Appendix A: Synoptic Measurements

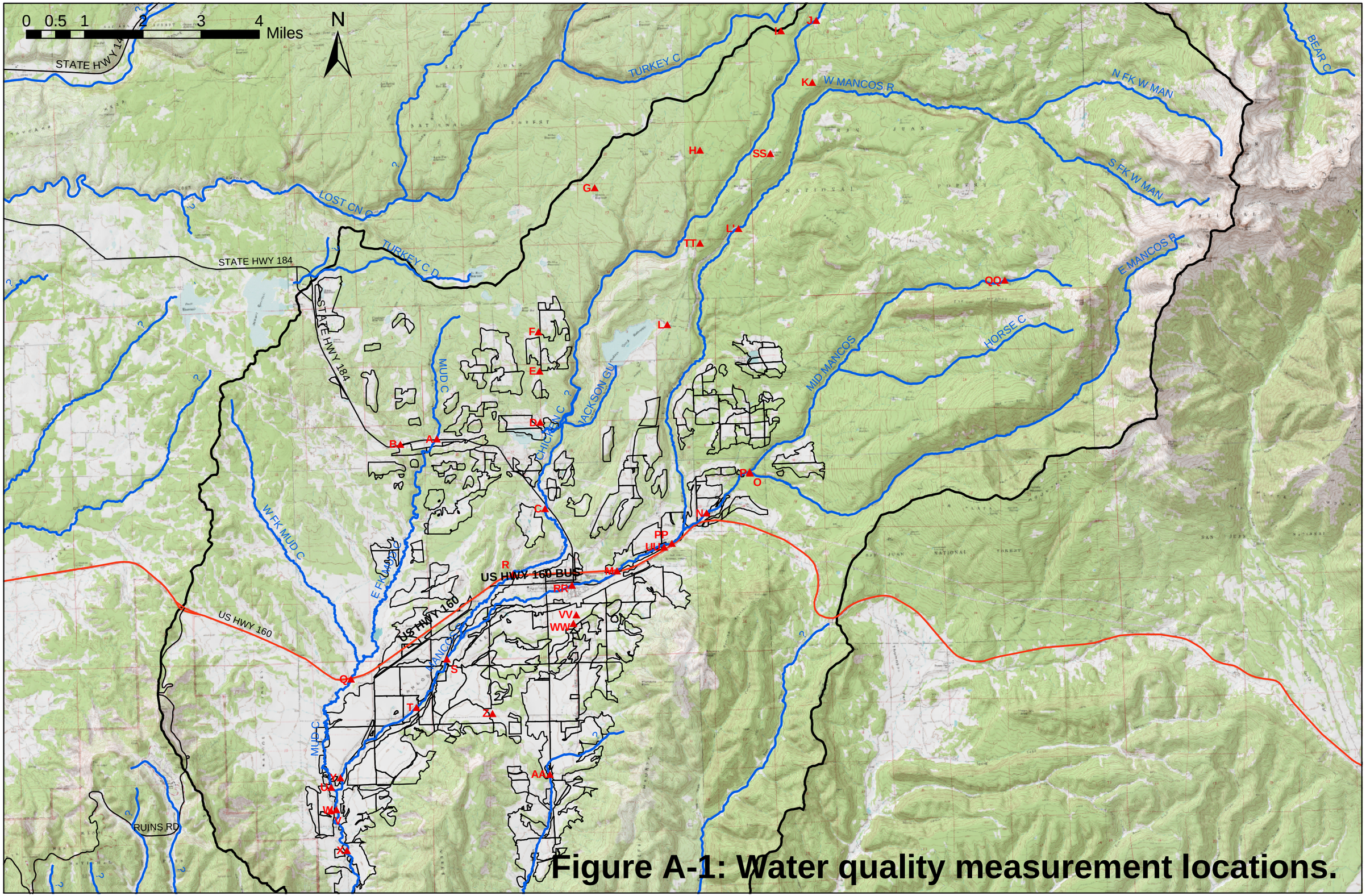
0 0.5 1 2 3 4 Miles
N
STATE HWY 14
TURKEY C
W MANCOS R
N FK W MAN
BEAR C
S FK W MAN
E MANCOS R
LOST CN C
TURKEY C D
STATE HWY 184
MUD C
HORSE C
MID MANCOS
W FK MUD C
E FK MUD C
US HWY 160
US HWY 160 BUS
RUINS RD
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Figure A-1: Water quality measurement locations.

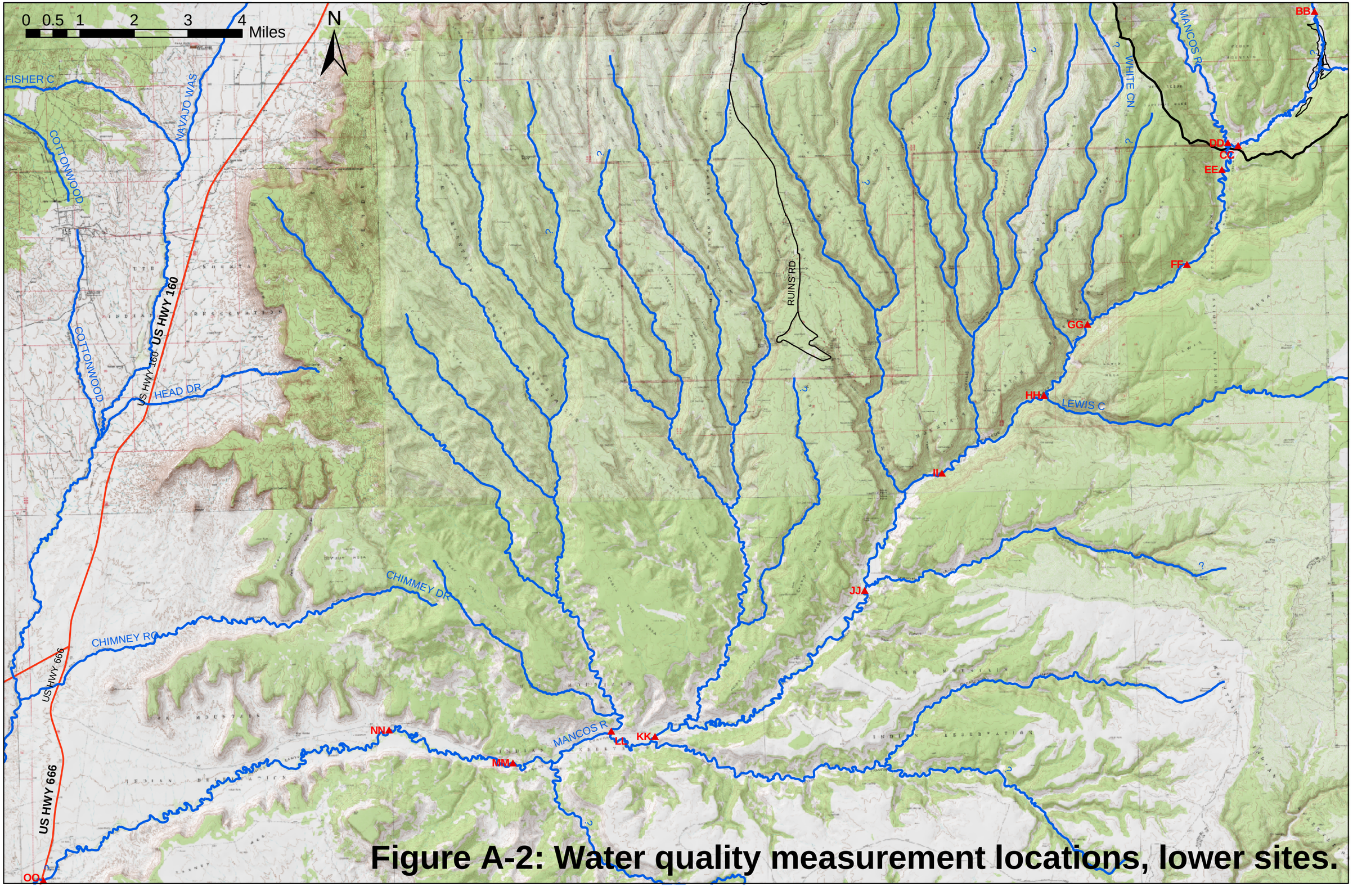

Figure A-2: Water quality measurement locations, lower sites.

Table A-1: Synoptic 1 measurements and computations.

Date	Time	Description	Field ID	Station[1]	UTM 1	UTM 2	UTM 3	Temperature (degrees C)	Spec. Cond. (us/cm)
5/8/01	1305	Mancos River diversion ditch	L	----	12S	0742696.6156	4143711	----	72.7
5/8/01	1305	Mancos River (virtual)	L'	339.3	----	----	----	----	72.7
5/8/01	1425	East Mancos, just u.s. of confluence	P	316.3	12S	0744983.3587	4139642	14.1	165
5/8/01	1405	Middle Mancos, just u.s. of confluence	O	316.4	12S	0744998.4513	4139694	10.8	175
5/8/01	1400	Middle/East Mancos River	N	310.3	12S	0743810.3272	4138547	10.9	164
5/8/01	1350	Mancos River @ Mancos, CO 160	M	299.7	12S	0741258.3398	4136917	13.1	290
5/8/01	1220	Chicken Creek @ F.S. road	J	362.2	12S	0746813.2581	4152190	12.7	66.9
5/8/01	1215	trib to Chicken Creek	I	----	12S	0745748.2834	4151850	8.6	66.7
5/8/01	1150	trib to Chicken Creek	H	----	12S	0743598.9442	4148580	9.7	62.6
5/8/01	1135	trib to Chicken Creek (possibly ditch leakage)	G	----	12S	0740777.2541	4147517	12.9	66.0
5/8/01	1110	lined ditch from Little Bauer Lake, @ C.R.	F	----	12S	0739150.5553	4143530	11.3	86.7
5/8/01	1105	small trib. @ C.R.	E	----	12S	0739182.4763	4142466	12.2	310
5/8/01	1100	Trib. To Bauer Lake @ C.R.	D	----	12S	0739224.9903	4140999	12.0	311
5/8/01	1050	Chicken Creek nr. Rt. 184	C	302.6	12S	0739292.7478	4138634	9.2	190
5/9/01	945	Chicken Creek @ 160	R	291.0	12S	0738391	4136770	16.4	218
5/9/01	1000	Mancos River at C.R. J	S	280.0	12S	0736600	4134482	11.6	206
5/9/01	1145	Trib. to Mancos River	Z	283.0	12S	0737933	4132973	21.5	2710
5/9/01	1015	Mancos River	T	274.3	12S	0735810	4133189	8.6	259
5/9/01	1130	Mancos River at C.R. F	Y	263.2	12S	0733632	4131197	11.4	301
5/8/01	1045	Trib. to E. Fork of Mud Creek, at Co184	B	308.4	12S	0735318.824	4140417	16.8	895
5/8/01	1030	E. Fork of Mud Creek at Co184	A	309.6	12S	0736307.7716	4140583	13.3	1043
5/9/01	920	Mud Creek at Co160	Q	277.6	12S	0733949	4133982	14.0	2070
5/9/01	1030	Mud Creek at C.R. 38	U	262.3	12S	0733427	4130903	13.8	2800
5/9/01	1045	Mancos River	W	259.7	12S	0733522	4130322	10.4	342
5/9/01	1040	Trib. to Mancos River, irrigation overflow	V	260.1	12S	0733430	4130291	13.9	458
5/9/01	1105	Mancos River @ Koppenhafer Bridge	X	254.8	12S	0733824	4129247	11.1	365
5/9/01	1440	Mancos River, u.s. of Weber Drainage	DD	223.0	12S	0736048	4122258	16.8	400
5/9/01	1330	Weber Drainage, at Doerfer Driveway	AA	268.0	12S	0739431	4131316	12.9	595
5/9/01	1355	Weber Drainage	BB	246.3	12S	0738599	4126123	15.3	1793
5/9/01	1420	Weber Drainage, at Crossing	CC	227.3	12S	0736370	4122178	17.4	1770
5/9/01	1750	Mancos River, d.s. of Weber Drainage	EE	218.0	12S	0735913	4121503	16.8	446
5/9/01	1805	Mancos River at Horse Canyon	FF	204.5	12S	0734845	4118643	16.3	454
5/9/01	1820	Mancos River at Weaver Canyon	GG	191.5	12S	0731840	4116818	18.4	453
5/9/01	1830	Mancos River at Lewis Creek	HH	181.0	12S	0730539	4114705	19.2	446
5/9/01	1845	Mancos River at Pine Canyon	II	164.0	12S	0727536	4112396	19.2	475
5/9/01	1900	Mancos River at Johnson Canyon	JJ	146.0	12S	0725171	4108872	17.6	496
5/9/01	1915	Mancos River at 502(?)	KK	102.0	12S	0718907	4104499	18.0	574
5/9/01	1925	Ute Canyon Drainage, u.s. of road	LL	95.0	12S	0717626	4104674	18.9	2330
5/9/01	1935	Mancos River	MM	81.5	12S	0714738	4103784	19.0	647
5/9/01	1950	Mancos River	NN	62.0	12S	0711024	4104739	19.6	634
5/9/01	2010	Mancos River at Rt. 666, Q = 70 cfs	OO	0.0	12S	0700677	4100244	19.2	713

[1] /1000 feet upstream of Rt. 666.

Table A-1: Synoptic 1 measurements and computations.

Date	Time	Description	Field ID	TDS (mg/l)	Change in TDS (mg/l)	Change in Sta. (1000s ft)	del TDS/del Dist. (mg/l-ft)	Reach
5/8/01	1305	Mancos River diversion ditch	L	39	----	----	----	----
5/8/01	1305	Mancos River (virtual)	L'	39	----	----	----	----
5/8/01	1425	East Mancos, just u.s. of confluence	P	103	----	----	----	----
5/8/01	1405	Middle Mancos, just u.s. of confluence	O	110	----	----	----	----
5/8/01	1400	Middle/East Mancos River	N	102	-1	6.0	-0.00012	P-N
					151	39.6	0.00380	L'-M
5/8/01	1350	Mancos River @ Mancos, CO 160	M	190	87	10.6	0.00824	N-M
5/8/01	1220	Chicken Creek @ F.S. road	J	35	----	----	----	----
5/8/01	1215	trib to Chicken Creek	I	35	----	----	----	----
5/8/01	1150	trib to Chicken Creek	H	32	----	----	----	----
5/8/01	1135	trib to Chicken Creek (possibly ditch leakage)	G	34	----	----	----	----
5/8/01	1110	lined ditch from Little Bauer Lake, @ C.R.	F	49	----	----	----	----
5/8/01	1105	small trib. @ C.R.	E	203	----	----	----	----
5/8/01	1100	Trib. To Bauer Lake @ C.R.	D	204	----	----	----	----
5/8/01	1050	Chicken Creek nr. Rt. 184	C	120	85	59.6	0.00143	J-C
5/9/01	945	Chicken Creek @ 160	R	140	19	11.6	0.00167	C-R
5/9/01	1000	Mancos River at C.R. J	S	131	-58	19.7	-0.00296	M-S
5/9/01	1145	Trib. to Mancos River	Z	2479	----	----	----	----
5/9/01	1015	Mancos River	T	168	37	5.7	0.00645	S-T
5/9/01	1130	Mancos River at C.R. F	Y	197	29	11.1	0.00262	T-Y
5/8/01	1045	Trib. to E. Fork of Mud Creek, at Co184	B	694	----	----	----	----
5/8/01	1030	E. Fork of Mud Creek at Co184	A	840	----	----	----	----
5/9/01	920	Mud Creek at Co160	Q	1849	1010	32.0	0.03156	A-Q
5/9/01	1030	Mud Creek at C.R. 38	U	2567	718	15.3	0.04692	Q-U
5/9/01	1045	Mancos River	W	226	28	3.5	0.00812	Y-W
5/9/01	1040	Trib. to Mancos River, irrigation overflow	V	306	----	----	----	----
5/9/01	1105	Mancos River @ Koppenhafer Bridge	X	242	16	4.9	0.00325	W-X
5/9/01	1440	Mancos River, u.s. of Weber Drainage	DD	266	24	31.8	0.00076	X-DD
5/9/01	1330	Weber Drainage, at Doerfer Driveway	AA	401	----	----	----	----
5/9/01	1355	Weber Drainage	BB	1577	1176	21.7	0.05420	AA-BB
5/9/01	1420	Weber Drainage, at Crossing	CC	1554	-23	19.0	-0.00119	BB-CC
5/9/01	1750	Mancos River, d.s. of Weber Drainage	EE	298	32	5.0	0.00638	DD-EE
5/9/01	1805	Mancos River at Horse Canyon	FF	303	6	13.5	0.00041	EE-FF
5/9/01	1820	Mancos River at Weaver Canyon	GG	303	-1	13.0	-0.00005	FF-GG
5/9/01	1830	Mancos River at Lewis Creek	HH	298	-5	10.5	-0.00046	GG-HH
5/9/01	1845	Mancos River at Pine Canyon	II	318	20	17.0	0.00118	HH-II
5/9/01	1900	Mancos River at Johnson Canyon	JJ	332	15	18.0	0.00081	II-JJ
5/9/01	1915	Mancos River at 502(?)	KK	386	54	44.0	0.00123	JJ-KK
5/9/01	1925	Ute Canyon Drainage, u.s. of road	LL	2105	----	----	----	----
5/9/01	1935	Mancos River	MM	450	64	20.5	0.00311	KK-MM
5/9/01	1950	Mancos River	NN	437	-13	19.5	-0.00066	MM-NN
5/9/01	2010	Mancos River at Rt. 666, Q = 70 cfs	OO	515	78	62.0	0.00125	NN-OO

Table A-1: Synoptic 1 measurements and computations.

Date	Time	Description	Field ID	del TDS/del Dist. (mg/l-ft)	del TDS/del Dist. (mg/l-10,000 ft)
5/8/01	1305	Mancos River diversion ditch	L	----	----
5/8/01	1305	Mancos River (virtual)	L'	----	----
5/8/01	1425	East Mancos, just u.s. of confluence	P	----	----
5/8/01	1405	Middle Mancos, just u.s. of confluence	O	----	----
5/8/01	1400	Middle/East Mancos River	N	<0.001	< 10
				0.00380	38
5/8/01	1350	Mancos River @ Mancos, CO 160	M	0.00824	82
5/8/01	1220	Chicken Creek @ F.S. road	J	----	----
5/8/01	1215	trib to Chicken Creek	I	----	----
5/8/01	1150	trib to Chicken Creek	H	----	----
5/8/01	1135	trib to Chicken Creek (possibly ditch leakage)	G	----	----
5/8/01	1110	lined ditch from Little Bauer Lake, @ C.R.	F	----	----
5/8/01	1105	small trib. @ C.R.	E	----	----
5/8/01	1100	Trib. To Bauer Lake @ C.R.	D	----	----
5/8/01	1050	Chicken Creek nr. Rt. 184	C	0.00143	14
5/9/01	945	Chicken Creek @ 160	R	0.00167	17
5/9/01	1000	Mancos River at C.R. J	S	<0.001	<10
5/9/01	1145	Trib. to Mancos River	Z	----	----
5/9/01	1015	Mancos River	T	0.00645	64
5/9/01	1130	Mancos River at C.R. F	Y	0.00262	26
5/8/01	1045	Trib. to E. Fork of Mud Creek, at Co184	B	----	----
5/8/01	1030	E. Fork of Mud Creek at Co184	A	----	----
5/9/01	920	Mud Creek at Co160	Q	0.03156	316
5/9/01	1030	Mud Creek at C.R. 38	U	0.04692	469
5/9/01	1045	Mancos River	W	0.00812	81
5/9/01	1040	Trib. to Mancos River, irrigation overflow	V	----	----
5/9/01	1105	Mancos River @ Koppenhafer Bridge	X	0.00325	33
5/9/01	1440	Mancos River, u.s. of Weber Drainage	DD	<0.001	<10
5/9/01	1330	Weber Drainage, at Doerfer Driveway	AA	----	----
5/9/01	1355	Weber Drainage	BB	0.05420	542
5/9/01	1420	Weber Drainage, at Crossing	CC	<0.001	<10
5/9/01	1750	Mancos River, d.s. of Weber Drainage	EE	0.00638	64
5/9/01	1805	Mancos River at Horse Canyon	FF	<0.001	<10
5/9/01	1820	Mancos River at Weaver Canyon	GG	<0.001	<10
5/9/01	1830	Mancos River at Lewis Creek	HH	<0.001	<10
5/9/01	1845	Mancos River at Pine Canyon	II	0.00118	12
5/9/01	1900	Mancos River at Johnson Canyon	JJ	<0.001	<10
5/9/01	1915	Mancos River at 502(?)	KK	0.00123	12
5/9/01	1925	Ute Canyon Drainage, u.s. of road	LL	----	----
5/9/01	1935	Mancos River	MM	0.00311	31
5/9/01	1950	Mancos River	NN	<0.001	<10
5/9/01	2010	Mancos River at Rt. 666, Q = 70 cfs	OO	0.00125	13

Table A-2: Synoptic 2 measurements and computations.

Date	Time	Description	Field ID	Station[1]	UTM 1	UTM 2	UTM 3	Temperature (degrees C)	Spec. Cond. (us/cm)
8/7/01	1535	Mancos River diversion ditch	L	----	12S	0742696.6156	4143711	13.0	165
		Mancos River (virtual)	L'	339.3	----	----	----	----	165
8/7/01	950	East Mancos, just u.s. of confluence	P	316.3	12S	0744983.3587	4139642	14.2	273
8/7/01	1035	Middle Mancos, in Forest Service Headwaters	QQ	349.2	12S	0752058	4144950	9	287
8/7/01	945	Middle Mancos, just u.s. of confluence	O	316.4	12S	0744998.4513	4139694	14.7	318
8/7/01	940	Middle/East Mancos River	N	310.3	12S	0743810.3272	4138547	----	dry
8/7/01	930	Mancos River at Gaging Station	PP	305.5	----	----	----	13.3	182
8/7/01	1120	Mancos River @ Mancos, CO 160	M	299.7	12S	0741258.3398	4136917	15.3	328
8/7/01	1135	Mancos River at Mancos, u.s. of Frank Ditch	RR	294.2	----	----	----	15.8	369
8/7/01	1515	Chicken Creek @ F.S. road	J	362.2	12S	0746813.2581	4152190	13.1	112
8/7/01	1510	trib to Chicken Creek	I	----	12S	0745748.2834	4151850	13.4	107
8/7/01	1450	trib to Chicken Creek	H	----	12S	0743598.9442	4148580	----	dry
8/7/01	1440	trib to Chicken Creek (possibly ditch leakage)	G	----	12S	0740777.2541	4147517	----	dry
8/7/01	1430	lined ditch from Little Bauer Lake, @ C.R.	F	----	12S	0739150.5553	4143530	19.9	123
8/7/01	1425	small trib. @ C.R.	E	----	12S	0739182.4763	4142466	----	dry
8/7/01	1425	Trib. To Bauer Lake @ C.R.	D	----	12S	0739224.9903	4140999	17.5	659
8/7/01	1145	Chicken Creek nr. Rt. 184	C	302.6	12S	0739292.7478	4138634	13.9	262
8/7/01	1155	Chicken Creek @ 160	R	291.0	12S	0738391	4136770	15.3	409
8/7/01	1205	Mancos River at C.R. J	S	280.0	12S	0736600	4134482	17.5	483
8/7/01	1315	Trib. to Mancos River	Z	283.0	12S	0737933	4132973	23.2	1134
8/7/01	1215	Mancos River	T	274.3	12S	0735810	4133189	18.8	635
8/7/01	1225	Mancos River at C.R. F	Y	263.2	12S	0733632	4131197	19.9	1191
8/7/01	1330	Trib. to E. Fork of Mud Creek, at Co184	B	308.4	12S	0735318.824	4140417	22.2	1332
8/7/01	----	E. Fork of Mud Creek at Co184	A	309.6	12S	0736307.7716	4140583	----	dry
8/7/01	1330	Mud Creek at Co160	Q	277.6	12S	0733949	4133982	21.6	1398
8/7/01	1235	Mud Creek at C.R. 38	U	262.3	12S	0733427	4130903	19.9	1966
8/7/01	1255	Mancos River	W	259.7	12S	0733522	4130322	20.8	1532
8/7/01	1250	Trib. to Mancos River, irrigation return flow	V	260.1	12S	0733430	4130291	21.0	1154
8/7/01	1300	Mancos River @ Koppenhafer Bridge	X	254.8	12S	0733824	4129247	20.9	1544
8/8/01	1000	Mancos River, u.s. of Weber Drainage	DD	223.0	12S	0736048	4122258	18.2	1637
8/8/01	840	Weber Drainage, at Doerfer Driveway	AA	268.0	12S	0739431	4131316	11.8	940
8/8/01	905	Weber Drainage	BB	246.3	12S	0738599	4126123	13.8	1648
8/8/01	940	Weber Drainage, at Crossing	CC	227.3	12S	0736370	4122178	14.9	1708
8/8/01	1040	Mancos River, d.s. of Weber Drainage	EE	218.0	12S	0735913	4121503	18.7	1646
8/8/01	1100	Mancos River at Horse Canyon	FF	204.5	12S	0734845	4118643	19.4	1622
8/8/01	1120	Mancos River at Weaver Canyon	GG	191.5	12S	0731840	4116818	20.4	1618
8/8/01	1140	Mancos River at Lewis Creek	HH	181.0	12S	0730539	4114705	20.9	1647
8/8/01	1220	Mancos River at Pine Canyon	II	164.0	12S	0727536	4112396	21.6	1755
8/8/01	1240	Mancos River at Johnson Canyon	JJ	146.0	12S	0725171	4108872	23.0	1617
8/8/01	1330	Mancos River at 502(?)	KK	102.0	12S	0718907	4104499	25.5	1516
8/8/01	1355	Ute Canyon Drainage, u.s. of road	LL	95.0	12S	0717626	4104674	28.5	2562
8/8/01	1405	Mancos River	MM	81.5	12S	0714738	4103784	23.9	1065
8/8/01	1415	Mancos River	NN	62.0	12S	0711024	4104739	24.4	774
8/8/01	1445	Mancos River at Rt. 666	OO	0.0	12S	0700677	4100244	23.1	768

[1] /1000 feet upstream of Rt. 666.

Table A-2: Synoptic 2 measurements and computations.

Date	Time	Description	Field ID	TDS (mg/l)	Discharge (cfs)	Inst. Load (kg/day)	Change in TDS (mg/l)	Change in Sta (1000s ft)
8/7/01	1535	Mancos River diversion ditch	L	103	----	----	----	----
		Mancos River (virtual)	L'	103	----	----	----	----
8/7/01	950	East Mancos, just u.s. of confluence	P	178	----	----	----	----
8/7/01	1035	Middle Mancos, in Forest Service Headwaters	QQ	187	----	----	----	----
8/7/01	945	Middle Mancos, just u.s. of confluence	O	209	----	----	21	32.8
8/7/01	940	Middle/East Mancos River	N	----	0	0	----	6.0
8/7/01	930	Mancos River at Gaging Station	PP	115	21.30	5976	----	4.8
							12	33.8
8/7/01	1120	Mancos River @ Mancos, CO 160	M	216	10.24	5408	101	5.8
8/7/01	1135	Mancos River at Mancos, u.s. of Frank Ditch	RR	244	----	----	28	5.5
8/7/01	1515	Chicken Creek @ F.S. road	J	66	----	----	----	----
8/7/01	1510	trib to Chicken Creek	I	63	----	----	----	----
8/7/01	1450	trib to Chicken Creek	H	----	----	----	----	----
8/7/01	1440	trib to Chicken Creek (possibly ditch leakage)	G	----	----	----	----	----
8/7/01	1430	lined ditch from Little Bauer Lake, @ C.R.	F	74	----	----	----	----
8/7/01	1425	small trib. @ C.R.	E	----	----	----	----	----
8/7/01	1425	Trib. To Bauer Lake @ C.R.	D	462	----	----	----	----
8/7/01	1145	Chicken Creek nr. Rt. 184	C	170	----	----	104	59.6
8/7/01	1155	Chicken Creek @ 160	R	272	11.41	7594	102	11.6
8/7/01	1205	Mancos River at C.R. J	S	323	7.10	5616	79	14.2
8/7/01	1315	Trib. to Mancos River	Z	929	----	----	----	----
8/7/01	1215	Mancos River	T	438	----	----	115	5.7
8/7/01	1225	Mancos River at C.R. F	Y	985	5.06	12195	547	11.1
8/7/01	1330	Trib. to E. Fork of Mud Creek, at Co184	B	1124	----	----	----	----
8/7/01	----	E. Fork of Mud Creek at Co184	A	----	----	----	----	----
8/7/01	1330	Mud Creek at Co160	Q	1189	----	----	----	32.0
8/7/01	1235	Mud Creek at C.R. 38	U	1747	3.64	15560	559	15.3
8/7/01	1255	Mancos River	W	1320	----	----	335	3.5
8/7/01	1250	Trib. to Mancos River, irrigation return flow	V	949	----	----	----	----
8/7/01	1300	Mancos River @ Koppenhafer Bridge	X	1332	----	----	12	4.9
8/8/01	1000	Mancos River, u.s. of Weber Drainage	DD	1424	6.94	24173	91	31.8
8/8/01	840	Weber Drainage, at Doerfer Driveway	AA	738	----	----	----	----
8/8/01	905	Weber Drainage	BB	1434	----	----	696	21.7
8/8/01	940	Weber Drainage, at Crossing	CC	1493	3.10	11327	59	19.0
8/8/01	1040	Mancos River, d.s. of Weber Drainage	EE	1433	----	----	9	5.0
8/8/01	1100	Mancos River at Horse Canyon	FF	1409	11.04	38056	-24	13.5
8/8/01	1120	Mancos River at Weaver Canyon	GG	1405	----	----	-4	13.0
8/8/01	1140	Mancos River at Lewis Creek	HH	1434	10.76	37738	29	10.5
8/8/01	1220	Mancos River at Pine Canyon	II	1540	----	----	106	17.0
8/8/01	1240	Mancos River at Johnson Canyon	JJ	1404	9.96	34213	-136	18.0
8/8/01	1330	Mancos River at 502(?)	KK	1305	9.03	28824	-99	44.0
8/8/01	1355	Ute Canyon Drainage, u.s. of road	LL	2333	----	----	----	----
8/8/01	1405	Mancos River	MM	861	----	----	-444	20.5
8/8/01	1415	Mancos River	NN	575	8.97	12619	-286	19.5
8/8/01	1445	Mancos River at Rt. 666	OO	569	3.8	5291	-6	62.0

Table A-2: Synoptic 2 measurements and computations.

Date	Time	Description	Field ID	del TDS/del Dist. (mg/l-ft)	Reach	del TDS/del Dist. (mg/l-ft)	del TDS/del Dist. (mg/l-10,000 ft)
8/7/01	1535	Mancos River diversion ditch	L	----	----	----	----
		Mancos River (virtual)	L'	----	----	----	----
8/7/01	950	East Mancos, just u.s. of confluence	P	----	----	----	----
8/7/01	1035	Middle Mancos, in Forest Service Headwaters	QQ	----	----	----	----
8/7/01	945	Middle Mancos, just u.s. of confluence	O	0.00066	QQ-O	<0.001	<10
8/7/01	940	Middle/East Mancos River	N	----	P-N	----	----
8/7/01	930	Mancos River at Gaging Station	PP	----	N-PP	----	----
				0.00035	L'-PP	<0.001	<10
8/7/01	1120	Mancos River @ Mancos, CO 160	M	0.01745	PP-M	0.0174	174
8/7/01	1135	Mancos River at Mancos, u.s. of Frank Ditch	RR	0.00517	M-RR	0.0052	52
8/7/01	1515	Chicken Creek @ F.S. road	J	----	----	----	----
8/7/01	1510	trib to Chicken Creek	I	----	----	----	----
8/7/01	1450	trib to Chicken Creek	H	----	----	----	----
8/7/01	1440	trib to Chicken Creek (possibly ditch leakage)	G	----	----	----	----
8/7/01	1430	lined ditch from Little Bauer Lake, @ C.R.	F	----	----	----	----
8/7/01	1425	small trib. @ C.R.	E	----	----	----	----
8/7/01	1425	Trib. To Bauer Lake @ C.R.	D	----	----	----	----
8/7/01	1145	Chicken Creek nr. Rt. 184	C	0.00174	J-C	0.00174	17
8/7/01	1155	Chicken Creek @ 160	R	0.00878	C-R	0.00878	88
8/7/01	1205	Mancos River at C.R. J	S	0.00557	RR-S	0.00557	56
8/7/01	1315	Trib. to Mancos River	Z	----	----	----	----
8/7/01	1215	Mancos River	T	0.02017	S-T	0.02017	202
8/7/01	1225	Mancos River at C.R. F	Y	0.04926	T-Y	0.04926	493
8/7/01	1330	Trib. to E. Fork of Mud Creek, at Co184	B	----	----	----	----
8/7/01	----	E. Fork of Mud Creek at Co184	A	----	----	----	----
8/7/01	1330	Mud Creek at Co160	Q	----	A-Q	----	----
8/7/01	1235	Mud Creek at C.R. 38	U	0.03651	Q-U	0.03651	365
8/7/01	1255	Mancos River	W	0.09581	Y-W	0.09581	958
8/7/01	1250	Trib. to Mancos River, irrigation return flow	V	----	----	----	----
8/7/01	1300	Mancos River @ Koppenhafer Bridge	X	0.00241	W-X	0.00241	24
8/8/01	1000	Mancos River, u.s. of Weber Drainage	DD	0.00288	X-DD	0.00288	29
8/8/01	840	Weber Drainage, at Doerfer Driveway	AA	----	----	----	----
8/8/01	905	Weber Drainage	BB	0.03209	AA-BB	0.03209	321
8/8/01	940	Weber Drainage, at Crossing	CC	0.00311	BB-CC	0.00311	31
8/8/01	1040	Mancos River, d.s. of Weber Drainage	EE	0.00177	DD-EE	0.00177	18
8/8/01	1100	Mancos River at Horse Canyon	FF	-0.00175	EE-FF	<0.001	<10
8/8/01	1120	Mancos River at Weaver Canyon	GG	-0.00030	FF-GG	<0.001	<10
8/8/01	1140	Mancos River at Lewis Creek	HH	0.00272	GG-HH	0.00272	27
8/8/01	1220	Mancos River at Pine Canyon	II	0.00625	HH-II	0.00625	62
8/8/01	1240	Mancos River at Johnson Canyon	JJ	-0.00754	II-JJ	<0.001	<10
8/8/01	1330	Mancos River at 502(?)	KK	-0.00226	JJ-KK	<0.001	<10
8/8/01	1355	Ute Canyon Drainage, u.s. of road	LL	----	----	----	----
8/8/01	1405	Mancos River	MM	-0.02163	KK-MM	<0.001	<10
8/8/01	1415	Mancos River	NN	-0.01468	MM-NN	<0.001	<10
8/8/01	1445	Mancos River at Rt. 666	OO	-0.00010	NN-OO	<0.001	<10

Table A-3: Synoptic 3 measurements and computations.

Date	Time	Description	Field ID	Comments	Station[1]	UTM 1	UTM 2
11/14/01	----	Mancos River diversion ditch	L		----	12S	0742696.6156
11/14/01	----	Mancos River (virtual)	L'		339.3	----	----
11/14/01	925	East Mancos, just u.s. of confluence	P		316.3	12S	0744983.3587
11/14/01	1005	Middle Mancos, in Forest Service Headwaters	QQ	conductance = 190	349.2	12S	0752058
11/14/01	920	Middle Mancos, just u.s. of confluence	O	conductance = 292	316.4	12S	0744998.4513
11/14/01	900	Middle/East Mancos River	N		310.3	12S	0743810.3272
11/14/01	1045	Mancos River at Gaging Station	PP		305.5	----	----
11/14/01	1055	Mancos River @ Mancos, CO 160	M		299.7	12S	0741258.3398
11/14/01	1105	Mancos River at Mancos, u.s. of Frank Ditch	RR		294.2	----	----
11/14/01	1605	Chicken Creek @ F.S. road	J		362.2	12S	0746813.2581
11/14/01	1600	trib to Chicken Creek	I		----	12S	0745748.2834
11/14/01	1545	trib to Chicken Creek	H		----	12S	0743598.9442
11/14/01	1535	trib to Chicken Creek (possibly ditch leakage)	G		----	12S	0740777.2541
11/14/01	1530	lined ditch from Little Bauer Lake, @ C.R.	F		----	12S	0739150.5553
----	----	small trib. @ C.R.	E		----	12S	0739182.4763
11/14/01	1525	Trib. To Bauer Lake @ C.R.	D		----	12S	0739224.9903
11/14/01	1115	Chicken Creek nr. Rt. 184	C		302.6	12S	0739292.7478
11/14/01	1120	Chicken Creek @ 160	R	pipe discharge u.s. of station	291.0	12S	0738391
11/14/01	1130	Mancos River at C.R. J	S		280.0	12S	0736600
11/14/01	1235	Trib. to Mancos River	Z		283.0	12S	0737933
11/14/01	1230	Mancos River	T		274.3	12S	0735810
11/14/01	1145	Mancos River at C.R. F	Y		263.2	12S	0733632
11/14/01	1515	Trib. to E. Fork of Mud Creek, at Co184	B		308.4	12S	0735318.824
11/14/01	1515	E. Fork of Mud Creek at Co184	A		309.6	12S	0736307.7716
11/14/01	1135	Mud Creek at Co160	Q		277.6	12S	0733949
11/14/01	1200	Mud Creek at C.R. 38	U		262.3	12S	0733427
11/14/01	1210	Mancos River	W		259.7	12S	0733522
11/14/01	1205	Trib. to Mancos River, irrigation return flow	V		260.1	12S	0733430
11/14/01	1215	Mancos River @ Koppenhafer Bridge	X		254.8	12S	0733824
11/14/01	1400	Mancos River, u.s. of Weber Drainage	DD		223.0	12S	0736048
11/15/01	1055	Weber Drainage, at Doerfer Driveway	AA		268.0	12S	0739431
11/15/01	1120	Weber Drainage	BB		246.3	12S	0738599
11/15/01	1155	Weber Drainage, at Crossing	CC		227.3	12S	0736370
11/15/01	1235	Mancos River, d.s. of Weber Drainage	EE		218.0	12S	0735913
11/15/01	1300	Mancos River at Horse Canyon	FF		204.5	12S	0734845
11/15/01	1330	Mancos River at Weaver Canyon	GG		191.5	12S	0731840
11/15/01	1340	Mancos River at Lewis Creek	HH		181.0	12S	0730539
11/15/01	1405	Mancos River at Pine Canyon	II		164.0	12S	0727536
11/15/01	1425	Mancos River at Johnson Canyon	JJ		146.0	12S	0725171
11/15/01	1445	Mancos River at 502(?)	KK		102.0	12S	0718907
11/15/01	1455	Ute Canyon Drainage, u.s. of road	LL		95.0	12S	0717626
11/15/01	1505	Mancos River	MM		81.5	12S	0714738
11/15/01	1525	Mancos River	NN		62.0	12S	0711024
11/15/01	1550	Mancos River at Rt. 666	OO		0.0	12S	0700677
11/15/01	905	Crystal Creek Ditch near Transfer Campground	K	conductance = 70	----	----	----
11/15/01	925	Crystal Creek Ditch at middle road crossing	SS		----	----	----
11/15/01	945	Crystal Creek Ditch at lower road crossing	TT	conductance = 73	----	----	----
11/15/01	1010	ditch at Parshal Flume	UU		----	----	----
11/15/01	1030	diversion from ditch	VV		----	----	----
11/15/01	1035	ditch at road crossing	WW		----	----	----

[1] /1000 feet upstream of Rt. 666.

Table A-3: Synoptic 3 measurements and computations.

Date	Time	Description	Field ID	UTM 3	Temperature (degrees C)	Spec. Cond. (us/cm)	TDS (mg/l)	Discharge (cfs)
11/14/01	----	Mancos River diversion ditch	L	4143711	----	dry	----	----
11/14/01	----	Mancos River (virtual)	L'	----	----	dry	----	----
11/14/01	925	East Mancos, just u.s. of confluence	P	4139642	2.7	360	238	----
11/14/01	1005	Middle Mancos, in Forest Service Headwaters	QQ	4144950	0.1	362	239	----
11/14/01	920	Middle Mancos, just u.s. of confluence	O	4139694	1.5	530	356	----
11/14/01	900	Middle/East Mancos River	N	4138547	3.4	407	271	1.67
11/14/01	1045	Mancos River at Gaging Station	PP	----	4.6	453	303	2.8
11/14/01	1055	Mancos River @ Mancos, CO 160	M	4136917	5.7	479	321	3.05
11/14/01	1105	Mancos River at Mancos, u.s. of Frank Ditch	RR	----	5.3	562	378	----
11/14/01	1605	Chicken Creek @ F.S. road	J	4152190	5.6	109	64	----
11/14/01	1600	trib to Chicken Creek	I	4151850	7.5	110	65	----
11/14/01	1545	trib to Chicken Creek	H	4148580	----	dry	----	0
11/14/01	1535	trib to Chicken Creek (possibly ditch leakage)	G	4147517	----	dry	----	0
11/14/01	1530	lined ditch from Little Bauer Lake, @ C.R.	F	4143530	----	dry	----	0
----	----	small trib. @ C.R.	E	4142466	----	----	----	----
11/14/01	1525	Trib. To Bauer Lake @ C.R.	D	4140999	9.0	809	609	----
11/14/01	1115	Chicken Creek nr. Rt. 184	C	4138634	9.4	1629	1416	0.16
11/14/01	1120	Chicken Creek @ 160	R	4136770	5.7	1966	1747	0.79
11/14/01	1130	Mancos River at C.R. J	S	4134482	6.8	787	588	3.92
11/14/01	1235	Trib. to Mancos River	Z	4132973	10.9	3306	3065	----
11/14/01	1230	Mancos River	T	4133189	9.6	856	656	----
11/14/01	1145	Mancos River at C.R. F	Y	4131197	9.5	1197	991	4.54
11/14/01	1515	Trib. to E. Fork of Mud Creek, at Co184	B	4140417	----	not flowing	----	----
11/14/01	1515	E. Fork of Mud Creek at Co184	A	4140583	----	dry	----	0
11/14/01	1135	Mud Creek at Co160	Q	4133982	6.2	2201	1978	0.63
11/14/01	1200	Mud Creek at C.R. 38	U	4130903	9.6	3028	2792	1.53
11/14/01	1210	Mancos River	W	4130322	8.9	1651	1437	----
11/14/01	1205	Trib. to Mancos River, irrigation return flow	V	4130291	8.2	1188	982	----
11/14/01	1215	Mancos River @ Koppenhafer Bridge	X	4129247	9.4	1581	1369	9.90
11/14/01	1400	Mancos River, u.s. of Weber Drainage	DD	4122258	10.7	1597	1384	9.88
11/15/01	1055	Weber Drainage, at Doerfer Driveway	AA	4131316	8.7	1012	809	----
11/15/01	1120	Weber Drainage	BB	4126123	5.8	2025	1805	2.84
11/15/01	1155	Weber Drainage, at Crossing	CC	4122178	4.5	2096	1875	2.25
11/15/01	1235	Mancos River, d.s. of Weber Drainage	EE	4121503	6.9	1680	1466	----
11/15/01	1300	Mancos River at Horse Canyon	FF	4118643	7.0	1718	1503	10.85
11/15/01	1330	Mancos River at Weaver Canyon	GG	4116818	6.6	1728	1513	----
11/15/01	1340	Mancos River at Lewis Creek	HH	4114705	7.6	1730	1515	13.65
11/15/01	1405	Mancos River at Pine Canyon	II	4112396	7.5	1725	1510	----
11/15/01	1425	Mancos River at Johnson Canyon	JJ	4108872	8.0	1711	1496	11.38
11/15/01	1445	Mancos River at 502(?)	KK	4104499	9.0	1724	1509	10.76
11/15/01	1455	Ute Canyon Drainage, u.s. of road	LL	4104674	14.0	2424	2198	----
11/15/01	1505	Mancos River	MM	4103784	8.9	1716	1501	----
11/15/01	1525	Mancos River	NN	4104739	9.2	1730	1515	8.71
11/15/01	1550	Mancos River at Rt. 666	OO	4100244	10.0	1746	1531	13
11/15/01	905	Crystal Creek Ditch near Transfer Campground	K	----	0.4	132	80	0.25
11/15/01	925	Crystal Creek Ditch at middle road crossing	SS	----	2.0	131	79	0.29
11/15/01	945	Crystal Creek Ditch at lower road crossing	TT	----	1.5	132	80	0.38
11/15/01	1010	ditch at Parshal Flume	UU	----	3.3	419	279	1.12
11/15/01	1030	diversion from ditch	VV	----	3.6	609	413	0.56
11/15/01	1035	ditch at road crossing	WW	----	2.7	605	409	0.70

Table A-3: Synoptic 3 measurements and computations.

Date	Time	Description	Field ID	Inst. Load (kg/day)	Change in TDS (mg/l)	Change in Sta. (1000s ft)	del TDS/del Dist. (mg/l-ft)
11/14/01	----	Mancos River diversion ditch	L	----	----	----	----
11/14/01	----	Mancos River (virtual)	L'	----	----	----	----
11/14/01	925	East Mancos, just u.s. of confluence	P	----	----	----	----
11/14/01	1005	Middle Mancos, in Forest Service Headwaters	QQ	----	----	----	----
11/14/01	920	Middle Mancos, just u.s. of confluence	O	----	116	32.8	0.00355
11/14/01	900	Middle/East Mancos River	N	1106	33	6.0	0.00543
11/14/01	1045	Mancos River at Gaging Station	PP	2072	32	4.8	0.00664
					----	33.8	----
11/14/01	1055	Mancos River @ Mancos, CO 160	M	2392	18	5.8	0.00311
11/14/01	1105	Mancos River at Mancos, u.s. of Frank Ditch	RR	----	58	5.5	0.01046
11/14/01	1605	Chicken Creek @ F.S. road	J	----	----	----	----
11/14/01	1600	trib to Chicken Creek	I	----	----	----	----
11/14/01	1545	trib to Chicken Creek	H	----	----	----	----
11/14/01	1535	trib to Chicken Creek (possibly ditch leakage)	G	----	----	----	----
11/14/01	1530	lined ditch from Little Bauer Lake, @ C.R.	F	----	----	----	----
----	----	small trib. @ C.R.	E	----	----	----	----
11/14/01	1525	Trib. To Bauer Lake @ C.R.	D	----	----	----	----
11/14/01	1115	Chicken Creek nr. Rt. 184	C	554	1352	59.6	0.02268
11/14/01	1120	Chicken Creek @ 160	R	3377	331	11.6	0.02857
11/14/01	1130	Mancos River at C.R. J	S	5637	210	14.2	0.01477
11/14/01	1235	Trib. to Mancos River	Z	----	----	----	----
11/14/01	1230	Mancos River	T	----	68	5.7	0.01190
11/14/01	1145	Mancos River at C.R. F	Y	11007	335	11.1	0.03021
11/14/01	1515	Trib. to E. Fork of Mud Creek, at Co184	B	----	----	----	----
11/14/01	1515	E. Fork of Mud Creek at Co184	A	----	----	----	----
11/14/01	1135	Mud Creek at Co160	Q	3049	----	32.0	----
11/14/01	1200	Mud Creek at C.R. 38	U	10450	813	15.3	0.05316
11/14/01	1210	Mancos River	W	----	446	3.5	0.12756
11/14/01	1205	Trib. to Mancos River, irrigation return flow	V	----	----	----	----
11/14/01	1215	Mancos River @ Koppenhafer Bridge	X	33149	-69	4.9	-0.01405
11/14/01	1400	Mancos River, u.s. of Weber Drainage	DD	33463	16	31.8	0.00049
11/15/01	1055	Weber Drainage, at Doerfer Driveway	AA	----	----	----	----
11/15/01	1120	Weber Drainage	BB	12543	996	21.7	0.04591
11/15/01	1155	Weber Drainage, at Crossing	CC	10322	70	19.0	0.00367
11/15/01	1235	Mancos River, d.s. of Weber Drainage	EE	----	82	5.0	0.01632
11/15/01	1300	Mancos River at Horse Canyon	FF	39907	37	13.5	0.00277
11/15/01	1330	Mancos River at Weaver Canyon	GG	----	10	13.0	0.00076
11/15/01	1340	Mancos River at Lewis Creek	HH	50599	2	10.5	0.00019
11/15/01	1405	Mancos River at Pine Canyon	II	----	-5	17.0	-0.00029
11/15/01	1425	Mancos River at Johnson Canyon	JJ	41665	-14	18.0	-0.00076
11/15/01	1445	Mancos River at 502(?)	KK	39731	13	44.0	0.00029
11/15/01	1455	Ute Canyon Drainage, u.s. of road	LL	----	----	----	----
11/15/01	1505	Mancos River	MM	----	-8	20.5	-0.00038
11/15/01	1525	Mancos River	NN	32287	14	19.5	0.00071
11/15/01	1550	Mancos River at Rt. 666	OO	48690	16	62.0	0.00025
11/15/01	905	Crystal Creek Ditch near Transfer Campground	K	49	----	----	----
11/15/01	925	Crystal Creek Ditch at middle road crossing	SS	56	----	----	----
11/15/01	945	Crystal Creek Ditch at lower road crossing	TT	74	----	----	----
11/15/01	1010	ditch at Parshal Flume	UU	764	----	----	----
11/15/01	1030	diversion from ditch	VV	565	----	----	----
11/15/01	1035	ditch at road crossing	WW	700	----	----	----

Table A-3: Synoptic 3 measurements and computations.

Date	Time	Description	Field ID	Reach	del TDS/del Dist. (mg/l-ft)	del TDS/del Dist. (mg/l-10,000 ft)
11/14/01	----	Mancos River diversion ditch	L	----	----	----
11/14/01	----	Mancos River (virtual)	L'	----	----	----
11/14/01	925	East Mancos, just u.s. of confluence	P	----	----	----
11/14/01	1005	Middle Mancos, in Forest Service Headwaters	QQ	----	----	----
11/14/01	920	Middle Mancos, just u.s. of confluence	O	QQ-O	0.00355	36
11/14/01	900	Middle/East Mancos River	N	P-N	0.00543	54
11/14/01	1045	Mancos River at Gaging Station	PP	N-PP	0.00664	66
				L'-PP	----	----
11/14/01	1055	Mancos River @ Mancos, CO 160	M	PP-M	0.00311	31
11/14/01	1105	Mancos River at Mancos, u.s. of Frank Ditch	RR	M-RR	0.01046	105
11/14/01	1605	Chicken Creek @ F.S. road	J	----	----	----
11/14/01	1600	trib to Chicken Creek	I	----	----	----
11/14/01	1545	trib to Chicken Creek	H	----	----	----
11/14/01	1535	trib to Chicken Creek (possibly ditch leakage)	G	----	----	----
11/14/01	1530	lined ditch from Little Bauer Lake, @ C.R.	F	----	----	----
----	----	small trib. @ C.R.	E	----	----	----
11/14/01	1525	Trib. To Bauer Lake @ C.R.	D	----	----	----
11/14/01	1115	Chicken Creek nr. Rt. 184	C	J-C	0.02268	227
11/14/01	1120	Chicken Creek @ 160	R	C-R	0.02857	286
11/14/01	1130	Mancos River at C.R. J	S	RR-S	0.01477	148
11/14/01	1235	Trib. to Mancos River	Z	----	----	----
11/14/01	1230	Mancos River	T	S-T	0.01190	119
11/14/01	1145	Mancos River at C.R. F	Y	T-Y	0.03021	302
11/14/01	1515	Trib. to E. Fork of Mud Creek, at Co184	B	----	----	----
11/14/01	1515	E. Fork of Mud Creek at Co184	A	----	----	----
11/14/01	1135	Mud Creek at Co160	Q	A-Q	----	----
11/14/01	1200	Mud Creek at C.R. 38	U	Q-U	0.05316	532
11/14/01	1210	Mancos River	W	Y-W	0.12756	1276
11/14/01	1205	Trib. to Mancos River, irrigation return flow	V	----	----	----
11/14/01	1215	Mancos River @ Koppenhafer Bridge	X	W-X	<0.001	<10
11/14/01	1400	Mancos River, u.s. of Weber Drainage	DD	X-DD	<0.001	<10
11/15/01	1055	Weber Drainage, at Doerfer Driveway	AA	----	----	----
11/15/01	1120	Weber Drainage	BB	AA-BB	0.04591	459
11/15/01	1155	Weber Drainage, at Crossing	CC	BB-CC	0.00367	37
11/15/01	1235	Mancos River, d.s. of Weber Drainage	EE	DD-EE	0.01632	163
11/15/01	1300	Mancos River at Horse Canyon	FF	EE-FF	0.00277	28
11/15/01	1330	Mancos River at Weaver Canyon	GG	FF-GG	<0.001	<10
11/15/01	1340	Mancos River at Lewis Creek	HH	GG-HH	<0.001	<10
11/15/01	1405	Mancos River at Pine Canyon	II	HH-II	<0.001	<10
11/15/01	1425	Mancos River at Johnson Canyon	JJ	II-JJ	<0.001	<10
11/15/01	1445	Mancos River at 502(?)	KK	JJ-KK	<0.001	<10
11/15/01	1455	Ute Canyon Drainage, u.s. of road	LL	----	----	----
11/15/01	1505	Mancos River	MM	KK-MM	<0.001	<10
11/15/01	1525	Mancos River	NN	MM-NN	<0.001	<10
11/15/01	1550	Mancos River at Rt. 666	OO	NN-OO	<0.001	<10
11/15/01	905	Crystal Creek Ditch near Transfer Campground	K	----	----	----
11/15/01	925	Crystal Creek Ditch at middle road crossing	SS	----	----	----
11/15/01	945	Crystal Creek Ditch at lower road crossing	TT	----	----	----
11/15/01	1010	ditch at Parshal Flume	UU	----	----	----
11/15/01	1030	diversion from ditch	VV	----	----	----
11/15/01	1035	ditch at road crossing	WW	----	----	----

Table A-4: Older NRCS Mancos Valley data.

Description	2001 Field ID	Old ID	Station	Date	Estimated Discharge (cfs)	Specific Conductivity (us/cm)	Temperature (degrees C)
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	8/9/78	----	----	----
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	11/8/78	1	375	----
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	4/10/79	----	----	----
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	5/22/79	----	----	----
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	6/13/79	----	----	----
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	7/18/79	----	----	----
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	8/15/79	----	----	----
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	9/12/79	----	----	----
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	10/24/79	----	----	----
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	4/16/80	----	----	----
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	5/14/80	----	----	----
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	6/18/80	----	----	----
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	7/16/80	15	220	18
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	8/20/80	15	200	11
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	9/24/80	2	300	14
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	10/22/80	5	375	6
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	12/17/80	3	460	4
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	1/21/81	3	500	3
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	2/25/81	----	----	----
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	3/25/81	2	740	4
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	4/22/81	6	400	----
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	5/13/81	12	250	7
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	6/17/81	12	235	11
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	7/15/81	7	330	17
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	8/20/81	10	260	16.5
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	9/15/81	4	265	13
Mancos River at Gaging Station nr. Mancos	PP	9	305.5	10/28/81	15	270	7

Description	2001 Field ID	Old ID	Station	Date	Estimated Discharge (cfs)	Specific Conductivity (us/cm)	Temperature (degrees C)
Mancos River at Mancos	RR	11	294.2	8/9/78	1.7*	375	----
Mancos River at Mancos	RR	11	294.2	11/8/78	0.8*	375	----
Mancos River at Mancos	RR	11	294.2	4/10/79	0.8*	310	----
Mancos River at Mancos	RR	11	294.2	5/22/79	400	150	----
Mancos River at Mancos	RR	11	294.2	6/13/79	300	120	----
Mancos River at Mancos	RR	11	294.2	7/18/79	3*	200	----
Mancos River at Mancos	RR	11	294.2	8/15/79	3*	350	----
Mancos River at Mancos	RR	11	294.2	9/12/79	8	925	----
Mancos River at Mancos	RR	11	294.2	10/24/79	2	1160	----
Mancos River at Mancos	RR	11	294.2	4/16/80	400	425	8
Mancos River at Mancos	RR	11	294.2	5/14/80	150	325	12
Mancos River at Mancos	RR	11	294.2	6/18/80	200	150	14
Mancos River at Mancos	RR	11	294.2	7/16/80	20	270	23
Mancos River at Mancos	RR	11	294.2	8/20/80	25	350	15
Mancos River at Mancos	RR	11	294.2	9/24/80	4	710	18
Mancos River at Mancos	RR	11	294.2	10/22/80	7	520	8
Mancos River at Mancos	RR	11	294.2	12/17/80	5	650	6
Mancos River at Mancos	RR	11	294.2	1/21/81	5	950	618
Mancos River at Mancos	RR	11	294.2	2/25/81	4	800	9
Mancos River at Mancos	RR	11	294.2	3/25/81	3	1000	4
Mancos River at Mancos	RR	11	294.2	4/22/81	12	500	----
Mancos River at Mancos	RR	11	294.2	5/13/81	12	325	11
Mancos River at Mancos	RR	11	294.2	6/17/81	14	325	20
Mancos River at Mancos	RR	11	294.2	7/15/81	10	485	20
Mancos River at Mancos	RR	11	294.2	8/20/81	8	385	19
Mancos River at Mancos	RR	11	294.2	9/15/81	5	525	15.5
Mancos River at Mancos	RR	11	294.2	10/28/81	30	350	7

*** Measured Discharge**

Table A-4: Older NRCS Mancos Valley data.

Description	2001 Field ID	Old ID	Station	Date	Estimated Discharge (cfs)	Specific Conductivity (us/cm)	Temperature (degrees C)
Chicken Creek nr. Rt. 184	C	5	302.6	8/9/78	4	300	----
Chicken Creek nr. Rt. 184	C	5	302.6	11/8/78	0.25	1475	----
Chicken Creek nr. Rt. 184	C	5	302.6	4/10/79	5	330	----
Chicken Creek nr. Rt. 184	C	5	302.6	5/22/79	14	145	----
Chicken Creek nr. Rt. 184	C	5	302.6	6/13/79	4	250	----
Chicken Creek nr. Rt. 184	C	5	302.6	7/18/79	6	275	----
Chicken Creek nr. Rt. 184	C	5	302.6	8/15/79	10	275	----
Chicken Creek nr. Rt. 184	C	5	302.6	9/12/79	0.75	2000	----
Chicken Creek nr. Rt. 184	C	5	302.6	10/24/79	2	800	----
Chicken Creek nr. Rt. 184	C	5	302.6	4/16/80	50	250	10
Chicken Creek nr. Rt. 184	C	5	302.6	5/14/80	25	175	6
Chicken Creek nr. Rt. 184	C	5	302.6	6/18/80	6	500	22
Chicken Creek nr. Rt. 184	C	5	302.6	7/16/80	10	260	18
Chicken Creek nr. Rt. 184	C	5	302.6	8/20/80	15	290	12
Chicken Creek nr. Rt. 184	C	5	302.6	9/24/80	5	380	14
Chicken Creek nr. Rt. 184	C	5	302.6	10/22/80	1	2000	8
Chicken Creek nr. Rt. 184	C	5	302.6	12/17/80	0.5	2000	9
Chicken Creek nr. Rt. 184	C	5	302.6	1/21/81	0.5	2000	8
Chicken Creek nr. Rt. 184	C	5	302.6	2/25/81	1.5	2000	13
Chicken Creek nr. Rt. 184	C	5	302.6	3/25/81	1	1900	11
Chicken Creek nr. Rt. 184	C	5	302.6	4/22/81	0.25	2300	6
Chicken Creek nr. Rt. 184	C	5	302.6	5/13/81	6	315	13
Chicken Creek nr. Rt. 184	C	5	302.6	6/17/81	15	230	12
Chicken Creek nr. Rt. 184	C	5	302.6	7/15/81	15	300	15
Chicken Creek nr. Rt. 184	C	5	302.6	8/20/81	10	300	16
Chicken Creek nr. Rt. 184	C	5	302.6	9/15/81	12	320	14
Chicken Creek nr. Rt. 184	C	5	302.6	10/28/81	0.25	1825	11

Description	2001 Field ID	Old ID	Station	Date	Estimated Discharge (cfs)	Specific Conductivity (us/cm)	Temperature (degrees C)
Chicken Creek @ 160	R	8	291.0	8/9/78	4*	500	----
Chicken Creek @ 160	R	8	291.0	11/8/78	0.8*	1850	----
Chicken Creek @ 160	R	8	291.0	4/10/79	0.8*	700	----
Chicken Creek @ 160	R	8	291.0	5/22/79	15	225	----
Chicken Creek @ 160	R	8	291.0	6/13/79	3.2*	450	----
Chicken Creek @ 160	R	8	291.0	7/18/79	3.5*	460	----
Chicken Creek @ 160	R	8	291.0	8/15/79	2.7*	500	----
Chicken Creek @ 160	R	8	291.0	9/12/79	0.9*	2000	----
Chicken Creek @ 160	R	8	291.0	10/24/79	0.5*	1300	----
Chicken Creek @ 160	R	8	291.0	4/16/80	60	520	10
Chicken Creek @ 160	R	8	291.0	5/14/80	25	580	8
Chicken Creek @ 160	R	8	291.0	6/18/80	12	750	22
Chicken Creek @ 160	R	8	291.0	7/16/80	12	600	24
Chicken Creek @ 160	R	8	291.0	8/20/80	20	530	14
Chicken Creek @ 160	R	8	291.0	9/24/80	6	650	17
Chicken Creek @ 160	R	8	291.0	10/22/80	3	2500	8
Chicken Creek @ 160	R	8	291.0	12/17/80	1	2400	4
Chicken Creek @ 160	R	8	291.0	1/21/81	75	2700	4
Chicken Creek @ 160	R	8	291.0	2/25/81	2	2400	9
Chicken Creek @ 160	R	8	291.0	3/25/81	1.5	2100	11
Chicken Creek @ 160	R	8	291.0	4/22/81	3	3100	15
Chicken Creek @ 160	R	8	291.0	5/13/81	15	440	11
Chicken Creek @ 160	R	8	291.0	6/17/81	20	370	18
Chicken Creek @ 160	R	8	291.0	7/15/81	18	440	17
Chicken Creek @ 160	R	8	291.0	8/20/81	15	450	21
Chicken Creek @ 160	R	8	291.0	9/15/81	15	530	15.5
Chicken Creek @ 160	R	8	291.0	10/28/81	1	1850	11

Table A-4: Older NRCS Mancos Valley data.

Description	2001 Field ID	Old ID	Station	Date	Estimated Discharge (cfs)	Specific Conductivity (us/cm)	Temperature (degrees C)
Mancos River at C.R. J	S	15	280.0	8/9/78	----	----	----
Mancos River at C.R. J	S	15	280.0	11/8/78	1	1150	----
Mancos River at C.R. J	S	15	280.0	4/10/79	50	490	----
Mancos River at C.R. J	S	15	280.0	5/22/79	400	200	----
Mancos River at C.R. J	S	15	280.0	6/13/79	300	150	----
Mancos River at C.R. J	S	15	280.0	7/18/79	100	310	----
Mancos River at C.R. J	S	15	280.0	8/15/79	3	625	----
Mancos River at C.R. J	S	15	280.0	9/12/79	4	1125	----
Mancos River at C.R. J	S	15	280.0	10/24/79	1.5	1100	----
Mancos River at C.R. J	S	15	280.0	4/16/80	400	460	10
Mancos River at C.R. J	S	15	280.0	5/14/80	175	390	12
Mancos River at C.R. J	S	15	280.0	6/18/80	200	150	16
Mancos River at C.R. J	S	15	280.0	7/16/80	3	600	27
Mancos River at C.R. J	S	15	280.0	8/20/80	5	650	22
Mancos River at C.R. J	S	15	280.0	9/24/80	6	825	17
Mancos River at C.R. J	S	15	280.0	10/22/80	8	750	9
Mancos River at C.R. J	S	15	280.0	12/17/80	6	760	4
Mancos River at C.R. J	S	15	280.0	1/21/81	6	925	6
Mancos River at C.R. J	S	15	280.0	2/25/81	2	1200	10
Mancos River at C.R. J	S	15	280.0	3/25/81	4	1050	13
Mancos River at C.R. J	S	15	280.0	4/22/81	6	575	----
Mancos River at C.R. J	S	15	280.0	5/13/81	1.5	705	19
Mancos River at C.R. J	S	15	280.0	6/17/81	----	----	----
Mancos River at C.R. J	S	15	280.0	7/15/81	20	650	23
Mancos River at C.R. J	S	15	280.0	8/20/81	2.5	635	26
Mancos River at C.R. J	S	15	280.0	9/15/81	5	820	18
Mancos River at C.R. J	S	15	280.0	10/28/81	35	505	9

Description	2001 Field ID	Old ID	Station	Date	Estimated Discharge (cfs)	Specific Conductivity (us/cm)	Temperature (degrees C)
Mancos River	T	16	274.3	8/9/78	4	900	----
Mancos River	T	16	274.3	11/8/78	1.5	2000	----
Mancos River	T	16	274.3	4/10/79	50	550	----
Mancos River	T	16	274.3	5/22/79	400	200	----
Mancos River	T	16	274.3	6/13/79	300	150	----
Mancos River	T	16	274.3	7/18/79	100	350	----
Mancos River	T	16	274.3	8/15/79	10	950	----
Mancos River	T	16	274.3	9/12/79	10	1210	----
Mancos River	T	16	274.3	10/24/79	3	1550	----
Mancos River	T	16	274.3	4/16/80	400	490	9
Mancos River	T	16	274.3	5/14/80	165	400	9
Mancos River	T	16	274.3	6/18/80	140	200	17
Mancos River	T	16	274.3	7/16/80	10	1150	26
Mancos River	T	16	274.3	8/20/80	5	1100	22
Mancos River	T	16	274.3	9/24/80	6	975	19
Mancos River	T	16	274.3	10/22/80	7	920	11
Mancos River	T	16	274.3	12/17/80	6	1050	6
Mancos River	T	16	274.3	1/21/81	6	1450	4
Mancos River	T	16	274.3	2/25/81	3	1350	9
Mancos River	T	16	274.3	3/25/81	5	1350	15
Mancos River	T	16	274.3	4/22/81	6	780	----
Mancos River	T	16	274.3	5/13/81	0.75	1575	20
Mancos River	T	16	274.3	6/17/81	2	1750	23.5
Mancos River	T	16	274.3	7/15/81	20	820	25.5
Mancos River	T	16	274.3	8/20/81	2	1110	25.5
Mancos River	T	16	274.3	9/15/81	2.5	----	----
Mancos River	T	16	274.3	10/28/81	60	590	10

*** Measured Discharge**

Table A-4: Older NRCS Mancos Valley data.

Description	2001 Field ID	Old ID	Station	Date	Estimated Discharge (cfs)	Specific Conductivity (us/cm)	Temperature (degrees C)
Mancos River at C.R. F	Y	20	263.2	8/9/78	2	1450	----
Mancos River at C.R. F	Y	20	263.2	11/8/78	3	1700	----
Mancos River at C.R. F	Y	20	263.2	4/10/79	50	675	----
Mancos River at C.R. F	Y	20	263.2	5/22/79	400	250	----
Mancos River at C.R. F	Y	20	263.2	6/13/79	300	675	----
Mancos River at C.R. F	Y	20	263.2	7/18/79	100	450	----
Mancos River at C.R. F	Y	20	263.2	8/15/79	5	1125	----
Mancos River at C.R. F	Y	20	263.2	9/12/79	12	1375	----
Mancos River at C.R. F	Y	20	263.2	10/24/79	4	1625	----
Mancos River at C.R. F	Y	20	263.2	4/16/80	400	550	11
Mancos River at C.R. F	Y	20	263.2	5/14/80	182*	410	10
Mancos River at C.R. F	Y	20	263.2	6/18/80	150	220	18
Mancos River at C.R. F	Y	20	263.2	7/16/80	20	1190	28
Mancos River at C.R. F	Y	20	263.2	8/20/80	8	1410	23
Mancos River at C.R. F	Y	20	263.2	9/24/80	8	1170	19
Mancos River at C.R. F	Y	20	263.2	10/22/80	12	1170	11
Mancos River at C.R. F	Y	20	263.2	12/17/80	7	1200	8
Mancos River at C.R. F	Y	20	263.2	1/21/81	8	1650	6
Mancos River at C.R. F	Y	20	263.2	2/25/81	3	1550	9
Mancos River at C.R. F	Y	20	263.2	3/25/81	4	1400	14
Mancos River at C.R. F	Y	20	263.2	4/22/81	7	930	----
Mancos River at C.R. F	Y	20	263.2	5/13/81	2	1475	20
Mancos River at C.R. F	Y	20	263.2	6/17/81	3	1575	24
Mancos River at C.R. F	Y	20	263.2	7/15/81	25	1070	27.5
Mancos River at C.R. F	Y	20	263.2	8/20/81	5	1200	27.5
Mancos River at C.R. F	Y	20	263.2	9/15/81	10	1410	22
Mancos River at C.R. F	Y	20	263.2	10/28/81	40	820	11

Description	2001 Field ID	Old ID	Station	Date	Estimated Discharge (cfs)	Specific Conductivity (us/cm)	Temperature (degrees C)
Mud Creek at Co160	Q	13	277.6	8/9/78	11.3*	140	----
Mud Creek at Co160	Q	13	277.6	11/8/78	2.5*	390	----
Mud Creek at Co160	Q	13	277.6	4/10/79	2.5*	325	----
Mud Creek at Co160	Q	13	277.6	5/22/79	5*	140	----
Mud Creek at Co160	Q	13	277.6	6/13/79	11.9*	115	----
Mud Creek at Co160	Q	13	277.6	7/18/79	38.1*	150	----
Mud Creek at Co160	Q	13	277.6	8/15/79	20*	225	----
Mud Creek at Co160	Q	13	277.6	9/12/79	2.1*	350	----
Mud Creek at Co160	Q	13	277.6	10/24/79	3.1*	750	----
Mud Creek at Co160	Q	13	277.6	4/16/80	60	940	10
Mud Creek at Co160	Q	13	277.6	5/14/80	20	775	13
Mud Creek at Co160	Q	13	277.6	6/18/80	25	850	23
Mud Creek at Co160	Q	13	277.6	7/16/80	----	----	----
Mud Creek at Co160	Q	13	277.6	8/20/80	----	----	----
Mud Creek at Co160	Q	13	277.6	9/24/80	3*	2000	29
Mud Creek at Co160	Q	13	277.6	10/22/80	2	3200	7
Mud Creek at Co160	Q	13	277.6	12/17/80	1-2 gpm	2200	6
Mud Creek at Co160	Q	13	277.6	1/21/81	2	2400	4
Mud Creek at Co160	Q	13	277.6	2/25/81	2	2900	9
Mud Creek at Co160	Q	13	277.6	3/25/81	1	2700	15
Mud Creek at Co160	Q	13	277.6	4/22/81	1	4100	
Mud Creek at Co160	Q	13	277.6	5/13/81	3	1900	21
Mud Creek at Co160	Q	13	277.6	6/17/81	----	----	----
Mud Creek at Co160	Q	13	277.6	7/15/81	8	1750	26
Mud Creek at Co160	Q	13	277.6	8/20/81	2	1580	26
Mud Creek at Co160	Q	13	277.6	9/15/81	5	1800	16
Mud Creek at Co160	Q	13	277.6	10/28/81	2	2300	11

Table A-4: Older NRCS Mancos Valley data.

Description	Field ID	2001 Old ID	Station	Date	Estimated Discharge (cfs)	Specific Conductivity (us/cm)	Temperature (degrees C)
Mud Creek at C.R. 38	U	21a	262.3	8/9/78	8	2000	----
Mud Creek at C.R. 38	U	21a	262.3	11/8/78	2.5	2250	----
Mud Creek at C.R. 38	U	21a	262.3	4/10/79	25	1000	----
Mud Creek at C.R. 38	U	21a	262.3	5/22/79	2.5	1200	----
Mud Creek at C.R. 38	U	21a	262.3	6/13/79	10	1275	----
Mud Creek at C.R. 38	U	21a	262.3	7/18/79	15	1900	----
Mud Creek at C.R. 38	U	21a	262.3	8/15/79	8	1600	----
Mud Creek at C.R. 38	U	21a	262.3	9/12/79	8	2500	----
Mud Creek at C.R. 38	U	21a	262.3	10/24/79	4	2800	----
Mud Creek at C.R. 38	U	21a	262.3	4/16/80	70	1080	10
Mud Creek at C.R. 38	U	21a	262.3	5/14/80	25	1280	14
Mud Creek at C.R. 38	U	21a	262.3	6/18/80	40	1100	23
Mud Creek at C.R. 38	U	21a	262.3	7/16/80	10	2100	25
Mud Creek at C.R. 38	U	21a	262.3	8/20/80	8	2400	22
Mud Creek at C.R. 38	U	21a	262.3	9/24/80	4	2800	18
Mud Creek at C.R. 38	U	21a	262.3	10/22/80	3	3900	12
Mud Creek at C.R. 38	U	21a	262.3	12/17/80	3	4000	4
Mud Creek at C.R. 38	U	21a	262.3	1/21/81	3	4600	6
Mud Creek at C.R. 38	U	21a	262.3	2/25/81	3	5000	10
Mud Creek at C.R. 38	U	21a	262.3	3/25/81	1.5	4300	14
Mud Creek at C.R. 38	U	21a	262.3	4/22/81	2	4400	----
Mud Creek at C.R. 38	U	21a	262.3	5/13/81	0.75	6500	20
Mud Creek at C.R. 38	U	21a	262.3	6/17/81	1	3300	22
Mud Creek at C.R. 38	U	21a	262.3	7/15/81	10	1875	24
Mud Creek at C.R. 38	U	21a	262.3	8/20/81	3	2000	24.5
Mud Creek at C.R. 38	U	21a	262.3	9/15/81	6	1875	19
Mud Creek at C.R. 38	U	21a	262.3	10/28/81	4	2750	11

Description	Field ID	2001 Old ID	Station	Date	Estimated Discharge (cfs)	Specific Conductivity (us/cm)	Temperature (degrees C)
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	8/9/78	----	----	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	11/8/78	----	----	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	4/10/79	----	----	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	5/22/79	----	----	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	6/13/79	----	----	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	7/18/79	----	----	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	8/15/79	----	----	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	9/12/79	----	----	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	10/24/79	----	----	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	4/16/80	----	----	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	5/14/80	----	----	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	6/18/80	----	----	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	7/16/80	20	1700	26
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	8/20/80	18	2000	20
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	9/24/80	15	1800	16
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	10/22/80	----	----	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	12/17/80	8	1950	3
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	1/21/81	6	2550	4
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	2/25/81	5	2900	4
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	3/25/81	----	----	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	4/22/81	----	2300	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	5/13/81	3	2500	11
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	6/17/81	5	2250	24.5
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	7/15/81	----	----	----
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	8/20/81	10	1725	22
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	9/15/81	17	1750	17
Mancos River, u.s. of Weber Drainage	DD	28a	223.0	10/28/81	60	1210	7

*** Measured Discharge**

Table A-4: Older NRCS Mancos Valley data.

Description	2001 Field ID	Old ID	Station	Date	Estimated Discharge (cfs)	Specific Conductivity (us/cm)	Temperature (degrees C)
Weber Drainage, at Crossing	CC	28b	227.3	8/9/78	----	----	----
Weber Drainage, at Crossing	CC	28b	227.3	11/8/78	----	----	----
Weber Drainage, at Crossing	CC	28b	227.3	4/10/79	----	----	----
Weber Drainage, at Crossing	CC	28b	227.3	5/22/79	----	----	----
Weber Drainage, at Crossing	CC	28b	227.3	6/13/79	----	----	----
Weber Drainage, at Crossing	CC	28b	227.3	7/18/79	----	----	----
Weber Drainage, at Crossing	CC	28b	227.3	8/15/79	----	----	----
Weber Drainage, at Crossing	CC	28b	227.3	9/12/79	----	----	----
Weber Drainage, at Crossing	CC	28b	227.3	10/24/79	----	----	----
Weber Drainage, at Crossing	CC	28b	227.3	4/16/80	----	----	----
Weber Drainage, at Crossing	CC	28b	227.3	5/14/80	----	----	----
Weber Drainage, at Crossing	CC	28b	227.3	6/18/80	----	----	----
Weber Drainage, at Crossing	CC	28b	227.3	7/16/80	6	2200	25
Weber Drainage, at Crossing	CC	28b	227.3	8/20/80	3	2600	20
Weber Drainage, at Crossing	CC	28b	227.3	9/24/80	5	2600	15
Weber Drainage, at Crossing	CC	28b	227.3	10/22/80	----	----	----
Weber Drainage, at Crossing	CC	28b	227.3	12/17/80	4	2750	5
Weber Drainage, at Crossing	CC	28b	227.3	1/21/81	3	2900	6
Weber Drainage, at Crossing	CC	28b	227.3	2/25/81	3	2800	
Weber Drainage, at Crossing	CC	28b	227.3	3/25/81	----	----	----
Weber Drainage, at Crossing	CC	28b	227.3	4/22/81	2	4000	
Weber Drainage, at Crossing	CC	28b	227.3	5/13/81	2	2750	11
Weber Drainage, at Crossing	CC	28b	227.3	6/17/81	2	3550	24
Weber Drainage, at Crossing	CC	28b	227.3	7/15/81	----	----	----
Weber Drainage, at Crossing	CC	28b	227.3	8/20/81	3	2350	21
Weber Drainage, at Crossing	CC	28b	227.3	9/15/81	8	2000	16
Weber Drainage, at Crossing	CC	28b	227.3	10/28/81	7	2000	7

Appendix B: Geologic field review report

Bob Rasely
Geologist
NRCS Utah

US DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

Neil Pellmann
State Conservation Engineer
Salt Lake City, UT

September 13, 2002

SUBJECT: Geologic Field Review of the Mancos Rover Valley, Colorado

PARTICIPANTS:
Al Albin, Geologist, NRCS, Denver, CO
Steve Yochum, Hydrologist, NRCS, Denver, CO
Bob Rasely, Geologist, NRCS, Salt Lake City, UT

LOCATION: Southwest Colorado, east and north of Mesa Verde National Park.
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BACKGROUND: Geologic assistance was requested to support the Mancos Valley Salinity Control Study with a field review of the geology of the watershed. The field review was conducted in May 2002.

GEOLOGY AND GEOMORPHOLOGY: The team toured the watershed using the established roads. This allowed for viewing of most of the watershed except for the north western area where there were few roads and no permission to travel on private lands. The team agreed that evaluation of the northwestern area would be accomplished by others later on in the study.

The Mancos River Valley Watershed flows from north to south with generally parallel stream that join in the southern downstream area. The upper portion of the watershed is in high elevation, rocky, glaciated country that yields sediment to ancient glacial outwash fan areas in the central and southern portions of the watershed. Present day sedimentation from the mountains in nominal and as would be expected from such mountainous areas. The mountain canyons and uplands appeared to be in hydrologic and erosional equilibrium with the precipitation regime of the area (>30 inches/year). No accelerated erosion was evident from the review. The rocks of the mountain area are fairly resistant to erosion and yield little to no slats to the system.

The middle and lower portions of the watershed are underlain by salt bearing sedimentary rock units of the Mancos Shale (gypsum and sodium salts) and the Dakota Sandstone (calcium carbonate). The rocks in the watershed dip about 10 degrees to the south as is typical of the Colorado Plateau. The geomorphology is characterized by low lying hills of the more resistant Dakota Sandstone being overlain by erosive, salt laden, base of the Mancos Shale. There are low, gentle folds in the rock units and faults in the rocks. The axis of the folds is oriented north-south and the faulting is mostly in the middle watershed area. The faults have an uplift of a few hundred feet or less. These features are directly related to salt yield from the watershed. The folds and faults caused the uplifted lower Mancos Shale and Dakota Sandstone to be exposed multiple times in the watershed area.

The Mancos Shale is dark gray and the Dakota Shale is red. Each exposure of a low hill of red sandstone had an exposure very salty, gray shale directly to the south of it for a few thousand feet. This relationship repeated throughout the middle and lower watershed area. It appears the lower portion of the thickness of the Mancos shale is extremely salty, while the units above it contain moderate or low levels of salt. The relationship of the red sandstone and gray salty shale is important to understanding the salt yield from the watershed.

The outlet of the watershed is in a canyon area adjacent to the Mesa Verde Park. Little salt yield was seen in the rocky canyon areas except in the sediments of the valley bottom.

The western most middle of the watershed in the Mud Creek area is a low lying exposure of the lower salty Mancos Shale. The agricultural practices of the area appeared to be used on slopes of 8 to 10 percent or less. Previous landuse practices of cultivation and irrigation of the soils in this area were observed to continue to yield soil and salt erosion even after to practices were abandoned. Some of these fields are exposed and/or currently cultivated. The eroding fields have a PSIAC sediment yield rate of 1.42 acre-feet/yr or about 4 tons/acre/yr. PSIAC sheet 1 and 2 are attached.
If conservation practices would maintain a permanent cover the erosion rate would be about .23 acre-feet /yr or about .70 tons/acre/yr. The differential from eroding to potential equilibrium is about 5 times. These soils have visible white salt showing on the surface. The channels leaving the area are sediment laden and have significant salt shows on the banks. The salt yield for this area is probably around 10% of the sediment yield. This is based on estimates developed by soil scientists in Utah and is presented here through personal communication. Definitive analysis of a few samples would be of value to the study. Sampling should be dome in the top inch of the soil, because this is the layer that is yielded through erosion. Sampling should be done in the mid-Spring to late-Summer time to insure acquiring a true erosional salt value.

Applying the estimated value of salt yield to the eroding land results in a salt yield of about .4 tons per acre per year in the Mud Creek area.

A field along Mud Creek was observed to have about 2 inches of soil missing and eroded in a previously irrigated area with current totally exposed soil. Assuming a 100 year irrigation time frame (source - local conservationist) this is a .00167 feet of soil loss per year. Multiplying by 43560 square feet per acre gives 72.6 cubic feet of soil per acre. Multiplying by 90 pounds per cubic feet of compacted soil gives 7260 pounds of soil loss per acre. Dividing by 2000 pounds per ton give 3.6 tons per acre estimated soil loss. This figure is in reasonable agreement with the PSIAC estimate of about 4 tons sediment yield per acre. Using a 10 percent value for salt in the sediment, **the salt yield per acre is approximately .4 tons per acre in the cropland of the area where salt is present.**

The presence of sodium salts throughout the Mancos Shale exposures that occur directly south of the reed sandstone exposures and in the Mud Creek area are significant to

understanding the salt yield of the watershed. Less that 1 percent sodium in a soil-rock unit is enough to cause accelerated removal and mobilization of calcium carbonate salts from the soil and rock. This is based on chemical analyses taken on Navajo Sandstone salt samples from City Creek Dam, St. George, Utah, using an analyzing electron microscope and differential thermal analysis techniques. These salts are called Glaubers Salts and are the minerals thenardite and mirabillite. These two salts are related in the following way. They are both Na2SO4 but thenardite has no water molecules attached and mirabillite has up to 10 water molecules attached. This relationship manifest itself between temperatures of 40 degrees F = Mirabillite with water and 90 degrees F = Thenardite with no water. It can be seen in the field when the morning temperatures are low and the same area will have a significantly reduced salt show by afternoon. The mineral takes on water and releases to EVERY day that temperatures permit. The significance of this relationship and process is that the mineral causes a definite expansion when it takes on water and a definite contraction when it loses water. This aerates the soil and promotes erosion. Further the presence of sodium allows for the rapid chemical leaching of calcium from the matrix of soil and rocks. Sodium acts as a catalyst to free calcium from its bond with carbonate, thus promoting salt yield by erosion and solution. Sodium also acts as an agent to cause bonded clays to become unbonded and act as discrete particles instead of as a coherent material in a process known as dispersion. This means that when sodium salts are identified that the erosiveness of the soil is enhanced. Sodium salts were noted in the salts of the middle watershed area associated with the lower Mancos Shale.

RECOMMENDATIONS: Overland erosion rates should be used in calculating the salt yield for the watershed. Significant salt shows on the surface of the areas where the lower Mancos Shale is exposed south of red Dakota Sandstone. Quantifying these areas and applying the erosion and salt yield ratings to the acreage will give a more complete view of salt yield of the area. Measuring salt content of the water is a useful tool in salt yield studies. But it should be noted that in the Colorado River Basin salts are yielded in slug flows during intense convective storm events. And that these slug flows are most salt laden during the late summer to early fall flows and in post drought times, when masses of evaporate salts are on the surface available for transport.

ROBERT C. RASELY
Geologist, NRCS

Appendix C: Total dissolved solid load estimates

Table C-1: Total annual total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Water Year	TDS Load (tons/year)	95% Confidence Interval Lower (tons/year)	95% Confidence Interval Upper (tons/year)	Standard Error (tons/year)	Standard Error of Prediction (tons/year)
1969	47,075	40,964	53,835	3,012	3,285
1970	34,314	30,180	38,852	1,949	2,213
1971	33,352	29,854	37,144	1,622	1,860
1972	20,689	18,494	23,071	969	1,168
1973	80,243	71,430	89,836	4,076	4,697
1974	15,461	14,061	16,963	572	741
1975	52,672	47,900	57,786	1,991	2,522
1976	26,702	24,622	28,909	809	1,094
1977	10,414	9,516	11,372	329	474
1978	32,647	29,579	35,944	1,140	1,624
1979	72,829	66,031	80,132	2,835	3,598
1980	65,830	59,765	72,339	2,475	3,208
1981	20,505	18,940	22,164	578	822
1982	48,588	44,962	52,427	1,405	1,905
1983	72,831	66,982	79,050	2,415	3,079
1984	52,611	48,526	56,944	1,571	2,148
1985	56,024	51,601	60,720	1,714	2,327
1986	61,705	56,967	66,728	1,850	2,490
1987	77,493	71,449	83,907	2,498	3,179
1988	37,119	34,499	39,883	996	1,374
1989	29,587	27,180	32,148	862	1,268
1990	12,439	11,430	13,512	393	531
1991	23,189	21,376	25,114	692	954
1992	45,599	41,818	49,628	1,521	1,993
1993	61,804	56,179	67,834	2,427	2,974
1994	34,040	30,893	37,418	1,354	1,665
1995	43,633	39,343	48,260	1,964	2,275
1996	13,537	12,047	15,158	702	794
1997	50,860	44,730	57,590	2,987	3,282
1998	35,409	30,845	40,454	2,268	2,453
	42,307	:Average			
	40,376	:Median			
	20,301	:Standard Deviation			

Table C-2: Total monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1968	1969	10	2,061	1,649	2,545	149	229
1968	1969	11	2,128	1,731	2,589	150	219
1968	1969	12	2,178	1,779	2,639	151	220
1969	1969	1	3,561	2,880	4,355	248	377
1969	1969	2	2,515	2,046	3,060	168	259
1969	1969	3	5,376	4,262	6,691	369	620
1969	1969	4	10,872	8,806	13,276	789	1,142
1969	1969	5	7,909	6,446	9,605	549	807
1969	1969	6	2,754	2,235	3,357	181	287
1969	1969	7	3,076	2,385	3,904	214	388
1969	1969	8	1,839	1,417	2,346	125	238
1969	1969	9	2,807	2,284	3,412	190	288
1969	1970	10	4,988	3,935	6,237	376	588
1969	1970	11	3,368	2,751	4,080	225	339
1969	1970	12	3,417	2,802	4,126	222	338
1970	1970	1	2,328	1,920	2,798	143	224
1970	1970	2	2,156	1,769	2,602	131	213
1970	1970	3	2,463	2,034	2,955	148	235
1970	1970	4	2,089	1,719	2,515	126	203
1970	1970	5	4,097	3,347	4,965	244	413
1970	1970	6	1,593	1,273	1,968	96	178
1970	1970	7	1,315	1,015	1,675	79	169
1970	1970	8	1,295	1,012	1,631	78	158
1970	1970	9	5,205	3,798	6,966	428	810
1970	1971	10	2,432	2,006	2,921	145	234
1970	1971	11	3,105	2,561	3,729	187	298
1970	1971	12	2,587	2,143	3,095	149	243
1971	1971	1	3,942	3,226	4,768	229	394
1971	1971	2	2,687	2,216	3,227	149	258
1971	1971	3	2,708	2,252	3,228	148	249
1971	1971	4	2,853	2,354	3,427	154	274
1971	1971	5	6,925	5,659	8,388	399	697
1971	1971	6	1,658	1,366	1,994	93	160
1971	1971	7	370	228	570	20	88
1971	1971	8	2,766	2,126	3,538	171	361
1971	1971	9	1,322	1,068	1,617	71	140
1971	1972	10	3,326	2,687	4,071	196	353
1971	1972	11	3,295	2,732	3,939	184	308
1971	1972	12	4,125	3,342	5,036	235	433
1972	1972	1	2,681	2,239	3,184	138	241
1972	1972	2	3,064	2,530	3,677	156	293
1972	1972	3	2,375	1,977	2,830	121	218

Table C-2: Total monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1972	1972	4	268	205	345	16	36
1972	1972	5	198	155	250	13	24
1972	1972	6	509	400	638	29	61
1972	1972	7	0	0	0	0	0
1972	1972	8	141	91	208	7	30
1972	1972	9	654	517	816	32	77
1972	1973	10	7,537	5,948	9,420	535	887
1972	1973	11	4,747	3,927	5,688	265	450
1972	1973	12	3,033	2,537	3,596	149	270
1973	1973	1	2,631	2,209	3,111	125	230
1973	1973	2	3,281	2,730	3,910	155	301
1973	1973	3	7,590	6,331	9,025	370	688
1973	1973	4	13,023	10,738	15,650	731	1,254
1973	1973	5	19,945	16,303	24,157	1,336	2,006
1973	1973	6	12,592	10,339	15,190	771	1,239
1973	1973	7	3,082	2,505	3,751	151	318
1973	1973	8	1,126	921	1,362	53	113
1973	1973	9	1,656	1,360	1,998	77	163
1973	1974	10	1,972	1,657	2,329	90	172
1973	1974	11	1,900	1,596	2,243	85	165
1973	1974	12	1,854	1,562	2,184	83	159
1974	1974	1	1,911	1,608	2,254	86	165
1974	1974	2	1,829	1,528	2,170	83	164
1974	1974	3	3,999	3,346	4,742	174	356
1974	1974	4	1,458	1,207	1,745	71	138
1974	1974	5	59	41	83	4	11
1974	1974	6	0	0	0	0	0
1974	1974	7	458	281	705	21	109
1974	1974	8	22	12	36	1	6
1974	1974	9	0	0	0	0	0
1974	1975	10	800	561	1,108	38	140
1974	1975	11	2,564	2,144	3,043	113	230
1974	1975	12	1,774	1,493	2,092	75	153
1975	1975	1	2,007	1,693	2,362	86	171
1975	1975	2	2,242	1,872	2,663	96	202
1975	1975	3	6,451	5,390	7,658	275	579
1975	1975	4	8,199	6,813	9,784	362	759
1975	1975	5	11,852	9,852	14,137	599	1,094
1975	1975	6	9,181	7,580	11,020	468	879
1975	1975	7	4,445	3,682	5,318	205	418
1975	1975	8	1,539	1,267	1,852	67	149
1975	1975	9	1,618	1,306	1,982	69	173

Table C-2: Total monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1975	1976	10	1,341	1,129	1,581	54	115
1975	1976	11	2,117	1,786	2,492	87	180
1975	1976	12	2,609	2,201	3,070	108	222
1976	1976	1	2,391	2,022	2,808	99	201
1976	1976	2	3,684	3,077	4,374	150	331
1976	1976	3	3,806	3,214	4,474	153	322
1976	1976	4	3,444	2,902	4,057	140	295
1976	1976	5	3,455	2,898	4,087	141	304
1976	1976	6	596	471	745	30	70
1976	1976	7	679	463	963	29	128
1976	1976	8	858	564	1,254	39	177
1976	1976	9	1,663	1,161	2,311	88	294
1976	1977	10	1,921	1,626	2,254	77	160
1976	1977	11	1,874	1,583	2,203	74	158
1976	1977	12	1,330	1,124	1,563	54	112
1977	1977	1	1,314	1,109	1,546	56	111
1977	1977	2	1,244	1,040	1,475	56	111
1977	1977	3	936	773	1,123	46	89
1977	1977	4	38	29	49	3	5
1977	1977	5	3	2	4	0	0
1977	1977	6	0	0	0	0	0
1977	1977	7	416	296	568	18	70
1977	1977	8	568	418	755	24	86
1977	1977	9	770	475	1,182	38	181
1977	1978	10	27	17	39	1	6
1977	1978	11	241	184	309	10	32
1977	1978	12	327	268	396	15	33
1978	1978	1	742	622	878	34	65
1978	1978	2	1,374	1,146	1,635	61	125
1978	1978	3	6,660	5,584	7,882	261	587
1978	1978	4	7,903	6,665	9,304	310	674
1978	1978	5	8,996	7,563	10,619	379	780
1978	1978	6	5,232	4,299	6,307	220	513
1978	1978	7	770	635	925	37	74
1978	1978	8	1	1	3	0	1
1978	1978	9	374	255	529	15	70
1978	1979	10	1,252	1,042	1,491	49	115
1978	1979	11	2,490	2,059	2,985	101	236
1978	1979	12	2,805	2,274	3,423	115	293
1979	1979	1	3,473	2,832	4,215	141	353
1979	1979	2	3,052	2,544	3,631	121	278
1979	1979	3	8,514	7,140	10,076	345	750

Table C-2: Total monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1979	1979	4	13,611	11,351	16,188	635	1,235
1979	1979	5	17,659	14,563	21,217	986	1,699
1979	1979	6	12,081	9,986	14,486	623	1,149
1979	1979	7	5,597	4,704	6,611	244	487
1979	1979	8	1,832	1,521	2,187	76	170
1979	1979	9	463	374	565	20	49
1979	1980	10	590	460	745	23	73
1979	1980	11	1,374	1,161	1,616	54	116
1979	1980	12	1,149	971	1,351	47	97
1980	1980	1	3,205	2,668	3,818	128	294
1980	1980	2	4,980	4,079	6,019	201	495
1980	1980	3	6,522	5,517	7,655	250	546
1980	1980	4	14,253	11,835	17,018	683	1,323
1980	1980	5	16,139	13,472	19,179	822	1,457
1980	1980	6	11,676	9,726	13,902	579	1,066
1980	1980	7	2,406	1,971	2,909	100	240
1980	1980	8	845	691	1,024	37	85
1980	1980	9	2,693	2,218	3,241	114	261
1980	1981	10	2,268	1,906	2,680	90	198
1980	1981	11	2,593	2,191	3,047	103	218
1980	1981	12	2,479	2,099	2,909	98	207
1981	1981	1	1,792	1,513	2,108	75	152
1981	1981	2	1,583	1,325	1,877	70	141
1981	1981	3	2,023	1,702	2,386	90	175
1981	1981	4	1,817	1,522	2,153	84	161
1981	1981	5	352	284	432	22	38
1981	1981	6	361	273	470	19	50
1981	1981	7	3,009	2,295	3,876	136	404
1981	1981	8	778	644	933	35	74
1981	1981	9	1,447	1,195	1,737	59	138
1981	1982	10	3,773	3,128	4,512	165	353
1981	1982	11	2,497	2,107	2,937	99	212
1981	1982	12	2,197	1,856	2,582	87	185
1982	1982	1	2,070	1,749	2,431	86	174
1982	1982	2	3,038	2,539	3,607	122	273
1982	1982	3	5,231	4,397	6,177	201	454
1982	1982	4	6,309	5,298	7,455	239	551
1982	1982	5	9,845	8,286	11,612	408	849
1982	1982	6	4,001	3,319	4,781	160	373
1982	1982	7	1,074	892	1,283	51	100
1982	1982	8	3,902	3,055	4,910	190	474
1982	1982	9	4,652	3,872	5,541	213	426

Table C-2: Total monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1982	1983	10	3,039	2,569	3,570	125	255
1982	1983	11	3,164	2,667	3,727	129	270
1982	1983	12	3,780	3,180	4,460	155	327
1983	1983	1	2,967	2,509	3,483	120	249
1983	1983	2	3,956	3,277	4,733	156	372
1983	1983	3	8,943	7,542	10,528	357	762
1983	1983	4	11,040	9,190	13,151	471	1,011
1983	1983	5	14,102	11,819	16,694	663	1,245
1983	1983	6	10,494	8,773	12,453	491	940
1983	1983	7	5,376	4,506	6,365	230	474
1983	1983	8	4,162	3,486	4,930	180	369
1983	1983	9	1,809	1,521	2,136	73	157
1983	1984	10	3,110	2,613	3,674	129	271
1983	1984	11	2,976	2,508	3,505	121	254
1983	1984	12	3,671	3,095	4,323	150	313
1984	1984	1	3,001	2,539	3,522	121	251
1984	1984	2	2,980	2,507	3,515	121	257
1984	1984	3	7,135	6,028	8,387	274	602
1984	1984	4	9,527	8,008	11,249	378	828
1984	1984	5	12,435	10,424	14,721	559	1,097
1984	1984	6	2,636	2,140	3,212	106	274
1984	1984	7	953	764	1,174	43	105
1984	1984	8	2,144	1,718	2,643	89	236
1984	1984	9	2,081	1,730	2,482	85	192
1984	1985	10	3,093	2,608	3,643	127	264
1984	1985	11	2,680	2,261	3,155	107	228
1984	1985	12	3,119	2,587	3,727	126	291
1985	1985	1	2,939	2,484	3,453	119	247
1985	1985	2	3,590	2,987	4,278	142	330
1985	1985	3	7,529	6,310	8,914	292	665
1985	1985	4	11,368	9,565	13,411	468	982
1985	1985	5	11,338	9,520	13,401	484	991
1985	1985	6	5,636	4,694	6,710	226	515
1985	1985	7	1,010	817	1,235	46	107
1985	1985	8	620	503	756	29	65
1985	1985	9	3,101	2,476	3,836	141	347
1985	1986	10	3,735	3,137	4,414	159	326
1985	1986	11	3,344	2,794	3,971	138	301
1985	1986	12	3,534	2,977	4,165	143	303
1986	1986	1	3,042	2,573	3,571	122	255
1986	1986	2	4,422	3,667	5,286	173	413
1986	1986	3	7,200	6,078	8,468	273	610

Table C-2: Total monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1986	1986	4	12,427	10,261	14,914	551	1,188
1986	1986	5	8,946	7,544	10,533	354	763
1986	1986	6	6,753	5,633	8,031	276	612
1986	1986	7	2,933	2,460	3,471	120	258
1986	1986	8	1,510	1,195	1,882	62	176
1986	1986	9	3,859	3,150	4,681	173	391
1986	1987	10	5,321	4,453	6,308	247	474
1986	1987	11	8,214	6,763	9,883	437	797
1986	1987	12	4,727	3,968	5,589	201	414
1987	1987	1	3,003	2,537	3,531	121	254
1987	1987	2	5,581	4,679	6,607	220	492
1987	1987	3	8,772	7,383	10,346	344	756
1987	1987	4	13,609	11,399	16,121	601	1,206
1987	1987	5	11,692	9,828	13,806	498	1,015
1987	1987	6	6,697	5,624	7,915	270	585
1987	1987	7	2,241	1,862	2,675	93	207
1987	1987	8	5,687	4,689	6,833	268	547
1987	1987	9	1,948	1,633	2,305	79	172
1987	1988	10	2,382	1,935	2,902	98	247
1987	1988	11	5,261	4,318	6,348	248	518
1987	1988	12	2,987	2,524	3,510	120	252
1988	1988	1	2,267	1,916	2,664	93	191
1988	1988	2	3,374	2,802	4,028	132	313
1988	1988	3	4,069	3,428	4,796	156	349
1988	1988	4	4,746	4,005	5,585	176	403
1988	1988	5	3,581	2,969	4,282	135	335
1988	1988	6	1,369	1,122	1,654	62	136
1988	1988	7	1,151	943	1,390	52	114
1988	1988	8	2,685	2,199	3,246	111	267
1988	1988	9	3,226	2,684	3,847	137	297
1988	1989	10	1,841	1,558	2,161	73	154
1988	1989	11	2,540	2,136	2,998	103	220
1988	1989	12	2,094	1,771	2,459	85	176
1989	1989	1	2,243	1,896	2,635	93	188
1989	1989	2	3,308	2,723	3,980	130	321
1989	1989	3	8,204	6,941	9,629	315	686
1989	1989	4	5,666	4,783	6,665	207	480
1989	1989	5	847	684	1,039	43	91
1989	1989	6	11	6	18	1	3
1989	1989	7	1,345	910	1,918	64	258
1989	1989	8	1,487	1,109	1,954	62	216
1989	1989	9	0	0	0	0	0

Table C-2: Total monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1989	1990	10	1,054	874	1,261	43	99
1989	1990	11	1,406	1,186	1,654	57	120
1989	1990	12	1,049	884	1,235	46	89
1990	1990	1	1,085	913	1,281	50	94
1990	1990	2	1,330	1,107	1,586	62	122
1990	1990	3	1,925	1,617	2,276	87	168
1990	1990	4	330	256	418	19	41
1990	1990	5	389	275	535	18	66
1990	1990	6	0	0	0	0	0
1990	1990	7	544	416	699	25	72
1990	1990	8	935	690	1,240	39	141
1990	1990	9	2,390	1,994	2,842	101	216
1990	1991	10	2,441	2,060	2,871	102	207
1990	1991	11	1,707	1,437	2,014	71	147
1990	1991	12	1,476	1,245	1,736	64	125
1991	1991	1	1,418	1,193	1,673	64	123
1991	1991	2	1,419	1,184	1,687	66	128
1991	1991	3	2,352	1,980	2,774	104	203
1991	1991	4	4,430	3,726	5,228	171	384
1991	1991	5	3,649	3,040	4,343	144	333
1991	1991	6	847	695	1,022	44	83
1991	1991	7	429	351	519	24	43
1991	1991	8	186	147	233	10	22
1991	1991	9	2,834	2,214	3,574	138	347
1991	1992	10	1,337	1,123	1,579	57	116
1991	1992	11	2,689	2,234	3,210	119	249
1991	1992	12	2,223	1,875	2,617	97	189
1992	1992	1	1,965	1,655	2,317	88	169
1992	1992	2	3,116	2,610	3,692	133	276
1992	1992	3	5,719	4,818	6,739	233	491
1992	1992	4	8,235	6,925	9,719	338	713
1992	1992	5	11,348	9,519	13,425	526	997
1992	1992	6	3,728	3,031	4,536	157	384
1992	1992	7	1,308	1,073	1,579	62	129
1992	1992	8	1,542	1,281	1,839	71	142
1992	1992	9	2,404	1,963	2,914	112	243
1992	1993	10	2,050	1,718	2,427	93	181
1992	1993	11	2,607	2,181	3,093	121	233
1992	1993	12	2,589	2,177	3,055	119	224
1993	1993	1	3,137	2,639	3,702	144	271
1993	1993	2	6,269	5,149	7,559	294	615
1993	1993	3	10,803	9,041	12,807	513	962

Table C-2: Total monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1993	1993	4	10,453	8,750	12,388	483	929
1993	1993	5	13,063	10,908	15,518	669	1,177
1993	1993	6	5,863	4,889	6,974	268	532
1993	1993	7	859	680	1,070	43	100
1993	1993	8	1,450	1,164	1,784	69	158
1993	1993	9	2,662	2,222	3,163	130	240
1993	1994	10	2,840	2,376	3,369	141	254
1993	1994	11	2,802	2,341	3,328	139	252
1993	1994	12	2,455	2,056	2,907	120	217
1994	1994	1	2,031	1,701	2,405	101	180
1994	1994	2	3,300	2,674	4,027	158	346
1994	1994	3	6,611	5,493	7,889	314	612
1994	1994	4	4,585	3,828	5,448	210	414
1994	1994	5	6,644	5,570	7,864	311	585
1994	1994	6	1,998	1,574	2,500	95	237
1994	1994	7	24	18	33	2	4
1994	1994	8	0	0	1	0	0
1994	1994	9	750	599	928	39	84
1994	1995	10	2,057	1,716	2,445	107	186
1994	1995	11	2,027	1,676	2,429	107	192
1994	1995	12	2,055	1,704	2,456	109	192
1995	1995	1	1,866	1,553	2,224	100	171
1995	1995	2	3,230	2,676	3,864	168	303
1995	1995	3	7,136	5,897	8,558	371	680
1995	1995	4	4,704	3,922	5,596	235	427
1995	1995	5	6,032	5,030	7,174	307	548
1995	1995	6	8,156	6,732	9,791	465	781
1995	1995	7	3,834	3,158	4,611	210	371
1995	1995	8	1,440	1,189	1,729	81	138
1995	1995	9	1,097	901	1,324	62	108
1995	1996	10	1,841	1,529	2,198	104	171
1995	1996	11	1,880	1,556	2,252	108	178
1995	1996	12	1,335	1,105	1,599	78	126
1996	1996	1	1,485	1,230	1,778	88	140
1996	1996	2	2,242	1,845	2,699	130	218
1996	1996	3	1,673	1,382	2,006	101	159
1996	1996	4	1,599	1,313	1,929	97	157
1996	1996	5	79	54	112	6	15
1996	1996	6	131	77	210	8	34
1996	1996	7	207	158	266	14	28
1996	1996	8	321	186	517	20	85
1996	1996	9	701	542	891	43	89

Table C-2: Total monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1996	1997	10	3,356	2,669	4,164	224	382
1996	1997	11	2,695	2,209	3,256	173	267
1996	1997	12	2,388	1,941	2,906	152	246
1997	1997	1	2,519	2,045	3,070	160	262
1997	1997	2	2,446	2,000	2,961	155	245
1997	1997	3	7,219	5,868	8,787	459	745
1997	1997	4	7,420	6,098	8,943	463	726
1997	1997	5	9,839	8,055	11,900	652	982
1997	1997	6	6,214	5,057	7,555	408	638
1997	1997	7	706	529	924	47	101
1997	1997	8	2,563	2,083	3,121	173	265
1997	1997	9	3,495	2,755	4,372	255	413
1997	1998	10	3,833	3,118	4,662	276	394
1997	1998	11	3,527	2,864	4,297	253	366
1997	1998	12	2,547	2,070	3,101	179	263
1998	1998	1	2,261	1,845	2,743	158	230
1998	1998	2	2,000	1,622	2,439	140	209
1998	1998	3	3,621	2,944	4,408	248	374
1998	1998	4	5,353	4,363	6,501	365	546
1998	1998	5	7,729	6,296	9,390	547	790
1998	1998	6	1,957	1,525	2,473	137	242
1998	1998	7	873	690	1,090	65	102
1998	1998	8	654	461	901	48	113
1998	1998	9	1,054	832	1,318	79	124

Table C-3: Baseflow total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Water Year	TDS Load (tons/year)	Proportion of Total Load (percent)	95% Confidence Interval Lower (tons/year)	95% Confidence Interval Upper (tons/year)	Standard Error (tons/year)	Standard Error of Prediction (tons/year)
1969	27,916	59	24,777	31,340	1,616	1,675
1970	28,007	82	25,155	31,091	1,444	1,515
1971	27,844	83	25,221	30,664	1,310	1,389
1972	16,919	82	15,485	18,450	676	757
1973	29,160	36	26,812	31,657	1,148	1,236
1974	13,123	85	12,152	14,150	434	510
1975	25,712	49	23,721	27,823	958	1,046
1976	22,917	86	21,172	24,765	817	917
1977	8,001	77	7,480	8,548	215	272
1978	14,459	44	13,168	15,842	609	682
1979	33,300	46	30,395	36,406	1,423	1,534
1980	27,224	41	24,990	29,601	1,077	1,177
1981	17,953	88	16,841	19,118	491	581
1982	28,531	59	26,541	30,629	943	1,043
1983	38,656	53	35,693	41,797	1,442	1,558
1984	31,289	59	29,055	33,646	1,061	1,171
1985	32,575	58	30,101	35,195	1,185	1,300
1986	35,815	58	33,160	38,625	1,279	1,394
1987	36,524	47	33,959	39,229	1,220	1,344
1988	31,284	84	29,078	33,611	1,041	1,157
1989	20,352	69	18,914	21,869	650	754
1990	11,214	90	10,475	11,991	317	387
1991	20,538	89	19,069	22,089	683	771
1992	29,378	64	27,046	31,855	1,133	1,227
1993	38,389	62	34,921	42,106	1,725	1,833
1994	25,679	75	23,340	28,187	1,152	1,237
1995	29,521	68	26,533	32,750	1,517	1,587
1996	14,155	105	12,661	15,776	749	795
1997	37,664	74	32,938	42,874	2,462	2,536
1998	33,100	93	28,659	38,030	2,326	2,392
	26,240	:Average				
	27,961	:Median				
	8,532	:Standard Deviation				

Table C-4: Baseflow monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1968	1969	10	1,369	1,156	1,609	86	116
1968	1969	11	1,957	1,665	2,285	120	158
1968	1969	12	1,930	1,650	2,244	114	152
1969	1969	1	2,393	2,047	2,782	142	188
1969	1969	2	2,654	2,249	3,110	164	220
1969	1969	3	3,106	2,633	3,638	201	257
1969	1969	4	3,013	2,537	3,552	207	259
1969	1969	5	2,999	2,517	3,545	213	263
1969	1969	6	2,485	2,084	2,941	175	219
1969	1969	7	2,045	1,714	2,420	139	180
1969	1969	8	1,503	1,240	1,806	98	144
1969	1969	9	2,464	2,091	2,882	155	202
1969	1970	10	3,699	3,138	4,330	234	304
1969	1970	11	3,309	2,824	3,852	195	262
1969	1970	12	3,225	2,766	3,737	181	248
1970	1970	1	2,141	1,847	2,469	113	159
1970	1970	2	2,179	1,868	2,528	119	169
1970	1970	3	2,834	2,422	3,295	167	223
1970	1970	4	2,397	2,039	2,800	147	194
1970	1970	5	2,885	2,439	3,388	191	242
1970	1970	6	1,312	1,113	1,536	79	108
1970	1970	7	923	775	1,090	54	80
1970	1970	8	1,074	908	1,262	60	90
1970	1970	9	2,031	1,730	2,369	115	163
1970	1971	10	2,318	1,999	2,673	122	172
1970	1971	11	2,880	2,486	3,318	149	212
1970	1971	12	2,299	1,995	2,635	111	164
1971	1971	1	2,888	2,497	3,322	144	211
1971	1971	2	2,771	2,382	3,205	144	210
1971	1971	3	3,154	2,705	3,655	178	243
1971	1971	4	2,984	2,533	3,492	181	245
1971	1971	5	3,173	2,695	3,711	202	259
1971	1971	6	2,334	1,975	2,740	146	195
1971	1971	7	214	170	266	11	25
1971	1971	8	1,550	1,316	1,812	84	127
1971	1971	9	1,280	1,091	1,493	64	103
1971	1972	10	2,200	1,906	2,526	105	158
1971	1972	11	3,141	2,724	3,604	151	225
1971	1972	12	2,200	1,923	2,506	95	149
1972	1972	1	2,456	2,145	2,800	108	167
1972	1972	2	2,432	2,106	2,795	116	176
1972	1972	3	2,664	2,297	3,073	137	198

Table C-4: Baseflow monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1972	1972	4	275	226	332	14	27
1972	1972	5	219	182	262	11	20
1972	1972	6	647	537	773	34	60
1972	1972	7	0	0	0	0	0
1972	1972	8	106	79	139	5	15
1972	1972	9	538	450	637	23	48
1972	1973	10	1,827	1,592	2,087	78	126
1972	1973	11	2,444	2,140	2,779	102	163
1972	1973	12	2,709	2,373	3,078	111	180
1973	1973	1	2,377	2,086	2,697	97	156
1973	1973	2	3,095	2,677	3,559	146	225
1973	1973	3	3,161	2,739	3,630	160	227
1973	1973	4	3,011	2,588	3,483	167	229
1973	1973	5	2,984	2,557	3,461	173	231
1973	1973	6	2,746	2,350	3,189	160	214
1973	1973	7	2,129	1,829	2,464	114	162
1973	1973	8	1,144	987	1,319	51	85
1973	1973	9	1,533	1,333	1,754	65	107
1973	1974	10	1,853	1,628	2,100	73	120
1973	1974	11	1,621	1,428	1,833	60	103
1973	1974	12	1,515	1,337	1,711	55	95
1974	1974	1	1,633	1,438	1,847	61	104
1974	1974	2	1,729	1,511	1,969	70	117
1974	1974	3	2,973	2,582	3,406	144	210
1974	1974	4	1,716	1,477	1,983	84	129
1974	1974	5	61	47	78	3	8
1974	1974	6	0	0	0	0	0
1974	1974	7	0	0	0	0	0
1974	1974	8	22	14	31	1	4
1974	1974	9	0	0	0	0	0
1974	1975	10	343	279	416	12	35
1974	1975	11	1,955	1,724	2,209	68	124
1974	1975	12	1,438	1,268	1,625	50	91
1975	1975	1	1,719	1,516	1,941	62	108
1975	1975	2	2,014	1,760	2,294	81	136
1975	1975	3	2,712	2,363	3,097	126	187
1975	1975	4	2,927	2,525	3,374	154	217
1975	1975	5	3,215	2,760	3,723	183	246
1975	1975	6	3,229	2,763	3,750	188	252
1975	1975	7	3,245	2,788	3,754	181	246
1975	1975	8	1,503	1,309	1,716	64	104
1975	1975	9	1,412	1,230	1,615	54	98

Table C-4: Baseflow monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1975	1976	10	1,173	1,034	1,325	40	74
1975	1976	11	1,817	1,606	2,047	60	112
1975	1976	12	2,228	1,969	2,511	75	138
1976	1976	1	2,084	1,842	2,350	74	130
1976	1976	2	3,162	2,755	3,612	139	219
1976	1976	3	3,981	3,446	4,575	203	288
1976	1976	4	3,411	2,935	3,941	186	257
1976	1976	5	3,025	2,597	3,503	169	231
1976	1976	6	761	634	905	37	69
1976	1976	7	279	227	340	12	29
1976	1976	8	523	429	631	22	52
1976	1976	9	424	359	497	15	35
1976	1977	10	1,768	1,565	1,990	60	108
1976	1977	11	1,573	1,392	1,771	51	97
1976	1977	12	1,024	904	1,156	36	64
1977	1977	1	1,048	924	1,184	39	66
1977	1977	2	1,097	961	1,248	43	73
1977	1977	3	895	776	1,027	38	64
1977	1977	4	32	26	39	2	3
1977	1977	5	3	2	3	0	0
1977	1977	6	0	0	0	0	0
1977	1977	7	247	200	302	10	26
1977	1977	8	215	175	262	8	22
1977	1977	9	98	78	121	4	11
1977	1978	10	19	14	25	1	3
1977	1978	11	174	141	213	7	18
1977	1978	12	222	189	259	11	18
1978	1978	1	554	484	632	24	38
1978	1978	2	1,234	1,077	1,407	48	84
1978	1978	3	2,806	2,444	3,205	130	194
1978	1978	4	2,916	2,518	3,359	152	215
1978	1978	5	3,028	2,606	3,499	167	228
1978	1978	6	2,412	2,070	2,795	130	185
1978	1978	7	917	792	1,057	39	68
1978	1978	8	1	1	2	0	0
1978	1978	9	175	138	219	6	21
1978	1979	10	1,091	953	1,243	35	74
1978	1979	11	1,805	1,594	2,035	57	113
1978	1979	12	1,633	1,442	1,843	53	102
1979	1979	1	1,889	1,664	2,136	67	121
1979	1979	2	2,667	2,318	3,053	113	188
1979	1979	3	3,974	3,442	4,565	202	287

Table C-4: Baseflow monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1979	1979	4	4,168	3,570	4,837	240	323
1979	1979	5	4,575	3,895	5,338	285	368
1979	1979	6	4,591	3,896	5,374	292	377
1979	1979	7	4,918	4,188	5,739	306	396
1979	1979	8	1,550	1,338	1,787	65	115
1979	1979	9	438	375	509	16	34
1979	1980	10	499	416	594	16	46
1979	1980	11	1,099	971	1,239	37	68
1979	1980	12	866	762	979	33	55
1980	1980	1	2,310	2,019	2,630	85	156
1980	1980	2	2,405	2,104	2,737	99	162
1980	1980	3	3,104	2,699	3,552	149	218
1980	1980	4	3,493	3,004	4,039	192	264
1980	1980	5	3,949	3,376	4,591	235	310
1980	1980	6	4,052	3,452	4,725	248	325
1980	1980	7	2,656	2,252	3,110	148	219
1980	1980	8	799	692	917	30	57
1980	1980	9	1,981	1,741	2,246	74	129
1980	1981	10	2,036	1,794	2,302	68	130
1980	1981	11	2,284	2,022	2,570	74	140
1980	1981	12	2,086	1,848	2,346	68	127
1981	1981	1	1,489	1,314	1,682	54	94
1981	1981	2	1,447	1,265	1,647	58	98
1981	1981	3	2,141	1,868	2,443	96	147
1981	1981	4	2,187	1,890	2,517	109	160
1981	1981	5	385	327	449	19	31
1981	1981	6	453	367	553	22	47
1981	1981	7	1,085	923	1,267	48	88
1981	1981	8	837	727	960	32	59
1981	1981	9	1,523	1,311	1,759	57	115
1981	1982	10	3,157	2,776	3,576	120	204
1981	1982	11	2,203	1,948	2,482	71	136
1981	1982	12	1,826	1,615	2,058	60	113
1982	1982	1	1,767	1,560	1,995	64	111
1982	1982	2	2,469	2,153	2,817	103	169
1982	1982	3	3,029	2,636	3,465	144	212
1982	1982	4	2,985	2,575	3,441	157	221
1982	1982	5	3,049	2,623	3,524	169	230
1982	1982	6	2,788	2,398	3,224	153	211
1982	1982	7	1,336	1,156	1,536	60	97
1982	1982	8	1,619	1,412	1,846	67	111
1982	1982	9	2,303	2,021	2,612	89	151

Table C-4: Baseflow monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1982	1983	10	2,975	2,624	3,360	110	188
1982	1983	11	2,913	2,570	3,289	100	184
1982	1983	12	3,473	3,049	3,939	127	227
1983	1983	1	2,696	2,377	3,046	99	171
1983	1983	2	3,093	2,691	3,538	135	216
1983	1983	3	3,920	3,396	4,502	199	282
1983	1983	4	3,745	3,217	4,335	209	285
1983	1983	5	3,721	3,188	4,318	217	288
1983	1983	6	3,434	2,941	3,986	198	267
1983	1983	7	3,424	2,951	3,952	186	255
1983	1983	8	3,371	2,925	3,864	166	240
1983	1983	9	1,890	1,661	2,142	69	123
1983	1984	10	2,742	2,419	3,095	98	172
1983	1984	11	2,729	2,409	3,080	92	171
1983	1984	12	2,806	2,477	3,166	96	176
1984	1984	1	2,743	2,420	3,097	101	173
1984	1984	2	3,034	2,645	3,464	131	209
1984	1984	3	3,326	2,890	3,809	162	235
1984	1984	4	3,470	2,986	4,010	189	261
1984	1984	5	3,717	3,186	4,312	216	288
1984	1984	6	2,326	1,988	2,704	125	183
1984	1984	7	892	778	1,018	38	61
1984	1984	8	1,573	1,366	1,804	64	112
1984	1984	9	1,907	1,675	2,162	71	124
1984	1985	10	2,948	2,596	3,334	108	188
1984	1985	11	2,441	2,157	2,751	80	152
1984	1985	12	2,271	2,005	2,562	75	142
1985	1985	1	2,713	2,390	3,066	99	173
1985	1985	2	2,756	2,402	3,148	116	190
1985	1985	3	4,033	3,494	4,630	204	290
1985	1985	4	3,938	3,381	4,559	220	301
1985	1985	5	4,120	3,523	4,788	245	323
1985	1985	6	3,727	3,182	4,337	220	295
1985	1985	7	1,084	933	1,252	47	81
1985	1985	8	707	604	824	28	56
1985	1985	9	1,838	1,596	2,107	69	130
1985	1986	10	3,300	2,906	3,731	124	211
1985	1986	11	2,526	2,231	2,850	83	158
1985	1986	12	2,988	2,640	3,369	102	186
1986	1986	1	2,843	2,507	3,211	104	180
1986	1986	2	2,413	2,107	2,750	98	164
1986	1986	3	3,107	2,705	3,552	146	216

Table C-4: Baseflow monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1986	1986	4	3,540	3,048	4,088	191	265
1986	1986	5	4,034	3,453	4,683	237	314
1986	1986	6	4,145	3,536	4,828	250	330
1986	1986	7	3,011	2,602	3,465	156	220
1986	1986	8	1,120	968	1,289	43	82
1986	1986	9	2,788	2,442	3,169	113	186
1986	1987	10	4,806	4,202	5,473	211	325
1986	1987	11	4,333	3,806	4,912	169	282
1986	1987	12	3,575	3,158	4,030	126	223
1987	1987	1	2,545	2,247	2,872	91	159
1987	1987	2	2,493	2,180	2,838	101	168
1987	1987	3	2,959	2,579	3,378	137	204
1987	1987	4	2,951	2,551	3,395	151	215
1987	1987	5	3,046	2,626	3,515	165	227
1987	1987	6	2,910	2,506	3,361	157	218
1987	1987	7	2,336	2,022	2,685	114	169
1987	1987	8	2,493	2,179	2,840	109	169
1987	1987	9	2,076	1,816	2,362	80	139
1987	1988	10	1,660	1,458	1,882	55	108
1987	1988	11	3,117	2,752	3,516	107	195
1987	1988	12	2,748	2,430	3,095	92	170
1988	1988	1	2,073	1,830	2,339	74	130
1988	1988	2	2,749	2,404	3,131	113	186
1988	1988	3	3,796	3,297	4,349	185	268
1988	1988	4	4,185	3,593	4,846	235	320
1988	1988	5	3,156	2,706	3,660	174	244
1988	1988	6	1,580	1,355	1,830	77	121
1988	1988	7	1,449	1,242	1,680	67	112
1988	1988	8	2,077	1,804	2,380	89	147
1988	1988	9	2,682	2,351	3,047	108	178
1988	1989	10	1,807	1,598	2,035	61	111
1988	1989	11	2,192	1,937	2,470	72	136
1988	1989	12	1,841	1,629	2,073	62	113
1989	1989	1	2,072	1,830	2,336	74	129
1989	1989	2	2,268	1,983	2,583	91	153
1989	1989	3	3,382	2,943	3,867	160	236
1989	1989	4	3,852	3,314	4,451	210	290
1989	1989	5	1,030	876	1,203	49	84
1989	1989	6	12	8	17	1	2
1989	1989	7	526	408	666	25	66
1989	1989	8	1,371	1,154	1,617	62	118
1989	1989	9	0	0	0	0	0

Table C-4: Baseflow monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1989	1990	10	856	746	978	32	59
1989	1990	11	1,228	1,083	1,388	44	78
1989	1990	12	849	745	963	35	56
1990	1990	1	918	805	1,043	39	61
1990	1990	2	1,307	1,138	1,494	53	91
1990	1990	3	2,203	1,922	2,513	97	151
1990	1990	4	388	322	463	19	36
1990	1990	5	332	262	416	16	39
1990	1990	6	0	0	0	0	0
1990	1990	7	438	365	520	20	40
1990	1990	8	437	368	515	18	38
1990	1990	9	2,257	1,972	2,572	92	153
1990	1991	10	2,551	2,245	2,888	97	164
1990	1991	11	1,571	1,382	1,778	56	101
1990	1991	12	1,270	1,118	1,437	49	81
1991	1991	1	1,262	1,108	1,431	50	82
1991	1991	2	1,420	1,239	1,621	59	97
1991	1991	3	2,866	2,491	3,282	135	202
1991	1991	4	3,173	2,737	3,658	167	235
1991	1991	5	2,681	2,306	3,098	145	202
1991	1991	6	1,181	1,011	1,372	58	92
1991	1991	7	524	451	606	25	39
1991	1991	8	203	170	241	10	18
1991	1991	9	1,835	1,586	2,112	78	134
1991	1992	10	1,310	1,148	1,488	52	87
1991	1992	11	2,355	2,065	2,674	90	155
1991	1992	12	2,072	1,825	2,343	79	132
1992	1992	1	1,873	1,645	2,123	75	122
1992	1992	2	2,835	2,471	3,238	125	196
1992	1992	3	3,421	2,968	3,924	170	244
1992	1992	4	3,606	3,098	4,174	201	275
1992	1992	5	3,893	3,328	4,527	233	306
1992	1992	6	2,779	2,360	3,251	162	227
1992	1992	7	1,473	1,270	1,700	73	110
1992	1992	8	1,588	1,381	1,818	74	112
1992	1992	9	2,151	1,869	2,464	98	152
1992	1993	10	1,947	1,705	2,214	82	130
1992	1993	11	2,486	2,177	2,827	103	166
1992	1993	12	2,525	2,215	2,865	104	166
1993	1993	1	3,245	2,838	3,692	141	218
1993	1993	2	4,012	3,466	4,618	199	294
1993	1993	3	4,615	3,973	5,331	254	347

Table C-4: Baseflow monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1993	1993	4	4,560	3,888	5,315	277	364
1993	1993	5	4,670	3,963	5,467	301	384
1993	1993	6	4,430	3,748	5,200	291	371
1993	1993	7	1,264	1,047	1,513	71	119
1993	1993	8	1,476	1,260	1,718	74	117
1993	1993	9	3,160	2,725	3,643	165	234
1993	1994	10	2,683	2,334	3,070	127	188
1993	1994	11	2,785	2,425	3,184	128	194
1993	1994	12	2,427	2,117	2,769	109	166
1994	1994	1	2,023	1,764	2,311	93	140
1994	1994	2	2,127	1,838	2,449	104	156
1994	1994	3	3,345	2,882	3,861	182	250
1994	1994	4	3,661	3,123	4,264	221	291
1994	1994	5	3,855	3,272	4,510	247	316
1994	1994	6	1,878	1,569	2,230	115	169
1994	1994	7	27	21	34	2	3
1994	1994	8	0	0	1	0	0
1994	1994	9	868	729	1,026	46	76
1994	1995	10	2,306	1,993	2,655	119	169
1994	1995	11	1,849	1,599	2,127	93	135
1994	1995	12	1,885	1,632	2,166	95	136
1995	1995	1	1,882	1,627	2,165	96	137
1995	1995	2	1,897	1,631	2,193	100	143
1995	1995	3	2,709	2,325	3,137	154	207
1995	1995	4	3,088	2,627	3,606	192	250
1995	1995	5	3,519	2,976	4,132	234	295
1995	1995	6	3,630	3,055	4,282	250	313
1995	1995	7	3,721	3,136	4,384	255	319
1995	1995	8	1,808	1,541	2,109	109	145
1995	1995	9	1,226	1,046	1,429	71	98
1995	1996	10	2,075	1,779	2,406	119	160
1995	1996	11	1,939	1,662	2,248	109	150
1995	1996	12	1,262	1,080	1,466	73	98
1996	1996	1	1,479	1,268	1,715	85	114
1996	1996	2	2,134	1,822	2,484	124	169
1996	1996	3	2,135	1,821	2,488	130	170
1996	1996	4	1,821	1,541	2,137	116	152
1996	1996	5	100	74	132	7	15
1996	1996	6	63	45	86	4	11
1996	1996	7	276	223	339	19	30
1996	1996	8	159	124	201	11	20
1996	1996	9	675	556	812	44	65

Table C-4: Baseflow monthly total dissolved solid (TDS) load estimates, at Mancos River at Rt. 666 gaging station.

Calendar Year	Water Year	Month	TDS Load (tons/month)	95% Confidence Interval Lower (tons/month)	95% Confidence Interval Upper (tons/month)	Standard Error (tons/month)	Standard Error of Prediction (tons/month)
1996	1997	10	2,773	2,344	3,258	180	233
1996	1997	11	2,863	2,429	3,351	181	235
1996	1997	12	2,368	2,005	2,778	148	197
1997	1997	1	2,397	2,036	2,804	150	196
1997	1997	2	2,956	2,494	3,478	193	251
1997	1997	3	4,163	3,498	4,915	292	362
1997	1997	4	4,423	3,681	5,270	334	406
1997	1997	5	4,801	3,970	5,756	384	456
1997	1997	6	4,778	3,929	5,756	395	466
1997	1997	7	824	657	1,022	61	93
1997	1997	8	2,340	1,949	2,787	174	214
1997	1997	9	2,977	2,477	3,549	221	274
1997	1998	10	5,189	4,312	6,190	398	480
1997	1998	11	4,296	3,587	5,104	314	387
1997	1998	12	2,823	2,366	3,344	198	250
1998	1998	1	2,534	2,129	2,992	177	220
1998	1998	2	2,467	2,061	2,929	177	222
1998	1998	3	3,348	2,789	3,985	252	305
1998	1998	4	3,588	2,966	4,303	286	341
1998	1998	5	3,899	3,203	4,700	326	382
1998	1998	6	2,214	1,800	2,694	184	228
1998	1998	7	928	763	1,119	74	91
1998	1998	8	605	486	745	48	66
1998	1998	9	1,209	992	1,461	97	120