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**MEMORANDUM**

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

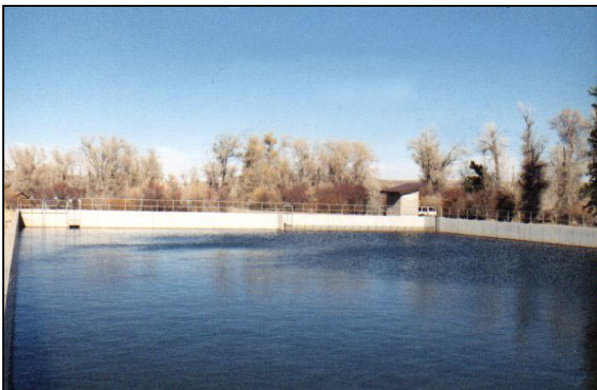
**Date:**         August 7, 2000

**Diversion Description:** The Evanston headgate structure consists of a permanent notched concrete cut-off wall constructed across the river. The wall can be raised during low flows using boards. Historically this has not been required. The water is diverted into a concrete settling basin approximately 142 feet wide by 250 feet long. The headwall of the basin has a trash rack and a series of inlet gates (three (3) 4' x 6' slide gates and nine (9) 24-inch canal gates) at varying elevations to control inflow. Water is delivered



*Evanston Intake Facility on the Bear River*

from the basin to control building located about 600 feet downstream through a 36-inch steel pipe. Flow is measured at that building using a Parshall Flume.



*Evanston Intake Settling Basin*

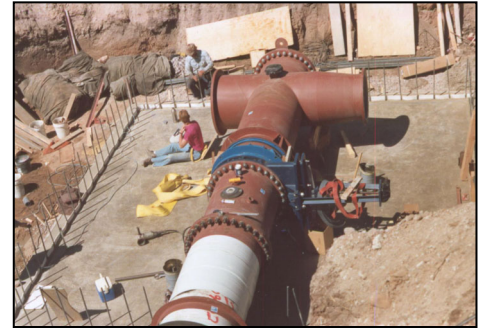
The facility also includes an infiltration gallery with approximately 3300 linear feet of 12-inch diameter perforated pipe under the river. The infiltration gallery is located immediately upstream of the cut-off wall and has an estimated capacity of approximately 8 CFS. Water is delivered from the gallery to the control building through a 24-inch pipe. Flow is measured in that building using a second Parshall Flume.

The Evanston Pipeline and Diversion facilities were constructed and placed in service in 1989.<sup>2</sup>

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

Latitude      N 41° 08' 57.0"  
 Longitude    W 110° 52' 47.0"

**Conveyance Description:** Water is conveyed through 24,000 feet of 36-inch steel pipeline north to a junction vault located on the north side of Highway 150 . From the junction vault, water can be conveyed to and from Sulphur Creek Reservoir through 11,200 feet of 36-inch steel pipeline. Water is also conveyed from the junction vault to the City of Evanston through approximately 7 miles of 30-inch steel pipeline. The junction vault is metered to record water delivery to and from the reservoir as well as delivery to the city. <sup>3</sup>



**Construction Photo of Evanston Pipeline junction vault**

**Direct Flow Water Rights:<sup>1</sup>**

Priority Date	Permit Number	Permitted Use	Permitted Acres	Flow (CFS)	Cumulative (CFS)	Comments
-1869	TERR	Irrigation, RR	4.50	0.60	0.60	PL, Pump, Tank at Evanston
-0328-1875	TERR	Municipal	63.02 A/F	0.33	0.93	Evanston Ditch (May-Sept)
03-28-1875	TERR	Municipal	94.50 A/F	0.45	1.38	Evanston Ditch (May 15 -Sept)
03-28-1875	TERR	Municipal	76.06 A/F	0.39	1.77	Evanston Ditch (May 15 -Sept)
03-28-1875	TERR	Municipal	106.05 A/F	0.50	2.27	Evanston Ditch (May 15 -Sept)
-1875	TERR	Irrigation, Municipal, Storage		4.00	6.27	Evanston Water Supply Ditch
08-28-1893	563	Irrigation, Municipal, Dom., Storage		3.00	9.27	Evanston Water Supply Ditch
03-29-1901	693E	Municipal	178.5 A/F	0.85	10.12	Enl Anderson (May 15 -Sept)
01-11-1902	3643	RR		0.27	10.39	PL, Windmill, Pump, Tanks at Mills
09-22-1915	3520E	Municipal	99.27 A/F	0.51	10.90	Evanston Water Ditch (May -Sept)

09-22-1915	3520E	Municipal	143.85 A/F	0.69	11.59	<i>Evanston Water Ditch (May 15 –Sept)</i>
09-28-1933	4942E	Municipal	52.50 A/F	0.25	11.84	<i>Evanston Water Supply Ditch (May 15 -Sept)</i>
04-17-1974	24325	Municipal		7.55	19.39	
02-01-1988	6911E	RS	14060.3 A/F			<i>Enl Sulphur Creek Reservoir</i>

**Associated Storage Rights:**

Reservoir	Shareholder	Volume (Acre-ft)	Est. % of Shares Used this Diversion <sup>3</sup>	Comments
Sulphur Creek	City of Evanston	12,837	100%	

**Irrigation Practices:** Not Applicable. Water is all municipal use.

**Estimated Diversion Efficiency:** Not Applicable.

**Crop Types / Consumptive Use:** Not Applicable

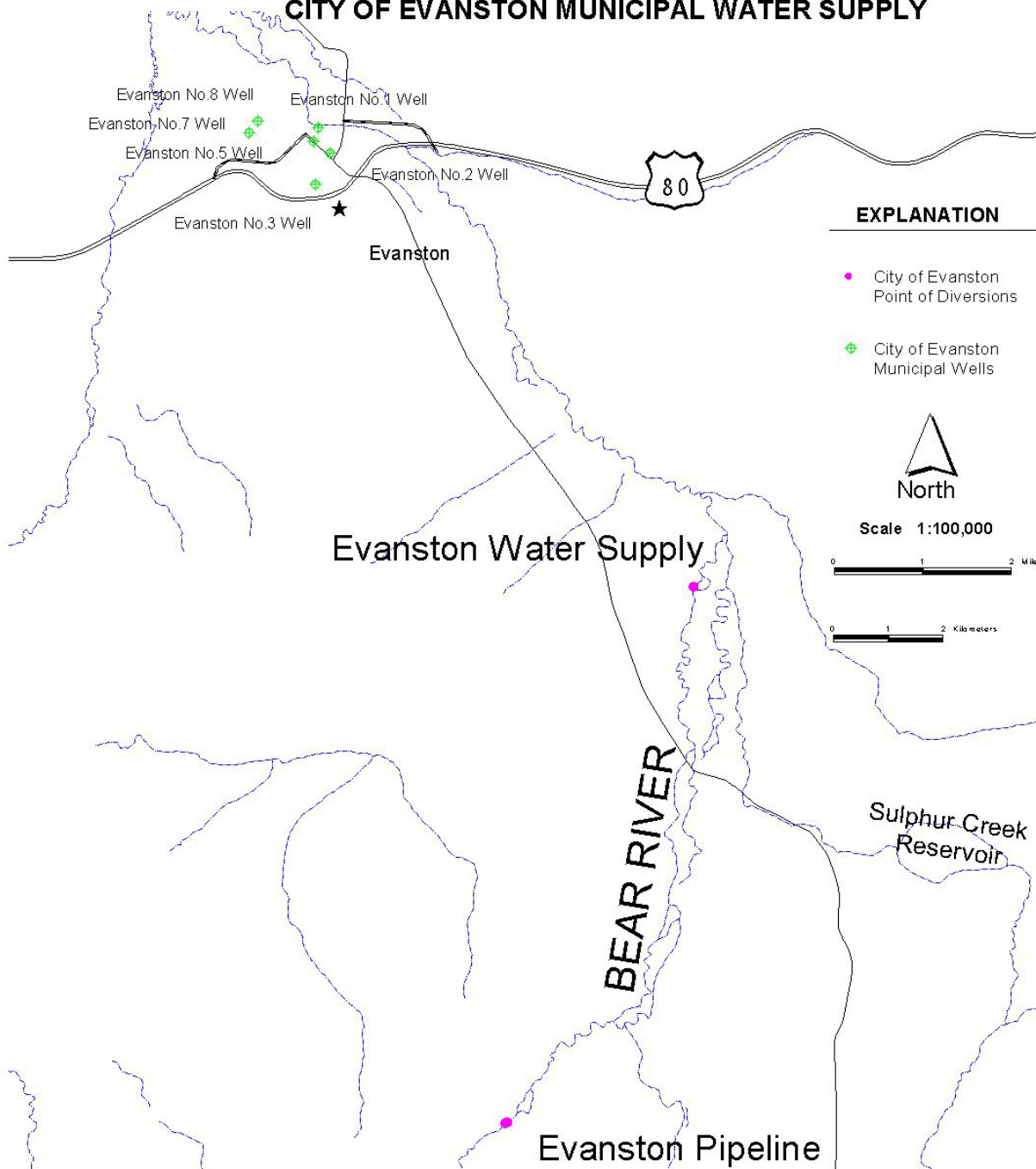
**Return Flows:** Evanston utilizes a mechanical water treatment plant that discharges wastewater into the Yellow Creek tributary of the Bear River. Recorded average wastewater effluent for the past 7 years (1993-1999) was 1.41 MGD (4.33 AFD). Average annual wastewater effluent is 504 MG or 1,547 acre-feet.

**Other Operational Information:** The Evanston Pipeline and Intake Facility was not placed in service until 1989. Prior to this time, the City of Evanston utilized the Evanston Water Supply Ditch to meet their municipal needs. See Evanston Municipal Water Use Memo in Appendix “J”.

**References:**

- 1) *Water rights summary obtained from State Engineer Interstate Reglist – revised April 14, 1999*
- 2) *Forsgren Associates Engineering p.a., Design Drawings – City of Evanston Bear River Intake Facilities, 1988*
- 3) *Forsgren Associates Engineering p.a., Design Drawings – City of Evanston Bear River Pipeline, 1989*

# LOCATION MAP CITY OF EVANSTON MUNICIPAL WATER SUPPLY



### EXPLANATION

- City of Evanston Point of Diversions
- ⊕ City of Evanston Municipal Wells



Scale 1:100,000



**BEAR RIVER WYOMING DIVERSIONS  
MONTHLY DIVERSION RECORDS**

**EVANSTON PIPELINE (City of Evanston)**

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															
1972															
1973															
1974															
1975															
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1980															
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1984															
1985															
1986															
1987															
1988															
*1989		4.4	273.1		7.3	433.8		12.5	767.8		10.4	640.8		7.4	437.5
*1990		6.5	402.5		9.1	539.6		11.9	734.2		10.8	664.4		7.5	449.1
*1991		4.2	256.1		7.8	463.1		11.4	699.5		8.3	511.8		6.1	361.5
*1992		7.3	447.6		10.1	600.6		10.6	650.3		11.2	690.7		7.3	434.5
1993	149	4.8	295.5	246	8.2	487.9	280	9.0	555.4	247	8.0	489.9	228	7.6	452.2
1994	210	6.8	416.5	350	11.7	694.2	402	13.0	797.4	334	10.8	662.5	238	7.9	472.1
1995	120	3.9	238.0	184	6.1	365.0	324	10.5	642.6	360	11.6	714.0	284	9.5	563.3
1996	180	5.8	357.0	323	10.8	640.7	385	12.4	763.6	400	12.9	793.4	271	9.0	537.5
1997	188.5	6.1	373.9	264.6	8.8	524.8	420.2	13.6	833.5	333.1	10.7	660.7	231.2	7.7	458.6
1998	179.2	5.8	355.4	220.2	7.3	436.8	375.4	12.1	744.6	346.5	11.2	687.3	239.9	8.0	475.8
1999	140	4.5	277.7	283	9.4	561.3	375	12.1	743.8	333	10.7	660.5	233	7.8	462.1
<b>AVERAGES</b>		<b>5.5</b>	<b>335.8</b>		<b>8.8</b>	<b>522.5</b>		<b>11.7</b>	<b>721.2</b>		<b>10.6</b>	<b>652.4</b>		<b>7.8</b>	<b>464.0</b>

- Notes: 1. Pipeline was constructed in 1988 and placed in operation the following year. Prior to that time, the city received water from the "Evanston Water Supply" diversion.  
 \*2. No diversion records are available from 1989 through 1992. Data reflects water treatment plant records for those years.  
 3. Evanston's water treatment plant was expanded in 1990. Prior to that time, the city was reliant on groundwater wells to meet peak demands.