
MEMORANDUM

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

Date: August 7, 2000

Diversion Description: The headgate structure consists of a 36-inch CMP with a rectangular slide gate set into a concrete headwall.



Diversion Location: The Goodell Diversion is the highest diversion on Pine Creek, tributary to Smiths Fork, tributary the Bear River. See location map hereafter.

Latitude N 4.2° 06' 11.5"
Longitude W 110° 51' 04.5"

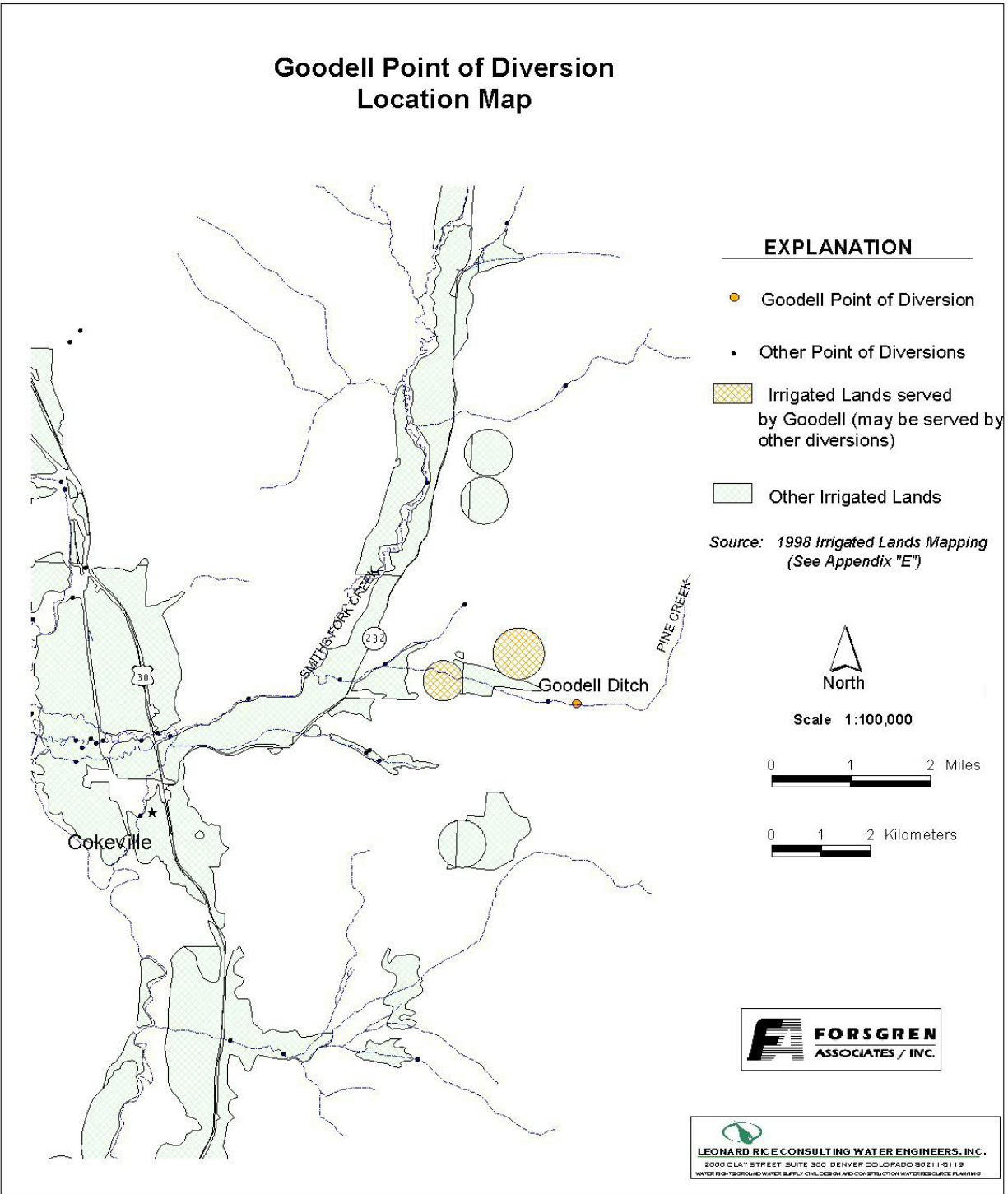
Conveyance Description: Open channel canal¹

Goodell headgate

Direct Flow Water Rights:²

Priority Date	Permit Number	Permitted Use	Permitted Acres	Flow (CFS)	Cumulative (CFS)	Comments
-1887	TERR	Irrigation, Domestic, Storage	287	4.10	4.10	
-1887	TERR	Irrigation, Domestic, Storage	296	4.23	8.33	<i>No Irr. right from June 15 to Sept. 15 each year</i>
09-09-1915	3512E	Irrigation	215	3.07	11.40	<i>Irr. right limited from June 15 to Sept. 15 each year</i>
09-09-1915	3513E	Irrigation, Storage	111.17	1.58	12.98	

Goodell Point of Diversion Location Map



Associated Storage Rights: None

Irrigation Practices: Land is irrigated using circular pivots sprinklers. ³

Estimated Diversion Efficiency:

Calculated Diversion Efficiency = Conveyance Efficiency X Application Efficiency:

Conveyance Efficiency:	55%
Application Efficiency:	<u>85%</u>
Overall Diversion Efficiency:	47%

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: The primary crop irrigated from this canal is alfalfa. ³

Return Flows: Return flow is primarily captured by Brunner Creek and/or the DC&P Ditch.

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	50%
1	25%
2	15%
3	<u>10%</u>
	100%

Other Operational Information: Surface flows in Pine Creek tend to disappear into the ground by mid-July when diverting. Pine Creek was decreed a “futile call” by the courts, and as a result it is not regulated for the benefit of more senior water rights on Smiths Fork. There are only two irrigators taking water directly from Pine Creek. Only one irrigator (Thornock) utilizes the Goodell Ditch.

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. Kevin Wilde, Water Hydrographer / Commissioner – November 30, 1999.*
- 4) *State of Utah Natural Resources, Water Budget Studies – Utah, Bear River study Area, September 1994*

**BEAR RIVER WYOMING DIVERSIONS
MONTHLY DIVERSION RECORDS**

**GOODELL
(on Pine Creek)**

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	178	5.7	353.1	131	4.4	259.8	123	4.0	244.0	110	3.5	218.2	120	4.0	238.0
1971	379	12.2	751.7	392	13.1	777.5	320	10.3	634.7	337	10.9	668.4	307	10.2	608.9
1972	26	0.8	51.6	338	11.3	670.4	325	10.5	644.6	287	9.3	569.3	276	9.2	547.4
1973	0	0.0	0.0	267	8.9	529.6	248	8.0	491.9	248	8.0	491.9	240	8.0	476.0
1974	277	8.9	549.4	254	8.5	503.8	292	9.4	579.2	301	9.7	597.0	270	9.0	535.5
1975	126	4.1	249.9	311	10.4	616.9	302	9.7	599.0	287	9.3	569.3	300	10.0	595.0
1976	250	8.1	495.9	278	9.3	551.4	310	10.0	614.9	40	1.3	79.3	0	0.0	0.0
1977	186	6.0	368.9	184	6.1	365.0	199	6.4	394.7	217	7.0	430.4	252	8.4	499.8
1978	0	0.0	0.0	167	5.6	331.2	255	8.2	505.8	273	8.8	541.5	270	9.0	535.5
1979	0	0.0	0.0	172	5.7	341.2	218	7.0	432.4	124	4.0	246.0	0	0.0	0.0
1980	104	3.4	206.3	157	5.2	311.4	234	7.5	464.1	241	7.8	478.0	159	5.3	315.4
1981	58	1.9	115.0	141	4.7	279.7	217	7.0	430.4	217	7.0	430.4	140	4.7	277.7
1982	0	0.0	0.0	172	5.7	341.2	219	7.1	434.4	137	4.4	271.7	62	2.1	123.0
1983	0	0.0	0.0	66	2.2	130.9	205	6.6	406.6	101	3.3	200.3	18	0.6	35.7
1984	0	0.0	0.0	103	3.4	204.3	123	4.0	244.0	165	5.3	327.3	64	2.1	126.9
1985	98	3.2	194.4	180	6.0	357.0	175	5.6	347.1	101	3.3	200.3	43	1.4	85.3
1986	40	1.3	79.3	126	4.2	249.9	140	4.5	277.7	136	4.4	269.8	21	0.7	41.7
1987	232	7.5	460.2	237	7.9	470.1	211	6.8	418.5	217	7.0	430.4	210	7.0	416.5
1988	70	2.3	138.8	192	6.4	380.8	186	6.0	368.9	164	5.3	325.3	60	2.0	119.0
1989	248	8.0	491.9	219	7.3	434.4	217	7.0	430.4	217	7.0	430.4	210	7.0	416.5
1990	97	3.1	192.4	206	6.9	408.6	216	7.0	428.4	143	4.6	283.6	0	0.0	0.0
1991	133	4.3	263.8	203	6.8	402.6	208	6.7	412.6	183	5.9	363.0	168	5.6	333.2
1992	165	5.3	327.3	125	4.2	247.9	124	4.0	246.0	40	1.3	79.3	0	0.0	0.0
1993	93	3.0	184.5	151	5.0	299.5	192	6.2	380.8	192	6.2	380.8	70	2.3	138.8
1994	74	2.4	146.8	210	7.0	416.5	219	7.1	434.4	153	4.9	303.5	206	6.9	408.6
1995	36	1.2	71.4	231	7.7	458.2	264	8.5	523.6	240	7.7	476.0	147	4.9	291.6
1996	86	2.8	170.6	138	4.6	273.7	112	3.6	222.1	112	3.6	222.1	46	1.5	91.2
1997	43.5	1.4	86.3	6.8	0.2	13.5	249.1	8.0	494.1	120	3.9	238.0	63.5	2.1	126.0
1998	88.6	2.9	175.7	162.7	5.4	322.7	224.2	7.2	444.7	233	7.5	462.1	173.2	5.8	343.5

AVERAGES

3.4 211.2

6.3 377.6

7.0 432.8

5.9 365.0

4.5 266.4