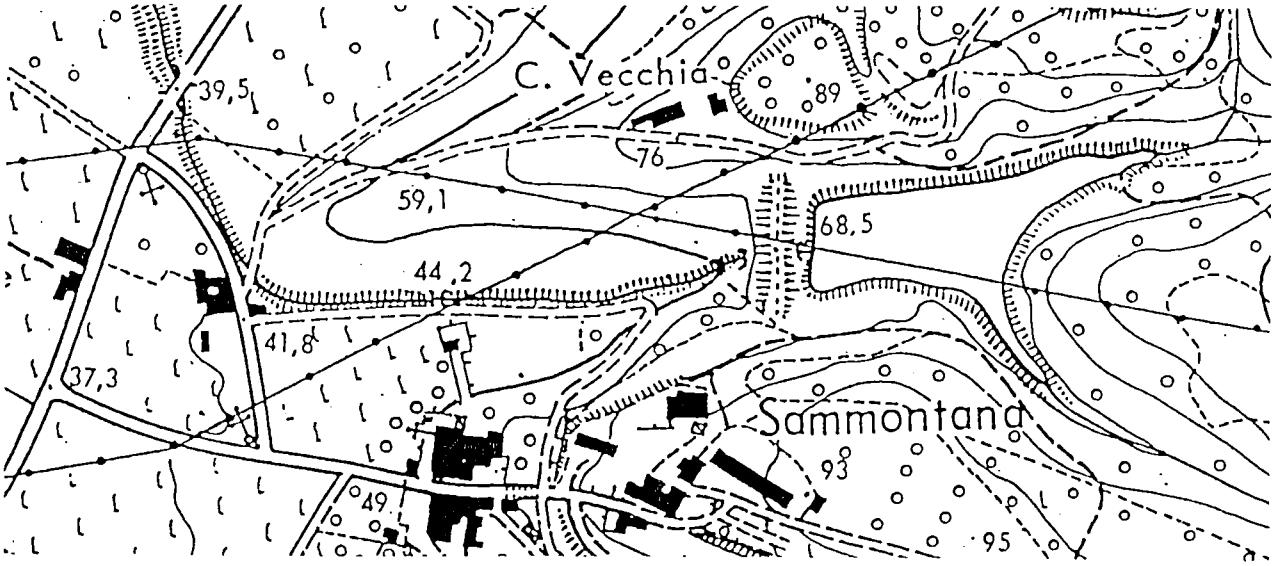
PROVINCIA DI FIRENZE
COMUNE DI MONTELUPO FIORENTINO

PROGETTO:

STUDIO DELL'ONDA DI SOMMERSIONE CONSEGUENTE AL CROLLO DELLA DIGA DI SAMMONTANA

COMMITTENTE:

CONTI M. ED A. DZIEDUSZYCKI



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STUDIO ASSOCIATO
INGEGNERIA PER L'AMBIENTE
ing. C.Lubello-ing. F.Preti-ing. D.Settesoldi

Progetto di:

Ing. Claudio Lubello
Ing. Lorenzo Conti

data
GENNAIO 1997

ANALYSIS OF THE DOWNSTREAM FLOOD HYDROGRAPH

PRODUCED BY THE DAM BREAK OF

DIGA DI SAMMONTANA

ON

RIO DI SAMMONTANA

ANALYSIS BY

ING. CLAUDIO LUBELLO
ING. LORENZO CONTI

STUDIO ASSOCIATO INGEGNERIA PER L'AMBIENTE
VIALE DEI CADORNA 13, FIRENZE

BASED ON PROCEDURE DEVELOPED BY
DANNY L. FREAD, PH.D., SR. RESEARCH HYDROLOGIST

QUALITY CONTROL TESTING AND OTHER SUPPORT BY
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*** SUMMARY OF INPUT DATA ***
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INPUT CONTROL PARAMETERS FOR Diga di Sammontana

PARAMETER	VARIABLE	VALUE
NUMBER OF DYNAMIC ROUTING REACHES	KKN	1
TYPE OF RESERVOIR ROUTING	KUI	0
MULTIPLE DAM INDICATOR	MULDAM	0
PRINTING INSTRUCTIONS FOR INPUT SUMMARY	KDMP	5
NO. OF RESERVOIR INFLOW HYDROGRAPH POINTS	ITEH	6
INTERVAL OF CROSS-SECTION INFO PRINTED OUT WHEN JNK=9	NPRT	0
FLOOD-PLAIN MODEL PARAMETER	KFLP	0
METRIC INPUT/OUTPUT OPTION	METRIC	1

IOPUT= 0 0 0 0 0 0 0 0 0 0 0 0

Diga di Sammontana RESERVOIR
TABLE OF ELEVATION VS SURFACE AREA

SURFACE AREA (SQ KM) SA(K)	ELEVATION (M) HSA(K)
.02163	68.41
.02005	67.16
.01744	65.16
.01470	63.16
.01180	61.16
.00865	59.16
.00509	57.16
.00051	55.16

Diga di Sammontana RESERVOIR AND BREACH PARAMETERS

PARAMETER	UNITS	VARIABLE	VALUE
LENGTH OF RESERVOIR	KM	RLM	.00
ELEVATION OF WATER SURFACE	M	YO	68.41
SIDE SLOPE OF BREACH		Z	2.00
ELEVATION OF BOTTOM OF BREACH	M	YBMIN	55.16
WIDTH OF BASE OF BREACH	M	BB	18.00
TIME TO MAXIMUM BREACH SIZE	HOUR	TFH	.25
ELEVATION (MSL) OF BOTTOM OF DAM	M	DATUM	55.16
VOLUME-SURFACE AREA PARAMETER		VOL	.00
ELEVATION OF WATER WHEN BREACHED	M	HF	68.41
ELEVATION OF TOP OF DAM	M	HD	68.41
ELEVATION OF UNCONTROLLED SPILLWAY CREST	M	HSP	.00
ELEVATION OF CENTER OF GATE OPENINGS	M	HGT	.00
DISCHARGE COEF. FOR UNCONTROLLED SPILLWAY		CS	.00
DISCHARGE COEF. FOR GATE FLOW		CG	.00
DISCHARGE COEF. FOR UNCONTROLLED WEIR FLOW		CDO	.00
DISCHARGE THRU TURBINES	CMS	QT	-50.00

CDO SHOULD NOT BE 0.0 IF OVERTOPPING MAY OCCUR

QTT(L,K):

80.00	.00	.00	.00	.00	.00

DHF(INTERVAL BETWEEN INPUT HYDROGRAPH ORDINATES) = .00 HRS.
TEH(TIME AT WHICH COMPUTATIONS TERMINATE)= .8000 HRS.
BREX(BREACH EXPONENT) = 2.000
MUD(MUD FLOW OPTION) = 0
IWF(TYPE OF WAVE FRONT TRACKING) = 0
KPRES(WETTED PERIMETER OPTION) = 0
KSL(LANDSLIDE PARAMETER) = 0
DFR(WINDOW FOR CRITICAL FROUDE NO. IN MIX FLOW ALGORITHM)= .050

INFLOW HYDROGRAPH TO Diga di Sammontana
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22.00	24.50	27.00	20.00	10.00	10.00

TIME OF INFLOW HYDROGRAPH ORDINATES
****

.0000	.1500	.2000	.4000	.7000	1.0000

CROSS-SECTIONAL PARAMETERS FOR Sammontana
BELOW Diga di Sammontana

PARAMETER	VARIABLE	VALUE
NUMBER OF CROSS-SECTIONS	NS	13
MAXIMUM NUMBER OF TOP WIDTHS	NCS	7
NUMBER OF CROSS-SECTIONAL HYDROGRAPHS TO PLOT	NTT	6
TYPE OF OUTPUT OTHER THAN HYDROGRAPH PLOTS	JNK	4
CROSS-SECTIONAL SMOOTHING PARAMETER	KSA	0
DOWNSTREAM SUPERCRITICAL OR NOT	KSUPC	3
NO. OF LATERAL INFLOW HYDROGRAPHS	LQ	0
NO. OF POINTS IN GATE CONTROL CURVE	KCG	0

NUMBER OF CROSS-SECTION WHERE HYDROGRAPH DESIRED
(MAX NUMBER OF HYDROGRAPHS = 6)

1 2 3 4 5 6

CROSS-SECTIONAL VARIABLES FOR Sammontana
BELOW Diga di Sammontana

PARAMETER	UNITS	VARIABLE
LOCATION OF CROSS-SECTION	KM	XS(I)
ELEVATION(MSL) OF FLOODING AT CROSS-SECTION	M	FSTG(I)
ELEV CORRESPONDING TO EACH TOP WIDTH	M	HS(K,I)
TOP WIDTH CORRESPONDING TO EACH ELEV (ACTIVE FLOW PORTION)	M	BS(K,I)
TOP WIDTH CORRESPONDING TO EACH ELEV (OFF-CHANNEL PORTION)	M	BSS(K,I)
NUMBER OF CROSS-SECTION		I
NUMBER OF ELEVATION LEVEL		K

CROSS-SECTION NUMBER 1

XS(I) = .010 FSTG(I) = .00

HS ...	55.0	56.0	58.0	60.0	62.0	64.0	66.0
BS ...	.0	40.0	50.0	55.0	59.0	59.0	59.0
BSS ...	.0	20.0	30.0	35.0	39.0	39.0	39.0

CROSS-SECTION NUMBER 2

XS(I) = .020 FSTG(I) = .00

HS ...	52.0	54.0	56.0	58.0	60.0	62.0	64.0
BS ...	.0	30.0	45.0	60.0	70.0	75.0	75.0
BSS ...	.0	10.0	25.0	40.0	50.0	55.0	55.0

CROSS-SECTION NUMBER 3

XS(I) = .032 FSTG(I) = .00

HS ...	51.0	52.0	54.0	56.0	58.0	60.0	62.0
BS ...	.0	18.0	45.0	55.0	67.0	75.0	80.0
BSS ...	.0	.0	25.0	35.0	47.0	45.0	60.0

CROSS-SECTION NUMBER 4

XS(I) = .044 FSTG(I) = .00

HS ...	50.0	52.0	54.0	56.0	58.0	60.0	62.0
BS ...	.0	43.0	55.0	67.0	75.0	80.0	80.0
BSS ...	.0	23.0	35.0	47.0	55.0	60.0	60.0

CROSS-SECTION NUMBER 5

XS(I) = .062 FSTG(I) = .00

HS ...	49.3	50.0	52.0	54.0	56.0	58.0	60.0
BS ...	.0	13.0	47.0	70.0	78.0	87.0	87.0
BSS ...	.0	.0	27.0	50.0	58.0	67.0	67.0

CROSS-SECTION NUMBER 6

XS(I) = .080 FSTG(I) = .00

HS ...	48.7	50.0	52.0	54.0	56.0	58.0	60.0
BS ...	.0	30.0	59.0	78.0	88.0	97.0	97.0
BSS ...	.0	.0	39.0	58.0	68.0	77.0	77.0

CROSS-SECTION NUMBER 7

XS(I) = .098 FSTG(I) = .00

HS ...	48.0	50.0	52.0	54.0	56.0	58.0	60.0
BS ...	.0	35.0	70.0	90.0	100.0	110.0	110.0
BSS ...	.0	15.0	50.0	70.0	80.0	90.0	90.0

CROSS-SECTION NUMBER 8

XS(I) = .133 FSTG(I) = .00

HS ...	47.3	48.0	50.0	52.0	54.0	56.0	58.0
BS ...	.0	20.0	62.0	94.0	108.0	115.0	115.0
BSS ...	.0	.0	32.0	64.0	78.0	85.0	85.0

CROSS-SECTION NUMBER 9

XS(I) = .168 FSTG(I) = .00

HS ...	46.7	48.0	50.0	52.0	54.0	56.0	58.0
BS ...	.0	43.0	87.0	107.0	122.0	122.0	122.0
BSS ...	.0	13.0	57.0	77.0	92.0	92.0	92.0

CROSS-SECTION NUMBER 10

XS(I) = .188 FSTG(I) = .00

HS ...	46.3	48.0	50.0	52.0	54.0	56.0	58.0
BS ...	.0	34.0	50.0	118.0	130.0	130.0	130.0
BSS ...	.0	4.0	20.0	88.0	100.0	100.0	100.0

CROSS-SECTION NUMBER 11

XS(I) = .228 FSTG(I) = .00

HS ...	45.3	46.0	48.0	50.0	52.0	54.0	56.0
BS ...	.0	45.0	100.0	180.0	180.0	180.0	180.0
BSS ...	.0	15.0	70.0	150.0	150.0	150.0	150.0

CROSS-SECTION NUMBER 12

XS(I) = .253 FSTG(I) = .00

HS ...	44.7	46.0	48.0	50.0	52.0	54.0	56.0
BS ...	.0	110.0	140.0	140.0	140.0	140.0	140.0
BSS ...	.0	80.0	110.0	110.0	110.0	110.0	110.0

CROSS-SECTION NUMBER 13

XS(I) = .278 FSTG(I) = .00

HS ...	44.0	46.0	48.0	50.0	52.0	54.0	56.0
BS ...	.0	133.0	190.0	190.0	190.0	190.0	190.0
BSS ...	.0	103.0	160.0	160.0	160.0	160.0	160.0

MANNING N ROUGHNESS COEFFICIENTS FOR THE GIVEN REACHES
(CM(K,I),K=1,NCS) WHERE I = REACH NUMBER

REACH 1 ...	.080	.080	.080	.080	.080	.080	.080
REACH 2 ...	.080	.080	.080	.080	.080	.080	.080
REACH 3 ...	.080	.080	.080	.080	.080	.080	.080
REACH 4 ...	.035	.035	.035	.035	.035	.035	.035
REACH 5 ...	.035	.035	.035	.035	.035	.035	.035
REACH 6 ...	.035	.035	.035	.035	.035	.035	.035
REACH 7 ...	.035	.035	.035	.035	.035	.035	.035
REACH 8 ...	.035	.035	.035	.035	.035	.035	.035
REACH 9 ...	.035	.035	.035	.035	.035	.035	.035
REACH 10 ...	.035	.035	.035	.035	.035	.035	.035
REACH 11 ...	.035	.035	.035	.035	.035	.035	.035
REACH 12 ...	.035	.035	.035	.035	.035	.035	.035

CROSS-SECTIONAL VARIABLES FOR Sammontana
BELOW Diga di Sammontana

PARAMETER	UNITS	VARIABLE
MINIMUM COMPUTATIONAL DISTANCE USED BETWEEN CROSS-SECTIONS	KM	DXM(I)
CONTRACTION - EXPANSION COEFFICIENTS BETWEEN CROSS-SECTIONS		FKC(I)

REACH NUMBER	DXM(I)	FKC(I)
1	.020	.000
2	.020	.000
3	.020	.000

4	.001	.000
5	.002	.000
6	.009	.000
7	.004	.000
8	.005	.000
9	.009	.000
10	.002	.000
11	.003	.000
12	.012	.000

DOWNSTREAM FLOW PARAMETERS FOR Sammontana
BELOW Diga di Sammontana

PARAMETER	UNITS	VARIABLE	VALUE
MAX DISCHARGE AT DOWNSTREAM EXTREMITY	CMS	QMAXD	.0
MAX LATERAL OUTFLOW PRODUCING LOSSES	CMS /M	QLL	.000
INITIAL SIZE OF TIME STEP	HOUR	DTHM	.0000
DOWNSTREAM BOUNDARY PARAMETER	M	YDN	.000000
SLOPE OF CHANNEL DOWNSTREAM OF DAM	%	SOM	.00
THETA WEIGHTING FACTOR		THETA	.50
CONVERGENCE CRITERION FOR STAGE	M	EPSY	.000000
TIME AT WHICH DAM STARTS TO FAIL	HOUR	TFI	.00

AT REACH= 4 DXM SHOULD BE CHANGED TO .001 DUE TO EXP/CONTRACT CRITERIA
AT REACH= 6 DXM SHOULD BE CHANGED TO .009 DUE TO EXP/CONTRACT CRITERIA
AT REACH= 7 DXM SHOULD BE CHANGED TO .004 DUE TO EXP/CONTRACT CRITERIA
AT REACH= 8 DXM SHOULD BE CHANGED TO .005 DUE TO EXP/CONTRACT CRITERIA

COMPUTATIONS WILL USE THE FOLLOWING DXM VALUES

.020 .020 .020 .001 .002 .009 .004 .005 .009 .002 .003
.012

TOTAL NUMBER OF CROSS SECTIONS (ORIGINAL+INTERPOLATED) (N)=80 (MAXIMUM ALLOWABLE = 200

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*** SUMMARY OF OUTPUT DATA ***
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CROSS-SECTION NO.	KM	BOTTOM ELEVATION M	REACH NO.	REACH LENGTH KM	SLOPE %
1	.01	55.00			
2	.02	52.00	1	.01	30.00
3	.03	51.00	2	.01	8.33
4	.04	50.00	3	.01	8.33
5	.06	49.33	4	.02	3.72
6	.08	48.66	5	.02	3.72
7	.10	48.00	6	.02	3.67
8	.13	47.33	7	.03	1.91
9	.17	46.66	8	.03	1.91
10	.19	46.33	9	.02	1.65
11	.23	45.33	10	.04	2.50
12	.25	44.66	11	.02	2.68
13	.28	44.00	12	.02	2.64

MESAGE

TOTAL VOLUME IN RESERVOIR BEHIND
Diga di Sammontana = .2 CU. M (MILLION)

DEFINITION OF VARIABLES IN RESERVOIR DEPLETION TABLE

PARAMETER	UNITS	VARIABLE
TIME STEP FROM START OF ANALYSIS		I
ITERATIONS NECESSARY TO SOLVE FLOW EQUATIONS		K
ELAPSED TIME FROM START OF ANALYSIS	HOUR	TTP(I)
TOTAL OUTFLOW FROM DAM	CMS	Q(I)
ELEVATION OF WATER SURFACE AT DAM	M	H2

ELEVATION OF BOTTOM OF BREACH	M	YB
EST DEPTH OF FLOW IMMEDIATELY DOWNSTREAM	M	D
SUBMERGENCE COEFFICIENT		SUB
VELOCITY CORRECTION		VCOR
TOTAL VOLUME DISCHARGED FROM TIME OF BREACH	MILLION CU M	OUTVOL
BREACH WIDTH	M	BB
RECTANGULAR BREACH DISCHARGE COEFFICIENT		COFR
INFLOW TO RESERVOIR	CMS	QI(I)
BREACH OUTFLOW	CMS	QBRECH
SPILLWAY OUTFLOW	CMS	QSPIL

RESERVOIR DEPLETION TABLE

I	K	TTP(I)	Q(I)	H2	YB	D	SUB	VCOR	OUTVOL	BB	COFR	QI(I)	QBRECH	QSPIL
***	**	******	********	*******	*******	*******	****	****	*********	****	****	*****	******	*****
1	0	.000	80	68.41	68.41	56.17	1.00	1.00	.0	.0	3.10	22.	0.	80.
2	2	.005	77	68.35	68.40	56.15	1.00	.98	.0	.0	3.10	22.	0.	77.
3	2	.010	74	68.31	68.39	56.14	1.00	.99	.0	.0	3.10	22.	0.	75.
4	1	.015	72	68.26	68.36	56.13	1.00	.99	.0	.1	3.10	22.	0.	72.
5	1	.020	69	68.22	68.32	56.11	1.00	.99	.0	.1	3.10	22.	0.	69.
6	1	.025	66	68.18	68.28	56.10	1.00	.99	.0	.2	3.10	22.	0.	67.
7	1	.030	64	68.15	68.22	56.08	1.00	.99	.0	.3	3.10	22.	0.	64.
8	1	.035	61	68.11	68.15	56.07	1.00	.98	.0	.4	3.10	23.	0.	61.
9	1	.040	58	68.08	68.07	56.05	1.00	1.04	.0	.5	3.10	23.	0.	59.
10	1	.045	56	68.05	67.98	56.04	1.00	1.01	.0	.6	3.10	23.	0.	56.
11	1	.050	53	68.03	67.88	56.02	1.00	1.00	.0	.7	3.10	23.	0.	53.
12	1	.055	50	68.00	67.77	56.01	1.00	1.00	.0	.9	3.10	23.	0.	51.
13	1	.060	48	67.98	67.64	55.99	1.00	1.00	.0	1.0	3.10	23.	1.	48.
14	1	.065	46	67.96	67.51	55.97	1.00	1.00	.0	1.2	3.10	23.	1.	45.
15	1	.070	44	67.94	67.37	55.96	1.00	1.00	.0	1.4	3.10	23.	2.	43.
16	1	.075	42	67.92	67.22	55.94	1.00	1.00	.0	1.6	3.10	23.	3.	40.
17	1	.080	41	67.91	67.05	55.93	1.00	1.00	.0	1.8	3.10	23.	4.	37.
18	1	.085	41	67.89	66.88	55.93	1.00	1.00	.0	2.1	3.10	23.	6.	35.
19	1	.090	41	67.87	66.69	55.93	1.00	1.00	.0	2.3	3.10	23.	9.	32.
20	1	.095	42	67.86	66.49	55.94	1.00	1.00	.0	2.6	3.10	24.	13.	29.
21	1	.100	44	67.84	66.29	55.96	1.00	1.00	.0	2.9	3.10	24.	18.	27.
22	1	.105	47	67.82	66.07	55.98	1.00	1.00	.0	3.2	3.10	24.	24.	24.
23	2	.110	52	67.80	65.84	56.01	1.00	1.00	.0	3.5	3.10	24.	31.	21.
24	2	.115	58	67.77	65.60	56.05	1.00	1.00	.0	3.8	3.10	24.	40.	19.
25	2	.120	65	67.74	65.35	56.09	1.00	1.00	.0	4.1	3.10	24.	50.	16.
26	2	.125	75	67.70	65.10	56.14	1.00	1.00	.0	4.5	3.10	24.	62.	13.
27	2	.130	86	67.65	64.82	56.20	1.00	1.00	.0	4.9	3.10	24.	76.	11.
28	2	.135	99	67.59	64.54	56.26	1.00	1.00	.0	5.2	3.10	24.	92.	8.
29	2	.140	114	67.52	64.25	56.33	1.00	1.00	.0	5.6	3.10	24.	109.	5.
30	2	.145	131	67.43	63.95	56.40	1.00	1.00	.0	6.1	3.10	24.	129.	3.
31	2	.150	149	67.33	63.64	56.48	1.00	1.00	.0	6.5	3.10	25.	150.	0.
32	2	.155	172	67.21	63.31	56.56	1.00	1.00	.0	6.9	3.10	25.	172.	0.

33	2	.160	195	67.06	62.98	56.65	1.00	1.00	.0	7.4	3.10	25.
196.		0.										
34	2	.165	219	66.90	62.64	56.73	1.00	1.00	.0	7.8	3.10	25.
220.		0.										
35	2	.170	244	66.71	62.28	56.81	1.00	1.00	.0	8.3	3.10	25.
245.		0.										
36	2	.175	269	66.49	61.92	56.89	1.00	1.00	.1	8.8	3.10	26.
270.		0.										
37	2	.180	294	66.25	61.54	56.96	1.00	1.00	.1	9.3	3.10	26.
295.		0.										
38	2	.185	318	65.98	61.15	57.03	1.00	1.01	.1	9.9	3.10	26.
319.		0.										
39	2	.190	342	65.68	60.75	57.10	1.00	1.01	.1	10.4	3.10	26.
342.		0.										
40	2	.195	363	65.35	60.35	57.16	1.00	1.01	.1	11.0	3.10	27.
364.		0.										
41	2	.200	384	64.99	59.93	57.21	1.00	1.01	.1	11.5	3.10	27.
384.		0.										
42	2	.205	402	64.61	59.50	57.26	1.00	1.01	.1	12.1	3.10	27.
402.		0.										
43	2	.210	417	64.19	59.06	57.30	1.00	1.01	.1	12.7	3.10	27.
418.		0.										
44	2	.215	430	63.73	58.61	57.33	1.00	1.02	.1	13.3	3.10	26.
431.		0.										
45	2	.220	440	63.25	58.15	57.35	1.00	1.02	.1	13.9	3.10	26.
440.		0.										
46	2	.225	446	62.73	57.67	57.37	1.00	1.02	.1	14.6	3.10	26.
447.		0.										
47	2	.230	449	62.17	57.19	57.38	1.00	1.03	.1	15.2	3.10	26.
449.		0.										
48	2	.235	447	61.58	56.70	57.37	1.00	1.04	.1	15.9	3.10	26.
448.		0.										
49	2	.240	442	60.95	56.20	57.36	1.00	1.05	.1	16.6	3.10	26.
442.		0.										
50	2	.245	431	60.27	55.68	57.33	1.00	1.06	.2	17.3	3.10	25.
432.		0.										
51	2	.250	416	59.54	55.16	57.29	1.00	1.09	.2	18.0	3.10	25.
416.		0.										
52	2	.255	313	58.84	55.16	57.02	1.00	1.10	.2	18.0	3.10	25.
314.		0.										
53	2	.260	232	58.24	55.16	56.77	1.00	1.10	.2	18.0	3.10	25.
233.		0.										
54	2	.265	174	57.76	55.16	56.57	1.00	1.11	.2	18.0	3.10	25.
175.		0.										
55	2	.270	132	57.36	55.16	56.41	1.00	1.12	.2	18.0	3.10	25.
133.		0.										
56	2	.275	102	57.03	55.16	56.28	1.00	1.13	.2	18.0	3.10	24.
103.		0.										
57	2	.280	80	56.76	55.16	56.17	1.00	1.15	.2	18.0	3.10	24.
81.		0.										
58	2	.285	64	56.54	55.16	56.09	1.00	1.18	.2	18.0	3.10	24.
64.		0.										
59	2	.290	52	56.36	55.16	56.02	1.00	1.22	.2	18.0	3.10	24.
53.		0.										
60	2	.295	43	56.21	55.16	55.95	.98	1.28	.2	18.0	3.10	24.
44.		0.										
61	2	.300	37	56.10	55.16	55.90	.96	1.35	.2	18.0	3.10	24.
38.		0.										
62	2	.305	33	56.02	55.16	55.86	.92	1.43	.2	18.0	3.10	23.
33.		0.										
63	2	.310	29	55.96	55.16	55.82	.88	1.51	.2	18.0	3.10	23.
30.		0.										
64	2	.315	27	55.91	55.16	55.80	.84	1.58	.2	18.0	3.10	23.
28.		0.										
65	2	.320	25	55.88	55.16	55.78	.80	1.64	.2	18.0	3.10	23.
26.		0.										
66	2	.325	24	55.86	55.16	55.77	.78	1.68	.2	18.0	3.10	23.
25.		0.										
67	2	.330	23	55.84	55.16	55.76	.76	1.71	.2	18.0	3.10	22.
24.		0.										
68	2	.335	23	55.83	55.16	55.75	.75	1.73	.2	18.0	3.10	22.
23.		0.										
69	1	.340	22	55.82	55.16	55.74	.73	1.75	.2	18.0	3.10	22.
23.		0.										
70	1	.345	22	55.82	55.16	55.74	.73	1.76	.2	18.0	3.10	22.
22.		0.										
71	1	.350	21	55.81	55.16	55.73	.71	1.74	.2	18.0	3.10	22.
22.		0.										
72	2	.355	21	55.81	55.16	55.73	.71	1.71	.2	18.0	3.10	22.
21.		0.										
73	1	.360	21	55.81	55.16	55.72	.71	1.69	.2	18.0	3.10	21.
21.		0.										

74	1	.365	21	55.82	55.16	55.72	.71	1.67	.2	18.0	3.10	21.	21.
		0.											
75	1	.370	20	55.82	55.16	55.72	.71	1.65	.2	18.0	3.10	21.	21.
		0.											
76	1	.375	20	55.82	55.16	55.72	.71	1.64	.2	18.0	3.10	21.	21.
		0.											
77	1	.380	20	55.82	55.16	55.72	.71	1.62	.2	18.0	3.10	21.	21.
		0.											
78	1	.385	20	55.82	55.16	55.71	.71	1.61	.2	18.0	3.10	21.	20.
		0.											
79	1	.390	20	55.82	55.16	55.71	.71	1.60	.2	18.0	3.10	20.	20.
		0.											
80	1	.395	20	55.82	55.16	55.71	.71	1.59	.2	18.0	3.10	20.	20.
		0.											
81	1	.400	20	55.82	55.16	55.71	.71	1.58	.2	18.0	3.10	20.	20.
		0.											
82	1	.405	19	55.82	55.16	55.71	.71	1.58	.2	18.0	3.10	20.	20.
		0.											
83	1	.410	19	55.82	55.16	55.71	.71	1.58	.2	18.0	3.10	20.	20.
		0.											
84	1	.415	19	55.82	55.16	55.70	.71	1.58	.2	18.0	3.10	20.	20.
		0.											
85	1	.420	19	55.82	55.16	55.70	.71	1.58	.2	18.0	3.10	19.	20.
		0.											
86	1	.425	19	55.81	55.16	55.70	.71	1.59	.2	18.0	3.10	19.	20.
		0.											
87	1	.430	19	55.81	55.16	55.70	.71	1.61	.2	18.0	3.10	19.	20.
		0.											
88	1	.435	19	55.80	55.16	55.70	.71	1.63	.2	18.0	3.10	19.	19.
		0.											
89	1	.440	19	55.80	55.16	55.70	.71	1.66	.2	18.0	3.10	19.	19.
		0.											
90	1	.445	19	55.79	55.16	55.70	.71	1.69	.2	18.0	3.10	19.	19.
		0.											
91	1	.450	19	55.78	55.16	55.70	.71	1.74	.2	18.0	3.10	18.	19.
		0.											
92	1	.455	19	55.77	55.16	55.70	.71	1.81	.2	18.0	3.10	18.	19.
		0.											
93	1	.460	19	55.76	55.16	55.70	.69	1.86	.2	18.0	3.10	18.	19.
		0.											
94	1	.465	18	55.75	55.16	55.69	.67	1.89	.2	18.0	3.10	18.	19.
		0.											
95	2	.470	17	55.74	55.16	55.69	.64	1.86	.2	18.0	3.10	18.	18.
		0.											
96	2	.475	17	55.74	55.16	55.67	.64	1.85	.2	18.0	3.10	18.	18.
		0.											
97	1	.480	17	55.74	55.16	55.67	.64	1.83	.2	18.0	3.10	17.	18.
		0.											
98	1	.485	17	55.74	55.16	55.67	.64	1.82	.2	18.0	3.10	17.	17.
		0.											
99	1	.490	17	55.74	55.16	55.67	.64	1.82	.2	18.0	3.10	17.	17.
		0.											
100	1	.495	17	55.74	55.16	55.67	.64	1.82	.2	18.0	3.10	17.	17.
		0.											
101	1	.500	16	55.74	55.16	55.66	.64	1.82	.2	18.0	3.10	17.	17.
		0.											
102	1	.505	16	55.73	55.16	55.66	.64	1.83	.2	18.0	3.10	17.	17.
		0.											
103	1	.510	16	55.73	55.16	55.66	.64	1.85	.2	18.0	3.10	16.	17.
		0.											
104	1	.517	16	55.72	55.16	55.66	.64	1.89	.2	18.0	3.10	16.	17.
		0.											
105	1	.523	16	55.72	55.16	55.66	.64	1.95	.2	18.0	3.10	16.	17.
		0.											
106	1	.531	16	55.71	55.16	55.66	.63	1.99	.2	18.0	3.10	16.	16.
		0.											
107	0	.54	16										
108	0	.55	16										
109	0	.55	16										
110	0	.56	16										
111	0	.58	16										
112	0	.59	16										
113	0	.60	16										
114	0	.61	16										
115	0	.63	16										
116	0	.65	16										
117	0	.67	16										
118	0	.69	16										
119	0	.71	16										
120	0	.74	16										
121	0	.76	16										
122	0	.79	16										
123	0	.83	16										

PARAMETER	UNITS	VARIABLE	VALUE
INITIAL FLOW	CMS	Q(1)	80.
MAX FLOW	CMS	QM	449.
FINAL FLOW	CMS	Q(NU)	17.
TIME TO MAX FLOW	HRS	TP	.23
NUMBER OF TIME STEPS		NNU	123
TOTAL VOLUME DISCHARGED FROM RESERVOIR	MILLION CU M	DISVOL	0.

INITIAL CONDITIONS

I= 1	X= .010	YN= 55.97	DEPN= .97	YC= 56.25	DEPC= 1.25	IFR= 1	ITN= 13	ITC= 13		
I= 2	X= .020	YN= 53.78	DEPN= 1.78	YC= 53.88	DEPC= 1.88	IFR= 1	ITN= 13	ITC= 13		
I= 3	X= .032	YN= 52.66	DEPN= 1.66	YC= 52.75	DEPC= 1.75	IFR= 1	ITN= 13	ITC= 13		
I= 4	X= .044	YN= 51.33	DEPN= 1.33	YC= 51.62	DEPC= 1.62	IFR= 1	ITN= 13	ITC= 13		
I= 5	X= .045	YN= 51.29	DEPN= 1.33	YC= 51.59	DEPC= 1.63	IFR= 1	ITN= 13	ITC= 13		
I= 6	X= .046	YN= 51.26	DEPN= 1.33	YC= 51.55	DEPC= 1.63	IFR= 1	ITN= 13	ITC= 13		
I= 7	X= .047	YN= 51.22	DEPN= 1.33	YC= 51.52	DEPC= 1.63	IFR= 1	ITN= 13	ITC= 13		
I= 8	X= .048	YN= 51.18	DEPN= 1.33	YC= 51.48	DEPC= 1.63	IFR= 1	ITN= 13	ITC= 13		
I= 9	X= .049	YN= 51.15	DEPN= 1.34	YC= 51.44	DEPC= 1.63	IFR= 1	ITN= 13	ITC= 13		
I= 10	X= .050	YN= 51.11	DEPN= 1.34	YC= 51.40	DEPC= 1.63	IFR= 1	ITN= 13	ITC= 13		
I= 11	X= .051	YN= 51.08	DEPN= 1.34	YC= 51.36	DEPC= 1.62	IFR= 1	ITN= 13	ITC= 13		
I= 12	X= .052	YN= 51.04	DEPN= 1.34	YC= 51.33	DEPC= 1.62	IFR= 1	ITN= 13	ITC= 13		
I= 13	X= .053	YN= 51.01	DEPN= 1.34	YC= 51.29	DEPC= 1.63	IFR= 1	ITN= 13	ITC= 13		
I= 14	X= .054	YN= 50.96	DEPN= 1.34	YC= 51.26	DEPC= 1.63	IFR= 1	ITN= 13	ITC= 13		
I= 15	X= .055	YN= 50.93	DEPN= 1.34	YC= 51.23	DEPC= 1.64	IFR= 1	ITN= 13	ITC= 13		
I= 16	X= .056	YN= 50.89	DEPN= 1.34	YC= 51.20	DEPC= 1.65	IFR= 1	ITN= 13	ITC= 13		
I= 17	X= .057	YN= 50.86	DEPN= 1.34	YC= 51.17	DEPC= 1.66	IFR= 1	ITN= 13	ITC= 13		
I= 18	X= .058	YN= 50.83	DEPN= 1.35	YC= 51.15	DEPC= 1.67	IFR= 1	ITN= 13	ITC= 13		
I= 19	X= .059	YN= 50.80	DEPN= 1.36	YC= 51.12	DEPC= 1.68	IFR= 1	ITN= 13	ITC= 13		
I= 20	X= .060	YN= 50.77	DEPN= 1.37	YC= 51.10	DEPC= 1.69	IFR= 1	ITN= 13	ITC= 13		
I= 21	X= .061	YN= 50.74	DEPN= 1.38	YC= 51.07	DEPC= 1.70	IFR= 1	ITN= 13	ITC= 13		
I= 22	X= .062	YN= 50.72	DEPN= 1.39	YC= 51.04	DEPC= 1.71	IFR= 1	ITN= 13	ITC= 13		
I= 23	X= .064	YN= 50.62	DEPN= 1.37	YC= 50.95	DEPC= 1.69	IFR= 1	ITN= 13	ITC= 13		
I= 24	X= .066	YN= 50.53	DEPN= 1.35	YC= 50.85	DEPC= 1.67	IFR= 1	ITN= 13	ITC= 13		
I= 25	X= .068	YN= 50.45	DEPN= 1.34	YC= 50.76	DEPC= 1.65	IFR= 1	ITN= 13	ITC= 13		
I= 26	X= .070	YN= 50.36	DEPN= 1.33	YC= 50.67	DEPC= 1.64	IFR= 1	ITN= 13	ITC= 13		
I= 27	X= .072	YN= 50.28	DEPN= 1.32	YC= 50.58	DEPC= 1.62	IFR= 1	ITN= 13	ITC= 13		
I= 28	X= .074	YN= 50.20	DEPN= 1.31	YC= 50.49	DEPC= 1.61	IFR= 1	ITN= 13	ITC= 13		
I= 29	X= .076	YN= 50.12	DEPN= 1.31	YC= 50.41	DEPC= 1.60	IFR= 1	ITN= 13	ITC= 13		
I= 30	X= .078	YN= 50.04	DEPN= 1.31	YC= 50.33	DEPC= 1.59	IFR= 1	ITN= 13	ITC= 13		
I= 31	X= .080	YN= 49.97	DEPN= 1.31	YC= 50.25	DEPC= 1.59	IFR= 1	ITN= 13	ITC= 13		
I= 32	X= .089	YN= 49.71	DEPN= 1.38	YC= 50.02	DEPC= 1.69	IFR= 1	ITN= 13	ITC= 13		
I= 33	X= .098	YN= 49.63	DEPN= 1.63	YC= 49.76	DEPC= 1.76	IFR= 1	ITN= 13	ITC= 13		
I= 34	X= .102	YN= 49.52	DEPN= 1.61	YC= 49.66	DEPC= 1.74	IFR= 1	ITN= 13	ITC= 13		

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   I=   35   X=    .107   YN=     49.42   DEPN=     1.59   YC=     49.55   DEPC=     1.72   IFR= 1
ITN=   13  ITC=   13
   I=   36   X=    .111   YN=     49.31   DEPN=     1.56   YC=     49.43   DEPC=     1.69   IFR= 1
ITN=   13  ITC=   13
   I=   37   X=    .115   YN=     49.19   DEPN=     1.53   YC=     49.32   DEPC=     1.65   IFR= 1
ITN=   13  ITC=   13
   I=   38   X=    .120   YN=     49.07   DEPN=     1.49   YC=     49.19   DEPC=     1.61   IFR= 1
ITN=   13  ITC=   13
   I=   39   X=    .124   YN=     48.95   DEPN=     1.45   YC=     49.06   DEPC=     1.56   IFR= 1
ITN=   13  ITC=   13
   I=   40   X=    .129   YN=     48.81   DEPN=     1.40   YC=     48.92   DEPC=     1.51   IFR= 1
ITN=   13  ITC=   13
   I=   41   X=    .133   YN=     48.67   DEPN=     1.34   YC=     48.78   DEPC=     1.45   IFR= 1
ITN=   13  ITC=   13
   I=   42   X=    .138   YN=     48.56   DEPN=     1.32   YC=     48.66   DEPC=     1.43   IFR= 1
ITN=   13  ITC=   13
   I=   43   X=    .143   YN=     48.45   DEPN=     1.31   YC=     48.55   DEPC=     1.41   IFR= 1
ITN=   13  ITC=   13
   I=   44   X=    .148   YN=     48.34   DEPN=     1.30   YC=     48.44   DEPC=     1.40   IFR= 1
ITN=   13  ITC=   13
   I=   45   X=    .153   YN=     48.24   DEPN=     1.29   YC=     48.33   DEPC=     1.39   IFR= 1
ITN=   13  ITC=   13
   I=   46   X=    .158   YN=     48.14   DEPN=     1.29   YC=     48.23   DEPC=     1.38   IFR= 1
ITN=   13  ITC=   13
   I=   47   X=    .163   YN=     48.05   DEPN=     1.30   YC=     48.14   DEPC=     1.38   IFR= 1
ITN=   13  ITC=   13
   I=   48   X=    .168   YN=     47.99   DEPN=     1.33   YC=     48.04   DEPC=     1.38   IFR= 1
ITN=   13  ITC=   13
   I=   49   X=    .178   YN=     47.95   DEPN=     1.45   YC=     48.01   DEPC=     1.51   IFR= 1
ITN=   13  ITC=   13
   I=   50   X=    .188   YN=     47.79   DEPN=     1.46   YC=     47.99   DEPC=     1.66   IFR= 1
ITN=   13  ITC=   13
   I=   51   X=    .190   YN=     47.72   DEPN=     1.44   YC=     47.91   DEPC=     1.63   IFR= 1
ITN=   13  ITC=   13
   I=   52   X=    .192   YN=     47.64   DEPN=     1.41   YC=     47.83   DEPC=     1.60   IFR= 1
ITN=   13  ITC=   13
   I=   53   X=    .194   YN=     47.57   DEPN=     1.39   YC=     47.74   DEPC=     1.56   IFR= 1
ITN=   13  ITC=   13
   I=   54   X=    .196   YN=     47.49   DEPN=     1.36   YC=     47.66   DEPC=     1.53   IFR= 1
ITN=   13  ITC=   13
   I=   55   X=    .198   YN=     47.42   DEPN=     1.34   YC=     47.58   DEPC=     1.50   IFR= 1
ITN=   13  ITC=   13
   I=   56   X=    .200   YN=     47.34   DEPN=     1.31   YC=     47.50   DEPC=     1.47   IFR= 1
ITN=   13  ITC=   13
   I=   57   X=    .202   YN=     47.27   DEPN=     1.29   YC=     47.42   DEPC=     1.44   IFR= 1
ITN=   13  ITC=   13
   I=   58   X=    .204   YN=     47.19   DEPN=     1.26   YC=     47.34   DEPC=     1.41   IFR= 1
ITN=   13  ITC=   13
   I=   59   X=    .206   YN=     47.11   DEPN=     1.23   YC=     47.26   DEPC=     1.38   IFR= 1
ITN=   13  ITC=   13
   I=   60   X=    .208   YN=     47.04   DEPN=     1.21   YC=     47.18   DEPC=     1.35   IFR= 1
ITN=   13  ITC=   13
   I=   61   X=    .210   YN=     46.96   DEPN=     1.18   YC=     47.09   DEPC=     1.31   IFR= 1
ITN=   13  ITC=   13
   I=   62   X=    .212   YN=     46.88   DEPN=     1.15   YC=     47.01   DEPC=     1.28   IFR= 1
ITN=   13  ITC=   13
   I=   63   X=    .214   YN=     46.80   DEPN=     1.12   YC=     46.93   DEPC=     1.25   IFR= 1
ITN=   13  ITC=   13
   I=   64   X=    .216   YN=     46.72   DEPN=     1.09   YC=     46.85   DEPC=     1.22   IFR= 1
ITN=   13  ITC=   13
   I=   65   X=    .218   YN=     46.64   DEPN=     1.06   YC=     46.77   DEPC=     1.19   IFR= 1
ITN=   13  ITC=   13
   I=   66   X=    .220   YN=     46.57   DEPN=     1.04   YC=     46.69   DEPC=     1.16   IFR= 1
ITN=   13  ITC=   13
   I=   67   X=    .222   YN=     46.49   DEPN=     1.01   YC=     46.60   DEPC=     1.12   IFR= 1
ITN=   13  ITC=   13
   I=   68   X=    .224   YN=     46.41   DEPN=      .98   YC=     46.52   DEPC=     1.09   IFR= 1
ITN=   13  ITC=   13
   I=   69   X=    .226   YN=     46.33   DEPN=      .95   YC=     46.44   DEPC=     1.06   IFR= 1
ITN=   13  ITC=   13
   I=   70   X=    .228   YN=     46.24   DEPN=      .91   YC=     46.36   DEPC=     1.03   IFR= 1
ITN=   13  ITC=   13
   I=   71   X=    .231   YN=     46.14   DEPN=      .89   YC=     46.25   DEPC=     1.00   IFR= 1
ITN=   13  ITC=   13
   I=   72   X=    .234   YN=     46.05   DEPN=      .89   YC=     46.15   DEPC=      .98   IFR= 1
ITN=   13  ITC=   13
   I=   73   X=    .237   YN=     45.96   DEPN=      .88   YC=     46.06   DEPC=      .98   IFR= 1
ITN=   13  ITC=   13
   I=   74   X=    .240   YN=     45.87   DEPN=      .88   YC=     45.97   DEPC=      .97   IFR= 1
ITN=   13  ITC=   13
   I=   75   X=    .244   YN=     45.78   DEPN=      .87   YC=     45.88   DEPC=      .97   IFR= 1
ITN=   13  ITC=   13
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   I=   76   X=    .247   YN=      45.69   DEPN=       .86   YC=      45.79   DEPC=       .96   IFR= 1
ITN=   13  ITC=   13
   I=   77   X=    .250   YN=      45.60   DEPN=       .86   YC=      45.70   DEPC=       .95   IFR= 1
ITN=   13  ITC=   13
   I=   78   X=    .253   YN=      45.52   DEPN=       .86   YC=      45.61   DEPC=       .95   IFR= 1
ITN=   13  ITC=   13
   I=   79   X=    .265   YN=      45.23   DEPN=       .90   YC=      45.33   DEPC=      1.00   IFR= 1
ITN=   13  ITC=   13
   I=   80   X=    .278   YN=      44.93   DEPN=       .93   YC=      45.03   DEPC=      1.03   IFR= 1
ITN=   13  ITC=   13
```

```
          (IFR(I),I=1,N)
    1     1     1     1     1     1     1     1     1     1
    1     1     1     1     1     1     1     1     1     1
    1     1     1     1     1     1     1     1     1     1
    1     1     1     1     1     1     1     1     1     1
    1     1     1     1     1     1     1     1     1     1
    1     1     1     1     1     1     1     1     1     1
    1     1     1     1     1     1     1     1     1     1
    1     1     1     1     1     1     1     1     1     1
```

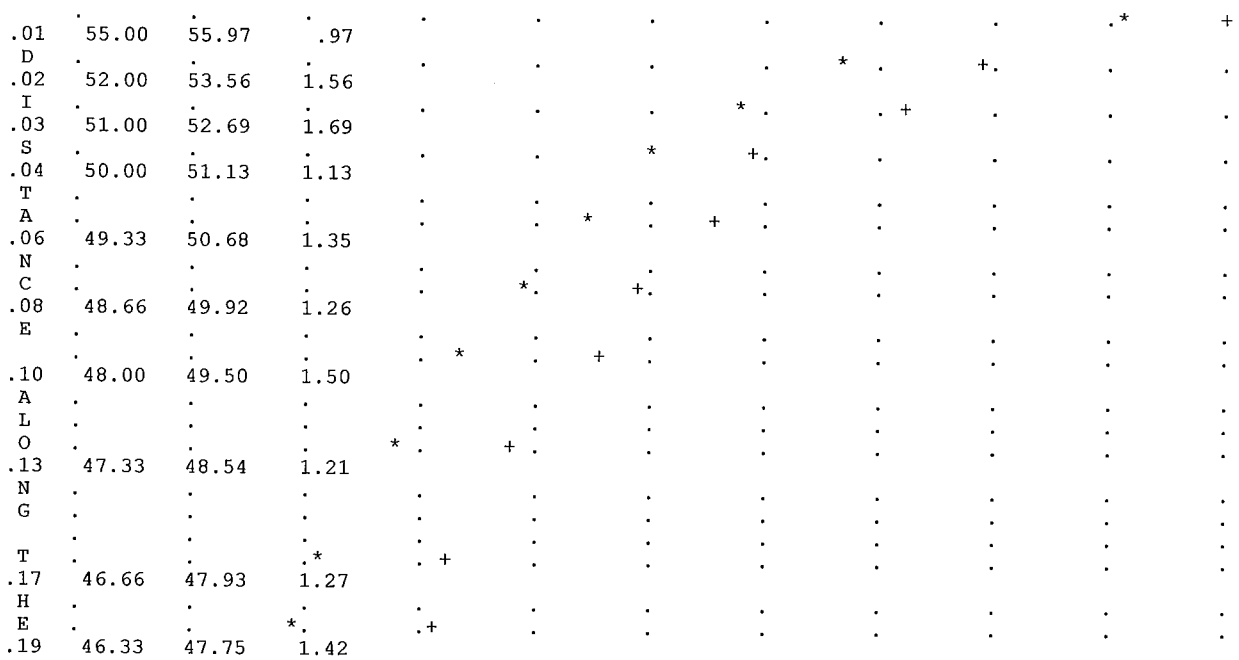
```
IN=     1      YNN=      55.97      DEP=        .97
I=      2      X=      .020      QIR=       80.      YIR=      53.56      DEP=      1.56      ITD=      3
I=      3      X=      .032      QIR=       80.      YIR=      52.69      DEP=      1.69      ITD=      2
I=      4      X=      .044      QIR=       80.      YIR=      51.13      DEP=      1.13      ITD=      4
I=      5      X=      .045      QIR=       80.      YIR=      51.10      DEP=      1.14      ITD=      4
I=      6      X=      .046      QIR=       80.      YIR=      51.07      DEP=      1.15      ITD=      4
I=      7      X=      .047      QIR=       80.      YIR=      51.05      DEP=      1.16      ITD=      4
I=      8      X=      .048      QIR=       80.      YIR=      51.02      DEP=      1.17      ITD=      4
I=      9      X=      .049      QIR=       80.      YIR=      50.99      DEP=      1.18      ITD=      4
I=     10      X=      .050      QIR=       80.      YIR=      50.96      DEP=      1.19      ITD=      4
I=     11      X=      .051      QIR=       80.      YIR=      50.94      DEP=      1.20      ITD=      4
I=     12      X=      .052      QIR=       80.      YIR=      50.91      DEP=      1.21      ITD=      4
I=     13      X=      .053      QIR=       80.      YIR=      50.88      DEP=      1.22      ITD=      4
I=     14      X=      .054      QIR=       80.      YIR=      50.86      DEP=      1.23      ITD=      4
I=     15      X=      .055      QIR=       80.      YIR=      50.83      DEP=      1.24      ITD=      3
I=     16      X=      .056      QIR=       80.      YIR=      50.81      DEP=      1.25      ITD=      3
I=     17      X=      .057      QIR=       80.      YIR=      50.78      DEP=      1.27      ITD=      3
I=     18      X=      .058      QIR=       80.      YIR=      50.76      DEP=      1.28      ITD=      3
I=     19      X=      .059      QIR=       80.      YIR=      50.74      DEP=      1.30      ITD=      3
I=     20      X=      .060      QIR=       80.      YIR=      50.72      DEP=      1.32      ITD=      3
I=     21      X=      .061      QIR=       80.      YIR=      50.70      DEP=      1.34      ITD=      3
I=     22      X=      .062      QIR=       80.      YIR=      50.68      DEP=      1.35      ITD=      3
I=     23      X=      .064      QIR=       80.      YIR=      50.58      DEP=      1.33      ITD=      3
I=     24      X=      .066      QIR=       80.      YIR=      50.49      DEP=      1.31      ITD=      3
I=     25      X=      .068      QIR=       80.      YIR=      50.40      DEP=      1.29      ITD=      3
I=     26      X=      .070      QIR=       80.      YIR=      50.31      DEP=      1.28      ITD=      3
I=     27      X=      .072      QIR=       80.      YIR=      50.22      DEP=      1.27      ITD=      3
I=     28      X=      .074      QIR=       80.      YIR=      50.14      DEP=      1.26      ITD=      3
I=     29      X=      .076      QIR=       80.      YIR=      50.06      DEP=      1.26      ITD=      3
I=     30      X=      .078      QIR=       80.      YIR=      49.99      DEP=      1.25      ITD=      3
I=     31      X=      .080      QIR=       80.      YIR=      49.92      DEP=      1.26      ITD=      3
I=     32      X=      .089      QIR=       80.      YIR=      49.74      DEP=      1.41      ITD=      2
I=     33      X=      .098      QIR=       80.      YIR=      49.50      DEP=      1.50      ITD=      4
I=     34      X=      .102      QIR=       80.      YIR=      49.41      DEP=      1.49      ITD=      4
I=     35      X=      .107      QIR=       80.      YIR=      49.31      DEP=      1.48      ITD=      4
I=     36      X=      .111      QIR=       80.      YIR=      49.20      DEP=      1.45      ITD=      4
I=     37      X=      .115      QIR=       80.      YIR=      49.08      DEP=      1.42      ITD=      4
I=     38      X=      .120      QIR=       80.      YIR=      48.96      DEP=      1.38      ITD=      4
I=     39      X=      .124      QIR=       80.      YIR=      48.83      DEP=      1.33      ITD=      4
I=     40      X=      .129      QIR=       80.      YIR=      48.69      DEP=      1.27      ITD=      4
I=     41      X=      .133      QIR=       80.      YIR=      48.54      DEP=      1.21      ITD=      4
I=     42      X=      .138      QIR=       80.      YIR=      48.45      DEP=      1.21      ITD=      4
I=     43      X=      .143      QIR=       80.      YIR=      48.36      DEP=      1.22      ITD=      4
I=     44      X=      .148      QIR=       80.      YIR=      48.27      DEP=      1.22      ITD=      3
I=     45      X=      .153      QIR=       80.      YIR=      48.18      DEP=      1.23      ITD=      3
I=     46      X=      .158      QIR=       80.      YIR=      48.10      DEP=      1.25      ITD=      3
I=     47      X=      .163      QIR=       80.      YIR=      48.02      DEP=      1.26      ITD=      3
I=     48      X=      .168      QIR=       80.      YIR=      47.93      DEP=      1.27      ITD=      3
I=     49      X=      .178      QIR=       80.      YIR=      47.93      DEP=      1.43      ITD=     21
I=     50      X=      .188      QIR=       80.      YIR=      47.75      DEP=      1.42      ITD=     21
I=     51      X=      .190      QIR=       80.      YIR=      47.65      DEP=      1.37      ITD=      3
I=     52      X=      .192      QIR=       80.      YIR=      47.56      DEP=      1.33      ITD=      3
I=     53      X=      .194      QIR=       80.      YIR=      47.47      DEP=      1.29      ITD=      3
I=     54      X=      .196      QIR=       80.      YIR=      47.39      DEP=      1.26      ITD=      4
I=     55      X=      .198      QIR=       80.      YIR=      47.31      DEP=      1.23      ITD=      4
I=     56      X=      .200      QIR=       80.      YIR=      47.23      DEP=      1.20      ITD=      4
I=     57      X=      .202      QIR=       80.      YIR=      47.15      DEP=      1.17      ITD=      4
I=     58      X=      .204      QIR=       80.      YIR=      47.07      DEP=      1.14      ITD=      4
I=     59      X=      .206      QIR=       80.      YIR=      46.99      DEP=      1.11      ITD=      4
I=     60      X=      .208      QIR=       80.      YIR=      46.91      DEP=      1.08      ITD=      4
```

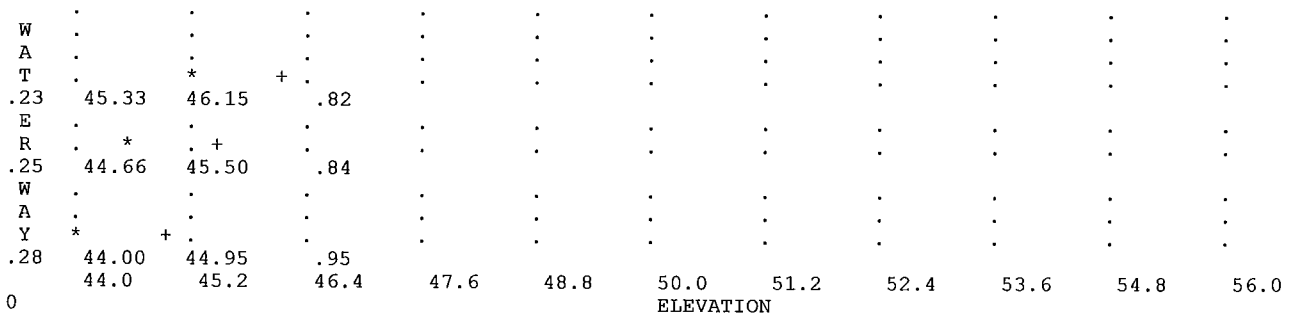
```
I=  61    X=    .210    QIR=      80.    YIR=    46.84    DEP=     1.06    ITD=    4
I=  62    X=    .212    QIR=      80.    YIR=    46.76    DEP=     1.03    ITD=    4
I=  63    X=    .214    QIR=      80.    YIR=    46.69    DEP=     1.01    ITD=    4
I=  64    X=    .216    QIR=      80.    YIR=    46.61    DEP=      .98    ITD=    4
I=  65    X=    .218    QIR=      80.    YIR=    46.53    DEP=      .95    ITD=    4
I=  66    X=    .220    QIR=      80.    YIR=    46.46    DEP=      .93    ITD=    4
I=  67    X=    .222    QIR=      80.    YIR=    46.38    DEP=      .90    ITD=    4
I=  68    X=    .224    QIR=      80.    YIR=    46.30    DEP=      .87    ITD=    4
I=  69    X=    .226    QIR=      80.    YIR=    46.23    DEP=      .85    ITD=    4
I=  70    X=    .228    QIR=      80.    YIR=    46.15    DEP=      .82    ITD=    4
I=  71    X=    .231    QIR=      80.    YIR=    46.05    DEP=      .81    ITD=    4
I=  72    X=    .234    QIR=      80.    YIR=    45.98    DEP=      .81    ITD=    4
I=  73    X=    .237    QIR=      80.    YIR=    45.90    DEP=      .82    ITD=    3
I=  74    X=    .240    QIR=      80.    YIR=    45.82    DEP=      .83    ITD=    3
I=  75    X=    .244    QIR=      80.    YIR=    45.74    DEP=      .83    ITD=    3
I=  76    X=    .247    QIR=      80.    YIR=    45.66    DEP=      .84    ITD=    3
I=  77    X=    .250    QIR=      80.    YIR=    45.58    DEP=      .84    ITD=    3
I=  78    X=    .253    QIR=      80.    YIR=    45.50    DEP=      .84    ITD=    3
I=  79    X=    .265    QIR=      80.    YIR=    45.27    DEP=      .94    ITD=    3
I=  80    X=    .278    QIR=      80.    YIR=    44.95    DEP=      .95    ITD=    3

                    INITIAL CONDITIONS

          (QDI(I),I=1,N)
      80.       80.       80.       80.       80.       80.       80.       80.
      80.       80.       80.       80.       80.       80.       80.       80.
      80.       80.       80.       80.       80.       80.       80.       80.
      80.       80.       80.       80.       80.       80.       80.       80.
      80.       80.       80.       80.       80.       80.       80.       80.
      80.       80.       80.       80.       80.       80.       80.       80.
      80.       80.       80.       80.       80.       80.       80.       80.
      80.       80.       80.       80.       80.       80.       80.       80.
      80.       80.       80.       80.       80.       80.       80.       80.
      80.       80.       80.       80.       80.       80.       80.       80.

          (YI(I),I=1,N)
    55.97     53.56     52.69     51.13     51.10     51.07     51.05     51.02
    50.99     50.96     50.94     50.91     50.88     50.86     50.83     50.81
    50.78     50.76     50.74     50.72     50.70     50.68     50.58     50.49
    50.40     50.31     50.22     50.14     50.06     49.99     49.92     49.74
    49.50     49.41     49.31     49.20     49.08     48.96     48.83     48.69
    48.54     48.45     48.36     48.27     48.18     48.10     48.02     47.93
    47.93     47.75     47.65     47.56     47.47     47.39     47.31     47.23
    47.15     47.07     46.99     46.91     46.84     46.76     46.69     46.61
    46.53     46.46     46.38     46.30     46.23     46.15     46.05     45.98
    45.90     45.82     45.74     45.66     45.58     45.50     45.27     44.95
1
0  PROFILE OF INVERT ELEVATION (HS) AND INITIAL WATER SURFACE ELEVATION (YI) ALONG WATERWAY (X)
                              X(KM)      HST(M) -- "*"      YI(M) -- "+"
0
X       HS       YI    DEPTH
```





TIME PARAMETERS OF OUTFLOW HYDROGRAPH IMMEDIATELY DOWNSTREAM OF DAM

PARAMETER	UNITS	VARIABLE	VALUE
TIME TO FAILURE	HR	TFH	.250
TIME TO START OF RISING LIMB OF HYDROGRAPH	HR	TFO	.000
TIME TO PEAK	HR	TP	.230
TIME STEP SIZE	HR	DTHI	.013

```
TT =    .0000          DTH =   .0125          ITMX =   0
QU(1) =      80.00     YU(1) =      55.97  QU(N) =      80.00  YU(N) =      44.95
FRDM=    2.50  IIFR=    4  FRM=1.09 IIFM=    3

TT =    .0000          DTH =   .0125          ITMX =   6
QU(1) =      80.00     YU(1) =      55.97  QU(N) =      75.17  YU(N) =      44.93
FRDM=    1.94  IIFR=    1  FRM= .69 IIFM=   48

TT =    .0000          DTH =   .0125          ITMX =   2
QU(1) =      80.00     YU(1) =      55.97  QU(N) =      75.10  YU(N) =      44.93
FRDM=    1.94  IIFR=    1  FRM= .60 IIFM=   48

TT =    .0125          DTH =   .0125          ITMX =   2
QU(1) =      73.33     YU(1) =      55.94  QU(N) =      75.66  YU(N) =      44.93
FRDM=    1.93  IIFR=    1  FRM= .57 IIFM=   48

TT =    .0250          DTH =   .0125          ITMX =   1
QU(1) =      66.67     YU(1) =      55.91  QU(N) =      73.95  YU(N) =      44.93
FRDM=    1.92  IIFR=    1  FRM= .57 IIFM=   48

TT =    .0375          DTH =   .0125          ITMX =   1
QU(1) =      60.00     YU(1) =      55.87  QU(N) =      70.01  YU(N) =      44.91
FRDM=    1.91  IIFR=    1  FRM= .56 IIFM=   48

TT =    .0500          DTH =   .0125          ITMX =   1
QU(1) =      53.43     YU(1) =      55.83  QU(N) =      64.75  YU(N) =      44.88
FRDM=    1.89  IIFR=    1  FRM= .57 IIFM=   48

TT =    .0625          DTH =   .0125          ITMX =   1
QU(1) =      47.42     YU(1) =      55.80  QU(N) =      58.99  YU(N) =      44.85
FRDM=    1.88  IIFR=    1  FRM= .57 IIFM=   48

TT =    .0750          DTH =   .0125          ITMX =   2
QU(1) =      42.78     YU(1) =      55.77  QU(N) =      53.36  YU(N) =      44.82
FRDM=    1.87  IIFR=    1  FRM= .58 IIFM=   48

TT =    .0875          DTH =   .0125          ITMX =   1
QU(1) =      41.19     YU(1) =      55.76  QU(N) =      48.60  YU(N) =      44.79
FRDM=    1.86  IIFR=    1  FRM= .59 IIFM=   48

TT =    .1000          DTH =   .0125          ITMX =   2
QU(1) =      44.37     YU(1) =      55.78  QU(N) =      45.68  YU(N) =      44.77
FRDM=    1.87  IIFR=    1  FRM= .60 IIFM=   48

TT =    .1125          DTH =   .0125          ITMX =   1
QU(1) =      55.21     YU(1) =      55.85  QU(N) =      46.14  YU(N) =      44.77
FRDM=    1.90  IIFR=    1  FRM= .61 IIFM=   48

TT =    .1250          DTH =   .0125          ITMX =   2
QU(1) =      75.34     YU(1) =      55.95  QU(N) =      52.29  YU(N) =      44.80
FRDM=    1.94  IIFR=    1  FRM= .62 IIFM=   48

TT =    .1375          DTH =   .0125          ITMX =   3
QU(1) =     107.07     YU(1) =      56.07  QU(N) =      67.29  YU(N) =      44.88
FRDM=    1.99  IIFR=    1  FRM= .62 IIFM=   48

TT =    .1500          DTH =   .0125          ITMX =   3
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```
QU(1) =     149.57     YU(1) =      56.20  QU(N) =      94.07  YU(N) =      45.00
FRDM=     2.06  IIFR=     1  FRM= .60 IIFM=   48

TT =     .1625           DTH =    .0125          ITMX =   3
QU(1) =     207.77     YU(1) =      56.35  QU(N) =     135.28  YU(N) =      45.15
FRDM=     2.12  IIFR=     1  FRM= .58 IIFM=   48

TT =     .1750           DTH =    .0125          ITMX =   3
QU(1) =     269.84     YU(1) =      56.50  QU(N) =     189.31  YU(N) =      45.31
FRDM=     2.17  IIFR=     1  FRM= .55 IIFM=   48

TT =     .1875           DTH =    .0125          ITMX =   3
QU(1) =     330.42     YU(1) =      56.63  QU(N) =     250.51  YU(N) =      45.45
FRDM=     2.22  IIFR=     1  FRM= .52 IIFM=   48

TT =     .2000           DTH =    .0125          ITMX =   2
QU(1) =     384.10     YU(1) =      56.73  QU(N) =     311.78  YU(N) =      45.57
FRDM=     2.25  IIFR=     1  FRM= .50 IIFM=   48

TT =     .2125           DTH =    .0125          ITMX =   2
QU(1) =     424.17     YU(1) =      56.81  QU(N) =     366.01  YU(N) =      45.65
FRDM=     2.27  IIFR=     1  FRM= .47 IIFM=   48

TT =     .2250           DTH =    .0125          ITMX =   2
QU(1) =     446.69     YU(1) =      56.85  QU(N) =     407.24  YU(N) =      45.71
FRDM=     2.28  IIFR=     1  FRM= .46 IIFM=   48

TT =     .2375           DTH =    .0125          ITMX =   1
QU(1) =     445.14     YU(1) =      56.85  QU(N) =     429.94  YU(N) =      45.74
FRDM=     2.28  IIFR=     1  FRM= .45 IIFM=   48

TT =     .2500           DTH =    .0125          ITMX =   1
QU(1) =     416.03     YU(1) =      56.79  QU(N) =     429.28  YU(N) =      45.75
FRDM=     2.26  IIFR=     1  FRM= .44 IIFM=   48

TT =     .2625           DTH =    .0125          ITMX =   3
QU(1) =     203.76     YU(1) =      56.34  QU(N) =     352.05  YU(N) =      45.66
FRDM=     2.12  IIFR=     1  FRM= .43 IIFM=   48

TT =     .2750           DTH =    .0125          ITMX =   3
QU(1) =     102.68     YU(1) =      56.06  QU(N) =     250.73  YU(N) =      45.51
FRDM=     1.99  IIFR=     1  FRM= .43 IIFM=   48

TT =     .2875           DTH =    .0125          ITMX =   3
QU(1) =      58.57     YU(1) =      55.86  QU(N) =     167.08  YU(N) =      45.31
FRDM=     1.91  IIFR=     1  FRM= .44 IIFM=   48

TT =     .3000           DTH =    .0125          ITMX =   3
QU(1) =      37.68     YU(1) =      55.73  QU(N) =     109.76  YU(N) =      45.12
FRDM=     1.85  IIFR=     1  FRM= .47 IIFM=   48

TT =     .3125           DTH =    .0125          ITMX =   2
QU(1) =      28.73     YU(1) =      55.66  QU(N) =      73.67  YU(N) =      44.95
FRDM=     1.82  IIFR=     1  FRM= .50 IIFM=   48

TT =     .3250           DTH =    .0125          ITMX =   2
QU(1) =      24.69     YU(1) =      55.62  QU(N) =      51.70  YU(N) =      44.82
FRDM=     1.81  IIFR=     1  FRM= .54 IIFM=   48

TT =     .3375           DTH =    .0125          ITMX =   2
QU(1) =      23.04     YU(1) =      55.61  QU(N) =      38.57  YU(N) =      44.73
FRDM=     1.80  IIFR=     1  FRM= .58 IIFM=   48

TT =     .3500           DTH =    .0125          ITMX =   2
QU(1) =      21.72     YU(1) =      55.60  QU(N) =      30.84  YU(N) =      44.66
FRDM=     1.79  IIFR=     1  FRM= .61 IIFM=   48

TT =     .3625           DTH =    .0125          ITMX =   1
QU(1) =      21.14     YU(1) =      55.59  QU(N) =      26.35  YU(N) =      44.62
FRDM=     1.79  IIFR=     1  FRM= .64 IIFM=   48

TT =     .3750           DTH =    .0125          ITMX =   1
QU(1) =      20.72     YU(1) =      55.59  QU(N) =      23.76  YU(N) =      44.60
FRDM=     1.78  IIFR=     1  FRM= .65 IIFM=   48

TT =     .3875           DTH =    .0125          ITMX =   1
QU(1) =      20.35     YU(1) =      55.58  QU(N) =      22.25  YU(N) =      44.58
FRDM=     1.78  IIFR=     1  FRM= .66 IIFM=   48

TT =     .4000           DTH =    .0125          ITMX =   1
QU(1) =      20.04     YU(1) =      55.58  QU(N) =      21.33  YU(N) =      44.57
FRDM=     1.78  IIFR=     1  FRM= .66 IIFM=   48
```

```
TT =    .4125          DTH =   .0125          ITMX =   1
QU(1) =      19.78     YU(1) =      55.58  QU(N) =      20.73  YU(N) =      44.56
FRDM=    1.78  IIFR=    1  FRM= .67 IIFM=   48

TT =    .4250          DTH =   .0125          ITMX =   1
QU(1) =      19.57     YU(1) =      55.57  QU(N) =      20.31  YU(N) =      44.56
FRDM=    1.78  IIFR=    1  FRM= .67 IIFM=   48

TT =    .4375          DTH =   .0125          ITMX =   1
QU(1) =      19.42     YU(1) =      55.57  QU(N) =      20.00  YU(N) =      44.55
FRDM=    1.78  IIFR=    1  FRM= .67 IIFM=   48

TT =    .4500          DTH =   .0125          ITMX =   1
QU(1) =      19.37     YU(1) =      55.57  QU(N) =      19.76  YU(N) =      44.55
FRDM=    1.78  IIFR=    1  FRM= .67 IIFM=   48

TT =    .4625          DTH =   .0125          ITMX =   1
QU(1) =      18.85     YU(1) =      55.56  QU(N) =      19.54  YU(N) =      44.55
FRDM=    1.77  IIFR=    1  FRM= .67 IIFM=   48

TT =    .4750          DTH =   .0125          ITMX =   1
QU(1) =      17.61     YU(1) =      55.55  QU(N) =      19.20  YU(N) =      44.55
FRDM=    1.77  IIFR=    1  FRM= .67 IIFM=   48

TT =    .4875          DTH =   .0125          ITMX =   1
QU(1) =      17.19     YU(1) =      55.55  QU(N) =      18.72  YU(N) =      44.54
FRDM=    1.76  IIFR=    1  FRM= .67 IIFM=   48

TT =    .5000          DTH =   .0125          ITMX =   1
QU(1) =      16.90     YU(1) =      55.54  QU(N) =      18.18  YU(N) =      44.53
FRDM=    1.76  IIFR=    1  FRM= .67 IIFM=   48

TT =    .5125          DTH =   .0125          ITMX =   1
QU(1) =      16.71     YU(1) =      55.54  QU(N) =      17.68  YU(N) =      44.53
FRDM=    1.76  IIFR=    1  FRM= .68 IIFM=   48

TT =    .5250          DTH =   .0125          ITMX =   1
QU(1) =      16.60     YU(1) =      55.54  QU(N) =      17.28  YU(N) =      44.52
FRDM=    1.76  IIFR=    1  FRM= .68 IIFM=   48

TT =    .5375          DTH =   .0125          ITMX =   1
QU(1) =      16.57     YU(1) =      55.54  QU(N) =      16.98  YU(N) =      44.52
FRDM=    1.76  IIFR=    1  FRM= .68 IIFM=   48

TT =    .5500          DTH =   .0125          ITMX =   0
QU(1) =      16.57     YU(1) =      55.54  QU(N) =      16.79  YU(N) =      44.52
FRDM=    1.76  IIFR=    1  FRM= .68 IIFM=   48

TT =    .5625          DTH =   .0125          ITMX =   0
QU(1) =      16.57     YU(1) =      55.54  QU(N) =      16.68  YU(N) =      44.52
FRDM=    1.76  IIFR=    1  FRM= .69 IIFM=   48

TT =    .5750          DTH =   .0125          ITMX =   0
QU(1) =      16.57     YU(1) =      55.54  QU(N) =      16.62  YU(N) =      44.52
FRDM=    1.76  IIFR=    1  FRM= .69 IIFM=   48

TT =    .5875          DTH =   .0125          ITMX =   0
QU(1) =      16.57     YU(1) =      55.54  QU(N) =      16.59  YU(N) =      44.52
FRDM=    1.76  IIFR=    1  FRM= .69 IIFM=   48

TT =    .6000          DTH =   .0125          ITMX =   0
QU(1) =      16.57     YU(1) =      55.54  QU(N) =      16.58  YU(N) =      44.51
FRDM=    1.76  IIFR=    1  FRM= .69 IIFM=   48

TT =    .6125          DTH =   .0125          ITMX =   0
QU(1) =      16.57     YU(1) =      55.54  QU(N) =      16.57  YU(N) =      44.51
FRDM=    1.76  IIFR=    1  FRM= .69 IIFM=   48

TT =    .6250          DTH =   .0125          ITMX =   0
QU(1) =      16.57     YU(1) =      55.54  QU(N) =      16.57  YU(N) =      44.51
FRDM=    1.76  IIFR=    1  FRM= .69 IIFM=   48

TT =    .6375          DTH =   .0125          ITMX =   0
QU(1) =      16.57     YU(1) =      55.54  QU(N) =      16.57  YU(N) =      44.51
FRDM=    1.76  IIFR=    1  FRM= .69 IIFM=   48

TT =    .6500          DTH =   .0125          ITMX =   0
QU(1) =      16.57     YU(1) =      55.54  QU(N) =      16.57  YU(N) =      44.51
FRDM=    1.76  IIFR=    1  FRM= .69 IIFM=   48

TT =    .6625          DTH =   .0125          ITMX =   0
QU(1) =      16.57     YU(1) =      55.54  QU(N) =      16.57  YU(N) =      44.51
FRDM=    1.76  IIFR=    1  FRM= .69 IIFM=   48
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```
TT =     .6750          DTH =    .0125          ITMX =    0
QU(1) =       16.57     YU(1) =       55.54  QU(N) =       16.57  YU(N) =       44.51
FRDM=     1.76  IIFR=     1  FRM= .69 IIFM=    48

TT =     .6875          DTH =    .0125          ITMX =    0
QU(1) =       16.57     YU(1) =       55.54  QU(N) =       16.57  YU(N) =       44.51
FRDM=     1.76  IIFR=     1  FRM= .69 IIFM=    48

TT =     .7000          DTH =    .0125          ITMX =    0
QU(1) =       16.57     YU(1) =       55.54  QU(N) =       16.57  YU(N) =       44.51
FRDM=     1.76  IIFR=     1  FRM= .69 IIFM=    48

TT =     .7125          DTH =    .0125          ITMX =    0
QU(1) =       16.57     YU(1) =       55.54  QU(N) =       16.57  YU(N) =       44.51
FRDM=     1.76  IIFR=     1  FRM= .69 IIFM=    48

TT =     .7250          DTH =    .0125          ITMX =    0
QU(1) =       16.57     YU(1) =       55.54  QU(N) =       16.57  YU(N) =       44.51
FRDM=     1.76  IIFR=     1  FRM= .69 IIFM=    48

TT =     .7375          DTH =    .0125          ITMX =    0
QU(1) =       16.57     YU(1) =       55.54  QU(N) =       16.57  YU(N) =       44.51
FRDM=     1.76  IIFR=     1  FRM= .69 IIFM=    48

TT =     .7500          DTH =    .0125          ITMX =    0
QU(1) =       16.57     YU(1) =       55.54  QU(N) =       16.57  YU(N) =       44.51
FRDM=     1.76  IIFR=     1  FRM= .69 IIFM=    48

TT =     .7625          DTH =    .0125          ITMX =    0
QU(1) =       16.57     YU(1) =       55.54  QU(N) =       16.57  YU(N) =       44.51
FRDM=     1.76  IIFR=     1  FRM= .69 IIFM=    48

TT =     .7750          DTH =    .0125          ITMX =    0
QU(1) =       16.57     YU(1) =       55.54  QU(N) =       16.57  YU(N) =       44.51
FRDM=     1.76  IIFR=     1  FRM= .69 IIFM=    48

TT =     .7875          DTH =    .0125          ITMX =    0
QU(1) =       16.57     YU(1) =       55.54  QU(N) =       16.57  YU(N) =       44.51
FRDM=     1.76  IIFR=     1  FRM= .69 IIFM=    48

TT =     .8000          DTH =    .0125          ITMX =    0
QU(1) =       16.57     YU(1) =       55.54  QU(N) =       16.57  YU(N) =       44.51
FRDM=     1.76  IIFR=     1  FRM= .69 IIFM=    48

ROUTING COMPLETED.

KTIME=    64      ALLOWABLE KTIME= 699          TT=     .8
```

PROFILE OF CRESTS AND TIMES FOR Sammontana
BELOW Diga di Sammontana

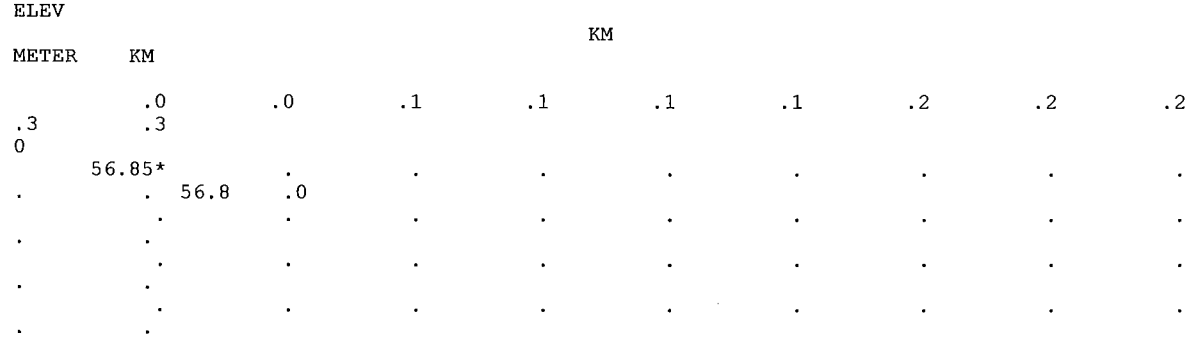
DISTANCE FROM DAM KM	MAX ELEV M	MAX FLOW CMS	TIME MAX ELEV-HRS	MAX VEL M/S	FLOOD ELEV M	TIME FLOOD ELEV-HRS
.010	56.85	446	.225	8.01	.00	.00
.020	54.89	446	.238	7.50	.00	.00
.032	54.01	445	.238	6.16	.00	.00
.044	52.73	445	.238	5.86	.00	.00
.045	52.71	445	.238	5.85	.00	.00
.046	52.70	445	.238	5.85	.00	.00
.047	52.68	445	.238	5.84	.00	.00
.048	52.66	445	.238	5.83	.00	.00
.049	52.65	445	.238	5.83	.00	.00
.050	52.63	445	.238	5.82	.00	.00
.051	52.61	445	.238	5.82	.00	.00
.052	52.59	445	.238	5.83	.00	.00
.053	52.56	445	.238	5.83	.00	.00
.054	52.53	445	.238	5.84	.00	.00
.055	52.50	445	.238	5.86	.00	.00
.056	52.47	445	.238	5.88	.00	.00
.057	52.43	445	.238	5.91	.00	.00
.058	52.39	445	.238	5.94	.00	.00
.059	52.34	445	.238	5.97	.00	.00
.060	52.29	445	.238	6.01	.00	.00
.061	52.24	445	.238	6.05	.00	.00
.062	52.18	445	.238	6.10	.00	.00
.064	52.07	445	.238	6.19	.00	.00
.066	51.95	445	.238	6.27	.00	.00
.068	51.84	445	.238	6.35	.00	.00

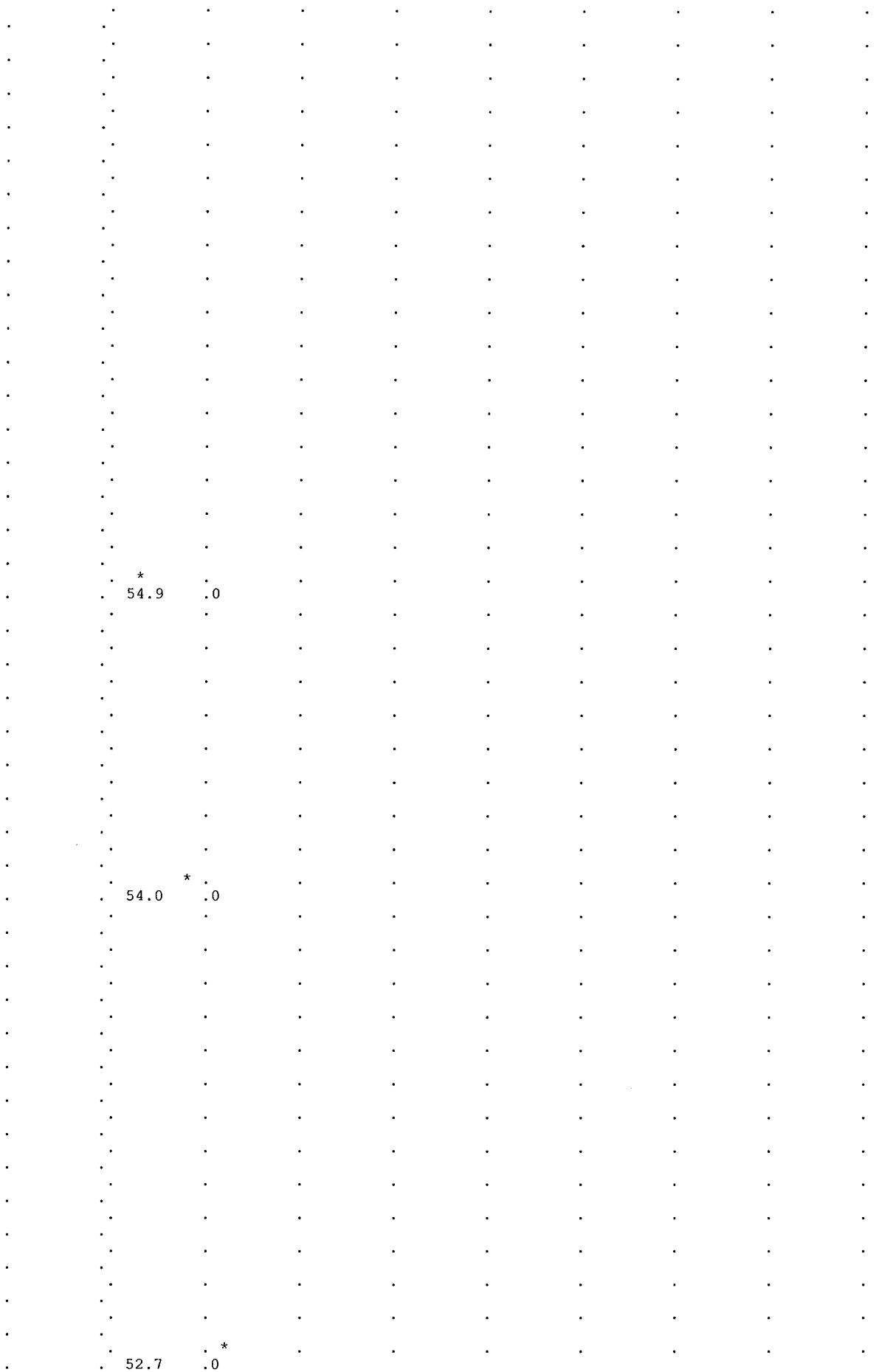
.070	51.73	444	.238	6.42	.00	.00
.072	51.62	444	.238	6.49	.00	.00
.074	51.51	444	.238	6.55	.00	.00
.076	51.41	444	.238	6.61	.00	.00
.078	51.30	444	.238	6.67	.00	.00
.080	51.20	444	.238	6.72	.00	.00
.089	51.01	444	.238	6.55	.00	.00
.098	50.82	444	.238	6.40	.00	.00
.102	50.70	443	.238	6.38	.00	.00
.107	50.57	443	.238	6.36	.00	.00
.111	50.43	443	.238	6.35	.00	.00
.115	50.29	443	.238	6.34	.00	.00
.120	50.15	443	.238	6.34	.00	.00
.124	50.00	443	.238	6.34	.00	.00
.129	49.84	442	.238	6.34	.00	.00
.133	49.68	442	.238	6.35	.00	.00
.138	49.55	442	.238	6.27	.00	.00
.143	49.43	442	.238	6.19	.00	.00
.148	49.32	441	.238	6.10	.00	.00
.153	49.21	441	.238	6.01	.00	.00
.158	49.11	441	.238	5.92	.00	.00
.163	49.01	441	.238	5.83	.00	.00
.168	50.56	441	.238	2.13	.00	.00

PROFILE OF CRESTS AND TIMES FOR Sammontana
BELOW Diga di Sammontana

DISTANCE FROM DAM KM	MAX ELEV M	MAX FLOW CMS	TIME MAX ELEV-HRS	MAX VEL M/S	FLOOD ELEV M	TIME FLOOD ELEV-HRS
********	********	********	********	********	**********	**********
.178	50.40	438	.238	2.66	.00	.00
.188	49.69	437	.238	4.49	.00	.00
.190	49.24	437	.238	5.30	.00	.00
.192	49.02	436	.238	5.62	.00	.00
.194	48.84	436	.238	5.84	.00	.00
.196	48.68	436	.238	6.01	.00	.00
.198	48.53	436	.238	6.15	.00	.00
.200	48.40	436	.238	6.26	.00	.00
.202	48.27	436	.238	6.35	.00	.00
.204	48.15	436	.238	6.43	.00	.00
.206	48.03	436	.238	6.49	.00	.00
.208	47.91	435	.238	6.54	.00	.00
.210	47.80	435	.238	6.58	.00	.00
.212	47.70	435	.238	6.61	.00	.00
.214	47.59	435	.238	6.63	.00	.00
.216	47.48	435	.238	6.64	.00	.00
.218	47.38	435	.238	6.64	.00	.00
.220	47.28	435	.238	6.64	.00	.00
.222	47.18	434	.238	6.63	.00	.00
.224	47.08	434	.238	6.62	.00	.00
.226	46.99	434	.238	6.60	.00	.00
.228	46.89	434	.238	6.58	.00	.00
.231	46.74	434	.238	6.54	.00	.00
.234	46.60	434	.238	6.47	.00	.00
.237	46.48	433	.238	6.37	.00	.00
.240	46.37	433	.238	6.24	.00	.00
.244	46.28	433	.238	6.09	.00	.00
.247	46.19	433	.238	5.92	.00	.00
.250	46.11	432	.238	5.74	.00	.00
.253	46.04	432	.238	5.55	.00	.00
.265	45.92	431	.250	4.71	.00	.00
.278	45.75	429	.250	4.26	.00	.00

PEAK ELEVATION PROFILE

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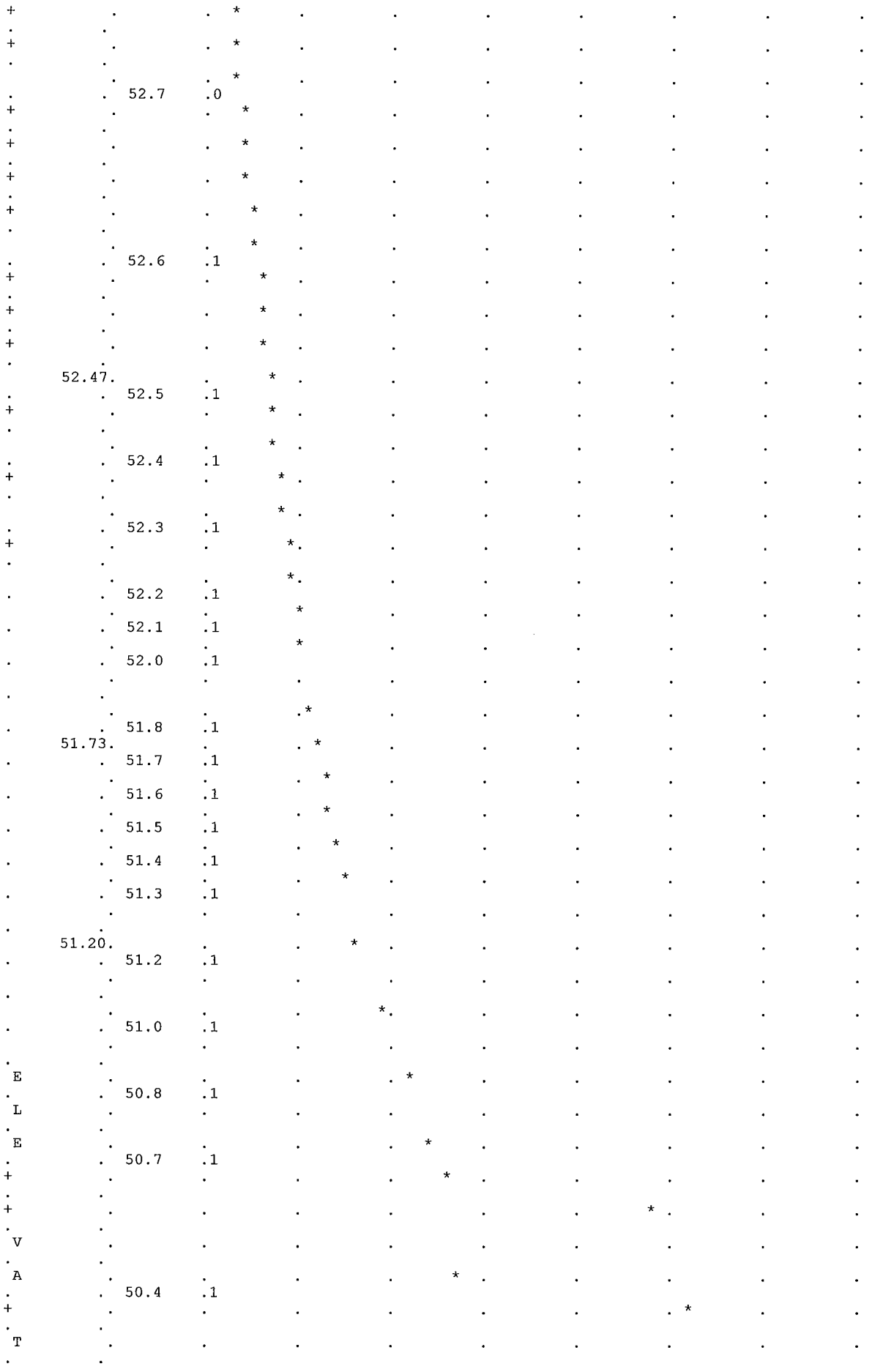
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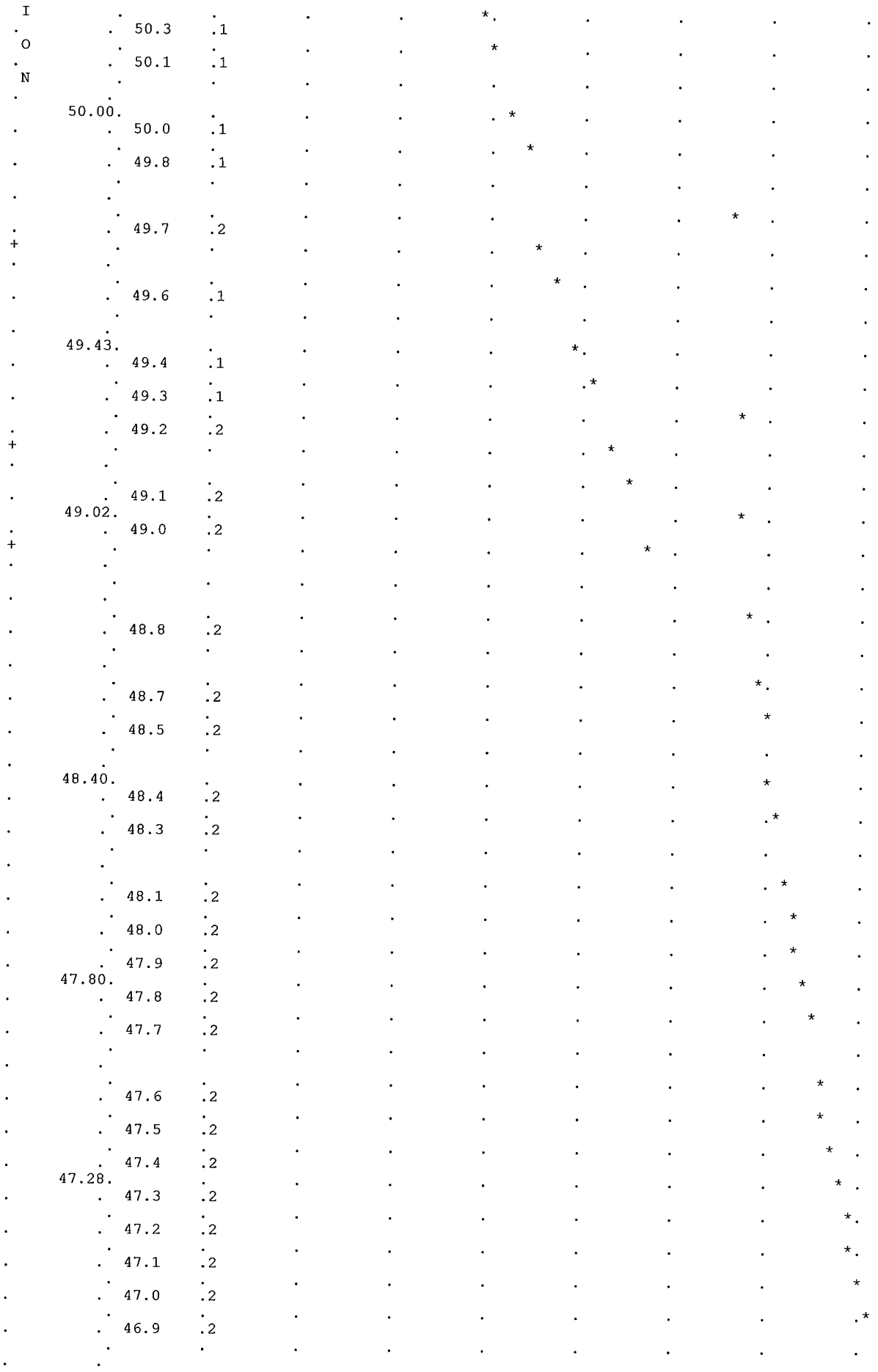
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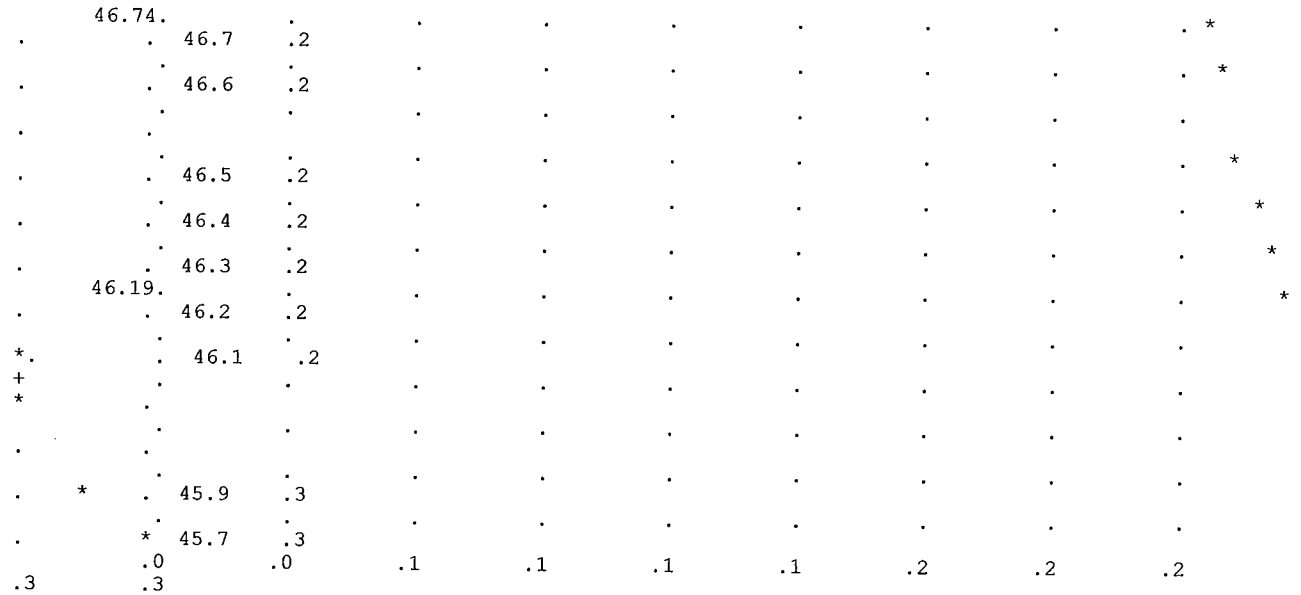
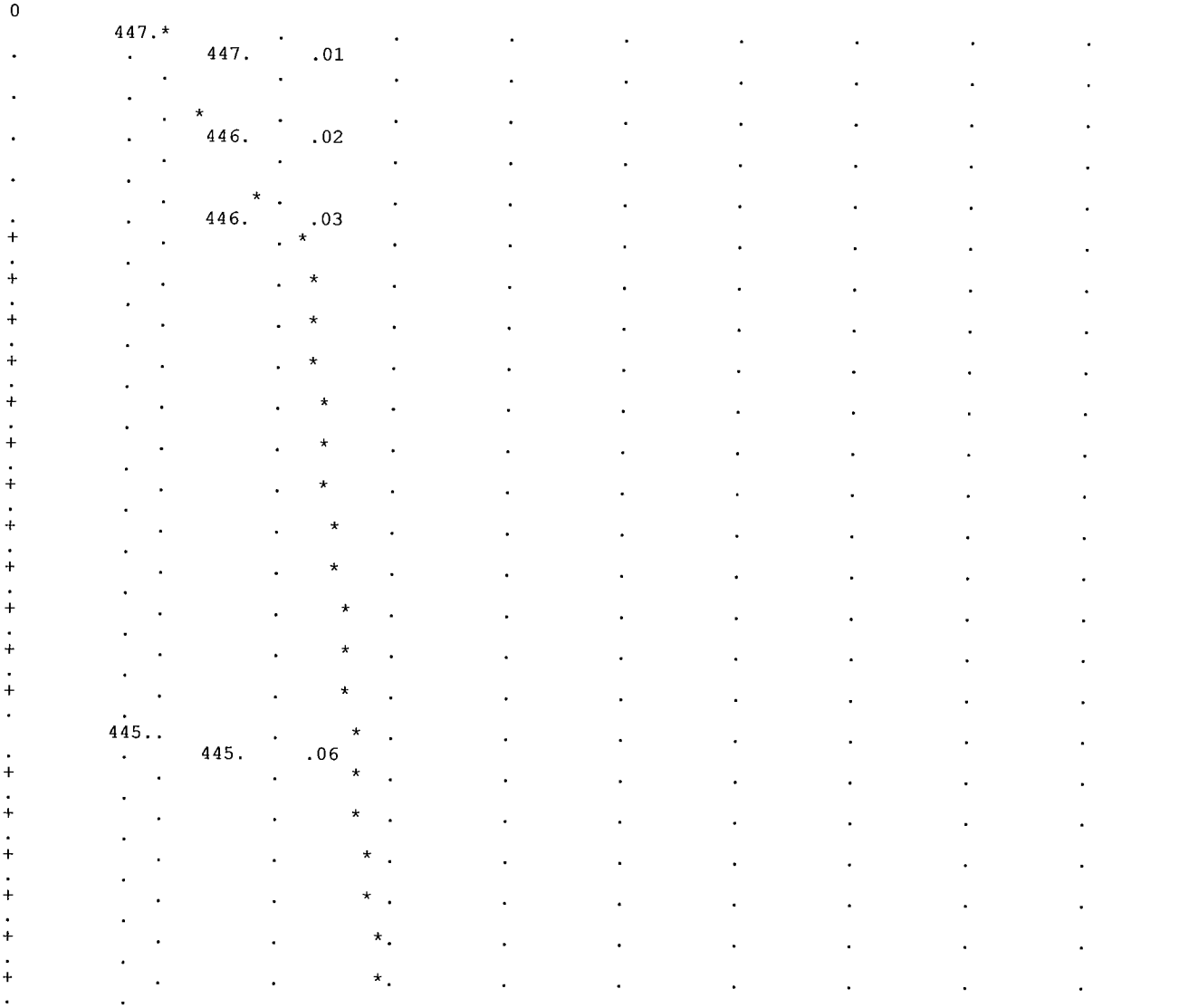


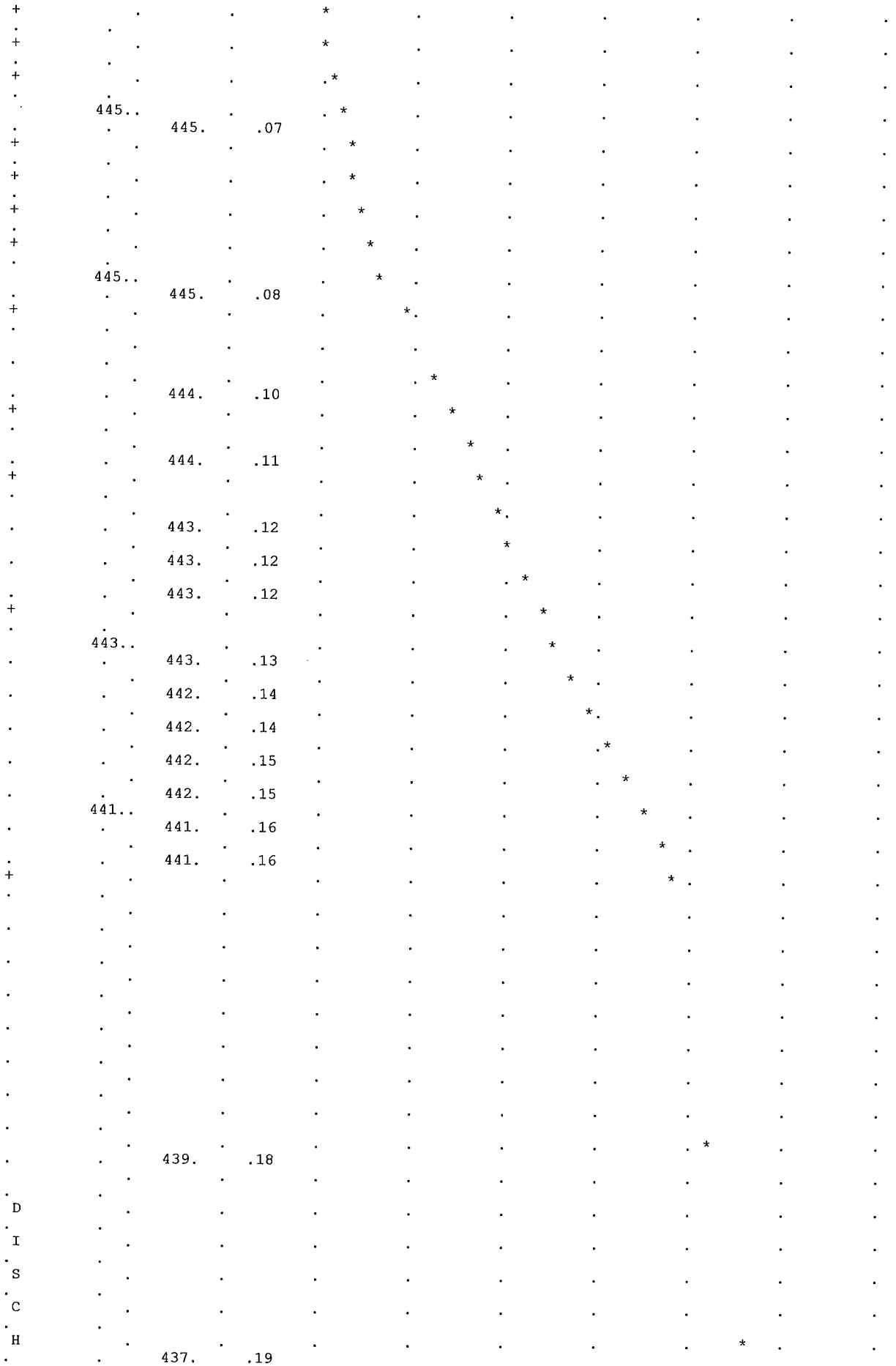
PEAK DISCHARGE PROFILE

DISCHARGE

KM

CMS KM

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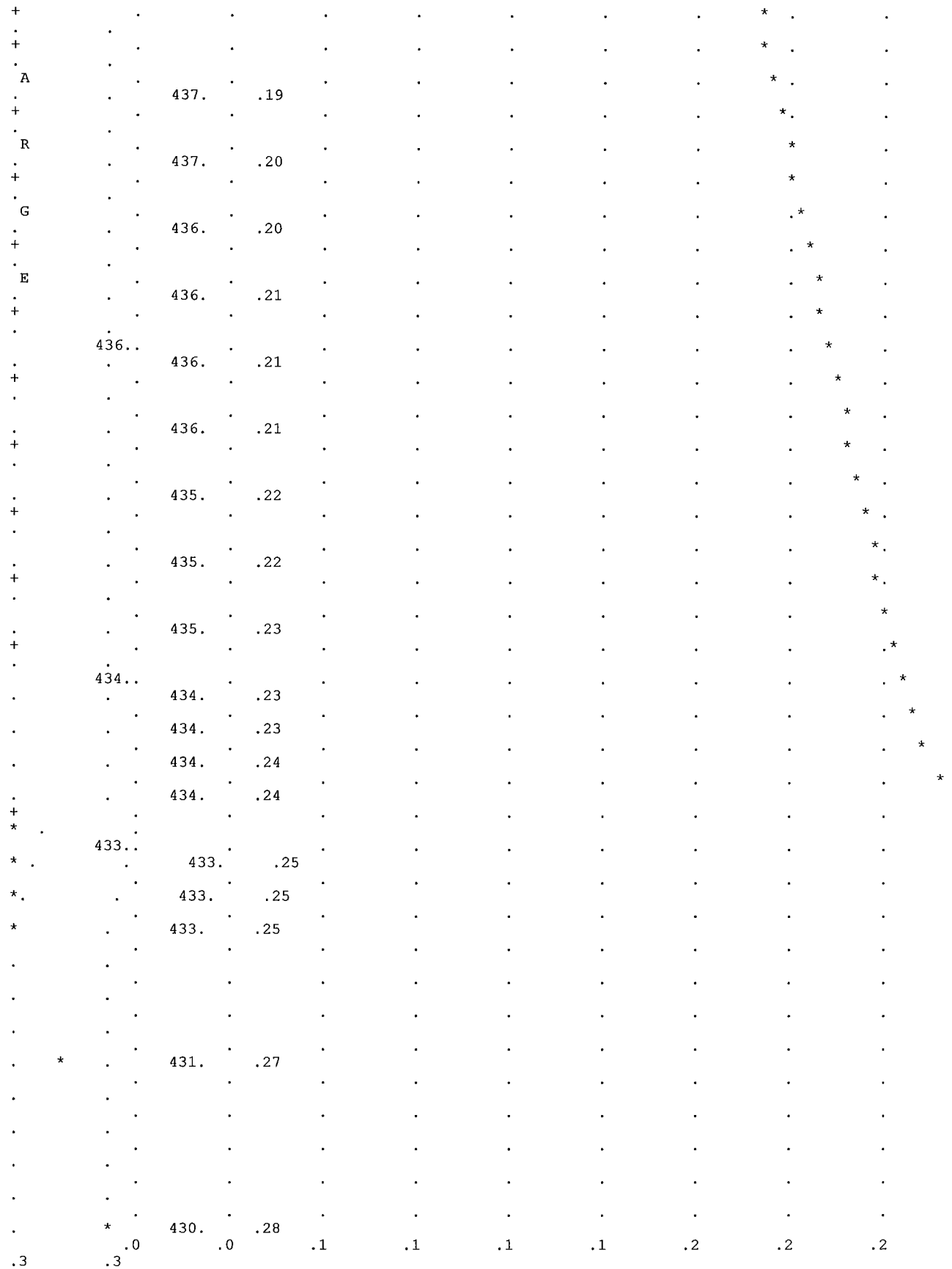

TIME TO PEAK ELEVATION PROFILE

KM

HOUR	KM	ELEV
0	PEAK TIME IS CONSTANT AT	.25 HOURS

DISCHARGE HYDROGRAPH FOR Sammontana ... STATION NUMBER 1
BELOW Diga di Sammontana AT KM .01

GAGE ZERO = 55.00 M MAX ELEVATION REACHED BY FLOOD WAVE = 56.85 M
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 1.85 M AT TIME = .225 HOURS
MAX FLOW = 447 CMS AT TIME = .225 HOURS

TIME HR	STAGE M	FLOW CMS	0 100 200 300 400 500
.00	1.0	80	
.01	.9	75	
.02	.9	69	
.03	.9	64	
.04	.9	59	
.05	.8	53	
.06	.8	49	
.07	.8	45	
.08	.8	42	
.09	.8	42	
.10	.8	44	
.11	.8	53	
.12	.9	67	
.13	1.0	88	
.14	1.1	116	
.15	1.2	150	
.16	1.3	196	
.17	1.4	245	
.18	1.5	294	
.19	1.6	341	
.20	1.7	384	
.21	1.8	416	
.22	1.8	438	
.23	1.8	446	
.24	1.8	439	
.25	1.8	416	
.26	1.4	246	
.27	1.2	143	
.28	1.0	85	
.29	.8	54	
.30	.7	38	
.31	.7	31	
.32	.6	26	
.33	.6	24	
.34	.6	23	
.35	.6	22	
.36	.6	21	
.37	.6	21	
.38	.6	21	
.39	.6	20	
.40	.6	20	
.41	.6	20	
.42	.6	20	
.43	.6	20	
.44	.6	19	
.45	.6	19	
.46	.6	19	
.47	.6	18	
.48	.5	17	
.49	.5	17	
.50	.5	17	

DISCHARGE HYDROGRAPH FOR Sammontana ... STATION NUMBER 2
BELOW Diga di Sammontana AT KM .02

GAGE ZERO = 52.00 M MAX ELEVATION REACHED BY FLOOD WAVE = 54.89 M
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 2.89 M AT TIME = .238 HOURS
MAX FLOW = 446 CMS AT TIME = .225 HOURS

TIME HR	STAGE M	FLOW CMS	0 100 200 300 400 500
.00	1.6	80	
.01	1.5	75	
.02	1.5	70	
.03	1.4	64	
.04	1.4	59	
.05	1.3	54	

.06	1.3	49	. * . . . . .
.07	1.2	45	. * . . . . .
.08	1.2	42	. * . . . . .
.09	1.2	42	. * . . . . .
.10	1.2	44	. * . . . . .
.11	1.3	52	. * . . . . .
.12	1.4	66	. * . . . . .
.13	1.6	87	. * . . . . .
.14	1.8	114	. * . . . . .
.15	2.0	148	. * . . . . .
.16	2.1	194	. * . . . . .
.17	2.3	243	. * . . . . .
.18	2.5	292	. * . . . . .
.19	2.6	339	. * . . . . .
.20	2.7	383	. * . . . . .
.21	2.8	415	. * . . . . .
.22	2.9	437	. * . . . . .
.23	2.9	446	. * . . . . .
.24	2.9	440	. * . . . . .
.25	2.8	417	. * . . . . .
.26	2.3	252	. * . . . . .
.27	1.9	148	. * . . . . .
.28	1.6	88	. * . . . . .
.29	1.4	57	. * . . . . .
.30	1.2	39	. * . . . . .
.31	1.1	31	. * . . . . .
.32	1.0	27	. * . . . . .
.33	1.0	24	. * . . . . .
.34	.9	23	. * . . . . .
.35	.9	22	. * . . . . .
.36	.9	21	. * . . . . .
.37	.9	21	. * . . . . .
.38	.9	21	. * . . . . .
.39	.9	20	. * . . . . .
.40	.9	20	. * . . . . .
.41	.9	20	. * . . . . .
.42	.9	20	. * . . . . .
.43	.9	20	. * . . . . .
.44	.9	19	. * . . . . .
.45	.9	19	. * . . . . .
.46	.9	19	. * . . . . .
.47	.9	18	. * . . . . .
.48	.9	18	. * . . . . .
.49	.8	17	. * . . . . .
.50	.8	17	. * . . . . .

DISCHARGE HYDROGRAPH FOR Sammontana ... STATION NUMBER 3
BELOW Diga di Sammontana AT KM .03

GAGE ZERO = 51.00 M MAX ELEVATION REACHED BY FLOOD WAVE = 54.01 M
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 3.01 M AT TIME = .238 HOURS
MAX FLOW = 446 CMS AT TIME = .238 HOURS

TIME HR	STAGE M	FLOW CMS	0 100 200 300 400 500
.00	1.7	80	. * . . . . .
.01	1.7	75	. * . . . . .
.02	1.6	70	. * . . . . .
.03	1.6	65	. * . . . . .
.04	1.5	60	. * . . . . .
.05	1.5	54	. * . . . . .
.06	1.4	49	. * . . . . .
.07	1.4	45	. * . . . . .
.08	1.4	43	. * . . . . .
.09	1.4	42	. * . . . . .
.10	1.4	44	. * . . . . .
.11	1.5	52	. * . . . . .
.12	1.6	65	. * . . . . .
.13	1.7	85	. * . . . . .
.14	1.9	112	. * . . . . .
.15	2.1	145	. * . . . . .
.16	2.3	191	. * . . . . .
.17	2.5	240	. * . . . . .
.18	2.6	289	. * . . . . .
.19	2.7	337	. * . . . . .
.20	2.9	380	. * . . . . .
.21	2.9	413	. * . . . . .
.22	3.0	436	. * . . . . .
.23	3.0	445	. * . . . . .
.24	3.0	440	. * . . . . .

.25	3.0	418	. . . . . * .
.26	2.5	258	. . . * . . .
.27	2.1	155	. . * . . . .
.28	1.8	93	. *. . . . .
.29	1.5	60	. * . . . . .
.30	1.3	41	. * . . . . .
.31	1.2	32	. * . . . . .
.32	1.2	27	. * . . . . .
.33	1.1	25	. * . . . . .
.34	1.1	23	. * . . . . .
.35	1.1	22	. * . . . . .
.36	1.1	21	. * . . . . .
.37	1.1	21	. * . . . . .
.38	1.1	21	. * . . . . .
.39	1.1	20	. * . . . . .
.40	1.1	20	. * . . . . .
.41	1.1	20	. * . . . . .
.42	1.1	20	. * . . . . .
.43	1.0	20	. * . . . . .
.44	1.0	19	. * . . . . .
.45	1.0	19	. * . . . . .
.46	1.0	19	. * . . . . .
.47	1.0	18	. * . . . . .
.48	1.0	18	. * . . . . .
.49	1.0	17	. * . . . . .
.50	1.0	17	. * . . . . .

DISCHARGE HYDROGRAPH FOR Sammontana ... STATION NUMBER 4
BELOW Diga di Sammontana AT KM .04

GAGE ZERO = 50.00 M MAX ELEVATION REACHED BY FLOOD WAVE = 52.73 M
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 2.73 M AT TIME = .238 HOURS
MAX FLOW = 445 CMS AT TIME = .238 HOURS

TIME HR	STAGE M	FLOW CMS	0 100 200 300 400 500
.00	1.5	80	. * . . . . .
.01	1.4	76	. * . . . . .
.02	1.4	71	. * . . . . .
.03	1.4	65	. * . . . . .
.04	1.3	60	. * . . . . .
.05	1.3	55	. * . . . . .
.06	1.2	50	. * . . . . .
.07	1.2	46	. * . . . . .
.08	1.2	43	. * . . . . .
.09	1.1	42	. * . . . . .
.10	1.2	44	. * . . . . .
.11	1.2	51	. * . . . . .
.12	1.3	64	. * . . . . .
.13	1.5	83	. * . . . . .
.14	1.6	109	. .* . . . . .
.15	1.8	142	. . * . . . . .
.16	2.0	188	. . *. . . . .
.17	2.2	237	. . . * . . . .
.18	2.3	286	. . . . *. . . .
.19	2.4	334	. . . . . * . . .
.20	2.6	378	. . . . . * . . .
.21	2.6	411	. . . . . .* . .
.22	2.7	434	. . . . . . * . .
.23	2.7	445	. . . . . . * . .
.24	2.7	440	. . . . . . * . .
.25	2.7	419	. . . . . . * . .
.26	2.3	266	. . . . . * . . . .
.27	1.9	163	. . . * . . . . .
.28	1.6	99	. * . . . . .
.29	1.3	63	. * . . . . .
.30	1.2	43	. * . . . . .
.31	1.0	34	. * . . . . .
.32	1.0	28	. * . . . . .
.33	.9	25	. * . . . . .
.34	.9	23	. * . . . . .
.35	.9	22	. * . . . . .
.36	.9	21	. * . . . . .
.37	.9	21	. * . . . . .
.38	.9	21	. * . . . . .
.39	.8	20	. * . . . . .
.40	.8	20	. * . . . . .
.41	.8	20	. * . . . . .
.42	.8	20	. * . . . . .
.43	.8	20	. * . . . . .

.44	.8	19	. *
.45	.8	19	. *
.46	.8	19	. *
.47	.8	18	. *
.48	.8	18	. *
.49	.8	17	. *
.50	.8	17	. *

DISCHARGE HYDROGRAPH FOR Sammontana ... STATION NUMBER 22
BELOW Diga di Sammontana AT KM .06

GAGE ZERO = 49.33 M MAX ELEVATION REACHED BY FLOOD WAVE = 52.18 M
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 2.85 M AT TIME = .238 HOURS
MAX FLOW = 445 CMS AT TIME = .238 HOURS

TIME HR	STAGE M	FLOW CMS	0 100 200 300 400 500
.00	1.5	79	. * . . . . .
.01	1.4	76	. * . . . . .
.02	1.4	71	. * . . . . .
.03	1.4	66	. * . . . . .
.04	1.3	61	. * . . . . .
.05	1.3	56	. * . . . . .
.06	1.2	51	. * . . . . .
.07	1.2	47	. * . . . . .
.08	1.2	44	. * . . . . .
.09	1.1	42	. * . . . . .
.10	1.2	44	. * . . . . .
.11	1.2	50	. * . . . . .
.12	1.3	62	. * . . . . .
.13	1.5	81	. * . . . . .
.14	1.6	106	. * . . . . .
.15	1.8	138	. * . . . . .
.16	2.0	182	. * . . . . .
.17	2.2	231	. * . . . . .
.18	2.4	280	. * . . . . .
.19	2.5	329	. * . . . . .
.20	2.7	373	. * . . . . .
.21	2.8	408	. * . . . . .
.22	2.8	432	. * . . . . .
.23	2.8	443	. * . . . . .
.24	2.8	440	. * . . . . .
.25	2.8	421	. * . . . . .
.26	2.4	278	. * . . . . .
.27	2.1	175	. * . . . . .
.28	1.7	108	. * . . . . .
.29	1.4	69	. * . . . . .
.30	1.2	47	. * . . . . .
.31	1.1	36	. * . . . . .
.32	1.0	29	. * . . . . .
.33	.9	26	. * . . . . .
.34	.9	24	. * . . . . .
.35	.9	22	. * . . . . .
.36	.9	22	. * . . . . .
.37	.9	21	. * . . . . .
.38	.9	21	. * . . . . .
.39	.9	20	. * . . . . .
.40	.9	20	. * . . . . .
.41	.8	20	. * . . . . .
.42	.8	20	. * . . . . .
.43	.8	20	. * . . . . .
.44	.8	19	. * . . . . .
.45	.8	19	. * . . . . .
.46	.8	19	. * . . . . .
.47	.8	18	. * . . . . .
.48	.8	18	. * . . . . .
.49	.8	17	. * . . . . .
.50	.8	17	. * . . . . .

DISCHARGE HYDROGRAPH FOR Sammontana ... STATION NUMBER 31
BELOW Diga di Sammontana AT KM .08

GAGE ZERO = 48.66 M MAX ELEVATION REACHED BY FLOOD WAVE = 51.20 M
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 2.54 M AT TIME = .238 HOURS
MAX FLOW = 445 CMS AT TIME = .238 HOURS

TIME STAGE FLOW

HR	M	CMS	0 100 200 300 400 500
.00	1.3	79	
.01	1.3	76	
.02	1.2	72	
.03	1.2	67	
.04	1.2	62	
.05	1.1	56	
.06	1.1	51	
.07	1.1	47	
.08	1.0	44	
.09	1.0	42	
.10	1.0	43	
.11	1.1	50	
.12	1.2	61	
.13	1.3	79	
.14	1.4	103	
.15	1.5	135	
.16	1.7	178	
.17	1.9	226	
.18	2.1	276	
.19	2.2	324	
.20	2.3	369	
.21	2.4	404	
.22	2.5	429	
.23	2.5	442	
.24	2.5	440	
.25	2.5	422	
.26	2.1	288	
.27	1.8	186	
.28	1.5	116	
.29	1.3	74	
.30	1.1	49	
.31	1.0	38	
.32	.9	30	
.33	.9	26	
.34	.8	24	
.35	.8	23	
.36	.8	22	
.37	.8	21	
.38	.8	21	
.39	.8	20	
.40	.8	20	
.41	.8	20	
.42	.8	20	
.43	.8	20	
.44	.8	19	
.45	.8	19	
.46	.8	19	
.47	.7	19	
.48	.7	18	
.49	.7	17	
.50	.7	17	

DISCHARGE HYDROGRAPH FOR Sammontana ... STATION NUMBER 33
BELOW Diga di Sammontana AT KM .10

GAGE ZERO = 48.00 M MAX ELEVATION REACHED BY FLOOD WAVE = 50.82 M
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 2.82 M AT TIME = .238 HOURS
MAX FLOW = 444 CMS AT TIME = .238 HOURS

TIME HR	STAGE M	FLOW CMS	0 100 200 300 400 500
.00	1.5	78	
.01	1.5	76	
.02	1.5	72	
.03	1.4	67	
.04	1.4	62	
.05	1.3	57	
.06	1.3	52	
.07	1.2	48	
.08	1.2	44	
.09	1.2	43	
.10	1.2	43	
.11	1.3	49	
.12	1.3	60	
.13	1.5	77	
.14	1.6	101	
.15	1.8	132	
.16	2.0	174	
.17	2.2	222	

.18	2.3	271	. . . * . . .
.19	2.5	320	. . . . * . . .
.20	2.6	365	. . . . . * . .
.21	2.7	401	. . . . . * .
.22	2.8	427	. . . . . * .
.23	2.8	440	. . . . . * .
.24	2.8	440	. . . . . * .
.25	2.8	423	. . . . . * .
.26	2.5	297	. . . . * . .
.27	2.1	196	. . . * . . .
.28	1.8	124	. . * . . . .
.29	1.5	79	. * . . . . .
.30	1.3	53	. * . . . . .
.31	1.2	40	. * . . . . .
.32	1.1	32	. * . . . . .
.33	1.0	27	. * . . . . .
.34	1.0	24	. * . . . . .
.35	.9	23	. * . . . . .
.36	.9	22	. * . . . . .
.37	.9	21	. * . . . . .
.38	.9	21	. * . . . . .
.39	.9	21	. * . . . . .
.40	.9	20	. * . . . . .
.41	.9	20	. * . . . . .
.42	.9	20	. * . . . . .
.43	.9	20	. * . . . . .
.44	.9	20	. * . . . . .
.45	.9	19	. * . . . . .
.46	.9	19	. * . . . . .
.47	.9	19	. * . . . . .
.48	.9	18	. * . . . . .
.49	.8	18	. * . . . . .
.50	.8	17	. * . . . . .

DISCHARGE HYDROGRAPH FOR Sammontana ... STATION NUMBER 41
BELOW Diga di Sammontana AT KM .13

GAGE ZERO = 47.33 M MAX ELEVATION REACHED BY FLOOD WAVE = 49.68 M
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 2.35 M AT TIME = .238 HOURS
MAX FLOW = 443 CMS AT TIME = .238 HOURS

TIME HR	STAGE M	FLOW CMS	0 100 200 300 400 500
.00	1.2	78	. * . . . . .
.01	1.2	76	. * . . . . .
.02	1.2	73	. * . . . . .
.03	1.1	68	. * . . . . .
.04	1.1	63	. * . . . . .
.05	1.1	58	. * . . . . .
.06	1.0	53	. * . . . . .
.07	1.0	49	. * . . . . .
.08	1.0	45	. * . . . . .
.09	1.0	43	. * . . . . .
.10	1.0	43	. * . . . . .
.11	1.0	48	. * . . . . .
.12	1.1	58	. * . . . . .
.13	1.2	73	. * . . . . .
.14	1.3	96	. * . . . . .
.15	1.4	125	. . * . . . .
.16	1.6	166	. . * . . . .
.17	1.7	213	. . .* . . .
.18	1.9	262	. . . * . . .
.19	2.0	310	. . . .* . .
.20	2.1	357	. . . . * . .
.21	2.2	394	. . . . .* .
.22	2.3	421	. . . . . * .
.23	2.3	437	. . . . . * .
.24	2.3	439	. . . . . * .
.25	2.3	425	. . . . . * .
.26	2.1	312	. . . . .* .
.27	1.8	214	. . . .* . .
.28	1.5	140	. . * . . . .
.29	1.3	91	. * . . . . .
.30	1.1	60	. * . . . . .
.31	1.0	44	. * . . . . .
.32	.9	35	. * . . . . .
.33	.8	29	. * . . . . .
.34	.8	25	. * . . . . .
.35	.8	23	. * . . . . .
.36	.8	22	. * . . . . .

.37	.7	22	. *
.38	.7	21	. *
.39	.7	21	. *
.40	.7	20	. *
.41	.7	20	. *
.42	.7	20	. *
.43	.7	20	. *
.44	.7	20	. *
.45	.7	19	. *
.46	.7	19	. *
.47	.7	19	. *
.48	.7	18	. *
.49	.7	18	. *
.50	.7	17	. *

DISCHARGE HYDROGRAPH FOR Sammontana ... STATION NUMBER 48
BELOW Diga di Sammontana AT KM .17

GAGE ZERO = 46.66 M MAX ELEVATION REACHED BY FLOOD WAVE = 50.56 M
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 3.90 M AT TIME = .238 HOURS
MAX FLOW = 441 CMS AT TIME = .238 HOURS

TIME HR	STAGE M	FLOW CMS	0 100 200 300 400 500
.00	1.7	78	. * . . . . .
.01	1.7	77	. * . . . . .
.02	1.7	73	. * . . . . .
.03	1.6	69	. * . . . . .
.04	1.6	64	. * . . . . .
.05	1.5	59	. * . . . . .
.06	1.5	54	. * . . . . .
.07	1.4	50	. * . . . . .
.08	1.4	46	. * . . . . .
.09	1.3	44	. * . . . . .
.10	1.3	43	. * . . . . .
.11	1.4	47	. * . . . . .
.12	1.4	56	. * . . . . .
.13	1.6	70	. * . . . . .
.14	1.8	92	. * . . . . .
.15	2.0	120	. . * . . . .
.16	2.3	160	. . * . . . .
.17	2.6	205	. . * . . . .
.18	2.9	254	. . * . . . .
.19	3.1	303	. . * . . . .
.20	3.4	349	. . * . . . .
.21	3.6	388	. . * . . . .
.22	3.8	417	. . * . . . .
.23	3.9	434	. . * . . . .
.24	3.9	438	. . * . . . .
.25	3.9	427	. . * . . . .
.26	3.5	324	. . * . . . .
.27	3.0	229	. . * . . . .
.28	2.5	154	. . * . . . .
.29	2.1	101	. * . . . . .
.30	1.7	67	. * . . . . .
.31	1.5	49	. * . . . . .
.32	1.3	38	. * . . . . .
.33	1.2	31	. * . . . . .
.34	1.1	27	. * . . . . .
.35	1.0	24	. * . . . . .
.36	1.0	23	. * . . . . .
.37	1.0	22	. * . . . . .
.38	1.0	21	. * . . . . .
.39	1.0	21	. * . . . . .
.40	.9	20	. * . . . . .
.41	.9	20	. * . . . . .
.42	.9	20	. * . . . . .
.43	.9	20	. * . . . . .
.44	.9	20	. * . . . . .
.45	.9	19	. * . . . . .
.46	.9	19	. * . . . . .
.47	.9	19	. * . . . . .
.48	.9	18	. * . . . . .
.49	.9	18	. * . . . . .
.50	.9	17	. * . . . . .

DISCHARGE HYDROGRAPH FOR Sammontana ... STATION NUMBER 50
BELOW Diga di Sammontana AT KM .19

GAGE ZERO = 46.33 M MAX ELEVATION REACHED BY FLOOD WAVE = 49.69 M
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 3.36 M AT TIME = .238 HOURS
MAX FLOW = 437 CMS AT TIME = .238 HOURS

TIME HR	STAGE M	FLOW CMS
.00	1.6	76
.01	1.6	76
.02	1.6	74
.03	1.6	70
.04	1.5	66
.05	1.5	61
.06	1.4	56
.07	1.4	51
.08	1.3	47
.09	1.3	45
.10	1.3	44
.11	1.3	47
.12	1.4	54
.13	1.5	67
.14	1.7	86
.15	1.9	113
.16	2.1	150
.17	2.3	194
.18	2.6	241
.19	2.8	289
.20	3.0	336
.21	3.1	376
.22	3.3	407
.23	3.3	428
.24	3.4	435
.25	3.3	428
.26	3.0	343
.27	2.6	254
.28	2.2	176
.29	1.9	118
.30	1.6	78
.31	1.4	57
.32	1.3	42
.33	1.2	34
.34	1.1	28
.35	1.0	25
.36	1.0	23
.37	1.0	22
.38	1.0	22
.39	1.0	21
.40	1.0	21
.41	1.0	20
.42	1.0	20
.43	1.0	20
.44	.9	20
.45	.9	20
.46	.9	19
.47	.9	19
.48	.9	19
.49	.9	18
.50	.9	18

DISCHARGE HYDROGRAPH FOR Sammontana ... STATION NUMBER 70
BELOW Diga di Sammontana AT KM .23

GAGE ZERO = 45.33 M MAX ELEVATION REACHED BY FLOOD WAVE = 46.89 M
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 1.56 M AT TIME = .238 HOURS
MAX FLOW = 435 CMS AT TIME = .238 HOURS

TIME HR	STAGE M	FLOW CMS
.00	.8	75
.01	.8	76
.02	.8	74
.03	.8	71
.04	.8	67
.05	.8	62
.06	.7	57
.07	.7	53
.08	.7	49
.09	.7	46
.10	.7	44

```
.11     .7       46  .    *     .          .          .          .          .
.12     .7       52  .    *     .          .          .          .          .
.13     .8       64  .     *    .          .          .          .          .
.14     .8       82  .      *   .          .          .          .          .
.15     .9      106  .       *  .          .          .          .          .
.16    1.0      142  .          .*          .          .          .          .
.17    1.1      185  .          .  *        .          .          .          .
.18    1.2      231  .          .    *      .          .          .          .
.19    1.3      279  .          .      *    .          .          .          .
.20    1.4      327  .          .        *  .          .          .          .
.21    1.5      368  .          .          * .          .          .          .
.22    1.5      401  .          .          .*          .          .          .
.23    1.5      423  .          .          .  *        .          .          .
.24    1.6      433  .          .          .    *      .          .          .
.25    1.6      429  .          .          .    *      .          .          .
.26    1.4      355  .          .          .      *    .          .          .
.27    1.3      270  .          .          .    *      .          .          .
.28    1.1      193  .          .          .*          .          .          .
.29    1.0      131  .          .  *       .          .          .          .
.30     .9       88  .        *.          .          .          .          .
.31     .8       64  .      *   .          .          .          .          .
.32     .7       47  .     *    .          .          .          .          .
.33     .6       37  .    *     .          .          .          .          .
.34     .6       30  .  *       .          .          .          .          .
.35     .6       26  .  *       .          .          .          .          .
.36     .5       24  . *        .          .          .          .          .
.37     .5       23  . *        .          .          .          .          .
.38     .5       22  . *        .          .          .          .          .
.39     .5       21  . *        .          .          .          .          .
.40     .5       21  . *        .          .          .          .          .
.41     .5       20  . *        .          .          .          .          .
.42     .5       20  . *        .          .          .          .          .
.43     .5       20  . *        .          .          .          .          .
.44     .5       20  . *        .          .          .          .          .
.45     .5       20  . *        .          .          .          .          .
.46     .5       19  . *        .          .          .          .          .
.47     .5       19  . *        .          .          .          .          .
.48     .5       19  . *        .          .          .          .          .
.49     .5       18  . *        .          .          .          .          .
.50     .5       18  . *        .          .          .          .          .
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DISCHARGE HYDROGRAPH FOR Sammontana ... STATION NUMBER 78
BELOW Diga di Sammontana AT KM .25

GAGE ZERO = 44.66 M MAX ELEVATION REACHED BY FLOOD WAVE = 46.04 M
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 1.38 M AT TIME = .238 HOURS
MAX FLOW = 433 CMS AT TIME = .238 HOURS

```
TIME  STAGE     FLOW
 HR     M        CMS  0        100        200        300        400        500
 .00     .8       75  .        * .          .          .          .          .
 .01     .8       76  .        * .          .          .          .          .
 .02     .8       74  .       *  .          .          .          .          .
 .03     .8       72  .       *  .          .          .          .          .
 .04     .8       68  .       *  .          .          .          .          .
 .05     .8       63  .      *   .          .          .          .          .
 .06     .8       58  .      *   .          .          .          .          .
 .07     .7       54  .     *    .          .          .          .          .
 .08     .7       50  .     *    .          .          .          .          .
 .09     .7       47  .     *    .          .          .          .          .
 .10     .7       45  .    *     .          .          .          .          .
 .11     .7       46  .     *    .          .          .          .          .
 .12     .7       51  .     *    .          .          .          .          .
 .13     .8       61  .      *   .          .          .          .          .
 .14     .8       78  .       *  .          .          .          .          .
 .15     .9      101  .         * .          .          .          .          .
 .16    1.0      136  .          .*          .          .          .          .
 .17    1.1      178  .          .  *        .          .          .          .
 .18    1.1      225  .          .   *       .          .          .          .
 .19    1.2      273  .          .     *     .          .          .          .
 .20    1.3      321  .          .       *   .          .          .          .
 .21    1.3      363  .          .         * .          .          .          .
 .22    1.3      396  .          .          .*          .          .          .
 .23    1.4      420  .          .          .  *        .          .          .
 .24    1.4      432  .          .          .    *      .          .          .
 .25    1.4      429  .          .          .    *      .          .          .
 .26    1.3      361  .          .          .      *    .          .          .
 .27    1.2      280  .          .          .    *      .          .          .
 .28    1.1      203  .          .          *          .          .          .
 .29    1.0      141  .          .  *       .          .          .          .
```

.30	.9	97	. * . . . . .
.31	.8	70	. * . . . . .
.32	.7	52	. * . . . . .
.33	.7	41	. * . . . . .
.34	.6	33	. * . . . . .
.35	.6	28	. * . . . . .
.36	.6	25	. * . . . . .
.37	.5	24	. * . . . . .
.38	.5	22	. * . . . . .
.39	.5	22	. * . . . . .
.40	.5	21	. * . . . . .
.41	.5	21	. * . . . . .
.42	.5	20	. * . . . . .
.43	.5	20	. * . . . . .
.44	.5	20	. * . . . . .
.45	.5	20	. * . . . . .
.46	.5	19	. * . . . . .
.47	.5	19	. * . . . . .
.48	.5	19	. * . . . . .
.49	.5	18	. * . . . . .
.50	.5	18	. * . . . . .

DISCHARGE HYDROGRAPH FOR Sammontana ... STATION NUMBER 80
BELOW Diga di Sammontana AT KM .28

GAGE ZERO = 44.00 M MAX ELEVATION REACHED BY FLOOD WAVE = 45.75 M
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 1.75 M AT TIME = .250 HOURS
MAX FLOW = 430 CMS AT TIME = .238 HOURS

TIME HR	STAGE M	FLOW CMS	0 100 200 300 400 500
.00	.9	75	. * . . . . .
.01	.9	76	. * . . . . .
.02	.9	75	. * . . . . .
.03	.9	72	. * . . . . .
.04	.9	69	. * . . . . .
.05	.9	65	. * . . . . .
.06	.9	60	. * . . . . .
.07	.8	56	. * . . . . .
.08	.8	51	. * . . . . .
.09	.8	48	. * . . . . .
.10	.8	46	. * . . . . .
.11	.8	46	. * . . . . .
.12	.8	50	. * . . . . .
.13	.8	58	. * . . . . .
.14	.9	73	. * . . . . .
.15	1.0	94	. * . . . . .
.16	1.1	127	. * . . . . .
.17	1.2	168	. * . . . . .
.18	1.4	214	. * . . . . .
.19	1.5	263	. * . . . . .
.20	1.6	312	. * . . . . .
.21	1.6	355	. * . . . . .
.22	1.7	391	. * . . . . .
.23	1.7	416	. * . . . . .
.24	1.7	430	. * . . . . .
.25	1.7	429	. * . . . . .
.26	1.7	367	. * . . . . .
.27	1.6	291	. * . . . . .
.28	1.4	217	. * . . . . .
.29	1.3	156	. * . . . . .
.30	1.1	110	. * . . . . .
.31	1.0	81	. * . . . . .
.32	.9	60	. * . . . . .
.33	.8	46	. * . . . . .
.34	.7	37	. * . . . . .
.35	.7	31	. * . . . . .
.36	.6	27	. * . . . . .
.37	.6	25	. * . . . . .
.38	.6	23	. * . . . . .
.39	.6	22	. * . . . . .
.40	.6	21	. * . . . . .
.41	.6	21	. * . . . . .
.42	.6	20	. * . . . . .
.43	.6	20	. * . . . . .
.44	.6	20	. * . . . . .
.45	.6	20	. * . . . . .
.46	.5	20	. * . . . . .
.47	.5	19	. * . . . . .
.48	.5	19	. * . . . . .

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.49     .5      19  . *       .       .       .       .       .
.50     .5      18  . *       .       .       .       .       .
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