100       3
```

```
KK     38
BA   7.18
PB   15.7
LU    .95      .15
UK    300     0.02     0.15      100
RK   8500     0.09     0.04        2    TRAP      20        3
RK  33750     0.06    0.035             TRAP      50        3
KK COMBINE
HC      2
KK     39
BA   2.77
PB   15.7
UI      0      137      308      595     1015     1468     1786     1776     1915     1829
UI   1393     1266      997      917      787      629      574      449      424      401
UI    380      318      246      235      201      121      116      112      105       65
UI     62       60       58       57       55       47       29       28       27       27
UI     26       24        0        0
KK   ROUTE39 TO 35
RK  24000     0.01    0.035             TRAP      50        3
KK     35
BA   2.57
PB   15.7
LU    .95      .15
UK    300     0.02     0.15      100
RK   6000     0.02     0.04        1    TRAP      20        3
RK  24000     0.01    0.035             TRAP      50        3
KK     28
BA  17.59
PB   15.7
LU    .95      .15
UK    300    0.007     0.15      100
RK  19000    0.007     0.04        6    TRAP      25        3
RK  44500    0.006    0.035             TRAP      50        3       NO
KK   DAM20
KM   C.A.P., STA. 466+0
RS      1     STOR       -1
SV      0        9       33       97      436      912
SE   1536     1538     1540     1542     1544     1546
SQ      0      432     1222     2245     3457     4830
ST   1546     2000        3      1.5
KK   ROUTE28 TO 29
RK  14000    0.005     0.03             TRAP      75        3
KK     29
BA  10.32
PB   15.7
LU    .95      .15
UK    300     0.04     0.15      100
RK  16000     0.06     0.04        3    TRAP      25        3
RK  44000     0.04    0.035             TRAP      75        3       NO
KK COMBINE28 TO 29
HC      2
KK COMBINE28, 29, 39 & 35
HC      3
KK   ROUTE
RK   6500    0.004    0.035             TRAP     100        3
```

```
KK    40
BA  2.15
PB  15.7
UI     0     168     397     786    1319    1870    2068    2259    2259    1805
UI  1532    1254    1095     949     743     665     526     494     466     462
UI   298     283     270     161     139     133     129      76      74      71
UI    69      66      74      35      33      33      32      31      30       4
UI     0
KK   ROUTE40 TO 36
RK 18000    0.01   0.035            TRAP      50       3
KK    36
BA  4.37
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6600    0.02    0.04       2    TRAP      20       3
RK 26500    0.01   0.035            TRAP      50       3
KK    30
BA  1.50
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.005   0.035            TRAP      25       3
KK COMBINE30, 35, 36, 39 & 40
HC     4
KK   ROUTETO 37
RK  5000    0.01   0.035            TRAP     100       3
KK    37
BA  2.94
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6700    0.09    0.04       1    TRAP      50       3
RK 26750    0.07   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE
RK 14500   0.005   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE MCM.SUB. TO 34
RK  3000   0.001    0.03            TRAP     100       3
KK COMBINE ALL TO 34
HC     4
KO     1       2
* KK MCMICKEN DAM
* RS     1    ELEV    1335
* SV     0       0    2200    8800   19000   32400   35500   49800
* SE  1335    1340    1345    1350    1355    1360    1361    1365
* SQ   0.0  1750.0  4600.0  10500.  20100.  47000.  63600.  81150.102200.0
* SE1335.0  1345.0  1353.9  1355.0  1356.0  1358.0  1359.0  1360.0  1361.0
* ST  1361   49500    3.05     1.5
```

```
KKNEW MCMICKEN DAM
KM NEW RATING CURVE FOR THE DAM WAS OBTAINED FROM JOE TRAM ON 01/09/1996
* RS      1     ELEV    1335
RS      1     ELEV    1327
SV      0        6      96     471    2196    6112   12926   20070   23126   28121
SV 30824   33615   36501
SE1327.0  1330.0 1332.55  1335.0  1340.0  1345.0  1350.0 1353.65  1355.0  1357.0
SE1358.0  1359.0  1360.0
* SAME SQ-SE RELATIONSHIP BECAUSE Q DEPENDS ON HEAD
SQ   0.0      35    2000    4660   18300   39260   64100   93580  127400  164710
SQ205820
SE  1330    1335    1345  1353.9    1355    1356    1357    1358    1359    1360
SE  1361
ST  1361   49500    3.05     1.5
ZZ
```

APPENDIX P

HEC-1 Model PMP2CPCPMW.DAT - Modifies outflow Rating for the present outlet spillway channel, based a HECRAS analysis of the spillway channel, using a using a present condition vegetative condition and by moving the weir to the upper end of the channel.

Appendix K - HEC-1 Model PMP2B45.DAT

```
ID filename: pmp2B45.DAT
ID McMicken Dam Watershed
ID Probable Maximum Flood
ID FCMCD Jan 87 J. Rumann
ID Sub Basins 1-44
ID TWO MORE SUB-BASINS WERE ADDED BY BING ZHAO
ID (01/09/1996). THEY ARE SUB-BASINS 45 AND
46.
ID
ID (2-15-2000) THE OHE MCMICKEN DAM OUTLET RATING CURVES MODIFIED BY RWC
ID      FOR EXTENDING THE EMERGECY SPILLWAY
ID              TO 4500 FEET
ID
*DIAGRAM
IT     5       0       0     900
IO     3
KK     1
BA  9.60
IN   360
PB 15.70
PI   1.1     2.3     7.2     1.3     .65     .65     .65     .65     .30     .30
PI   .30     .30
LU  0.95    0.15
UI     0     241     489     761    1196    1767    2405    3022    3742    3889
UI  4131    4350    4350    4350    3744    3157    2953    2702    2265    2142
UI  2032    1842    1467    1402    1343    1086    1005     967     932     920
UI   900     869     580     562     545     529     514     319     295     274
UI   267     260     254     171     150     146     143     140     137     134
UI   131     129     126      67      66      65      64      62      61      60
UI    59      58      57      19       0
KK ROUTE1 TO 4
RM     1     0.7     0.2
KK     4
BA  3.42
PB 15.70
LU   .95     .15
UK   300    0.09    0.15     100
RK  7500    0.05    0.05     0.5    TRAP      25       3
RK 19500    0.05   0.035            TRAP      50       3      NO
KK CCOMBINE1 & 4
HC     2
KK     6
BA  5.79
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 10000    0.02    0.04     1.0    TRAP      25       3
RK 19500    0.02   0.035            TRAP      75       3     YES
```

```
KK  DAM2
KM TRILBY WASH @ S.R. 74
RS     1    STOR      -1
SA     0     0.9
SE  2050    2061
SQ     0   17600
ST  2061    3500       3     1.5
KK   ROUTEDAM2 TO 13
RM     1     1.1     0.2
KK    13
BA  6.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 21000    0.02   0.040     1.0    TRAP      25       3
RK 27000    0.02   0.035            TRAP      50       3      NO
KK COMBINEDAM 2 @ 13
HC     2
KK    DAM9
KM   TRILBY WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1850    1857
SQ     0   30300
ST  1857    9000       3     1.5
KK   ROUTEDAM9 TO 25
RM     1     2.6     0.2
KK    25
BA  9.36
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 20000   0.009   0.040     3.0    TRAP      50       3
RK 40750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM9 TO 25
HC     2
KK   DAM22
KM   TRILBY WASH @ C.A.P., STA. 609+0
RS     1    STOR      -1
SQ     0    6903
SE  1540  1548.5
SV     0    3436
ST  1554    2000       3     1.5
KK   ROUTEDAM22 TO 31
RM     1     2.7     0.2
KK     3
BA  4.43
PB  15.7
LU   .95     .15
UK   300    0.05    0.15     100
RK  6200    0.05   0.040     1.0    TRAP      50       3
RK 26500    0.04   0.035            TRAP      75       3      NO
```

```
KK      5
BA   2.98
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK   4500     0.03    0.040      1.0     TRAP      50        3
RK  13000     0.01    0.035             TRAP     100        3      YES
KK   DAM1
KM    IONA WASH @ S.R. 74
RS      1     STOR       -1
SA      0      1.1
SE   2040     2048
SQ      0     7300
ST   2048     6000        3      1.5
KK   ROUTEDAM1 TO 12              ,
RM      1      0.9      0.2
KK     12
BA   4.42
PB   15.7
LU    .95      .15
UK    300     0.02     0.15      100
RK   9300    0.015    0.040      1.0     TRAP      50        3
RK  13500    0.010    0.035             TRAP     100        3       NO
KK CCOMBINEDAM1 TO 12
HC      2
KK DAM8
KM IONA WASH @ GRAND AVE.
RS      1     STOR       -1
SA      0     50.0
SE   1920     1930
SQ      0    10500
ST   1930    70003      1.5
KK    ROUTEDAM8 TO 24
RM      1      3.3      0.2
KK     24
BA  17.92
PB   15.7
LU    .95      .15
UK    300    0.010     0.15      100
RK  16000    0.008    0.040      5.0     TRAP      75        3
RK  60250    0.007    0.035             TRAP     150        3       NO
KK COMBINEDAM8 TO 24
HC      2
KK DAM21
KM    IONA WASH @ C.A.P., STA. 572+5
RS      1     STOR       -1
SQ      0       72      505     1135     1914     2817
SE1545.2     1546     1548     1550     1552     1554
SV      0        7       31       69      288      518
ST   1553     2000        3      1.5
KK    ROUTEDAM 21 TO 31
RM      1      2.8      0.2
```

```
KK    31
BA  9.34
PB  15.7
LU   .95      .15
UK   300    0.007     0.15      100
RK 10000    0.006    0.040      2.0    TRAP     100        3
RK 39750    0.005    0.035             TRAP     175        3       NO
KK COMBINEDAMS 21 & 22 TO 31
HC     3
KK ROUTEDAMS 21 & 22/31 TO 32
RM     1      0.2      0.2
KK     7
BA  7.05
PB  15.7
LU   .95      .15
UK   300     0.03     0.15      100
RK 12400     0.02    0.040      1.0    TRAP      25        3
RK 24750     0.03    0.035             TRAP      50        3       NO
KK  DAM3
KM  S.R. 74
RS     1     STOR       -1
SA     0      1.1
SE  2000     2008
SQ     0    10300
ST  2008     6000        3      1.5
KK   ROUTEDAM3 TO 14
RM     1      2.1      0.2
KK    14
BA  7.21
PB  15.7
LU   .95      .15
UK   300    0.020     0.15      100
RK 19000    0.015    0.040      2.0    TRAP      50        3
RK 32250    0.012    0.035             TRAP     100        3       NO
KK COMBINEDAM3 TO 14
HC     2
KK DAM10
KM GRAND AVE.
RS     1     STOR       -1
SA     0       50
SE  1670     1675
SQ     0     8740
ST  1681     4000        3      1.5
KK   ROUTEDAM10 TO 26
RM     1      1.2      0.2
KK    26
BA  8.42
PB  15.7
LU   .95      .15
UK   300    0.010     0.15      100
RK 20000    0.008    0.040      2.0    TRAP      75        3
RK 27750    0.008    0.035             TRAP     150        3       NO
KK COMBINEDAM 10 TO 26
HC     2
```

```
KK DAM23
KM   C.A.P., STA. 688+0
RS     1    STOR      -1
SQ     0     116     440     881    1414    2025    2705    3447
SE1544.3    1545    1546    1547    1548    1549    1550    1551
SV     0       3      10      19      31     139     292     498
ST1550.2    2000       3     1.5
* THE FOLLOWING CARDS WERE FROM SPF HEC-1 INPUT FILE IN THE 1987
* REPORT BECAUSE ONE PAGE IS MISSING IN THE PMP HEC-1 INPUT FILE
* IN THE 1987 REPORT.
KK ROUTEDAM23 TO 32
RM     1     2.7     0.2
KK    32
BA  8.42
PB  15.7
LU  0.95    0.15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     3.0    TRAP     100       3
RK 38250   0.006   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21,22,23 TO 32
HC     3
KK      ROUTEDAMS 21,22,23/31,32 TO 33
RM     1     0.6     0.2
KK     8
BA  3.38
PB  15.7
LU  0.95    0.15
UK   300    0.04    0.15     100
RK  6500    0.04   0.040     1.0    TRAP      25       3
RK 24500    0.03   0.035            TRAP      50       3      NO
KK  DAM4
KM   S.R. 74
RS     1    STOR      -1
SA     0    50.0
SE  1990    2000
SQ     0    1525
ST  2001    1500       3     1.5
KK  ROUTEDAM4 TO 15
RM     1     2.6     0.2
KK     9
BA  5.44
PB  15.7
LU  0.95    0.15
UK   300    0.05    0.15     100
RK 12000    0.05    0.04     1.0    TRAP      25       3
RK 27500    0.04   0.035            TRAP      75       3      NO
KK DAM5
KM S.R.74
RS     1    STOR      -1
SA     0     5.0
SE  1980    1988
SQ     0   12000
ST  1988    2500       3     1.5
KK TO 15
RM     1     2.6     0.2
```

```
KK     15
BA   6.65
PB   15.7
* THE ABOVE (UP TO *) CARDS ARE FROM SPF HEC-1 INPUT FILE
LU    .95      .15
UK    300     0.02     0.15      100
RK 11400      0.02     0.04      2.0     TRAP      50        3
RK 38000     0.011    0.035              TRAP     100        3       NO
KK COMBINEDAMS 4, 5 TO 15
HC      3
KK DAM11
KM GRAND AVE.
RS      1     STOR       -1
SA      0     50.0
SE   1560     1567
SQ      0     5000
ST   1568     5000        3      1.5
KK   ROUTEDAM 11 TO 27
RM      1     0.07      0.2
KK     27
BA   1.04
PB   15.7
LU    .95      .15
UK    300    0.009     0.15      100
RK 13500    0.008     0.04              TRAP      25        3       NO
KK COMBINEDAM11 TO 27
HC      2
KK DAM24
KM   C.A.P. STA. 804+5
RS      1     STOR       -1
SQ      0       54      233      608     1007     1469     1985     2550     3161     3814
SQ   4506     5236
SE1543.5      1544     1545     1546     1547     1548     1549     1550     1551     1552
SE   1553     1554
SV      0        0        0        0        1        3        9       18       44      114
SV    204      413
ST1552.8      2000        3      1.5
KK   ROUTEDAM24 TO 33
RM      1      2.4      0.2
KK     18
BA   0.87
PB   15.7
LU    .95      .15
UK    300     0.01     0.15      100
RK 17500    0.009     0.04              TRAP      50        3       NO
KK DAM14
KM GRAND AVE.
RS      1     STOR       -1
SA      0     0.30
SE   1520     1527
SQ      0     1500
ST   1527     1500        3      1.5
KK   ROUTEDAM14 TO 33
RM      1      2.4      0.2
```

```
KK     33
BA   7.48
PB   15.7
LU    .95      .15
UK    300    0.005     0.15      100
RK  13000    0.005     0.04      2.0    TRAP      75        3
RK  34750    0.006    0.035             TRAP     100        3       NO
KK COMBINEDAMS 21, 22, 23/31, 32 TO DAMS 14, 24/33
HC      4
KK   ROUTEALL TO 34
RM      1      0.3      0.2
KK      2
BA  17.02
PB   15.7
LU    .95     0.15
UK    300     0.09     0.15      100
RK   6800    0.071    0.040      2.0    TRAP      50        3
RK  48000    0.043    0.035             TRAP     100        3       NO
KK     11
BA   1.40
PB   15.7
LU    .95      .15
UK    300    0.030     0.15      100
RK   9000    0.022     0.04      0.5    TRAP      50        3
RK  11750    0.022    0.035             TRAP     100        3      YES
KK   DAM7
KM    ME WASH @ S.R. 74
RS      1     STOR      -1
SA      0       50
SE   1980     1988
SQ      0    15000
ST   1988     2500       3      1.5
KK    ROUTEDAM7 TO 17
RM      1      2.4      0.2
KK     10
BA   1.43
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK   8500     0.28     0.04      0.5    TRAP      25        3
RK  17500    0.023    0.035             TRAP      50        3       NO
KK   DAM6
KM   S.R. 74
RS      1     STOR      -1
SA      0     0.20
SE   1980     1988
SQ      0     1325
ST   1988     1000       3      1.5
KK    ROUTEDAM6 TO 17
RM      1      2.4      0.2
KK     17
BA   6.70
PB   15.7
LU    .95      .15
UK    300    0.015     0.15      100
RK  18000    0.014     0.04      2.0    TRAP      50        3
RK  34250    0.013    0.035             TRAP     100        3       NO
```

```
KK COMBINEDAM56 & 7 TO 17
HC     3
KK DAM13
KM ME WASH @ C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM13 TO 21
RM     1     0.6     0.2
KK    16
BA  3.46
PB  15.7
LU   .95     .15
UK   300   0.015    0.15     100
RK  8500   0.014    0.04     1.0    TRAP      25       3
RK 35750   0.011   0.035            TRAP      75       3      NO
KK DAM12
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557     200       3     1.5
KK   ROUTEDAM12 TO 21
RM     1     0.6     0.2
KK    21
BA  1.04
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK  8500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAMS 12, 13 TO 21
HC     3
KK   DAM17
KM GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1480    1487
SQ     0   12000
ST  1488    3000       3     1.5
KK   ROUTEDAM 17 TO 34
RM     1     1.3     0.2
KK    19
BA  2.57
PB  15.7
LU   .95     .15
UK   300   0.013    0.15     100
RK 10000   0.012    0.04     1.0    TRAP      25       3
RK 19000   0.012   0.035            TRAP      50       3      NO
```

```
KK DAM15
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM15 TO 22
RM     0       1     0.2
KK    22
BA  2.31
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK 14750   0.008    0.04            TRAP      50       3      NO
KK COMBINEDAM15 TO 22
HC     2
KK DAM18
KM GRAND AVE.
RS     1    STOR      -1
SA     0   0.600
SE  1420    1427
SQ     0   10000
ST  1427    3500       3     1.5
KK ROUTEDAM18 TO 34
RM     1     0.8     0.2
KK COMBINEDAM 17 TO DAM 18
HC     2
KK    20
BA  1.08
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK  6500    0.01    0.04     0.5    TRAP      25       3
RK 12250   0.011   0.035            TRAP      50       3      NO
KK DAM16
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM16 TO 23
RM     1     1.6     0.2
KK    23
BA  3.71
PB  15.7
LU   .95     .15
UK   300   0.008    0.15     100
RK 12000   0.008    0.04     1.0    TRAP      50       3
RK 23500   0.007   0.035            TRAP      75       3      NO
KK COM8INEDAM16 TO 23
HC     2
```

```
KK DAM19
KM GRAND AVE.
RS      1    STOR      -1
SA      0   0.650
SE   1375    1382
SQ      0   10000
ST   1382    4000       3     1.5
KK   ROUTEDAM19 TO 34
RM      1     0.2     0.2
KK COMBINEDAMS 17, 18 TO DAM 19
HC      2
KK     34
BA   3.23
PB   15.7
LU    .95     .15
UK    300   0.008    0.15     100
RK 12000   0.008    0.04     1.0    TRAP      75       3
RK 24000   0.007   0.035            TRAP     100       3      NO
KK     44
BA    8.7
IN     60
PB   15.7
LU    .95     .15
UI      0     144     292     398     593     826    1097    1476    1794    2129
UI   2582    2587    2710    3037    3037    3037    3037    3037    2621    2242
UI   2127    2024    1883    1597    1529    1466    1409    1345    1040    1003
UI    969     938     802     715     694     674     655     637     620     604
UI    588     523     399     389     380     372     364     351     196     192
UI    188     184     184     181     177     174     110     104     102     100
UI     99      97      96      94      92      91      89      88      87      47
UI     46      45      45      44      44      43      42      42      41      41
UI     40      38       0       0
KK ROUTE44
KM ROUTE 44 TO 43
RK 12500   0.001    0.03            TRAP     100       3
KK     42
BA   5.46
PB   15.7
UI      0     144     292     466     723    1096    1469    1846    2256    2225
UI   2550    2550    2550    2549    1928    1795    1679    1431    1288    1218
UI   1189     875     834     797     684     595     572     550     530     511
UI    494     396     330     319     310     313     164     160     156     152
UI    148     157      87      85      83      81      80      78      76      75
UI     73      81      39      38      38      37      36      36      35      34
UI     34      16       0       0
KK   ROUTE42
KM   ROUTE 42 TO 43
RK 21000   0.013   0.035            TRAP     100       3
KK     43
BA   5.11
PB   15.7
LU    .95     .15
UK    300    0.02    0.15     100
RK   6500    0.02    0.04       1    TRAP      20       3
RK 25500   0.017   0.035            TRAP      50       3
KK COM8INE
HC      3
```

```
KK   ROUTE
KM ROUTE COMBINED HYDROGRAPHS
KM    42 43 44 TO 41
RK  5000   0.001    0.03            TRAP     100       3
KK    41
BA  3.05
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6200    0.09    0.04       1    TRAP      20       3
RK 24750    0.09   0.035            TRAP      50       3
KK COMBINE
HC     2
KK   ROUTE41 TO 38
RK  7000   0.001    0.03            TRAP     100       3
KK    38
BA  7.18
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  8500    0.09    0.04       2    TRAP      20       3
RK 33750    0.06   0.035            TRAP      50       3
KK COMBINE
HC     2
KK    39
BA  2.77
PB  15.7
UI     0     137     308     595    1015    1468    1786    1776    1915    1829
UI  1393    1266     997     917     787     629     574     449     424     401
UI   380     318     246     235     201     121     116     112     105      65
UI    62      60      58      57      55      47      29      28      27      27
UI    26      24       0       0
KK   ROUTE39 TO 35
RK 24000    0.01   0.035            TRAP      50       3
KK    35
BA  2.57
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6000    0.02    0.04       1    TRAP      20       3
RK 24000    0.01   0.035            TRAP      50       3
KK    28
BA 17.59
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.007    0.04       6    TRAP      25       3
RK 44500   0.006   0.035            TRAP      50       3      NO
KK   DAM20
KM   C.A.P., STA. 466+0
RS     1    STOR      -1
SV     0       9      33      97     436     912
SE  1536    1538    1540    1542    1544    1546
SQ     0     432    1222    2245    3457    4830
ST  1546    2000       3     1.5
```

```
KK   ROUTE28 TO 29
RK 14000   0.005    0.03            TRAP      75       3
KK    29
BA 10.32
PB  15.7
LU   .95     .15
UK   300    0.04    0.15     100
RK 16000    0.06    0.04       3    TRAP      25       3
RK 44000    0.04   0.035            TRAP      75       3      NO
KK COMBINE28 TO 29
HC     2
KK COMBINE28, 29, 39 & 35
HC     3
KK   ROUTE
RK  6500   0.004   0.035            TRAP     100       3
KK    40
BA  2.15
PB  15.7
UI     0     168     397     786    1319    1870    2068    2259    2259    1805
UI  1532    1254    1095     949     743     665     526     494     466     462
UI   298     283     270     161     139     133     129      76      74      71
UI    69      66      74      35      33      33      32      31      30       4
UI     0
KK   ROUTE40 TO 36
RK 18000    0.01   0.035            TRAP      50       3
KK    36
BA  4.37
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6600    0.02    0.04       2    TRAP      20       3
RK 26500    0.01   0.035            TRAP      50       3
KK    30
BA  1.50
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.005   0.035            TRAP      25       3
KK COMBINE30, 35, 36, 39 & 40
HC     4
KK   ROUTETO 37
RK  5000    0.01   0.035            TRAP     100       3
KK    37
BA  2.94
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6700    0.09    0.04       1    TRAP      50       3
RK 26750    0.07   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE
RK 14500   0.005   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE MCM.SUB. TO 34
RK  3000   0.001    0.03            TRAP     100       3
```

```
KK COMBINE ALL TO 34
HC      4
KO      1       2
* KK MCMICKEN DAM
* RS      1    ELEV    1335
* SV      0       0    2200    8800   19000   32400   35500   49800
* SE   1335    1340    1345    1350    1355    1360    1361    1365
* SQ    0.0  1750.0  4600.0  10500.  20100.  47000.  63600.  81150.102200.0
* SE1335.0  1345.0  1353.9  1355.0  1356.0  1358.0  1359.0  1360.0  1361.0
* ST   1361   49500    3.05     1.5
KKNEW MCMICKEN DAM
KM NEW RATING CURVE FOR THE DAM WAS OBTAINED FROM JOE TRAM ON 01/09/1996
* RS      1    ELEV    1335
RS      1    ELEV    1327
SV      0       6      96     471    2196    6112   12926   20070   23126   28121
SV 30824   33615   36501
SE1327.0  1330.0 1332.55  1335.0  1340.0  1345.0  1350.0 1353.65  1355.0  1357.0
SE1358.0  1359.0  1360.0
* SAME SQ-SE RELATIONSHIP BECAUSE Q DEPENDS ON HEAD
SQ    0.0      35    2000    4660   18300   40730   67900  100370  136920  177250
SQ222040
SE   1330    1335    1345  1353.9    1355    1356    1357    1358    1359    1360
SE   1361
ST   1361   49500    3.05     1.5
ZZ
```

APPENDIX L

HEC-1 Model PMP2B50.DAT - Modifies the outflow spillway Rating curve for a 5,000 foot weir.

Appendix L - HEC-1 Model PMP2B50.DAT

```
ID filename: pmp2B50.DAT
ID McMicken Dam Watershed
ID Probable Maximum Flood
ID FCMCD Jan 87 J. Rumann
ID Sub Basins 1-44
ID TWO MORE SUB-BASINS WERE ADDED BY BING ZHAO
ID (01/09/1996). THEY ARE SUB-BASINS 45 AND 46.
ID
ID (2-15-2000) THE OHE MCMICKEN DAM OUTLET RATING CURVES MODIFIED BY RWC
ID      FOR EXTENDING THE EMERGECY SPILLWAY
ID              TO 5000 FEET
ID
*DIAGRAM
IT     5       0       0     900
IO     3
KK     1
BA  9.60
IN   360
PB 15.70
PI   1.1     2.3     7.2     1.3     .65     .65     .65     .65     .30     .30
PI   .30     .30
LU  0.95    0.15
UI     0     241     489     761    1196    1767    2405    3022    3742    3889
UI  4131    4350    4350    4350    3744    3157    2953    2702    2265    2142
UI  2032    1842    1467    1402    1343    1086    1005     967     932     920
UI   900     869     580     562     545     529     514     319     295     274
UI   267     260     254     171     150     146     143     140     137     134
UI   131     129     126      67      66      65      64      62      61      60
UI    59      58      57      19       0
KK ROUTE1 TO 4
RM     1     0.7     0.2
KK     4
BA  3.42
PB 15.70
LU   .95     .15
UK   300    0.09    0.15     100
RK  7500    0.05    0.05     0.5    TRAP      25       3
RK 19500    0.05   0.035            TRAP      50       3      NO
KK CCOMBINE1 & 4
HC     2
KK     6
BA  5.79
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 10000    0.02    0.04     1.0    TRAP      25       3
RK 19500    0.02   0.035            TRAP      75       3     YES
KK  DAM2
KM TRILBY WASH @ S.R. 74
RS     1    STOR      -1
SA     0     0.9
SE  2050    2061
SQ     0   17600
ST  2061    3500       3     1.5
```

```
KK   ROUTEDAM2 TO 13
RM     1     1.1     0.2
KK    13
BA  6.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 21000    0.02   0.040     1.0    TRAP      25       3
RK 27000    0.02   0.035            TRAP      50       3      NO
KK COMBINEDAM 2 @ 13
HC     2
KK    DAM9
KM   TRILBY WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1850    1857
SQ     0   30300
ST  1857    9000       3     1.5
KK   ROUTEDAM9 TO 25
RM     1     2.6     0.2
KK    25
BA  9.36
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 20000   0.009   0.040     3.0    TRAP      50       3
RK 40750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM9 TO 25
HC     2
KK   DAM22
KM   TRILBY WASH @ C.A.P., STA. 609+0
RS     1    STOR      -1
SQ     0    6903
SE  1540  1548.5
SV     0    3436
ST  1554    2000       3     1.5
KK   ROUTEDAM22 TO 31
RM     1     2.7     0.2
KK     3
BA  4.43
PB  15.7
LU   .95     .15
UK   300    0.05    0.15     100
RK  6200    0.05   0.040     1.0    TRAP      50       3
RK 26500    0.04   0.035            TRAP      75       3      NO
KK     5
BA  2.98
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK  4500    0.03   0.040     1.0    TRAP      50       3
RK 13000    0.01   0.035            TRAP     100       3     YES
```

```
KK  DAM1
KM   IONA WASH @ S.R. 74
RS     1    STOR      -1
SA     0     1.1
SE  2040    2048
SQ     0    7300
ST  2048    6000       3     1.5
KK  ROUTEDAM1 TO 12           ,
RM     1     0.9     0.2
KK    12
BA  4.42
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  9300   0.015   0.040     1.0    TRAP      50       3
RK 13500   0.010   0.035            TRAP     100       3      NO
KK CCOMBINEDAM1 TO 12
HC     2
KK DAM8
KM IONA WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1920    1930
SQ     0   10500
ST  1930   70003     1.5
KK   ROUTEDAM8 TO 24
RM     1     3.3     0.2
KK    24
BA 17.92
PB  15.7
LU   .95     .15
UK   300   0.010    0.15     100
RK 16000   0.008   0.040     5.0    TRAP      75       3
RK 60250   0.007   0.035            TRAP     150       3      NO
KK COMBINEDAM8 TO 24
HC     2
KK DAM21
KM   IONA WASH @ C.A.P., STA. 572+5
RS     1    STOR      -1
SQ     0      72     505    1135    1914    2817
SE1545.2    1546    1548    1550    1552    1554
SV     0       7      31      69     288     518
ST  1553    2000       3     1.5
KK   ROUTEDAM 21 TO 31
RM     1     2.8     0.2
KK    31
BA  9.34
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     2.0    TRAP     100       3
RK 39750   0.005   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21 & 22 TO 31
HC     3
KK ROUTEDAMS 21 & 22/31 TO 32
RM     1     0.2     0.2
```

```
KK      7
BA   7.05
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK 12400      0.02    0.040      1.0     TRAP       25        3
RK 24750      0.03    0.035             TRAP       50        3       NO
KK  DAM3
KM  S.R. 74
RS      1     STOR       -1
SA      0      1.1
SE   2000     2008
SQ      0    10300
ST   2008     6000        3      1.5
KK   ROUTEDAM3 TO 14
RM      1      2.1      0.2
KK     14
BA   7.21
PB   15.7
LU    .95      .15
UK    300    0.020     0.15      100
RK 19000    0.015    0.040      2.0     TRAP       50        3
RK 32250    0.012    0.035             TRAP      100        3       NO
KK COMBINEDAM3 TO 14
HC      2
KK DAM10
KM GRAND AVE.
RS      1     STOR       -1
SA      0       50
SE   1670     1675
SQ      0     8740
ST   1681     4000        3      1.5
KK   ROUTEDAM10 TO 26
RM      1      1.2      0.2
KK     26
BA   8.42
PB   15.7
LU    .95      .15
UK    300    0.010     0.15      100
RK 20000    0.008    0.040      2.0     TRAP       75        3
RK 27750    0.008    0.035             TRAP      150        3       NO
KK COMBINEDAM 10 TO 26
HC      2
KK DAM23
KM   C.A.P., STA. 688+0
RS      1     STOR       -1
SQ      0      116      440      881     1414     2025     2705     3447
SE1544.3     1545     1546     1547     1548     1549     1550     1551
SV      0        3       10       19       31      139      292      498
ST1550.2     2000        3      1.5
* THE FOLLOWING CARDS WERE FROM SPF HEC-1 INPUT FILE IN THE 1987
* REPORT BECAUSE ONE PAGE IS MISSING IN THE PMP HEC-1 INPUT FILE
* IN THE 1987 REPORT.
KK ROUTEDAM23 TO 32
RM      1      2.7      0.2
```

```
KK    32
BA  8.42
PB  15.7
LU  0.95    0.15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     3.0    TRAP     100       3
RK 38250   0.006   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21,22,23 TO 32
HC     3
KK      ROUTEDAMS 21,22,23/31,32 TO 33
RM     1     0.6     0.2
KK     8
BA  3.38
PB  15.7
LU  0.95    0.15
UK   300    0.04    0.15     100
RK  6500    0.04   0.040     1.0    TRAP      25       3
RK 24500    0.03   0.035            TRAP      50       3      NO
KK  DAM4
KM   S.R. 74
RS     1    STOR      -1
SA     0    50.0
SE  1990    2000
SQ     0    1525
ST  2001    1500       3     1.5
KK  ROUTEDAM4 TO 15
RM     1     2.6     0.2
KK     9
BA  5.44
PB  15.7
LU  0.95    0.15
UK   300    0.05    0.15     100
RK 12000    0.05    0.04     1.0    TRAP      25       3
RK 27500    0.04   0.035            TRAP      75       3      NO
KK DAM5
KM S.R.74
RS     1    STOR      -1
SA     0     5.0
SE  1980    1988
SQ     0   12000
ST  1988    2500       3     1.5
KK TO 15
RM     1     2.6     0.2
KK    15
BA  6.65
PB  15.7
* THE ABOVE (UP TO *) CARDS ARE FROM SPF HEC-1 INPUT FILE
LU   .95     .15
UK   300    0.02    0.15     100
RK 11400    0.02    0.04     2.0    TRAP      50       3
RK 38000   0.011   0.035            TRAP     100       3      NO
KK COMBINEDAMS 4, 5 TO 15
HC     3
```

```
KK DAM11
KM GRAND AVE.
RS      1     STOR       -1
SA      0     50.0
SE   1560     1567
SQ      0     5000
ST   1568     5000        3      1.5
KK   ROUTEDAM 11 TO 27
RM      1     0.07      0.2
KK     27
BA   1.04
PB   15.7
LU    .95      .15
UK    300    0.009     0.15      100
RK 13500    0.008     0.04             TRAP      25        3       NO
KK COMBINEDAM11 TO 27
HC      2
KK DAM24
KM   C.A.P. STA. 804+5
RS      1     STOR       -1
SQ      0       54      233      608     1007     1469     1985     2550     3161     3814
SQ   4506     5236
SE1543.5     1544     1545     1546     1547     1548     1549     1550     1551     1552
SE   1553     1554
SV      0        0        0        0        1        3        9       18       44      114
SV    204      413
ST1552.8     2000        3      1.5
KK   ROUTEDAM24 TO 33
RM      1      2.4      0.2
KK     18
BA   0.87
PB   15.7
LU    .95      .15
UK    300     0.01     0.15      100
RK 17500    0.009     0.04             TRAP      50        3       NO
KK DAM14
KM GRAND AVE.
RS      1     STOR       -1
SA      0     0.30
SE   1520     1527
SQ      0     1500
ST   1527     1500        3      1.5
KK   ROUTEDAM14 TO 33
RM      1      2.4      0.2
KK     33
BA   7.48
PB   15.7
LU    .95      .15
UK    300    0.005     0.15      100
RK 13000    0.005     0.04      2.0    TRAP      75        3
RK 34750    0.006    0.035             TRAP     100        3       NO
KK COMBINEDAMS 21, 22, 23/31, 32 TO DAMS 14, 24/33
HC      4
KK   ROUTEALL TO 34
RM      1      0.3      0.2
```

```
KK      2
BA 17.02
PB  15.7
LU   .95     0.15
UK   300     0.09     0.15      100
RK  6800    0.071    0.040      2.0    TRAP      50        3
RK 48000    0.043    0.035             TRAP     100        3       NO
KK     11
BA  1.40
PB  15.7
LU   .95      .15
UK   300    0.030     0.15      100
RK  9000    0.022     0.04      0.5    TRAP      50        3
RK 11750    0.022    0.035             TRAP     100        3      YES
KK  DAM7
KM   ME WASH @ S.R. 74
RS      1     STOR      -1
SA      0       50
SE   1980     1988
SQ      0    15000
ST   1988     2500       3      1.5
KK   ROUTEDAM7 TO 17
RM      1      2.4     0.2
KK     10
BA  1.43
PB  15.7
LU   .95      .15
UK   300     0.03     0.15      100
RK  8500     0.28     0.04      0.5    TRAP      25        3
RK 17500    0.023    0.035             TRAP      50        3       NO
KK  DAM6
KM  S.R. 74
RS      1     STOR      -1
SA      0     0.20
SE   1980     1988
SQ      0     1325
ST   1988     1000       3      1.5
KK   ROUTEDAM6 TO 17
RM      1      2.4     0.2
KK     17
BA  6.70
PB  15.7
LU   .95      .15
UK   300    0.015     0.15      100
RK 18000    0.014     0.04      2.0    TRAP      50        3
RK 34250    0.013    0.035             TRAP     100        3       NO
KK COMBINEDAM56 & 7 TO 17
HC      3
KK DAM13
KM ME WASH @ C.A.P.
RS      1     STOR      -1
SQ      0       51      778     3740     5531     6875     7646     7773
SE   1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV      0        0        0       44      357      747     1024     1072
ST   1557     2000       3      1.5
KK   ROUTEDAM13 TO 21
RM      1      0.6     0.2
```

```
KK    16
BA  3.46
PB  15.7
LU   .95      .15
UK   300    0.015     0.15      100
RK  8500    0.014     0.04      1.0     TRAP       25        3
RK 35750    0.011    0.035              TRAP       75        3       NO
KK DAM12
KM C.A.P.
RS     1     STOR       -1
SQ     0       51      778     3740     5531     6875     7646     7773
SE  1540     1542     1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0        0        0       44      357      747     1024     1072
ST  1557      200        3      1.5
KK   ROUTEDAM12 TO 21
RM     1      0.6      0.2
KK    21
BA  1.04
PB  15.7
LU   .95      .15
UK   300    0.009     0.15      100
RK  8500    0.008     0.04              TRAP       25        3       NO
KK COMBINEDAMS 12, 13 TO 21
HC     3
KK   DAM17
KM GRAND AVE.
RS     1     STOR       -1
SA     0       50
SE  1480     1487
SQ     0    12000
ST  1488     3000        3      1.5
KK   ROUTEDAM 17 TO 34
RM     1      1.3      0.2
KK    19
BA  2.57
PB  15.7
LU   .95      .15
UK   300    0.013     0.15      100
RK 10000    0.012     0.04      1.0     TRAP       25        3
RK 19000    0.012    0.035              TRAP       50        3       NO
KK DAM15
KM C.A.P.
RS     1     STOR       -1
SQ     0       51      778     3740     5531     6875     7646     7773
SE  1540     1542     1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0        0        0       44      357      747     1024     1072
ST  1557     2000        3      1.5
KK   ROUTEDAM15 TO 22
RM     0        1      0.2
KK    22
BA  2.31
PB  15.7
LU   .95      .15
UK   300    0.009     0.15      100
RK 14750    0.008     0.04              TRAP       50        3       NO
```

```
KK COMBINEDAM15 TO 22
HC      2
KK DAM18
KM GRAND AVE.
RS      1     STOR       -1
SA      0    0.600
SE   1420     1427
SQ      0    10000
ST   1427     3500        3      1.5
KK ROUTEDAM18 TO 34
RM      1      0.8      0.2
KK COMBINEDAM 17 TO DAM 18
HC      2
KK     20
BA   1.08
PB   15.7
LU    .95      .15
UK    300     0.01     0.15      100
RK   6500     0.01     0.04      0.5    TRAP      25        3
RK  12250    0.011    0.035            TRAP      50        3       NO
KK DAM16
KM C.A.P.
RS      1     STOR       -1
SQ      0       51      778     3740     5531     6875     7646     7773
SE   1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV      0        0        0       44      357      747     1024     1072
ST   1557     2000        3      1.5
KK   ROUTEDAM16 TO 23
RM      1      1.6      0.2
KK     23
BA   3.71
PB   15.7
LU    .95      .15
UK    300    0.008     0.15      100
RK  12000    0.008     0.04      1.0    TRAP      50        3
RK  23500    0.007    0.035            TRAP      75        3       NO
KK COM8INEDAM16 TO 23
HC      2
KK DAM19
KM GRAND AVE.
RS      1     STOR       -1
SA      0    0.650
SE   1375     1382
SQ      0    10000
ST   1382     4000        3      1.5
KK   ROUTEDAM19 TO 34
RM      1      0.2      0.2
KK COMBINEDAMS 17, 18 TO DAM 19
HC      2
KK     34
BA   3.23
PB   15.7
LU    .95      .15
UK    300    0.008     0.15      100
RK  12000    0.008     0.04      1.0    TRAP      75        3
RK  24000    0.007    0.035            TRAP     100        3       NO
```

```
KK    44
BA   8.7
IN    60
PB  15.7
LU   .95     .15
UI     0     144     292     398     593     826    1097    1476    1794    2129
UI  2582    2587    2710    3037    3037    3037    3037    3037    2621    2242
UI  2127    2024    1883    1597    1529    1466    1409    1345    1040    1003
UI   969     938     802     715     694     674     655     637     620     604
UI   588     523     399     389     380     372     364     351     196     192
UI   188     184     184     181     177     174     110     104     102     100
UI    99      97      96      94      92      91      89      88      87      47
UI    46      45      45      44      44      43      42      42      41      41
UI    40      38       0       0
KK ROUTE44
KM ROUTE 44 TO 43
RK 12500   0.001    0.03            TRAP     100       3
KK    42
BA  5.46
PB  15.7
UI     0     144     292     466     723    1096    1469    1846    2256    2225
UI  2550    2550    2550    2549    1928    1795    1679    1431    1288    1218
UI  1189     875     834     797     684     595     572     550     530     511
UI   494     396     330     319     310     313     164     160     156     152
UI   148     157      87      85      83      81      80      78      76      75
UI    73      81      39      38      38      37      36      36      35      34
UI    34      16       0       0
KK   ROUTE42
KM   ROUTE 42 TO 43
RK 21000   0.013   0.035            TRAP     100       3
KK    43
BA  5.11
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6500    0.02    0.04       1    TRAP      20       3
RK 25500   0.017   0.035            TRAP      50       3
KK COM8INE
HC     3
KK   ROUTE
KM ROUTE COMBINED HYDROGRAPHS
KM    42 43 44 TO 41
RK  5000   0.001    0.03            TRAP     100       3
KK    41
BA  3.05
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6200    0.09    0.04       1    TRAP      20       3
RK 24750    0.09   0.035            TRAP      50       3
KK COMBINE
HC     2
KK   ROUTE41 TO 38
RK  7000   0.001    0.03            TRAP     100       3
```

```
KK    38
BA  7.18
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  8500    0.09    0.04       2    TRAP      20       3
RK 33750    0.06   0.035            TRAP      50       3
KK COMBINE
HC     2
KK    39
BA  2.77
PB  15.7
UI     0     137     308     595    1015    1468    1786    1776    1915    1829
UI  1393    1266     997     917     787     629     574     449     424     401
UI   380     318     246     235     201     121     116     112     105      65
UI    62      60      58      57      55      47      29      28      27      27
UI    26      24       0       0
KK   ROUTE39 TO 35
RK 24000    0.01   0.035            TRAP      50       3
KK    35
BA  2.57
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6000    0.02    0.04       1    TRAP      20       3
RK 24000    0.01   0.035            TRAP      50       3
KK    28
BA 17.59
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.007    0.04       6    TRAP      25       3
RK 44500   0.006   0.035            TRAP      50       3      NO
KK   DAM20
KM   C.A.P., STA. 466+0
RS     1    STOR      -1
SV     0       9      33      97     436     912
SE  1536    1538    1540    1542    1544    1546
SQ     0     432    1222    2245    3457    4830
ST  1546    2000       3     1.5
KK   ROUTE28 TO 29
RK 14000   0.005    0.03            TRAP      75       3
KK    29
BA 10.32
PB  15.7
LU   .95     .15
UK   300    0.04    0.15     100
RK 16000    0.06    0.04       3    TRAP      25       3
RK 44000    0.04   0.035            TRAP      75       3      NO
KK COMBINE28 TO 29
HC     2
KK COMBINE28, 29, 39 & 35
HC     3
KK   ROUTE
RK  6500   0.004   0.035            TRAP     100       3
```

```
KK    40
BA  2.15
PB  15.7
UI     0     168     397     786    1319    1870    2068    2259    2259    1805
UI  1532    1254    1095     949     743     665     526     494     466     462
UI   298     283     270     161     139     133     129      76      74      71
UI    69      66      74      35      33      33      32      31      30       4
UI     0
KK   ROUTE40 TO 36
RK 18000    0.01   0.035            TRAP      50       3
KK    36
BA  4.37
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6600    0.02    0.04       2    TRAP      20       3
RK 26500    0.01   0.035            TRAP      50       3
KK    30
BA  1.50
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.005   0.035            TRAP      25       3
KK COMBINE30, 35, 36, 39 & 40
HC     4
KK   ROUTETO 37
RK  5000    0.01   0.035            TRAP     100       3
KK    37
BA  2.94
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6700    0.09    0.04       1    TRAP      50       3
RK 26750    0.07   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE
RK 14500   0.005   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE MCM.SUB. TO 34
RK  3000   0.001    0.03            TRAP     100       3
KK COMBINE ALL TO 34
HC     4
KO     1       2
* KK MCMICKEN DAM
* RS     1    ELEV    1335
* SV     0       0    2200    8800   19000   32400   35500   49800
* SE  1335    1340    1345    1350    1355    1360    1361    1365
* SQ   0.0  1750.0  4600.0  10500.  20100.  47000.  63600.  81150.102200.0
* SE1335.0  1345.0  1353.9  1355.0  1356.0  1358.0  1359.0  1360.0  1361.0
* ST  1361   49500    3.05     1.5
```

```
KKNEW MCMICKEN DAM
KM NEW RATING CURVE FOR THE DAM WAS OBTAINED FROM JOE TRAM ON 01/09/1996
* RS      1     ELEV    1335
RS      1     ELEV    1327
SV      0        6      96     471    2196    6112   12926   20070   23126   28121
SV 30824   33615   36501
SE1327.0  1330.0 1332.55  1335.0  1340.0  1345.0  1350.0 1353.65  1355.0  1357.0
SE1358.0  1359.0  1360.0
* SAME SQ-SE RELATIONSHIP BECAUSE Q DEPENDS ON HEAD
SQ   0.0       35    2000    4660   19800   44640   74900  110010  151520  196350
SQ246120
SE  1330    1335    1345  1353.9    1355    1356    1357    1358    1359    1360
SE  1361
ST  1361   49500    3.05     1.5
ZZ
1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```

APPENDIX M

HEC-1 Model PMP2DP10.DAT - Modifies the outflow spillway Rating curve for a 1,000 foot weir extension and use weir analysis for analysis for the extension and the HECRAS analysis for present vegetation for the existing 2,000 foot weir.

```
KK    41
BA  3.05
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6200    0.09    0.04       1    TRAP      20       3
RK 24750    0.09   0.035            TRAP      50       3
KK COMBINE
HC     2
KK   ROUTE41 TO 38
RK  7000   0.001    0.03            TRAP     100       3
KK    38
BA  7.18
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  8500    0.09    0.04       2    TRAP      20       3
RK 33750    0.06   0.035            TRAP      50       3
KK COMBINE
HC     2
KK    39
BA  2.77
PB  15.7
UI     0     137     308     595    1015    1468    1786    1776    1915    1829
UI  1393    1266     997     917     787     629     574     449     424     401
UI   380     318     246     235     201     121     116     112     105      65
UI    62      60      58      57      55      47      29      28      27      27
UI    26      24       0       0
KK   ROUTE39 TO 35
RK 24000    0.01   0.035            TRAP      50       3
KK    35
BA  2.57
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6000    0.02    0.04       1    TRAP      20       3
RK 24000    0.01   0.035            TRAP      50       3
KK    28
BA 17.59
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.007    0.04       6    TRAP      25       3
RK 44500   0.006   0.035            TRAP      50       3      NO
KK   DAM20
KM   C.A.P., STA. 466+0
RS     1    STOR      -1
SV     0       9      33      97     436     912
SE  1536    1538    1540    1542    1544    1546
SQ     0     432    1222    2245    3457    4830
ST  1546    2000       3     1.5
KK   ROUTE28 TO 29
RK 14000   0.005    0.03            TRAP      75       3
```

```
KK    29
BA 10.32
PB  15.7
LU   .95     .15
UK   300    0.04    0.15     100
RK 16000    0.06    0.04       3    TRAP      25       3
RK 44000    0.04   0.035            TRAP      75       3      NO
KK COMBINE28 TO 29
HC     2
KK COMBINE28, 29, 39 & 35
HC     3
KK   ROUTE
RK  6500   0.004   0.035            TRAP     100       3
KK    40
BA  2.15
PB  15.7
UI     0     168     397     786    1319    1870    2068    2259    2259    1805
UI  1532    1254    1095     949     743     665     526     494     466     462
UI   298     283     270     161     139     133     129      76      74      71
UI    69      66      74      35      33      33      32      31      30       4
UI     0
KK   ROUTE40 TO 36
RK 18000    0.01   0.035            TRAP      50       3
KK    36
BA  4.37
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6600    0.02    0.04       2    TRAP      20       3
RK 26500    0.01   0.035            TRAP      50       3
KK    30
BA  1.50
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.005   0.035            TRAP      25       3
KK COMBINE30, 35, 36, 39 & 40
HC     4
KK   ROUTETO 37
RK  5000    0.01   0.035            TRAP     100       3
KK    37
BA  2.94
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6700    0.09    0.04       1    TRAP      50       3
RK 26750    0.07   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE
RK 14500   0.005   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE MCM.SUB. TO 34
RK  3000   0.001    0.03            TRAP     100       3
```

```
KK COMBINE ALL TO 34
HC      4
KO      1        2
* KK MCMICKEN DAM
* RS      1     ELEV     1335
* SV      0        0     2200     8800    19000    32400    35500    49800
* SE   1335     1340     1345     1350     1355     1360     1361     1365
* SQ    0.0   1750.0   4600.0   10500.   20100.   47000.   63600.   81150.102200.0
* SE1335.0   1345.0   1353.9   1355.0   1356.0   1358.0   1359.0   1360.0   1361.0
* ST   1361    49500     3.05      1.5
KKNEW MCMICKEN DAM
KM NEW RATING CURVE FOR THE DAM WAS OBTAINED FROM JOE TRAM ON 01/09/1996
* RS      1     ELEV     1335
RS      1     ELEV     1327
SV      0        6       96      471     2196     6112    12926    20070    23126    28121
SV 30824    33615    36501
SE1327.0   1330.0 1332.55   1335.0   1340.0   1345.0   1350.0 1353.65   1355.0   1357.0
SE1358.0   1359.0   1360.0
* SAME SQ-SE RELATIONSHIP BECAUSE Q DEPENDS ON HEAD
SQ    0.0       35     2000     4660    13800    28760    46900    68550    93000   119910
SQ149820
SE   1330     1335     1345   1353.9     1355     1356     1357     1358     1359     1360
SE   1361
ST   1361    49500     3.05      1.5
ZZ
1


13
```

APPENDIX I

HEC-1 Model PMP2B35.DAT - Modifies the outflow spillway Rating curve for a 3,500 foot weir.

Appendix I - hEC-1 Model pmp2b35.dat

```
ID filename: pmp2B35.DAT
ID McMicken Dam Watershed
ID Probable Maximum Flood
ID FCMCD Jan 87 J. Rumann
ID Sub Basins 1-44
ID TWO MORE SUB-BASINS WERE ADDED BY BING ZHAO
ID (01/09/1996). THEY ARE SUB-BASINS 45 AND 46.
ID
ID (2-15-2000) THE OHE MCMICKEN DAM OUTLET RATING CURVES MODIFIED BY RWC
ID      FOR EXTENDING THE EMERGECY SPILLWAY
ID              TO 3500 FEET
ID
*DIAGRAM
IT     5       0       0     900
IO     3
KK     1
BA  9.60
IN   360
PB 15.70
PI   1.1     2.3     7.2     1.3     .65     .65     .65     .65     .30     .30
PI   .30     .30
LU  0.95    0.15
UI     0     241     489     761    1196    1767    2405    3022    3742    3889
UI  4131    4350    4350    4350    3744    3157    2953    2702    2265    2142
UI  2032    1842    1467    1402    1343    1086    1005     967     932     920
UI   900     869     580     562     545     529     514     319     295     274
UI   267     260     254     171     150     146     143     140     137     134
UI   131     129     126      67      66      65      64      62      61      60
UI    59      58      57      19       0
KK ROUTE1 TO 4
RM     1     0.7     0.2
KK     4
BA  3.42
PB 15.70
LU   .95     .15
UK   300    0.09    0.15     100
RK  7500    0.05    0.05     0.5    TRAP      25       3
RK 19500    0.05   0.035            TRAP      50       3      NO
KK CCOMBINE1 & 4
HC     2
KK     6
BA  5.79
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 10000    0.02    0.04     1.0    TRAP      25       3
RK 19500    0.02   0.035            TRAP      75       3     YES
KK  DAM2
KM TRILBY WASH @ S.R. 74
RS     1    STOR      -1
SA     0     0.9
SE  2050    2061
SQ     0   17600
ST  2061    3500       3     1.5
```

```
KK   ROUTEDAM2 TO 13
RM     1     1.1     0.2
KK    13
BA  6.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 21000    0.02   0.040     1.0    TRAP      25       3
RK 27000    0.02   0.035            TRAP      50       3      NO
KK COMBINEDAM 2 @ 13
HC     2
KK    DAM9
KM   TRILBY WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1850    1857
SQ     0   30300
ST  1857    9000       3     1.5
KK   ROUTEDAM9 TO 25
RM     1     2.6     0.2
KK    25
BA  9.36
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 20000   0.009   0.040     3.0    TRAP      50       3
RK 40750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM9 TO 25
HC     2
KK   DAM22
KM   TRILBY WASH @ C.A.P., STA. 609+0
RS     1    STOR      -1
SQ     0    6903
SE  1540  1548.5
SV     0    3436
ST  1554    2000       3     1.5
KK   ROUTEDAM22 TO 31
RM     1     2.7     0.2
KK     3
BA  4.43
PB  15.7
LU   .95     .15
UK   300    0.05    0.15     100
RK  6200    0.05   0.040     1.0    TRAP      50       3
RK 26500    0.04   0.035            TRAP      75       3      NO
KK     5
BA  2.98
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK  4500    0.03   0.040     1.0    TRAP      50       3
RK 13000    0.01   0.035            TRAP     100       3     YES
```

```
KK  DAM1
KM   IONA WASH @ S.R. 74
RS     1    STOR      -1
SA     0     1.1
SE  2040    2048
SQ     0    7300
ST  2048    6000       3     1.5
KK  ROUTEDAM1 TO 12           ,
RM     1     0.9     0.2
KK    12
BA  4.42
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  9300   0.015   0.040     1.0    TRAP      50       3
RK 13500   0.010   0.035            TRAP     100       3      NO
KK CCOMBINEDAM1 TO 12
HC     2
KK DAM8
KM IONA WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1920    1930
SQ     0   10500
ST  1930   70003     1.5
KK   ROUTEDAM8 TO 24
RM     1     3.3     0.2
KK    24
BA 17.92
PB  15.7
LU   .95     .15
UK   300   0.010    0.15     100
RK 16000   0.008   0.040     5.0    TRAP      75       3
RK 60250   0.007   0.035            TRAP     150       3      NO
KK COMBINEDAM8 TO 24
HC     2
KK DAM21
KM   IONA WASH @ C.A.P., STA. 572+5
RS     1    STOR      -1
SQ     0      72     505    1135    1914    2817
SE1545.2    1546    1548    1550    1552    1554
SV     0       7      31      69     288     518
ST  1553    2000       3     1.5
KK   ROUTEDAM 21 TO 31
RM     1     2.8     0.2
KK    31
BA  9.34
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     2.0    TRAP     100       3
RK 39750   0.005   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21 & 22 TO 31
HC     3
KK ROUTEDAMS 21 & 22/31 TO 32
RM     1     0.2     0.2
KK     7
```

```
BA  7.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 12400    0.02   0.040     1.0    TRAP      25       3
RK 24750    0.03   0.035            TRAP      50       3      NO
KK  DAM3
KM  S.R. 74
RS     1    STOR      -1
SA     0     1.1
SE  2000    2008
SQ     0   10300
ST  2008    6000       3     1.5
KK   ROUTEDAM3 TO 14
RM     1     2.1     0.2
KK    14
BA  7.21
PB  15.7
LU   .95     .15
UK   300   0.020    0.15     100
RK 19000   0.015   0.040     2.0    TRAP      50       3
RK 32250   0.012   0.035            TRAP     100       3      NO
KK COMBINEDAM3 TO 14
HC     2
KK DAM10
KM GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1670    1675
SQ     0    8740
ST  1681    4000       3     1.5
KK   ROUTEDAM10 TO 26
RM     1     1.2     0.2
KK    26
BA  8.42
PB  15.7
LU   .95     .15
UK   300   0.010    0.15     100
RK 20000   0.008   0.040     2.0    TRAP      75       3
RK 27750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM 10 TO 26
HC     2
KK DAM23
KM   C.A.P., STA. 688+0
RS     1    STOR      -1
SQ     0     116     440     881    1414    2025    2705    3447
SE1544.3    1545    1546    1547    1548    1549    1550    1551
SV     0       3      10      19      31     139     292     498
ST1550.2    2000       3     1.5
* THE FOLLOWING CARDS WERE FROM SPF HEC-1 INPUT FILE IN THE 1987
* REPORT BECAUSE ONE PAGE IS MISSING IN THE PMP HEC-1 INPUT FILE
* IN THE 1987 REPORT.
KK ROUTEDAM23 TO 32
RM     1     2.7     0.2
KK    32
BA  8.42
PB  15.7
```

```
LU  0.95    0.15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     3.0    TRAP     100       3
RK 38250   0.006   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21,22,23 TO 32
HC     3
KK      ROUTEDAMS 21,22,23/31,32 TO 33
RM     1     0.6     0.2
KK     8
BA  3.38
PB  15.7
LU  0.95    0.15
UK   300    0.04    0.15     100
RK  6500    0.04   0.040     1.0    TRAP      25       3
RK 24500    0.03   0.035            TRAP      50       3      NO
KK  DAM4
KM   S.R. 74
RS     1    STOR      -1
SA     0    50.0
SE  1990    2000
SQ     0    1525
ST  2001    1500       3     1.5
KK  ROUTEDAM4 TO 15
RM     1     2.6     0.2
KK     9
BA  5.44
PB  15.7
LU  0.95    0.15
UK   300    0.05    0.15     100
RK 12000    0.05    0.04     1.0    TRAP      25       3
RK 27500    0.04   0.035            TRAP      75       3      NO
KK DAM5
KM S.R.74
RS     1    STOR      -1
SA     0     5.0
SE  1980    1988
SQ     0   12000
ST  1988    2500       3     1.5
KK TO 15
RM     1     2.6     0.2
KK    15
BA  6.65
PB  15.7
* THE ABOVE (UP TO *) CARDS ARE FROM SPF HEC-1 INPUT FILE
LU   .95     .15
UK   300    0.02    0.15     100
RK 11400    0.02    0.04     2.0    TRAP      50       3
RK 38000   0.011   0.035            TRAP     100       3      NO
KK COMBINEDAMS 4, 5 TO 15
HC     3
KK DAM11
KM GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1560    1567
SQ     0    5000
ST  1568    5000       3     1.5
```

```
KK   ROUTEDAM 11 TO 27
RM     1    0.07     0.2
KK    27
BA  1.04
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK 13500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAM11 TO 27
HC     2
KK DAM24
KM   C.A.P. STA. 804+5
RS     1    STOR      -1
SQ     0      54     233     608    1007    1469    1985    2550    3161    3814
SQ  4506    5236
SE1543.5    1544    1545    1546    1547    1548    1549    1550    1551    1552
SE  1553    1554
SV     0       0       0       0       1       3       9      18      44     114
SV   204     413
ST1552.8    2000       3     1.5
KK   ROUTEDAM24 TO 33
RM     1     2.4     0.2
KK    18
BA  0.87
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 17500   0.009    0.04            TRAP      50       3      NO
KK DAM14
KM GRAND AVE.
RS     1    STOR      -1
SA     0    0.30
SE  1520    1527
SQ     0    1500
ST  1527    1500       3     1.5
KK   ROUTEDAM14 TO 33
RM     1     2.4     0.2
KK    33
BA  7.48
PB  15.7
LU   .95     .15
UK   300   0.005    0.15     100
RK 13000   0.005    0.04     2.0    TRAP      75       3
RK 34750   0.006   0.035            TRAP     100       3      NO
KK COMBINEDAMS 21, 22, 23/31, 32 TO DAMS 14, 24/33
HC     4
KK   ROUTEALL TO 34
RM     1     0.3     0.2
KK     2
BA 17.02
PB  15.7
LU   .95    0.15
UK   300    0.09    0.15     100
RK  6800   0.071   0.040     2.0    TRAP      50       3
RK 48000   0.043   0.035            TRAP     100       3      NO
```

```
KK    11
BA  1.40
PB  15.7
LU   .95     .15
UK   300   0.030    0.15     100
RK  9000   0.022    0.04     0.5    TRAP      50       3
RK 11750   0.022   0.035            TRAP     100       3     YES
KK  DAM7
KM   ME WASH @ S.R. 74
RS     1    STOR      -1
SA     0      50
SE  1980    1988
SQ     0   15000
ST  1988    2500       3     1.5
KK   ROUTEDAM7 TO 17
RM     1     2.4     0.2
KK    10
BA  1.43
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK  8500    0.28    0.04     0.5    TRAP      25       3
RK 17500   0.023   0.035            TRAP      50       3      NO
KK  DAM6
KM  S.R. 74
RS     1    STOR      -1
SA     0    0.20
SE  1980    1988
SQ     0    1325
ST  1988    1000       3     1.5
KK   ROUTEDAM6 TO 17
RM     1     2.4     0.2
KK    17
BA  6.70
PB  15.7
LU   .95     .15
UK   300   0.015    0.15     100
RK 18000   0.014    0.04     2.0    TRAP      50       3
RK 34250   0.013   0.035            TRAP     100       3      NO
KK COMBINEDAM56 & 7 TO 17
HC     3
KK DAM13
KM ME WASH @ C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM13 TO 21
RM     1     0.6     0.2
```

```
KK    16
BA  3.46
PB  15.7
LU   .95     .15
UK   300   0.015    0.15     100
RK  8500   0.014    0.04     1.0    TRAP      25       3
RK 35750   0.011   0.035            TRAP      75       3      NO
KK DAM12
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557     200       3     1.5
KK   ROUTEDAM12 TO 21
RM     1     0.6     0.2
KK    21
BA  1.04
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK  8500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAMS 12, 13 TO 21
HC     3
KK   DAM17
KM GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1480    1487
SQ     0   12000
ST  1488    3000       3     1.5
KK   ROUTEDAM 17 TO 34
RM     1     1.3     0.2
KK    19
BA  2.57
PB  15.7
LU   .95     .15
UK   300   0.013    0.15     100
RK 10000   0.012    0.04     1.0    TRAP      25       3
RK 19000   0.012   0.035            TRAP      50       3      NO
KK DAM15
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM15 TO 22
RM     0       1     0.2
KK    22
BA  2.31
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK 14750   0.008    0.04            TRAP      50       3      NO
```

```
KK COMBINEDAM15 TO 22
HC      2
KK DAM18
KM GRAND AVE.
RS      1    STOR      -1
SA      0   0.600
SE   1420    1427
SQ      0   10000
ST   1427    3500       3     1.5
KK ROUTEDAM18 TO 34
RM      1     0.8     0.2
KK COMBINEDAM 17 TO DAM 18
HC      2
KK     20
BA   1.08
PB   15.7
LU    .95     .15
UK    300    0.01    0.15     100
RK   6500    0.01    0.04     0.5    TRAP      25       3
RK  12250   0.011   0.035            TRAP      50       3      NO
KK DAM16
KM C.A.P.
RS      1    STOR      -1
SQ      0      51     778    3740    5531    6875    7646    7773
SE   1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV      0       0       0      44     357     747    1024    1072
ST   1557    2000       3     1.5
KK   ROUTEDAM16 TO 23
RM      1     1.6     0.2
KK     23
BA   3.71
PB   15.7
LU    .95     .15
UK    300   0.008    0.15     100
RK  12000   0.008    0.04     1.0    TRAP      50       3
RK  23500   0.007   0.035            TRAP      75       3      NO
KK COM8INEDAM16 TO 23
HC      2
KK DAM19
KM GRAND AVE.
RS      1    STOR      -1
SA      0   0.650
SE   1375    1382
SQ      0   10000
ST   1382    4000       3     1.5
KK   ROUTEDAM19 TO 34
RM      1     0.2     0.2
KK COMBINEDAMS 17, 18 TO DAM 19
HC      2
KK     34
BA   3.23
PB   15.7
LU    .95     .15
UK    300   0.008    0.15     100
RK  12000   0.008    0.04     1.0    TRAP      75       3
RK  24000   0.007   0.035            TRAP     100       3      NO
```

```
KK    44
BA   8.7
IN    60
PB  15.7
LU   .95     .15
UI     0     144     292     398     593     826    1097    1476    1794    2129
UI  2582    2587    2710    3037    3037    3037    3037    3037    2621    2242
UI  2127    2024    1883    1597    1529    1466    1409    1345    1040    1003
UI   969     938     802     715     694     674     655     637     620     604
UI   588     523     399     389     380     372     364     351     196     192
UI   188     184     184     181     177     174     110     104     102     100
UI    99      97      96      94      92      91      89      88      87      47
UI    46      45      45      44      44      43      42      42      41      41
UI    40      38       0       0
KK ROUTE44
KM ROUTE 44 TO 43
RK 12500   0.001    0.03            TRAP     100       3
KK    42
BA  5.46
PB  15.7
UI     0     144     292     466     723    1096    1469    1846    2256    2225
UI  2550    2550    2550    2549    1928    1795    1679    1431    1288    1218
UI  1189     875     834     797     684     595     572     550     530     511
UI   494     396     330     319     310     313     164     160     156     152
UI   148     157      87      85      83      81      80      78      76      75
UI    73      81      39      38      38      37      36      36      35      34
UI    34      16       0       0
KK   ROUTE42
KM   ROUTE 42 TO 43
RK 21000   0.013   0.035            TRAP     100       3
KK    43
BA  5.11
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6500    0.02    0.04       1    TRAP      20       3
RK 25500   0.017   0.035            TRAP      50       3
KK COM8INE
HC     3
KK   ROUTE
KM ROUTE COMBINED HYDROGRAPHS
KM    42 43 44 TO 41
RK  5000   0.001    0.03            TRAP     100       3
KK    41
BA  3.05
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6200    0.09    0.04       1    TRAP      20       3
RK 24750    0.09   0.035            TRAP      50       3
KK COMBINE
HC     2
KK   ROUTE41 TO 38
RK  7000   0.001    0.03            TRAP     100       3
```

```
KK    38
BA  7.18
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  8500    0.09    0.04       2    TRAP      20       3
RK 33750    0.06   0.035            TRAP      50       3
KK COMBINE
HC     2
KK    39
BA  2.77
PB  15.7
UI     0     137     308     595    1015    1468    1786    1776    1915    1829
UI  1393    1266     997     917     787     629     574     449     424     401
UI   380     318     246     235     201     121     116     112     105      65
UI    62      60      58      57      55      47      29      28      27      27
UI    26      24       0       0
KK   ROUTE39 TO 35
RK 24000    0.01   0.035            TRAP      50       3
KK    35
BA  2.57
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6000    0.02    0.04       1    TRAP      20       3
RK 24000    0.01   0.035            TRAP      50       3
KK    28
BA 17.59
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.007    0.04       6    TRAP      25       3
RK 44500   0.006   0.035            TRAP      50       3      NO
KK   DAM20
KM   C.A.P., STA. 466+0
RS     1    STOR      -1
SV     0       9      33      97     436     912
SE  1536    1538    1540    1542    1544    1546
SQ     0     432    1222    2245    3457    4830
ST  1546    2000       3     1.5
KK   ROUTE28 TO 29
RK 14000   0.005    0.03            TRAP      75       3
KK    29
BA 10.32
PB  15.7
LU   .95     .15
UK   300    0.04    0.15     100
RK 16000    0.06    0.04       3    TRAP      25       3
RK 44000    0.04   0.035            TRAP      75       3      NO
KK COMBINE28 TO 29
HC     2
KK COMBINE28, 29, 39 & 35
HC     3
KK   ROUTE
RK  6500   0.004   0.035            TRAP     100       3
```

```
KK     40
BA   2.15
PB   15.7
UI      0      168      397      786     1319     1870     2068     2259     2259     1805
UI   1532     1254     1095      949      743      665      526      494      466      462
UI    298      283      270      161      139      133      129       76       74       71
UI     69       66       74       35       33       33       32       31       30        4
UI      0
KK   ROUTE40 TO 36
RK 18000     0.01    0.035             TRAP       50        3
KK     36
BA   4.37
PB   15.7
LU    .95      .15
UK    300     0.02     0.15      100
RK   6600     0.02     0.04        2    TRAP       20        3
RK  26500     0.01    0.035             TRAP       50        3
KK     30
BA   1.50
PB   15.7
LU    .95      .15
UK    300    0.007     0.15      100
RK  19000    0.005    0.035             TRAP       25        3
KK COMBINE30, 35, 36, 39 & 40
HC      4
KK   ROUTETO 37
RK   5000     0.01    0.035             TRAP      100        3
KK     37
BA   2.94
PB   15.7
LU    .95      .15
UK    300     0.02     0.15      100
RK   6700     0.09     0.04        1    TRAP       50        3
RK  26750     0.07    0.035             TRAP      100        3
KK COMBINE
HC      2
KK ROUTE
RK  14500    0.005    0.035             TRAP      100        3
KK COMBINE
HC      2
KK ROUTE MCM.SUB. TO 34
RK   3000    0.001     0.03             TRAP      100        3
KK COMBINE ALL TO 34
HC      4
KO      1        2
* KK MCMICKEN DAM
* RS      1     ELEV     1335
* SV      0        0     2200     8800    19000    32400    35500    49800
* SE   1335     1340     1345     1350     1355     1360     1361     1365
* SQ    0.0   1750.0   4600.0   10500.   20100.   47000.   63600.   81150.102200.0
* SE1335.0   1345.0   1353.9   1355.0   1356.0   1358.0   1359.0   1360.0   1361.0
* ST   1361    49500     3.05      1.5
```

```
KKNEW MCMICKEN DAM
KM NEW RATING CURVE FOR THE DAM WAS OBTAINED FROM JOE TRAM ON 01/09/1996
* RS      1    ELEV    1335
RS      1    ELEV    1327
SV      0       6      96     471    2196    6112   12926   20070   23126   28121
SV 30824   33615   36501
SE1327.0  1330.0 1332.55  1335.0  1340.0  1345.0  1350.0 1353.65  1355.0  1357.0
SE1358.0  1359.0  1360.0
* SAME SQ-SE RELATIONSHIP BECAUSE Q DEPENDS ON HEAD
SQ   0.0      35    2000    4660   15280   32750   53900   79090  107640  138620
SQ173880
SE  1330    1335    1345  1353.9    1355    1356    1357    1358    1359    1360
SE  1361
ST  1361   49500    3.05     1.5
ZZ
1


13
```

APPENDIX J

HEC-1 Model PMP2B40.DAT - Modifies the outflow spillway Rating curve for a 4,000 foot weir.

Appendix J - HEC-1 M0del PMP2D40.DAT

```
ID filename: pmp2B40.DAT
ID McMicken Dam Watershed
ID Probable Maximum Flood
ID FCMCD Jan 87 J. Rumann
ID Sub Basins 1-44
ID TWO MORE SUB-BASINS WERE ADDED BY BING ZHAO
ID (01/09/1996). THEY ARE SUB-BASINS 45 AND 46.
ID
ID (2-15-2000) THE OHE MCMICKEN DAM OUTLET RATING CURVES MODIFIED BY RWC
ID      FOR EXTENDING THE EMERGECY SPILLWAY
ID              TO 4000 FEET
ID
*DIAGRAM
IT     5       0       0     900
IO     3
KK     1
BA  9.60
IN   360
PB 15.70
PI   1.1     2.3     7.2     1.3     .65     .65     .65     .65     .30     .30
PI   .30     .30
LU  0.95    0.15
UI     0     241     489     761    1196    1767    2405    3022    3742    3889
UI  4131    4350    4350    4350    3744    3157    2953    2702    2265    2142
UI  2032    1842    1467    1402    1343    1086    1005     967     932     920
UI   900     869     580     562     545     529     514     319     295     274
UI   267     260     254     171     150     146     143     140     137     134
UI   131     129     126      67      66      65      64      62      61      60
UI    59      58      57      19       0
KK ROUTE1 TO 4
RM     1     0.7     0.2
KK     4
BA  3.42
PB 15.70
LU   .95     .15
UK   300    0.09    0.15     100
RK  7500    0.05    0.05     0.5    TRAP      25       3
RK 19500    0.05   0.035            TRAP      50       3      NO
KK CCOMBINE1 & 4
HC     2
KK     6
BA  5.79
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 10000    0.02    0.04     1.0    TRAP      25       3
RK 19500    0.02   0.035            TRAP      75       3     YES
KK  DAM2
KM TRILBY WASH @ S.R. 74
RS     1    STOR      -1
SA     0     0.9
SE  2050    2061
SQ     0   17600
ST  2061    3500       3     1.5
```

```
KK   ROUTEDAM2 TO 13
RM     1     1.1     0.2
KK    13
BA  6.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 21000    0.02   0.040     1.0    TRAP      25       3
RK 27000    0.02   0.035            TRAP      50       3      NO
KK COMBINEDAM 2 @ 13
HC     2
KK    DAM9
KM   TRILBY WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1850    1857
SQ     0   30300
ST  1857    9000       3     1.5
KK   ROUTEDAM9 TO 25
RM     1     2.6     0.2
KK    25
BA  9.36
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 20000   0.009   0.040     3.0    TRAP      50       3
RK 40750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM9 TO 25
HC     2
KK   DAM22
KM   TRILBY WASH @ C.A.P., STA. 609+0
RS     1    STOR      -1
SQ     0    6903
SE  1540  1548.5
SV     0    3436
ST  1554    2000       3     1.5
KK   ROUTEDAM22 TO 31
RM     1     2.7     0.2
KK     3
BA  4.43
PB  15.7
LU   .95     .15
UK   300    0.05    0.15     100
RK  6200    0.05   0.040     1.0    TRAP      50       3
RK 26500    0.04   0.035            TRAP      75       3      NO
KK     5
BA  2.98
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK  4500    0.03   0.040     1.0    TRAP      50       3
RK 13000    0.01   0.035            TRAP     100       3     YES
```

```
KK  DAM1
KM   IONA WASH @ S.R. 74
RS     1    STOR      -1
SA     0     1.1
SE  2040    2048
SQ     0    7300
ST  2048    6000       3     1.5
KK  ROUTEDAM1 TO 12           ,
RM     1     0.9     0.2
KK    12
BA  4.42
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  9300   0.015   0.040     1.0    TRAP      50       3
RK 13500   0.010   0.035            TRAP     100       3      NO
KK CCOMBINEDAM1 TO 12
HC     2
KK DAM8
KM IONA WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1920    1930
SQ     0   10500
ST  1930   70003     1.5
KK   ROUTEDAM8 TO 24
RM     1     3.3     0.2
KK    24
BA 17.92
PB  15.7
LU   .95     .15
UK   300   0.010    0.15     100
RK 16000   0.008   0.040     5.0    TRAP      75       3
RK 60250   0.007   0.035            TRAP     150       3      NO
KK COMBINEDAM8 TO 24
HC     2
KK DAM21
KM   IONA WASH @ C.A.P., STA. 572+5
RS     1    STOR      -1
SQ     0      72     505    1135    1914    2817
SE1545.2    1546    1548    1550    1552    1554
SV     0       7      31      69     288     518
ST  1553    2000       3     1.5
KK   ROUTEDAM 21 TO 31
RM     1     2.8     0.2
KK    31
BA  9.34
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     2.0    TRAP     100       3
RK 39750   0.005   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21 & 22 TO 31
HC     3
KK ROUTEDAMS 21 & 22/31 TO 32
RM     1     0.2     0.2
```

```
KK      7
BA   7.05
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK 12400      0.02    0.040      1.0     TRAP       25        3
RK 24750      0.03    0.035             TRAP       50        3       NO
KK   DAM3
KM   S.R. 74
RS      1     STOR       -1
SA      0      1.1
SE   2000     2008
SQ      0    10300
ST   2008     6000        3      1.5
KK    ROUTEDAM3 TO 14
RM      1      2.1      0.2
KK     14
BA   7.21
PB   15.7
LU    .95      .15
UK    300    0.020     0.15      100
RK 19000    0.015    0.040      2.0     TRAP       50        3
RK 32250    0.012    0.035             TRAP      100        3       NO
KK COMBINEDAM3 TO 14
HC      2
KK DAM10
KM GRAND AVE.
RS      1     STOR       -1
SA      0       50
SE   1670     1675
SQ      0     8740
ST   1681     4000        3      1.5
KK    ROUTEDAM10 TO 26
RM      1      1.2      0.2
KK     26
BA   8.42
PB   15.7
LU    .95      .15
UK    300    0.010     0.15      100
RK 20000    0.008    0.040      2.0     TRAP       75        3
RK 27750    0.008    0.035             TRAP      150        3       NO
KK COMBINEDAM 10 TO 26
HC      2
KK DAM23
KM    C.A.P., STA. 688+0
RS      1     STOR       -1
SQ      0      116      440      881     1414     2025     2705     3447
SE1544.3     1545     1546     1547     1548     1549     1550     1551
SV      0        3       10       19       31      139      292      498
ST1550.2     2000        3      1.5
* THE FOLLOWING CARDS WERE FROM SPF HEC-1 INPUT FILE IN THE 1987
* REPORT BECAUSE ONE PAGE IS MISSING IN THE PMP HEC-1 INPUT FILE
* IN THE 1987 REPORT.
KK ROUTEDAM23 TO 32
RM      1      2.7      0.2
```

```
KK    32
BA  8.42
PB  15.7
LU  0.95    0.15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     3.0    TRAP     100       3
RK 38250   0.006   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21,22,23 TO 32
HC     3
KK      ROUTEDAMS 21,22,23/31,32 TO 33
RM     1     0.6     0.2
KK     8
BA  3.38
PB  15.7
LU  0.95    0.15
UK   300    0.04    0.15     100
RK  6500    0.04   0.040     1.0    TRAP      25       3
RK 24500    0.03   0.035            TRAP      50       3      NO
KK  DAM4
KM   S.R. 74
RS     1    STOR      -1
SA     0    50.0
SE  1990    2000
SQ     0    1525
ST  2001    1500       3     1.5
KK  ROUTEDAM4 TO 15
RM     1     2.6     0.2
KK     9
BA  5.44
PB  15.7
LU  0.95    0.15
UK   300    0.05    0.15     100
RK 12000    0.05    0.04     1.0    TRAP      25       3
RK 27500    0.04   0.035            TRAP      75       3      NO
KK DAM5
KM S.R.74
RS     1    STOR      -1
SA     0     5.0
SE  1980    1988
SQ     0   12000
ST  1988    2500       3     1.5
KK TO 15
RM     1     2.6     0.2
KK    15
BA  6.65
PB  15.7
* THE ABOVE (UP TO *) CARDS ARE FROM SPF HEC-1 INPUT FILE
LU   .95     .15
UK   300    0.02    0.15     100
RK 11400    0.02    0.04     2.0    TRAP      50       3
RK 38000   0.011   0.035            TRAP     100       3      NO
KK COMBINEDAMS 4, 5 TO 15
HC     3
```

```
KK DAM11
KM GRAND AVE.
RS      1     STOR       -1
SA      0     50.0
SE   1560     1567
SQ      0     5000
ST   1568     5000        3      1.5
KK   ROUTEDAM 11 TO 27
RM      1     0.07      0.2
KK     27
BA   1.04
PB   15.7
LU    .95      .15
UK    300    0.009     0.15      100
RK 13500    0.008     0.04              TRAP       25        3       NO
KK COMBINEDAM11 TO 27
HC      2
KK DAM24
KM   C.A.P. STA. 804+5
RS      1     STOR       -1
SQ      0       54      233      608     1007     1469     1985     2550     3161     3814
SQ   4506     5236
SE1543.5     1544     1545     1546     1547     1548     1549     1550     1551     1552
SE   1553     1554
SV      0        0        0        0        1        3        9       18       44      114
SV    204      413
ST1552.8     2000        3      1.5
KK   ROUTEDAM24 TO 33
RM      1      2.4      0.2
KK     18
BA   0.87
PB   15.7
LU    .95      .15
UK    300     0.01     0.15      100
RK 17500    0.009     0.04              TRAP       50        3       NO
KK DAM14
KM GRAND AVE.
RS      1     STOR       -1
SA      0     0.30
SE   1520     1527
SQ      0     1500
ST   1527     1500        3      1.5
KK   ROUTEDAM14 TO 33
RM      1      2.4      0.2
KK     33
BA   7.48
PB   15.7
LU    .95      .15
UK    300    0.005     0.15      100
RK 13000    0.005     0.04      2.0     TRAP       75        3
RK 34750    0.006    0.035              TRAP      100        3       NO
KK COMBINEDAMS 21, 22, 23/31, 32 TO DAMS 14, 24/33
HC      4
KK   ROUTEALL TO 34
RM      1      0.3      0.2
```

```
KK      2
BA  17.02
PB   15.7
LU    .95     0.15
UK    300     0.09     0.15      100
RK   6800    0.071    0.040      2.0    TRAP      50        3
RK  48000    0.043    0.035             TRAP     100        3       NO
KK     11
BA   1.40
PB   15.7
LU    .95      .15
UK    300    0.030     0.15      100
RK   9000    0.022     0.04      0.5    TRAP      50        3
RK  11750    0.022    0.035             TRAP     100        3      YES
KK   DAM7
KM    ME WASH @ S.R. 74
RS      1     STOR      -1
SA      0       50
SE   1980     1988
SQ      0    15000
ST   1988     2500       3      1.5
KK    ROUTEDAM7 TO 17
RM      1      2.4     0.2
KK     10
BA   1.43
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK   8500     0.28     0.04      0.5    TRAP      25        3
RK  17500    0.023    0.035             TRAP      50        3       NO
KK   DAM6
KM   S.R. 74
RS      1     STOR      -1
SA      0     0.20
SE   1980     1988
SQ      0     1325
ST   1988     1000       3      1.5
KK    ROUTEDAM6 TO 17
RM      1      2.4     0.2
KK     17
BA   6.70
PB   15.7
LU    .95      .15
UK    300    0.015     0.15      100
RK  18000    0.014     0.04      2.0    TRAP      50        3
RK  34250    0.013    0.035             TRAP     100        3       NO
KK COMBINEDAM56 & 7 TO 17
HC      3
KK DAM13
KM ME WASH @ C.A.P.
RS      1     STOR      -1
SQ      0       51      778     3740    5531    6875    7646    7773
SE   1540     1542     1548  1549.03 1551.26 1552.82 1553.68 1553.82
SV      0        0        0       44     357     747    1024    1072
ST   1557     2000       3      1.5
KK    ROUTEDAM13 TO 21
RM      1      0.6     0.2
```

```
KK    16
BA  3.46
PB  15.7
LU   .95     .15
UK   300   0.015    0.15     100
RK  8500   0.014    0.04     1.0    TRAP      25       3
RK 35750   0.011   0.035            TRAP      75       3      NO
KK DAM12
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557     200       3     1.5
KK   ROUTEDAM12 TO 21
RM     1     0.6     0.2
KK    21
BA  1.04
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK  8500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAMS 12, 13 TO 21
HC     3
KK   DAM17
KM GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1480    1487
SQ     0   12000
ST  1488    3000       3     1.5
KK   ROUTEDAM 17 TO 34
RM     1     1.3     0.2
KK    19
BA  2.57
PB  15.7
LU   .95     .15
UK   300   0.013    0.15     100
RK 10000   0.012    0.04     1.0    TRAP      25       3
RK 19000   0.012   0.035            TRAP      50       3      NO
KK DAM15
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM15 TO 22
RM     0       1     0.2
KK    22
BA  2.31
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK 14750   0.008    0.04            TRAP      50       3      NO
KK COMBINEDAM15 TO 22
HC     2
```

```
KK DAM18
KM GRAND AVE.
RS     1    STOR      -1
SA     0   0.600
SE  1420    1427
SQ     0   10000
ST  1427    3500       3     1.5
KK ROUTEDAM18 TO 34
RM     1     0.8     0.2
KK COMBINEDAM 17 TO DAM 18
HC     2
KK    20
BA  1.08
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK  6500    0.01    0.04     0.5    TRAP      25       3
RK 12250   0.011   0.035            TRAP      50       3      NO
KK DAM16
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM16 TO 23
RM     1     1.6     0.2
KK    23
BA  3.71
PB  15.7
LU   .95     .15
UK   300   0.008    0.15     100
RK 12000   0.008    0.04     1.0    TRAP      50       3
RK 23500   0.007   0.035            TRAP      75       3      NO
KK COM8INEDAM16 TO 23
HC     2
KK DAM19
KM GRAND AVE.
RS     1    STOR      -1
SA     0   0.650
SE  1375    1382
SQ     0   10000
ST  1382    4000       3     1.5
KK   ROUTEDAM19 TO 34
RM     1     0.2     0.2
KK COMBINEDAMS 17, 18 TO DAM 19
HC     2
KK    34
BA  3.23
PB  15.7
LU   .95     .15
UK   300   0.008    0.15     100
RK 12000   0.008    0.04     1.0    TRAP      75       3
RK 24000   0.007   0.035            TRAP     100       3      NO
```

```
KK    44
BA   8.7
IN    60
PB  15.7
LU   .95      .15
UI     0      144      292      398      593      826     1097     1476     1794     2129
UI  2582     2587     2710     3037     3037     3037     3037     3037     2621     2242
UI  2127     2024     1883     1597     1529     1466     1409     1345     1040     1003
UI   969      938      802      715      694      674      655      637      620      604
UI   588      523      399      389      380      372      364      351      196      192
UI   188      184      184      181      177      174      110      104      102      100
UI    99       97       96       94       92       91       89       88       87       47
UI    46       45       45       44       44       43       42       42       41       41
UI    40       38        0        0
KK ROUTE44
KM ROUTE 44 TO 43
RK 12500   0.001    0.03            TRAP     100        3
KK    42
BA  5.46
PB  15.7
UI     0      144      292      466      723     1096     1469     1846     2256     2225
UI  2550     2550     2550     2549     1928     1795     1679     1431     1288     1218
UI  1189      875      834      797      684      595      572      550      530      511
UI   494      396      330      319      310      313      164      160      156      152
UI   148      157       87       85       83       81       80       78       76       75
UI    73       81       39       38       38       37       36       36       35       34
UI    34       16        0        0
KK   ROUTE42
KM   ROUTE 42 TO 43
RK 21000   0.013   0.035            TRAP     100        3
KK    43
BA  5.11
PB  15.7
LU   .95      .15
UK   300     0.02     0.15      100
RK  6500     0.02     0.04        1    TRAP      20        3
RK 25500    0.017    0.035            TRAP      50        3
KK COM8INE
HC     3
KK   ROUTE
KM ROUTE COMBINED HYDROGRAPHS
KM    42 43 44 TO 41
RK  5000   0.001    0.03            TRAP     100        3
KK    41
BA  3.05
PB  15.7
LU   .95      .15
UK   300     0.02     0.15      100
RK  6200     0.09     0.04        1    TRAP      20        3
RK 24750     0.09    0.035            TRAP      50        3
KK COMBINE
HC     2
KK   ROUTE41 TO 38
RK  7000   0.001    0.03            TRAP     100        3
```

```
KK    38
BA  7.18
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  8500    0.09    0.04       2    TRAP      20       3
RK 33750    0.06   0.035            TRAP      50       3
KK COMBINE
HC     2
KK    39
BA  2.77
PB  15.7
UI     0     137     308     595    1015    1468    1786    1776    1915    1829
UI  1393    1266     997     917     787     629     574     449     424     401
UI   380     318     246     235     201     121     116     112     105      65
UI    62      60      58      57      55      47      29      28      27      27
UI    26      24       0       0
KK   ROUTE39 TO 35
RK 24000    0.01   0.035            TRAP      50       3
KK    35
BA  2.57
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6000    0.02    0.04       1    TRAP      20       3
RK 24000    0.01   0.035            TRAP      50       3
KK    28
BA 17.59
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.007    0.04       6    TRAP      25       3
RK 44500   0.006   0.035            TRAP      50       3      NO
KK   DAM20
KM   C.A.P., STA. 466+0
RS     1    STOR      -1
SV     0       9      33      97     436     912
SE  1536    1538    1540    1542    1544    1546
SQ     0     432    1222    2245    3457    4830
ST  1546    2000       3     1.5
KK   ROUTE28 TO 29
RK 14000   0.005    0.03            TRAP      75       3
KK    29
BA 10.32
PB  15.7
LU   .95     .15
UK   300    0.04    0.15     100
RK 16000    0.06    0.04       3    TRAP      25       3
RK 44000    0.04   0.035            TRAP      75       3      NO
KK COMBINE28 TO 29
HC     2
KK COMBINE28, 29, 39 & 35
HC     3
KK   ROUTE
RK  6500   0.004   0.035            TRAP     100       3
```

```
KK    40
BA  2.15
PB  15.7
UI     0     168     397     786    1319    1870    2068    2259    2259    1805
UI  1532    1254    1095     949     743     665     526     494     466     462
UI   298     283     270     161     139     133     129      76      74      71
UI    69      66      74      35      33      33      32      31      30       4
UI     0
KK   ROUTE40 TO 36
RK 18000    0.01   0.035            TRAP      50       3
KK    36
BA  4.37
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6600    0.02    0.04       2    TRAP      20       3
RK 26500    0.01   0.035            TRAP      50       3
KK    30
BA  1.50
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.005   0.035            TRAP      25       3
KK COMBINE30, 35, 36, 39 & 40
HC     4
KK   ROUTETO 37
RK  5000    0.01   0.035            TRAP     100       3
KK    37
BA  2.94
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6700    0.09    0.04       1    TRAP      50       3
RK 26750    0.07   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE
RK 14500   0.005   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE MCM.SUB. TO 34
RK  3000   0.001    0.03            TRAP     100       3
KK COMBINE ALL TO 34
HC     4
KO     1       2
* KK MCMICKEN DAM
* RS     1    ELEV    1335
* SV     0       0    2200    8800   19000   32400   35500   49800
* SE  1335    1340    1345    1350    1355    1360    1361    1365
* SQ   0.0  1750.0  4600.0  10500.  20100.  47000.  63600.  81150.102200.0
* SE1335.0  1345.0  1353.9  1355.0  1356.0  1358.0  1359.0  1360.0  1361.0
* ST  1361   49500    3.05     1.5
```

```
KKNEW MCMICKEN DAM
KM NEW RATING CURVE FOR THE DAM WAS OBTAINED FROM JOE TRAM ON 01/09/1996
* RS      1     ELEV     1335
RS      1     ELEV     1327
SV      0        6       96      471     2196     6112    12926    20070    23126    28121
SV 30824    33615    36501
SE1327.0  1330.0 1332.55  1335.0  1340.0  1345.0  1350.0 1353.65  1355.0  1357.0
SE1358.0  1359.0  1360.0
* SAME SQ-SE RELATIONSHIP BECAUSE Q DEPENDS ON HEAD
SQ    0.0       35     2000     4660    16800    36740    60900    89770   122880   158130
SQ197960
SE  1330     1335     1345   1353.9     1355     1356     1357     1358     1359     1360
SE  1361
ST  1361    49500     3.05      1.5
ZZ
1


13
```

APPENDIX K

HEC-1 Model PMP2B45.DAT - Modifies the outflow spillway Rating curve for a 4,500 foot weir.

Appendix F - HEC-1 Model PMP2C03.DAT

```
ID filename: pmp2C03.DAT
ID McMicken Dam Watershed
ID Probable Maximum Flood
ID FCMCD Jan 87 J. Rumann
ID Sub Basins 1-44
ID TWO MORE SUB-BASINS WERE ADDED BY BING ZHAO
ID (01/09/1996). THEY ARE SUB-BASINS 45 AND 46.
ID
ID (2-14-2000) THE OHE MCMICKEN DAM OUTLET RATING CURVES MODIFIED BY RWC
ID      TO USE THE HECRAS RESULTS AT THE UPPER END OF THE SPILLWAY CHANNEL
ID              FOR "N" = 0.030
ID
*DIAGRAM
IT     5       0       0     900
IO     3
KK     1
BA  9.60
IN   360
PB 15.70
PI   1.1     2.3     7.2     1.3     .65     .65     .65     .65     .30     .30
PI   .30     .30
LU  0.95    0.15
UI     0     241     489     761    1196    1767    2405    3022    3742    3889
UI  4131    4350    4350    4350    3744    3157    2953    2702    2265    2142
UI  2032    1842    1467    1402    1343    1086    1005     967     932     920
UI   900     869     580     562     545     529     514     319     295     274
UI   267     260     254     171     150     146     143     140     137     134
UI   131     129     126      67      66      65      64      62      61      60
UI    59      58      57      19       0
KK ROUTE1 TO 4
RM     1     0.7     0.2
KK     4
BA  3.42
PB 15.70
LU   .95     .15
UK   300    0.09    0.15     100
RK  7500    0.05    0.05     0.5    TRAP      25       3
RK 19500    0.05   0.035            TRAP      50       3      NO
KK CCOMBINE1 & 4
HC     2
KK     6
BA  5.79
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 10000    0.02    0.04     1.0    TRAP      25       3
RK 19500    0.02   0.035            TRAP      75       3     YES
KK  DAM2
KM TRILBY WASH @ S.R. 74
RS     1    STOR      -1
SA     0     0.9
SE  2050    2061
SQ     0   17600
ST  2061    3500       3     1.5
```

```
KK   ROUTEDAM2 TO 13
RM     1     1.1     0.2
KK    13
BA  6.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 21000    0.02   0.040     1.0    TRAP      25       3
RK 27000    0.02   0.035            TRAP      50       3      NO
KK COMBINEDAM 2 @ 13
HC     2
KK    DAM9
KM   TRILBY WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1850    1857
SQ     0   30300
ST  1857    9000       3     1.5
KK   ROUTEDAM9 TO 25
RM     1     2.6     0.2
KK    25
BA  9.36
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 20000   0.009   0.040     3.0    TRAP      50       3
RK 40750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM9 TO 25
HC     2
KK   DAM22
KM   TRILBY WASH @ C.A.P., STA. 609+0
RS     1    STOR      -1
SQ     0    6903
SE  1540  1548.5
SV     0    3436
ST  1554    2000       3     1.5
KK   ROUTEDAM22 TO 31
RM     1     2.7     0.2
KK     3
BA  4.43
PB  15.7
LU   .95     .15
UK   300    0.05    0.15     100
RK  6200    0.05   0.040     1.0    TRAP      50       3
RK 26500    0.04   0.035            TRAP      75       3      NO
KK     5
BA  2.98
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK  4500    0.03   0.040     1.0    TRAP      50       3
RK 13000    0.01   0.035            TRAP     100       3     YES
```

```
KK  DAM1
KM   IONA WASH @ S.R. 74
RS     1    STOR      -1
SA     0     1.1
SE  2040    2048
SQ     0    7300
ST  2048    6000       3     1.5
KK  ROUTEDAM1 TO 12
RM     1     0.9     0.2
KK    12
BA  4.42
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  9300   0.015   0.040     1.0    TRAP      50       3
RK 13500   0.010   0.035            TRAP     100       3      NO
KK CCOMBINEDAM1 TO 12
HC     2
KK DAM8
KM IONA WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1920    1930
SQ     0   10500
ST  1930   70003     1.5
KK   ROUTEDAM8 TO 24
RM     1     3.3     0.2
KK    24
BA 17.92
PB  15.7
LU   .95     .15
UK   300   0.010    0.15     100
RK 16000   0.008   0.040     5.0    TRAP      75       3
RK 60250   0.007   0.035            TRAP     150       3      NO
KK COMBINEDAM8 TO 24
HC     2
KK DAM21
KM   IONA WASH @ C.A.P., STA. 572+5
RS     1    STOR      -1
SQ     0      72     505    1135    1914    2817
SE1545.2    1546    1548    1550    1552    1554
SV     0       7      31      69     288     518
ST  1553    2000       3     1.5
KK   ROUTEDAM 21 TO 31
RM     1     2.8     0.2
KK    31
BA  9.34
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     2.0    TRAP     100       3
RK 39750   0.005   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21 & 22 TO 31
HC     3
KK ROUTEDAMS 21 & 22/31 TO 32
RM     1     0.2     0.2
```

```
KK      7
BA   7.05
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK 12400      0.02    0.040      1.0    TRAP      25        3
RK 24750      0.03    0.035             TRAP      50        3       NO
KK   DAM3
KM   S.R. 74
RS      1     STOR       -1
SA      0      1.1
SE   2000     2008
SQ      0    10300
ST   2008     6000        3      1.5
KK    ROUTEDAM3 TO 14
RM      1      2.1      0.2
KK     14
BA   7.21
PB   15.7
LU    .95      .15
UK    300    0.020     0.15      100
RK 19000    0.015    0.040      2.0    TRAP      50        3
RK 32250    0.012    0.035             TRAP     100        3       NO
KK COMBINEDAM3 TO 14
HC      2
KK DAM10
KM GRAND AVE.
RS      1     STOR       -1
SA      0       50
SE   1670     1675
SQ      0     8740
ST   1681     4000        3      1.5
KK    ROUTEDAM10 TO 26
RM      1      1.2      0.2
KK     26
BA   8.42
PB   15.7
LU    .95      .15
UK    300    0.010     0.15      100
RK 20000    0.008    0.040      2.0    TRAP      75        3
RK 27750    0.008    0.035             TRAP     150        3       NO
KK COMBINEDAM 10 TO 26
HC      2
KK DAM23
KM    C.A.P., STA. 688+0
RS      1     STOR       -1
SQ      0      116      440      881     1414     2025     2705     3447
SE1544.3     1545     1546     1547     1548     1549     1550     1551
SV      0        3       10       19       31      139      292      498
ST1550.2     2000        3      1.5
* THE FOLLOWING CARDS WERE FROM SPF HEC-1 INPUT FILE IN THE 1987
* REPORT BECAUSE ONE PAGE IS MISSING IN THE PMP HEC-1 INPUT FILE
* IN THE 1987 REPORT.
KK ROUTEDAM23 TO 32
RM      1      2.7      0.2
```

```
KK    32
BA  8.42
PB  15.7
LU  0.95    0.15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     3.0    TRAP     100       3
RK 38250   0.006   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21,22,23 TO 32
HC     3
KK      ROUTEDAMS 21,22,23/31,32 TO 33
RM     1     0.6     0.2
KK     8
BA  3.38
PB  15.7
LU  0.95    0.15
UK   300    0.04    0.15     100
RK  6500    0.04   0.040     1.0    TRAP      25       3
RK 24500    0.03   0.035            TRAP      50       3      NO
KK  DAM4
KM   S.R. 74
RS     1    STOR      -1
SA     0    50.0
SE  1990    2000
SQ     0    1525
ST  2001    1500       3     1.5
KK  ROUTEDAM4 TO 15
RM     1     2.6     0.2
KK     9
BA  5.44
PB  15.7
LU  0.95    0.15
UK   300    0.05    0.15     100
RK 12000    0.05    0.04     1.0    TRAP      25       3
RK 27500    0.04   0.035            TRAP      75       3      NO
KK DAM5
KM S.R.74
RS     1    STOR      -1
SA     0     5.0
SE  1980    1988
SQ     0   12000
ST  1988    2500       3     1.5
KK TO 15
RM     1     2.6     0.2
KK    15
BA  6.65
PB  15.7
* THE ABOVE (UP TO *) CARDS ARE FROM SPF HEC-1 INPUT FILE
LU   .95     .15
UK   300    0.02    0.15     100
RK 11400    0.02    0.04     2.0    TRAP      50       3
RK 38000   0.011   0.035            TRAP     100       3      NO
KK COMBINEDAMS 4, 5 TO 15
HC     3
```

```
KK DAM11
KM GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1560    1567
SQ     0    5000
ST  1568    5000       3     1.5
KK   ROUTEDAM 11 TO 27
RM     1    0.07     0.2
KK    27
BA  1.04
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK 13500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAM11 TO 27
HC     2
KK DAM24
KM   C.A.P. STA. 804+5
RS     1    STOR      -1
SQ     0      54     233     608    1007    1469    1985    2550    3161    3814
SQ  4506    5236
SE1543.5    1544    1545    1546    1547    1548    1549    1550    1551    1552
SE  1553    1554
SV     0       0       0       0       1       3       9      18      44     114
SV   204     413
ST1552.8    2000       3     1.5
KK   ROUTEDAM24 TO 33
RM     1     2.4     0.2
KK    18
BA  0.87
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 17500   0.009    0.04            TRAP      50       3      NO
KK DAM14
KM GRAND AVE.
RS     1    STOR      -1
SA     0    0.30
SE  1520    1527
SQ     0    1500
ST  1527    1500       3     1.5
KK   ROUTEDAM14 TO 33
RM     1     2.4     0.2
KK    33
BA  7.48
PB  15.7
LU   .95     .15
UK   300   0.005    0.15     100
RK 13000   0.005    0.04     2.0    TRAP      75       3
RK 34750   0.006   0.035            TRAP     100       3      NO
KK COMBINEDAMS 21, 22, 23/31, 32 TO DAMS 14, 24/33
HC     4
KK   ROUTEALL TO 34
RM     1     0.3     0.2
KK     2
BA 17.02
```

```
PB  15.7
LU   .95     0.15
UK   300     0.09     0.15      100
RK  6800    0.071    0.040      2.0    TRAP      50        3
RK 48000    0.043    0.035             TRAP     100        3       NO
KK    11
BA  1.40
PB  15.7
LU   .95      .15
UK   300    0.030     0.15      100
RK  9000    0.022     0.04      0.5    TRAP      50        3
RK 11750    0.022    0.035             TRAP     100        3      YES
KK  DAM7
KM   ME WASH @ S.R. 74
RS     1     STOR      -1
SA     0       50
SE  1980     1988
SQ     0    15000
ST  1988     2500       3      1.5
KK   ROUTEDAM7 TO 17
RM     1      2.4     0.2
KK    10
BA  1.43
PB  15.7
LU   .95      .15
UK   300     0.03     0.15      100
RK  8500     0.28     0.04      0.5    TRAP      25        3
RK 17500    0.023    0.035             TRAP      50        3       NO
KK  DAM6
KM  S.R. 74
RS     1     STOR      -1
SA     0     0.20
SE  1980     1988
SQ     0     1325
ST  1988     1000       3      1.5
KK   ROUTEDAM6 TO 17
RM     1      2.4     0.2
KK    17
BA  6.70
PB  15.7
LU   .95      .15
UK   300    0.015     0.15      100
RK 18000    0.014     0.04      2.0    TRAP      50        3
RK 34250    0.013    0.035             TRAP     100        3       NO
KK COMBINEDAM56 & 7 TO 17
HC     3
KK DAM13
KM ME WASH @ C.A.P.
RS     1     STOR      -1
SQ     0       51      778     3740     5531     6875     7646     7773
SE  1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV     0        0        0       44      357      747     1024     1072
ST  1557     2000       3      1.5
KK   ROUTEDAM13 TO 21
RM     1      0.6     0.2
```

```
KK    16
BA  3.46
PB  15.7
LU   .95      .15
UK   300    0.015     0.15      100
RK  8500    0.014     0.04      1.0     TRAP       25        3
RK 35750    0.011    0.035             TRAP       75        3       NO
KK DAM12
KM C.A.P.
RS     1     STOR       -1
SQ     0       51      778     3740     5531     6875     7646     7773
SE  1540     1542     1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0        0        0       44      357      747     1024     1072
ST  1557      200        3      1.5
KK   ROUTEDAM12 TO 21
RM     1      0.6      0.2
KK    21
BA  1.04
PB  15.7
LU   .95      .15
UK   300    0.009     0.15      100
RK  8500    0.008     0.04             TRAP       25        3       NO
KK COMBINEDAMS 12, 13 TO 21
HC     3
KK   DAM17
KM GRAND AVE.
RS     1     STOR       -1
SA     0       50
SE  1480     1487
SQ     0    12000
ST  1488     3000        3      1.5
KK   ROUTEDAM 17 TO 34
RM     1      1.3      0.2
KK    19
BA  2.57
PB  15.7
LU   .95      .15
UK   300    0.013     0.15      100
RK 10000    0.012     0.04      1.0     TRAP       25        3
RK 19000    0.012    0.035             TRAP       50        3       NO
KK DAM15
KM C.A.P.
RS     1     STOR       -1
SQ     0       51      778     3740     5531     6875     7646     7773
SE  1540     1542     1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0        0        0       44      357      747     1024     1072
ST  1557     2000        3      1.5
KK   ROUTEDAM15 TO 22
RM     0        1      0.2
KK    22
BA  2.31
PB  15.7
LU   .95      .15
UK   300    0.009     0.15      100
RK 14750    0.008     0.04             TRAP       50        3       NO
KK COMBINEDAM15 TO 22
HC     2
```

```
KK DAM18
KM GRAND AVE.
RS     1    STOR      -1
SA     0   0.600
SE  1420    1427
SQ     0   10000
ST  1427    3500       3     1.5
KK ROUTEDAM18 TO 34
RM     1     0.8     0.2
KK COMBINEDAM 17 TO DAM 18
HC     2
KK    20
BA  1.08
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK  6500    0.01    0.04     0.5    TRAP      25       3
RK 12250   0.011   0.035            TRAP      50       3      NO
KK DAM16
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM16 TO 23
RM     1     1.6     0.2
KK    23
BA  3.71
PB  15.7
LU   .95     .15
UK   300   0.008    0.15     100
RK 12000   0.008    0.04     1.0    TRAP      50       3
RK 23500   0.007   0.035            TRAP      75       3      NO
KK COM8INEDAM16 TO 23
HC     2
KK DAM19
KM GRAND AVE.
RS     1    STOR      -1
SA     0   0.650
SE  1375    1382
SQ     0   10000
ST  1382    4000       3     1.5
KK   ROUTEDAM19 TO 34
RM     1     0.2     0.2
KK COMBINEDAMS 17, 18 TO DAM 19
HC     2
KK    34
BA  3.23
PB  15.7
LU   .95     .15
UK   300   0.008    0.15     100
RK 12000   0.008    0.04     1.0    TRAP      75       3
RK 24000   0.007   0.035            TRAP     100       3      NO
```

```
KK    44
BA   8.7
IN    60
PB  15.7
LU   .95     .15
UI     0     144     292     398     593     826    1097    1476    1794    2129
UI  2582    2587    2710    3037    3037    3037    3037    3037    2621    2242
UI  2127    2024    1883    1597    1529    1466    1409    1345    1040    1003
UI   969     938     802     715     694     674     655     637     620     604
UI   588     523     399     389     380     372     364     351     196     192
UI   188     184     184     181     177     174     110     104     102     100
UI    99      97      96      94      92      91      89      88      87      47
UI    46      45      45      44      44      43      42      42      41      41
UI    40      38       0       0
KK ROUTE44
KM ROUTE 44 TO 43
RK 12500   0.001    0.03            TRAP     100       3
KK    42
BA  5.46
PB  15.7
UI     0     144     292     466     723    1096    1469    1846    2256    2225
UI  2550    2550    2550    2549    1928    1795    1679    1431    1288    1218
UI  1189     875     834     797     684     595     572     550     530     511
UI   494     396     330     319     310     313     164     160     156     152
UI   148     157      87      85      83      81      80      78      76      75
UI    73      81      39      38      38      37      36      36      35      34
UI    34      16       0       0
KK   ROUTE42
KM   ROUTE 42 TO 43
RK 21000   0.013   0.035            TRAP     100       3
KK    43
BA  5.11
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6500    0.02    0.04       1    TRAP      20       3
RK 25500   0.017   0.035            TRAP      50       3
KK COM8INE
HC     3
KK   ROUTE
KM ROUTE COMBINED HYDROGRAPHS
KM    42 43 44 TO 41
RK  5000   0.001    0.03            TRAP     100       3
KK    41
BA  3.05
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6200    0.09    0.04       1    TRAP      20       3
RK 24750    0.09   0.035            TRAP      50       3
KK COMBINE
HC     2
KK   ROUTE41 TO 38
RK  7000   0.001    0.03            TRAP     100       3
```

```
KK    38
BA  7.18
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  8500    0.09    0.04       2    TRAP      20       3
RK 33750    0.06   0.035            TRAP      50       3
KK COMBINE
HC     2
KK    39
BA  2.77
PB  15.7
UI     0     137     308     595    1015    1468    1786    1776    1915    1829
UI  1393    1266     997     917     787     629     574     449     424     401
UI   380     318     246     235     201     121     116     112     105      65
UI    62      60      58      57      55      47      29      28      27      27
UI    26      24       0       0
KK   ROUTE39 TO 35
RK 24000    0.01   0.035            TRAP      50       3
KK    35
BA  2.57
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6000    0.02    0.04       1    TRAP      20       3
RK 24000    0.01   0.035            TRAP      50       3
KK    28
BA 17.59
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.007    0.04       6    TRAP      25       3
RK 44500   0.006   0.035            TRAP      50       3      NO
KK   DAM20
KM   C.A.P., STA. 466+0
RS     1    STOR      -1
SV     0       9      33      97     436     912
SE  1536    1538    1540    1542    1544    1546
SQ     0     432    1222    2245    3457    4830
ST  1546    2000       3     1.5
KK   ROUTE28 TO 29
RK 14000   0.005    0.03            TRAP      75       3
KK    29
BA 10.32
PB  15.7
LU   .95     .15
UK   300    0.04    0.15     100
RK 16000    0.06    0.04       3    TRAP      25       3
RK 44000    0.04   0.035            TRAP      75       3      NO
KK COMBINE28 TO 29
HC     2
KK COMBINE28, 29, 39 & 35
HC     3
KK   ROUTE
RK  6500   0.004   0.035            TRAP     100       3
```

```
KK     40
BA   2.15
PB   15.7
UI      0      168      397      786     1319     1870     2068     2259     2259     1805
UI   1532     1254     1095      949      743      665      526      494      466      462
UI    298      283      270      161      139      133      129       76       74       71
UI     69       66       74       35       33       33       32       31       30        4
UI      0
KK   ROUTE40 TO 36
RK 18000     0.01    0.035             TRAP       50        3
KK     36
BA   4.37
PB   15.7
LU    .95      .15
UK    300     0.02     0.15      100
RK   6600     0.02     0.04        2    TRAP       20        3
RK  26500     0.01    0.035             TRAP       50        3
KK     30
BA   1.50
PB   15.7
LU    .95      .15
UK    300    0.007     0.15      100
RK  19000    0.005    0.035             TRAP       25        3
KK COMBINE30, 35, 36, 39 & 40
HC      4
KK   ROUTETO 37
RK   5000     0.01    0.035             TRAP      100        3
KK     37
BA   2.94
PB   15.7
LU    .95      .15
UK    300     0.02     0.15      100
RK   6700     0.09     0.04        1    TRAP       50        3
RK  26750     0.07    0.035             TRAP      100        3
KK COMBINE
HC      2
KK ROUTE
RK  14500    0.005    0.035             TRAP      100        3
KK COMBINE
HC      2
KK ROUTE MCM.SUB. TO 34
RK   3000    0.001     0.03             TRAP      100        3
KK COMBINE ALL TO 34
HC      4
KO      1        2
* KK MCMICKEN DAM
* RS      1     ELEV     1335
* SV      0        0     2200     8800    19000    32400    35500    49800
* SE   1335     1340     1345     1350     1355     1360     1361     1365
* SQ    0.0   1750.0   4600.0   10500.   20100.   47000.   63600.   81150.102200.0
* SE1335.0   1345.0   1353.9   1355.0   1356.0   1358.0   1359.0   1360.0   1361.0
* ST   1361    49500     3.05      1.5
```

```
KKNEW MCMICKEN DAM
KM NEW RATING CURVE FOR THE DAM WAS OBTAINED FROM JOE TRAM ON 01/09/1996
* RS      1     ELEV     1335
RS      1     ELEV     1327
SV      0        6       96      471     2196     6112    12926    20070    23126    28121
SV 30824    33615    36501
SE1327.0  1330.0 1332.55  1335.0  1340.0  1345.0  1350.0 1353.65  1355.0  1357.0
SE1358.0  1359.0  1360.0
* SAME SQ-SE RELATIONSHIP BECAUSE Q DEPENDS ON HEAD
SQ    0.0       35     2000     4660    10480    19840    31800    45810    61620    79750
SQ 99360
SE  1330     1335     1345   1353.9     1355     1356     1357     1358     1359     1360
SE  1361
ST  1361    49500     3.05      1.5
ZZ
```

APPENDIX G

HEC-1 Model PMP2B25.DAT - Modifies the outflow spillway Rating curve for a 2,500 foot weir.

Appendix G - HEC-1 Model PMP2B25.DAT

```
ID filename: pmp2B25.DAT
ID McMicken Dam Watershed
ID Probable Maximum Flood
ID FCMCD Jan 87 J. Rumann
ID Sub Basins 1-44
ID TWO MORE SUB-BASINS WERE ADDED BY BING ZHAO
ID (01/09/1996). THEY ARE SUB-BASINS 45 AND 46.
ID
ID (2-14-2000) THE OHE MCMICKEN DAM OUTLET RATING CURVES MODIFIED BY RWC
ID      FOR EXTENDING THE EMERGECY SPILLWAY
ID              TO 2500 FEET
ID
*DIAGRAM
IT     5       0       0     900
IO     3
KK     1
BA  9.60
IN   360
PB 15.70
PI   1.1     2.3     7.2     1.3     .65     .65     .65     .65     .30     .30
PI   .30     .30
LU  0.95    0.15
UI     0     241     489     761    1196    1767    2405    3022    3742    3889
UI  4131    4350    4350    4350    3744    3157    2953    2702    2265    2142
UI  2032    1842    1467    1402    1343    1086    1005     967     932     920
UI   900     869     580     562     545     529     514     319     295     274
UI   267     260     254     171     150     146     143     140     137     134
UI   131     129     126      67      66      65      64      62      61      60
UI    59      58      57      19       0
KK ROUTE1 TO 4
RM     1     0.7     0.2
KK     4
BA  3.42
PB 15.70
LU   .95     .15
UK   300    0.09    0.15     100
RK  7500    0.05    0.05     0.5    TRAP      25       3
RK 19500    0.05   0.035            TRAP      50       3      NO
KK CCOMBINE1 & 4
HC     2
KK     6
BA  5.79
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 10000    0.02    0.04     1.0    TRAP      25       3
RK 19500    0.02   0.035            TRAP      75       3     YES
KK  DAM2
KM TRILBY WASH @ S.R. 74
RS     1    STOR      -1
SA     0     0.9
SE  2050    2061
SQ     0   17600
ST  2061    3500       3     1.5
```

```
KK   ROUTEDAM2 TO 13
RM     1     1.1     0.2
KK    13
BA  6.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 21000    0.02   0.040     1.0    TRAP      25       3
RK 27000    0.02   0.035            TRAP      50       3      NO
KK COMBINEDAM 2 @ 13
HC     2
KK    DAM9
KM   TRILBY WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1850    1857
SQ     0   30300
ST  1857    9000       3     1.5
KK   ROUTEDAM9 TO 25
RM     1     2.6     0.2
KK    25
BA  9.36
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 20000   0.009   0.040     3.0    TRAP      50       3
RK 40750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM9 TO 25
HC     2
KK   DAM22
KM   TRILBY WASH @ C.A.P., STA. 609+0
RS     1    STOR      -1
SQ     0    6903
SE  1540  1548.5
SV     0    3436
ST  1554    2000       3     1.5
KK   ROUTEDAM22 TO 31
RM     1     2.7     0.2
KK     3
BA  4.43
PB  15.7
LU   .95     .15
UK   300    0.05    0.15     100
RK  6200    0.05   0.040     1.0    TRAP      50       3
RK 26500    0.04   0.035            TRAP      75       3      NO
KK     5
BA  2.98
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK  4500    0.03   0.040     1.0    TRAP      50       3
RK 13000    0.01   0.035            TRAP     100       3     YES
```

```
KK  DAM1
KM   IONA WASH @ S.R. 74
RS     1    STOR      -1
SA     0     1.1
SE  2040    2048
SQ     0    7300
ST  2048    6000       3     1.5
KK  ROUTEDAM1 TO 12           ,
RM     1     0.9     0.2
KK    12
BA  4.42
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  9300   0.015   0.040     1.0    TRAP      50       3
RK 13500   0.010   0.035            TRAP     100       3      NO
KK CCOMBINEDAM1 TO 12
HC     2
KK DAM8
KM IONA WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1920    1930
SQ     0   10500
ST  1930   70003     1.5
KK   ROUTEDAM8 TO 24
RM     1     3.3     0.2
KK    24
BA 17.92
PB  15.7
LU   .95     .15
UK   300   0.010    0.15     100
RK 16000   0.008   0.040     5.0    TRAP      75       3
RK 60250   0.007   0.035            TRAP     150       3      NO
KK COMBINEDAM8 TO 24
HC     2
KK DAM21
KM   IONA WASH @ C.A.P., STA. 572+5
RS     1    STOR      -1
SQ     0      72     505    1135    1914    2817
SE1545.2    1546    1548    1550    1552    1554
SV     0       7      31      69     288     518
ST  1553    2000       3     1.5
KK   ROUTEDAM 21 TO 31
RM     1     2.8     0.2
KK    31
BA  9.34
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     2.0    TRAP     100       3
RK 39750   0.005   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21 & 22 TO 31
HC     3
KK ROUTEDAMS 21 & 22/31 TO 32
RM     1     0.2     0.2
KK     7
```

```
BA  7.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 12400    0.02   0.040     1.0    TRAP      25       3
RK 24750    0.03   0.035            TRAP      50       3      NO
KK  DAM3
KM  S.R. 74
RS     1    STOR      -1
SA     0     1.1
SE  2000    2008
SQ     0   10300
ST  2008    6000       3     1.5
KK   ROUTEDAM3 TO 14
RM     1     2.1     0.2
KK    14
BA  7.21
PB  15.7
LU   .95     .15
UK   300   0.020    0.15     100
RK 19000   0.015   0.040     2.0    TRAP      50       3
RK 32250   0.012   0.035            TRAP     100       3      NO
KK COMBINEDAM3 TO 14
HC     2
KK DAM10
KM GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1670    1675
SQ     0    8740
ST  1681    4000       3     1.5
KK   ROUTEDAM10 TO 26
RM     1     1.2     0.2
KK    26
BA  8.42
PB  15.7
LU   .95     .15
UK   300   0.010    0.15     100
RK 20000   0.008   0.040     2.0    TRAP      75       3
RK 27750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM 10 TO 26
HC     2
KK DAM23
KM   C.A.P., STA. 688+0
RS     1    STOR      -1
SQ     0     116     440     881    1414    2025    2705    3447
SE1544.3    1545    1546    1547    1548    1549    1550    1551
SV     0       3      10      19      31     139     292     498
ST1550.2    2000       3     1.5
* THE FOLLOWING CARDS WERE FROM SPF HEC-1 INPUT FILE IN THE 1987
* REPORT BECAUSE ONE PAGE IS MISSING IN THE PMP HEC-1 INPUT FILE
* IN THE 1987 REPORT.
KK ROUTEDAM23 TO 32
RM     1     2.7     0.2
KK    32
BA  8.42
PB  15.7
```

```
LU  0.95    0.15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     3.0    TRAP     100       3
RK 38250   0.006   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21,22,23 TO 32
HC     3
KK      ROUTEDAMS 21,22,23/31,32 TO 33
RM     1     0.6     0.2
KK     8
BA  3.38
PB  15.7
LU  0.95    0.15
UK   300    0.04    0.15     100
RK  6500    0.04   0.040     1.0    TRAP      25       3
RK 24500    0.03   0.035            TRAP      50       3      NO
KK  DAM4
KM   S.R. 74
RS     1    STOR      -1
SA     0    50.0
SE  1990    2000
SQ     0    1525
ST  2001    1500       3     1.5
KK  ROUTEDAM4 TO 15
RM     1     2.6     0.2
KK     9
BA  5.44
PB  15.7
LU  0.95    0.15
UK   300    0.05    0.15     100
RK 12000    0.05    0.04     1.0    TRAP      25       3
RK 27500    0.04   0.035            TRAP      75       3      NO
KK DAM5
KM S.R.74
RS     1    STOR      -1
SA     0     5.0
SE  1980    1988
SQ     0   12000
ST  1988    2500       3     1.5
KK TO 15
RM     1     2.6     0.2
KK    15
BA  6.65
PB  15.7
* THE ABOVE (UP TO *) CARDS ARE FROM SPF HEC-1 INPUT FILE
LU   .95     .15
UK   300    0.02    0.15     100
RK 11400    0.02    0.04     2.0    TRAP      50       3
RK 38000   0.011   0.035            TRAP     100       3      NO
KK COMBINEDAMS 4, 5 TO 15
HC     3
KK DAM11
KM GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1560    1567
SQ     0    5000
ST  1568    5000       3     1.5
```

```
KK   ROUTEDAM 11 TO 27
RM     1    0.07     0.2
KK    27
BA  1.04
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK 13500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAM11 TO 27
HC     2
KK DAM24
KM   C.A.P. STA. 804+5
RS     1    STOR      -1
SQ     0      54     233     608    1007    1469    1985    2550    3161    3814
SQ  4506    5236
SE1543.5    1544    1545    1546    1547    1548    1549    1550    1551    1552
SE  1553    1554
SV     0       0       0       0       1       3       9      18      44     114
SV   204     413
ST1552.8    2000       3     1.5
KK   ROUTEDAM24 TO 33
RM     1     2.4     0.2
KK    18
BA  0.87
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 17500   0.009    0.04            TRAP      50       3      NO
KK DAM14
KM GRAND AVE.
RS     1    STOR      -1
SA     0    0.30
SE  1520    1527
SQ     0    1500
ST  1527    1500       3     1.5
KK   ROUTEDAM14 TO 33
RM     1     2.4     0.2
KK    33
BA  7.48
PB  15.7
LU   .95     .15
UK   300   0.005    0.15     100
RK 13000   0.005    0.04     2.0    TRAP      75       3
RK 34750   0.006   0.035            TRAP     100       3      NO
KK COMBINEDAMS 21, 22, 23/31, 32 TO DAMS 14, 24/33
HC     4
KK   ROUTEALL TO 34
RM     1     0.3     0.2
KK     2
BA 17.02
PB  15.7
LU   .95    0.15
UK   300    0.09    0.15     100
RK  6800   0.071   0.040     2.0    TRAP      50       3
RK 48000   0.043   0.035            TRAP     100       3      NO
```

```
KK    11
BA  1.40
PB  15.7
LU   .95      .15
UK   300    0.030     0.15      100
RK  9000    0.022     0.04      0.5    TRAP      50        3
RK 11750    0.022    0.035             TRAP     100        3      YES
KK  DAM7
KM   ME WASH @ S.R. 74
RS     1     STOR      -1
SA     0       50
SE  1980     1988
SQ     0    15000
ST  1988     2500        3      1.5
KK   ROUTEDAM7 TO 17
RM     1      2.4      0.2
KK    10
BA  1.43
PB  15.7
LU   .95      .15
UK   300     0.03     0.15      100
RK  8500     0.28     0.04      0.5    TRAP      25        3
RK 17500    0.023    0.035             TRAP      50        3       NO
KK  DAM6
KM  S.R. 74
RS     1     STOR      -1
SA     0     0.20
SE  1980     1988
SQ     0     1325
ST  1988     1000        3      1.5
KK   ROUTEDAM6 TO 17
RM     1      2.4      0.2
KK    17
BA  6.70
PB  15.7
LU   .95      .15
UK   300    0.015     0.15      100
RK 18000    0.014     0.04      2.0    TRAP      50        3
RK 34250    0.013    0.035             TRAP     100        3       NO
KK COMBINEDAM56 & 7 TO 17
HC     3
KK DAM13
KM ME WASH @ C.A.P.
RS     1     STOR      -1
SQ     0       51      778     3740     5531     6875     7646     7773
SE  1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV     0        0        0       44      357      747     1024     1072
ST  1557     2000        3      1.5
KK   ROUTEDAM13 TO 21
RM     1      0.6      0.2
KK    16
BA  3.46
PB  15.7
LU   .95      .15
UK   300    0.015     0.15      100
RK  8500    0.014     0.04      1.0    TRAP      25        3
RK 35750    0.011    0.035             TRAP      75        3       NO
```

```
KK DAM12
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557     200       3     1.5
KK   ROUTEDAM12 TO 21
RM     1     0.6     0.2
KK    21
BA  1.04
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK  8500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAMS 12, 13 TO 21
HC     3
KK   DAM17
KM GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1480    1487
SQ     0   12000
ST  1488    3000       3     1.5
KK   ROUTEDAM 17 TO 34
RM     1     1.3     0.2
KK    19
BA  2.57
PB  15.7
LU   .95     .15
UK   300   0.013    0.15     100
RK 10000   0.012    0.04     1.0    TRAP      25       3
RK 19000   0.012   0.035            TRAP      50       3      NO
KK DAM15
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM15 TO 22
RM     0       1     0.2
KK    22
BA  2.31
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK 14750   0.008    0.04            TRAP      50       3      NO
KK COMBINEDAM15 TO 22
HC     2
KK DAM18
KM GRAND AVE.
RS     1    STOR      -1
SA     0   0.600
SE  1420    1427
SQ     0   10000
ST  1427    3500       3     1.5
```

```
KK ROUTEDAM18 TO 34
RM      1      0.8      0.2
KK COMBINEDAM 17 TO DAM 18
HC      2
KK     20
BA   1.08
PB   15.7
LU    .95      .15
UK    300     0.01     0.15      100
RK   6500     0.01     0.04      0.5    TRAP      25        3
RK  12250    0.011    0.035            TRAP      50        3       NO
KK DAM16
KM C.A.P.
RS      1     STOR       -1
SQ      0       51      778     3740    5531    6875    7646    7773
SE   1540     1542     1548  1549.03 1551.26 1552.82 1553.68 1553.82
SV      0        0        0       44     357     747    1024    1072
ST   1557     2000        3      1.5
KK   ROUTEDAM16 TO 23
RM      1      1.6      0.2
KK     23
BA   3.71
PB   15.7
LU    .95      .15
UK    300    0.008     0.15      100
RK  12000    0.008     0.04      1.0    TRAP      50        3
RK  23500    0.007    0.035            TRAP      75        3       NO
KK COM8INEDAM16 TO 23
HC      2
KK DAM19
KM GRAND AVE.
RS      1     STOR       -1
SA      0    0.650
SE   1375     1382
SQ      0    10000
ST   1382     4000        3      1.5
KK   ROUTEDAM19 TO 34
RM      1      0.2      0.2
KK COMBINEDAMS 17, 18 TO DAM 19
HC      2
KK     34
BA   3.23
PB   15.7
LU    .95      .15
UK    300    0.008     0.15      100
RK  12000    0.008     0.04      1.0    TRAP      75        3
RK  24000    0.007    0.035            TRAP     100        3       NO
```

```
KK    44
BA   8.7
IN    60
PB  15.7
LU   .95     .15
UI     0     144     292     398     593     826    1097    1476    1794    2129
UI  2582    2587    2710    3037    3037    3037    3037    3037    2621    2242
UI  2127    2024    1883    1597    1529    1466    1409    1345    1040    1003
UI   969     938     802     715     694     674     655     637     620     604
UI   588     523     399     389     380     372     364     351     196     192
UI   188     184     184     181     177     174     110     104     102     100
UI    99      97      96      94      92      91      89      88      87      47
UI    46      45      45      44      44      43      42      42      41      41
UI    40      38       0       0
KK ROUTE44
KM ROUTE 44 TO 43
RK 12500   0.001    0.03            TRAP     100       3
KK    42
BA  5.46
PB  15.7
UI     0     144     292     466     723    1096    1469    1846    2256    2225
UI  2550    2550    2550    2549    1928    1795    1679    1431    1288    1218
UI  1189     875     834     797     684     595     572     550     530     511
UI   494     396     330     319     310     313     164     160     156     152
UI   148     157      87      85      83      81      80      78      76      75
UI    73      81      39      38      38      37      36      36      35      34
UI    34      16       0       0
KK   ROUTE42
KM   ROUTE 42 TO 43
RK 21000   0.013   0.035            TRAP     100       3
KK    43
BA  5.11
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6500    0.02    0.04       1    TRAP      20       3
RK 25500   0.017   0.035            TRAP      50       3
KK COM8INE
HC     3
KK   ROUTE
KM ROUTE COMBINED HYDROGRAPHS
KM    42 43 44 TO 41
RK  5000   0.001    0.03            TRAP     100       3
KK    41
BA  3.05
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6200    0.09    0.04       1    TRAP      20       3
RK 24750    0.09   0.035            TRAP      50       3
KK COMBINE
HC     2
KK   ROUTE41 TO 38
RK  7000   0.001    0.03            TRAP     100       3
```

```
KK    38
BA  7.18
PB  15.7
LU   .95      .15
UK   300     0.02     0.15      100
RK  8500     0.09     0.04        2    TRAP      20        3
RK 33750     0.06    0.035             TRAP      50        3
KK COMBINE
HC     2
KK    39
BA  2.77
PB  15.7
UI     0      137      308      595     1015     1468     1786     1776     1915     1829
UI  1393     1266      997      917      787      629      574      449      424      401
UI   380      318      246      235      201      121      116      112      105       65
UI    62       60       58       57       55       47       29       28       27       27
UI    26       24        0        0
KK   ROUTE39 TO 35
RK 24000     0.01    0.035             TRAP      50        3
KK    35
BA  2.57
PB  15.7
LU   .95      .15
UK   300     0.02     0.15      100
RK  6000     0.02     0.04        1    TRAP      20        3
RK 24000     0.01    0.035             TRAP      50        3
KK    28
BA 17.59
PB  15.7
LU   .95      .15
UK   300    0.007     0.15      100
RK 19000    0.007     0.04        6    TRAP      25        3
RK 44500    0.006    0.035             TRAP      50        3      NO
KK   DAM20
KM   C.A.P., STA. 466+0
RS     1     STOR       -1
SV     0        9       33       97      436      912
SE  1536     1538     1540     1542     1544     1546
SQ     0      432     1222     2245     3457     4830
ST  1546     2000        3      1.5
KK   ROUTE28 TO 29
RK 14000    0.005     0.03             TRAP      75        3
KK    29
BA 10.32
PB  15.7
LU   .95      .15
UK   300     0.04     0.15      100
RK 16000     0.06     0.04        3    TRAP      25        3
RK 44000     0.04    0.035             TRAP      75        3      NO
KK COMBINE28 TO 29
HC     2
KK COMBINE28, 29, 39 & 35
HC     3
KK   ROUTE
RK  6500    0.004    0.035             TRAP     100        3
```

```
KK    40
BA  2.15
PB  15.7
UI     0     168     397     786    1319    1870    2068    2259    2259    1805
UI  1532    1254    1095     949     743     665     526     494     466     462
UI   298     283     270     161     139     133     129      76      74      71
UI    69      66      74      35      33      33      32      31      30       4
UI     0
KK   ROUTE40 TO 36
RK 18000    0.01   0.035            TRAP      50       3
KK    36
BA  4.37
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6600    0.02    0.04       2    TRAP      20       3
RK 26500    0.01   0.035            TRAP      50       3
KK    30
BA  1.50
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.005   0.035            TRAP      25       3
KK COMBINE30, 35, 36, 39 & 40
HC     4
KK   ROUTETO 37
RK  5000    0.01   0.035            TRAP     100       3
KK    37
BA  2.94
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6700    0.09    0.04       1    TRAP      50       3
RK 26750    0.07   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE
RK 14500   0.005   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE MCM.SUB. TO 34
RK  3000   0.001    0.03            TRAP     100       3
KK COMBINE ALL TO 34
HC     4
KO     1       2
* KK MCMICKEN DAM
* RS     1    ELEV    1335
* SV     0       0    2200    8800   19000   32400   35500   49800
* SE  1335    1340    1345    1350    1355    1360    1361    1365
* SQ   0.0  1750.0  4600.0  10500.  20100.  47000.  63600.  81150.102200.0
* SE1335.0  1345.0  1353.9  1355.0  1356.0  1358.0  1359.0  1360.0  1361.0
* ST  1361   49500    3.05     1.5
```

```
KKNEW MCMICKEN DAM
KM NEW RATING CURVE FOR THE DAM WAS OBTAINED FROM JOE TRAM ON 01/09/1996
* RS      1    ELEV    1335
RS      1    ELEV    1327
SV      0       6      96     471    2196    6112   12926   20070   23126   28121
SV 30824   33615   36501
SE1327.0  1330.0 1332.55  1335.0  1340.0  1345.0  1350.0 1353.65  1355.0  1357.0
SE1358.0  1359.0  1360.0
* SAME SQ-SE RELATIONSHIP BECAUSE Q DEPENDS ON HEAD
SQ   0.0      35    2000    4660   12200   24780   39900   57990   78340  100800
SQ125740
SE  1330    1335    1345  1353.9    1355    1356    1357    1358    1359    1360
SE  1361
ST  1361   49500    3.05     1.5
ZZ
```

APPENDIX H

HEC-1 Model PMP2B30.DAT - Modifies the outflow spillway Rating curve for a 3,000 foot weir.

Appendix H - HEC-1 Model PMP2B30.DAT

```
ID filename: pmp2B30.DAT
ID McMicken Dam Watershed
ID Probable Maximum Flood
ID FCMCD Jan 87 J. Rumann
ID Sub Basins 1-44
ID TWO MORE SUB-BASINS WERE ADDED BY BING ZHAO
ID (01/09/1996). THEY ARE SUB-BASINS 45 AND 46.
ID
ID (2-15-2000) THE OHE MCMICKEN DAM OUTLET RATING CURVES MODIFIED BY RWC
ID      FOR EXTENDING THE EMERGECY SPILLWAY
ID              TO 3000 FEET
ID
*DIAGRAM
IT     5       0       0     900
IO     3
KK     1
BA  9.60
IN   360
PB 15.70
PI   1.1     2.3     7.2     1.3     .65     .65     .65     .65     .30     .30
PI   .30     .30
LU  0.95    0.15
UI     0     241     489     761    1196    1767    2405    3022    3742    3889
UI  4131    4350    4350    4350    3744    3157    2953    2702    2265    2142
UI  2032    1842    1467    1402    1343    1086    1005     967     932     920
UI   900     869     580     562     545     529     514     319     295     274
UI   267     260     254     171     150     146     143     140     137     134
UI   131     129     126      67      66      65      64      62      61      60
UI    59      58      57      19       0
KK ROUTE1 TO 4
RM     1     0.7     0.2
KK     4
BA  3.42
PB 15.70
LU   .95     .15
UK   300    0.09    0.15     100
RK  7500    0.05    0.05     0.5    TRAP      25       3
RK 19500    0.05   0.035            TRAP      50       3      NO
KK CCOMBINE1 & 4
HC     2
KK     6
BA  5.79
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 10000    0.02    0.04     1.0    TRAP      25       3
RK 19500    0.02   0.035            TRAP      75       3     YES
KK  DAM2
KM TRILBY WASH @ S.R. 74
RS     1    STOR      -1
SA     0     0.9
SE  2050    2061
SQ     0   17600
ST  2061    3500       3     1.5
```

```
KK   ROUTEDAM2 TO 13
RM     1     1.1     0.2
KK    13
BA  6.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 21000    0.02   0.040     1.0    TRAP      25       3
RK 27000    0.02   0.035            TRAP      50       3      NO
KK COMBINEDAM 2 @ 13
HC     2
KK    DAM9
KM   TRILBY WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1850    1857
SQ     0   30300
ST  1857    9000       3     1.5
KK   ROUTEDAM9 TO 25
RM     1     2.6     0.2
KK    25
BA  9.36
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 20000   0.009   0.040     3.0    TRAP      50       3
RK 40750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM9 TO 25
HC     2
KK   DAM22
KM   TRILBY WASH @ C.A.P., STA. 609+0
RS     1    STOR      -1
SQ     0    6903
SE  1540  1548.5
SV     0    3436
ST  1554    2000       3     1.5
KK   ROUTEDAM22 TO 31
RM     1     2.7     0.2
KK     3
BA  4.43
PB  15.7
LU   .95     .15
UK   300    0.05    0.15     100
RK  6200    0.05   0.040     1.0    TRAP      50       3
RK 26500    0.04   0.035            TRAP      75       3      NO
KK     5
BA  2.98
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK  4500    0.03   0.040     1.0    TRAP      50       3
RK 13000    0.01   0.035            TRAP     100       3     YES
```

```
KK  DAM1
KM   IONA WASH @ S.R. 74
RS     1    STOR      -1
SA     0     1.1
SE  2040    2048
SQ     0    7300
ST  2048    6000       3     1.5
KK  ROUTEDAM1 TO 12           ,
RM     1     0.9     0.2
KK    12
BA  4.42
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  9300   0.015   0.040     1.0    TRAP      50       3
RK 13500   0.010   0.035            TRAP     100       3      NO
KK CCOMBINEDAM1 TO 12
HC     2
KK DAM8
KM IONA WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1920    1930
SQ     0   10500
ST  1930   70003     1.5
KK   ROUTEDAM8 TO 24
RM     1     3.3     0.2
KK    24
BA 17.92
PB  15.7
LU   .95     .15
UK   300   0.010    0.15     100
RK 16000   0.008   0.040     5.0    TRAP      75       3
RK 60250   0.007   0.035            TRAP     150       3      NO
KK COMBINEDAM8 TO 24
HC     2
KK DAM21
KM   IONA WASH @ C.A.P., STA. 572+5
RS     1    STOR      -1
SQ     0      72     505    1135    1914    2817
SE1545.2    1546    1548    1550    1552    1554
SV     0       7      31      69     288     518
ST  1553    2000       3     1.5
KK   ROUTEDAM 21 TO 31
RM     1     2.8     0.2
KK    31
BA  9.34
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     2.0    TRAP     100       3
RK 39750   0.005   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21 & 22 TO 31
HC     3
KK ROUTEDAMS 21 & 22/31 TO 32
RM     1     0.2     0.2
```

```
KK      7
BA   7.05
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK 12400      0.02    0.040      1.0     TRAP       25        3
RK 24750      0.03    0.035             TRAP       50        3       NO
KK   DAM3
KM   S.R. 74
RS      1     STOR       -1
SA      0      1.1
SE   2000     2008
SQ      0    10300
ST   2008     6000        3      1.5
KK    ROUTEDAM3 TO 14
RM      1      2.1      0.2
KK     14
BA   7.21
PB   15.7
LU    .95      .15
UK    300    0.020     0.15      100
RK 19000    0.015    0.040      2.0     TRAP       50        3
RK 32250    0.012    0.035             TRAP      100        3       NO
KK COMBINEDAM3 TO 14
HC      2
KK DAM10
KM GRAND AVE.
RS      1     STOR       -1
SA      0       50
SE   1670     1675
SQ      0     8740
ST   1681     4000        3      1.5
KK    ROUTEDAM10 TO 26
RM      1      1.2      0.2
KK     26
BA   8.42
PB   15.7
LU    .95      .15
UK    300    0.010     0.15      100
RK 20000    0.008    0.040      2.0     TRAP       75        3
RK 27750    0.008    0.035             TRAP      150        3       NO
KK COMBINEDAM 10 TO 26
HC      2
KK DAM23
KM    C.A.P., STA. 688+0
RS      1     STOR       -1
SQ      0      116      440      881     1414     2025     2705     3447
SE1544.3     1545     1546     1547     1548     1549     1550     1551
SV      0        3       10       19       31      139      292      498
ST1550.2     2000        3      1.5
* THE FOLLOWING CARDS WERE FROM SPF HEC-1 INPUT FILE IN THE 1987
* REPORT BECAUSE ONE PAGE IS MISSING IN THE PMP HEC-1 INPUT FILE
* IN THE 1987 REPORT.
KK ROUTEDAM23 TO 32
RM      1      2.7      0.2
```

```
KK    32
BA  8.42
PB  15.7
LU  0.95    0.15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     3.0    TRAP     100       3
RK 38250   0.006   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21,22,23 TO 32
HC     3
KK      ROUTEDAMS 21,22,23/31,32 TO 33
RM     1     0.6     0.2
KK     8
BA  3.38
PB  15.7
LU  0.95    0.15
UK   300    0.04    0.15     100
RK  6500    0.04   0.040     1.0    TRAP      25       3
RK 24500    0.03   0.035            TRAP      50       3      NO
KK  DAM4
KM   S.R. 74
RS     1    STOR      -1
SA     0    50.0
SE  1990    2000
SQ     0    1525
ST  2001    1500       3     1.5
KK  ROUTEDAM4 TO 15
RM     1     2.6     0.2
KK     9
BA  5.44
PB  15.7
LU  0.95    0.15
UK   300    0.05    0.15     100
RK 12000    0.05    0.04     1.0    TRAP      25       3
RK 27500    0.04   0.035            TRAP      75       3      NO
KK DAM5
KM S.R.74
RS     1    STOR      -1
SA     0     5.0
SE  1980    1988
SQ     0   12000
ST  1988    2500       3     1.5
KK TO 15
RM     1     2.6     0.2
KK    15
BA  6.65
PB  15.7
* THE ABOVE (UP TO *) CARDS ARE FROM SPF HEC-1 INPUT FILE
LU   .95     .15
UK   300    0.02    0.15     100
RK 11400    0.02    0.04     2.0    TRAP      50       3
RK 38000   0.011   0.035            TRAP     100       3      NO
KK COMBINEDAMS 4, 5 TO 15
HC     3
```

```
KK DAM11
KM GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1560    1567
SQ     0    5000
ST  1568    5000       3     1.5
KK   ROUTEDAM 11 TO 27
RM     1    0.07     0.2
KK    27
BA  1.04
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK 13500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAM11 TO 27
HC     2
KK DAM24
KM   C.A.P. STA. 804+5
RS     1    STOR      -1
SQ     0      54     233     608    1007    1469    1985    2550    3161    3814
SQ  4506    5236
SE1543.5    1544    1545    1546    1547    1548    1549    1550    1551    1552
SE  1553    1554
SV     0       0       0       0       1       3       9      18      44     114
SV   204     413
ST1552.8    2000       3     1.5
KK   ROUTEDAM24 TO 33
RM     1     2.4     0.2
KK    18
BA  0.87
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 17500   0.009    0.04            TRAP      50       3      NO
KK DAM14
KM GRAND AVE.
RS     1    STOR      -1
SA     0    0.30
SE  1520    1527
SQ     0    1500
ST  1527    1500       3     1.5
KK   ROUTEDAM14 TO 33
RM     1     2.4     0.2
KK    33
BA  7.48
PB  15.7
LU   .95     .15
UK   300   0.005    0.15     100
RK 13000   0.005    0.04     2.0    TRAP      75       3
RK 34750   0.006   0.035            TRAP     100       3      NO
KK COMBINEDAMS 21, 22, 23/31, 32 TO DAMS 14, 24/33
HC     4
KK   ROUTEALL TO 34
RM     1     0.3     0.2
```

```
KK      2
BA 17.02
PB  15.7
LU   .95     0.15
UK   300     0.09     0.15      100
RK  6800    0.071    0.040      2.0    TRAP      50        3
RK 48000    0.043    0.035             TRAP     100        3       NO
KK     11
BA  1.40
PB  15.7
LU   .95      .15
UK   300    0.030     0.15      100
RK  9000    0.022     0.04      0.5    TRAP      50        3
RK 11750    0.022    0.035             TRAP     100        3      YES
KK  DAM7
KM   ME WASH @ S.R. 74
RS      1     STOR      -1
SA      0       50
SE   1980     1988
SQ      0    15000
ST   1988     2500       3      1.5
KK   ROUTEDAM7 TO 17
RM      1      2.4     0.2
KK     10
BA  1.43
PB  15.7
LU   .95      .15
UK   300     0.03     0.15      100
RK  8500     0.28     0.04      0.5    TRAP      25        3
RK 17500    0.023    0.035             TRAP      50        3       NO
KK  DAM6
KM  S.R. 74
RS      1     STOR      -1
SA      0     0.20
SE   1980     1988
SQ      0     1325
ST   1988     1000       3      1.5
KK   ROUTEDAM6 TO 17
RM      1      2.4     0.2
KK     17
BA  6.70
PB  15.7
LU   .95      .15
UK   300    0.015     0.15      100
RK 18000    0.014     0.04      2.0    TRAP      50        3
RK 34250    0.013    0.035             TRAP     100        3       NO
KK COMBINEDAM56 & 7 TO 17
HC      3
KK DAM13
KM ME WASH @ C.A.P.
RS      1     STOR      -1
SQ      0       51      778     3740     5531     6875     7646     7773
SE   1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV      0        0        0       44      357      747     1024     1072
ST   1557     2000       3      1.5
```

```
KK   ROUTEDAM13 TO 21
RM     1     0.6     0.2
KK    16
BA  3.46
PB  15.7
LU   .95     .15
UK   300   0.015    0.15     100
RK  8500   0.014    0.04     1.0    TRAP      25       3
RK 35750   0.011   0.035            TRAP      75       3      NO
KK DAM12
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557     200       3     1.5
KK   ROUTEDAM12 TO 21
RM     1     0.6     0.2
KK    21
BA  1.04
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK  8500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAMS 12, 13 TO 21
HC     3
KK   DAM17
KM GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1480    1487
SQ     0   12000
ST  1488    3000       3     1.5
KK   ROUTEDAM 17 TO 34
RM     1     1.3     0.2
KK    19
BA  2.57
PB  15.7
LU   .95     .15
UK   300   0.013    0.15     100
RK 10000   0.012    0.04     1.0    TRAP      25       3
RK 19000   0.012   0.035            TRAP      50       3      NO
KK DAM15
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM15 TO 22
RM     0       1     0.2
```

```
KK    22
BA  2.31
PB  15.7
LU   .95      .15
UK   300    0.009     0.15      100
RK 14750    0.008     0.04              TRAP       50        3       NO
KK COMBINEDAM15 TO 22
HC     2
KK DAM18
KM GRAND AVE.
RS     1     STOR       -1
SA     0    0.600
SE  1420     1427
SQ     0    10000
ST  1427     3500        3      1.5
KK ROUTEDAM18 TO 34
RM     1      0.8      0.2
KK COMBINEDAM 17 TO DAM 18
HC     2
KK    20
BA  1.08
PB  15.7
LU   .95      .15
UK   300     0.01     0.15      100
RK  6500     0.01     0.04      0.5     TRAP       25        3
RK 12250    0.011    0.035              TRAP       50        3       NO
KK DAM16
KM C.A.P.
RS     1     STOR       -1
SQ     0       51      778     3740     5531     6875     7646     7773
SE  1540     1542     1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0        0        0       44      357      747     1024     1072
ST  1557     2000        3      1.5
KK   ROUTEDAM16 TO 23
RM     1      1.6      0.2
KK    23
BA  3.71
PB  15.7
LU   .95      .15
UK   300    0.008     0.15      100
RK 12000    0.008     0.04      1.0     TRAP       50        3
RK 23500    0.007    0.035              TRAP       75        3       NO
KK COM8INEDAM16 TO 23
HC     2
KK DAM19
KM GRAND AVE.
RS     1     STOR       -1
SA     0    0.650
SE  1375     1382
SQ     0    10000
ST  1382     4000        3      1.5
KK   ROUTEDAM19 TO 34
RM     1      0.2      0.2
KK COMBINEDAMS 17, 18 TO DAM 19
HC     2
```

```
KK    34
BA  3.23
PB  15.7
LU   .95     .15
UK   300   0.008    0.15     100
RK 12000   0.008    0.04     1.0    TRAP      75       3
RK 24000   0.007   0.035            TRAP     100       3      NO
KK    44
BA   8.7
IN    60
PB  15.7
LU   .95     .15
UI     0     144     292     398     593     826    1097    1476    1794    2129
UI  2582    2587    2710    3037    3037    3037    3037    3037    2621    2242
UI  2127    2024    1883    1597    1529    1466    1409    1345    1040    1003
UI   969     938     802     715     694     674     655     637     620     604
UI   588     523     399     389     380     372     364     351     196     192
UI   188     184     184     181     177     174     110     104     102     100
UI    99      97      96      94      92      91      89      88      87      47
UI    46      45      45      44      44      43      42      42      41      41
UI    40      38       0       0
KK ROUTE44
KM ROUTE 44 TO 43
RK 12500   0.001    0.03            TRAP     100       3
KK    42
BA  5.46
PB  15.7
UI     0     144     292     466     723    1096    1469    1846    2256    2225
UI  2550    2550    2550    2549    1928    1795    1679    1431    1288    1218
UI  1189     875     834     797     684     595     572     550     530     511
UI   494     396     330     319     310     313     164     160     156     152
UI   148     157      87      85      83      81      80      78      76      75
UI    73      81      39      38      38      37      36      36      35      34
UI    34      16       0       0
KK   ROUTE42
KM   ROUTE 42 TO 43
RK 21000   0.013   0.035            TRAP     100       3
KK    43
BA  5.11
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6500    0.02    0.04       1    TRAP      20       3
RK 25500   0.017   0.035            TRAP      50       3
KK COM8INE
HC     3
KK   ROUTE
KM ROUTE COMBINED HYDROGRAPHS
KM    42 43 44 TO 41
RK  5000   0.001    0.03            TRAP     100       3
```

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam - Outlet spillway PAGE 7 OF 7

DETAIL Rating for 5,000 ft weir COMPUTED RWC DATE 12-29-99

C per Corps design CHECKED BY _____ DATE _____

Pool Elev.	H	$H^{3/2}$	C	L	Q
1354.0	0	0	3.09	5,000	0
4.5	0.5	0.3536	3.08		5,450
5.0	1.0	1.000	3.005		15,020
5.5	1.5	1.837	2.92		26,820
6.0	2.0	2.828	2.82		39,880
6.5	2.5	3.953	2.73		53,950
7.0	3.0	5.196	2.694		70,000
7.5	3.5	6.548	2.67		87,425
8.0	4.0	8.000	2.649		106,000
8.5	4.5	9.546	2.625		125,800
9.0	5.0	11.18	2.62		146,400
9.5	5.5	12.90	2.61		168,400
1360.0	6.0	14.70	2.60		191,100
61.	7.0	18.52	2.60		240,760

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT McMicken Dam-Outlet Sp. 11W2 PAGE ____ OF ____

DETAIL Rating for Various Weir Lengths COMPUTED RWC DATE 2-22-

CHECKED BY ____ DATE ____

Pool Elev.	H	$H^{3/2}$	C	L 500	Q	L 1,000	Q	L 1,500	Q
1354.0	0	0	3.09		0		0		0
55.0	1	1	3.005		1,500		3,010		4,510
56.0	2	2.828	2.820		3,990		7,970		11,960
57.0	3	5.196	2.694		7,000		14,000		21,000
58.0	4	8.000	2.649		10,600		21,200		31,790
59.0	5	11.18	2.620		14,650		29,290		43,940
60.0	6	14.70	2.600		19,110		38,220		57,330
61.0	7	18.52	2.600		24,080		48,150		72,230

Pool Elev.	H	$H^{3/2}$	C	L 2,000	Q	L 2,500	Q	L 3,000	Q
1354.0	0	0	3.09		0		0		0
55.0	1	1	3.005		6,010		7,510		9,020
56.0	2	2.828	2.820		15,950		19,940		23,920
57.0	3	5.196	2.694		28,000		35,000		42,000
58.0	4	8.000	2.649		42,380		52,980		63,570
59.0	5	11.18	2.620		58,580		73,220		87,870
60.0	6	14.70	2.600		76,440		95,550		114,660
61.0	7	18.52	2.600		96,300		120,380		144,460

APPENDIX D

HEC-1 Model PMP2A1,DAT - Modifies outflow from model PMP2A (by Bing Zhao)

Appendx D. - HEC-1 Model PMP2A1.DAT

```
ID filename: pmp2a1.dat
ID McMicken Dam Watershed
ID Probable Maximum Flood
ID FCMCD Jan 87 J. Rumann
ID Sub Basins 1-44
ID TWO MORE SUB-BASINS WERE ADDED BY BING ZHAO
ID (2-14-2000) THE MCMICKEN DAM OUTLET RATING CURVES MODIFIED BY RWC
ID      FOR ORIGINAL CONFIGURATION
ID
ID
ID
*DIAGRAM
IT     5       0       0     900
IO     3
KK     1
BA  9.60
IN   360
PB 15.70
PI   1.1     2.3     7.2     1.3     .65     .65     .65     .65     .30     .30
PI   .30     .30
LU  0.95    0.15
UI     0     241     489     761    1196    1767    2405    3022    3742    3889
UI  4131    4350    4350    4350    3744    3157    2953    2702    2265    2142
UI  2032    1842    1467    1402    1343    1086    1005     967     932     920
UI   900     869     580     562     545     529     514     319     295     274
UI   267     260     254     171     150     146     143     140     137     134
UI   131     129     126      67      66      65      64      62      61      60
UI    59      58      57      19       0
KK ROUTE1 TO 4
RM     1     0.7     0.2
KK     4
BA  3.42
PB 15.70
LU   .95     .15
UK   300    0.09    0.15     100
RK  7500    0.05    0.05     0.5    TRAP      25       3
RK 19500    0.05   0.035            TRAP      50       3      NO
KK CCOMBINE1 & 4
HC     2
KK     6
BA  5.79
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 10000    0.02    0.04     1.0    TRAP      25       3
RK 19500    0.02   0.035            TRAP      75       3     YES
KK  DAM2
KM TRILBY WASH @ S.R. 74
RS     1    STOR      -1
SA     0     0.9
SE  2050    2061
SQ     0   17600
ST  2061    3500       3     1.5
```

```
KK   ROUTEDAM2 TO 13
RM     1     1.1     0.2
KK    13
BA  6.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 21000    0.02   0.040     1.0    TRAP      25       3
RK 27000    0.02   0.035            TRAP      50       3      NO
KK COMBINEDAM 2 @ 13
HC     2
KK    DAM9
KM   TRILBY WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1850    1857
SQ     0   30300
ST  1857    9000       3     1.5
KK   ROUTEDAM9 TO 25
RM     1     2.6     0.2
KK    25
BA  9.36
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 20000   0.009   0.040     3.0    TRAP      50       3
RK 40750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM9 TO 25
HC     2
KK   DAM22
KM   TRILBY WASH @ C.A.P., STA. 609+0
RS     1    STOR      -1
SQ     0    6903
SE  1540  1548.5
SV     0    3436
ST  1554    2000       3     1.5
KK   ROUTEDAM22 TO 31
RM     1     2.7     0.2
KK     3
BA  4.43
PB  15.7
LU   .95     .15
UK   300    0.05    0.15     100
RK  6200    0.05   0.040     1.0    TRAP      50       3
RK 26500    0.04   0.035            TRAP      75       3      NO
KK     5
BA  2.98
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK  4500    0.03   0.040     1.0    TRAP      50       3
RK 13000    0.01   0.035            TRAP     100       3     YES
```

```
KK  DAM1
* KM   IONA WASH @ S.R. 74
RS     1    STOR      -1
SA     0     1.1
SE  2040    2048
SQ     0    7300
ST  2048    6000       3     1.5
KK  ROUTEDAM1 TO 12           ,
RM     1     0.9     0.2
KK    12
BA  4.42
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  9300   0.015   0.040     1.0    TRAP      50       3
RK 13500   0.010   0.035            TRAP     100       3      NO
KK CCOMBINEDAM1 TO 12
HC     2
KK DAM8
KM IONA WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1920    1930
SQ     0   10500
ST  1930   70003     1.5
KK   ROUTEDAM8 TO 24
RM     1     3.3     0.2
KK    24
BA 17.92
PB  15.7
LU   .95     .15
UK   300   0.010    0.15     100
RK 16000   0.008   0.040     5.0    TRAP      75       3
RK 60250   0.007   0.035            TRAP     150       3      NO
KK COMBINEDAM8 TO 24
HC     2
KK DAM21
KM   IONA WASH @ C.A.P., STA. 572+5
RS     1    STOR      -1
SQ     0      72     505    1135    1914    2817
SE1545.2    1546    1548    1550    1552    1554
SV     0       7      31      69     288     518
ST  1553    2000       3     1.5
KK   ROUTEDAM 21 TO 31
RM     1     2.8     0.2
KK    31
BA  9.34
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     2.0    TRAP     100       3
RK 39750   0.005   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21 & 22 TO 31
HC     3
KK ROUTEDAMS 21 & 22/31 TO 32
RM     1     0.2     0.2
```

```
KK      7
BA   7.05
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK 12400      0.02    0.040      1.0    TRAP      25        3
RK 24750      0.03    0.035             TRAP      50        3       NO
KK   DAM3
KM   S.R. 74
RS      1     STOR       -1
SA      0      1.1
SE   2000     2008
SQ      0    10300
ST   2008     6000        3      1.5
KK    ROUTEDAM3 TO 14
RM      1      2.1      0.2
KK     14
BA   7.21
PB   15.7
LU    .95      .15
UK    300    0.020     0.15      100
RK 19000    0.015    0.040      2.0    TRAP      50        3
RK 32250    0.012    0.035             TRAP     100        3       NO
KK COMBINEDAM3 TO 14
HC      2
KK DAM10
KM GRAND AVE.
RS      1     STOR       -1
SA      0       50
SE   1670     1675
SQ      0     8740
ST   1681     4000        3      1.5
KK    ROUTEDAM10 TO 26
RM      1      1.2      0.2
KK     26
BA   8.42
PB   15.7
LU    .95      .15
UK    300    0.010     0.15      100
RK 20000    0.008    0.040      2.0    TRAP      75        3
RK 27750    0.008    0.035             TRAP     150        3       NO
KK COMBINEDAM 10 TO 26
HC      2
KK DAM23
KM    C.A.P., STA. 688+0
RS      1     STOR       -1
SQ      0      116      440      881     1414     2025     2705     3447
SE1544.3     1545     1546     1547     1548     1549     1550     1551
SV      0        3       10       19       31      139      292      498
ST1550.2     2000        3      1.5
* THE FOLLOWING CARDS WERE FROM SPF HEC-1 INPUT FILE IN THE 1987
* REPORT BECAUSE ONE PAGE IS MISSING IN THE PMP HEC-1 INPUT FILE
* IN THE 1987 REPORT.
KK ROUTEDAM23 TO 32
RM      1      2.7      0.2
```

```
KK    32
BA  8.42
PB  15.7
LU  0.95    0.15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     3.0    TRAP     100       3
RK 38250   0.006   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21,22,23 TO 32
HC     3
KK      ROUTEDAMS 21,22,23/31,32 TO 33
RM     1     0.6     0.2
KK     8
BA  3.38
PB  15.7
LU  0.95    0.15
UK   300    0.04    0.15     100
RK  6500    0.04   0.040     1.0    TRAP      25       3
RK 24500    0.03   0.035            TRAP      50       3      NO
KK  DAM4
KM   S.R. 74
RS     1    STOR      -1
SA     0    50.0
SE  1990    2000
SQ     0    1525
ST  2001    1500       3     1.5
KK  ROUTEDAM4 TO 15
RM     1     2.6     0.2
KK     9
BA  5.44
PB  15.7
LU  0.95    0.15
UK   300    0.05    0.15     100
RK 12000    0.05    0.04     1.0    TRAP      25       3
RK 27500    0.04   0.035            TRAP      75       3      NO
KK DAM5
KM S.R.74
RS     1    STOR      -1
SA     0     5.0
SE  1980    1988
SQ     0   12000
ST  1988    2500       3     1.5
KK TO 15
RM     1     2.6     0.2
KK    15
BA  6.65
PB  15.7
* THE ABOVE (UP TO *) CARDS ARE FROM SPF HEC-1 INPUT FILE
LU   .95     .15
UK   300    0.02    0.15     100
RK 11400    0.02    0.04     2.0    TRAP      50       3
RK 38000   0.011   0.035            TRAP     100       3      NO
KK COMBINEDAMS 4, 5 TO 15
HC     3
```

```
KK DAM11
KM GRAND AVE.
RS      1    STOR      -1
SA      0    50.0
SE   1560    1567
SQ      0    5000
ST   1568    5000       3     1.5
KK   ROUTEDAM 11 TO 27
RM      1    0.07     0.2
KK     27
BA   1.04
PB   15.7
LU    .95     .15
UK    300   0.009    0.15     100
RK 13500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAM11 TO 27
HC      2
KK DAM24
KM   C.A.P. STA. 804+5
RS      1    STOR      -1
SQ      0      54     233     608    1007    1469    1985    2550    3161    3814
SQ   4506    5236
SE1543.5    1544    1545    1546    1547    1548    1549    1550    1551    1552
SE   1553    1554
SV      0       0       0       0       1       3       9      18      44     114
SV    204     413
ST1552.8    2000       3     1.5
KK   ROUTEDAM24 TO 33
RM      1     2.4     0.2
KK     18
BA   0.87
PB   15.7
LU    .95     .15
UK    300    0.01    0.15     100
RK 17500   0.009    0.04            TRAP      50       3      NO
KK DAM14
KM GRAND AVE.
RS      1    STOR      -1
SA      0    0.30
SE   1520    1527
SQ      0    1500
ST   1527    1500       3     1.5
KK   ROUTEDAM14 TO 33
RM      1     2.4     0.2
KK     33
BA   7.48
PB   15.7
LU    .95     .15
UK    300   0.005    0.15     100
RK 13000   0.005    0.04     2.0    TRAP      75       3
RK 34750   0.006   0.035            TRAP     100       3      NO
KK COMBINEDAMS 21, 22, 23/31, 32 TO DAMS 14, 24/33
HC      4
KK   ROUTEALL TO 34
RM      1     0.3     0.2
```

```
KK      2
BA  17.02
PB   15.7
LU    .95     0.15
UK    300     0.09     0.15      100
RK   6800    0.071    0.040      2.0    TRAP      50        3
RK  48000    0.043    0.035             TRAP     100        3       NO
KK     11
BA   1.40
PB   15.7
LU    .95      .15
UK    300    0.030     0.15      100
RK   9000    0.022     0.04      0.5    TRAP      50        3
RK  11750    0.022    0.035             TRAP     100        3      YES
KK   DAM7
KM    ME WASH @ S.R. 74
RS      1     STOR      -1
SA      0       50
SE   1980     1988
SQ      0    15000
ST   1988     2500       3      1.5
KK    ROUTEDAM7 TO 17
RM      1      2.4     0.2
KK     10
BA   1.43
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK   8500     0.28     0.04      0.5    TRAP      25        3
RK  17500    0.023    0.035             TRAP      50        3       NO
KK   DAM6
KM   S.R. 74
RS      1     STOR      -1
SA      0     0.20
SE   1980     1988
SQ      0     1325
ST   1988     1000       3      1.5
KK    ROUTEDAM6 TO 17
RM      1      2.4     0.2
KK     17
BA   6.70
PB   15.7
LU    .95      .15
UK    300    0.015     0.15      100
RK  18000    0.014     0.04      2.0    TRAP      50        3
RK  34250    0.013    0.035             TRAP     100        3       NO
KK COMBINEDAM56 & 7 TO 17
HC      3
KK DAM13
KM ME WASH @ C.A.P.
RS      1     STOR      -1
SQ      0       51      778     3740     5531     6875     7646     7773
SE   1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV      0        0        0       44      357      747     1024     1072
ST   1557     2000       3      1.5
```

```
KK   ROUTEDAM13 TO 21
RM     1     0.6     0.2
KK    16
BA  3.46
PB  15.7
LU   .95     .15
UK   300   0.015    0.15     100
RK  8500   0.014    0.04     1.0    TRAP      25       3
RK 35750   0.011   0.035            TRAP      75       3      NO
KK DAM12
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557     200       3     1.5
KK   ROUTEDAM12 TO 21
RM     1     0.6     0.2
KK    21
BA  1.04
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK  8500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAMS 12, 13 TO 21
HC     3
KK   DAM17
KM GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1480    1487
SQ     0   12000
ST  1488    3000       3     1.5
KK   ROUTEDAM 17 TO 34
RM     1     1.3     0.2
KK    19
BA  2.57
PB  15.7
LU   .95     .15
UK   300   0.013    0.15     100
RK 10000   0.012    0.04     1.0    TRAP      25       3
RK 19000   0.012   0.035            TRAP      50       3      NO
KK DAM15
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM15 TO 22
RM     0       1     0.2
KK    22
BA  2.31
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK 14750   0.008    0.04            TRAP      50       3      NO
```

```
KK COMBINEDAM15 TO 22
HC     2
KK DAM18
KM GRAND AVE.
RS     1    STOR      -1
SA     0   0.600
SE  1420    1427
SQ     0   10000
ST  1427    3500       3     1.5
KK ROUTEDAM18 TO 34
RM     1     0.8     0.2
KK COMBINEDAM 17 TO DAM 18
HC     2
KK    20
BA  1.08
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK  6500    0.01    0.04     0.5    TRAP      25       3
RK 12250   0.011   0.035            TRAP      50       3      NO
KK DAM16
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM16 TO 23
RM     1     1.6     0.2
KK    23
BA  3.71
PB  15.7
LU   .95     .15
UK   300   0.008    0.15     100
RK 12000   0.008    0.04     1.0    TRAP      50       3
RK 23500   0.007   0.035            TRAP      75       3      NO
KK COM8INEDAM16 TO 23
HC     2
KK DAM19
KM GRAND AVE.
RS     1    STOR      -1
SA     0   0.650
SE  1375    1382
SQ     0   10000
ST  1382    4000       3     1.5
KK   ROUTEDAM19 TO 34
RM     1     0.2     0.2
KK COMBINEDAMS 17, 18 TO DAM 19
HC     2
KK    34
BA  3.23
PB  15.7
LU   .95     .15
UK   300   0.008    0.15     100
RK 12000   0.008    0.04     1.0    TRAP      75       3
RK 24000   0.007   0.035            TRAP     100       3      NO
```

```
KK    44
BA   8.7
IN    60
PB  15.7
LU   .95     .15
UI     0     144     292     398     593     826    1097    1476    1794    2129
UI  2582    2587    2710    3037    3037    3037    3037    3037    2621    2242
UI  2127    2024    1883    1597    1529    1466    1409    1345    1040    1003
UI   969     938     802     715     694     674     655     637     620     604
UI   588     523     399     389     380     372     364     351     196     192
UI   188     184     184     181     177     174     110     104     102     100
UI    99      97      96      94      92      91      89      88      87      47
UI    46      45      45      44      44      43      42      42      41      41
UI    40      38       0       0
KK ROUTE44
KM ROUTE 44 TO 43
RK 12500   0.001    0.03            TRAP     100       3
KK    42
BA  5.46
PB  15.7
UI     0     144     292     466     723    1096    1469    1846    2256    2225
UI  2550    2550    2550    2549    1928    1795    1679    1431    1288    1218
UI  1189     875     834     797     684     595     572     550     530     511
UI   494     396     330     319     310     313     164     160     156     152
UI   148     157      87      85      83      81      80      78      76      75
UI    73      81      39      38      38      37      36      36      35      34
UI    34      16       0       0
KK   ROUTE42
KM   ROUTE 42 TO 43
RK 21000   0.013   0.035            TRAP     100       3
KK    43
BA  5.11
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6500    0.02    0.04       1    TRAP      20       3
RK 25500   0.017   0.035            TRAP      50       3
KK COM8INE
HC     3
KK   ROUTE
KM ROUTE COMBINED HYDROGRAPHS
KM    42 43 44 TO 41
RK  5000   0.001    0.03            TRAP     100       3
KK    41
BA  3.05
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6200    0.09    0.04       1    TRAP      20       3
RK 24750    0.09   0.035            TRAP      50       3
KK COMBINE
HC     2
KK   ROUTE41 TO 38
RK  7000   0.001    0.03            TRAP     100       3
```

```
KK    38
BA  7.18
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  8500    0.09    0.04       2    TRAP      20       3
RK 33750    0.06   0.035            TRAP      50       3
KK COMBINE
HC     2
KK    39
BA  2.77
PB  15.7
UI     0     137     308     595    1015    1468    1786    1776    1915    1829
UI  1393    1266     997     917     787     629     574     449     424     401
UI   380     318     246     235     201     121     116     112     105      65
UI    62      60      58      57      55      47      29      28      27      27
UI    26      24       0       0
KK   ROUTE39 TO 35
RK 24000    0.01   0.035            TRAP      50       3
KK    35
BA  2.57
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6000    0.02    0.04       1    TRAP      20       3
RK 24000    0.01   0.035            TRAP      50       3
KK    28
BA 17.59
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.007    0.04       6    TRAP      25       3
RK 44500   0.006   0.035            TRAP      50       3      NO
KK   DAM20
KM   C.A.P., STA. 466+0
RS     1    STOR      -1
SV     0       9      33      97     436     912
SE  1536    1538    1540    1542    1544    1546
SQ     0     432    1222    2245    3457    4830
ST  1546    2000       3     1.5
KK   ROUTE28 TO 29
RK 14000   0.005    0.03            TRAP      75       3
KK    29
BA 10.32
PB  15.7
LU   .95     .15
UK   300    0.04    0.15     100
RK 16000    0.06    0.04       3    TRAP      25       3
RK 44000    0.04   0.035            TRAP      75       3      NO
KK COMBINE28 TO 29
HC     2
KK COMBINE28, 29, 39 & 35
HC     3
KK   ROUTE
RK  6500   0.004   0.035            TRAP     100       3
```

```
KK    40
BA  2.15
PB  15.7
UI     0     168     397     786    1319    1870    2068    2259    2259    1805
UI  1532    1254    1095     949     743     665     526     494     466     462
UI   298     283     270     161     139     133     129      76      74      71
UI    69      66      74      35      33      33      32      31      30       4
UI     0
KK   ROUTE40 TO 36
RK 18000    0.01   0.035            TRAP      50       3
KK    36
BA  4.37
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6600    0.02    0.04       2    TRAP      20       3
RK 26500    0.01   0.035            TRAP      50       3
KK    30
BA  1.50
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.005   0.035            TRAP      25       3
KK COMBINE30, 35, 36, 39 & 40
HC     4
KK   ROUTETO 37
RK  5000    0.01   0.035            TRAP     100       3
KK    37
BA  2.94
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6700    0.09    0.04       1    TRAP      50       3
RK 26750    0.07   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE
RK 14500   0.005   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE MCM.SUB. TO 34
RK  3000   0.001    0.03            TRAP     100       3
KK COMBINE ALL TO 34
HC     4
KO     1       2
* KK MCMICKEN DAM
* RS     1    ELEV    1335
* SV     0       0    2200    8800   19000   32400   35500   49800
* SE  1335    1340    1345    1350    1355    1360    1361    1365
* SQ   0.0  1750.0  4600.0  10500.  20100.  47000.  63600.  81150.102200.0
* SE1335.0  1345.0  1353.9  1355.0  1356.0  1358.0  1359.0  1360.0  1361.0
* ST  1361   49500    3.05     1.5
```

```
KKNEW MCMICKEN DAM
KM NEW RATING CURVE FOR THE DAM WAS OBTAINED FROM JOE TRAM ON 01/09/1996
* RS      1     ELEV     1335
RS      1     ELEV     1327
SV      0        6       96      471     2196     6112    12926    20070    23126    28121
SV 30824    33615    36501
SE1327.0  1330.0 1332.55  1335.0  1340.0  1345.0  1350.0 1353.65  1355.0  1357.0
SE1358.0  1359.0  1360.0
* SAME SQ-SE RELATIONSHIP BECAUSE Q DEPENDS ON HEAD
SQ    0.0       35     2000     4660    10750    20730    32930    47520    63920    82090
SQ102310
SE  1330     1335     1345   1353.9     1355     1356     1357     1358     1359     1360
SE  1361
ST  1361    49500     3.05      1.5
ZZ
1


2


1


2


1


1
```

PMP241.DAT

APPENDIX E

HEC-1 Model PMP2CP.DAT - Modifies outflow Rating based a HECRAS analysis of the spillway channel, using present vegetation condition.

Appendix E - HEC-1 Model PMP2CP.DAT

```
ID filename: pmp2CP.DAT
ID McMicken Dam Watershed
ID Probable Maximum Flood
ID FCMCD Jan 87 J. Rumann
ID Sub Basins 1-44
ID TWO MORE SUB-BASINS WERE ADDED BY BING ZHAO
ID9/1996 THEY ARE SUB-BA SINS 45 AND 46.
ID
ID (2-14-2000) THE OHE MCMICKEN DAM OUTLET RATING CURVES MODIFIED BY RWC
ID      TO USE THE HECRAS RESULTS AT THE UPPER END OF THE SPILLWAY CHANNEL
ID              FOR PRESENT CONDITIONS"N"
ID                                                                    (01/0
*DIAGRAM
IT     5       0       0     900
IO     3
KK     1
BA  9.60
IN   360
PB 15.70
PI   1.1     2.3     7.2     1.3     .65     .65     .65     .65     .30     .30
PI   .30     .30
LU  0.95    0.15
UI     0     241     489     761    1196    1767    2405    3022    3742    3889
UI  4131    4350    4350    4350    3744    3157    2953    2702    2265    2142
UI  2032    1842    1467    1402    1343    1086    1005     967     932     920
UI   900     869     580     562     545     529     514     319     295     274
UI   267     260     254     171     150     146     143     140     137     134
UI   131     129     126      67      66      65      64      62      61      60
UI    59      58      57      19       0
KK ROUTE1 TO 4
RM     1     0.7     0.2
KK     4
BA  3.42
PB 15.70
LU   .95     .15
UK   300    0.09    0.15     100
RK  7500    0.05    0.05     0.5    TRAP      25       3
RK 19500    0.05   0.035            TRAP      50       3      NO
KK CCOMBINE1 & 4
HC     2
KK     6
BA  5.79
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 10000    0.02    0.04     1.0    TRAP      25       3
RK 19500    0.02   0.035            TRAP      75       3     YES
KK  DAM2
KM TRILBY WASH @ S.R. 74
RS     1    STOR      -1
SA     0     0.9
SE  2050    2061
SQ     0   17600
ST  2061    3500       3     1.5
```

```
KK   ROUTEDAM2 TO 13
RM     1     1.1     0.2
KK    13
BA  6.05
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK 21000    0.02   0.040     1.0    TRAP      25       3
RK 27000    0.02   0.035            TRAP      50       3      NO
KK COMBINEDAM 2 @ 13
HC     2
KK    DAM9
KM   TRILBY WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1850    1857
SQ     0   30300
ST  1857    9000       3     1.5
KK   ROUTEDAM9 TO 25
RM     1     2.6     0.2
KK    25
BA  9.36
PB  15.7
LU   .95     .15
UK   300    0.01    0.15     100
RK 20000   0.009   0.040     3.0    TRAP      50       3
RK 40750   0.008   0.035            TRAP     150       3      NO
KK COMBINEDAM9 TO 25
HC     2
KK   DAM22
KM   TRILBY WASH @ C.A.P., STA. 609+0
RS     1    STOR      -1
SQ     0    6903
SE  1540  1548.5
SV     0    3436
ST  1554    2000       3     1.5
KK   ROUTEDAM22 TO 31
RM     1     2.7     0.2
KK     3
BA  4.43
PB  15.7
LU   .95     .15
UK   300    0.05    0.15     100
RK  6200    0.05   0.040     1.0    TRAP      50       3
RK 26500    0.04   0.035            TRAP      75       3      NO
KK     5
BA  2.98
PB  15.7
LU   .95     .15
UK   300    0.03    0.15     100
RK  4500    0.03   0.040     1.0    TRAP      50       3
RK 13000    0.01   0.035            TRAP     100       3     YES
```

```
KK  DAM1
KM   IONA WASH @ S.R. 74
RS     1    STOR      -1
SA     0     1.1
SE  2040    2048
SQ     0    7300
ST  2048    6000       3     1.5
KK  ROUTEDAM1 TO 12           ,
RM     1     0.9     0.2
KK    12
BA  4.42
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  9300   0.015   0.040     1.0    TRAP      50       3
RK 13500   0.010   0.035            TRAP     100       3      NO
KK CCOMBINEDAM1 TO 12
HC     2
KK DAM8
KM IONA WASH @ GRAND AVE.
RS     1    STOR      -1
SA     0    50.0
SE  1920    1930
SQ     0   10500
ST  1930   70003     1.5
KK   ROUTEDAM8 TO 24
RM     1     3.3     0.2
KK    24
BA 17.92
PB  15.7
LU   .95     .15
UK   300   0.010    0.15     100
RK 16000   0.008   0.040     5.0    TRAP      75       3
RK 60250   0.007   0.035            TRAP     150       3      NO
KK COMBINEDAM8 TO 24
HC     2
KK DAM21
KM   IONA WASH @ C.A.P., STA. 572+5
RS     1    STOR      -1
SQ     0      72     505    1135    1914    2817
SE1545.2    1546    1548    1550    1552    1554
SV     0       7      31      69     288     518
ST  1553    2000       3     1.5
KK   ROUTEDAM 21 TO 31
RM     1     2.8     0.2
KK    31
BA  9.34
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     2.0    TRAP     100       3
RK 39750   0.005   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21 & 22 TO 31
HC     3
KK ROUTEDAMS 21 & 22/31 TO 32
RM     1     0.2     0.2
```

```
KK      7
BA   7.05
PB   15.7
LU    .95      .15
UK    300     0.03     0.15      100
RK 12400      0.02    0.040      1.0    TRAP      25        3
RK 24750      0.03    0.035             TRAP      50        3       NO
KK   DAM3
KM   S.R. 74
RS      1     STOR       -1
SA      0      1.1
SE   2000     2008
SQ      0    10300
ST   2008     6000        3      1.5
KK    ROUTEDAM3 TO 14
RM      1      2.1      0.2
KK     14
BA   7.21
PB   15.7
LU    .95      .15
UK    300    0.020     0.15      100
RK 19000    0.015    0.040      2.0    TRAP      50        3
RK 32250    0.012    0.035             TRAP     100        3       NO
KK COMBINEDAM3 TO 14
HC      2
KK DAM10
KM GRAND AVE.
RS      1     STOR       -1
SA      0       50
SE   1670     1675
SQ      0     8740
ST   1681     4000        3      1.5
KK    ROUTEDAM10 TO 26
RM      1      1.2      0.2
KK     26
BA   8.42
PB   15.7
LU    .95      .15
UK    300    0.010     0.15      100
RK 20000    0.008    0.040      2.0    TRAP      75        3
RK 27750    0.008    0.035             TRAP     150        3       NO
KK COMBINEDAM 10 TO 26
HC      2
KK DAM23
KM    C.A.P., STA. 688+0
RS      1     STOR       -1
SQ      0      116      440      881     1414     2025     2705     3447
SE1544.3     1545     1546     1547     1548     1549     1550     1551
SV      0        3       10       19       31      139      292      498
ST1550.2     2000        3      1.5
* THE FOLLOWING CARDS WERE FROM SPF HEC-1 INPUT FILE IN THE 1987
* REPORT BECAUSE ONE PAGE IS MISSING IN THE PMP HEC-1 INPUT FILE
* IN THE 1987 REPORT.
KK ROUTEDAM23 TO 32
RM      1      2.7      0.2
```

```
KK    32
BA  8.42
PB  15.7
LU  0.95    0.15
UK   300   0.007    0.15     100
RK 10000   0.006   0.040     3.0    TRAP     100       3
RK 38250   0.006   0.035            TRAP     175       3      NO
KK COMBINEDAMS 21,22,23 TO 32
HC     3
KK      ROUTEDAMS 21,22,23/31,32 TO 33
RM     1     0.6     0.2
KK     8
BA  3.38
PB  15.7
LU  0.95    0.15
UK   300    0.04    0.15     100
RK  6500    0.04   0.040     1.0    TRAP      25       3
RK 24500    0.03   0.035            TRAP      50       3      NO
KK  DAM4
KM   S.R. 74
RS     1    STOR      -1
SA     0    50.0
SE  1990    2000
SQ     0    1525
ST  2001    1500       3     1.5
KK  ROUTEDAM4 TO 15
RM     1     2.6     0.2
KK     9
BA  5.44
PB  15.7
LU  0.95    0.15
UK   300    0.05    0.15     100
RK 12000    0.05    0.04     1.0    TRAP      25       3
RK 27500    0.04   0.035            TRAP      75       3      NO
KK DAM5
KM S.R.74
RS     1    STOR      -1
SA     0     5.0
SE  1980    1988
SQ     0   12000
ST  1988    2500       3     1.5
KK TO 15
RM     1     2.6     0.2
KK    15
BA  6.65
PB  15.7
* THE ABOVE (UP TO *) CARDS ARE FROM SPF HEC-1 INPUT FILE
LU   .95     .15
KK DAM11
UK   300    0.02    0.15     100
RK 11400    0.02    0.04     2.0    TRAP      50       3
RK 38000   0.011   0.035            TRAP     100       3      NO
KK COMBINEDAMS 4, 5 TO 15
HC     3
```

```
KM GRAND AVE.
RS      1    STOR      -1
SA      0    50.0
SE   1560    1567
SQ      0    5000
ST   1568    5000       3     1.5
KK   ROUTEDAM 11 TO 27
RM      1    0.07     0.2
KK     27
BA   1.04
PB   15.7
LU    .95     .15
UK    300   0.009    0.15     100
RK 13500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAM11 TO 27
HC      2
KK DAM24
KM   C.A.P. STA. 804+5
RS      1    STOR      -1
SQ      0      54     233     608    1007    1469    1985    2550    3161    3814
SQ   4506    5236
SE1543.5    1544    1545    1546    1547    1548    1549    1550    1551    1552
SE   1553    1554
SV      0       0       0       0       1       3       9      18      44     114
SV    204     413
ST1552.8    2000       3     1.5
KK   ROUTEDAM24 TO 33
RM      1     2.4     0.2
KK     18
BA   0.87
PB   15.7
LU    .95     .15
UK    300    0.01    0.15     100
RK 17500   0.009    0.04            TRAP      50       3      NO
KK DAM14
KM GRAND AVE.
RS      1    STOR      -1
SA      0    0.30
SE   1520    1527
SQ      0    1500
ST   1527    1500       3     1.5
KK   ROUTEDAM14 TO 33
RM      1     2.4     0.2
KK     33
BA   7.48
PB   15.7
LU    .95     .15
UK    300   0.005    0.15     100
RK 13000   0.005    0.04     2.0    TRAP      75       3
RK 34750   0.006   0.035            TRAP     100       3      NO
KK COMBINEDAMS 21, 22, 23/31, 32 TO DAMS 14, 24/33
HC      4
KK   ROUTEALL TO 34
RM      1     0.3     0.2
```

```
KK      2
BA 17.02
PB  15.7
LU   .95     0.15
UK   300     0.09     0.15      100
RK  6800    0.071    0.040      2.0    TRAP      50        3
RK 48000    0.043    0.035             TRAP     100        3       NO
KK     11
BA  1.40
PB  15.7
LU   .95      .15
UK   300    0.030     0.15      100
RK  9000    0.022     0.04      0.5    TRAP      50        3
RK 11750    0.022    0.035             TRAP     100        3      YES
KK  DAM7
KM   ME WASH @ S.R. 74
RS      1     STOR       -1
SA      0       50
SE   1980     1988
SQ      0    15000
ST   1988     2500        3      1.5
KK   ROUTEDAM7 TO 17
RM      1      2.4      0.2
KK     10
BA  1.43
PB  15.7
LU   .95      .15
UK   300     0.03     0.15      100
RK  8500     0.28     0.04      0.5    TRAP      25        3
RK 17500    0.023    0.035             TRAP      50        3       NO
KK  DAM6
KM  S.R. 74
RS      1     STOR       -1
SA      0     0.20
SE   1980     1988
SQ      0     1325
ST   1988     1000        3      1.5
KK   ROUTEDAM6 TO 17
RM      1      2.4      0.2
KK     17
BA  6.70
PB  15.7
LU   .95      .15
UK   300    0.015     0.15      100
RK 18000    0.014     0.04      2.0    TRAP      50        3
RK 34250    0.013    0.035             TRAP     100        3       NO
KK COMBINEDAM56 & 7 TO 17
HC      3
KK DAM13
KM ME WASH @ C.A.P.
RS      1     STOR       -1
SQ      0       51      778     3740     5531     6875     7646     7773
SE   1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV      0        0        0       44      357      747     1024     1072
ST   1557     2000        3      1.5
```

```
KK   ROUTEDAM13 TO 21
RM     1     0.6     0.2
KK    16
BA  3.46
PB  15.7
LU   .95     .15
UK   300   0.015    0.15     100
RK  8500   0.014    0.04     1.0    TRAP      25       3
RK 35750   0.011   0.035            TRAP      75       3      NO
KK DAM12
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557     200       3     1.5
KK   ROUTEDAM12 TO 21
RM     1     0.6     0.2
KK    21
BA  1.04
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK  8500   0.008    0.04            TRAP      25       3      NO
KK COMBINEDAMS 12, 13 TO 21
HC     3
KK   DAM17
KM GRAND AVE.
RS     1    STOR      -1
SA     0      50
SE  1480    1487
SQ     0   12000
ST  1488    3000       3     1.5
KK   ROUTEDAM 17 TO 34
RM     1     1.3     0.2
KK    19
BA  2.57
PB  15.7
LU   .95     .15
UK   300   0.013    0.15     100
RK 10000   0.012    0.04     1.0    TRAP      25       3
RK 19000   0.012   0.035            TRAP      50       3      NO
KK DAM15
KM C.A.P.
RS     1    STOR      -1
SQ     0      51     778    3740    5531    6875    7646    7773
SE  1540    1542    1548 1549.03 1551.26 1552.82 1553.68 1553.82
SV     0       0       0      44     357     747    1024    1072
ST  1557    2000       3     1.5
KK   ROUTEDAM15 TO 22
RM     0       1     0.2
KK    22
BA  2.31
PB  15.7
LU   .95     .15
UK   300   0.009    0.15     100
RK 14750   0.008    0.04            TRAP      50       3      NO
```

```
KK COMBINEDAM15 TO 22
HC      2
KK DAM18
KM GRAND AVE.
RS      1     STOR       -1
SA      0    0.600
SE   1420     1427
SQ      0    10000
ST   1427     3500        3      1.5
KK ROUTEDAM18 TO 34
RM      1      0.8      0.2
KK COMBINEDAM 17 TO DAM 18
HC      2
KK     20
BA   1.08
PB   15.7
LU    .95      .15
UK    300     0.01     0.15      100
RK   6500     0.01     0.04      0.5    TRAP      25        3
RK  12250    0.011    0.035            TRAP      50        3       NO
KK DAM16
KM C.A.P.
RS      1     STOR       -1
SQ      0       51      778     3740     5531     6875     7646     7773
SE   1540     1542     1548  1549.03  1551.26  1552.82  1553.68  1553.82
SV      0        0        0       44      357      747     1024     1072
ST   1557     2000        3      1.5
KK   ROUTEDAM16 TO 23
RM      1      1.6      0.2
KK     23
BA   3.71
PB   15.7
LU    .95      .15
UK    300    0.008     0.15      100
RK  12000    0.008     0.04      1.0    TRAP      50        3
RK  23500    0.007    0.035            TRAP      75        3       NO
KK COM8INEDAM16 TO 23
HC      2
KK DAM19
KM GRAND AVE.
RS      1     STOR       -1
SA      0    0.650
SE   1375     1382
SQ      0    10000
ST   1382     4000        3      1.5
KK   ROUTEDAM19 TO 34
RM      1      0.2      0.2
KK COMBINEDAMS 17, 18 TO DAM 19
HC      2
KK     34
BA   3.23
PB   15.7
LU    .95      .15
UK    300    0.008     0.15      100
RK  12000    0.008     0.04      1.0    TRAP      75        3
RK  24000    0.007    0.035            TRAP     100        3       NO
```

```
KK    44
BA   8.7
IN    60
PB  15.7
LU   .95     .15
UI     0     144     292     398     593     826    1097    1476    1794    2129
UI  2582    2587    2710    3037    3037    3037    3037    3037    2621    2242
UI  2127    2024    1883    1597    1529    1466    1409    1345    1040    1003
UI   969     938     802     715     694     674     655     637     620     604
UI   588     523     399     389     380     372     364     351     196     192
UI   188     184     184     181     177     174     110     104     102     100
UI    99      97      96      94      92      91      89      88      87      47
UI    46      45      45      44      44      43      42      42      41      41
UI    40      38       0       0
KK ROUTE44
KM ROUTE 44 TO 43
RK 12500   0.001    0.03            TRAP     100       3
KK    42
BA  5.46
PB  15.7
UI     0     144     292     466     723    1096    1469    1846    2256    2225
UI  2550    2550    2550    2549    1928    1795    1679    1431    1288    1218
UI  1189     875     834     797     684     595     572     550     530     511
UI   494     396     330     319     310     313     164     160     156     152
UI   148     157      87      85      83      81      80      78      76      75
UI    73      81      39      38      38      37      36      36      35      34
UI    34      16       0       0
KK   ROUTE42
KM   ROUTE 42 TO 43
RK 21000   0.013   0.035            TRAP     100       3
KK    43
BA  5.11
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6500    0.02    0.04       1    TRAP      20       3
RK 25500   0.017   0.035            TRAP      50       3
KK COM8INE
HC     3
KK   ROUTE
KM ROUTE COMBINED HYDROGRAPHS
KM    42 43 44 TO 41
RK  5000   0.001    0.03            TRAP     100       3
KK    41
BA  3.05
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6200    0.09    0.04       1    TRAP      20       3
RK 24750    0.09   0.035            TRAP      50       3
KK COMBINE
HC     2
KK   ROUTE41 TO 38
RK  7000   0.001    0.03            TRAP     100       3
```

```
KK    38
BA  7.18
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  8500    0.09    0.04       2    TRAP      20       3
RK 33750    0.06   0.035            TRAP      50       3
KK COMBINE
HC     2
KK    39
BA  2.77
PB  15.7
UI     0     137     308     595    1015    1468    1786    1776    1915    1829
UI  1393    1266     997     917     787     629     574     449     424     401
UI   380     318     246     235     201     121     116     112     105      65
UI    62      60      58      57      55      47      29      28      27      27
UI    26      24       0       0
KK   ROUTE39 TO 35
RK 24000    0.01   0.035            TRAP      50       3
KK    35
BA  2.57
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6000    0.02    0.04       1    TRAP      20       3
RK 24000    0.01   0.035            TRAP      50       3
KK    28
BA 17.59
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.007    0.04       6    TRAP      25       3
RK 44500   0.006   0.035            TRAP      50       3      NO
KK   DAM20
KM   C.A.P., STA. 466+0
RS     1    STOR      -1
SV     0       9      33      97     436     912
SE  1536    1538    1540    1542    1544    1546
SQ     0     432    1222    2245    3457    4830
ST  1546    2000       3     1.5
KK   ROUTE28 TO 29
RK 14000   0.005    0.03            TRAP      75       3
KK    29
BA 10.32
PB  15.7
LU   .95     .15
UK   300    0.04    0.15     100
RK 16000    0.06    0.04       3    TRAP      25       3
RK 44000    0.04   0.035            TRAP      75       3      NO
KK COMBINE28 TO 29
HC     2
KK COMBINE28, 29, 39 & 35
HC     3
KK   ROUTE
RK  6500   0.004   0.035            TRAP     100       3
```

```
KK    40
BA  2.15
PB  15.7
UI     0     168     397     786    1319    1870    2068    2259    2259    1805
UI  1532    1254    1095     949     743     665     526     494     466     462
UI   298     283     270     161     139     133     129      76      74      71
UI    69      66      74      35      33      33      32      31      30       4
UI     0
KK   ROUTE40 TO 36
RK 18000    0.01   0.035            TRAP      50       3
KK    36
BA  4.37
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6600    0.02    0.04       2    TRAP      20       3
RK 26500    0.01   0.035            TRAP      50       3
KK    30
BA  1.50
PB  15.7
LU   .95     .15
UK   300   0.007    0.15     100
RK 19000   0.005   0.035            TRAP      25       3
KK COMBINE30, 35, 36, 39 & 40
HC     4
KK   ROUTETO 37
RK  5000    0.01   0.035            TRAP     100       3
KK    37
BA  2.94
PB  15.7
LU   .95     .15
UK   300    0.02    0.15     100
RK  6700    0.09    0.04       1    TRAP      50       3
RK 26750    0.07   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE
RK 14500   0.005   0.035            TRAP     100       3
KK COMBINE
HC     2
KK ROUTE MCM.SUB. TO 34
RK  3000   0.001    0.03            TRAP     100       3
KK COMBINE ALL TO 34
HC     4
KO     1       2
* KK MCMICKEN DAM
* RS     1    ELEV    1335
* SV     0       0    2200    8800   19000   32400   35500   49800
* SE  1335    1340    1345    1350    1355    1360    1361    1365
* SQ   0.0  1750.0  4600.0  10500.  20100.  47000.  63600.  81150.102200.0
* SE1335.0  1345.0  1353.9  1355.0  1356.0  1358.0  1359.0  1360.0  1361.0
* ST  1361   49500    3.05     1.5
```

```
KKNEW MCMICKEN DAM
KM NEW RATING CURVE FOR THE DAM WAS OBTAINED FROM JOE TRAM ON 01/09/1996
* RS      1     ELEV     1335
RS      1     ELEV     1327
SV      0        6       96      471     2196     6112    12926    20070    23126    28121
SV 30824    33615    36501
SE1327.0  1330.0 1332.55  1335.0  1340.0  1345.0  1350.0 1353.65  1355.0  1357.0
SE1358.0  1359.0  1360.0
* SAME SQ-SE RELATIONSHIP BECAUSE Q DEPENDS ON HEAD
SQ    0.0       35     2000     4660     9280    15340    22100    30010    39520    50050
SQ 61360
SE  1330     1335     1345   1353.9     1355     1356     1357     1358     1359     1360
SE  1361
ST  1361    49500     3.05      1.5
ZZ
```

PMP2CP.DAT

APPENDIX F

HEC-1 Model PMP2C03.DAT - Modifies outflow Rating based a HECRAS analysis of the spillway channel, using cleared vegetation condition ("n"=0.030).