Utah (Upper Colorado CU+L)							
Basin	Year	CU + L (acre-feet)	Modified Blaney-Criddle (af) USBR rainfall	Original Blaney-Criddle (af) USBR rainfall	Modified Blaney-Criddle (af) SCS rainfall	Modified USBR/ Original USBR	Modified SCS/ Original USBR
U 1	1976	7554	7557	9508	8360	0.79	0.88
	1977	4927	4955	5752	5352	0.86	0.93
	1978	8717	8760	11025	9414	0.79	0.85
	1979	10090	10135	11839	10747	0.86	0.91
	1980	8595	8618	10860	9372	0.79	0.86
	Average	7977	8005	9797	8649	0.82	0.88
U 2	1976	41649	42155	37089	43777	1.14	1.18
	1977	19989	21094	21773	22080	0.97	1.01
	1978	43116	43658	42762	45196	1.02	1.06
	1979	45180	45712	44206	46941	1.03	1.06
	1980	45599	46181	42433	48024	1.09	1.13
	Average	39107	39760	37653	41204	1.06	1.09
U 3	1976	1336	1339	1276	1386	1.05	1.09
	1977	688	688	668	708	1.03	1.06
	1978	1172	1174	1362	1225	0.86	0.90
	1979	1121	1124	1266	1166	0.89	0.92
	1980	1365	1374	1456	1447	0.94	0.99
	Average	1136	1140	1206	1186	0.95	0.98
U 4	1976	118875	119437	114121	122837	1.05	1.08
	1977	63821	64027	70619	67224	0.91	0.95
	1978	106071	106515	119694	112387	0.89	0.94
	1979	118721	119237	128789	122633	0.93	0.95
	1980	116195	116798	117478	122880	0.99	1.05
	Average	104737	105203	110140	109592	0.96	1.00
U 5	1976	96608	97098	113980	102924	0.85	0.90
	1977	62657	63049	71431	65883	0.88	0.92
	1978	111260	111835	125835	116422	0.89	0.93
	1979	100607	101244	115598	106049	0.88	0.92
	1980	95384	95708	107767	103673	0.89	0.96
	Average	93303	93787	106922	98990	0.88	0.93
U 6	1976	39441	39497	35658	40858	1.11	1.15
	1977	19247	19424	19472	20220	1.00	1.04
	1978	43253	43466	41096	44425	1.06	1.08
	1979	46448	46600	45859	47343	1.02	1.03
	1980	35833	35915	35727	38326	1.01	1.07
	Average	36844	36980	35562	38234	1.04	1.08

Utah (Upper Colorado CU+L)								
Basin	Year	CU + L (acre-feet)	Modified Blaney-Criddle (af) USBR rainfall	Original Blaney-Criddle (af) USBR rainfall	Modified Blaney-Criddle (af) SCS rainfall	Modified USBR/ Original USBR	Modified SCS/ Original USBR
U 7	1976	3618	3627	3395	3711	1.07	1.09
	1977	1975	1981	1772	2004	1.12	1.13
	1978	4111	4114	3811	4194	1.08	1.10
	1979	4365	4380	4201	4448	1.04	1.06
	1980	4214	4226	4050	4365	1.04	1.08
	Average	3657	3666	3446	3744	1.06	1.09
U 8	1976	36371	36543	39621	37840	0.92	0.96
	1977	15785	15867	16229	16552	0.98	1.02
	1978	44647	44812	46963	46137	0.95	0.98
	1979	46802	47101	47997	47989	0.98	1.00
	1980	40011	40171	38081	42904	1.05	1.13
	Average	36723	36899	37778	38284	0.98	1.01
U 9	1976	6330	6344	5682	6475	1.12	1.14
	1977	1871	1873	1627	1908	1.15	1.17
	1978	8060	8069	7515	8430	1.07	1.12
	1979	8733	8750	7903	9024	1.11	1.14
	1980	8508	8526	7482	8827	1.14	1.18
	Average	6700	6712	6042	6933	1.11	1.15
U 10	1976	3089	3113	2854	3364	1.09	1.18
	1977	1729	1570	1609	1647	0.98	1.02
	1978	3160	3179	3243	3292	0.98	1.02
	1979	3718	3738	3975	3911	0.94	0.98
	1980	3260	3271	3187	3445	1.03	1.08
	Average	2991	2974	2974	3132	1.00	1.05
U 11	1976	6544	6566	6724	6785	0.98	1.01
	1977	764	770	758	811	1.02	1.07
	1978	2357	2363	2390	2472	0.99	1.03
	1979	5994	6016	5739	6180	1.05	1.08
	1980	6927	6949	6495	7181	1.07	1.11
	Average	4517	4533	4421	4686	1.03	1.06
U 12	1976	4487	4501	4974	4742	0.90	0.95
	1977	2837	2849	2826	2973	1.01	1.05
	1978	7512	7534	6871	7776	1.10	1.13
	1979	6455	6497	6421	6698	1.01	1.04
	1980	4636	4672	5047	4937	0.93	0.98
	Average	5185	5211	5228	5425	1.00	1.04

Utah (Upper Colorado CU+L)								
Basin	Year	CU + L (acre-feet)	Modified Blaney-Criddle (af) USBR rainfall	Original Blaney-Criddle (af) USBR rainfall	Modified Blaney-Criddle (af) SCS rainfall	Modified USBR/ Original USBR	Modified SCS/ Original USBR
U 13	1976	12590	12640	12574	13274	1.01	1.06
	1977	6487	6531	6752	6786	0.97	1.01
	1978	15808	15913	17492	16499	0.91	0.94
	1979	16333	16412	16078	16944	1.02	1.05
	1980	16059	13553	13994	14259	0.97	1.02
	Average	13455	13010	13378	13552	0.97	1.01
U 14	1976	2122	2130	1950	2182	1.09	1.12
	1977	775	776	682	786	1.14	1.15
	1978	3292	3298	3049	3365	1.08	1.10
	1979	2991	2995	2835	3115	1.06	1.10
	1980	3628	3631	3339	3702	1.09	1.11
	Average	2562	2566	2371	2630	1.08	1.11
U 15	1976	3454	3472	3988	3798	0.87	0.95
	1977	1745	1753	1715	1809	1.02	1.05
	1978	4869	4888	5613	5155	0.87	0.92
	1979	9202	9253	10003	9553	0.93	0.96
	1980	7901	7956	8363	8549	0.95	1.02
	Average	5434	5464	5936	5773	0.92	0.97
U 16	1976	2877	2883	3349	3030	0.86	0.90
	1977	750	754	754	785	1.00	1.04
	1978	3384	3399	3646	3544	0.93	0.97
	1979	6305	6324	7015	6479	0.90	0.92
	1980	4931	4947	5783	5448	0.86	0.94
	Average	3649	3661	4109	3857	0.89	0.94
Total UT Average		367978	369571	386963	385873	0.96	1.00

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Utah (Upper Colorado CU+L) Irrigation Depletions w/CU+L Incidental Depletions					
Basin	Year	CU + L (acre-feet)	Modified Blaney-Criddle (af) USBR rainfall	Modified Blaney-Criddle (af) SCS rainfall	Original Blaney-Criddle (af) USBR rainfall	Ratio--- Modified USBR rain/Original USBR rain	Ratio--- Modified SCS rain/Original USBR rain
U 1	1976	8400	8449	9347	10630	0.79	0.88
	1977	5500	5540	5983	6431	0.86	0.93
	1978	9700	9793	10525	12326	0.79	0.85
	1979	11300	11331	12015	13235	0.86	0.91
	1980	9600	9635	10478	12141	0.79	0.86
	Average	8900	8950	9670	10953	0.82	0.88
U 2	1976	50300	50923	52883	44803	1.14	1.18
	1977	24100	25482	26672	26301	0.97	1.01
	1978	52100	52738	54597	51656	1.02	1.06
	1979	54600	55220	56704	53401	1.03	1.06
	1980	55100	55787	58013	51259	1.09	1.13
	Average	47240	48030	49774	45484	1.06	1.09
U 3	1976	1600	1618	1674	1541	1.05	1.09
	1977	800	831	855	806	1.03	1.06
	1978	1400	1419	1479	1645	0.86	0.90
	1979	1400	1358	1409	1529	0.89	0.92
	1980	1600	1660	1749	1759	0.94	0.99
	Average	1360	1377	1433	1456	0.95	0.98
U 4	1976	143600	144279	148388	137858	1.05	1.08
	1977	77100	77344	81206	85307	0.91	0.95
	1978	128100	128670	135764	144590	0.89	0.94
	1979	143400	144039	148141	155577	0.93	0.95
	1980	140400	141092	148439	141913	0.99	1.05
	Average	126520	127085	132388	133049	0.96	1.00
U 5	1976	116700	117294	124332	137688	0.85	0.90
	1977	75700	76163	79587	86289	0.88	0.92
	1978	134400	135096	140638	152008	0.89	0.93
	1979	121500	122302	128107	139643	0.88	0.92
	1980	115200	115615	125237	130183	0.89	0.96
	Average	112700	113294	119580	129162	0.88	0.93
U 6	1976	47600	47713	49356	43075	1.11	1.15
	1977	23300	23464	24426	23522	1.00	1.04
	1978	52200	52507	53665	49643	1.06	1.08
	1979	56100	56292	57191	55397	1.02	1.03
	1980	43300	43385	46298	43159	1.01	1.07
	Average	44500	44672	46187	42959	1.04	1.08
U 7	1976	4400	4381	4483	4102	1.07	1.09
	1977	2400	2393	2420	2140	1.12	1.13
	1978	5000	4970	5066	4603	1.08	1.10
	1979	5300	5291	5374	5075	1.04	1.06
	1980	5100	5105	5273	4892	1.04	1.08
	Average	4440	4428	4523	4162	1.06	1.09

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Utah (Upper Colorado CU+L) Irrigation Depletions w/CU+L Incidental Depletions											
Basin	Year		CU + L (acre-feet)		Modified Blaney-Criddle (af) USBR rainfall			Modified Blaney-Criddle (af) SCS rainfall	Original Blaney-Criddle (af) USBR rainfall	Ratio— Modified USBR rain/Original USBR rain	Ratio— Modified SCS rain/Original USBR rain
U 8	1976		43900		44144			45711	47862	0.92	0.96
	1977		19100		19167			19995	19604	0.98	1.02
	1978		53900		54133			55734	56732	0.95	0.98
	1979		56500		56898			57970	57980	0.98	1.00
	1980		48300		48527			51828	46002	1.05	1.13
	Average		44340		44574			46248	45636	0.98	1.01
U 9	1976		7000		7042			7188	6307	1.12	1.14
	1977		2100		2079			2117	1806	1.15	1.17
	1978		8900		8956			9358	8342	1.07	1.12
	1979		9700		9712			10017	8773	1.11	1.14
	1980		9400		9464			9798	8304	1.14	1.18
	Average		7420		7451			7696	6706	1.11	1.15
U 10	1976		3400		3456			3734	3168	1.09	1.18
	1977		1900		1743			1828	1786	0.98	1.02
	1978		3500		3528			3654	3600	0.98	1.02
	1979		4100		4149			4341	4412	0.94	0.98
	1980		3600		3631			3824	3538	1.03	1.08
	Average		3300		3301			3476	3301	1.00	1.05
U 11	1976		7900		7899			8163	8089	0.98	1.01
	1977		900		926			976	912	1.02	1.07
	1978		2800		2843			2974	2875	0.99	1.03
	1979		7200		7238			7434	6904	1.05	1.08
	1980		8300		8359			8638	7814	1.07	1.11
	Average		5420		5453			5637	5319	1.03	1.06
U 12	1976		5300		5347			5633	5909	0.90	0.95
	1977		3400		3384			3531	3357	1.01	1.05
	1978		8900		8950			9238	8163	1.10	1.13
	1979		7700		7718			7957	7629	1.01	1.04
	1980		5500		5550			5865	5996	0.93	0.98
	Average		6160		6190			6445	6211	1.00	1.04
U 13	1976		15000		15016			15770	14938	1.01	1.06
	1977		7700		7759			8062	8021	0.97	1.01
	1978		18800		18905			19601	20781	0.91	0.94
	1979		19400		19498			20130	19101	1.02	1.05
	1980		19100		16100			16940	16625	0.97	1.02

Utah (Upper Colorado CU+L) Irrigation Depletions w/CU+L Incidental Depletions											
Basin	Year		CU + L (acre-feet)		Modified Blaney-Criddle (af) USBR rainfall			Modified Blaney-Criddle (af) SCS rainfall	Original Blaney-Criddle (af) USBR rainfall	Ratio— Modified USBR rain/Original USBR rain	Ratio— Modified SCS rain/Original USBR rain
	Average		16000		15456			16101	15893	0.97	1.01
U 14	1976		2500		2531			2593	2317	1.09	1.12
	1977		900		922			934	811	1.14	1.15
	1978		3900		3918			3998	3623	1.08	1.10
	1979		3600		3558			3701	3368	1.06	1.10
	1980		4300		4314			4398	3966	1.09	1.11
	Average		3040		3049			3125	2817	1.08	1.11
U 15	1976		4100		4125			4512	4737	0.87	0.95
	1977		2100		2083			2149	2037	1.02	1.05
	1978		5800		5807			6125	6669	0.87	0.92
	1979		10900		10992			11348	11884	0.92	0.95
	1980		9400		9452			10156	9936	0.95	1.02
	Average		6460		6492			6858	7053	0.92	0.97
U 16	1976		3400		3425			3599	3978	0.86	0.90
	1977		900		895			933	896	1.00	1.04
	1978		4000		4038			4210	4331	0.93	0.97
	1979		7500		7513			7697	8334	0.90	0.92
	1980		5900		5877			6472	6870	0.86	0.94
	Average		4340		4350			4582	4882	0.89	0.94
Total UT Average			442140		444150			463722	465043	0.96	1.00

Wyoming (Upper Colorado CU+L)						
Basin	Year	CU + L (acre-feet)	Modified Blaney-Criddle (af) USBR rain	Original Blaney-Criddle (af) USBR rain	Modified Blaney-Criddle SCS (af) rain	Modified USBR/ Original USBR	Modified SCS/ Original USBR
W 1	1976	14840	14881	18495	16433	0.80	0.89
	1977	14700	14774	16997	15951	0.87	0.94
	1978	15890	15961	19859	17112	0.80	0.86
	1979	18806	18874	21660	20001	0.87	0.92
	1980	15390	15370	19209	16752	0.80	0.87
	Average	15925	15972	19244	17250	0.83	0.90
W 2	1976	24913	24784	33354	29786	0.74	0.89
	1977	28414	28569	37482	31416	0.76	0.84
	1978	36934	37178	49539	40980	0.75	0.83
	1979	38785	38982	50317	41959	0.77	0.83
	1980	43731	43852	55019	46682	0.80	0.85
	Average	34555	34673	45142	38165	0.77	0.85
W 3	1976	9557	9544	9200	10425	1.04	1.13
	1977	7338	7344	7836	7846	0.94	1.00
	1978	11753	11783	13059	12938	0.90	0.99
	1979	14416	14438	15353	15089	0.94	0.98
	1980	11465	11458	11870	12526	0.97	1.06
	Average	10906	10913	11464	11765	0.95	1.03
W 4	1976	3467	3462	3366	3700	1.03	1.10
	1977	2046	2051	2046	2215	1.00	1.08
	1978	2502	2512	2918	2745	0.86	0.94
	1979	2986	2986	3194	3118	0.93	0.98
	1980	2573	2570	2625	2772	0.98	1.06
	Average	2715	2716	2830	2910	0.96	1.03
W 5	1976	19134	19095	19126	20661	1.00	1.08
	1977	12535	12539	10790	13831	1.16	1.28
	1978	15272	15173	12484	16124	1.22	1.29
	1979	25488	25506	27883	26279	0.91	0.94
	1980	20444	20419	21649	20997	0.94	0.97
	Average	18575	18546	18386	19578	1.01	1.06
W 6	1976	10401	10428	10686	11471	0.98	1.07
	1977	6946	6978	7201	7466	0.97	1.04
	1978	13910	13964	16340	14677	0.85	0.90
	1979	11206	11251	9570	11927	1.18	1.25
	1980	15688	15678	16755	16152	0.94	0.96
	Average	11630	11660	12110	12339	0.96	1.02

Wyoming (Upper Colorado CU+L)												
Basin	Year		CU + L (acre-feet)		Modified Blaney-Criddle (af) USBR rain		Original Blaney-Criddle (af) USBR rain		Modified Blaney-Criddle SCS (af) rain		Modified USBR/ Original USBR	Modified SCS/ Original USBR
W 7	1976		93456		93618		104496		110244		0.90	1.06
	1977		41142		41334		40549		46280		1.02	1.14
	1978		117162		117256		141071		126443		0.83	0.90
	1979		108381		108749		125366		116076		0.87	0.93
	1980		99797		99768		104424		108886		0.96	1.04
	Average		91988		92145		103181		101586		0.89	0.98
W 8	1976		11042		11084		11890		12093		0.93	1.02
	1977		8658		8693		9550		9509		0.91	1.00
	1978		10548		10553		11788		11733		0.90	1.00
	1979		11810		11845		13590		12785		0.87	0.94
	1980		10032		10063		10328		11368		0.97	1.10
	Average		10418		10448		11429		11498		0.91	1.01
Total WY Average			196712		197073		223787		215090		0.88	0.96

Wyoming (Upper Colorado CU+L) Irrigation Depletions w/CU+L Incidental Depletions							
Basin	Year	CU + L (acre-feet)	Modified Blaney-Criddle (af) USBR rain	Original Blaney-Criddle (af) USBR rain	Modified Blaney-Criddle SCS (af) rain	Ratio— Modified USBR rain/Original USBR rain	Ratio— Modified SCS rain/Original USBR rain
W 1	1976	16200	16264	20215	17962	0.80	0.89
	1977	16100	16148	18578	17434	0.87	0.94
	1978	17400	17445	21706	18704	0.80	0.86
	1979	20600	20630	23675	21861	0.87	0.92
	1980	16800	16799	20996	18310	0.80	0.87
	Average	17420	17457	21034	18854	0.83	0.90
W 2	1976	27200	27089	36456	32556	0.74	0.89
	1977	31100	31226	40968	34338	0.76	0.84
	1978	40400	40636	54146	44791	0.75	0.83
	1979	42400	42607	54997	45861	0.77	0.83
	1980	47800	47930	60136	51023	0.80	0.85
	Average	37780	37898	49341	41714	0.77	0.85
W 3	1976	10400	10432	10055	11395	1.04	1.13
	1977	8000	8027	8565	8576	0.94	1.00
	1978	12800	12879	14273	14141	0.90	0.99
	1979	15800	15780	16781	16492	0.94	0.98
	1980	12500	12524	12974	13691	0.97	1.06
	Average	11900	11928	12530	12859	0.95	1.03
W 4	1976	3800	3784	3679	4044	1.03	1.10
	1977	2200	2242	2236	2421	1.00	1.08
	1978	2700	2745	3190	3001	0.86	0.94
	1979	3300	3264	3491	3408	0.93	0.98
	1980	2800	2808	2869	3029	0.98	1.06
	Average	2960	2969	3093	3181	0.96	1.03
W 5	1976	20900	20871	20904	22582	1.00	1.08
	1977	13700	13705	11793	15117	1.16	1.28
	1978	16700	16584	13645	17623	1.22	1.29
	1979	27900	27878	30476	28723	0.91	0.94
	1980	22300	22318	23663	22950	0.94	0.97
	Average	20300	20271	20096	21399	1.01	1.06
W 6	1976	11400	11397	11680	12538	0.98	1.07
	1977	7600	7627	7871	8161	0.97	1.04
	1978	15200	15262	17860	16042	0.85	0.90
	1979	12200	12298	10460	13036	1.18	1.25
	1980	17100	17136	18313	17654	0.94	0.96
	Average	12700	12744	13237	13486	0.96	1.02

Wyoming (Upper Colorado CU+L) Irrigation Depletions w/CU+L Incidental Depletions					
Basin	Year	CU + L (acre-feet)	Modified Blaney-Criddle (af) USBR rain	Original Blaney-Criddle (af) USBR rain	Modified Blaney-Criddle SCS (af) rain	Ratio— Modified USBR rain/Original USBR rain	Ratio— Modified SCS rain/Original USBR rain
W 7	1976	102100	102325	114214	120497	0.90	1.06
	1977	45000	45178	44320	50584	1.02	1.14
	1978	128100	128161	154191	138203	0.83	0.90
	1979	118500	118863	137025	126871	0.87	0.93
	1980	109100	109046	114135	119013	0.96	1.04
	Average	100560	100715	112777	111034	0.89	0.98
W 8	1976	12000	12037	12913	13133	0.93	1.02
	1977	9400	9441	10372	10327	0.91	1.00
	1978	11500	11460	12802	12742	0.90	1.00
	1979	12800	12864	14759	13885	0.87	0.94
	1980	10900	10928	11216	12345	0.97	1.10
	Average	11320	11346	12412	12486	0.91	1.01
Total WY Average		214940	215328	244520	235013	0.88	0.96

New Mexico-- San Juan Basin (Upper Colorado CU+L)							
Basin	Year	CU + L (acre-feet)	Modified Blaney-Criddle (af) USBR rainfall	Original Blaney-Criddle (af) USBR rainfall	Modified Blaney-Criddle (af) SCS rainfall	Modifed USBR/ Original USBR	Modifed SCS/ Original USBR
NM - 1	1976	2102	2109	2315	2269	0.91	0.98
	1977	2044	2051	2034	2143	1.01	1.05
	1978	2558	2561	2751	2712	0.93	0.99
	1979	2331	2343	2601	2477	0.90	0.95
	1980	2498	2501	2517	2618	0.99	1.04
	Average	2307	2313	2444	2444	0.95	1.00
NM - 2	1976	44826	45082	44036	46127	1.02	1.05
	1977	44783	44904	40089	45594	1.12	1.14
	1978	49101	49287	43852	51077	1.12	1.16
	1979	42981	43160	41818	44411	1.03	1.06
	1980	45343	45508	42272	47090	1.08	1.11
	Average	45407	45588	42413	46860	1.07	1.10
NM - 2a	1976	9550	9605	9097	9717	1.06	1.07
	1977	9410	9444	8087	9552	1.17	1.18
	1978	10748	10783	9379	11119	1.15	1.19
	1979	9587	9635	9088	9856	1.06	1.08
	1980	9009	8906	8596	9237	1.04	1.07
	Average	9661	9675	8849	9896	1.09	1.12
NM - 3+4	1976	31465	31643	26842	32884	1.18	1.23
	1977	26269	26380	22793	27012	1.16	1.19
	1978	32706	32829	31785	34286	1.03	1.08
	1979	37058	37270	35514	38432	1.05	1.08
	1980	37463	37660	33967	38846	1.11	1.14
	Average	32992	33156	30180	34292	1.10	1.14
NM - 5+5a	1976	2136	2152	2434	2226	0.88	0.91
	1977	1320	1332	1163	1369	1.15	1.18
	1978	1304	1316	1397	1510	0.94	1.08
	1979	2335	2357	2016	2460	1.17	1.22
	1980	2110	2126	1911	2132	1.11	1.12
	Average	1841	1857	1784	1939	1.04	1.09
Total NM Average		92207	92589	85671	95431	1.08	1.11

New Mexico-- San Juan Basin (Upper Colorado CU+L) Irrigation Depletions													
					w/ CU+L Incidental Depletions								
Basin	Year		CU + L (acre-feet)		Modified Blaney-Criddle (af) USBR rainfall		Original Blaney-Criddle (af) USBR rainfall		Modified Blaney-Criddle (af) SCS rainfall		Ratio--- Modified USBR/ Original USBR		Ratio--- Modified SCS/ Original USBR
NM - 1	1976		2500		2498		2740		2686		0.91		0.98
	1977		2400		2428		2409		2537		1.01		1.05
	1978		3000		3032		3257		3211		0.93		0.99
	1979		2800		2774		3080		2933		0.90		0.95
	1980		3000		2961		2981		3099		0.99		1.04
	Average		2740		2739		2893		2893		0.95		1.00
NM - 2	1976		54100		54369		53107		55629		1.02		1.05
	1977		54000		54155		48347		54987		1.12		1.14
	1978		59200		59440		52885		61599		1.12		1.16
	1979		51800		52051		50433		53560		1.03		1.06
	1980		54700		54883		50980		56791		1.08		1.11
	Average		54760		54980		51150		56513		1.07		1.10
NM - 2a	1976		11500		11583		10971		11719		1.06		1.07
	1977		11300		11390		9753		11520		1.17		1.18
	1978		13000		13004		11311		13409		1.15		1.19
	1979		11600		11620		10960		11886		1.06		1.08
	1980		10900		10741		10367		11139		1.04		1.07
	Average		11660		11668		10672		11935		1.09		1.12
NM - 3+4	1976		37100		37275		31620		38738		1.18		1.23
	1977		30900		31076		26850		31820		1.16		1.19
	1978		38500		38673		37443		40389		1.03		1.08
	1979		43700		43904		41835		45273		1.05		1.08
	1980		44100		44363		40013		45761		1.11		1.14
	Average		38860		39058		35552		40396		1.10		1.14
NM - 5+5a	1976		2400		2421		2738		2504		0.88		0.91
	1977		1500		1498		1308		1540		1.15		1.18
	1978		1500		1480		1571		1699		0.94		1.08
	1979		2600		2652		2268		2768		1.17		1.22
	1980		2400		2392		2150		2399		1.11		1.12
	Average		2080		2089		2007		2182		1.04		1.09
Total NM Average			110100		110533		102275		113919		1.08		1.11

Colorado River Basin Natural Flow and Salt Data
Supporting Data for Natural Flow Computation

Supporting data for natural flow computation

Upper Basin
1971-2003

- Summary of the CU&L data loaded in the model by gauged reach in the Upper Basin
- Summary of the reservoir regulation including change in storage, evaporation, and change in bank storage for both mainstem and non-mainstem reservoirs in the Upper Basin
- Historic USGS gauge data that was used to determine natural flow along with the data in the two files described above.

1906-1970

- A record of data used to compute natural flow from 1906-1971 in the Upper Basin were extracted from Microfiche. These records are available in an Excel format upon request from the Upper Colorado Regional Office. The official data for natural flow from 1906-1971 does not exactly match the Microfiche for 4 gauges (09124600, 09211200, 09328500, 09355500). These difference are documented in a June 2000 status report presented to the Technical Modeling Subcommittee of the Salinity Control Forum. Reclamation intends to explore and document the resolution of these differences in the near future.

Lower Basin
1971-2003

- Lower Basin Decree Accounting and reservoir regulation data are stored in the Lower Colorado Hydrologic Data Base. These data are available upon request from the Boulder Canyon Operations Office.

1906-1970

- Lower Basin data from the March 1992 report cited above are available in an electronic format upon request from the Boulder Canyon Operations Office.

Return to Natural Flow and Salt Data home page.

Webmaster: Janie Jo Smith
Updated: January 2006

OSE-0710

4-6-96

John-

The pencil numbers are my results from taking the CU+L backup data consumptive use for each area & applying the appropriate incidental loss % from the 1976-1980 backup data.

Some are exactly the same, some a little at least and 1975 Colorado-San Juan Co is quite a bit different.

Molly

Whipple, John J., OSE

From: Don Ostler [dostler@uc.usbr.gov] **Sent:** Tue 5/22/2007 4:59 PM

To: Scott Balcomb; landerson@barnettwater.com; Richard Bratton; Pat Tyrrell; Rod.Kuharich@state.co.us; Dantonio, John, OSE; Dennis Strong

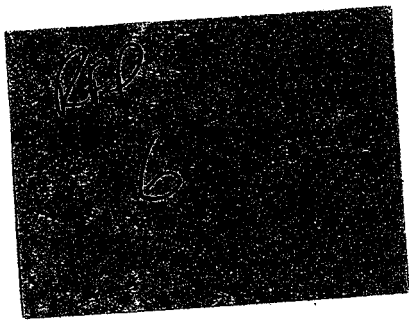
Cc: Stephen Farris; jlochhead@bhf-law.com; Dave Merritt; Eric Kuhn; djensen@pblutah.com; john shields; carol.angel@state.co.us; Hal.Simpson@state.co.us; John Cyran; Randy.Seaholm@state.co.us; ted.kowalski@state.co.us; Lopez, Estevan, OSE; Whipple, John J., OSE; Trujillo, Tanya, OSE; Kristen Dolan; pmicha@state.wy.us; Jane Bird; jerryolds@utah.gov; normanjohnson@utah.gov; Robert King

Subject: Revision of Upper Basin Depletion Schedules - 2007

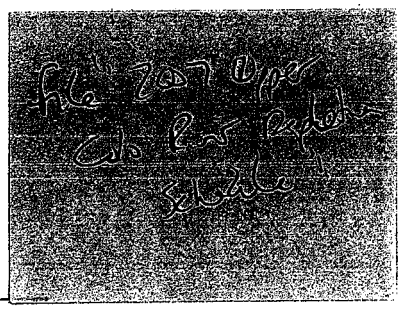
Attachments: Depletion Schedules 2007-Final Final.xls(120KB)

Commissioners:
The Engineering Committee and staff have been working on updating the Upper Basin Depletion Schedules which were last done in the year 2000. I have attached the currently proposed schedules for your review. We will be discussing these revised depletion schedules at our Commission Work Meeting on June 19 in Park City, and we hope to get your approval of the new schedules at the Commission meeting the following day.

These depletion schedules incorporate the results of the draft hydrologic determination which the Commission considered on June 6, 2006. We are expecting the Secretary of Interior to sign the hydrologic determination any time now. They also reflect the states' best estimates of how they see their depletions increasing over time. A major use of the depletion schedules has been in modeling work done by the Bureau of Reclamation. They should also be of value in planning for future development of the Upper Basin unused apportionment, agreement among the upper basin states as to the amount of apportionment available to each state and any number of other uses...



The Engineering Committee is recommending that the depletion schedules identified in the right hand corner as "schedule B" are the ones that we consider for adoption. The ones identified "schedule A" would be similar to what the Commission approved in 2000 and are provided for your information only. The only difference between the two schedules is that schedule B compares uses against the hydrologic determination yield without CRSP shared evaporation and schedule A includes the CRSP shared evaporation. The engineering Committee felt that Schedule B (without shared evaporation) is a more consistent comparison since the uses are more of an average and the evaporation (from the hydrologic determination) was critical period evap rather than the average.



If you have questions or comments, please let me know.
Don Ostler
Upper Colorado River Commission
801-531-1150

Schedule A

Upper Colorado River Division States
Current Depletion and Future Demand Schedule
UPPER BASIN TOTALS
June 20, 2007
(Units: 1000 acre-feet)

ITEM	YEAR						
	2001-2007	2010	2020	2030	2040	2050	2060+
CURRENT DEPLETIONS							
Agriculture-Irr & Stock	2735	2735	2735	2735	2735	2735	2735
Municipal/Domestic	123	123	123	123	123	123	123
Energy/Industrial	230	230	230	230	230	230	230
Minerals	46	46	46	46	46	46	46
Export	1033	1033	1033	1033	1033	1033	1033
Other (WY-Environmental Projects)	2	2	2	2	2	2	2
Reservoir Evaporation	167	167	167	167	167	167	167
TOTAL CURRENT DEPLETIONS	**4336**	**4336**	**4336**	**4336**	**4336**	**4336**	**4336**
ANTICIPATED DEPLETIONS							
Agriculture-Irr & Stock	0	160	228	258	260	269	269
Municipal/Domestic	0	83	108	113	119	123	125
Energy/Industrial	0	62	83	103	107	116	119
Minerals	0	15	32	55	59	62	63
Export	0	131	183	250	312	322	322
Ute Indian Settlement (UT)	0	0	10	40	80	105	105
Reservoir Evaporation	0	5	11	18	18	18	18
TC ANTICIPATED DEPLETIONS	**0**	**456**	**655**	**837**	**955**	**1015**	**1021**
POTENTIAL DEPLETIONS							
Agriculture-Irr & Stock	0	1	15	20	27	42	35
Municipal/Domestic	0	2	2	3	4	17	18
Energy/Industrial	0	0	0	52	52	52	52
Minerals	0	2	3	5	6	7	7
Export	0	0	10	20	30	40	50
Reservoir Evaporation	0	3	3	3	3	3	3
TOTAL POTENTIAL DEPLETIONS	**0**	**8**	**33**	**103**	**122**	**161**	**165**
Summary of Depletions	4336	4800	5024	5276	5413	5512	5522
Critical Period CRSP Evap (0.25maf)	250	250	250	250	250	250	250
TOTAL DEPLETIONS	**4586**	**5050**	**5274**	**5526**	**5663**	**5762**	**5772**
2007 Hydro-Det. Amount (Upper Basin)[4]	5960	5960	5960	5960	5960	5960	5960
Remaining Available	1374	910	686	434	297	198	188
Percent Unused(%)	23	15	12	7	5	3	3

Note 1: This depletion schedule does not attempt to interpret the Colorado River Compact, the Upper Colorado River Basin Compact, or any other element of the "Law of the River." This schedule should not be construed as an acceptance of any assumption that limits the Upper Colorado River Basin's depletion.

Note 2: This depletion schedule is for planning purposes only. This estimate does not constitute an endorsement of the Bureau of Reclamation's 2007 hydrologic determination and should not be construed as in any way limiting the Upper Division states use of Colorado River Water in accordance with the Commission's resolution of 6/6/06 .

Note 3: "Shared CRSP Evap." refers to the total and individual state portions of evaporation from the major Reservoirs constructed under the Colorado River S e Project Act. These projects include Flaming Gorge, the Aspinall Unit reservoirs and Glen Canyon.

Note 4: Excluding 50,000 ac-ft apportioned to Arizona

Schedule B

Upper Colorado River Division States
Current Depletion and Future Demand Schedule
UPPER BASIN TOTALS
June 20, 2007
(Units: 1000 acre-feet)

ITEM	YEAR						
	2001-2007	2010	2020	2030	2040	2050	2060+
CURRENT DEPLETIONS							
Agriculture-Irr & Stock	2735	2735	2735	2735	2735	2735	2735
Municipal/Domestic	123	123	123	123	123	123	123
Energy/Industrial	230	230	230	230	230	230	230
Minerals	46	46	46	46	46	46	46
Export	1033	1033	1033	1033	1033	1033	1033
Other (WY-Environmental Projects)	2	2	2	2	2	2	2
Reservoir Evaporation	167	167	167	167	167	167	167
TOTAL CURRENT DEPLETIONS	**4336**	**4336**	**4336**	**4336**	**4336**	**4336**	**4336**
ANTICIPATED DEPLETIONS							
Agriculture-Irr & Stock	0	160	228	258	260	269	269
Municipal/Domestic	0	83	108	113	119	123	125
Energy/Industrial	0	62	83	103	107	116	119
Minerals	0	15	32	55	59	62	63
Export	0	131	183	250	312	322	322
Ute Indian Settlement (UT)	0	0	10	40	80	105	105
Reservoir Evaporation	0	5	11	18	18	18	18
TOTAL ANTICIPATED DEPLETIONS	**0**	**456**	**655**	**837**	**955**	**1015**	**1021**
POTENTIAL DEPLETIONS							
Agriculture-Irr & Stock	0	1	15	20	27	42	35
Municipal/Domestic	0	2	2	3	4	17	18
Energy/Industrial	0	0	0	52	52	52	52
Minerals	0	2	3	5	6	7	7
Export	0	0	10	20	30	40	50
Reservoir Evaporation	0	3	3	3	3	3	3
TOTAL POTENTIAL DEPLETIONS	**0**	**8**	**33**	**103**	**122**	**161**	**165**
TOTAL DEPLETIONS	**4336**	**4800**	**5024**	**5276**	**5413**	**5512**	**5522**
2007 Hydro-Det. Amount (UB Share)[3]	5710	5710	5710	5710	5710	5710	5710
Remaining Available	1374	910	686	434	297	198	188
Percent Unused(%)	24	16	12	8	5	3	3

Note 1: This depletion schedule does not attempt to interpret the Colorado River Compact, the Upper Colorado River Basin Compact, or any other element of the "Law of the River." This schedule should not be construed as an acceptance of any assumption that limits the Upper Colorado River Basin's depletion.

Note 2: This depletion schedule is for planning purposes only. This estimate does not constitute an endorsement of the Bureau of Reclamation's 2007 hydrologic determination and should not be construed as in any way limiting the Upper Division states use of Colorado River Water in accordance with the Commission's Resolution of 6/6/06.

Note 3: The yield determined in the 2007 Hydrologic Determination (2007HD) excluding shared CRSP evaporation and excluding 50,000af apportioned for use in Arizona.

Schedule A

Upper Colorado River Division States
Current Depletion and Future Demand Schedule
STATE OF COLORADO
June 20, 2007
(Units: 1000 acre-feet)

ITEM	YEAR						
	2001-2007	2010	2020	2030	2040	2050	2060+
CURRENT DEPLETIONS							
Agriculture-Irr & Stock	1500	1500	1500	1500	1500	1500	1500
Municipal/Domestic	77	77	77	77	77	77	77
Energy/Industrial	87	87	87	87	87	87	87
Minerals	26	26	26	26	26	26	26
Export	705	705	705	705	705	705	705
Reservoir Evaporation	86	86	86	86	86	86	86
TOTAL CURRENT DEPLETIONS	**2481**	**2481**	**2481**	**2481**	**2481**	**2481**	**2481**
ANTICIPATED DEPLETIONS							
Agriculture-Irr & Stock	0	49	49	52	52	54	57
Municipal/Domestic	0	76	81	82	82	85	86
Energy/Industrial	0	57	64	73	73	77	80
Minerals	0	7	17	32	32	32	32
Export	0	122	142	162	182	182	182
Reservoir Evaporation	0	2	2	2	2	2	2
TOTAL ANTICIPATED DEPLETIONS	**0**	**313**	**355**	**403**	**423**	**432**	**439**
POTENTIAL DEPLETIONS							
Agriculture-Irr & Stock	0	1	5	5	12	27	20
Municipal/Domestic	0	1	1	1	1	13	13
Energy/Industrial	0	0	0	0	0	0	0
Minerals	0	0	0	1	2	2	2
Export	0	0	0	0	0	0	0
Reservoir Evaporation	0	0	0	0	0	0	0
TOTAL POTENTIAL DEPLETIONS	**0**	**2**	**6**	**7**	**15**	**42**	**35**
Summary of Depletions	2481	2796	2842	2891	2919	2955	2955
Critical Period CRSP Shared Evap. (% of 0.25 maf)	129	129	129	129	129	129	129
TOTAL DEPLETIONS	**2610**	**2925**	**2971**	**3020**	**3048**	**3084**	**3084**
Share of 2007 Hydro-Det Amount (6.01 maf)	3084	3084	3084	3084	3084	3084	3084
Remaining Available	474	159	113	64	36	0	0
Percent Unused(%)	15	5	4	2	1	0	0

Note 1: This depletion schedule does not attempt to interpret the Colorado River Compact, the Upper Colorado River Basin Compact, or any other element of the "Law of the River." This schedule should not be construed as an acceptance of any assumption that limits the Upper Colorado River Basin's depletion.

Note 2: This depletion schedule is for planning purposes only. This estimate does not constitute an endorsement of the Bureau of Reclamation's 2007 hydrologic determination and should not be construed as in any way limiting the Upper Division states use of Colorado River Water in accordance with the Commission's resolution of 6/6/06.

Note 3: "Shared CRSP Evap." refers to the total and individual state portions of evaporation from the major Reservoirs constructed under the Colorado River Storage Project Act. These projects include Flaming Gorge, the Aspinall Unit reservoirs and Glen Canyon.

Schedule B

Upper Colorado River Division States
Current Depletion and Future Demand Schedule
STATE OF COLORADO
June 20, 2007
(Units: 1000 acre-feet)

ITEM	YEAR						
	2001-2007	2010	2020	2030	2040	2050	2060+
CURRENT DEPLETIONS							
Agriculture-Irr & Stock	1500	1500	1500	1500	1500	1500	1500
Municipal/Domestic	77	77	77	77	77	77	77
Energy/Industrial	87	87	87	87	87	87	87
Minerals	26	26	26	26	26	26	26
Export	705	705	705	705	705	705	705
Reservoir Evaporation	86	86	86	86	86	86	86
TOTAL CURRENT DEPLETIONS	**2481**	**2481**	**2481**	**2481**	**2481**	**2481**	**2481**
ANTICIPATED DEPLETIONS							
Agriculture-Irr & Stock	0	49	49	52	52	54	57
Municipal/Domestic	0	76	81	82	82	85	86
Energy/Industrial	0	57	64	73	73	77	80
Minerals	0	7	17	32	32	32	32
Export	0	122	142	162	182	182	182
Reservoir Evaporation	0	2	2	2	2	2	2
TOTAL ANTICIPATED DEPLETIONS	**0**	**313**	**355**	**403**	**423**	**432**	**439**
POTENTIAL DEPLETIONS							
Agriculture-Irr & Stock	0	1	5	5	12	27	20
Municipal/Domestic	0	1	1	1	1	13	13
rgy/Industrial	0	0	0	0	0	0	0
erals	0	0	0	1	2	2	2
Export	0	0	0	0	0	0	0
Reservoir Evaporation	0	0	0	0	0	0	0
TOTAL POTENTIAL DEPLETIONS	**0**	**2**	**6**	**7**	**15**	**42**	**35**
TOTAL DEPLETIONS	**2481**	**2796**	**2842**	**2891**	**2919**	**2955**	**2955**
Share of 2007 Hydro-Det Amount (5.76maf)[3]	2955	2955	2955	2955	2955	2955	2955
Remaining Available	474	159	113	64	36	0	0
Percent Unused(%)	16	5	4	2	1	0	0

Note 1: This depletion schedule does not attempt to interpret the Colorado River Compact, the Upper Colorado River Basin Compact, or any other element of the "Law of the River." This schedule should not be construed as an acceptance of any assumption that limits the Upper Colorado River Basin's depletion.

Note 2: This depletion schedule is for planning purposes only. This estimate does not constitute an endorsement of the Bureau of Reclamation's 2007 hydrologic determination and should not be construed as in any way limiting the Upper Division states use of Colorado River Water in accordance with the Commission's resolution of 6/6/06.

Note 3: The yield determined in the 2007 Hydrologic Determination excluding shared CRSP evaporation and excuding 50,000ac-ft apportioned to Arizona.

Schedule A

Upper Colorado River Division States
Current Depletion and Future Demand Schedule
STATE OF WYOMING
June 20, 2007
(Units: 1000 acre-feet)

ITEM	YEAR						
	2001-2007	2010	2020	2030	2040	2050	2060+
CURRENT DEPLETIONS							
Agriculture-Irr & Stock	401	401	401	401	401	401	401
Municipal/Domestic	9	9	9	9	9	9	9
Energy/Industrial	48	48	48	48	48	48	48
Minerals	19	19	19	19	19	19	19
Export	16	16	16	16	16	16	16
Reservoir Evaporation	33	33	33	33	33	33	33
Other	2	2	2	2	2	2	2
TOTAL CURRENT DEPLETIONS	**527**	**527**	**527**	**527**	**527**	**527**	**527**
ANTICIPATED DEPLETIONS							
Agriculture-Irr & Stock	0	4	19	22	22	22	22
Municipal/Domestic	0	1	2	2	3	3	4
Energy/Industrial	0	0	9	17	17	17	17
Minerals	0	8	15	23	27	30	31
Export	0	9	11	15	15	15	15
Reservoir Evaporation	0	4	9	16	16	16	16
TOTAL ANTICIPATED DEPLETIONS	**0**	**26**	**65**	**94**	**99**	**104**	**105**
POTENTIAL DEPLETIONS							
Agriculture-Irr & Stock	0	0	10	15	15	15	15
Mu[illegible]al/Domestic	0	1	2	2	3	4	5
En[illegible]Industrial	0	0	0	52	52	52	52
Minerals	0	2	3	4	4	5	5
Export	0	0	10	20	30	40	50
Reservoir Evaporation	0	3	3	3	3	3	3
TOTAL POTENTIAL DEPLETIONS	**0**	**7**	**28**	**95**	**107**	**118**	**129**
Summary of Depletions	527	559	620	717	733	749	762
Critical Period CRSP Shared Evap. (% of 0.25 maf)	35	35	35	35	35	35	35
TOTAL DEPLETIONS	**562**	**594**	**655**	**752**	**768**	**784**	**797**
Share of 2007 Hydro-Det Amount (6.01 maf)	834	834	834	834	834	834	834
Remaining Available	272	240	180	82	66	50	37
Percent Unused	33	29	22	10	8	6	4

Note 1: This depletion schedule does not attempt to interpret the Colorado River Compact, the Upper Colorado River Basin Compact, or any other element of the "Law of the River." This schedule should not be construed as an acceptance of any assumption that limits the Upper Colorado River Basin's depletion.

Note 2: This depletion schedule is for planning purposes only. This estimate does not constitute an endorsement of the Bureau of Reclamation's 2007 hydrologic determination and should not be construed as in any way limiting the Upper Division states use of Colorado River Water in accordance with the Commission's resolution of 6/6/06.

Note 3: "Shared CRSP Evap." refers to the total and individual state portions of evaporation from the major Reservoirs constructed under the Colorado River Storage Project Act. These projects include Flaming Gorge, the Aspinall Unit reservoirs and Glen Canyon.

Schedule B

Upper Colorado River Division States
Current Depletion and Future Demand Schedule
STATE OF WYOMING
June 20, 2007
(Units: 1000 acre-feet)

ITEM	YEAR						
	2001-2007	2010	2020	2030	2040	2050	2060+
CURRENT DEPLETIONS							
Agriculture-Irr & Stock	401	401	401	401	401	401	401
Municipal/Domestic	9	9	9	9	9	9	9
Energy/Industrial	48	48	48	48	48	48	48
Minerals	19	19	19	19	19	19	19
Export	16	16	16	16	16	16	16
Reservoir Evaporation	33	33	33	33	33	33	33
Other	2	2	2	2	2	2	2
TOTAL CURRENT DEPLETIONS	**527**	**527**	**527**	**527**	**527**	**527**	**527**
ANTICIPATED DEPLETIONS							
Agriculture-Irr & Stock	0	4	19	22	22	22	22
Municipal/Domestic	0	1	2	2	3	3	4
Energy/Industrial	0	0	9	17	17	17	17
Minerals	0	8	15	23	27	30	31
Export	0	9	11	15	15	15	15
Reservoir Evaporation	0	4	9	16	16	16	16
TOTAL ANTICIPATED DEPLETIONS	**0**	**26**	**65**	**94**	**99**	**104**	**105**
POTENTIAL DEPLETIONS							
Agric[illegible]e-Irr & Stock	0	0	10	15	15	15	15
Muni[illegible]./Domestic	0	1	2	2	3	4	5
Energy/Industrial	0	0	0	52	52	52	52
Minerals	0	2	3	4	4	5	5
Export	0	0	10	20	30	40	50
Reservoir Evaporation	0	3	3	3	3	3	3
TOTAL POTENTIAL DEPLETIONS	**0**	**7**	**28**	**95**	**107**	**118**	**129**
TOTAL DEPLETIONS	**527**	**559**	**620**	**717**	**733**	**749**	**762**
Share of 2007 Hydro-Det Amount (5.76maf)[3]	799	799	799	799	799	799	799
Remaining Available	272	240	180	82	66	50	37
Percent Unused	34	30	78	10	8	6	5

Note 1: This depletion schedule does not attempt to interpret the Colorado River Compact, the Upper Colorado River Basin Compact, or any other element of the "Law of the River." This schedule should not be construed as an acceptance of any assumption that limits the Upper Colorado River Basin's depletion.

Note 2: This depletion schedule is for planning purposes only. This estimate does not constitute an endorsement of the Bureau of Reclamation's 2007 hydrologic determination and should not be construed as in any way limiting the Upper Division states use of Colorado River Water in accordance with the Commission's resolution of 6/6/06.

Note 3: The yield determined in the 2007 Hydrologic Determination excluding shared CRSP evaporation and excluding 50,000ac-ft apportioned for use in Arizona.

Schedule A

Upper Colorado River Division States
Current Depletion and Future Demand Schedule
STATE OF NEW MEXICO
June 20, 2007
(Units: 1000 acre-feet)

ITEM	YEAR						
	2001-2007	2010	2020	2030	2040	2050	2060+
CURRENT DEPLETIONS							
Agriculture-Irr & Stock	243	243	243	243	243	243	243
Municipal/Domestic	12	12	12	12	12	12	12
Energy/Industrial	51	51	51	51	51	51	51
Minerals	1	1	1	1	1	1	1
Export	105	105	105	105	105	105	105
Reservoir Evaporation	29	29	29	29	29	29	29
TOTAL CURRENT DEPLETIONS	**441**	**441**	**441**	**441**	**441**	**441**	**441**
ANTICIPATED DEPLETIONS							
Agriculture-Irr & Stock	0	89	130	150	150	150	150
Municipal/Domestic	0	5	22	25	29	29	29
Energy/Industrial	0	4	6	7	7	7	7
Minerals	0	0	0	0	0	0	0
Export	0	0	9	12	15	15	15
Reservoir Evaporation	0	0	0	0	0	0	0
TOTAL ANTICIPATED DEPLETIONS	**0**	**98**	**167**	**194**	**201**	**201**	**201**
POTENTIAL DEPLETIONS							
Agriculture-Irr & Stock	0	0	0	0	0	0	0
Municipal/Domestic	0	0	0	0	0	0	0
En Industrial	0	0	0	0	0	0	0
Mi s	0	0	0	0	0	0	0
Export	0	0	0	0	0	0	0
Reservoir Evaporation	0	0	0	0	0	0	0
TOTAL POTENTIAL DEPLETIONS	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Summary of Depletions	441	539	608	635	642	642	642
Critical Period CRSP Shared Evap. (% of 0.25 maf)	28	28	28	28	28	28	28
TOTAL DEPLETIONS	**469**	**567**	**636**	**663**	**670**	**670**	**670**
Share of 2007 Hydro-Det Amount (6.01 maf)	670	670	670	670	670	670	670
Remaining Available	201	103	34	7	0	0	0
Percent Unused	30	15	5	1	0	0	0

Note 1: This depletion schedule does not attempt to interpret the Colorado River Compact, the Upper Colorado River Basin Compact, or any other element of the "Law of the River." This schedule should not be construed as an acceptance of any assumption that limits the Upper Colorado River Basin's depletion.

Note 2: This depletion schedule is for planning purposes only. This estimate does not constitute an endorsement of the Bureau of Reclamation's 2007 hydrologic determination and should not be construed as in any way limiting the Upper Division states use of Colorado River Water in accordance with the Commission's resolution of 6/6/06.

Note 3: "Shared CRSP Evap." refers to the total and individual state portions of evaporation from the major Reservoirs constructed under the Colorado River Storage Project Act. These projects include Flaming Gorge, the Aspinall Unit Reservoirs and Glen Canyon.

Schedule B

Upper Colorado River Division States
Current Depletion and Future Demand Schedule
STATE OF NEW MEXICO
June 20, 2007
(Units: 1000 acre-feet)

ITEM	YEAR						
	2001-2007	2010	2020	2030	2040	2050	2060+
CURRENT DEPLETIONS							
Agriculture-Irr & Stock	243	243	243	243	243	243	243
Municipal/Domestic	12	12	12	12	12	12	12
Energy/Industrial	51	51	51	51	51	51	51
Minerals	1	1	1	1	1	1	1
Export	105	105	105	105	105	105	105
Reservoir Evaporation	29	29	29	29	29	29	29
TOTAL CURRENT DEPLETIONS	**441**	441	441	441	441	441	441
ANTICIPATED DEPLETIONS							
Agriculture-Irr & Stock	0	89	130	150	150	150	150
Municipal/Domestic	0	5	22	25	29	29	29
Energy/Industrial	0	4	6	7	7	7	7
Minerals	0	0	0	0	0	0	0
Export	0	0	9	12	15	15	15
Reservoir Evaporation	0	0	0	0	0	0	0
TOTAL ANTICIPATED DEPLETIONS	**0**	**98**	**167**	**194**	**201**	**201**	**201**
POTENTIAL DEPLETIONS							
[illegible]ilture-Irr & Stock	0	0	0	0	0	0	0
M[illegible]icipal/Domestic	0	0	0	0	0	0	0
Energy/Industrial	0	0	0	0	0	0	0
Minerals	0	0	0	0	0	0	0
Export	0	0	0	0	0	0	0
Reservoir Evaporation	0	0	0	0	0	0	0
TOTAL POTENTIAL DEPLETIONS	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL DEPLETIONS	**441**	**539**	**608**	**635**	**642**	**642**	**642**
Share of 2007 Hydro-Det Amount (5.76 maf)[3]	642	642	642	642	642	642	642
Remaining Available	201	103	34	7	0	0	0
Percent Unused	31	16	5	1	0	0	0

Note 1: This depletion schedule does not attempt to interpret the Colorado River Compact, the Upper Colorado River Basin Compact, or any other element of the "Law of the River." This schedule should not be construed as an acceptance of any assumption that limits the Upper Colorado River Basin's depletion.

Note 2: This depletion schedule is for planning purposes only. This estimate does not constitute an endorsement of the Bureau of Reclamation's 2007 hydrologic determination and should not be construed as in any way limiting the Upper Division states use of Colorado River Water in accordance with the Commission's resolution of 6/6/06.

Note 3: The yield determined in the 2007 Hydrologic Determination excluding shared CRSP evaporation and excluding 50,000 ac-ft apportioned for use in Arizona.

Schedule A

Upper Colorado River Division States
Current Depletion and Future Demand Schedule
STATE OF UTAH
June 20, 2007
(Units: 1000 acre-feet)

ITEM	YEAR						
	2001-2007	2010	2020	2030	2040	2050	2060+
CURRENT DEPLETIONS							
Agriculture-Irr & Stock	591	591	591	591	591	591	591
Municipal/Domestic	25	25	25	25	25	25	25
Energy/Industrial	45	45	45	45	45	45	45
Minerals	0	0	0	0	0	0	0
Export	207	207	207	207	207	207	207
Reservoir Evaporation (Non CRSP)	19	19	19	19	19	19	19
TOTAL CURRENT DEPLETIONS	**888**	**888**	**888**	**888**	**888**	**888**	**888**
ANTICIPATED DEPLETIONS							
Agriculture-Irr & Stock	0	18	30	34	36	40	40
Municipal/Domestic	0	1	3	4	5	6	6
Energy/Industrial	0	1	4	6	10	15	15
Ute Indian Settlement	0	0	10	40	80	105	105
Minerals	0	0	0	0	0	0	0
Export	0	0	21	61	100	110	110
Reservoir Evaporation	0	0	0	0	0	0	0
TOTAL ANTICIPATED DEPLETIONS	**0**	**20**	**68**	**145**	**231**	**276**	**276**
POTENTIAL DEPLETIONS							
Agriculture-Irr & Stock	0	0	0	0	0	0	0
Munic Domestic	0	0	0	0	0	0	0
Ener dustrial	0	0	0	0	0	0	0
Minerals	0	0	0	0	0	0	0
Export	0	0	0	0	0	0	0
Reservoir Evaporation	0	0	0	0	0	0	0
TOTAL POTENTIAL DEPLETIONS	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Summary of Depletions	888	908	956	1033	1119	1164	1164
Critical Period CRSP Shared Evap. (% of 0.25 maf)	58	58	58	58	58	58	58
TOTAL DEPLETIONS	**945**	**965**	**1013**	**1090**	**1176**	**1221**	**1221**
Share of 2007 Hydro-Det Amount (6.01 maf)	1371	1371	1371	1371	1371	1371	1371
REMAINING AVAILABLE	426	406	358	281	195	150	150
Percent Unused	31	30	26	20	14	11	11

Note 1: This depletion schedule does not attempt to interpret the Colorado River Compact, the Upper Colorado River Basin Compact, or any other element of the "Law of the River." This schedule should not be construed as an acceptance of any assumption that limits the Upper Colorado River Basin's depletion.

Note 2: This depletion schedule is for planning purposes only. This estimate does not constitute an endorsement of the Bureau of Reclamation's 2007 hydrologic determination and should not be construed as in any way limiting the Upper Division states use of Colorado River Water in accordance with the commission's resolution of 6/6/06.

Note 3: "Shared CRSP Evap." refers to the total and individual state portions of evaporation from the major Reservoirs constructed under the Colorado River Storage Project Act. These projects include Flaming Gorge, the Aspinall Unit Reservoirs and Glen Canyon.

Schedule B

Upper Colorado River Division States
Current Depletion and Future Demand Schedule
STATE OF UTAH
June 20, 2007
(Units: 1000 acre-feet)

ITEM	YEAR						
	2001-2007	2010	2020	2030	2040	2050	2060+
CURRENT DEPLETIONS							
Agriculture-Irr & Stock	591	591	591	591	591	591	591
Municipal/Domestic	25	25	25	25	25	25	25
Energy/Industrial	45	45	45	45	45	45	45
Minerals	0	0	0	0	0	0	0
Export	207	207	207	207	207	207	207
Reservoir Evaporation (Non CRSP)	19	19	19	19	19	19	19
TOTAL CURRENT DEPLETIONS	**888**	**888**	**888**	**888**	**888**	**888**	**888**
ANTICIPATED DEPLETIONS							
Agriculture-Irr & Stock	0	18	30	34	36	40	40
Municipal/Domestic	0	1	3	4	5	6	6
Energy/Industrial	0	1	4	6	10	15	15
Ute Indian Settlement	0	0	10	40	80	105	105
Minerals	0	0	0	0	0	0	0
Export	0	0	21	61	100	110	110
Reservoir Evaporation	0	0	0	0	0	0	0
TOTAL ANTICIPATED DEPLETIONS	**0**	**20**	**68**	**145**	**231**	**276**	**276**
F .NTIAL DEPLETIONS							
Agriculture-Irr & Stock	0	0	0	0	0	0	0
Municipal/Domestic	0	0	0	0	0	0	0
Energy/Industrial	0	0	0	0	0	0	0
Minerals	0	0	0	0	0	0	0
Export	0	0	0	0	0	0	0
Reservoir Evaporation	0	0	0	0	0	0	0
TOTAL POTENTIAL DEPLETIONS	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL DEPLETIONS	**888**	**908**	**956**	**1033**	**1119**	**1164**	**1164**
Share of 2007 Hydro-Det Amount (5.76 maf)[3]	1313	1313	1313	1313	1313	1313	1313
REMAINING AVAILABLE	426	406	357	280	194	149	149
Percent Unused	32	31	27	21	15	11	11

Note 1: This depletion schedule does not attempt to interpret the Colorado River Compact, the Upper Colorado River Basin Compact, or any other element of the "Law of the River." This schedule should not be construed as an acceptance of any assumption that limits the Upper Colorado River Basin's depletion.

Note 2: This depletion schedule is for planning purposes only. This estimate does not constitute an endorsement of the Bureau of Reclamation's 2007 hydrologic determination and should not be construed as in any way limiting the Upper Division states use of Colorado River Water in accordance with the Commission's resolution of 6/6/06.

Note 3: The yield determined in the 2007 Hydrologic Determination excluding shared CRSP evaporation and excluding 50,000 ac-ft apportioned for use in Arizona.

Whipple, John J., OSE

From: Don Ostler [dostler@uc.usbr.gov] **Sent:** Thu 5/10/2007 12:24 PM
To: john shields; Randy Seaholm; Whipple, John J., OSE; Robert King
Cc: Jane Bird
Subject: RE: 2007 Depletion Schedules
Attachments:

Hello All:

Thanks John W. for your thoughts on the Depletion Tables. They are good comments. To stimulate this e mail discussion to a conclusion, I have the following thoughts regarding the issues John has raised...

1. Given John W's concern about the "2007" column, I would propose that the column be titled "2001-2007". This would be somewhat consistent with how it was done in 2000 where we showed a column for 1991-1995. This should give the impression of the values being estimated averages.

2. Comment 2....Wyoming and Utah will need to decide if you can accommodate the suggested change to add numbers from these two state specific categories back into the existing categories...

3. Regarding comment number 3, I think John makes some good points about the Hydro Determination is not accepted as our firm cap. I thought that is why we have the footnotes which tend to say we are not limited or bound by it. However, one thing I do like about comparing our to the hydro Det. amount is that I think it shows a commitment by all states to plan and manage our uses within this amount of allocation until we officially establish a new or revised determination accepted and adopted by the Commission. Are we not expecting New Mexico and the other states to limit and plan uses to these amounts until officially changed? Don't all states need to know what each others allowable uses are? Doesn't the Commission need to know the same to meet its obligations and duties? Therefore, I think we should keep the lines which show state uses compared to their share of the current hydro determination, along with the appropriate footnotes so everyone feels comfortable that the Commission may revise the resolution on the hydrologic determination at such time as assumptions and conditions warrant a justified change. But until then, I would argue that these numbers should be viewed as the uses wel are expected to stay within.....That is my view and why I think we need to keep the lines comparing uses to the current hydrologic determination amount....If we are saying we have no agreement on how much each state can use, then it seems we have some important work that we need to do to get a resolution on this... I would like to think we have agreed upon a minimum number, but that number is the limit until we officially agree on something else..

4. Regarding comment number 4. I think if we use schedule B, it avoids most of the problems. With the 2007 hydro det we have tied ourselves to critical period evap...If it helps to clarify things we could elaborate in footnote 3 that the critical period evaporation is 250kaf/yr and the average evaporation is 500kaf/yr, but I am not sure that helps. I think for us to talk now about 6.25 maf is more of a problem than any inconsistency in the tables. The table is our best estimate of our future consumptive uses, and future uses are simply compared to the current hydrologic determination amount(with all its

assumptions).

5. I note 5 changes seem to be an improvement..

>>> "Whipple, John J., OSE" <john.whipple@state.nm.us> 5/10/2007 8:52 AM >>>
All:

1. I am not sure that the first column of depletions should be titled 2007. It wrongly suggests that for New Mexico, depletions will increase by 100,000 af over three years from 2007-2010. I am not aware that any of the states have estimated what their actual depletions will be this year. The New Mexico depletions in the first column represent the average annual depletions under 2005 development conditions (for example, average CIRs with recent [2001-2005] irrigated acres and crop patterns for irrigation depletions, and long-term average San Juan-Chama Project exports). Similarly, the depletions in out years are averages under anticipated development conditions. Perhaps the first column should be noted as reflecting average depletions under current or recent development conditions.

2. I am not clear as to why separate lines are provided for two specific items (WY environmental projects and UT Ute Indian Settlement). Other fish, wildlife and recreation uses and other Indian water rights settlements are not specifically set apart from, and are included within, the six general use categories, and have been in previous UCRC depletion schedules. The WY environmental projects depletion amount constitutes only about 0.03 percent of the total Upper Basin use. Does the UT Ute Indian Settlement provide water for certain categories of use, or does it provide water for undesignated uses? Can the Ute Settlement uses be distributed now based on reasonable assumptions from the settlement terms, subject of course to change when the depletions schedules are updated in a few years? For example, the Jicarilla Apache Nation settlement in 1992 provided rights for municipal and industrial uses, and we now have a better definition of which uses (some amount of municipal/domestic and some amount of energy/industrial) will or may be served by these rights. If the rights of one tribe are identified in the schedules, do the rights of others need to be similarly identified? They all want their rights to be recognized, but are these depletion schedules the place as opposed to each states' backup tables and notes (for example, New Mexico's detailed project/use listing of depletions provided in the May 2006 Draft Hydrologic Determination).

3. Regarding Schedules B for public dissemination, I thought that we were not going to include the last three lines showing 2007 Hydro-Det. Amount, Remaining Available, and Percent Unused. This information is not needed for USBR modeling purposes, and I am not sure we need to publish it given Notes 1 and 2. The information seems somewhat inconsistent with Notes 1 and 2. Also, there is no 2007 Hydro Determination yet (not until the Secretary approves it). At this time, there is only the 2006 Draft Hydro Determination and the UCRC Resolution of June 5, 2006, which Resolution states that the UCRC would not object to the USBR finding that at least 5.76 maf is available for UB development, excluding shared CRSP evaporation. If the 5.76 maf is the floor on UB development, should the schedules show a "Remaining Available" as compared to the 5.76, which seems to suggest that the 5.76 maf is the cap on UB development?

4. Regarding Schedules A for internal UCRC use, it seems inconsistent to include in a table of long-term average depletions the critical period average shared CRSP evaporation. Perhaps one of two options can be pursued: (1) prepare two tables, one with all long-term average depletions and one with all critical period average depletions; or (2) add to the bottom of Schedules A lines for long-term average shared CRSP reservoir evaporation (about 0.5 maf UB total) and average total depletions excluding Arizona (about 6.25 maf UB total). Option 2 would be easiest, and a note could be added explaining that critical period depletions for all uses would be anticipated to be somewhat less than the average depletions shown in the table due to water supply shortages during extended UB drought. Also, a heading should be added to the top of Schedules A stating that they are for UCRC internal use only and are not for distribution (lawyers might also want to add that the Schedules A are attorney-client priviledged communications or work product).

5. Change Note 3 to read: "Shared CRSP Evap." refers to the total and individual state portions of evaporation from certain major reservoirs constructed under the Colorado River Storage Project Act. These reservoirs include Flaming Gorge Reservoir, the Aspinall Unit reservoirs, and Lake Powell.

John Whipple

From: Don Ostler [mailto:dostler@uc.usbr.gov]
Sent: Wed 5/9/2007 4:19 PM
To: John shields; Randy Seaholm; Whipple, John J., OSE; Robert King
Subject: 2007 Depletion Schedules

Hello All:

John Shields has suggested some changes to the schedules which I think are an improvement. Thanks John...Are the rest of you comfortable with
the schedules as attached to this e mail?

If you are in agreement, I only plan to send schedule B to the Commissioners for their meeting...
Thanks
Don Ostler

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Whipple, John J., OSE

From: Whipple, John J., OSE **Sent:** Thu 5/10/2007 8:52 AM
To: Don Ostler; john shields; Randy Seaholm; Robert King
Cc:
Subject: RE: 2007 Depletion Schedules
Attachments:

All:

1. I am not sure that the first column of depletions should be titled 2007. It wrongly suggests that for New Mexico, depletions will increase by 100,000 af over three years from 2007-2010. I am not aware that any of the states have estimated what their actual depletions will be this year. The New Mexico depletions in the first column represent the average annual depletions under 2005 development conditions (for example, average CIRs with recent [2001-2005] irrigated acres and crop patterns for irrigation depletions, and long-term average San Juan-Chama Project exports). Similarly, the depletions in out years are averages under anticipated development conditions. Perhaps the first column should be noted as reflecting average depletions under current or recent development conditions.

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John Whipple

Fro Don Ostler [mailto:dostler@uc.usbr.gov]
Se. Ned 5/9/2007 4:19 PM
To: john shields; Randy Seaholm; Whipple, John J., OSE; Robert King
Subject: 2007 Depletion Schedules

Hello All:

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If you are in agreement, I only plan to send schedule B to the Commissioners for their meeting...
Thanks
Don Ostler

Whipple, John J., OSE

From: Don Ostler [dostler@uc.usbr.gov] **Sent:** Thu 12/21/2006 11:08 AM
To: Randy.Seaholm@dwr.state.co.us; Whipple, John J., OSE; jshiel@seo.wyo.gov; robertking@utah.gov
Cc:
Subject: Conference call
Attachments:

Hello All:
Based upon my discussions with each of your today, we can do a conference call on the Depletion Schedules at 2:30 p.m. today.....

The call in number is 801-524-3640 1-888-420-6860
Passcode 5240

Discussion Items:
1. shall we continue to use the current format for reporting our depletion schedule? current, anticipated and potential??
2. What are you using for current depletions??
3. Are there other coordinating issues we need to discuss regarding the new depletion schedules?
4. Will we be prepared for Commission approval this spring??
5. other

We will try to limit this to 30 minutes as I know some of you are on leave (or shoveling snow)

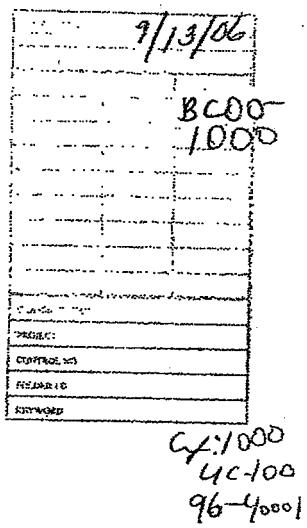
thanks
Don Ostler
801-5 1150

Keep current, antic, potential format

Delete - CRSP evap
- state share of UB depl.
- Remaining allocation lines

Footnote - table exc. shares of CRSP evap.

Lower Division States of the Colorado River Basin
Arizona, California, Nevada



September 6, 2006

The Honorable Dirk Kempthorne
Secretary of the Interior
1849 C Street, N.W.
Washington DC 20240

Re: May 2006 draft Hydrologic Determination regarding the Water Available from Navajo Reservoir and the Upper Colorado River Basin for Use in New Mexico (draft 2006 Hydrologic Determination)

Dear Secretary Kempthorne:

The Lower Division States (Arizona, California, and Nevada) recently received a copy of the May 2006 draft of the Hydrologic Determination regarding the Water Available from Navajo Reservoir and the Upper Colorado River Basin for Use in New Mexico (draft 2006 Hydrologic Determination) prepared by the Bureau of Reclamation. We understand that this document was prepared in coordination with the Upper Colorado River Commission and the Upper Division States (Colorado, New Mexico, Utah, and Wyoming) and that the Upper Colorado Region of the Bureau of Reclamation has recently transmitted the draft of the Hydrologic Determination to the Department of the Interior for approval. The Lower Division States support the resolution of the Navajo Nation's water rights claim; however we wish to bring to your attention some concerns with the draft 2006 Hydrologic Determination and the analysis therein. Our concerns include the following.

Department of the Interior Approval

It is not clear to us how this proposed determination will be processed within the Department of the Interior. Since this matter is tied to an Indian water rights settlement it has been suggested that the determination will be approved by the Assistant Secretary for Indian Affairs. However, the matters addressed below are intricately related to ongoing management responsibilities of Reclamation and the Basin States. Accordingly, we strongly suggest that this determination also be reviewed by the Assistant Secretary for Water and Science.

Coordination with the Lower Division States

The draft 2006 Hydrologic Determination and the findings contained within it raise a number of issues. These include the assumed delivery obligation of the Upper Basin to the Lower Basin; the use of water apportioned to the Upper Basin that is used within the Lower Basin, but charged against the Upper Basin's use (a Compact issue); and the assumptions regarding the determination of available water

supply and yield within the Colorado River Basin, including a revision of the natural flow data base. While the Upper Division States and the Upper Colorado River Commission have had an opportunity to participate and provide input into the draft 2006 Hydrologic Determination, the Lower Division States were not provided a copy of the draft 2006 Hydrologic Determination until after it had been submitted to the Commissioner of Reclamation for approval.

The Lower Division States appreciate the need for the Upper Division States to determine with reasonable certainty the amount of water that is likely to be available to support Upper Division projects while at the same time giving respect to obligations under the 1922 Colorado River Compact. This requires a very careful analysis of potential risk and that risk analysis should be clearly reflected in all documents such as the draft 2006 Hydrologic Determination. We believe that it is important that this determination should be based on a neutral set of assumptions and modeling approaches that do not prejudice either the Upper Division or Lower Division States.

Upper Basin's Water Delivery Obligation to the Lower Basin

The draft 2006 Hydrologic Determination states that: "Nothing in this report is intended to interpret the provisions of the Colorado River Compact (45 Stat. 1057), ..."; however, this determination only utilizes Reclamation's and the Upper Division States' assumptions regarding the water delivery obligation to the Lower Basin during the critical period. As both the Upper Division States and the Department of the Interior are well aware, it is the position of the Lower Division States that the delivery obligation of the Upper Division States to the Lower Division States under Article III(c) of the Colorado River Compact requires that one-half of the 1944 Mexican Treaty obligation and associated conveyance losses be delivered each year in addition to the 75 million acre-feet every ten years required by Article III(d) of the Compact. The Lower Division States' believe that our position regarding the Upper Basin's delivery obligation should be reflected in the hydrologic determination to more fairly show the range of potential risk that is being accepted by the Upper Division States.

incremental only?

Substantive

UB delivery then measured @ Hoover - absorb increase losses against contract de

basis?

Inclusion of Additional Reservoir Storage

The draft 2006 Hydrologic Determination assumes that reservoirs other than those of the Colorado River Storage Project (CRSP) initial units will be used to meet the water demands of the Upper Division States during the critical period of below normal water supply and will be drawn down proportionally with CRSP reservoirs during the critical period. Previous Hydrologic Determinations did not rely on the use of these other reservoirs to determine the water available from Navajo Reservoir and the Upper Colorado River Basin for use in New Mexico. This assumption adds about 4.5 million acre-feet of water that contributes to the yield determination and is utilized during the critical period. Although this water will be available for use in the Upper Division States during the critical period, it will be utilized by specific water right holders and may not be drawn upon in the same fashion as CRSP reservoirs absent the negotiation and execution of operating agreements within the Upper Basin.

used to meet UB demands

Alt. as to reduce uses to reflect depletions in dry years only of flow & not of res. storage. - limits to storage

We question Reclamation's inclusion of this additional storage in the draft 2006 Hydrologic Determination while excluding such storage in its annual determination of whether projected Upper Basin storage is sufficient to meet storage requirements under section 602(a) of the Colorado River Basin Project Act.

Reclamation Analysis and Conclusions

The draft 2006 Hydrologic Determination uses a "mass balance" analysis, rather than Reclamation's Colorado River Simulation System (CRSS), which is the analytical model used in all other decisional documents prepared by Reclamation regarding Colorado River management. The draft 2006 Hydrologic Determination also appears to be based solely on one hydrologic trace—as compared to the nearly 100 traces used to support the seven states' negotiations—and assumes that all reservoirs are full to begin the cycle. Moreover, the trace used in the draft 2006 Hydrologic Determination ends with the year 2000, just as the Colorado River Basin began one of its driest periods on record. These analytical inconsistencies call into question the report's conclusion.

The draft 2006 Hydrologic Determination assumes an overall shortage in the Upper Basin's consumptive use of six percent during the critical period in order to conclude that at least 5.76 million acre-feet of water is available for use by the Upper Basin, exclusive of reservoir evaporation at CRSP reservoirs. In its June 9, 2006, Resolution, the Upper Colorado River Commission opposes the use of this assumption; however absent that assumption, the conclusion reached in the hydrologic determination and supported by the Upper Colorado River Commission may not be valid under either Reclamation's or the Lower Division States' assumption regarding the Upper Basin's delivery obligation under Article III(c) of the Colorado River Compact. Also, several statements are made in the draft 2006 Hydrologic Determination regarding a Colorado River Compact call; however, no analysis, such as that contained in the 1988 Hydrologic Determination was conducted.

Conclusion

The Lower Division States support negotiated water rights settlements with all Tribal nations including the proposed Navajo settlement. We understand that the purpose of the draft 2006 Hydrologic Determination is to support additional Colorado River water use in New Mexico that may be necessary to resolve the water rights claims of the Navajo Nation. While we do support New Mexico's efforts to reach a Navajo settlement, the proposal to divert water in the Upper Basin for use in the Lower Basin raises legal and policy concerns that will need to be addressed in a collaborative setting involving all seven Basin States and included in any legislation authorizing the settlement.

We appreciate this opportunity to express our views regarding Reclamation's May 2006 draft Hydrologic Determination regarding the Water Available from Navajo Reservoir and the Upper Colorado River Basin for Use in New Mexico. Before granting your approval of the draft 2006 Hydrologic Determination, we urge you to direct Reclamation to reexamine its analysis in response to

use 1988 HD in lieu of new one - just adjust CRSP evap in deficit to address critical period evap.

the concerns raised in this letter. We stand ready to work with you, Reclamation and the Upper Division States to address our concerns regarding the draft 2006 Hydrologic Determination and related issues, as well as other issues of mutual interest in the Colorado River Basin.

We would appreciate a response from Reclamation to the concerns raised in this letter. Thank you for your consideration.

this not questioned by CB.

Sincerely,

Herbert R. Guenther

Herbert R. Guenther
Director
Arizona Department of Water Resources

Dana B. Fisher, Jr.
Chairman
Colorado River Board of California

Gerald R. Zimmerman
~~Executive Director~~
Colorado River Board of California

Richard Bunker
Chairman
Colorado River Commission of Nevada

Patricia Mulroy
General Manager
Southern Nevada Water Authority

cc: Upper and Lower Colorado Regional Directors (USBR)
Upper Colorado River Division States
Upper Colorado River Commission

River Outlet Works at Glen Canyon Dam.

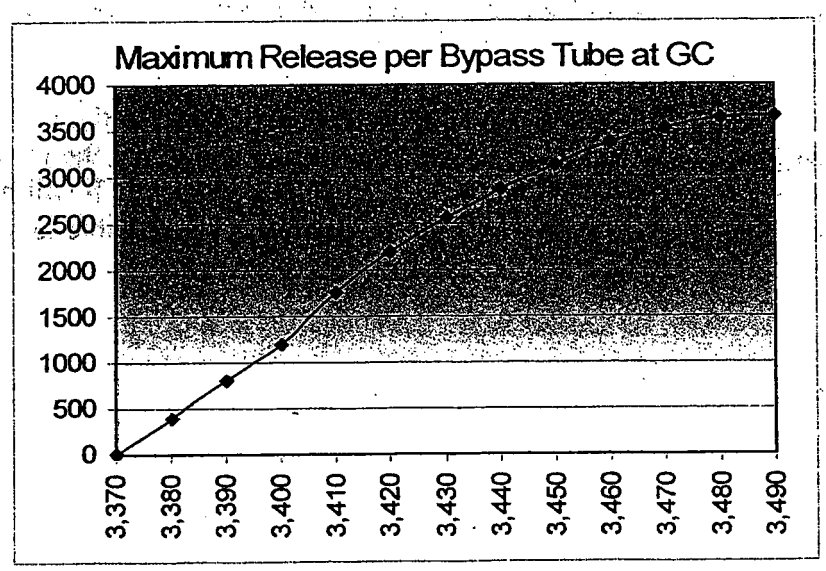
In the majority of the modeling Reclamation performed for the Colorado Basin States the past two years, minimum power pool (elevation 3,490 feet) was not absolutely protected. In very dry hydrologic traces, the model showed the elevation of Lake Powell going below 3,490 feet. In modeling these dry traces for the states, annual releases of 8.23 million acre-feet (maf) continued to be met through use of the river outlet works.

The question has been raised whether the river outlets can deliver 8.23 maf annually when Lake Powell is below 3,490 feet, whether the extended operation of the outlets is safe, and what maintenance issues can be anticipated with extended use of the outlet works.

There are four river outlets at Glen Canyon Dam (96" diameter steel pipes with hollow-jet values for regulation), each with a capacity of 3,750 cfs. The release rate is controlled by the hollow-jet valves from elevation 3,500 feet to 3,700 feet. At elevation 3,700 feet a hollow-jet valve opening of 79% produces the 3,750 cfs. At elevation 3,500 feet, the hollow-jet valve must be fully opened to achieve 3,750 cfs.

At elevations below 3,500 feet with the hollow-jet valve fully opened, the flow is reduced below 3,750 cfs as the head is lowered. At elevation 3,490 feet, for instance, one river outlet with the hollow-jet valve fully opened will release about 3,660 cfs. At elevation 3,460 feet one river outlet will release about 3,380 cfs.[1]

The following plot shows the maximum release in cfs from one hollow jet tube between elevations 3,370 feet (top of dead pool) and 3,490 feet (minimum power pool).



linearly interpolated below 3400 ft.

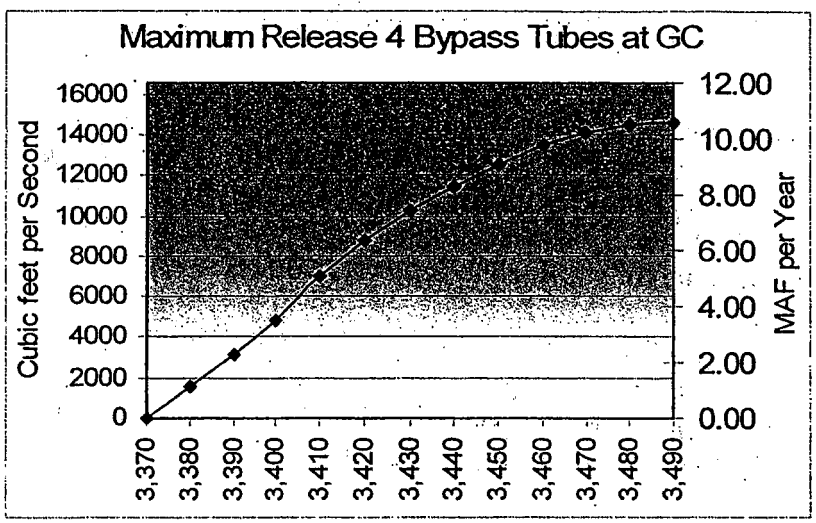
[1] Data taken from "Glen Canyon Dam and Power Plant Technical Record of Design and Construction," Page 164

An annual release of 8.23 maf requires a continuous release of 11,368 cfs. With all four river outlets in service, this release can be achieved down to elevation 3,440 feet. At this elevation the release capacity from the four river outlets is approximately 11,440 cfs (2,860 cfs per unit).

1.9 MAF live storage at 3440 ft

4.0 MAF live storage at 3490 min power pool

The subsequent plot shows the maximum release from 4 hollow jet tubes between elevations 3,370 feet (top of dead pool) and 3,490 feet (minimum power pool). The dual y axis depicts the maximum flow in cfs and the maximum water year release volume in maf (assuming a constant water surface elevation).



Maintenance of the river outlet works is also an important consideration. The outlet works would need to be periodically de-watered and inspected for cavitation or damage from fatigue.

Reclamation is updating the CRSS model to reflect the physical limitations of the river outlets. Maximum release rules will be added to the model to limit the volume of release below 3,490 feet to be consistent with the graphs displayed above. It will be assumed in the CRSS model that all 4 of the bypass tubes will always be available for delivery of water.

Tom Ryan
May 7, 2006

Whip le, John J., OSE

From: Lopez, Estevan, OSE **Sent:** Tue 4/11/2006 6:16 PM
To: Whipple, John J., OSE
Cc:
Subject: Fw: UCRC Mtg May 3
Attachments:

Fyi

Sent from my BlackBerry Device

-----Original Message-----
From: Scott Balcomb <scott@balcombgreen.com>
To: Lopez, Estevan, OSE <estevan.lopez@state.nm.us>
Sent: Tue Apr 11 10:26:07 2006
Subject: RE: UCRC Mtg May 3

Estevan:

Thanks for postponing May 3. I didn't mean to imply that UCRC shouldn't consider the issue. I did want to alert you that there are a number of serious questions that need to be discussed such as those in my Friday, April 7 e-mail. We in Colorado are not necessarily ready to fully take a position at this time.

See y in LV on the 13th.

Scott

-----Original Message-----
From: Lopez, Estevan, OSE [mailto:estevan.lopez@state.nm.us]
Sent: Friday, April 07, 2006 4:59 PM
To: Scott Balcomb; Dantonio, John, OSE
Cc: Russell George Esq.; Rod Kuharich; Ted Kowalski
Subject: RE: UCRC Mtg May 3

Scott,

Sorr d not seen this e-mail as I was working on other things. But as you've probably noticed, I just sent out another e-mail rega: ng May 3rd. I've been convinced that May 3rd doesn't work. Nevertheless, we are interested in getting the UCRC to consider this issue but as I mentioned in the other e-mail, we are open to talking to you and others as to what the correct time for this might be.

I hope to see you in LV on the 13th.

Estev

From: Scott Balcomb [mailto:scott@balcombgreen.com]
Sent: Friday, April 07, 2006 3:25 PM
To: Lopez, Estevan, OSE
Cc: Russell George Esq.; Rod Kuharich; Ted Kowalski
Subject: UCRC Mtg May 3

Estevan:

In representing Colorado's interest on the UCRC, I make a decided effort to solicit suggestions, input and advice from various Colorado River interests. In following this procedure, I have learned that there is at least a little concern among other Colo. River water users about the speed with which NM is trying to move the Hydrologic Determination issue through the Commission. Also, it is taking us time to "digest" your and John's responses to my original set of questions. I do not see how, with the other things I am committed to between now and May 3, that we will be ready to have a Commission meeting. (Since no meeting had been scheduled on May 3, I had already scheduled surgery for May 2 and I doubt if I will be available).

One water user questions whether reducing the CRSP evaporation works to the benefit or the detriment of the Upper Basin, in calculating the 602A algorithm. The suggestion is that if we formerly approve of the reduced evaporation, we may be putting ourselves in a position where the 602A storage is only minimum power pool plus 650,000 AF.

Secondly, we haven't addressed one of the specific issues that deals with AZ, and the ephemeral tributary suggestions made in your original suggestions. What happens to our position vis a vis the Gila River, if the Commission formally approves NM's suggested treatment of use on ephemeral tributaries?

We know how interested NM is in resolving this matter and we remain very sympathetic to the project as a whole. We are, however, going to need more time to digest and form a consensus on this matter than May 3 will allow.

Please let me know if this is a problem.

Very truly yours,

Scott Balcomb

~~John Whipple~~
SJ-3
ALP

Friday, October 9, 2009 THE NEW MEXICAN C-3

Navajo pipeline contract awarded

GALLUP — The U.S. Interior Department has awarded a $277 million contract for the construction of a water pipeline on the Navajo reservation in northwestern New Mexico. The Navajo Engineering and Construction Authority will use the funds to build the remaining 21-mile stretch of the pipeline.

Interior Secretary Ken Salazar says the contract signifies progress toward completion of the Animas-La Plata project, which will provide water to the Navajo Nation, Southern Ute Indian Tribe, Ute Mountain Ute Tribe and people in the Four Corners [illegible]

The N[illegible] [illegible] authorized [illegible]

REGION

[illegible]mas-La Plata project in 2000 to provide for the delivery of 4,680 acre-feet of municipal and industrial water per year from Farmington to Shiprock.

Whipple, John J., OSE

From: Lopez, Estevan, OSE **Sent:** Tue 3/6/2007 3:43 PM
To: Whipple, John J., OSE
Cc:
Subject: FW: ALP background documents 2 of 2 -- Motion to Reconsider and Revised Amended Decree
Attachments: Motion to Reconsider.pdf(144KB) 02CW85 86 Amending Decree.pdf(66KB)

-----Original Message-----
From: Liz Taylor [mailto:etaylor@taylormccaleb.com]
Sent: Tuesday, March 06, 2007 11:17 AM
To: Lopez, Estevan, OSE; Trujillo, Tanya, OSE
Cc: Randy Kirkpatrick; sjwcoffice@sjwc.org
Subject: ALP background documents 2 of 2 -- Motion to Reconsider and Revised Amended Decree

Hi,

Attached are the Motion to Reconsider filed by the Utes in December 2006 and the revision of the amended decree filed by the court in February 2007.

These are all the documents I can put my hands(or my e-mail) on right now, but I'll be obtaining the other relevant documents as soon as I can.

Thanks. Liz
Eliza Newlin Taylor
Attorney
Taylor & McCaleb, P.A.
P.O. Box 2540
Corrales, NM 87048-2540

Email: etaylor@taylormccaleb.com
(505) 888-6600 (Phone)
(505) 888-6640 (Fax)