
MEMORANDUM

Subject: **Bear River Basin Plan**
 Key Structures and Diversions
 ANEL DIVERSION

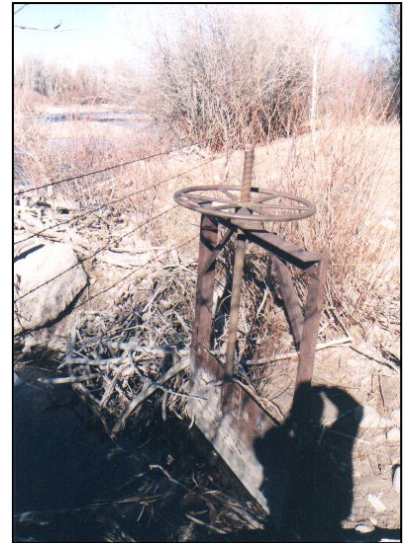
Date: August 7, 2000

Diversion Description: The Anel headgate structure consists of a 48-inch CMP culvert with a slide gate. The structure appears to be 60% to 40% buried. It tends to periodically plug up during in the spring.

Diversion Location: Diversion is on the Upper Bear in Wyoming. Irrigated lands are located in Wyoming.

Latitude N 41° 10' 09.4"
Longitude W 110° 52' 38.1"

Conveyance Description: Open channel ditch, approximately 10,560 feet in length.¹



Anel Ditch headgate

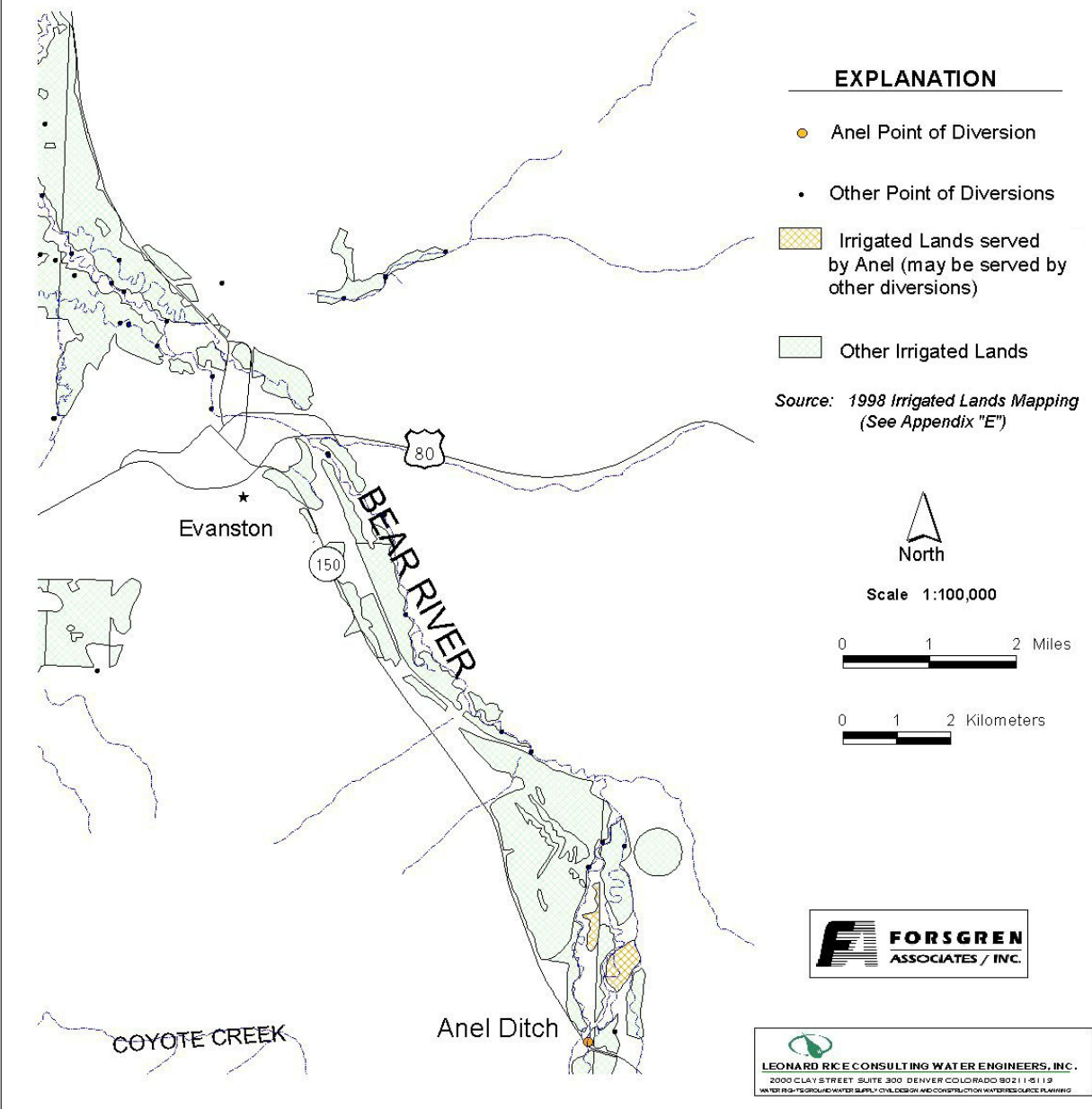
Direct Flow Water Rights:²

Priority Date	Permit Number	Permitted Use	Permitted Acres	Flow (CFS)	Cumulative (CFS)	Comments
04-15-1887	TERR	Irrigation	295	4.21	4.21	
04-19-1904	59582	Irrigation	31.2	0.94	12.18	
05-24-1978	6847E	Irrigation	102.2	1.46	6.11	

Associated Storage Rights:

Reservoir	Shareholder	Volume (Acre-ft)	Est. % of Shares Used this Diversion ³	Comments
Sulphur Creek	Dennis Cornelison	207	50%	By Exchange

Anel Point of Diversion Bear River Basin, Wyoming



Irrigation Practices: Land is all flood irrigated..³

Estimated Diversion Efficiency: Conveyance losses are relatively high due to porous nature of soils in the higher reaches of the Upper Bear.

Calculated Diversion Efficiency = Conveyance Efficiency X Application Efficiency:

Conveyance Efficiency:	55%
Application Efficiency:	<u>55%</u>
Overall Diversion Efficiency:	30%

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 entirely to irrigate mixed meadow grasses, primarily Meadow Foxtail, Redtop, etc.³

Return Flows: Return flow is primarily intercepted by the main channel of the Bear River between the Mill Creek and Sulphur Creek confluences.

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	0%

Other Operational Information: The Anel Ditch is typically operated from May through mid-August of each year.³

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's Office – 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**

ANEL

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	60	1.9	119.0	425	14.2	843.0	47	1.5	93.2	319	10.3	632.7	211	7.0	418.5
1972	117	3.8	232.1	488	16.3	967.9	131	4.2	259.8	119	3.8	236.0	0	0.0	0.0
1973	0	0.0	0.0	268	8.9	531.6	137	4.4	271.7	83	2.7	164.6	132	4.4	261.8
1974	109	3.5	216.2	79	2.6	156.7	118	3.8	234.0	6	0.2	11.9	6	0.2	11.9
1975	91	2.9	180.5	170	5.7	337.2	611	19.7	1211.9	37	1.2	73.4	32	1.1	63.5
1976	237	7.6	470.1	135	4.5	267.8	137	4.4	271.7	78	2.5	154.7	69	2.3	136.9
1977	91	2.9	180.5	118	3.9	234.0	50	1.6	99.2	0	0.0	0.0	0	0.0	0.0
1978	179	5.8	355.0	461	15.4	914.4	171	5.5	339.2	41	1.3	81.3	46	1.5	91.2
1979	76	2.5	150.7	145	4.8	287.6	103	3.3	204.3	43	1.4	85.3	0	0.0	0.0
1980	27	0.9	53.6	432	14.4	856.9	136	4.4	269.8	67	2.2	132.9	36	1.2	71.4
1981	110	3.5	218.2	248	8.3	491.9	32	1.0	63.5	41	1.3	81.3	0	0.0	0.0
1982	40	1.3	79.3	294	9.8	583.1	217	7.0	430.4	84	2.7	166.6	217	7.2	430.4
1983	204	6.6	404.6	24	0.8	47.6	149	4.8	295.5	64	2.1	126.9	34	1.1	67.4
1984	0	0.0	0.0	332	11.1	658.5	204	6.6	404.6	0	0.0	0.0	24	0.8	47.6
1985	59	1.9	117.0	825	27.5	1636.4	379	12.2	751.7	54	1.7	107.1	12	0.4	23.8
1986	27	0.9	53.6	0	0.0	0.0	259	8.4	513.7	53	1.7	105.1	247	8.2	489.9
1987	333	10.7	660.5	455	15.2	902.5	141	4.5	279.7	119	3.8	236.0	82	2.7	162.6
1988	249	8.0	493.9	238	7.9	472.1	155	5.0	307.4	0	0.0	0.0	0	0.0	0.0
1989	213	6.9	422.5	266	8.9	527.6	147	4.7	291.6	69	2.2	136.9	9	0.3	17.9
1990	121	3.9	240.0	132	4.4	261.8	143	4.6	283.6	56	1.8	111.1	0	0.0	0.0
1991	64	2.1	126.9	176	5.9	349.1	65	2.1	128.9	23	0.7	45.6	14	0.5	27.8
1992	105	3.4	208.3	127	4.2	251.9	61	2.0	121.0	0	0.0	0.0	38	1.3	75.4
1993	36	1.2	71.4	325	10.8	644.6	234	7.5	464.1	43	1.4	85.3	99	3.3	196.4
1994	41	1.3	81.3	256	8.5	507.8	117	3.8	232.1	72	2.3	142.8	25	0.8	49.6
1995	59	1.9	117.0	405	13.5	803.3	14	0.5	27.8	68	2.2	134.9	137	4.6	271.7
1996	2	0.1	4.0	765	25.5	1517.4	205	6.6	406.6	4	0.1	7.9	19	0.6	37.7
1997	62.3	2.0	123.6	525	17.5	1041.3	211	6.8	418.5	185.7	6.0	368.3	151.9	5.1	301.3
1998	394.8	12.7	783.1	318.4	10.6	631.5	186.8	6.0	370.5	109.8	3.5	217.8	27.1	0.9	53.8
1999	15	0.5	29.8	570	19.0	1130.6	383	12.4	759.7	99	3.2	196.4	35	1.2	69.4

AVERAGES

3.5 213.5

10.3 615.7

5.5 338.1

2.2 132.5

2.0 116.5

Notes: *1. No published records are available for this diversion for 1970