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**MEMORANDUM**

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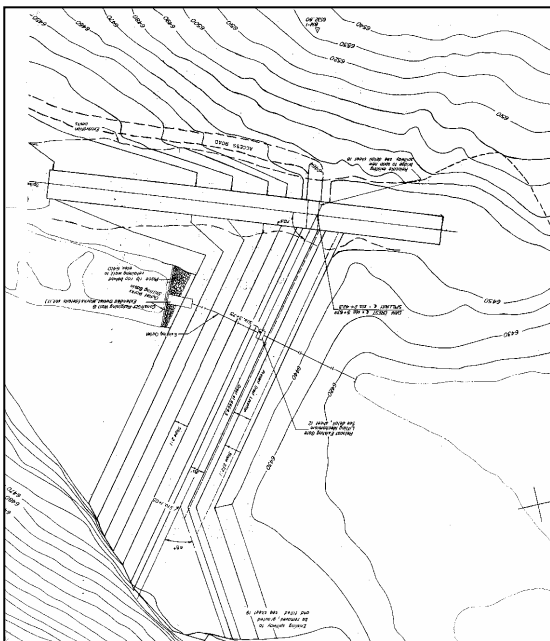
**Subject:** Bear River Basin Plan  
**WOODRUFF NARROWS RESERVOIR**

**Date:** July 20, 2000

**Location:** Section 32, Township 18N,  
Range 120W. Located on the main stream of the Bear River, approximately 5.6 miles upstream from the Wyoming-Utah State line. See location map.



*Woodruff Narrows Reservoir*



**Plan View - Woodruff Narrows Dam**

**Year of construction:** 1959

**Enlargement History:** 1975 Enlargement

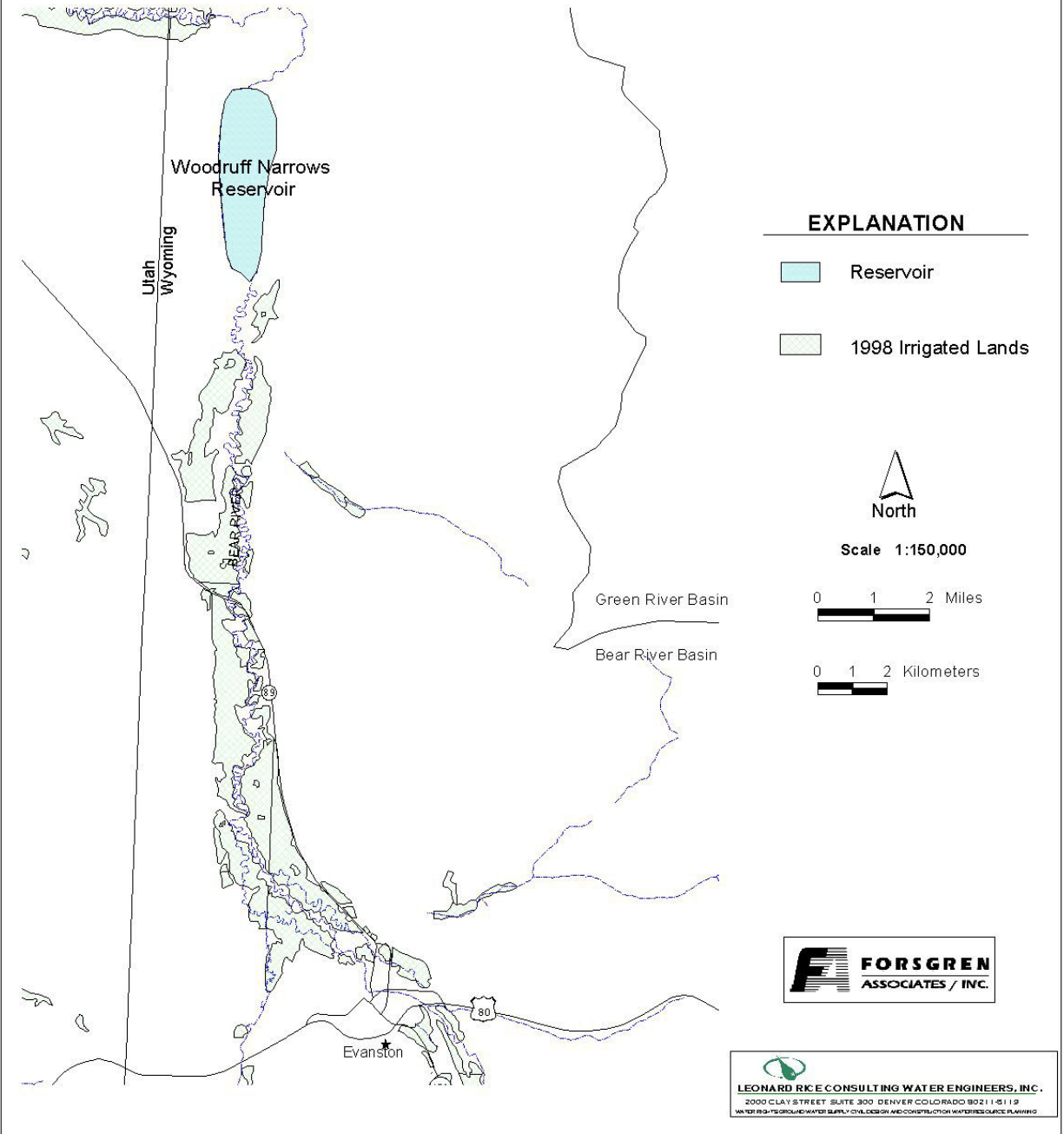
**Ownership:** Woodruff Narrows Reservoir Company. Contact Blair Francis, president (801-793-4243)

**Total Storage:** 57,300 acre-feet

**Active Storage:** 55,700 acre-feet

**Dead Storage:** 1600 acre-feet

# Woodruff Narrows Reservoir Location Map



**Area/Capacity Data:**

<b>Woodruff Narrows Reservoir Capacity Table</b>		
<b>Elevation</b>	<b>Area (acres)</b>	<b>Cumulative Capacity (acre-feet)</b>
6397	0	0
6400	8.8	17.6
6404	312	980
6410	417.4	1600
6411.7	512.9	3135
6415	714	6195
6420	906	10,245
6425	1,114	15,245
6430	1,380	21,530
6439.4	1,620	28,100
6445	1,796	37,700
6450	2,086	47,405
6454.5	2,312	57,300

**Dam Construction Type:** Earth-fill with rock face

**Outlet:** Originally two concrete conduits, each 5-ft x 6-ft. Retrofitted with two 4.7-ft x 5.8-ft O.D. steel ellipse pipes grouted into the original concrete conduits.

**Spillway:** Concrete chute spillway, 40-ft. wide, along the right abutment. Capacity = 6000 cfs



*Woodruff Narrows Spillway*

**End-of-Month Storage Records:** End-of-month storage records were maintained until 1997, at which time the gage was removed. A table of these records is attached to this memo.

**Water Rights:** The table below represents the five permits that have been issued to either the Woodruff Narrows Reservoir Company of the State of Utah.

<b>Woodruff Narrows Permitted Storage Rights</b>			
<b>Permit No.</b>	<b>Priority</b>	<b>Volume (acre-feet)</b>	<b>Comments</b>
<b><u>1958 Compact Rights</u></b>			
6556 U&WR	8-3-1959	1,600	<i>Wy – Inactive Storage</i>
6556 UR	8-3-1959	15,240	<i>Ut – Storage</i>
8060 WR	8-3-1959	3,000	<i>Wy – Storage</i>
6556 UR	8-3-1959	3,560	<i>Ut – Carryover</i>
6556 WR	8-3-1959	700	<i>Wy – Carryover</i>
6556 U&WR	8-3-1959	4,000	<i>Fish &amp; Wildlife</i>
8060R	7-25-1975	250	<i>Wy – Storage</i>
<b><u>1980 Amended Compact Rights</u></b>			
8060R	7-25-1975	2,960	<i>Wy - Storage</i>
8060R	7-25-1975	18,000	<i>Ut - Storage</i>
8060R	7-25-1975	985.09	<i>Wy - Carryover</i>
8060R	7-25-1975	2,481.91	<i>Ut - Carryover</i>
8061R	8-6-1979	768.91	<i>Wy - Carryover</i>
8061R	8-6-1979	3754.09	<i>Ut - Carryover</i>
<b>TOTALS</b>		<b>43,450</b>	

**Designated Use:** Irrigation and Stock

**Recreational Use:** Woodruff Narrows Reservoir is a popular fishing and boating location. In the winter it is a popular ice fishing location.

**Associated Irrigation Diversions:** There are presently 48,153 shares in the Woodruff Narrows Reservoir. Each share corresponds to one acre of irrigated ground. 39,967 shares (83%) are in Utah and 8,186 shares (17%) are in Wyoming.

Utah irrigators receive Woodruff Narrows water from the following ditches:

Francis Lee, Bear River Canal, Neville, Booth, Rees Land & Livestock, Crawford-Thompson, Randolph Woodruff, Big Creek Pumping Co. (pump out of

Randolph Woodruff ditch), Dykens, Randolph Sage Creek, McMinn, Enberg, B.Q. West, Adam Pump).

Wyoming irrigators receive Woodruff Narrows water from the Pixley Canal, BQ West, Weston Pumps, and Johnson Pumps.

**Associated Industrial Diversions:** Water pumped out of Woodruff Narrows Reservoir and consumed by Chevron USA at their Whitney Canyon/Carter Creek Facility is purchased from Woodruff Narrows Reservoir Company. During the months when the reservoir is storing, the water pumped counts against the allowed reservoir storage in Woodruff Narrows.

**Operational Discussion:** Filling of Woodruff Narrows and Sulphur Creek Reservoir is handled on a proportional basis based on storage allocation (not strictly priority). Woodruff Narrows's original Compact allocation is 76.4% of the combined and Sulphur Creek's original Compact allocations is 23.6% of the combined.

The maximum amount of storage that can take place in one year is 18,400 acre-feet under the Original Compact and 20,960 acre-feet under the Amended Compact. Wyoming has allowed Woodruff Narrows, Broadbent, and Sulphur Creek Reservoirs to temporarily store a portion of their unconstructed original compact allocated storage when Bear Lake levels dropped below elevation 5911 in the early 1990's. Releases of at least 10 cfs will be made per agreements between PacifiCorp and Utah Division of Wildlife Resources.

It should be noted that the Wyoming irrigators often have difficulty receiving their allotment of Woodruff Narrows storage. This problem is due to conveyance losses during dry periods when storage is needed, the inability to distinguish and regulate Wyoming storage vs. direct flow through the Lower Utah reach of the river, and the operational practices of the reservoir.

***Resources:***

- 1) *Water Right Permit 8060R Special Limitations*
- 2) *Sue Lowry, Summary of 1958 Bear River Compact Allocations, Bear River Basin, Wyoming; October 1990;*
- 3) *Sue Lowry, Policy Definition Regarding the Storage of Water in Woodruff Narrows and Sulphur Creek Reservoirs; October 1990*
- 4) *Bear River Compact as Amended, Amended Compact Unanimously Approved December 22, 1978 by Duly Appointed Commissioners from those states of Idaho, Utah, and Wyoming, Ratified by the Legislatures of all 3 states in 1979, Congressional Consent Public Law 96-189 February 8, 1980.*

**BEAR RIVER STORAGE (Wyoming Section - Upper Division)**

**END-OF-MONTH STORAGE RECORDS**

**WOODRUFF NARROWS RESERVOIR**

**END OF MONTH STORAGE (acre-feet)**

<b>YEAR</b>	<b>JANUARY</b>	<b>FEBRUARY</b>	<b>MARCH</b>	<b>ARRIL</b>	<b>MAY</b>	<b>JUNE</b>	<b>JULY</b>	<b>AUGUST</b>	<b>SEPTEMBER</b>	<b>OCTOBER</b>	<b>NOVEMBER</b>	<b>DECEMBER</b>
1970	20,270	22,890	25,800	29,180	32,350	30,080	19,000	11,600	11,520	13,000	15,670	17,550
1971	28,410	28,120	29,930	29,370	31,530	31,200	28,260	20,180	14,700	15,780	19,720	23,520
1972	28,260	28,560	28,860	29,370	31,690	23,640	17,550	12,410	11,000	18,510	24,710	27,550
1973	24,260	27,370	28,410	31,200	30,630	23,890	16,810	14,370	18,390	13,690	17,550	19,600
1974	21,320	18,390	29,000	30,850	32,700	27,020	16,370	15,000	12,900	23,520	28,120	25,500
1975	18,760	21,180	27,690	28,710	30,410	31,530	28,710	27,690	21,320	13,000	14,260	16,600
1976	27,970	28,260	29,000	29,000	30,230	12,490	5,840	4,920	1,570	22,310	26,320	27,830
1977	3,070	4,060	5,500	10,370	14,590	2,440	2,040	1,230	970	1,910	2,400	2,630
1978	4,180	5,640	13,270	27,370	30,630	29,930	18,000	16,600	16,370	1,510	2,040	2,770
1979	17,130	18,130	22,310	28,560	21,880	7,320	5,500	6,050	5,640	15,890	16,120	16,710
1980	12,570	16,490	21,180	20,060	19,960	15,570	7,790	5,300	4,790	6,260	7,240	8,440
1981	16,660	20,160	24,490	47,620	47,420	45,460	21,950	17,540	15,780	6,440	10,450	13,580
1982	23,200	26,400	32,500	55,930	59,820	60,470	52,230	47,230	58,200	17,990	17,870	20,570
1983	35,700	36,300	45,460	59,790	63,180	61,600	58,660	58,880	58,880	56,850	43,000	36,000
1984	55,040	57,530	51,920	49,980	61,140	55,940	44,690	47,840	55,260	52,360	46,640	50,630
1985	57,750	57,750	57,980	60,470	55,040	30,010	18,590	17,210	18,230	57,750	57,750	57,750
1986	35,650	54,130	59,790	60,240	62,500	57,750	56,400	49,120	48,480	25,340	28,300	30,530
1987	57,980	57,980	57,530	59,560	58,660	33,430	23,080	22,800	22,380	55,720	57,980	57,980
1988	28,470	33,430	39,640	57,980	57,530	22,800	16,440	14,390	12,870	22,240	24,630	26,590
1989	8,060	8,540	20,160	32,580	27,450	6,840	3,560	3,200	3,620	11,660	10,950	9,350
1990	7,330	9,350	16,660	23,220	21,800	7,490	5,400	4,480	4,360	4,540	5,460	5,960
1991	8,060	9,570	11,600	17,000	31,300	34,500	25,100	24,400	24,400	4,860	5,840	6,530
1992	36,800	40,300	51,100	50,600	42,800	9,800	6,920	5,370	4,580	27,200	31,000	34,000
1993	7,410	9,680	21,400	26,600	49,600	3,000	26,840	25,790	24,560	4,070	4,280	5,220
1994	35,100	36,580	45,000	56,550	49,940	17,600	9,350	8,660	7,220	28,060	30,390	32,900
1995	13,500	16,600	28,520	24,760	24,800	48,070	59,490	54,180	43,110	8,540	9,130	11,400
1996	44,000	46,800	54,600	59,900	60,800	51,200	37,510	34,800	28,800	42,880	43,650	43,000
1997												
1998												
<b>AVERAGES</b>	<b>25,071</b>	<b>27,414</b>	<b>32,567</b>	<b>38,401</b>	<b>40,014</b>	<b>28,929</b>	<b>23,410</b>	<b>21,157</b>	<b>20,367</b>	<b>21,181</b>	<b>22,277</b>	<b>23,359</b>

*Note: Gage was removed in 1997.*