
MEMORANDUM

**Subject: Bear River Basin Plan
Key Structures and Diversions
EVANSTON WATER DITCH**

Date: August 7, 2000

Diversion Description: The headgate structure consists of a concrete headwall with a 48-inch wood slide gates. The south gate and outlet ditch has been abandoned. The north gate feeds into a 48-inch squash culvert through the dike. The river is diverted using wood planks supported on railroad ties driven vertically into the ground.



Evanston Ditch Headgate

Diversion Location: Diversion is on the Upper Bear in Wyoming as shown on the location map hereafter.

Latitude N 41° 13' 09.3"
Longitude W 110° 53' 54.3"

Conveyance Description: Open channel canal, approximately 47,520 feet in length.¹

Direct Flow Water Rights:²

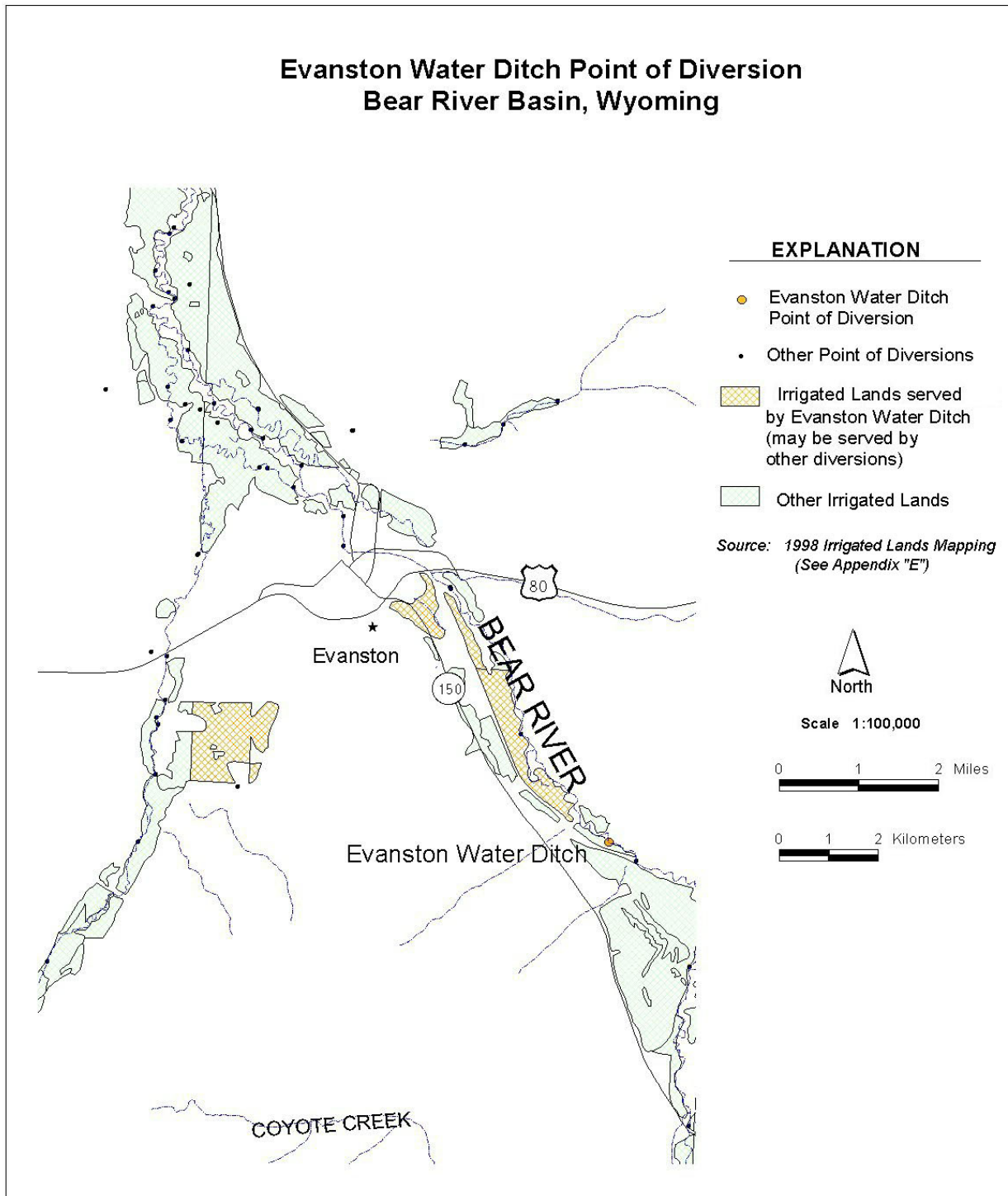
Priority Date	Permit Number	Permitted Use	Permitted Acres	Flow (CFS)	Cumulative (CFS)	Comments
03-28-1875	TERR	Irrigation	501.19	7.16	7.16	
03-28-1875	TERR	Irrigation	20	0.28	7.44	
03-28-1875	TERR	Irrigation	27.92	0.39	7.83	
-1888	TERR	Irrigation, Domestic, Storage	110	1.57	9.40	

06-29-1906	1569E	Irrigation, Domestic, Storage	40	0.57	9.97	
09-22-1915	3520E	Irrigation, Domestic, Storage	308	4.41	14.38	
09-22-1915	3520E	Irrigation, Domestic, Storage	20.79	0.30	14.68	
09-22-1915	3520E	Irrigation, Domestic, Storage	115	1.64	16.32	
09-22-1915		Supplemental Supply, Domestic, Storage		33		<i>East (Sulphur Creek Canyon Springs)</i>
09-22-1915	3520E	Irrigation, Domestic, Storage	242	2.46	19.77	
09-22-1915		Supplemental Supply, Domestic, Storage		232.00		<i>East (Sulphur Creek Canyon Springs)</i>

Associated Storage Rights:

Reservoir	Shareholder	Volume (Acre-ft)	Est. % of Shares Used this Diversion ³	Comments
Sulphur Creek	Duane Carpenter	263	100%	
Sulphur Creek	Lowham Ranch LTD	444	70%	
Sulphur Creek	Eldon Perkins	11	100%	
Sulphur Creek	Ellsworth Pexton	102	100%	
Sulphur Creek	Fred Stahley	219	100%	
Sulphur Creek	Ralph Stahley	16	100%	
Sulphur Creek	James Trout	3	100%	
Sulphur Creek	Wyoming State Hosp.	478	100%	

Evanston Water Ditch Point of Diversion Bear River Basin, Wyoming



Irrigation Practices: Land is all flood irrigated..³

Estimated Diversion Efficiency:

Calculated Diversion Efficiency = Conveyance Efficiency X Application Efficiency:

Conveyance Efficiency:	65%
Application Efficiency:	<u>55%</u>
Overall Diversion Efficiency:	36%

Conveyance efficiency is estimated based on total length of main canal. Application efficiency for flood irrigation and sprinkler irrigation is estimated at 55% and 85% respectively..

Crop Types / Consumptive Use: Water is used primarily to irrigate mixed meadow grasses, primarily Meadow Foxtail, Redtop, etc. There is a some alfalfa in the Yellowcreek area. They rely on reservoir water for their second crop.

Return Flows: Return flow is primarily intercepted by the Rocky Mountain & Blythe Canal.

The following return flow pattern was adopted for modeling in this study are as follows:

<u>Month</u> <u>(after initial Diversion)</u>	<u>Percent of Return</u>
0	70%
1	20%
2	10%
3	<u>0%</u>
	100%

References:

- 1) *USDA -Soil Conservation Service Economic Research Service-Forest Service in Cooperation with the States of Idaho, Utah, Wyoming, Irrigation Conveyance Systems, Working Paper for the Bear River Basin Type IV Study, Idaho-Utah-Wyoming, April 1976*
- 2) *Water rights summary obtained from State Engineer Interstate Reglist – revised April 14, 1999*
- 3) *Irrigation practices based on field investigation and interview with Mr. Don Shoemaker, Water Hydrographer-Commissioner – November 12,1999.*
- 4) *State of Utah Natural Resources, Water Budget Studies – Utah, Bear River Study Area, September 1994*

**BEAR RIVER WYOMING DIVERSIONS
MONTHLY DIVERSION RECORDS**

EVANSTON WATER DITCH

YEAR	MAY			JUNE			JULY			AUGUST			SEPTEMBER		
	Total of Daily Ave for Month	Average CFS	Monthly Total Ac-Ft	Total of Daily Ave for Month	Average CFS	Monthly Total Ac-Ft	Total of Daily Ave for Month	Average CFS	Monthly Total Ac-Ft	Total of Daily Ave for Month	Average CFS	Monthly Total Ac-Ft	Total of Daily Ave for Month	Average CFS	Monthly Total Ac-Ft
*1970															
1971	0	0.0	0.0	948	31.6	1880.3	813	26.2	1612.6	744	24.0	1475.7	228	7.6	452.2
1972	66	2.1	130.9	868	28.9	1721.7	581	18.7	1152.4	657	21.2	1303.1	0	0.0	0.0
1973	86	2.8	170.6	1041	34.7	2064.8	589	19.0	1168.3	589	19.0	1168.3	30	1.0	59.5
1974	55	1.8	109.1	1049	35.0	2080.7	566	18.3	1122.6	517	16.7	1025.5	97	3.2	192.4
1975	57	1.8	113.1	677	22.6	1342.8	725	23.4	1438.0	734	23.7	1455.9	174	5.8	345.1
1976	1	0.0	2.0	853	28.4	1691.9	772	24.9	1531.2	331	10.7	656.5	355	11.8	704.1
1977	235	7.6	466.1	619	20.6	1227.8	266	8.6	527.6	105	3.4	208.3	89	3.0	176.5
1978	134	4.3	265.8	691	23.0	1370.6	657	21.2	1303.1	296	9.5	587.1	214	7.1	424.5
1979	192	6.2	380.8	698	23.3	1384.5	531	17.1	1053.2	321	10.4	636.7	135	4.5	267.8
1980	0	0.0	0.0	349	11.6	692.2	572	18.5	1134.5	338	10.9	670.4	220	7.3	436.4
1981	3	0.1	6.0	411	13.7	815.2	433	14.0	858.8	393	12.7	779.5	197	6.6	390.7
1982	0	0.0	0.0	508	16.9	1007.6	480	15.5	952.1	404	13.0	801.3	218	7.3	432.4
1983	0	0.0	0.0	0	0.0	0.0	649	20.9	1287.3	171	5.5	339.2	5	0.2	9.9
1984	0	0.0	0.0	238	7.9	472.1	317	10.2	628.8	328	10.6	650.6	108	3.6	214.2
1985	135	4.4	267.8	419	14.0	831.1	445	14.4	882.6	332	10.7	658.5	199	6.6	394.7
1986	0	0.0	0.0	300	10.0	595.0	316	10.2	626.8	348	11.2	690.2	65	2.2	128.9
1987	350	11.3	694.2	356	11.9	706.1	443	14.3	878.7	197	6.4	390.7	32	1.1	63.5
1988	318	10.3	630.7	590	19.7	1170.2	530	17.1	1051.2	291	9.4	577.2	143	4.8	283.6
1989	534	17.2	1059.2	589	19.6	1168.3	553	17.8	1096.9	484	15.6	960.0	162	5.4	321.3
1990	311	10.0	616.9	609	20.3	1207.9	491	15.8	973.9	444	14.3	880.7	336	11.2	666.4
1991	193	6.2	382.8	592	19.7	1174.2	483	15.6	958.0	473	15.3	938.2	317	10.6	628.8
1992	488	15.7	967.9	609	20.3	1207.9	437	14.1	866.8	271	8.7	537.5	138	4.6	273.7
1993	55	1.8	109.1	442	14.7	876.7	483	15.6	958.0	375	12.1	743.8	178	5.9	353.1
1994	320	10.3	634.7	496	16.5	983.8	452	14.6	896.5	392	12.6	777.5	176	5.9	349.1
1995	0	0.0	0.0	278	9.3	551.4	347	11.2	688.3	387	12.5	767.6	185	6.2	366.9
1996	196	6.3	388.8	573	19.1	1136.5	479	15.5	950.1	419	13.5	831.1	241	8.0	478.0
1997	62.7	2.0	124.4	346.3	11.5	686.9	487	15.7	966.0	373	12.0	739.8	71.8	2.4	142.4
1998	108	3.5	214.2	167.7	5.6	332.6	412.6	13.3	818.4	426.5	13.8	846.0	241	8.0	478.0
1999	4	0.1	7.9	313	10.4	620.8	452	14.6	896.5	362	11.7	718.0	149	5.0	295.5

AVERAGES **4.3** **267.0** **18.0** **1069.0** **16.4** **1009.6** **12.8** **786.7** **5.4** **321.7**

Notes: *1. No published records are available for this diversion for 1970
2. Evanston Water Ditch is one of the first regulated. It utilizes approximately 50% Sulphur Creek storage water from July 1 to mid-September.