

Il Direttore dei Lavori

OGGETTO: Studio idrologico-idraulico a supporto della redazione del Piano Operativo di Volterra

UBICAZIONE: VOLTERRA PI

COMMITTENTE: Comune di VOLTERRA

ELABORATO: ALLEGATO IDRAULICO

DATA: Marzo 2021

Pr. n°: 19-007

Il Progettista

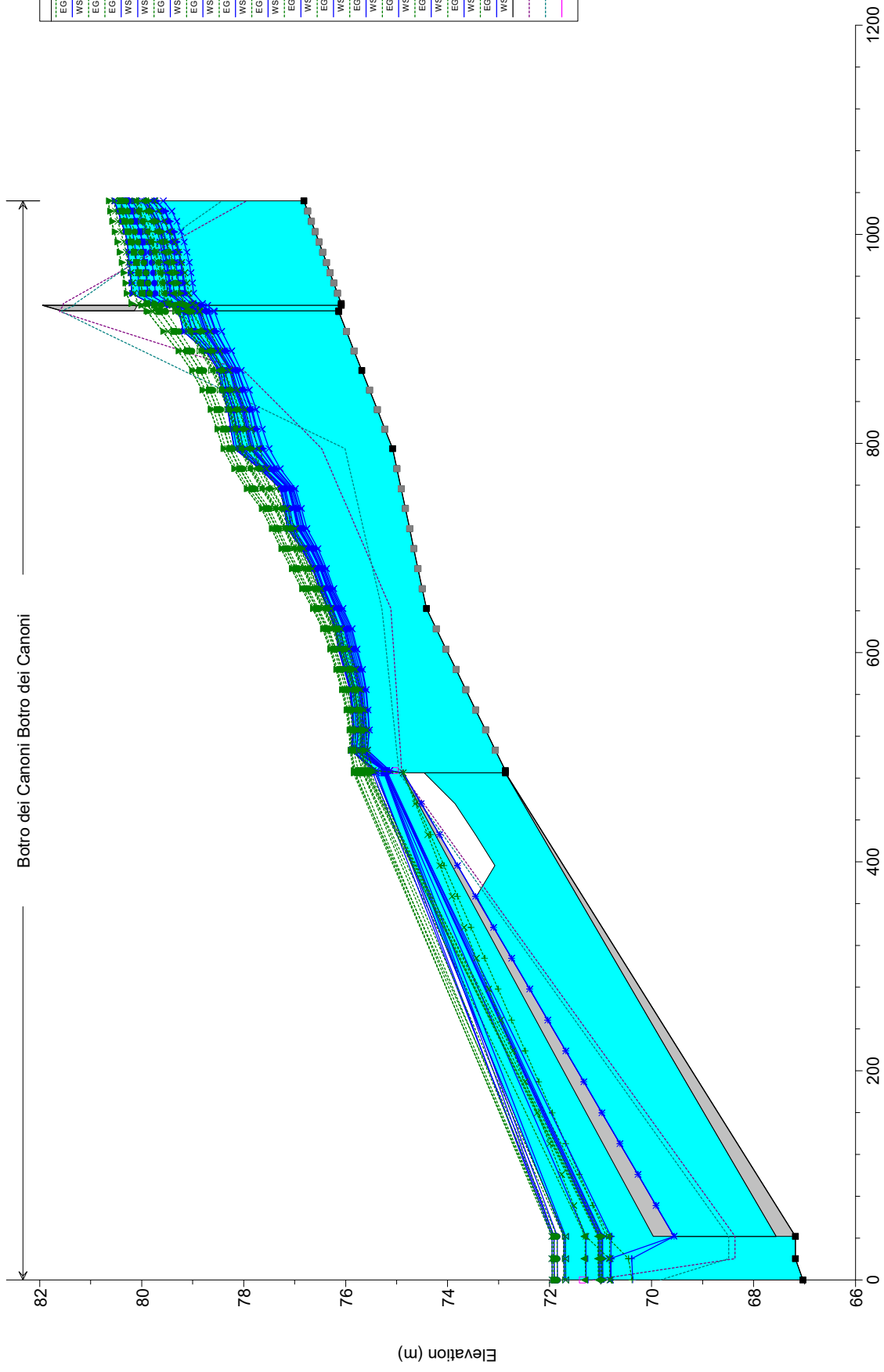
ALLEGATO:

ALL

STUDIO IDRAULICO

Nome: modello Salvo Pen: 3) TR20002 2/18/2021 2) TR20001 2/18/2021 3) TR20004 2/18/2021 4) TR20004 2/18/2021 5) TR20005 2/18/2021 6) TR20008 2/18/2021 7) TR20008 2/18/2021 8) TR2001 2/18/2021 9) TR2002 2/18/2021 10) TR2003 2/18/2021 11) TR2004 2/18/2021 12) TR2006 2/18/2021 13) TR2006 2/18/2021 14) TR2006 2/18/2021

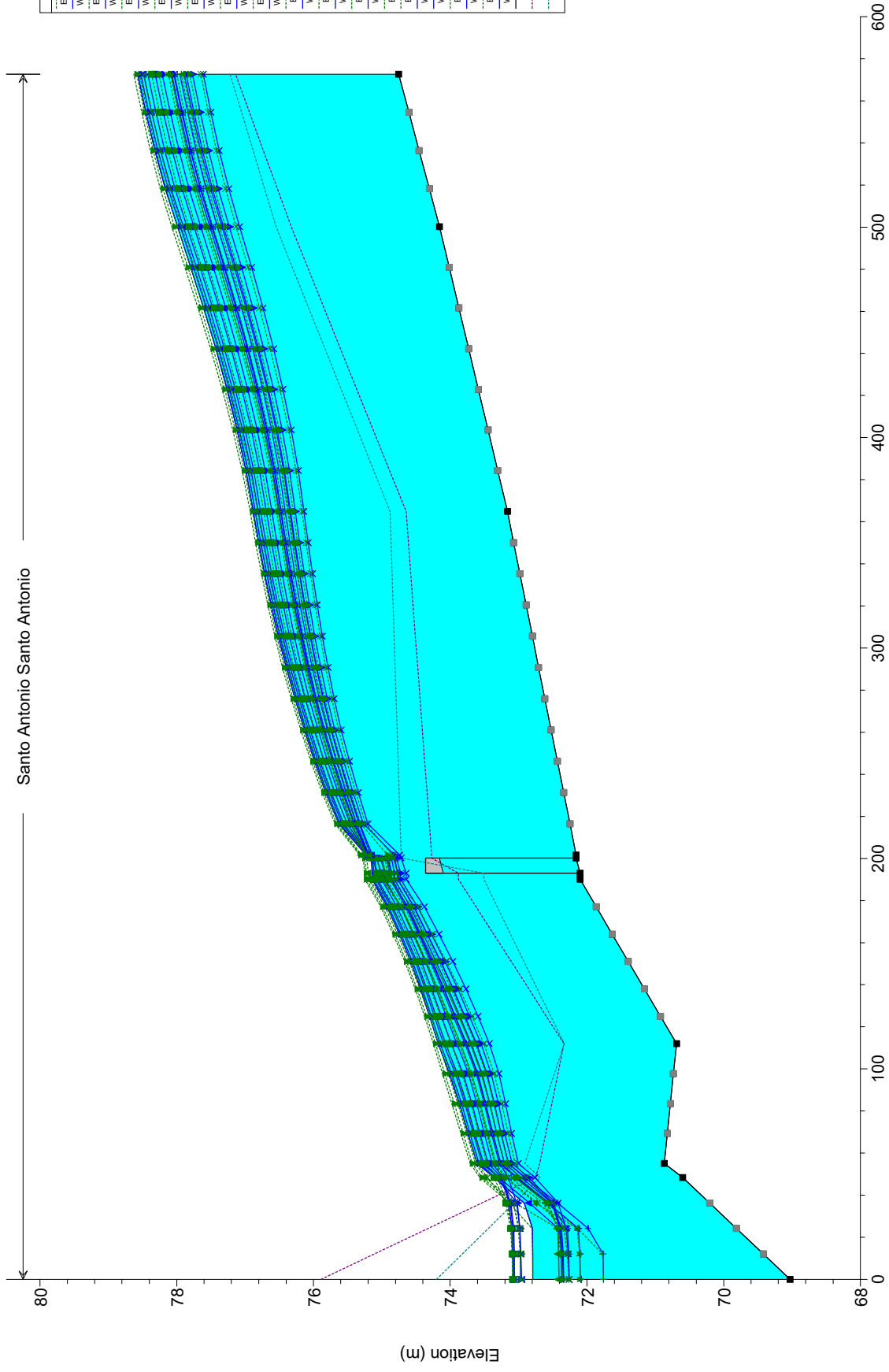
Botro dei Canoni Botro dei Canoni



Legend	
EG Max WS - TR20004	---
WS Max WS - TR20004	---
EG Max WS - TR20003	---
WS Max WS - TR20003	---
EG Max WS - TR20002	---
WS Max WS - TR20002	---
EG Max WS - TR20001	---
WS Max WS - TR20001	---
EG Max WS - TR20006	---
WS Max WS - TR20006	---
EG Max WS - TR20008	---
WS Max WS - TR20008	---
EG Max WS - TR20004	---
WS Max WS - TR20004	---
EG Max WS - TR3004	---
WS Max WS - TR3004	---
EG Max WS - TR3005	---
WS Max WS - TR3005	---
EG Max WS - TR3005	---
WS Max WS - TR3005	---
EG Max WS - TR3002	---
WS Max WS - TR3002	---
EG Max WS - TR3008	---
WS Max WS - TR3008	---
EG Max WS - TR3002	---
WS Max WS - TR3002	---
EG Max WS - TR3001	---
WS Max WS - TR3001	---
Ground	---
LOB	---
ROB	---
Left Levee	---

Nome: modelo Salvo Per: J TR20002 2/18/2021 2/ TR20001 2/18/2021 3/ TR20001 2/18/2021 4/ TR20004 2/18/2021 5/ TR20005 2/18/2021 6/ TR20008 2/18/2021 7/ TR20008 2/18/2021 8/ TR2001 2/18/2021 9/ TR2002 2/18/2021 10/ TR2003 2/18/2021 11/ TR2004 2/18/2021 12/ TR2006 2/18/2021 13/ TR2006 2/18/2021 14/ TR2006 2/18/2021

Santo Antonio Santo Antonio



Legend	
EG Max WS - TR20002	---●---
WS Max WS - TR20005	---●---
EG Max WS - TR20006	---●---
WS Max WS - TR20006	---●---
EG Max WS - TR20004	---●---
WS Max WS - TR20004	---●---
EG Max WS - TR20003	---●---
WS Max WS - TR20003	---●---
EG Max WS - TR20008	---●---
WS Max WS - TR20002	---●---
EG Max WS - TR20001	---●---
WS Max WS - TR20004	---●---
EG Max WS - TR3005	---●---
WS Max WS - TR3005	---●---
EG Max WS - TR3006	---●---
WS Max WS - TR3006	---●---
EG Max WS - TR3008	---●---
WS Max WS - TR3008	---●---
EG Max WS - TR3003	---●---
WS Max WS - TR3003	---●---
EG Max WS - TR3002	---●---
WS Max WS - TR3002	---●---
EG Max WS - TR3001	---●---
WS Max WS - TR3001	---●---
Ground	---
LOB	---
ROB	---

HEC-RAS Profile: Max WS

River	Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Santo Antonio	Santo Antonio	9	Max WS	TR200d2	25.80	74.75	78.57		78.63	0.006266	1.14	29.33	28.13	0.21
Santo Antonio	Santo Antonio	9	Max WS	TR200d1	24.40	74.75	78.49		78.54	0.006292	1.12	27.21	22.83	0.21
Santo Antonio	Santo Antonio	9	Max WS	TR200d3	25.00	74.75	78.53		78.58	0.006257	1.13	28.17	25.37	0.21
Santo Antonio	Santo Antonio	9	Max WS	TR200d4	23.13	74.75	78.42		78.48	0.006087	1.09	25.90	18.83	0.21
Santo Antonio	Santo Antonio	9	Max WS	TR200d5	21.26	74.75	78.31		78.37	0.005960	1.05	24.04	16.39	0.20
Santo Antonio	Santo Antonio	9	Max WS	TR200d6	19.61	74.75	78.21		78.26	0.005943	1.02	22.41	15.61	0.20
Santo Antonio	Santo Antonio	9	Max WS	TR200d8	16.96	74.75	78.03		78.08	0.005915	0.97	19.74	14.24	0.20
Santo Antonio	Santo Antonio	9	Max WS	TR30d1	15.11	74.75	77.89		77.93	0.005939	0.94	17.78	12.98	0.20
Santo Antonio	Santo Antonio	9	Max WS	TR30d2	17.54	74.75	78.07		78.12	0.005928	0.98	20.31	14.55	0.20
Santo Antonio	Santo Antonio	9	Max WS	TR30d3	17.10	74.75	78.04		78.09	0.005920	0.97	19.88	14.32	0.20
Santo Antonio	Santo Antonio	9	Max WS	TR30d4	15.89	74.75	77.96		78.00	0.005898	0.95	18.65	13.56	0.20
Santo Antonio	Santo Antonio	9	Max WS	TR30d5	14.66	74.75	77.86		77.90	0.005874	0.92	17.40	12.72	0.19
Santo Antonio	Santo Antonio	9	Max WS	TR30d6	13.57	74.75	77.77		77.81	0.005849	0.90	16.30	11.92	0.19
Santo Antonio	Santo Antonio	9	Max WS	TR30d8	11.77	74.75	77.61		77.65	0.005796	0.85	14.52	10.51	0.19
Santo Antonio	Santo Antonio	8	Max WS	TR200d2	25.79	74.16	77.99		78.07	0.010167	1.38	23.02	14.53	0.25
Santo Antonio	Santo Antonio	8	Max WS	TR200d1	24.28	74.16	77.90		77.99	0.010215	1.35	21.81	14.03	0.25
Santo Antonio	Santo Antonio	8	Max WS	TR200d3	24.99	74.16	77.95		78.03	0.010138	1.36	22.43	14.29	0.25
Santo Antonio	Santo Antonio	8	Max WS	TR200d4	23.13	74.16	77.85		77.93	0.010044	1.33	21.06	13.70	0.25
Santo Antonio	Santo Antonio	8	Max WS	TR200d5	21.26	74.16	77.75		77.82	0.009948	1.29	19.67	13.08	0.25
Santo Antonio	Santo Antonio	8	Max WS	TR200d6	19.61	74.16	77.65		77.72	0.009847	1.25	18.43	12.50	0.25
Santo Antonio	Santo Antonio	8	Max WS	TR200d8	16.96	74.16	77.48		77.55	0.009670	1.18	16.40	11.48	0.24
Santo Antonio	Santo Antonio	8	Max WS	TR30d1	15.04	74.16	77.34		77.40	0.009625	1.14	14.83	10.64	0.24
Santo Antonio	Santo Antonio	8	Max WS	TR30d2	17.53	74.16	77.52		77.59	0.009722	1.20	16.83	11.71	0.24
Santo Antonio	Santo Antonio	8	Max WS	TR30d3	17.10	74.16	77.49		77.56	0.009684	1.19	16.50	11.54	0.24
Santo Antonio	Santo Antonio	8	Max WS	TR30d4	15.89	74.16	77.41		77.47	0.009593	1.16	15.57	11.04	0.24
Santo Antonio	Santo Antonio	8	Max WS	TR30d5	14.66	74.16	77.32		77.38	0.009505	1.12	14.59	10.50	0.24
Santo Antonio	Santo Antonio	8	Max WS	TR30d6	13.56	74.16	77.23		77.29	0.009416	1.09	13.72	9.99	0.23
Santo Antonio	Santo Antonio	8	Max WS	TR30d8	11.77	74.16	77.08		77.13	0.009264	1.03	12.28	9.09	0.23
Santo Antonio	Santo Antonio	7	Max WS	TR200d2	25.77	73.16	76.88		76.93	0.005285	1.11	34.40	24.18	0.20
Santo Antonio	Santo Antonio	7	Max WS	TR200d1	23.99	73.16	76.81		76.85	0.005163	1.08	32.62	23.33	0.19
Santo Antonio	Santo Antonio	7	Max WS	TR200d3	24.97	73.16	76.85		76.89	0.005224	1.09	33.63	23.82	0.19
Santo Antonio	Santo Antonio	7	Max WS	TR200d4	23.11	73.16	76.77		76.81	0.005073	1.06	31.81	22.94	0.19
Santo Antonio	Santo Antonio	7	Max WS	TR200d5	21.25	73.16	76.69		76.73	0.004918	1.02	29.92	21.98	0.19
Santo Antonio	Santo Antonio	7	Max WS	TR200d6	19.61	73.16	76.61		76.65	0.004769	0.99	28.22	21.09	0.18
Santo Antonio	Santo Antonio	7	Max WS	TR200d8	16.96	73.16	76.47		76.51	0.004493	0.93	25.43	19.55	0.18
Santo Antonio	Santo Antonio	7	Max WS	TR30d1	14.87	73.16	76.35		76.38	0.004307	0.88	23.04	18.21	0.17
Santo Antonio	Santo Antonio	7	Max WS	TR30d2	17.51	73.16	76.50		76.54	0.004553	0.94	26.02	19.87	0.18
Santo Antonio	Santo Antonio	7	Max WS	TR30d3	17.08	73.16	76.48		76.51	0.004507	0.93	25.57	19.62	0.18
Santo Antonio	Santo Antonio	7	Max WS	TR30d4	15.88	73.16	76.41		76.44	0.004381	0.91	24.26	18.90	0.17
Santo Antonio	Santo Antonio	7	Max WS	TR30d5	14.64	73.16	76.34		76.37	0.004252	0.88	22.85	18.10	0.17
Santo Antonio	Santo Antonio	7	Max WS	TR30d6	13.56	73.16	76.26		76.29	0.004134	0.85	21.60	17.41	0.17
Santo Antonio	Santo Antonio	7	Max WS	TR30d8	11.77	73.16	76.14		76.17	0.003936	0.80	19.48	16.32	0.16
Santo Antonio	Santo Antonio	6.5												
Santo Antonio	Santo Antonio	6												
Santo Antonio	Santo Antonio	6	Max WS	TR200d2	24.81	72.16	75.23	74.87	75.33	0.034255	1.69	20.54	25.22	0.39
Santo Antonio	Santo Antonio	6	Max WS	TR200d1	23.01	72.16	75.21	74.84	75.30	0.031547	1.61	19.99	24.92	0.37
Santo Antonio	Santo Antonio	6	Max WS	TR200d3	24.06	72.16	75.22	74.86	75.31	0.033511	1.66	20.22	25.04	0.38
Santo Antonio	Santo Antonio	6	Max WS	TR200d4	13.99	72.16	75.19	74.61	75.22	0.012356	1.00	19.54	24.67	0.23
Santo Antonio	Santo Antonio	6	Max WS	TR200d5	13.99	72.16	75.19	74.61	75.22	0.012321	1.00	19.56	24.68	0.23
Santo Antonio	Santo Antonio	6	Max WS	TR200d6	13.99	72.16	75.19	74.61	75.22	0.012356	1.00	19.54	24.67	0.23
Santo Antonio	Santo Antonio	6	Max WS	TR200d8	13.99	72.16	75.19	74.61	75.22	0.012356	1.00	19.54	24.67	0.23
Santo Antonio	Santo Antonio	6	Max WS	TR30d1	13.96	72.16	75.16	74.61	75.20	0.013568	1.04	18.80	24.25	0.24
Santo Antonio	Santo Antonio	6	Max WS	TR30d2	13.99	72.16	75.19	74.61	75.22	0.012344	1.00	19.55	24.67	0.23
Santo Antonio	Santo Antonio	6	Max WS	TR30d3	13.99	72.16	75.19	74.61	75.22	0.012344	1.00	19.55	24.67	0.23
Santo Antonio	Santo Antonio	6	Max WS	TR30d4	13.99	72.16	75.19	74.61	75.22	0.012356	1.00	19.54	24.67	0.23
Santo Antonio	Santo Antonio	6	Max WS	TR30d5	13.94	72.16	75.14	74.61	75.18	0.014489	1.06	18.29	23.96	0.25
Santo Antonio	Santo Antonio	6	Max WS	TR30d6	13.32	72.16	74.81	74.01	74.92	0.042678	1.60	11.29	19.51	0.41
Santo Antonio	Santo Antonio	6	Max WS	TR30d8	11.60	72.16	74.74	73.87	74.84	0.044041	1.58	9.86	18.48	0.42
Santo Antonio	Santo Antonio	5.5												
Santo Antonio	Santo Antonio	5												
Santo Antonio	Santo Antonio	5	Max WS	TR200d2	24.81	72.10	75.14		75.25	0.021039	1.82	21.64	29.46	0.40
Santo Antonio	Santo Antonio	5	Max WS	TR200d1	23.00	72.10	75.09		75.19	0.022092	1.83	20.00	29.39	0.41
Santo Antonio	Santo Antonio	5	Max WS	TR200d3	24.06	72.10	75.12		75.23	0.021449	1.83	20.97	29.43	0.40
Santo Antonio	Santo Antonio	5	Max WS	TR200d4	22.28	72.10	75.06		75.17	0.022509	1.84	19.34	29.37	0.41
Santo Antonio	Santo Antonio	5	Max WS	TR200d5	20.44	72.10	75.01		75.12	0.023624	1.85	17.65	29.30	0.42
Santo Antonio	Santo Antonio	5	Max WS	TR200d6	18.81	72.10	74.95		75.07	0.024260	1.84	16.11	27.40	0.42
Santo Antonio	Santo Antonio	5	Max WS	TR200d8	16.16	72.10	74.86		74.98	0.025064	1.81	13.71	24.07	0.43
Santo Antonio	Santo Antonio	5	Max WS	TR30d1	13.96	72.10	74.77		74.89	0.025633	1.77	11.73	20.94	0.43
Santo Antonio	Santo Antonio	5	Max WS	TR30d2	16.71	72.10	74.88		75.00	0.024953	1.82	14.18	24.76	0.43
Santo Antonio	Santo Antonio	5	Max WS	TR30d3	16.28	72.10	74.86		74.98	0.025046	1.81	13.81	24.22	0.43
Santo Antonio	Santo Antonio	5	Max WS	TR30d4	15.09	72.10	74.82		74.94	0.025279	1.79	12.76	22.62	0.43
Santo Antonio	Santo Antonio	5	Max WS	TR30d5	13.94	72.10	74.77		74.89	0.025757	1.77	11.69	20.86	0.43
Santo Antonio	Santo Antonio	5	Max WS	TR30d6	13.32	72.10	74.72		74.85	0.027502	1.80	10.81	19.53	0.44
Santo Antonio	Santo Antonio	5	Max WS	TR30d8	11.60	72.10	74.64		74.78	0.028883	1.78	9.24	18.83	0.45
Santo Antonio	Santo Antonio	4.9												
Santo Antonio	Santo Antonio	4												
Santo Antonio	Santo Antonio	4	Max WS	TR200d2	24.44	70.69	74.17		74.24	0.009495	1.45	25.19	22.60	0.27
Santo Antonio	Santo Antonio	4	Max WS	TR200d1	22.82	70.69	74.10		74.17	0.008917	1.46	23.46	22.44	0.27
Santo Antonio	Santo Antonio	4	Max WS	TR200d3	23.79	70.69	74.14		74.21	0.009655	1.45	24.50	22.54	0.27
Santo Antonio	Santo Antonio	4	Max WS	TR200d4	22.25	70.69	74.07		74.14	0.010073	1.46	22.84	22.39	0.27
Santo Antonio	Santo Antonio	4	Max WS	TR200d5	20.71	70.69	73.98		74.06	0.010821	1.48	20.90	22.22	0.28
Santo Antonio	Santo Antonio	4	Max WS	TR200d6	19.31	70.69	73.90		73.99	0.011612	1.51	19.12	22.15	0.29
Santo Antonio	Santo Antonio	4	Max WS	TR200d8	16.88	70.69	73.76		73.85	0.012259	1.50	16.16	18.73	0.30
Santo Antonio	Santo Antonio	4	Max WS	TR30d1	14.62	70.69	73.62		73.71	0.012678	1.47	13.71	15.81	0.30
Santo Antonio	Santo Antonio	4	Max WS	TR30d2	17.43	70.69	73.79		73.87	0.012474	1.52	16.61	19.69	0.30
Santo Antonio	Santo Antonio	4	Max WS	TR30d3	17.01	70.69	73.76		73.85	0.012445	1.51	16.16	18.73	0.30
Santo Antonio	Santo Antonio	4	Max WS	TR30d4	15.82	70.69	73.69		73.78	0.012542	1.49	14.93	17.14	0.30
Santo Antonio	Santo Antonio	4	Max WS	TR30d5	14.57	70.69	73.62		73.70	0.012683	1.46	13.66	15.75	0.30
Santo Antonio	Santo Antonio	4	Max WS	TR30d6	13.51	70.69	73.55		73.63	0.012728	1.44	12.63	14.52	0.30
Santo Antonio	Santo Antonio	4	Max WS	TR30d8	11.73	70.69	73.43		73.51	0.012539	1.38	11.01	12.35	0.29
Santo Antonio	Santo Antonio	3												

HEC-RAS Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Santo Antonio	Santo Antonio	3	Max WS	TR30d3	17.06	70.87	73.26		73.33	0.008694	1.17	14.91	11.43	0.30
Santo Antonio	Santo Antonio	3	Max WS	TR30d4	15.87	70.87	73.21		73.27	0.008506	1.13	14.29	11.16	0.30
Santo Antonio	Santo Antonio	3	Max WS	TR30d5	14.61	70.87	73.15		73.21	0.008291	1.09	13.63	10.87	0.29
Santo Antonio	Santo Antonio	3	Max WS	TR30d6	13.55	70.87	73.09		73.15	0.008091	1.05	13.07	10.61	0.28
Santo Antonio	Santo Antonio	3	Max WS	TR30d8	11.76	70.87	73.00		73.05	0.007704	0.98	12.11	10.16	0.27
Santo Antonio	Santo Antonio	2	Max WS	TR200d2	25.75	70.60	73.36		73.57	0.031622	2.04	13.41	11.90	0.53
Santo Antonio	Santo Antonio	2	Max WS	TR200d1	23.77	70.60	73.29		73.49	0.032220	2.00	12.56	11.46	0.53
Santo Antonio	Santo Antonio	2	Max WS	TR200d3	24.95	70.60	73.33		73.54	0.031684	2.02	13.09	11.73	0.53
Santo Antonio	Santo Antonio	2	Max WS	TR200d4	22.11	70.60	73.28		73.45	0.028380	1.87	12.48	11.42	0.50
Santo Antonio	Santo Antonio	2	Max WS	TR200d5	17.36	70.60	73.25		73.36	0.019078	1.51	12.09	11.22	0.41
Santo Antonio	Santo Antonio	2	Max WS	TR200d6	14.37	70.60	73.23		73.31	0.013704	1.27	11.89	11.11	0.35
Santo Antonio	Santo Antonio	2	Max WS	TR200d8	14.24	70.60	73.15		73.24	0.016505	1.34	11.05	10.66	0.38
Santo Antonio	Santo Antonio	2	Max WS	TR30d1	14.67	70.60	72.91		73.06	0.036288	1.72	8.61	9.20	0.54
Santo Antonio	Santo Antonio	2	Max WS	TR30d2	17.48	70.60	73.03		73.20	0.034631	1.82	9.84	9.96	0.53
Santo Antonio	Santo Antonio	2	Max WS	TR30d3	17.06	70.60	73.02		73.18	0.034844	1.80	9.66	9.86	0.54
Santo Antonio	Santo Antonio	2	Max WS	TR30d4	15.87	70.60	72.96		73.12	0.035508	1.76	9.14	9.54	0.54
Santo Antonio	Santo Antonio	2	Max WS	TR30d5	14.61	70.60	72.90		73.05	0.036317	1.72	8.58	9.19	0.54
Santo Antonio	Santo Antonio	2	Max WS	TR30d6	13.55	70.60	72.85		72.99	0.037130	1.68	8.11	8.88	0.54
Santo Antonio	Santo Antonio	2	Max WS	TR30d8	11.76	70.60	72.76		72.89	0.038749	1.61	7.32	8.34	0.54
Santo Antonio	Santo Antonio	1	Max WS	TR200d2	4.84	69.03	72.79		72.79	0.000146	0.17	27.78	13.66	0.04
Santo Antonio	Santo Antonio	1	Max WS	TR200d1	3.64	69.03	72.41		72.41	0.000141	0.16	22.78	12.53	0.04
Santo Antonio	Santo Antonio	1	Max WS	TR200d3	5.80	69.03	72.97		72.97	0.000166	0.19	30.25	14.18	0.04
Santo Antonio	Santo Antonio	1	Max WS	TR200d4	7.53	69.03	73.06		73.06	0.000250	0.24	31.51	14.44	0.05
Santo Antonio	Santo Antonio	1	Max WS	TR200d5	9.32	69.03	73.08		73.09	0.000371	0.29	31.89	14.51	0.06
Santo Antonio	Santo Antonio	1	Max WS	TR200d6	10.40	69.03	73.07		73.07	0.000472	0.33	31.64	14.46	0.07
Santo Antonio	Santo Antonio	1	Max WS	TR200d8	11.11	69.03	72.96		72.96	0.000620	0.37	30.06	14.14	0.08
Santo Antonio	Santo Antonio	1	Max WS	TR30d1	3.38	69.03	71.76		71.76	0.000371	0.22	15.23	10.60	0.06
Santo Antonio	Santo Antonio	1	Max WS	TR30d2	4.83	69.03	72.09		72.10	0.000413	0.25	18.98	11.60	0.06
Santo Antonio	Santo Antonio	1	Max WS	TR30d3	4.95	69.03	72.26		72.26	0.000330	0.24	20.95	12.09	0.06
Santo Antonio	Santo Antonio	1	Max WS	TR30d4	6.56	69.03	72.34		72.34	0.000513	0.30	21.90	12.32	0.07
Santo Antonio	Santo Antonio	1	Max WS	TR30d5	7.64	69.03	72.36		72.37	0.000670	0.34	22.21	12.39	0.08
Santo Antonio	Santo Antonio	1	Max WS	TR30d6	8.10	69.03	72.35		72.36	0.000773	0.37	22.01	12.35	0.09
Santo Antonio	Santo Antonio	1	Max WS	TR30d8	8.01	69.03	72.26		72.27	0.000868	0.38	20.93	12.09	0.09
Santa Marta	SM monte	59	Max WS	TR200d2	65.74	82.10	85.43		85.47	0.004127	1.00	80.73	56.12	0.20
Santa Marta	SM monte	59	Max WS	TR200d1	52.60	82.10	85.09		85.13	0.004543	0.95	64.10	42.80	0.20
Santa Marta	SM monte	59	Max WS	TR200d3	70.87	82.10	85.56		85.60	0.003895	1.00	88.36	58.55	0.19
Santa Marta	SM monte	59	Max WS	TR200d4	71.41	82.10	85.57		85.62	0.003864	1.00	89.24	58.71	0.19
Santa Marta	SM monte	59	Max WS	TR200d5	69.69	82.10	85.53		85.58	0.003938	1.00	86.71	58.24	0.19
Santa Marta	SM monte	59	Max WS	TR200d6	67.15	82.10	85.47		85.51	0.004052	1.00	82.95	57.54	0.20
Santa Marta	SM monte	59	Max WS	TR200d8	61.60	82.10	85.32		85.37	0.004259	0.98	75.17	51.78	0.20
Santa Marta	SM monte	59	Max WS	TR30d1	32.39	82.10	84.43		84.47	0.006285	0.89	39.18	32.73	0.23
Santa Marta	SM monte	59	Max WS	TR30d2	41.62	82.10	84.78		84.82	0.004943	0.90	51.76	38.15	0.21
Santa Marta	SM monte	59	Max WS	TR30d3	45.71	82.10	84.89		84.93	0.004875	0.93	55.92	39.77	0.21
Santa Marta	SM monte	59	Max WS	TR30d4	46.63	82.10	84.92		84.96	0.004814	0.93	57.06	40.21	0.21
Santa Marta	SM monte	59	Max WS	TR30d5	45.90	82.10	84.90		84.94	0.004856	0.93	56.18	39.88	0.21
Santa Marta	SM monte	59	Max WS	TR30d6	44.50	82.10	84.85		84.89	0.004942	0.92	54.48	39.22	0.21
Santa Marta	SM monte	59	Max WS	TR30d8	41.16	82.10	84.77		84.81	0.004975	0.90	51.19	37.92	0.21
Santa Marta	SM monte	58	Max WS	TR200d2	65.72	81.10	85.32		85.32	0.000949	0.59	167.12	66.80	0.10
Santa Marta	SM monte	58	Max WS	TR200d1	52.59	81.10	84.96		84.97	0.000960	0.56	143.66	65.03	0.09
Santa Marta	SM monte	58	Max WS	TR200d3	70.84	81.10	85.45		85.46	0.000937	0.60	176.44	67.49	0.10
Santa Marta	SM monte	58	Max WS	TR200d4	71.39	81.10	85.47		85.48	0.000934	0.60	177.51	67.57	0.10
Santa Marta	SM monte	58	Max WS	TR200d5	69.68	81.10	85.42		85.43	0.000938	0.60	174.44	67.34	0.10
Santa Marta	SM monte	58	Max WS	TR200d6	67.14	81.10	85.36		85.37	0.000944	0.59	169.86	67.00	0.10
Santa Marta	SM monte	58	Max WS	TR200d8	61.60	81.10	85.21		85.22	0.000952	0.58	159.97	66.26	0.10
Santa Marta	SM monte	58	Max WS	TR30d1	32.37	81.10	84.23		84.24	0.001162	0.53	97.68	60.54	0.10
Santa Marta	SM monte	58	Max WS	TR30d2	41.60	81.10	84.64		84.64	0.000961	0.52	123.01	63.43	0.09
Santa Marta	SM monte	58	Max WS	TR30d3	45.69	81.10	84.75		84.76	0.000980	0.54	130.03	63.98	0.09
Santa Marta	SM monte	58	Max WS	TR30d4	46.62	81.10	84.78		84.79	0.000974	0.54	132.03	64.13	0.09
Santa Marta	SM monte	58	Max WS	TR30d5	45.89	81.10	84.76		84.76	0.000977	0.54	130.52	64.01	0.09
Santa Marta	SM monte	58	Max WS	TR30d6	44.48	81.10	84.71		84.72	0.000985	0.54	127.54	63.78	0.09
Santa Marta	SM monte	58	Max WS	TR30d8	41.15	81.10	84.62		84.63	0.000965	0.52	121.98	63.35	0.09
Santa Marta	SM monte	57	Max WS	TR200d2	65.66	80.49	84.86		85.08	0.022432	2.05	31.97	8.55	0.34
Santa Marta	SM monte	57	Max WS	TR200d1	52.56	80.49	84.57		84.73	0.017822	1.78	29.51	8.52	0.31
Santa Marta	SM monte	57	Max WS	TR200d3	70.78	80.49	84.98		85.21	0.024034	2.15	32.95	8.57	0.35
Santa Marta	SM monte	57	Max WS	TR200d4	71.33	80.49	84.99		85.23	0.024184	2.16	33.07	8.57	0.35
Santa Marta	SM monte	57	Max WS	TR200d5	69.64	80.49	84.95		85.18	0.023659	2.13	32.75	8.56	0.35
Santa Marta	SM monte	57	Max WS	TR200d6	67.11	80.49	84.90		85.12	0.022855	2.08	32.27	8.56	0.34
Santa Marta	SM monte	57	Max WS	TR200d8	61.59	80.49	84.77		84.97	0.021004	1.97	31.23	8.54	0.33
Santa Marta	SM monte	57	Max WS	TR30d1	32.36	80.49	83.87		83.97	0.012505	1.37	23.56	8.45	0.26
Santa Marta	SM monte	57	Max WS	TR30d2	41.58	80.49	84.31		84.43	0.013842	1.53	27.25	8.50	0.27
Santa Marta	SM monte	57	Max WS	TR30d3	45.68	80.49	84.39		84.53	0.015576	1.63	27.96	8.51	0.29
Santa Marta	SM monte	57	Max WS	TR30d4	46.61	80.49	84.42		84.56	0.015845	1.65	28.20	8.51	0.29
Santa Marta	SM monte	57	Max WS	TR30d5	45.88	80.49	84.40		84.53	0.015619	1.64	28.02	8.51	0.29
Santa Marta	SM monte	57	Max WS	TR30d6	44.48	80.49	84.36		84.49	0.015201	1.61	27.66	8.50	0.28
Santa Marta	SM monte	57	Max WS	TR30d8	41.15	80.49	84.29		84.41	0.013736	1.52	27.12	8.50	0.27
Santa Marta	SM monte	56	Max WS	TR200d2	65.33	79.54	84.20		84.20	0.000589	0.45	231.97	107.56	0.07
Santa Marta	SM monte	56	Max WS	TR200d1	52.20	79.54	83.75		83.76	0.000716	0.46	184.79	101.13	0.07
Santa Marta	SM monte	56	Max WS	TR200d3	70.51	79.54	84.36		84.37	0.000549	0.44	249.37	108.28	0.07
Santa Marta	SM monte	56	Max WS	TR200d4	71.14	79.54	84.38		84.39	0.000544	0.44	251.49	108.38	0.07
Santa Marta	SM monte	56	Max WS	TR200d5	69.49	79.54	84.33		84.33	0.000555	0.44	246.04	108.12	0.07
Santa Marta	SM monte	56	Max WS	TR200d6	66.99	79.54	84.25		84.26	0.000575	0.45	237.68	107.79	0.07
Santa Marta	SM monte	56	Max WS	TR200d8	61.50	79.54	84.08		84.08	0.000625	0.45	218.86	107.03	0.07
Santa Marta	SM monte	56	Max WS	TR30d1	32.18	79.54	82.91		82.91	0.001015	0.46	111.06	74.68	0.09
Santa Marta	SM monte	56	Max WS	TR30d2	41.34	79.54	83.32		83.32	0.000849	0.46	144.00	86.57	0.08
Santa Marta	SM monte	56	Max WS	TR30d3	45.42	79.54	83.49		83.49	0.000792	0.46	159.15	91.93	0.08
Santa Marta	SM monte	56	Max WS	TR30d4	46.40	79.54	83.53		83.53	0.000779	0.46	162.85	94.50	0.08
Santa Marta	SM monte	56	Max WS	TR30d5	45.73	79.54	83.50		83.51	0.000787	0.46	160.36	92.67	0.08
Santa Marta	SM monte	56	Max WS	TR30d6	44.37	79.54	83.45		83.45	0.000805	0.46			

HEC-RAS Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Plan	Q Total (m ³ /s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m ²)	Top Width (m)	Froude # Chl
Santa Marta	SM monte	55	Max WS	TR30d3	45.40	78.73	83.08		83.23	0.014600	1.79	28.83	10.77	0.30
Santa Marta	SM monte	55	Max WS	TR30d4	46.39	78.73	83.12		83.27	0.014819	1.81	29.22	11.03	0.30
Santa Marta	SM monte	55	Max WS	TR30d5	45.72	78.73	83.10		83.25	0.014670	1.80	28.96	10.85	0.30
Santa Marta	SM monte	55	Max WS	TR30d6	44.36	78.73	83.05		83.19	0.014349	1.77	28.43	10.49	0.30
Santa Marta	SM monte	55	Max WS	TR30d8	41.08	78.73	82.92		83.06	0.013493	1.69	27.20	9.58	0.29
Santa Marta	SM monte	54	Max WS	TR200d2	65.31	78.81	83.11		83.31	0.020886	2.14	34.63	9.81	0.35
Santa Marta	SM monte	54	Max WS	TR200d1	52.18	78.81	82.78		82.94	0.017426	1.88	31.41	9.81	0.32
Santa Marta	SM monte	54	Max WS	TR200d3	70.48	78.81	83.23		83.45	0.022222	2.23	35.80	9.81	0.36
Santa Marta	SM monte	54	Max WS	TR200d4	71.12	78.81	83.25		83.47	0.022384	2.24	35.94	9.81	0.36
Santa Marta	SM monte	54	Max WS	TR200d5	69.48	78.81	83.21		83.42	0.021955	2.21	35.59	9.81	0.36
Santa Marta	SM monte	54	Max WS	TR200d6	66.98	78.81	83.15		83.36	0.021303	2.17	35.03	9.81	0.35
Santa Marta	SM monte	54	Max WS	TR200d8	61.49	78.81	83.02		83.21	0.019871	2.06	33.75	9.81	0.34
Santa Marta	SM monte	54	Max WS	TR30d1	32.15	78.81	82.17		82.26	0.011922	1.43	25.41	9.81	0.27
Santa Marta	SM monte	54	Max WS	TR30d2	41.32	78.81	82.47		82.59	0.014488	1.65	28.36	9.81	0.29
Santa Marta	SM monte	54	Max WS	TR30d3	45.40	78.81	82.59		82.73	0.015600	1.74	29.56	9.81	0.30
Santa Marta	SM monte	54	Max WS	TR30d4	46.38	78.81	82.62		82.76	0.015862	1.76	29.84	9.81	0.31
Santa Marta	SM monte	54	Max WS	TR30d5	45.72	78.81	82.60		82.74	0.015677	1.74	29.66	9.81	0.30
Santa Marta	SM monte	54	Max WS	TR30d6	44.36	78.81	82.56		82.69	0.015308	1.71	29.27	9.81	0.30
Santa Marta	SM monte	54	Max WS	TR30d8	41.08	78.81	82.47		82.59	0.014409	1.64	28.30	9.81	0.29
Santa Marta	SM monte	53	Max WS	TR200d2	65.22	79.09	82.14		82.18	0.006671	1.17	73.85	43.85	0.24
Santa Marta	SM monte	53	Max WS	TR200d1	52.09	79.09	81.86		81.90	0.006633	1.07	62.26	39.49	0.23
Santa Marta	SM monte	53	Max WS	TR200d3	70.39	79.09	82.24		82.29	0.006672	1.20	78.30	45.27	0.24
Santa Marta	SM monte	53	Max WS	TR200d4	71.05	79.09	82.25		82.30	0.006657	1.20	78.88	45.39	0.24
Santa Marta	SM monte	53	Max WS	TR200d5	69.42	79.09	82.22		82.27	0.006672	1.19	77.51	45.08	0.24
Santa Marta	SM monte	53	Max WS	TR200d6	66.95	79.09	82.17		82.22	0.006661	1.18	75.41	44.38	0.24
Santa Marta	SM monte	53	Max WS	TR200d8	61.47	79.09	82.07		82.11	0.006633	1.14	70.71	42.76	0.24
Santa Marta	SM monte	53	Max WS	TR30d1	32.13	79.09	81.31		81.34	0.007272	0.94	43.01	32.31	0.23
Santa Marta	SM monte	53	Max WS	TR30d2	41.27	79.09	81.59		81.62	0.006714	0.99	52.12	34.65	0.23
Santa Marta	SM monte	53	Max WS	TR30d3	45.34	79.09	81.69		81.73	0.006663	1.02	55.98	36.53	0.23
Santa Marta	SM monte	53	Max WS	TR30d4	46.33	79.09	81.72		81.76	0.006645	1.03	56.95	37.00	0.23
Santa Marta	SM monte	53	Max WS	TR30d5	45.68	79.09	81.70		81.74	0.006644	1.02	56.35	36.71	0.23
Santa Marta	SM monte	53	Max WS	TR30d6	44.33	79.09	81.67		81.71	0.006652	1.01	55.09	36.09	0.23
Santa Marta	SM monte	53	Max WS	TR30d8	41.06	79.09	81.58		81.62	0.006704	0.99	51.98	34.60	0.23
Santa Marta	SM monte	52	Max WS	TR200d2	65.17	78.53	81.92		81.99	0.006907	1.24	59.54	27.46	0.24
Santa Marta	SM monte	52	Max WS	TR200d1	52.04	78.53	81.64		81.70	0.006314	1.12	52.25	26.06	0.23
Santa Marta	SM monte	52	Max WS	TR200d3	70.35	78.53	82.01		82.09	0.007173	1.29	62.21	28.21	0.25
Santa Marta	SM monte	52	Max WS	TR200d4	71.02	78.53	82.03		82.10	0.007203	1.29	62.56	28.30	0.25
Santa Marta	SM monte	52	Max WS	TR200d5	69.41	78.53	82.00		82.07	0.007118	1.28	61.76	28.08	0.24
Santa Marta	SM monte	52	Max WS	TR200d6	66.93	78.53	81.95		82.02	0.006989	1.26	60.49	27.73	0.24
Santa Marta	SM monte	52	Max WS	TR200d8	61.46	78.53	81.85		81.91	0.006992	1.20	57.64	26.92	0.24
Santa Marta	SM monte	52	Max WS	TR30d1	32.12	78.53	81.07		81.11	0.006059	0.94	37.83	24.23	0.22
Santa Marta	SM monte	52	Max WS	TR30d2	41.26	78.53	81.37		81.41	0.006038	1.02	45.13	25.25	0.22
Santa Marta	SM monte	52	Max WS	TR30d3	45.31	78.53	81.48		81.53	0.006118	1.05	47.95	25.57	0.22
Santa Marta	SM monte	52	Max WS	TR30d4	46.30	78.53	81.51		81.56	0.006129	1.06	48.65	25.65	0.22
Santa Marta	SM monte	52	Max WS	TR30d5	45.66	78.53	81.49		81.54	0.006108	1.06	48.23	25.61	0.22
Santa Marta	SM monte	52	Max WS	TR30d6	44.31	78.53	81.45		81.50	0.006071	1.04	47.34	25.50	0.22
Santa Marta	SM monte	52	Max WS	TR30d8	41.06	78.53	81.36		81.41	0.006015	1.01	45.03	25.24	0.22
Santa Marta	SM monte	51.9			Lat Struct									
Santa Marta	SM monte	51	Max WS	TR200d2	59.55	78.01	81.79		81.84	0.002666	0.93	66.24	30.30	0.19
Santa Marta	SM monte	51	Max WS	TR200d1	49.58	78.01	81.52		81.56	0.002676	0.88	58.12	28.76	0.18
Santa Marta	SM monte	51	Max WS	TR200d3	63.33	78.01	81.89		81.93	0.002670	0.96	69.20	30.84	0.19
Santa Marta	SM monte	51	Max WS	TR200d4	63.82	78.01	81.90		81.95	0.002669	0.96	69.60	30.91	0.19
Santa Marta	SM monte	51	Max WS	TR200d5	62.64	78.01	81.87		81.92	0.002665	0.95	68.71	30.75	0.19
Santa Marta	SM monte	51	Max WS	TR200d6	60.85	78.01	81.83		81.87	0.002663	0.94	67.31	30.49	0.19
Santa Marta	SM monte	51	Max WS	TR200d8	56.81	78.01	81.72		81.76	0.002656	0.92	64.14	29.91	0.18
Santa Marta	SM monte	51	Max WS	TR30d1	32.12	78.01	80.94		80.97	0.002808	0.76	42.49	25.16	0.18
Santa Marta	SM monte	51	Max WS	TR30d2	40.77	78.01	81.24		81.27	0.002758	0.82	50.29	27.20	0.18
Santa Marta	SM monte	51	Max WS	TR30d3	44.19	78.01	81.35		81.39	0.002720	0.84	53.37	27.82	0.18
Santa Marta	SM monte	51	Max WS	TR30d4	45.00	78.01	81.38		81.41	0.002706	0.85	54.14	27.98	0.18
Santa Marta	SM monte	51	Max WS	TR30d5	44.47	78.01	81.36		81.40	0.002708	0.84	53.69	27.89	0.18
Santa Marta	SM monte	51	Max WS	TR30d6	43.36	78.01	81.32		81.36	0.002717	0.84	52.70	27.69	0.18
Santa Marta	SM monte	51	Max WS	TR30d8	40.59	78.01	81.23		81.27	0.002749	0.82	50.19	27.18	0.18
Santa Marta	SM monte	50	Max WS	TR200d2	53.78	77.25	81.53		81.64	0.007212	1.47	38.45	16.72	0.28
Santa Marta	SM monte	50	Max WS	TR200d1	47.00	77.25	81.23		81.34	0.007946	1.45	33.61	15.88	0.29
Santa Marta	SM monte	50	Max WS	TR200d3	56.25	77.25	81.63		81.74	0.007004	1.48	40.21	17.14	0.28
Santa Marta	SM monte	50	Max WS	TR200d4	56.56	77.25	81.65		81.75	0.006974	1.48	40.44	17.21	0.28
Santa Marta	SM monte	50	Max WS	TR200d5	55.82	77.25	81.61		81.72	0.007030	1.47	39.92	17.06	0.28
Santa Marta	SM monte	50	Max WS	TR200d6	54.65	77.25	81.57		81.67	0.007124	1.47	39.09	16.83	0.28
Santa Marta	SM monte	50	Max WS	TR200d8	51.98	77.25	81.45		81.56	0.007356	1.46	37.22	16.51	0.28
Santa Marta	SM monte	50	Max WS	TR30d1	32.11	77.25	80.63		80.72	0.009007	1.32	24.62	14.18	0.31
Santa Marta	SM monte	50	Max WS	TR30d2	40.01	77.25	80.93		81.03	0.008729	1.41	28.97	15.03	0.30
Santa Marta	SM monte	50	Max WS	TR30d3	42.88	77.25	81.05		81.15	0.008452	1.43	30.78	15.36	0.30
Santa Marta	SM monte	50	Max WS	TR30d4	43.54	77.25	81.08		81.18	0.008353	1.43	31.24	15.45	0.30
Santa Marta	SM monte	50	Max WS	TR30d5	43.12	77.25	81.06		81.17	0.008390	1.43	30.98	15.40	0.30
Santa Marta	SM monte	50	Max WS	TR30d6	42.22	77.25	81.03		81.13	0.008481	1.42	30.41	15.29	0.30
Santa Marta	SM monte	50	Max WS	TR30d8	39.88	77.25	80.93		81.03	0.008705	1.41	28.94	15.02	0.30
Santa Marta	SM monte	49	Max WS	TR200d2	59.16	76.96	81.12		81.24	0.007724	1.54	42.90	19.96	0.30
Santa Marta	SM monte	49	Max WS	TR200d1	50.51	76.96	80.79		80.90	0.008712	1.52	36.43	18.84	0.31
Santa Marta	SM monte	49	Max WS	TR200d3	61.86	76.96	81.25		81.36	0.007301	1.53	45.34	20.36	0.29
Santa Marta	SM monte	49	Max WS	TR200d4	62.21	76.96	81.26		81.37	0.007246	1.53	45.66	20.42	0.29
Santa Marta	SM monte	49	Max WS	TR200d5	61.42	76.96	81.23		81.34	0.007368	1.53	44.93	20.30	0.29
Santa Marta	SM monte	49	Max WS	TR200d6	60.16	76.96	81.17		81.28	0.007566	1.54	43.79	20.11	0.29
Santa Marta	SM monte	49	Max WS	TR200d8	57.06	76.96	81.04		81.15	0.007974	1.54	41.25	19.68	0.30
Santa Marta	SM monte	49	Max WS	TR30d1	32.11	76.96	80.17		80.26	0.009219	1.34	25.47	16.43	0.31
Santa Marta	SM monte	49	Max WS	TR30d2	40.91	76.96	80.48		80.58	0.009127	1.44	30.66	17.78	0.32
Santa Marta	SM monte	49	Max WS	TR30d3	44.77	76.96	80.60		80.70	0.009060	1.48	32.84	18.18	0.32
Santa Marta	SM monte	49	Max WS	TR30d4	45.73	76.96	80.63		80.74	0.009006	1.49	33.43	18.29	0.32
Santa Marta	SM monte	49	Max WS	TR30d5	45.18	76.96	80.61		80.72	0.009028	1.48	33.11	18.23	

HEC-RAS Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Plan	Q Total (m ³ /s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m ²)	Top Width (m)	Froude # Chl
Santa Marta	SM monte	48	Max WS	TR30d1	32.10	76.53	79.30		79.46	0.020597	1.77	18.15	11.59	0.45
Santa Marta	SM monte	48	Max WS	TR30d2	40.98	76.53	79.58		79.77	0.020459	1.90	21.56	12.46	0.46
Santa Marta	SM monte	48	Max WS	TR30d3	45.02	76.53	79.68		79.88	0.020996	1.98	22.74	12.74	0.47
Santa Marta	SM monte	48	Max WS	TR30d4	46.10	76.53	79.70		79.91	0.021051	2.00	23.08	12.82	0.47
Santa Marta	SM monte	48	Max WS	TR30d5	45.50	76.53	79.69		79.89	0.021025	1.99	22.89	12.77	0.47
Santa Marta	SM monte	48	Max WS	TR30d6	44.18	76.53	79.66		79.85	0.020877	1.97	22.50	12.68	0.46
Santa Marta	SM monte	48	Max WS	TR30d8	40.92	76.53	79.58		79.77	0.020449	1.90	21.54	12.46	0.46
Santa Marta	SM monte	47	Max WS	TR200d2	64.89	75.34	79.34	77.81	79.64	0.013116	2.42	26.77	30.65	0.42
Santa Marta	SM monte	47	Max WS	TR200d1	51.73	75.34	79.13	77.54	79.34	0.010311	2.06	25.11	29.89	0.37
Santa Marta	SM monte	47	Max WS	TR200d3	70.12	75.34	79.50	77.91	79.82	0.013136	2.50	28.03	31.31	0.42
Santa Marta	SM monte	47	Max WS	TR200d4	70.84	75.34	79.53	77.92	79.85	0.013122	2.51	28.21	31.44	0.42
Santa Marta	SM monte	47	Max WS	TR200d5	69.27	75.34	79.48	77.89	79.79	0.013144	2.49	27.82	31.17	0.42
Santa Marta	SM monte	47	Max WS	TR200d6	66.83	75.34	79.40	77.84	79.71	0.013165	2.46	27.22	30.85	0.42
Santa Marta	SM monte	47	Max WS	TR200d8	61.39	75.34	79.27	77.74	79.55	0.012543	2.34	26.24	30.41	0.41
Santa Marta	SM monte	47	Max WS	TR30d1	32.09	75.34	78.64	77.09	78.75	0.006875	1.51	21.30	28.14	0.29
Santa Marta	SM monte	47	Max WS	TR30d2	40.97	75.34	78.93	77.30	79.09	0.007937	1.73	23.62	29.20	0.32
Santa Marta	SM monte	47	Max WS	TR30d3	45.01	75.34	78.99	77.39	79.17	0.009014	1.87	24.05	29.40	0.34
Santa Marta	SM monte	47	Max WS	TR30d4	46.09	75.34	79.01	77.41	79.20	0.009230	1.90	24.23	29.48	0.34
Santa Marta	SM monte	47	Max WS	TR30d5	45.49	75.34	79.00	77.40	79.18	0.009113	1.89	24.13	29.44	0.34
Santa Marta	SM monte	47	Max WS	TR30d6	44.17	75.34	78.98	77.37	79.15	0.008782	1.84	23.97	29.37	0.33
Santa Marta	SM monte	47	Max WS	TR30d8	40.91	75.34	78.93	77.30	79.09	0.007920	1.73	23.61	29.20	0.32
Santa Marta	SM monte	46.6			Bridge									
Santa Marta	SM monte	46.4	Max WS	TR200d2	64.87	74.90	78.86		79.18	0.012301	2.53	25.59	38.21	0.45
Santa Marta	SM monte	46.4	Max WS	TR200d1	51.73	74.90	78.59		78.83	0.010387	2.20	23.50	34.53	0.40
Santa Marta	SM monte	46.4	Max WS	TR200d3	70.10	74.90	78.96		79.32	0.012985	2.66	26.38	39.60	0.46
Santa Marta	SM monte	46.4	Max WS	TR200d4	70.82	74.90	78.97		79.34	0.013072	2.67	26.49	39.80	0.46
Santa Marta	SM monte	46.4	Max WS	TR200d5	69.26	74.90	78.94		79.30	0.012874	2.64	26.25	39.39	0.46
Santa Marta	SM monte	46.4	Max WS	TR200d6	66.82	74.90	78.89		79.23	0.012555	2.58	25.89	38.74	0.45
Santa Marta	SM monte	46.4	Max WS	TR200d8	61.39	74.90	78.79		79.09	0.011811	2.45	25.06	37.28	0.44
Santa Marta	SM monte	46.4	Max WS	TR30d1	32.09	74.90	78.09		78.23	0.007246	1.63	19.66	25.41	0.33
Santa Marta	SM monte	46.4	Max WS	TR30d2	40.97	74.90	78.34		78.52	0.008681	1.90	21.56	29.32	0.36
Santa Marta	SM monte	46.4	Max WS	TR30d3	45.01	74.90	78.44		78.65	0.009282	2.01	22.36	31.53	0.38
Santa Marta	SM monte	46.4	Max WS	TR30d4	46.09	74.90	78.46		78.68	0.009462	2.04	22.55	32.18	0.38
Santa Marta	SM monte	46.4	Max WS	TR30d5	45.49	74.90	78.45		78.66	0.009359	2.03	22.45	31.83	0.38
Santa Marta	SM monte	46.4	Max WS	TR30d6	44.17	74.90	78.42		78.62	0.009146	1.99	22.21	31.01	0.38
Santa Marta	SM monte	46.4	Max WS	TR30d8	40.91	74.90	78.34		78.52	0.008667	1.90	21.56	29.30	0.36
Santa Marta	SM monte	46	Max WS	TR200d2	64.87	74.90	78.96		79.05	0.004569	1.57	58.21	39.63	0.27
Santa Marta	SM monte	46	Max WS	TR200d1	51.73	74.90	78.66		78.75	0.004861	1.52	46.82	35.47	0.28
Santa Marta	SM monte	46	Max WS	TR200d3	70.11	74.90	79.07		79.16	0.004437	1.58	62.84	41.20	0.27
Santa Marta	SM monte	46	Max WS	TR200d4	70.83	74.90	79.09		79.18	0.004416	1.58	63.50	41.41	0.27
Santa Marta	SM monte	46	Max WS	TR200d5	69.26	74.90	79.06		79.15	0.004454	1.58	62.12	40.95	0.27
Santa Marta	SM monte	46	Max WS	TR200d6	66.82	74.90	79.00		79.09	0.004514	1.57	59.96	40.23	0.27
Santa Marta	SM monte	46	Max WS	TR200d8	61.39	74.90	78.88		78.97	0.004645	1.56	55.20	38.57	0.27
Santa Marta	SM monte	46	Max WS	TR30d1	32.09	74.90	78.11		78.19	0.004877	1.33	30.25	25.74	0.27
Santa Marta	SM monte	46	Max WS	TR30d2	40.97	74.90	78.38		78.46	0.004893	1.43	37.66	29.99	0.27
Santa Marta	SM monte	46	Max WS	TR30d3	45.01	74.90	78.49		78.58	0.004927	1.47	41.16	32.86	0.28
Santa Marta	SM monte	46	Max WS	TR30d4	46.09	74.90	78.52		78.61	0.004943	1.48	42.06	33.57	0.28
Santa Marta	SM monte	46	Max WS	TR30d5	45.49	74.90	78.50		78.59	0.004930	1.48	41.58	33.20	0.28
Santa Marta	SM monte	46	Max WS	TR30d6	44.17	74.90	78.47		78.56	0.004913	1.46	40.46	32.30	0.28
Santa Marta	SM monte	46	Max WS	TR30d8	40.91	74.90	78.38		78.46	0.004890	1.43	37.63	29.97	0.27
Santa Marta	SM monte	45	Max WS	TR200d2	64.88	75.61	78.96	77.80	78.99	0.003191	1.22	88.48	74.34	0.22
Santa Marta	SM monte	45	Max WS	TR200d1	51.73	75.61	78.64	77.59	78.69	0.004329	1.33	66.23	66.98	0.25
Santa Marta	SM monte	45	Max WS	TR200d3	70.11	75.61	79.07	77.87	79.11	0.002890	1.19	97.37	77.08	0.21
Santa Marta	SM monte	45	Max WS	TR200d4	70.83	75.61	79.09	77.87	79.12	0.002850	1.19	98.61	77.46	0.21
Santa Marta	SM monte	45	Max WS	TR200d5	69.26	75.61	79.06	77.86	79.09	0.002930	1.20	95.98	76.66	0.21
Santa Marta	SM monte	45	Max WS	TR200d6	66.82	75.61	79.00	77.83	79.04	0.003067	1.21	91.84	75.39	0.21
Santa Marta	SM monte	45	Max WS	TR200d8	61.39	75.61	78.88	77.75	78.92	0.003422	1.25	82.64	72.48	0.22
Santa Marta	SM monte	45	Max WS	TR30d1	32.09	75.61	78.07	77.21	78.14	0.006959	1.45	31.55	32.53	0.30
Santa Marta	SM monte	45	Max WS	TR30d2	40.97	75.61	78.34	77.38	78.41	0.006108	1.47	47.50	58.28	0.29
Santa Marta	SM monte	45	Max WS	TR30d3	45.01	75.61	78.47	77.46	78.52	0.005276	1.41	54.84	62.67	0.27
Santa Marta	SM monte	45	Max WS	TR30d4	46.09	75.61	78.49	77.48	78.55	0.005105	1.39	56.69	63.56	0.27
Santa Marta	SM monte	45	Max WS	TR30d5	45.49	75.61	78.48	77.47	78.53	0.005196	1.40	55.70	63.17	0.27
Santa Marta	SM monte	45	Max WS	TR30d6	44.17	75.61	78.44	77.44	78.50	0.005406	1.42	53.41	61.85	0.28
Santa Marta	SM monte	45	Max WS	TR30d8	40.91	75.61	78.34	77.38	78.41	0.006112	1.47	47.43	58.24	0.29
Santa Marta	SM monte	44.7			Inl Struct									
Santa Marta	SM monte	44.4	Max WS	TR200d2	64.88	75.50	78.94		78.98	0.003230	1.23	87.91	74.05	0.22
Santa Marta	SM monte	44.4	Max WS	TR200d1	51.73	75.50	78.63		78.68	0.004387	1.34	65.67	66.67	0.25
Santa Marta	SM monte	44.4	Max WS	TR200d3	70.11	75.50	79.06		79.10	0.002923	1.20	96.79	76.80	0.21
Santa Marta	SM monte	44.4	Max WS	TR200d4	70.83	75.50	79.08		79.11	0.002884	1.20	98.03	77.18	0.21
Santa Marta	SM monte	44.4	Max WS	TR200d5	69.27	75.50	79.04		79.08	0.002966	1.20	95.39	76.38	0.21
Santa Marta	SM monte	44.4	Max WS	TR200d6	66.83	75.50	78.99		79.03	0.003103	1.22	91.28	75.11	0.21
Santa Marta	SM monte	44.4	Max WS	TR200d8	61.39	75.50	78.86		78.90	0.003463	1.25	82.10	72.19	0.22
Santa Marta	SM monte	44.4	Max WS	TR30d1	32.09	75.50	78.04		78.12	0.007022	1.46	31.12	31.80	0.30
Santa Marta	SM monte	44.4	Max WS	TR30d2	40.97	75.50	78.33		78.39	0.006197	1.48	46.90	57.70	0.29
Santa Marta	SM monte	44.4	Max WS	TR30d3	45.01	75.50	78.45		78.51	0.005334	1.42	54.30	62.17	0.27
Santa Marta	SM monte	44.4	Max WS	TR30d4	46.09	75.50	78.48		78.54	0.005171	1.41	56.15	63.24	0.27
Santa Marta	SM monte	44.4	Max WS	TR30d5	45.49	75.50	78.46		78.52	0.005254	1.41	55.15	62.66	0.27
Santa Marta	SM monte	44.4	Max WS	TR30d6	44.17	75.50	78.43		78.49	0.005472	1.43	52.85	61.32	0.28
Santa Marta	SM monte	44.4	Max WS	TR30d8	40.91	75.50	78.33		78.39	0.006200	1.48	46.83	57.65	0.29
Santa Marta	SM monte	44	Max WS	TR200d2	64.87	75.50	78.91		78.97	0.004069	1.31	70.74	49.09	0.27
Santa Marta	SM monte	44	Max WS	TR200d1	51.73	75.50	78.60		78.66	0.004607	1.32	65.13	43.98	0.28
Santa Marta	SM monte	44	Max WS	TR200d3	70.11	75.50	79.03		79.08	0.003889	1.30	76.60	50.99	0.26
Santa Marta	SM monte	44	Max WS	TR200d4	70.83	75.50	79.05		79.10	0.003863	1.30	77.43	52.08	0.26
Santa Marta	SM monte	44	Max WS	TR200d5	69.26	75.50	79.01		79.07	0.003913	1.30	75.68	50.70	0.26
Santa Marta	SM monte	44	Max WS	TR200d6	66.83	75.50	78.96		79.01	0.003995	1.30	72.96	49.82	0.27
Santa Marta	SM monte	44	Max WS	TR200d8	61.39	75.50	78.83		78.89	0.004193	1.31	66.89	47.79	0.27
Santa Marta	SM monte	44	Max WS	TR30d1	32.09	75.50	78.02		78.09					

HEC-RAS Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Santa Marta	SM monte	43	Max WS	TR200d4	70.82	75.48	78.82	77.65	78.95	0.008637	1.84	49.06	31.12	0.39
Santa Marta	SM monte	43	Max WS	TR200d5	69.26	75.48	78.78	77.61	78.91	0.008772	1.84	47.93	30.83	0.39
Santa Marta	SM monte	43	Max WS	TR200d6	66.82	75.48	78.72	77.53	78.86	0.009006	1.85	46.14	30.36	0.40
Santa Marta	SM monte	43	Max WS	TR200d8	61.38	75.48	78.59	77.52	78.72	0.009590	1.86	42.13	29.30	0.41
Santa Marta	SM monte	43	Max WS	TR30d1	32.09	75.48	77.71	77.06	77.84	0.012854	1.78	21.10	16.65	0.45
Santa Marta	SM monte	43	Max WS	TR30d2	40.96	75.48	78.01	77.22	78.16	0.012321	1.87	26.70	21.22	0.45
Santa Marta	SM monte	43	Max WS	TR30d3	45.00	75.48	78.13	77.29	78.29	0.012388	1.93	29.63	25.69	0.45
Santa Marta	SM monte	43	Max WS	TR30d4	46.09	75.48	78.17	77.31	78.32	0.012143	1.93	30.47	25.95	0.45
Santa Marta	SM monte	43	Max WS	TR30d5	45.49	75.48	78.15	77.30	78.30	0.012268	1.93	30.02	25.81	0.45
Santa Marta	SM monte	43	Max WS	TR30d6	44.17	75.48	78.11	77.28	78.26	0.012492	1.93	29.00	25.15	0.45
Santa Marta	SM monte	43	Max WS	TR30d8	40.91	75.48	78.01	77.22	78.16	0.012304	1.87	26.68	21.18	0.45
Santa Marta	SM monte	42.99			Inl Struct									
Santa Marta	SM monte	42.98	Max WS	TR200d2	64.87	74.97	78.64		78.77	0.008699	1.80	45.62	29.69	0.37
Santa Marta	SM monte	42.98	Max WS	TR200d1	51.72	74.97	78.29		78.43	0.010022	1.82	35.90	26.97	0.39
Santa Marta	SM monte	42.98	Max WS	TR200d3	70.10	74.97	78.76		78.89	0.008288	1.79	49.44	30.69	0.37
Santa Marta	SM monte	42.98	Max WS	TR200d4	70.82	74.97	78.78		78.91	0.008231	1.79	49.97	30.83	0.37
Santa Marta	SM monte	42.98	Max WS	TR200d5	69.26	74.97	78.74		78.87	0.008344	1.79	48.84	30.54	0.37
Santa Marta	SM monte	42.98	Max WS	TR200d6	66.82	74.97	78.69		78.81	0.008526	1.79	47.07	30.08	0.37
Santa Marta	SM monte	42.98	Max WS	TR200d8	61.38	74.97	78.55		78.68	0.008982	1.80	43.10	29.01	0.38
Santa Marta	SM monte	42.98	Max WS	TR30d1	32.09	74.97	77.68		77.80	0.010343	1.63	22.74	16.35	0.39
Santa Marta	SM monte	42.98	Max WS	TR30d2	40.96	74.97	77.98		78.11	0.010358	1.74	28.11	20.03	0.39
Santa Marta	SM monte	42.98	Max WS	TR30d3	45.00	74.97	78.10		78.24	0.010808	1.82	30.84	24.83	0.41
Santa Marta	SM monte	42.98	Max WS	TR30d4	46.09	74.97	78.13		78.27	0.010765	1.83	31.65	25.69	0.41
Santa Marta	SM monte	42.98	Max WS	TR30d5	45.49	74.97	78.12		78.26	0.010817	1.82	31.21	25.42	0.41
Santa Marta	SM monte	42.98	Max WS	TR30d6	44.17	74.97	78.08		78.22	0.010755	1.80	30.25	23.88	0.40
Santa Marta	SM monte	42.98	Max WS	TR30d8	40.91	74.97	77.98		78.11	0.010337	1.73	28.10	20.00	0.39
Santa Marta	SM monte	42	Max WS	TR200d2	64.85	74.58	78.24		78.43	0.008967	2.08	36.00	16.81	0.40
Santa Marta	SM monte	42	Max WS	TR200d1	51.71	74.58	77.90		78.07	0.008645	1.94	30.56	15.51	0.39
Santa Marta	SM monte	42	Max WS	TR200d3	70.08	74.58	78.36		78.56	0.009058	2.13	38.12	17.29	0.40
Santa Marta	SM monte	42	Max WS	TR200d4	70.81	74.58	78.38		78.58	0.009064	2.13	38.42	17.36	0.40
Santa Marta	SM monte	42	Max WS	TR200d5	69.25	74.58	78.34		78.54	0.009033	2.12	37.80	17.22	0.40
Santa Marta	SM monte	42	Max WS	TR200d6	66.82	74.58	78.29		78.48	0.008986	2.10	36.83	17.00	0.40
Santa Marta	SM monte	42	Max WS	TR200d8	61.38	74.58	78.15		78.34	0.008875	2.04	34.62	16.49	0.40
Santa Marta	SM monte	42	Max WS	TR30d1	32.08	74.58	77.29		77.42	0.007818	1.64	21.85	13.15	0.36
Santa Marta	SM monte	42	Max WS	TR30d2	40.95	74.58	77.59		77.73	0.008265	1.79	25.89	14.29	0.37
Santa Marta	SM monte	42	Max WS	TR30d3	44.99	74.58	77.71		77.87	0.008417	1.85	27.68	14.77	0.38
Santa Marta	SM monte	42	Max WS	TR30d4	46.08	74.58	77.74		77.90	0.008455	1.86	28.16	14.89	0.38
Santa Marta	SM monte	42	Max WS	TR30d5	45.49	74.58	77.72		77.88	0.008429	1.85	27.90	14.83	0.38
Santa Marta	SM monte	42	Max WS	TR30d6	44.17	74.58	77.69		77.84	0.008377	1.84	27.33	14.68	0.38
Santa Marta	SM monte	42	Max WS	TR30d8	40.91	74.58	77.59		77.73	0.008251	1.79	25.89	14.29	0.37
Santa Marta	SM monte	41.1	Max WS	TR200d2	64.84	74.62	78.16		78.36	0.008394	1.99	34.70	15.96	0.40
Santa Marta	SM monte	41.1	Max WS	TR200d1	51.71	74.62	77.83		78.01	0.008108	1.84	29.62	14.82	0.38
Santa Marta	SM monte	41.1	Max WS	TR200d3	70.08	74.62	78.28		78.49	0.008485	2.04	36.67	16.38	0.40
Santa Marta	SM monte	41.1	Max WS	TR200d4	70.80	74.62	78.30		78.51	0.008493	2.05	36.94	16.44	0.40
Santa Marta	SM monte	41.1	Max WS	TR200d5	69.25	74.62	78.27		78.47	0.008460	2.03	36.37	16.32	0.40
Santa Marta	SM monte	41.1	Max WS	TR200d6	66.81	74.62	78.21		78.41	0.008414	2.01	35.47	16.12	0.40
Santa Marta	SM monte	41.1	Max WS	TR200d8	61.38	74.62	78.08		78.27	0.008307	1.95	33.41	15.68	0.39
Santa Marta	SM monte	41.1	Max WS	TR30d1	32.08	74.62	77.24		77.36	0.007509	1.54	21.39	12.75	0.36
Santa Marta	SM monte	41.1	Max WS	TR30d2	40.95	74.62	77.53		77.67	0.007816	1.69	25.22	13.75	0.37
Santa Marta	SM monte	41.1	Max WS	TR30d3	44.99	74.62	77.65		77.80	0.007923	1.75	26.92	14.17	0.38
Santa Marta	SM monte	41.1	Max WS	TR30d4	46.08	74.62	77.68		77.83	0.007952	1.76	27.36	14.28	0.38
Santa Marta	SM monte	41.1	Max WS	TR30d5	45.48	74.62	77.66		77.81	0.007933	1.75	27.12	14.22	0.38
Santa Marta	SM monte	41.1	Max WS	TR30d6	44.16	74.62	77.62		77.77	0.007892	1.73	26.58	14.09	0.37
Santa Marta	SM monte	41.1	Max WS	TR30d8	40.91	74.62	77.53		77.67	0.007795	1.69	25.23	13.75	0.37
Santa Marta	SM monte	41.05			Inl Struct									
Santa Marta	SM monte	41	Max WS	TR200d2	64.84	74.47	78.12		78.29	0.007381	1.90	36.41	16.32	0.37
Santa Marta	SM monte	41	Max WS	TR200d1	51.70	74.47	77.79		77.94	0.006985	1.74	31.31	15.20	0.36
Santa Marta	SM monte	41	Max WS	TR200d3	70.08	74.47	78.24		78.42	0.007512	1.95	38.37	16.73	0.38
Santa Marta	SM monte	41	Max WS	TR200d4	70.80	74.47	78.25		78.44	0.007523	1.96	38.65	16.79	0.38
Santa Marta	SM monte	41	Max WS	TR200d5	69.24	74.47	78.22		78.40	0.007481	1.94	38.08	16.67	0.38
Santa Marta	SM monte	41	Max WS	TR200d6	66.81	74.47	78.16		78.34	0.007419	1.92	37.17	16.48	0.37
Santa Marta	SM monte	41	Max WS	TR200d8	61.38	74.47	78.04		78.21	0.007271	1.86	35.12	16.04	0.37
Santa Marta	SM monte	41	Max WS	TR30d1	32.08	74.47	77.21		77.31	0.006153	1.44	23.00	13.17	0.33
Santa Marta	SM monte	41	Max WS	TR30d2	40.95	74.47	77.49		77.62	0.006580	1.59	26.88	14.15	0.34
Santa Marta	SM monte	41	Max WS	TR30d3	44.99	74.47	77.61		77.75	0.006736	1.65	28.59	14.56	0.35
Santa Marta	SM monte	41	Max WS	TR30d4	46.08	74.47	77.64		77.78	0.006777	1.66	29.04	14.67	0.35
Santa Marta	SM monte	41	Max WS	TR30d5	45.48	74.47	77.63		77.76	0.006749	1.65	28.80	14.61	0.35
Santa Marta	SM monte	41	Max WS	TR30d6	44.16	74.47	77.59		77.72	0.006697	1.63	28.25	14.48	0.35
Santa Marta	SM monte	41	Max WS	TR30d8	40.91	74.47	77.49		77.62	0.006564	1.59	26.88	14.15	0.34
Santa Marta	SM monte	40	Max WS	TR200d2	64.81	74.34	77.84		77.92	0.004798	1.45	55.71	28.24	0.28
Santa Marta	SM monte	40	Max WS	TR200d1	51.68	74.34	77.49		77.57	0.005298	1.42	45.95	28.04	0.29
Santa Marta	SM monte	40	Max WS	TR200d3	70.05	74.34	77.96		78.05	0.004665	1.46	59.34	28.32	0.28
Santa Marta	SM monte	40	Max WS	TR200d4	70.78	74.34	77.98		78.06	0.004645	1.46	59.85	28.33	0.28
Santa Marta	SM monte	40	Max WS	TR200d5	69.23	74.34	77.94		78.03	0.004676	1.46	58.81	28.31	0.28
Santa Marta	SM monte	40	Max WS	TR200d6	66.80	74.34	77.89		77.97	0.004731	1.45	57.16	28.27	0.28
Santa Marta	SM monte	40	Max WS	TR200d8	61.37	74.34	77.75		77.83	0.004882	1.44	53.33	28.19	0.28
Santa Marta	SM monte	40	Max WS	TR30d1	32.06	74.34	76.86		76.95	0.007285	1.43	28.48	27.67	0.33
Santa Marta	SM monte	40	Max WS	TR30d2	40.93	74.34	77.17		77.25	0.006065	1.41	36.95	27.85	0.31
Santa Marta	SM monte	40	Max WS	TR30d3	44.97	74.34	77.29		77.37	0.005709	1.41	40.49	27.92	0.30
Santa Marta	SM monte	40	Max WS	TR30d4	46.06	74.34	77.33		77.41	0.005625	1.41	41.42	27.94	0.30
Santa Marta	SM monte	40	Max WS	TR30d5	45.47	74.34	77.31		77.39	0.005664	1.41	40.93	27.93	0.30
Santa Marta	SM monte	40	Max WS	TR30d6	44.15	74.34	77.27		77.35	0.005759	1.41	39.83	27.91	0.30
Santa Marta	SM monte	40	Max WS	TR30d8	40.90	74.34	77.17		77.25	0.006037	1.41	37.00	27.85	0.31
Santa Marta	SM monte	39	Max WS	TR200d2	64.81	74.27	77.77		77.99	0.000814	0.73	119.31	48.01	0.13
Santa Marta	SM monte	39	Max WS	TR200d1	51.67	74.27	77.42		77.43	0.000811	0.68	102.49	46.09	0.13
Santa Marta	SM monte	39	Max WS	TR200d3	70.05	74.27	77.91		77.92	0.000817	0.75	125.66	48.72	0.13
Santa Marta	SM monte	39	Max WS	TR200d4	70.78	74.27	77.92		77.94	0.000816	0.76	126.57	48.82	0.13
Santa Marta	SM monte	39	Max WS	TR200d5										

HEC-RAS Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Santa Marta	SM monte	38.9												
					Inl Struct									
Santa Marta	SM monte	38.8	Max WS	TR200d2	64.81	73.91	77.77		77.78	0.000799	0.73	120.22	47.97	0.12
Santa Marta	SM monte	38.8	Max WS	TR200d1	51.67	73.91	77.41		77.42	0.000789	0.67	103.47	46.05	0.12
Santa Marta	SM monte	38.8	Max WS	TR200d3	70.05	73.91	77.90		77.91	0.000803	0.74	126.56	48.67	0.12
Santa Marta	SM monte	38.8	Max WS	TR200d4	70.78	73.91	77.92		77.93	0.000803	0.75	127.46	48.77	0.12
Santa Marta	SM monte	38.8	Max WS	TR200d5	69.23	73.91	77.88		77.89	0.000801	0.74	125.64	48.57	0.12
Santa Marta	SM monte	38.8	Max WS	TR200d6	66.80	73.91	77.82		77.83	0.000798	0.73	122.75	48.25	0.12
Santa Marta	SM monte	38.8	Max WS	TR200d8	61.37	73.91	77.68		77.69	0.000793	0.71	116.09	47.50	0.12
Santa Marta	SM monte	38.8	Max WS	TR30d1	32.05	73.91	76.75		76.76	0.000812	0.58	74.33	42.49	0.12
Santa Marta	SM monte	38.8	Max WS	TR30d2	40.92	73.91	77.08		77.09	0.000789	0.62	88.39	44.24	0.12
Santa Marta	SM monte	38.8	Max WS	TR30d3	44.97	73.91	77.21		77.22	0.000786	0.64	94.31	44.96	0.12
Santa Marta	SM monte	38.8	Max WS	TR30d4	46.06	73.91	77.24		77.26	0.000786	0.65	95.85	45.14	0.12
Santa Marta	SM monte	38.8	Max WS	TR30d5	45.47	73.91	77.22		77.24	0.000786	0.64	95.05	45.05	0.12
Santa Marta	SM monte	38.8	Max WS	TR30d6	44.15	73.91	77.18		77.20	0.000785	0.64	93.20	44.83	0.12
Santa Marta	SM monte	38.8	Max WS	TR30d8	40.90	73.91	77.08		77.09	0.000786	0.62	88.47	44.25	0.12
Santa Marta	SM monte	38	Max WS	TR200d2	64.81	73.57	77.72		77.78	0.002615	1.47	66.65	28.52	0.23
Santa Marta	SM monte	38	Max WS	TR200d1	51.67	73.57	77.37		77.42	0.002520	1.36	56.99	26.54	0.23
Santa Marta	SM monte	38	Max WS	TR200d3	70.04	73.57	77.85		77.91	0.002644	1.51	70.39	29.25	0.24
Santa Marta	SM monte	38	Max WS	TR200d4	70.77	73.57	77.87		77.93	0.002646	1.52	70.92	29.36	0.24
Santa Marta	SM monte	38	Max WS	TR200d5	69.23	73.57	77.83		77.89	0.002635	1.50	69.85	29.15	0.24
Santa Marta	SM monte	38	Max WS	TR200d6	66.79	73.57	77.77		77.83	0.002621	1.49	68.14	28.82	0.24
Santa Marta	SM monte	38	Max WS	TR200d8	61.37	73.57	77.63		77.69	0.002585	1.44	64.25	28.04	0.23
Santa Marta	SM monte	38	Max WS	TR30d1	32.05	73.57	76.72		76.76	0.002339	1.15	40.94	22.87	0.21
Santa Marta	SM monte	38	Max WS	TR30d2	40.92	73.57	77.04		77.08	0.002419	1.25	48.56	24.68	0.22
Santa Marta	SM monte	38	Max WS	TR30d3	44.97	73.57	77.17		77.22	0.002457	1.29	51.82	25.42	0.22
Santa Marta	SM monte	38	Max WS	TR30d4	46.05	73.57	77.20		77.25	0.002465	1.30	52.69	25.61	0.22
Santa Marta	SM monte	38	Max WS	TR30d5	45.47	73.57	77.19		77.23	0.002458	1.30	52.24	25.51	0.22
Santa Marta	SM monte	38	Max WS	TR30d6	44.15	73.57	77.14		77.19	0.002444	1.28	51.21	25.28	0.22
Santa Marta	SM monte	38	Max WS	TR30d8	40.90	73.57	77.04		77.09	0.002411	1.25	48.60	24.69	0.22
Santa Marta	SM monte	37.8												
					Lat Struct									
Santa Marta	SM monte	37	Max WS	TR200d2	57.36	72.67	77.22		77.43	0.011727	2.02	28.73	10.37	0.36
Santa Marta	SM monte	37	Max WS	TR200d1	46.58	72.67	76.88		77.05	0.011076	1.84	25.32	9.51	0.35
Santa Marta	SM monte	37	Max WS	TR200d3	61.58	72.67	77.35		77.57	0.011905	2.08	30.09	10.69	0.36
Santa Marta	SM monte	37	Max WS	TR200d4	62.17	72.67	77.37		77.59	0.011913	2.08	30.30	10.74	0.36
Santa Marta	SM monte	37	Max WS	TR200d5	60.92	72.67	77.34		77.55	0.011845	2.07	29.91	10.65	0.36
Santa Marta	SM monte	37	Max WS	TR200d6	58.97	72.67	77.28		77.49	0.011755	2.04	29.29	10.50	0.36
Santa Marta	SM monte	37	Max WS	TR200d8	54.57	72.67	77.14		77.34	0.011530	1.97	27.89	10.16	0.36
Santa Marta	SM monte	37	Max WS	TR30d1	30.02	72.67	76.26		76.38	0.008803	1.51	19.91	8.06	0.31
Santa Marta	SM monte	37	Max WS	TR30d2	37.58	72.67	76.56		76.71	0.010247	1.68	22.42	8.74	0.33
Santa Marta	SM monte	37	Max WS	TR30d3	40.97	72.67	76.69		76.84	0.010645	1.74	23.54	9.04	0.34
Santa Marta	SM monte	37	Max WS	TR30d4	41.89	72.67	76.72		76.88	0.010708	1.76	23.84	9.12	0.34
Santa Marta	SM monte	37	Max WS	TR30d5	41.40	72.67	76.71		76.86	0.010659	1.75	23.69	9.08	0.34
Santa Marta	SM monte	37	Max WS	TR30d6	40.30	72.67	76.67		76.82	0.010569	1.73	23.34	8.98	0.34
Santa Marta	SM monte	37	Max WS	TR30d8	37.57	72.67	76.57		76.71	0.010193	1.67	22.46	8.75	0.33
Santa Marta	SM monte	36	Max WS	TR200d2	51.70	72.50	76.59		76.82	0.011163	2.18	25.27	9.60	0.38
Santa Marta	SM monte	36	Max WS	TR200d1	41.14	72.50	76.35		76.53	0.009249	1.89	23.01	9.23	0.34
Santa Marta	SM monte	36	Max WS	TR200d3	55.97	72.50	76.68		76.94	0.011866	2.28	26.15	9.75	0.39
Santa Marta	SM monte	36	Max WS	TR200d4	56.61	72.50	76.70		76.95	0.011944	2.30	26.30	9.77	0.39
Santa Marta	SM monte	36	Max WS	TR200d5	55.40	72.50	76.67		76.92	0.011724	2.27	26.07	9.73	0.39
Santa Marta	SM monte	36	Max WS	TR200d6	53.44	72.50	76.63		76.87	0.011383	2.22	25.68	9.67	0.38
Santa Marta	SM monte	36	Max WS	TR200d8	49.05	72.50	76.54		76.76	0.010621	2.10	24.78	9.52	0.37
Santa Marta	SM monte	36	Max WS	TR30d1	26.05	72.50	75.88		75.99	0.006592	1.43	18.87	8.50	0.28
Santa Marta	SM monte	36	Max WS	TR30d2	32.69	72.50	76.11		76.25	0.007739	1.64	20.87	8.86	0.31
Santa Marta	SM monte	36	Max WS	TR30d3	35.86	72.50	76.21		76.36	0.008283	1.73	21.74	9.01	0.32
Santa Marta	SM monte	36	Max WS	TR30d4	36.73	72.50	76.24		76.39	0.008433	1.76	21.96	9.05	0.32
Santa Marta	SM monte	36	Max WS	TR30d5	36.28	72.50	76.23		76.38	0.008344	1.74	21.86	9.03	0.32
Santa Marta	SM monte	36	Max WS	TR30d6	35.27	72.50	76.20		76.34	0.008157	1.71	21.60	8.99	0.32
Santa Marta	SM monte	36	Max WS	TR30d8	32.74	72.50	76.12		76.26	0.007686	1.64	20.95	8.87	0.31
Santa Marta	SM monte	35.9												
					Lat Struct									
Santa Marta	SM monte	35	Max WS	TR200d2	27.23	72.53	76.55	73.90	76.61	0.003008	1.03	26.31	6.93	0.17
Santa Marta	SM monte	35	Max WS	TR200d1	25.49	72.53	76.26	73.85	76.31	0.003263	1.05	24.26	6.93	0.18
Santa Marta	SM monte	35	Max WS	TR200d3	27.68	72.53	76.67	73.91	76.72	0.002877	1.02	27.10	6.93	0.16
Santa Marta	SM monte	35	Max WS	TR200d4	27.65	72.53	76.69	73.91	76.74	0.002832	1.01	27.24	6.93	0.16
Santa Marta	SM monte	35	Max WS	TR200d5	27.50	72.53	76.66	73.91	76.71	0.002856	1.02	27.04	6.93	0.17
Santa Marta	SM monte	35	Max WS	TR200d6	27.23	72.53	76.61	73.90	76.66	0.002896	1.02	26.69	6.93	0.16
Santa Marta	SM monte	35	Max WS	TR200d8	26.64	72.53	76.49	73.88	76.54	0.003007	1.03	25.88	6.93	0.17
Santa Marta	SM monte	35	Max WS	TR30d1	21.61	72.53	75.71	73.73	75.76	0.003700	1.06	20.46	6.93	0.20
Santa Marta	SM monte	35	Max WS	TR30d2	23.69	72.53	75.97	73.79	76.03	0.003531	1.06	22.30	6.93	0.19
Santa Marta	SM monte	35	Max WS	TR30d3	24.38	72.53	76.09	73.81	76.14	0.003403	1.06	23.10	6.93	0.18
Santa Marta	SM monte	35	Max WS	TR30d4	24.55	72.53	76.12	73.82	76.18	0.003365	1.05	23.31	6.93	0.18
Santa Marta	SM monte	35	Max WS	TR30d5	24.44	72.53	76.11	73.82	76.16	0.003373	1.05	23.22	6.93	0.18
Santa Marta	SM monte	35	Max WS	TR30d6	24.23	72.53	76.07	73.81	76.13	0.003405	1.05	22.98	6.93	0.18
Santa Marta	SM monte	35	Max WS	TR30d8	23.62	72.53	75.98	73.79	76.04	0.003476	1.06	22.38	6.93	0.19
Santa Marta	SM monte	34.7												
					Bridge									
Santa Marta	SM monte	34.4	Max WS	TR200d2	27.19	72.53	76.47		76.54	0.004865	1.23	22.10	6.02	0.20
Santa Marta	SM monte	34.4	Max WS	TR200d1	25.45	72.53	76.16		76.24	0.005333	1.26	20.28	6.02	0.22
Santa Marta	SM monte	34.4	Max WS	TR200d3	27.66	72.53	76.58		76.66	0.004648	1.21			

HEC-RAS Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Santa Marta	SM monte	34	Max WS	TR200d5	32.41	72.24	76.52		76.61	0.005502	1.34	24.15	6.02	0.21
Santa Marta	SM monte	34	Max WS	TR200d6	31.91	72.24	76.47		76.56	0.005496	1.34	23.87	6.02	0.21
Santa Marta	SM monte	34	Max WS	TR200d8	30.76	72.24	76.36		76.45	0.005497	1.33	23.19	6.02	0.22
Santa Marta	SM monte	34	Max WS	TR30d1	22.25	72.24	75.55		75.62	0.005350	1.22	18.29	6.02	0.22
Santa Marta	SM monte	34	Max WS	TR30d2	25.21	72.24	75.84		75.92	0.005367	1.26	20.08	6.02	0.22
Santa Marta	SM monte	34	Max WS	TR30d3	26.42	72.24	75.97		76.05	0.005357	1.27	20.83	6.02	0.22
Santa Marta	SM monte	34	Max WS	TR30d4	26.73	72.24	76.00		76.08	0.005357	1.27	21.02	6.02	0.22
Santa Marta	SM monte	34	Max WS	TR30d5	26.57	72.24	75.99		76.07	0.005349	1.27	20.93	6.02	0.22
Santa Marta	SM monte	34	Max WS	TR30d6	26.21	72.24	75.95		76.03	0.005344	1.26	20.73	6.02	0.22
Santa Marta	SM monte	34	Max WS	TR30d8	25.25	72.24	75.86		75.94	0.005320	1.25	20.17	6.02	0.22
Santa Marta	SM monte	33.9			Lat Struct									
Santa Marta	SM monte	33	Max WS	TR200d2	43.01	72.23	76.16		76.22	0.002830	1.15	41.11	17.36	0.20
Santa Marta	SM monte	33	Max WS	TR200d1	37.57	72.23	75.89		75.95	0.002936	1.13	36.57	16.57	0.20
Santa Marta	SM monte	33	Max WS	TR200d3	45.10	72.23	76.26		76.32	0.002782	1.16	42.89	17.66	0.19
Santa Marta	SM monte	33	Max WS	TR200d4	45.41	72.23	76.28		76.34	0.002766	1.16	43.21	17.71	0.19
Santa Marta	SM monte	33	Max WS	TR200d5	44.81	72.23	76.26		76.32	0.002766	1.15	42.78	17.64	0.19
Santa Marta	SM monte	33	Max WS	TR200d6	43.85	72.23	76.21		76.27	0.002776	1.15	42.02	17.51	0.19
Santa Marta	SM monte	33	Max WS	TR200d8	41.69	72.23	76.11		76.17	0.002817	1.14	40.21	17.20	0.20
Santa Marta	SM monte	33	Max WS	TR30d1	28.35	72.23	75.30		75.36	0.003587	1.12	27.30	14.83	0.22
Santa Marta	SM monte	33	Max WS	TR30d2	32.81	72.23	75.61		75.67	0.003188	1.12	31.95	15.73	0.21
Santa Marta	SM monte	33	Max WS	TR30d3	34.69	72.23	75.73		75.79	0.003045	1.12	33.93	16.09	0.20
Santa Marta	SM monte	33	Max WS	TR30d4	35.19	72.23	75.76		75.82	0.003015	1.12	34.43	16.19	0.20
Santa Marta	SM monte	33	Max WS	TR30d5	34.95	72.23	75.75		75.81	0.003024	1.12	34.21	16.15	0.20
Santa Marta	SM monte	33	Max WS	TR30d6	34.38	72.23	75.72		75.77	0.003050	1.12	33.67	16.05	0.20
Santa Marta	SM monte	33	Max WS	TR30d8	32.91	72.23	75.63		75.68	0.003134	1.11	32.23	15.78	0.21
Santa Marta	SM monte	32	Max WS	TR200d2	45.51	71.70	75.87		75.95	0.004249	1.32	35.53	13.30	0.24
Santa Marta	SM monte	32	Max WS	TR200d1	41.25	71.70	75.57		75.66	0.004871	1.34	31.61	12.85	0.26
Santa Marta	SM monte	32	Max WS	TR200d3	46.91	71.70	75.98		76.07	0.003995	1.30	37.09	13.47	0.23
Santa Marta	SM monte	32	Max WS	TR200d4	47.11	71.70	76.00		76.09	0.003942	1.30	37.38	13.51	0.23
Santa Marta	SM monte	32	Max WS	TR200d5	46.69	71.70	75.98		76.06	0.003981	1.30	37.02	13.46	0.23
Santa Marta	SM monte	32	Max WS	TR200d6	46.02	71.70	75.93		76.02	0.004062	1.30	36.38	13.39	0.23
Santa Marta	SM monte	32	Max WS	TR200d8	44.56	71.70	75.81		75.90	0.004315	1.32	34.81	13.21	0.24
Santa Marta	SM monte	32	Max WS	TR30d1	31.10	71.70	74.90		75.00	0.006642	1.34	23.44	11.84	0.29
Santa Marta	SM monte	32	Max WS	TR30d2	36.55	71.70	75.24		75.34	0.005703	1.35	27.53	12.36	0.27
Santa Marta	SM monte	32	Max WS	TR30d3	38.51	71.70	75.39		75.48	0.005267	1.34	29.33	12.57	0.26
Santa Marta	SM monte	32	Max WS	TR30d4	39.01	71.70	75.42		75.51	0.005176	1.34	29.77	12.63	0.26
Santa Marta	SM monte	32	Max WS	TR30d5	38.79	71.70	75.41		75.50	0.005210	1.34	29.59	12.61	0.26
Santa Marta	SM monte	32	Max WS	TR30d6	38.23	71.70	75.37		75.46	0.005303	1.34	29.11	12.55	0.27
Santa Marta	SM monte	32	Max WS	TR30d8	36.70	71.70	75.27		75.36	0.005564	1.34	27.84	12.40	0.27
Santa Marta	SM monte	31	Max WS	TR200d2	57.55	71.06	75.05	72.92	75.18	0.005641	1.61	37.07	15.87	0.28
Santa Marta	SM monte	31	Max WS	TR200d1	49.57	71.06	74.67	72.76	74.80	0.006055	1.58	31.61	12.59	0.29
Santa Marta	SM monte	31	Max WS	TR200d3	60.18	71.06	75.23	72.97	75.36	0.005151	1.58	40.07	17.16	0.27
Santa Marta	SM monte	31	Max WS	TR200d4	60.52	71.06	75.27	72.98	75.39	0.005028	1.57	40.69	17.42	0.26
Santa Marta	SM monte	31	Max WS	TR200d5	59.82	71.06	75.23	72.97	75.36	0.005086	1.57	40.08	17.16	0.27
Santa Marta	SM monte	31	Max WS	TR200d6	58.64	71.06	75.17	72.94	75.29	0.005223	1.58	38.94	16.68	0.27
Santa Marta	SM monte	31	Max WS	TR200d8	55.83	71.06	74.99	72.89	75.12	0.005646	1.59	36.11	15.43	0.28
Santa Marta	SM monte	31	Max WS	TR30d1	31.77	71.06	74.08	72.35	74.16	0.004492	1.25	25.41	9.74	0.25
Santa Marta	SM monte	31	Max WS	TR30d2	40.10	71.06	74.37	72.54	74.47	0.005322	1.42	28.24	9.87	0.27
Santa Marta	SM monte	31	Max WS	TR30d3	44.03	71.06	74.51	72.63	74.62	0.005644	1.48	29.73	10.82	0.28
Santa Marta	SM monte	31	Max WS	TR30d4	45.11	71.06	74.54	72.66	74.66	0.005735	1.50	30.07	11.16	0.28
Santa Marta	SM monte	31	Max WS	TR30d5	44.67	71.06	74.53	72.65	74.64	0.005705	1.49	29.92	11.01	0.28
Santa Marta	SM monte	31	Max WS	TR30d6	43.54	71.06	74.50	72.62	74.61	0.005613	1.47	29.56	10.64	0.28
Santa Marta	SM monte	31	Max WS	TR30d8	40.59	71.06	74.41	72.56	74.51	0.005256	1.42	28.64	9.92	0.27
Santa Marta	SM monte	30.7			Bridge									
Santa Marta	SM monte	30.4	Max WS	TR200d2	57.55	70.49	74.82		74.92	0.004049	1.43	42.81	18.26	0.24
Santa Marta	SM monte	30.4	Max WS	TR200d1	49.57	70.49	74.43		74.53	0.004394	1.41	36.31	15.52	0.25
Santa Marta	SM monte	30.4	Max WS	TR200d3	60.17	70.49	75.04		75.13	0.003573	1.38	46.99	19.38	0.22
Santa Marta	SM monte	30.4	Max WS	TR200d4	60.52	70.49	75.08		75.17	0.003455	1.37	47.87	19.38	0.22
Santa Marta	SM monte	30.4	Max WS	TR200d5	59.82	70.49	75.04		75.13	0.003513	1.37	47.09	19.38	0.22
Santa Marta	SM monte	30.4	Max WS	TR200d6	58.64	70.49	74.96		75.06	0.003655	1.39	45.53	19.30	0.23
Santa Marta	SM monte	30.4	Max WS	TR200d8	55.83	70.49	74.76		74.86	0.004042	1.42	41.71	17.83	0.24
Santa Marta	SM monte	30.4	Max WS	TR30d1	31.77	70.49	73.70		73.76	0.003682	1.16	27.27	9.82	0.22
Santa Marta	SM monte	30.4	Max WS	TR30d2	40.10	70.49	74.21		74.29	0.003574	1.23	33.06	13.83	0.22
Santa Marta	SM monte	30.4	Max WS	TR30d3	44.03	70.49	74.32		74.40	0.003890	1.30	34.60	14.71	0.23
Santa Marta	SM monte	30.4	Max WS	TR30d4	45.11	70.49	74.34		74.43	0.003993	1.32	34.92	14.86	0.23
Santa Marta	SM monte	30.4	Max WS	TR30d5	44.67	70.49	74.33		74.42	0.003955	1.32	34.77	14.79	0.23
Santa Marta	SM monte	30.4	Max WS	TR30d6	43.54	70.49	74.31		74.39	0.003850	1.29	34.42	14.63	0.23
Santa Marta	SM monte	30.4	Max WS	TR30d8	40.59	70.49	74.24		74.32	0.003565	1.23	33.54	14.19	0.22
Santa Marta	SM monte	30.2			Lat Struct									
Santa Marta	SM monte	30	Max WS	TR200d2	57.92	70.77	74.74		74.88	0.005226	1.73	34.96	14.04	0.30
Santa Marta	SM monte	30	Max WS	TR200d1	49.57	70.77	74.35		74.50	0.007156	1.70	29.84	12.51	0.31
Santa Marta	SM monte	30	Max WS	TR200d3	60.83	70.77	74.96		75.10	0.005757	1.68	38.13	14.11	0.28
Santa Marta	SM monte	30	Max WS	TR200d4	61.22	70.77	75.01		75.14	0.005579	1.66	38.79	14.16	0.28
Santa Marta	SM monte	30	Max WS	TR200d5	60.45	70.77	74.97		75.10	0.005649	1.66	38.22	14.12	0.28
Santa Marta	SM monte	30	Max WS	TR200d6	59.16	70.77	74.89		75.02	0.005843	1.67	37.08	14.05	0.29
Santa Marta	SM monte	30	Max WS	TR200d8	56.10	70.77	74.68		74.82	0.006500	1.71	34.14	13.89	0.30
Santa Marta	SM monte	30	Max WS	TR30d1	31.77	70.77	73.62		73.73	0.007018	1.45	21.87	9.61	0.31
Santa Marta	SM monte	30	Max WS	TR30d2	40.10	70.77	74.15		74.26	0.005880	1.48	27.39	11.64	0.28
Santa Marta	SM monte	30	Max WS	TR30d3	44.03	70.77	74.25		74.37	0.006320	1.57	28.59	12.08	0.30
Santa Marta	SM monte	30	Max WS	TR30d4	45.11	70.77	74.27		74.40	0.006492	1.59	28.82	12.16	0.30
Santa Marta	SM monte	30	Max WS	TR30d5	44.67	70.77	74.26		74.39	0.006430	1.58	28.71	12.12	0.30
Santa Marta	SM monte	30	Max WS	TR30d6	43.54	70.77	74.24		74.36	0.006258	1.56	28.45	12.03	0.29
Santa Marta	SM monte	30	Max WS	TR30d8	40.59	70.77	74.18		74.29	0.005792	1.48	27.79	11.79	0.28
Santa Marta	SM monte	29	Max WS	TR200d2	57.92	70.40	74.52	72.47	74.75	0.012854	2.10	27.64	8.45	0.37
Santa Marta	SM monte	29	Max WS	TR200d1	49.57	70.40	74.16	72.26	74.37	0.012334	2.01	24.70	7.71	0.36
Santa Marta	SM monte	29	Max WS	TR200d3	60.83	70.40	74.76	72.53	74.97	0.011919	2.05	29.67	8.92	0.36
Santa Marta	SM monte	29	Max WS	TR200d4	61.22	70.40	74.81	72.54	75.02	0.011631	2.03	30.12	9.02	0.36
Santa Marta	SM monte	29	Max WS	TR200d5	60.45	70.40	74.77	72.53	74.98	0.011678	2.03	29.76	8	

HEC-RAS Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Santa Marta	SM monte	29	Max WS	TR30d8	40.59	70.40	74.05	72.04	74.20	0.008981	1.70	23.86	7.48	0.30
Santa Marta	SM monte	28.7			Bridge									
Santa Marta	SM monte	28.4	Max WS	TR200d2	57.92	69.93	74.24		74.44	0.011239	1.98	29.20	8.81	0.35
Santa Marta	SM monte	28.4	Max WS	TR200d1	49.53	69.93	73.80		73.99	0.011354	1.94	25.55	7.93	0.34
Santa Marta	SM monte	28.4	Max WS	TR200d3	60.82	69.93	74.40		74.60	0.011001	1.98	30.65	9.14	0.35
Santa Marta	SM monte	28.4	Max WS	TR200d4	61.22	69.93	74.43		74.63	0.010841	1.98	30.99	9.22	0.34
Santa Marta	SM monte	28.4	Max WS	TR200d5	60.45	69.93	74.41		74.61	0.010755	1.96	30.77	9.17	0.34
Santa Marta	SM monte	28.4	Max WS	TR200d6	59.15	69.93	74.36		74.55	0.010707	1.95	30.29	9.06	0.34
Santa Marta	SM monte	28.4	Max WS	TR200d8	56.10	69.93	74.21		74.40	0.010720	1.93	29.00	8.77	0.34
Santa Marta	SM monte	28.4	Max WS	TR30d1	31.77	69.93	72.97		73.11	0.008966	1.62	19.62	6.77	0.30
Santa Marta	SM monte	28.4	Max WS	TR30d2	40.09	69.93	73.38		73.54	0.010185	1.79	22.37	7.07	0.32
Santa Marta	SM monte	28.4	Max WS	TR30d3	44.01	69.93	73.56		73.73	0.010750	1.86	23.67	7.43	0.33
Santa Marta	SM monte	28.4	Max WS	TR30d4	45.11	69.93	73.61		73.79	0.010846	1.87	24.08	7.54	0.33
Santa Marta	SM monte	28.4	Max WS	TR30d5	44.65	69.93	73.60		73.78	0.010711	1.86	24.00	7.52	0.33
Santa Marta	SM monte	28.4	Max WS	TR30d6	43.52	69.93	73.56		73.73	0.010497	1.84	23.69	7.44	0.33
Santa Marta	SM monte	28.4	Max WS	TR30d8	40.53	69.93	73.43		73.59	0.009976	1.78	22.78	7.18	0.32
Santa Marta	SM monte	28.3			Lat Struct									
Santa Marta	SM monte	28.2			Lat Struct									
Santa Marta	SM monte	28	Max WS	TR200d2	58.45	69.88	74.13	72.50	74.40	0.017272	2.32	25.25	8.06	0.42
Santa Marta	SM monte	28	Max WS	TR200d1	49.71	69.88	73.69	72.30	73.96	0.019465	2.28	21.78	7.82	0.44
Santa Marta	SM monte	28	Max WS	TR200d3	61.69	69.88	74.29	72.57	74.56	0.016619	2.33	26.52	8.11	0.41
Santa Marta	SM monte	28	Max WS	TR200d4	62.20	69.88	74.32	72.58	74.60	0.016321	2.32	26.82	8.11	0.41
Santa Marta	SM monte	28	Max WS	TR200d5	61.34	69.88	74.30	72.57	74.57	0.016183	2.31	26.65	8.11	0.40
Santa Marta	SM monte	28	Max WS	TR200d6	59.89	69.88	74.25	72.53	74.52	0.016138	2.29	26.25	8.11	0.40
Santa Marta	SM monte	28	Max WS	TR200d8	56.54	69.88	74.11	72.46	74.37	0.016386	2.25	25.13	8.06	0.40
Santa Marta	SM monte	28	Max WS	TR30d1	31.77	69.88	72.88	71.85	73.08	0.017767	1.98	18.03	6.94	0.42
Santa Marta	SM monte	28	Max WS	TR30d2	40.09	69.88	73.28	72.06	73.51	0.018040	2.13	18.82	6.98	0.41
Santa Marta	SM monte	28	Max WS	TR30d3	44.01	69.88	73.46	72.16	73.70	0.018206	2.19	20.06	7.05	0.42
Santa Marta	SM monte	28	Max WS	TR30d4	45.11	69.88	73.51	72.19	73.76	0.018166	2.21	20.45	7.08	0.41
Santa Marta	SM monte	28	Max WS	TR30d5	44.65	69.88	73.50	72.18	73.75	0.017946	2.19	20.38	7.08	0.41
Santa Marta	SM monte	28	Max WS	TR30d6	43.52	69.88	73.46	72.15	73.70	0.017717	2.17	20.10	7.06	0.41
Santa Marta	SM monte	28	Max WS	TR30d8	40.53	69.88	73.34	72.08	73.57	0.017307	2.11	19.25	7.00	0.41
Santa Marta	SM monte	27.5			In Struct									
Santa Marta	SM monte	27	Max WS	TR200d2	58.45	69.84	74.05		74.30	0.013875	2.23	26.22	7.59	0.38
Santa Marta	SM monte	27	Max WS	TR200d1	49.71	69.84	73.62		73.86	0.014846	2.16	23.01	7.53	0.39
Santa Marta	SM monte	27	Max WS	TR200d3	61.69	69.84	74.20		74.46	0.013599	2.26	27.37	7.59	0.38
Santa Marta	SM monte	27	Max WS	TR200d4	62.20	69.84	74.24		74.50	0.013410	2.25	27.65	7.59	0.38
Santa Marta	SM monte	27	Max WS	TR200d5	61.34	69.84	74.22		74.47	0.013250	2.23	27.50	7.59	0.37
Santa Marta	SM monte	27	Max WS	TR200d6	59.89	69.84	74.17		74.42	0.013131	2.21	27.15	7.59	0.37
Santa Marta	SM monte	27	Max WS	TR200d8	56.54	69.84	74.04		74.28	0.013111	2.17	26.13	7.59	0.37
Santa Marta	SM monte	27	Max WS	TR30d1	31.77	69.84	72.83		73.00	0.011997	1.81	17.51	6.78	0.36
Santa Marta	SM monte	27	Max WS	TR30d2	40.09	69.84	73.22		73.42	0.012998	1.99	20.19	6.90	0.37
Santa Marta	SM monte	27	Max WS	TR30d3	44.00	69.84	73.39		73.61	0.013410	2.06	21.40	6.94	0.37
Santa Marta	SM monte	27	Max WS	TR30d4	45.11	69.84	73.45		73.67	0.013461	2.07	21.77	6.95	0.37
Santa Marta	SM monte	27	Max WS	TR30d5	44.65	69.84	73.44		73.66	0.013276	2.06	21.71	6.95	0.37
Santa Marta	SM monte	27	Max WS	TR30d6	43.51	69.84	73.40		73.61	0.013039	2.03	21.44	6.94	0.37
Santa Marta	SM monte	27	Max WS	TR30d8	40.53	69.84	73.28		73.48	0.012541	1.96	20.63	6.91	0.36
Santa Marta	SM monte	26	Max WS	TR200d2	60.84	69.17	72.74		72.88	0.006292	1.66	36.55	12.47	0.31
Santa Marta	SM monte	26	Max WS	TR200d1	48.57	69.17	72.37		72.49	0.005707	1.51	32.15	12.03	0.29
Santa Marta	SM monte	26	Max WS	TR200d3	63.78	69.17	72.91		73.05	0.005928	1.65	38.66	12.68	0.30
Santa Marta	SM monte	26	Max WS	TR200d4	66.44	69.17	73.00		73.14	0.005962	1.67	39.76	12.78	0.30
Santa Marta	SM monte	26	Max WS	TR200d5	65.16	69.17	73.02		73.16	0.005597	1.62	40.11	12.82	0.29
Santa Marta	SM monte	26	Max WS	TR200d6	63.30	69.17	73.01		73.14	0.005351	1.59	39.92	12.80	0.28
Santa Marta	SM monte	26	Max WS	TR200d8	58.84	69.17	72.90		73.02	0.005064	1.52	38.61	12.67	0.28
Santa Marta	SM monte	26	Max WS	TR30d1	31.31	69.17	71.74		71.82	0.004986	1.26	24.92	11.31	0.27
Santa Marta	SM monte	26	Max WS	TR30d2	38.68	69.17	72.07		72.16	0.004991	1.35	26.62	11.67	0.27
Santa Marta	SM monte	26	Max WS	TR30d3	43.55	69.17	72.23		72.33	0.005321	1.43	30.47	11.86	0.28
Santa Marta	SM monte	26	Max WS	TR30d4	44.07	69.17	72.30		72.40	0.005024	1.40	31.37	11.95	0.27
Santa Marta	SM monte	26	Max WS	TR30d5	43.68	69.17	72.33		72.42	0.004813	1.38	31.66	11.98	0.27
Santa Marta	SM monte	26	Max WS	TR30d6	42.56	69.17	72.31		72.41	0.004639	1.35	31.49	11.97	0.26
Santa Marta	SM monte	26	Max WS	TR30d8	40.11	69.17	72.23		72.32	0.004506	1.32	30.48	11.86	0.26
Santa Marta	SM medio	25	Max WS	TR200d2	65.69	69.12	72.67		72.78	0.001872	1.44	45.51	17.11	0.28
Santa Marta	SM medio	25	Max WS	TR200d1	52.98	69.12	72.30		72.40	0.001847	1.35	39.32	16.48	0.28
Santa Marta	SM medio	25	Max WS	TR200d3	71.45	69.12	72.84		72.96	0.001849	1.47	48.50	17.41	0.28
Santa Marta	SM medio	25	Max WS	TR200d4	73.97	69.12	72.93		73.04	0.001815	1.48	50.02	17.56	0.28
Santa Marta	SM medio	25	Max WS	TR200d5	74.49	69.12	72.96		73.07	0.001792	1.47	50.51	17.60	0.28
Santa Marta	SM medio	25	Max WS	TR200d6	73.72	69.12	72.94		73.05	0.001783	1.47	50.22	17.58	0.28
Santa Marta	SM medio	25	Max WS	TR200d8	69.83	69.12	72.84		72.94	0.001780	1.44	48.36	17.39	0.28
Santa Marta	SM medio	25	Max WS	TR30d1	34.68	69.12	71.67		71.74	0.001814	1.18	29.30	15.08	0.27
Santa Marta	SM medio	25	Max WS	TR30d2	43.53	69.12	72.00		72.08	0.001836	1.27	34.38	15.96	0.28
Santa Marta	SM medio	25	Max WS	TR30d3	48.51	69.12	72.16		72.25	0.001851	1.31	36.96	16.24	0.28
Santa Marta	SM medio	25	Max WS	TR30d4	50.67	69.12	72.24		72.33	0.001835	1.33	38.21	16.37	0.28
Santa Marta	SM medio	25	Max WS	TR30d5	51.32	69.12	72.26		72.35	0.001827	1.33	38.61	16.41	0.28
Santa Marta	SM medio	25	Max WS	TR30d6	50.74	69.12	72.24		72.33	0.001818	1.32	38.37	16.38	0.28
Santa Marta	SM medio	25	Max WS	TR30d8	48.13	69.12	72.16		72.25	0.001822	1.30	36.96	16.24	0.28
Santa Marta	SM medio	24.89			Lat Struct									
Santa Marta	SM medio	24	Max WS	TR200d2	56.10	68.26	71.90		72.15	0.006675	2.22	25.28	11.82	0.48
Santa Marta	SM medio	24	Max WS	TR200d1	47.08	68.26	71.52		71.78	0.007816	2.25	20.95	10.71	0.51
Santa Marta	SM medio	24	Max WS	TR200d3	61.61	68.26	72.09		72.35	0.006189	2.24	27.57	12.40	0.47
Santa Marta	SM medio	24	Max WS	TR200d4	67									

HEC-RAS Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Santa Marta	SM medio	23	Max WS	TR200d4	67.93	68.10	72.19		72.29	0.001439	1.52	58.91	26.70	0.27
Santa Marta	SM medio	23	Max WS	TR200d5	71.51	68.10	72.18		72.29	0.001621	1.61	58.56	26.67	0.29
Santa Marta	SM medio	23	Max WS	TR200d6	72.76	68.10	72.14		72.26	0.001761	1.66	57.53	26.61	0.30
Santa Marta	SM medio	23	Max WS	TR200d8	69.33	68.10	72.01		72.13	0.001897	1.68	54.05	26.40	0.31
Santa Marta	SM medio	23	Max WS	TR30d1	34.01	68.10	70.82		70.95	0.003550	1.62	23.86	23.99	0.39
Santa Marta	SM medio	23	Max WS	TR30d2	41.32	68.10	71.15		71.27	0.002639	1.57	32.06	25.04	0.35
Santa Marta	SM medio	23	Max WS	TR30d3	45.58	68.10	71.31		71.43	0.002378	1.57	36.15	25.30	0.33
Santa Marta	SM medio	23	Max WS	TR30d4	47.89	68.10	71.39		71.50	0.002321	1.58	37.93	25.41	0.33
Santa Marta	SM medio	23	Max WS	TR30d5	48.79	68.10	71.38		71.50	0.002414	1.61	37.90	25.41	0.34
Santa Marta	SM medio	23	Max WS	TR30d6	50.16	68.10	71.36		71.49	0.002680	1.69	37.18	25.36	0.36
Santa Marta	SM medio	23	Max WS	TR30d8	47.46	68.10	71.26		71.39	0.002846	1.69	34.76	25.21	0.36
Santa Marta	SM medio	22.9		Lat Struct										
Santa Marta	SM medio	22	Max WS	TR200d2	56.09	67.68	71.90		71.91	0.000264	0.70	131.21	59.15	0.12
Santa Marta	SM medio	22	Max WS	TR200d1	46.91	67.68	71.49		71.50	0.000322	0.71	107.70	54.88	0.13
Santa Marta	SM medio	22	Max WS	TR200d3	61.91	67.68	72.10		72.11	0.000253	0.71	143.21	61.22	0.12
Santa Marta	SM medio	22	Max WS	TR200d4	67.76	67.68	72.16		72.17	0.000282	0.76	146.87	61.84	0.12
Santa Marta	SM medio	22	Max WS	TR200d5	71.32	67.68	72.14		72.16	0.000319	0.81	145.78	61.65	0.13
Santa Marta	SM medio	22	Max WS	TR200d6	72.70	67.68	72.10		72.12	0.000349	0.84	143.12	61.21	0.14
Santa Marta	SM medio	22	Max WS	TR200d8	69.38	67.68	71.96		71.98	0.000376	0.85	134.71	59.76	0.14
Santa Marta	SM medio	22	Max WS	TR30d1	32.93	67.68	70.65		70.68	0.000685	0.85	64.19	51.13	0.18
Santa Marta	SM medio	22	Max WS	TR30d2	40.90	67.68	71.05		71.07	0.000489	0.80	84.49	52.05	0.16
Santa Marta	SM medio	22	Max WS	TR30d3	45.38	67.68	71.23		71.25	0.000445	0.79	93.85	52.47	0.15
Santa Marta	SM medio	22	Max WS	TR30d4	47.99	67.68	71.30		71.32	0.000443	0.81	97.78	53.07	0.15
Santa Marta	SM medio	22	Max WS	TR30d5	48.71	67.68	71.30		71.32	0.000460	0.82	97.51	53.02	0.15
Santa Marta	SM medio	22	Max WS	TR30d6	48.91	67.68	71.26		71.28	0.000492	0.84	95.49	52.64	0.16
Santa Marta	SM medio	22	Max WS	TR30d8	47.44	67.68	71.15		71.17	0.000554	0.87	89.73	52.29	0.17
Santa Marta	SM medio	21	Max WS	TR200d2	56.01	67.44	71.90		71.91	0.000267	0.74	129.88	59.96	0.12
Santa Marta	SM medio	21	Max WS	TR200d1	46.91	67.44	71.48		71.50	0.000325	0.75	107.08	54.52	0.13
Santa Marta	SM medio	21	Max WS	TR200d3	61.90	67.44	72.10		72.11	0.000257	0.75	141.10	56.66	0.12
Santa Marta	SM medio	21	Max WS	TR200d4	67.76	67.44	72.15		72.17	0.000288	0.80	144.47	56.87	0.13
Santa Marta	SM medio	21	Max WS	TR200d5	71.32	67.44	72.14		72.16	0.000326	0.85	143.45	56.81	0.13
Santa Marta	SM medio	21	Max WS	TR200d6	72.68	67.44	72.09		72.12	0.000355	0.88	141.00	56.65	0.14
Santa Marta	SM medio	21	Max WS	TR200d8	69.38	67.44	71.95		71.98	0.000382	0.89	133.14	56.16	0.14
Santa Marta	SM medio	21	Max WS	TR30d1	32.91	67.44	70.65		70.68	0.000679	0.90	62.84	51.66	0.18
Santa Marta	SM medio	21	Max WS	TR30d2	40.89	67.44	71.04		71.07	0.000493	0.85	83.50	53.01	0.16
Santa Marta	SM medio	21	Max WS	TR30d3	45.36	67.44	71.22		71.25	0.000450	0.84	93.07	53.63	0.15
Santa Marta	SM medio	21	Max WS	TR30d4	47.99	67.44	71.30		71.32	0.000447	0.85	97.08	53.89	0.15
Santa Marta	SM medio	21	Max WS	TR30d5	48.72	67.44	71.29		71.32	0.000465	0.87	96.80	53.87	0.15
Santa Marta	SM medio	21	Max WS	TR30d6	48.91	67.44	71.26		71.28	0.000497	0.89	94.74	53.74	0.16
Santa Marta	SM medio	21	Max WS	TR30d8	47.44	67.44	71.14		71.17	0.000560	0.92	88.81	53.36	0.17
Santa Marta	SM medio	20	Max WS	TR200d2	55.15	66.76	71.75		71.86	0.000489	1.44	38.19	17.44	0.31
Santa Marta	SM medio	20	Max WS	TR200d1	46.13	66.76	71.32		71.43	0.002810	1.48	31.21	14.70	0.32
Santa Marta	SM medio	20	Max WS	TR200d3	61.75	66.76	71.95		72.06	0.002405	1.48	41.69	17.71	0.31
Santa Marta	SM medio	20	Max WS	TR200d4	67.13	66.76	71.99		72.12	0.002697	1.58	42.43	17.76	0.33
Santa Marta	SM medio	20	Max WS	TR200d5	69.49	66.76	71.96		72.10	0.003019	1.66	41.81	17.72	0.35
Santa Marta	SM medio	20	Max WS	TR200d6	70.42	66.76	71.89		72.05	0.003363	1.73	40.68	17.63	0.36
Santa Marta	SM medio	20	Max WS	TR200d8	68.62	66.76	71.74		71.90	0.003944	1.81	37.89	17.42	0.39
Santa Marta	SM medio	20	Max WS	TR30d1	31.40	66.76	70.41		70.54	0.004044	1.57	19.95	10.66	0.37
Santa Marta	SM medio	20	Max WS	TR30d2	39.25	66.76	70.83		70.96	0.003594	1.59	24.72	12.18	0.36
Santa Marta	SM medio	20	Max WS	TR30d3	43.53	66.76	71.02		71.15	0.003491	1.61	27.03	12.85	0.35
Santa Marta	SM medio	20	Max WS	TR30d4	47.06	66.76	71.08		71.22	0.003774	1.69	27.84	13.08	0.37
Santa Marta	SM medio	20	Max WS	TR30d5	48.27	66.76	71.06		71.22	0.004065	1.75	27.59	13.01	0.38
Santa Marta	SM medio	20	Max WS	TR30d6	48.28	66.76	71.01		71.17	0.004351	1.79	26.90	12.82	0.40
Santa Marta	SM medio	20	Max WS	TR30d8	46.98	66.76	70.86		71.04	0.004933	1.87	25.13	12.30	0.42
Santa Marta	SM medio	19	Max WS	TR200d2	55.87	67.25	71.71		71.80	0.001375	1.34	43.60	19.42	0.25
Santa Marta	SM medio	19	Max WS	TR200d1	46.31	67.25	71.28		71.37	0.001544	1.32	35.45	17.30	0.26
Santa Marta	SM medio	19	Max WS	TR200d3	62.75	67.25	71.91		72.01	0.001459	1.40	47.47	20.16	0.26
Santa Marta	SM medio	19	Max WS	TR200d4	67.99	67.25	71.95		72.06	0.001702	1.50	48.24	20.70	0.28
Santa Marta	SM medio	19	Max WS	TR200d5	70.19	67.25	71.91		72.03	0.001825	1.57	47.44	20.14	0.29
Santa Marta	SM medio	19	Max WS	TR200d6	70.23	67.25	71.84		71.97	0.001886	1.61	46.15	19.56	0.30
Santa Marta	SM medio	19	Max WS	TR200d8	68.71	67.25	71.68		71.82	0.002158	1.67	42.99	19.39	0.31
Santa Marta	SM medio	19	Max WS	TR30d1	29.97	67.25	70.37		70.45	0.001959	1.27	23.52	11.62	0.29
Santa Marta	SM medio	19	Max WS	TR30d2	38.86	67.25	70.79		70.88	0.001937	1.36	28.62	12.63	0.29
Santa Marta	SM medio	19	Max WS	TR30d3	43.24	67.25	70.98		71.07	0.001934	1.40	30.99	13.07	0.29
Santa Marta	SM medio	19	Max WS	TR30d4	46.86	67.25	71.03		71.14	0.002127	1.48	31.76	13.21	0.30
Santa Marta	SM medio	19	Max WS	TR30d5	48.10	67.25	71.01		71.13	0.002297	1.53	31.47	13.16	0.32
Santa Marta	SM medio	19	Max WS	TR30d6	48.21	67.25	70.95		71.08	0.002464	1.57	30.71	13.02	0.33
Santa Marta	SM medio	19	Max WS	TR30d8	46.69	67.25	70.81		70.94	0.002745	1.62	28.81	12.67	0.34
Santa Marta	SM valle	18	Max WS	TR200d2	71.33	67.04	71.71		71.78	0.001151	1.13	62.85	26.35	0.23
Santa Marta	SM valle	18	Max WS	TR200d1	59.91	67.04	71.28		71.35	0.001427	1.16	51.86	25.00	0.26
Santa Marta	SM valle	18	Max WS	TR200d3	78.45	67.04	71.91		71.98	0.001102	1.15	68.10	26.97	0.23
Santa Marta	SM valle	18	Max WS	TR200d4	82.95	67.04	71.95		72.02	0.001180	1.20	69.12	27.09	0.24
Santa Marta	SM valle	18	Max WS	TR200d5	84.35	67.04	71.91		71.99	0.001275	1.24	68.07	26.97	0.25
Santa Marta	SM valle	18	Max WS	TR200d6	83.91	67.04	71.84		71.93	0.001361	1.27	66.32	26.76	0.26
Santa Marta	SM valle	18	Max WS	TR200d8	81.47	67.04	71.68		71.77	0.001561	1.31	62.01	26.25	0.27
Santa Marta	SM valle	18	Max WS	TR30d1	40.68	67.04	70.37		70.46	0.002688	1.31	30.94	19.73	0.34
Santa Marta	SM valle	18	Max WS	TR30d2	50.61	67.04	70.79		70.87	0.002165	1.27	39.91	22.95	0.31
Santa Marta	SM valle	18	Max WS	TR30d3	55.43	67.04	70.98		71.06	0.001953	1.25	44.27	24.02	0.29
Santa Marta	SM valle	18	Max WS	TR30d4	58.87	67.04	71.03		71.12	0.002007	1.29	45.68	24.21	0.30
Santa Marta	SM valle	18	Max WS	TR30d5	59.82	67.04	71.01		71.10	0.002147	1.33	45.14	24.14	0.31
Santa Marta	SM valle	18	Max WS	TR30d6	59.64	67.04	70.95		71.05	0.002341	1.36	43.76	23.96	0.32
Santa Marta	SM valle	18	Max WS	TR30d8	57.57	67.04	70.81		70.91	0.002737	1.43	40.27	23.07	0.35
Santa Marta	SM valle	17.9		Lat Struct										
Santa Marta	SM valle	17.8		Lat Struct										
Santa Marta	SM valle	17	Max WS	TR200d2	98.59	67.14	71.47		71.65	0.003777	1.89	52.15	24.90	0.42
Santa Marta	SM valle	17	Max WS	TR200d1	82.71	67.14	70.98		71.19	0.005528	2.04	40.56	23.08	0.49
Santa Marta	SM valle	17	Max WS	TR200d3	106.38	67.14	71.68		71.86	0.003287	1.84	57.69	25.72	0.39
Santa Marta	SM valle	17	Max WS	TR200d4	108.71	67.14	71.73		71.91	0.003225	1.84	58.96	25.90	0.39
Santa Marta	SM valle	17	Max WS	TR200d5	107.99	67.14	71.70		71.87					

HEC-RAS Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Santa Marta	SM valle	17	Max WS	TR30d6	74.09	67.14	70.64		70.89	0.005826	2.21	33.60	17.32	0.51
Santa Marta	SM valle	17	Max WS	TR30d8	69.92	67.14	70.50		70.75	0.005859	2.24	31.22	15.67	0.51
Santa Marta	SM valle	16	Max WS	TR200d2	103.66	66.85	71.29		71.48	0.003842	1.91	54.34	26.14	0.42
Santa Marta	SM valle	16	Max WS	TR200d1	86.78	66.85	70.74		70.97	0.005170	2.11	41.22	21.15	0.48
Santa Marta	SM valle	16	Max WS	TR200d3	111.64	66.85	71.54		71.71	0.003232	1.83	60.99	27.42	0.39
Santa Marta	SM valle	16	Max WS	TR200d4	113.49	66.85	71.60		71.77	0.003106	1.81	62.61	27.72	0.39
Santa Marta	SM valle	16	Max WS	TR200d5	112.29	66.85	71.57		71.73	0.003180	1.82	61.61	27.53	0.39
Santa Marta	SM valle	16	Max WS	TR200d6	110.01	66.85	71.49		71.67	0.003336	1.84	59.66	27.17	0.40
Santa Marta	SM valle	16	Max WS	TR200d8	103.84	66.85	71.30		71.49	0.003802	1.90	54.61	26.19	0.42
Santa Marta	SM valle	16	Max WS	TR30d1	55.71	66.85	69.73		70.01	0.007806	2.35	23.69	13.71	0.57
Santa Marta	SM valle	16	Max WS	TR30d2	70.01	66.85	70.17		70.44	0.006863	2.29	30.54	16.85	0.54
Santa Marta	SM valle	16	Max WS	TR30d3	76.36	66.85	70.39		70.64	0.006149	2.22	34.35	18.36	0.52
Santa Marta	SM valle	16	Max WS	TR30d4	78.64	66.85	70.47		70.71	0.005906	2.20	35.79	18.92	0.51
Santa Marta	SM valle	16	Max WS	TR30d5	78.13	66.85	70.45		70.70	0.005948	2.20	35.49	18.80	0.51
Santa Marta	SM valle	16	Max WS	TR30d6	76.43	66.85	70.40		70.65	0.006124	2.22	34.43	18.39	0.52
Santa Marta	SM valle	16	Max WS	TR30d8	71.82	66.85	70.24		70.50	0.006631	2.27	31.64	17.30	0.54
Santa Marta	SM valle	15	Max WS	TR200d2	103.74	66.92	71.28		71.42	0.002691	1.69	61.53	27.89	0.36
Santa Marta	SM valle	15	Max WS	TR200d1	86.85	66.92	70.72		70.89	0.003234	1.81	47.96	22.22	0.39
Santa Marta	SM valle	15	Max WS	TR200d3	111.73	66.92	71.53		71.66	0.002359	1.62	68.87	30.03	0.34
Santa Marta	SM valle	15	Max WS	TR200d4	113.58	66.92	71.59		71.72	0.002275	1.61	70.67	30.41	0.34
Santa Marta	SM valle	15	Max WS	TR200d5	112.39	66.92	71.55		71.69	0.002325	1.62	69.55	30.17	0.34
Santa Marta	SM valle	15	Max WS	TR200d6	110.11	66.92	71.48		71.62	0.002429	1.63	67.40	29.71	0.35
Santa Marta	SM valle	15	Max WS	TR200d8	103.94	66.92	71.29		71.43	0.002677	1.68	61.82	28.03	0.36
Santa Marta	SM valle	15	Max WS	TR30d1	55.77	66.92	69.69		69.89	0.005291	1.98	28.10	16.34	0.48
Santa Marta	SM valle	15	Max WS	TR30d2	70.09	66.92	70.15		70.34	0.004376	1.94	36.17	18.95	0.45
Santa Marta	SM valle	15	Max WS	TR30d3	76.44	66.92	70.37		70.55	0.003891	1.89	40.48	20.21	0.43
Santa Marta	SM valle	15	Max WS	TR30d4	78.72	66.92	70.45		70.63	0.003729	1.87	42.09	20.66	0.42
Santa Marta	SM valle	15	Max WS	TR30d5	78.22	66.92	70.43		70.61	0.003760	1.87	41.75	20.56	0.42
Santa Marta	SM valle	15	Max WS	TR30d6	76.51	66.92	70.38		70.56	0.003876	1.89	40.57	20.23	0.43
Santa Marta	SM valle	15	Max WS	TR30d8	71.90	66.92	70.22		70.40	0.004214	1.92	37.44	19.33	0.44
Santa Marta	SM valle	14	Max WS	TR200d2	103.91	67.05	70.84	68.97	71.26	0.007968	2.86	36.35		0.47
Santa Marta	SM valle	14	Max WS	TR200d1	87.02	67.05	70.48	68.80	70.77	0.005587	2.39	36.35		0.41
Santa Marta	SM valle	14	Max WS	TR200d3	111.91	67.05	71.00	69.05	71.48	0.009241	3.08	36.35		0.49
Santa Marta	SM valle	14	Max WS	TR200d4	113.77	67.05	71.04	69.07	71.54	0.009551	3.13	36.35		0.50
Santa Marta	SM valle	14	Max WS	TR200d5	112.58	67.05	71.01	69.06	71.50	0.009353	3.10	36.35		0.50
Santa Marta	SM valle	14	Max WS	TR200d6	110.31	67.05	70.97	69.04	71.44	0.008978	3.03	36.35		0.49
Santa Marta	SM valle	14	Max WS	TR200d8	104.14	67.05	70.85	68.98	71.27	0.008002	2.87	36.35		0.47
Santa Marta	SM valle	14	Max WS	TR30d1	55.93	67.05	69.64	68.42	69.80	0.002269	1.75	31.92	9.45	0.35
Santa Marta	SM valle	14	Max WS	TR30d2	70.25	67.05	70.06	68.60	70.26	0.003100	2.00	35.20	6.05	0.37
Santa Marta	SM valle	14	Max WS	TR30d3	76.61	67.05	70.23	68.68	70.46	0.003780	2.12	36.06	3.83	0.38
Santa Marta	SM valle	14	Max WS	TR30d4	78.89	67.05	70.29	68.71	70.53	0.004149	2.18	36.25	2.65	0.39
Santa Marta	SM valle	14	Max WS	TR30d5	78.40	67.05	70.28	68.70	70.52	0.004062	2.16	36.22	2.93	0.38
Santa Marta	SM valle	14	Max WS	TR30d6	76.69	67.05	70.23	68.68	70.46	0.003794	2.13	36.07	3.77	0.38
Santa Marta	SM valle	14	Max WS	TR30d8	72.08	67.05	70.11	68.62	70.32	0.003264	2.03	35.50	5.47	0.37
Santa Marta	SM valle	13.9	Max WS	TR200d2	103.92	67.05	70.77	68.97	71.18	0.007969	2.86	36.35		0.47
Santa Marta	SM valle	13.9	Max WS	TR200d1	87.02	67.05	70.43	68.80	70.72	0.005587	2.39	36.35		0.42
Santa Marta	SM valle	13.9	Max WS	TR200d3	111.92	67.05	70.91	69.05	71.40	0.009243	3.08	36.35		0.50
Santa Marta	SM valle	13.9	Max WS	TR200d4	113.79	67.05	70.95	69.07	71.45	0.009554	3.13	36.35		0.51
Santa Marta	SM valle	13.9	Max WS	TR200d5	112.60	67.05	70.93	69.06	71.42	0.009356	3.10	36.35		0.50
Santa Marta	SM valle	13.9	Max WS	TR200d6	110.32	67.05	70.88	69.04	71.35	0.008981	3.04	36.35		0.49
Santa Marta	SM valle	13.9	Max WS	TR200d8	104.16	67.05	70.77	68.98	71.19	0.008005	2.87	36.35		0.47
Santa Marta	SM valle	13.9	Max WS	TR30d1	55.93	67.05	69.62	68.43	69.78	0.002304	1.77	31.69	9.61	0.35
Santa Marta	SM valle	13.9	Max WS	TR30d2	70.25	67.05	70.02	68.60	70.23	0.003110	2.01	34.97	6.44	0.37
Santa Marta	SM valle	13.9	Max WS	TR30d3	76.61	67.05	70.19	68.68	70.42	0.003727	2.14	35.87	4.51	0.39
Santa Marta	SM valle	13.9	Max WS	TR30d4	78.90	67.05	70.24	68.71	70.49	0.004034	2.19	36.11	3.60	0.39
Santa Marta	SM valle	13.9	Max WS	TR30d5	78.41	67.05	70.23	68.70	70.47	0.003963	2.17	36.06	3.80	0.39
Santa Marta	SM valle	13.9	Max WS	TR30d6	76.71	67.05	70.19	68.68	70.42	0.003740	2.14	35.89	4.46	0.39
Santa Marta	SM valle	13.9	Max WS	TR30d8	72.09	67.05	70.07	68.63	70.28	0.003263	2.04	35.28	5.92	0.38
Santa Marta	SM valle	13.8	Max WS	TR200d2	103.92	67.11	70.24	69.65	71.03	0.001376	3.94	26.41	8.69	0.72
Santa Marta	SM valle	13.8	Max WS	TR200d1	87.02	67.11	69.83	69.37	70.57	0.001447	3.81	22.85	8.69	0.75
Santa Marta	SM valle	13.8	Max WS	TR200d3	111.93	67.11	70.44	69.77	71.25	0.001343	3.98	28.11	8.69	0.71
Santa Marta	SM valle	13.8	Max WS	TR200d4	113.80	67.11	70.49	69.80	71.30	0.001329	3.99	28.55	8.69	0.70
Santa Marta	SM valle	13.8	Max WS	TR200d5	112.62	67.11	70.46	69.78	71.27	0.001337	3.98	28.28	8.69	0.70
Santa Marta	SM valle	13.8	Max WS	TR200d6	110.34	67.11	70.40	69.75	71.20	0.001350	3.97	27.76	8.69	0.71
Santa Marta	SM valle	13.8	Max WS	TR200d8	104.18	67.11	70.25	69.65	71.04	0.001370	3.93	26.50	8.69	0.72
Santa Marta	SM valle	13.8	Max WS	TR30d1	55.93	67.11	69.05	68.82	69.67	0.001661	3.49	16.02	8.69	0.82
Santa Marta	SM valle	13.8	Max WS	TR30d2	70.25	67.11	69.42	69.08	70.10	0.001530	3.64	19.28	8.69	0.78
Santa Marta	SM valle	13.8	Max WS	TR30d3	76.62	67.11	69.58	69.20	70.28	0.001492	3.71	20.66	8.69	0.77
Santa Marta	SM valle	13.8	Max WS	TR30d4	78.91	67.11	69.64	69.24	70.35	0.001480	3.73	21.16	8.69	0.76
Santa Marta	SM valle	13.8	Max WS	TR30d5	78.42	67.11	69.63	69.23	70.33	0.001481	3.72	21.06	8.69	0.76
Santa Marta	SM valle	13.8	Max WS	TR30d6	76.72	67.11	69.59	69.20	70.29	0.001488	3.71	20.70	8.69	0.77
Santa Marta	SM valle	13.8	Max WS	TR30d8	72.11	67.11	69.47	69.12	70.15	0.001513	3.66	19.71	8.69	0.78
Santa Marta	SM valle	13	Max WS	TR200d2	103.93	67.00	70.25	69.50	70.97	0.001053	3.74	27.82	8.69	0.67
Santa Marta	SM valle	13	Max WS	TR200d1	87.02	67.00	69.85	69.22	70.51	0.001107	3.58	24.34	8.69	0.68
Santa Marta	SM valle	13	Max WS	TR200d3	111.95	67.00	70.44	69.62	71.18	0.001029	3.80	29.45	8.69	0.66
Santa Marta	SM valle	13	Max WS	TR200d4	113.83	67.00	70.49	69.65	71.23	0.001019	3.81	29.87	8.69	0.66
Santa Marta	SM valle	13	Max WS	TR200d5	112.65	67.00	70.46	69.63	71.20	0.001024	3.80	29.62	8.69	0.66
Santa Marta	SM valle	13	Max WS	TR200d6	110.38	67.00	70.40	69.60	71.14	0.001035	3.79	29.11	8.69	0.66
Santa Marta	SM valle	13	Max WS	TR200d8	104.21	67.00	70.26	69.50	70.97	0.001050	3.74	27.89	8.69	0.67
Santa Marta	SM valle	13	Max WS	TR30d1	55.93	67.00	69.07	68.67	69.59	0.001256	3.19	17.54	8.69	0.72
Santa Marta	SM valle	13	Max WS	TR30d2	70.26	67.00	69.44	68.93	70.03	0.001171	3.38	20.78	8.69	0.70
Santa Marta	SM valle	13	Max WS	TR30d3	76.63	67.00	69.60	69.05	70.21	0.001144	3.46	22.16	8.69	0.69
Santa Marta	SM valle	13	Max WS	TR30d4	78.93	67.00	69.66	69.08	70.28	0.001135	3.49	22.65	8.69	0.69
Santa Marta	SM valle	13	Max WS	TR30d5	78.44	67.00	69.65	69.08	70.26	0.001136	3.48	22.55	8.69	0.69
Santa Marta	SM valle	13	Max WS	TR30d6	76.74	67.00	69.61	69.05	70.22	0.001142	3.46	22.19	8.69	0.69
Santa Marta	SM valle	13	Max WS	TR30d8	72.									

HEC-RAS Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W. S. Elev (m)	Crit W. S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Santa Marta	SM valle	12	Max WS	TR30d6	76.79	66.73	69.64	68.79	70.11	0.000869	3.06	25.11	8.93	0.58
Santa Marta	SM valle	12	Max WS	TR30d8	72.18	66.73	69.52	68.70	69.98	0.000863	3.00	24.10	8.93	0.58
Santa Marta	SM valle	11.8			Inf Struct									
Santa Marta	SM valle	11.5	Max WS	TR200d2	103.94	66.14	69.58	68.53	70.11	0.000855	3.23	32.18	9.74	0.57
Santa Marta	SM valle	11.5	Max WS	TR200d1	87.02	66.14	69.32	68.28	69.76	0.000786	2.93	29.67	9.74	0.54
Santa Marta	SM valle	11.5	Max WS	TR200d3	111.98	66.14	69.69	68.65	70.26	0.000891	3.37	33.24	9.74	0.58
Santa Marta	SM valle	11.5	Max WS	TR200d4	113.88	66.14	69.71	68.68	70.30	0.000898	3.40	33.50	9.74	0.58
Santa Marta	SM valle	11.5	Max WS	TR200d5	112.71	66.14	69.70	68.66	70.28	0.000892	3.38	33.36	9.74	0.58
Santa Marta	SM valle	11.5	Max WS	TR200d6	110.44	66.14	69.67	68.62	70.24	0.000881	3.34	33.08	9.74	0.58
Santa Marta	SM valle	11.5	Max WS	TR200d8	104.28	66.14	69.59	68.54	70.12	0.000852	3.23	32.28	9.74	0.57
Santa Marta	SM valle	11.5	Max WS	TR30d1	55.93	66.14	68.67	67.77	68.96	0.000721	2.39	23.36	9.74	0.49
Santa Marta	SM valle	11.5	Max WS	TR30d2	70.26	66.14	69.00	68.01	69.36	0.000737	2.64	26.61	9.74	0.51
Santa Marta	SM valle	11.5	Max WS	TR30d3	76.65	66.14	69.13	68.12	69.52	0.000752	2.75	27.86	9.74	0.52
Santa Marta	SM valle	11.5	Max WS	TR30d4	78.95	66.14	69.18	68.15	69.57	0.000757	2.79	28.30	9.74	0.52
Santa Marta	SM valle	11.5	Max WS	TR30d5	78.48	66.14	69.17	68.15	69.56	0.000754	2.78	28.23	9.74	0.52
Santa Marta	SM valle	11.5	Max WS	TR30d6	76.79	66.14	69.14	68.12	69.52	0.000749	2.75	27.92	9.74	0.52
Santa Marta	SM valle	11.5	Max WS	TR30d8	72.18	66.14	69.05	68.04	69.41	0.000735	2.67	27.06	9.74	0.51
Santa Marta	SM valle	11	Max WS	TR200d2	103.95	65.78	69.60	68.23	70.04	0.002692	2.93	35.43	9.74	0.49
Santa Marta	SM valle	11	Max WS	TR200d1	87.02	65.78	69.34	67.97	69.70	0.002351	2.64	32.92	9.74	0.46
Santa Marta	SM valle	11	Max WS	TR200d3	111.99	65.78	69.71	68.34	70.19	0.002863	3.07	36.49	9.74	0.51
Santa Marta	SM valle	11	Max WS	TR200d4	113.89	65.78	69.74	68.37	70.23	0.002902	3.10	36.74	9.74	0.51
Santa Marta	SM valle	11	Max WS	TR200d5	112.73	65.78	69.72	68.35	70.21	0.002874	3.08	36.60	9.74	0.51
Santa Marta	SM valle	11	Max WS	TR200d6	110.46	65.78	69.69	68.32	70.17	0.002823	3.04	36.32	9.74	0.50
Santa Marta	SM valle	11	Max WS	TR200d8	104.29	65.78	69.61	68.23	70.05	0.002688	2.94	35.53	9.74	0.49
Santa Marta	SM valle	11	Max WS	TR30d1	55.93	65.78	68.69	67.46	68.92	0.001859	2.11	26.57	9.74	0.41
Santa Marta	SM valle	11	Max WS	TR30d2	70.26	65.78	69.03	67.70	69.31	0.002060	2.35	29.85	9.74	0.43
Santa Marta	SM valle	11	Max WS	TR30d3	76.65	65.78	69.16	67.81	69.47	0.002164	2.46	31.10	9.74	0.44
Santa Marta	SM valle	11	Max WS	TR30d4	78.96	65.78	69.20	67.85	69.52	0.002200	2.50	31.55	9.74	0.44
Santa Marta	SM valle	11	Max WS	TR30d5	78.49	65.78	69.20	67.84	69.51	0.002189	2.49	31.48	9.74	0.44
Santa Marta	SM valle	11	Max WS	TR30d6	76.80	65.78	69.16	67.81	69.47	0.002159	2.46	31.17	9.74	0.44
Santa Marta	SM valle	11	Max WS	TR30d8	72.19	65.78	69.07	67.74	69.36	0.002079	2.38	30.30	9.74	0.43
Santa Marta	SM valle	10.9			Lat Struct									
Santa Marta	SM valle	10	Max WS	TR200d2	104.00	65.44	69.56		69.97	0.002974	2.83	36.78	13.34	0.54
Santa Marta	SM valle	10	Max WS	TR200d1	87.06	65.44	69.30		69.64	0.002728	2.61	33.30	12.82	0.52
Santa Marta	SM valle	10	Max WS	TR200d3	112.05	65.44	69.67		70.11	0.003095	2.93	38.30	13.56	0.56
Santa Marta	SM valle	10	Max WS	TR200d4	113.96	65.44	69.70		70.14	0.003120	2.95	38.66	13.61	0.56
Santa Marta	SM valle	10	Max WS	TR200d5	112.79	65.44	69.69		70.12	0.003099	2.93	38.46	13.58	0.56
Santa Marta	SM valle	10	Max WS	TR200d6	110.52	65.44	69.66		70.09	0.003062	2.90	38.06	13.52	0.55
Santa Marta	SM valle	10	Max WS	TR200d8	104.36	65.44	69.57		69.98	0.002964	2.83	36.92	13.36	0.54
Santa Marta	SM valle	10	Max WS	TR30d1	55.97	65.44	68.63		68.88	0.002403	2.22	25.24	11.54	0.48
Santa Marta	SM valle	10	Max WS	TR30d2	70.31	65.44	68.97		69.27	0.002526	2.40	29.28	12.20	0.49
Santa Marta	SM valle	10	Max WS	TR30d3	76.70	65.44	69.11		69.42	0.002595	2.48	30.90	12.46	0.50
Santa Marta	SM valle	10	Max WS	TR30d4	79.01	65.44	69.15		69.47	0.002617	2.51	31.49	12.55	0.51
Santa Marta	SM valle	10	Max WS	TR30d5	78.55	65.44	69.15		69.46	0.002607	2.50	31.40	12.53	0.50
Santa Marta	SM valle	10	Max WS	TR30d6	76.86	65.44	69.11		69.43	0.002585	2.48	31.00	12.47	0.50
Santa Marta	SM valle	10	Max WS	TR30d8	72.25	65.44	69.02		69.32	0.002528	2.42	29.86	12.29	0.50
Santa Marta	SM valle	9	Max WS	TR200d2	103.85	65.36	69.45		69.80	0.006300	2.58	40.20	16.42	0.53
Santa Marta	SM valle	9	Max WS	TR200d1	87.06	65.36	69.19		69.49	0.006195	2.43	35.82	16.11	0.52
Santa Marta	SM valle	9	Max WS	TR200d3	111.78	65.36	69.57		69.93	0.006368	2.66	42.10	16.49	0.53
Santa Marta	SM valle	9	Max WS	TR200d4	113.67	65.36	69.60		69.96	0.006377	2.67	42.55	16.50	0.53
Santa Marta	SM valle	9	Max WS	TR200d5	112.53	65.36	69.58		69.94	0.006359	2.66	42.31	16.50	0.53
Santa Marta	SM valle	9	Max WS	TR200d6	110.31	65.36	69.55		69.91	0.006333	2.64	41.80	16.48	0.53
Santa Marta	SM valle	9	Max WS	TR200d8	104.26	65.36	69.47		69.81	0.006271	2.58	40.37	16.43	0.53
Santa Marta	SM valle	9	Max WS	TR30d1	56.00	65.36	68.50		68.75	0.006900	2.22	25.20	14.40	0.54
Santa Marta	SM valle	9	Max WS	TR30d2	70.33	65.36	68.86		69.13	0.006394	2.30	30.59	15.60	0.52
Santa Marta	SM valle	9	Max WS	TR30d3	76.74	65.36	68.99		69.27	0.006259	2.35	32.72	15.81	0.52
Santa Marta	SM valle	9	Max WS	TR30d4	79.06	65.36	69.04		69.32	0.006214	2.36	33.48	15.88	0.52
Santa Marta	SM valle	9	Max WS	TR30d5	78.61	65.36	69.03		69.32	0.006208	2.36	33.36	15.87	0.52
Santa Marta	SM valle	9	Max WS	TR30d6	76.93	65.36	69.00		69.28	0.006223	2.34	32.84	15.82	0.52
Santa Marta	SM valle	9	Max WS	TR30d8	72.32	65.36	68.91		69.18	0.006285	2.31	31.36	15.68	0.52
Santa Marta	SM valle	8	Max WS	TR200d2	104.10	65.19	69.15		69.37	0.003581	2.09	52.61	29.20	0.42
Santa Marta	SM valle	8	Max WS	TR200d1	87.13	65.19	68.88		69.08	0.003517	1.97	45.24	25.45	0.41
Santa Marta	SM valle	8	Max WS	TR200d3	112.23	65.19	69.27		69.50	0.003596	2.15	58.08	31.43	0.42
Santa Marta	SM valle	8	Max WS	TR200d4	114.20	65.19	69.29		69.53	0.003586	2.16	56.96	32.27	0.42
Santa Marta	SM valle	8	Max WS	TR200d5	113.06	65.19	69.28		69.51	0.003586	2.15	56.49	31.83	0.42
Santa Marta	SM valle	8	Max WS	TR200d6	110.80	65.19	69.25		69.48	0.003590	2.14	55.54	30.91	0.42
Santa Marta	SM valle	8	Max WS	TR200d8	104.65	65.19	69.16		69.38	0.003569	2.10	52.94	29.36	0.42
Santa Marta	SM valle	8	Max WS	TR30d1	56.01	65.19	68.16		68.32	0.003773	1.79	31.27	16.20	0.41
Santa Marta	SM valle	8	Max WS	TR30d2	70.35	65.19	68.54		68.72	0.003566	1.86	37.79	17.65	0.41
Santa Marta	SM valle	8	Max WS	TR30d3	76.79	65.19	68.68		68.87	0.003547	1.91	40.44	22.16	0.41
Santa Marta	SM valle	8	Max WS	TR30d4	79.16	65.19	68.73		68.92	0.003528	1.92	41.58	23.37	0.41
Santa Marta	SM valle	8	Max WS	TR30d5	78.74	65.19	68.72		68.91	0.003526	1.92	41.41	23.27	0.41
Santa Marta	SM valle	8	Max WS	TR30d6	77.07	65.19	68.69		68.88	0.003533	1.90	40.63	22.69	0.41
Santa Marta	SM valle	8	Max WS	TR30d8	72.48	65.19	68.59		68.77	0.003545	1.87	38.72	17.84	0.41
Santa Marta	SM valle	7	Max WS	TR200d2	95.91	64.35	68.55		69.06	0.009164	3.22	32.34	13.51	0.56
Santa Marta	SM valle	7	Max WS	TR200d1	83.64	64.35	68.25		68.74	0.009569	3.13	28.31	12.86	0.57
Santa Marta	SM valle	7	Max WS	TR200d3	101.53	64.35	68.68		69.20	0.009049	3.26	34.10	13.78	0.56
Santa Marta	SM valle	7	Max WS	TR200d4	102.91	64.35	68.71		69.23	0.009024	3.26	34.53	13.85	0.55
Santa Marta	SM valle	7	Max WS	TR200d5	102.12	64.35	68.70		69.22	0.009019	3.26	34.32	13.82	0.55
Santa Marta	SM valle	7	Max WS	TR200d6	100.56	64.35	68.66		69.18	0.009033	3.24	33.86	13.74	0.55
Santa Marta	SM valle	7	Max WS	TR200d8	96.33	64.35	68.57		69.08	0.009121	3.21	32.53	13.54	0.56
Santa Marta	SM valle	7	Max WS	TR30d1	56.01	64.35	67.50		67.91	0.010415	2.83	19.84	8.99	0.59
Santa Marta	SM valle	7	Max WS	TR30d2	70.28	64.35	67.83		68.32	0.010806	3.09	23.23	11.26	0.61
Santa Marta	SM valle	7	Max WS	TR30d3	75.73	64.35	68.00		68.49	0.010380	3.12	25.15	12.33	0.59
Santa Marta	SM valle	7	Max WS	TR30d4	77.61	64.35	68.06		68.55	0.010107	3.12	25.97	12.47	0.59
Santa Marta	SM valle	7	Max WS	TR30d5	77.29	64.35	68.05		68.54	0.010128	3.12	25.86	12.45	0.59
Santa Marta	SM valle	7	Max WS	TR30d6	75.97	64.35	68.01		68.50	0.010283	3.12	25.32	12.36	0.59
Santa Marta	SM													

HEC-RAS Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Santa Marta	SM valle	6	Max WS	TR30d2	70.36	64.36	67.72		68.19	0.010708	3.05	23.57	11.77	0.61
Santa Marta	SM valle	6	Max WS	TR30d3	76.75	64.36	67.86		68.36	0.011112	3.14	25.32	13.23	0.62
Santa Marta	SM valle	6	Max WS	TR30d4	79.08	64.36	67.91		68.42	0.011208	3.16	26.01	13.83	0.63
Santa Marta	SM valle	6	Max WS	TR30d5	78.70	64.36	67.90		68.41	0.011179	3.16	25.92	13.74	0.63
Santa Marta	SM valle	6	Max WS	TR30d6	77.10	64.36	67.87		68.37	0.011094	3.14	25.46	13.36	0.62
Santa Marta	SM valle	6	Max WS	TR30d8	72.58	64.36	67.77		68.25	0.010810	3.08	24.23	12.33	0.61
Santa Marta	SM valle	5	Max WS	TR200d2	103.87	63.80	67.97		68.21	0.003735	2.24	52.63	30.39	0.42
Santa Marta	SM valle	5	Max WS	TR200d1	87.07	63.80	67.66		67.89	0.003997	2.15	43.81	27.15	0.43
Santa Marta	SM valle	5	Max WS	TR200d3	111.85	63.80	68.10		68.35	0.003668	2.29	56.77	33.19	0.42
Santa Marta	SM valle	5	Max WS	TR200d4	113.85	63.80	68.13		68.39	0.003650	2.30	57.84	33.88	0.42
Santa Marta	SM valle	5	Max WS	TR200d5	112.79	63.80	68.11		68.37	0.003651	2.29	57.34	33.56	0.42
Santa Marta	SM valle	5	Max WS	TR200d6	110.63	63.80	68.08		68.33	0.003661	2.28	56.25	32.85	0.42
Santa Marta	SM valle	5	Max WS	TR200d8	104.65	63.80	67.99		68.23	0.003701	2.24	53.20	30.79	0.42
Santa Marta	SM valle	5	Max WS	TR30d1	56.01	63.80	66.93		67.12	0.004972	1.97	28.49	15.00	0.46
Santa Marta	SM valle	5	Max WS	TR30d2	70.36	63.80	67.30		67.51	0.004476	2.06	34.65	21.76	0.44
Santa Marta	SM valle	5	Max WS	TR30d3	76.86	63.80	67.45		67.67	0.004229	2.09	38.34	25.15	0.43
Santa Marta	SM valle	5	Max WS	TR30d4	79.30	63.80	67.50		67.73	0.004143	2.10	39.75	25.68	0.43
Santa Marta	SM valle	5	Max WS	TR30d5	78.93	63.80	67.50		67.72	0.004146	2.10	39.57	25.61	0.43
Santa Marta	SM valle	5	Max WS	TR30d6	77.28	63.80	67.46		67.68	0.004190	2.09	38.67	25.27	0.43
Santa Marta	SM valle	5	Max WS	TR30d8	72.70	63.80	67.36		67.58	0.004343	2.07	36.08	24.18	0.44
Santa Marta	SM valle	4	Max WS	TR200d2	104.14	63.32	67.83		68.12	0.004703	2.40	45.53	24.67	0.47
Santa Marta	SM valle	4	Max WS	TR200d1	87.07	63.32	67.54		67.80	0.004608	2.26	39.06	19.79	0.46
Santa Marta	SM valle	4	Max WS	TR200d3	112.36	63.32	67.96		68.26	0.004803	2.46	48.72	26.91	0.48
Santa Marta	SM valle	4	Max WS	TR200d4	114.45	63.32	67.99		68.29	0.004824	2.47	49.55	27.42	0.48
Santa Marta	SM valle	4	Max WS	TR200d5	113.36	63.32	67.97		68.28	0.004804	2.46	49.17	27.20	0.48
Santa Marta	SM valle	4	Max WS	TR200d6	111.13	63.32	67.94		68.24	0.004771	2.44	48.33	26.64	0.48
Santa Marta	SM valle	4	Max WS	TR200d8	104.99	63.32	67.85		68.14	0.004688	2.40	45.98	25.00	0.47
Santa Marta	SM valle	4	Max WS	TR30d1	56.01	63.32	66.82		67.03	0.004793	2.02	27.73	13.80	0.46
Santa Marta	SM valle	4	Max WS	TR30d2	70.36	63.32	67.19		67.42	0.004741	2.13	33.04	15.03	0.46
Santa Marta	SM valle	4	Max WS	TR30d3	76.87	63.32	67.34		67.58	0.004656	2.18	35.39	16.67	0.46
Santa Marta	SM valle	4	Max WS	TR30d4	79.32	63.32	67.39		67.64	0.004615	2.19	36.32	17.51	0.46
Santa Marta	SM valle	4	Max WS	TR30d5	78.95	63.32	67.39		67.63	0.004612	2.19	36.20	17.41	0.46
Santa Marta	SM valle	4	Max WS	TR30d6	77.31	63.32	67.35		67.59	0.004626	2.18	35.62	16.87	0.46
Santa Marta	SM valle	4	Max WS	TR30d8	72.73	63.32	67.25		67.48	0.004697	2.14	33.98	15.28	0.46
Santa Marta	SM valle	3	Max WS	TR200d2	104.19	62.36	66.71		66.86	0.002272	1.83	70.38	40.90	0.34
Santa Marta	SM valle	3	Max WS	TR200d1	87.03	62.36	66.41		66.56	0.002278	1.75	59.10	36.11	0.34
Santa Marta	SM valle	3	Max WS	TR200d3	112.56	62.36	66.83		67.00	0.002275	1.87	75.93	46.72	0.34
Santa Marta	SM valle	3	Max WS	TR200d4	114.82	62.36	66.87		67.03	0.002278	1.88	77.47	48.47	0.34
Santa Marta	SM valle	3	Max WS	TR200d5	113.82	62.36	66.85		67.02	0.002275	1.88	76.81	47.73	0.34
Santa Marta	SM valle	3	Max WS	TR200d6	111.63	62.36	66.82		66.98	0.002272	1.87	75.32	46.01	0.34
Santa Marta	SM valle	3	Max WS	TR200d8	105.51	62.36	66.73		66.89	0.002268	1.84	71.28	41.26	0.34
Santa Marta	SM valle	3	Max WS	TR30d1	55.99	62.36	65.63		65.76	0.002758	1.64	35.79	23.25	0.36
Santa Marta	SM valle	3	Max WS	TR30d2	70.36	62.36	66.04		66.18	0.002424	1.68	46.81	30.03	0.34
Santa Marta	SM valle	3	Max WS	TR30d3	76.97	62.36	66.21		66.35	0.002314	1.70	52.13	32.79	0.34
Santa Marta	SM valle	3	Max WS	TR30d4	79.54	62.36	66.27		66.41	0.002283	1.71	54.14	33.78	0.33
Santa Marta	SM valle	3	Max WS	TR30d5	79.24	62.36	66.27		66.41	0.002285	1.71	53.92	33.68	0.33
Santa Marta	SM valle	3	Max WS	TR30d6	77.65	62.36	66.23		66.37	0.002303	1.70	52.69	33.07	0.33
Santa Marta	SM valle	3	Max WS	TR30d8	73.10	62.36	66.12		66.26	0.002368	1.69	49.08	31.24	0.34
Santa Marta	SM valle	2	Max WS	TR200d2	104.21	61.93	66.57		66.75	0.002609	1.89	56.78	33.86	0.35
Santa Marta	SM valle	2	Max WS	TR200d1	87.03	61.93	66.30		66.46	0.002338	1.74	50.05	17.79	0.33
Santa Marta	SM valle	2	Max WS	TR200d3	112.60	61.93	66.69		66.89	0.002697	1.95	61.42	42.55	0.36
Santa Marta	SM valle	2	Max WS	TR200d4	114.85	61.93	66.72		66.92	0.002708	1.97	62.74	42.59	0.36
Santa Marta	SM valle	2	Max WS	TR200d5	113.87	61.93	66.71		66.91	0.002703	1.96	62.17	42.57	0.36
Santa Marta	SM valle	2	Max WS	TR200d6	111.70	61.93	66.68		66.87	0.002693	1.94	60.89	42.53	0.36
Santa Marta	SM valle	2	Max WS	TR200d8	105.58	61.93	66.59		66.78	0.002627	1.90	57.47	34.91	0.35
Santa Marta	SM valle	2	Max WS	TR30d1	55.99	61.93	65.54		65.65	0.002153	1.50	37.33	15.74	0.31
Santa Marta	SM valle	2	Max WS	TR30d2	70.36	61.93	65.94		66.07	0.002165	1.60	43.85	16.61	0.32
Santa Marta	SM valle	2	Max WS	TR30d3	77.00	61.93	66.11		66.25	0.002199	1.65	46.64	17.11	0.32
Santa Marta	SM valle	2	Max WS	TR30d4	79.57	61.93	66.17		66.31	0.002220	1.67	47.66	17.32	0.32
Santa Marta	SM valle	2	Max WS	TR30d5	79.29	61.93	66.16		66.30	0.002217	1.67	47.55	17.29	0.32
Santa Marta	SM valle	2	Max WS	TR30d6	77.70	61.93	66.12		66.26	0.002204	1.66	46.92	17.17	0.32
Santa Marta	SM valle	2	Max WS	TR30d8	73.15	61.93	66.01		66.15	0.002171	1.62	45.06	16.78	0.32
Santa Marta	SM valle	1	Max WS	TR200d2	104.21	60.97	65.88	64.76	66.20	0.006950	2.53	42.29	22.48	0.53
Santa Marta	SM valle	1	Max WS	TR200d1	87.03	60.97	65.65	64.51	65.93	0.006951	2.35	37.34	20.43	0.52
Santa Marta	SM valle	1	Max WS	TR200d3	112.59	60.97	65.98	64.87	66.33	0.006951	2.60	44.71	23.42	0.54
Santa Marta	SM valle	1	Max WS	TR200d4	114.82	60.97	66.01	64.91	66.36	0.006950	2.62	45.35	23.66	0.54
Santa Marta	SM valle	1	Max WS	TR200d5	113.86	60.97	66.00	64.89	66.35	0.006951	2.61	45.07	23.55	0.54
Santa Marta	SM valle	1	Max WS	TR200d6	111.70	60.97	65.97	64.86	66.31	0.006950	2.59	44.45	23.32	0.54
Santa Marta	SM valle	1	Max WS	TR200d8	105.58	60.97	65.90	64.78	66.22	0.006952	2.54	42.68	22.63	0.53
Santa Marta	SM valle	1	Max WS	TR30d1	55.99	60.97	64.87	63.92	65.13	0.006952	2.22	25.16	12.50	0.50
Santa Marta	SM valle	1	Max WS	TR30d2	70.36	60.97	65.30	64.23	65.57	0.006952	2.27	31.06	15.58	0.51
Santa Marta	SM valle	1	Max WS	TR30d3	76.99	60.97	65.47	64.35	65.74	0.006952	2.28	33.92	18.27	0.52
Santa Marta	SM valle	1	Max WS	TR30d4	79.57	60.97	65.53	64.39	65.80	0.006951	2.28	35.04	19.21	0.52
Santa Marta	SM valle	1	Max WS	TR30d5	79.28	60.97	65.53	64.39	65.79	0.006951	2.28	34.91	19.11	0.52
Santa Marta	SM valle	1	Max WS	TR30d6	77.70	60.97	65.49	64.36	65.75	0.006952	2.28	34.23	18.53	0.52
Santa Marta	SM valle	1	Max WS	TR30d8	73.15	60.97	65.38	64.29	65.64	0.006950	2.27	32.27	16.76	0.51
Botro dei Canoni	Botro dei Canoni	13	Max WS	TR200d2	51.83	76.82	80.54		80.65	0.003801	2.08	48.90	31.37	0.40
Botro dei Canoni	Botro dei Canoni	13	Max WS	TR200d1	44.66	76.82	80.29		80.42	0.004566	2.14	41.10	30.76	0.43
Botro dei Canoni	Botro dei Canoni	13	Max WS	TR200d3	51.76	76.82	80.54		80.65	0.003806	2.08	48.84	31.37	0.40
Botro dei Canoni	Botro dei Canoni	13	Max WS	TR200d4	48.42	76.82	80.42		80.54	0.004140	2.11	45.16	31.08	0.41
Botro dei Canoni	Botro dei Canoni	13	Max WS	TR200d5	44.70	76.82	80.30		80.42	0.004556	2.14	41.17	30.76	0.43
Botro dei Canoni	Botro dei Canoni	13	Max WS	TR200d6	41.32	76.82	80.18		80.31	0.004978	2.17	37.60	30.48	0.44
Botro dei Canoni	Botro dei Canoni	13	Max WS	TR200d8	35.77	76.82	79.99		80.13	0.005791	2.21	31.84	30.01	0.47
Botro dei Canoni	Botro dei Canoni	13	Max WS	TR30d1	27.92	76.82	79.71		79.87	0.006943	2.22	23.91	26.74	0.50
Botro dei Canoni	Botro dei Canoni	13	Max WS	TR30d2	34.29	76.82	79.94		80.08	0.006005	2.22	30.28	29.43	0.48
Botro dei Canoni	Botro dei Canoni	13	Max WS	TR30d3	34.82	76.82	79.96		80.10	0.005926	2.22	30.85	29.66	0.47
Botro dei Canoni	Botro dei Canoni	13	Max WS	TR30d4	32.84	76.82	79.89		80.03	0.006209				

HEC-RAS Profile: Max WS (Continued)

River	Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Botro dei Canoni	Botro dei Canoni	1	Max WS	TR200d2	15.45	67.03	71.71		71.72	0.000165	0.42	38.11	16.82	0.08
Botro dei Canoni	Botro dei Canoni	1	Max WS	TR200d1	13.60	67.03	71.28		71.29	0.000224	0.44	30.96	15.66	0.09
Botro dei Canoni	Botro dei Canoni	1	Max WS	TR200d3	15.70	67.03	71.91		71.92	0.000135	0.39	41.43	16.82	0.07
Botro dei Canoni	Botro dei Canoni	1	Max WS	TR200d4	14.97	67.03	71.95		71.95	0.000118	0.37	42.07	16.82	0.07
Botro dei Canoni	Botro dei Canoni	1	Max WS	TR200d5	14.16	67.03	71.91		71.92	0.000110	0.36	41.41	16.82	0.07
Botro dei Canoni	Botro dei Canoni	1	Max WS	TR200d6	13.68	67.03	71.84		71.85	0.000111	0.35	40.31	16.82	0.07
Botro dei Canoni	Botro dei Canoni	1	Max WS	TR200d8	12.76	67.03	71.68		71.69	0.000117	0.35	37.58	16.82	0.07
Botro dei Canoni	Botro dei Canoni	1	Max WS	TR30d1	10.71	67.03	70.37		70.39	0.000605	0.57	18.77	12.62	0.15
Botro dei Canoni	Botro dei Canoni	1	Max WS	TR30d2	11.75	67.03	70.79		70.80	0.000344	0.49	24.19	13.14	0.11
Botro dei Canoni	Botro dei Canoni	1	Max WS	TR30d3	12.19	67.03	70.98		70.99	0.000279	0.46	26.63	13.37	0.10
Botro dei Canoni	Botro dei Canoni	1	Max WS	TR30d4	12.01	67.03	71.03		71.04	0.000249	0.44	27.42	13.44	0.10
Botro dei Canoni	Botro dei Canoni	1	Max WS	TR30d5	11.72	67.03	71.01		71.02	0.000245	0.43	27.12	13.41	0.10
Botro dei Canoni	Botro dei Canoni	1	Max WS	TR30d6	11.43	67.03	70.95		70.96	0.000253	0.43	26.35	13.34	0.10
Botro dei Canoni	Botro dei Canoni	1	Max WS	TR30d8	10.88	67.03	70.81		70.82	0.000288	0.45	24.39	13.16	0.10

