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 TECHNICAL MEMORANDUM
 

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SUBJECT:           **Green River Basin Plan**  
                           ***Major Reservoir Information***

PREPARED BY: Pat Tyrrell, States West Water Resources Corp.

The Green River Basin contains many large reservoirs used for various purposes including storage for irrigation, municipal, industrial, recreation, fish propagation and flood control uses, among others. These reservoirs help sustain what is otherwise arid to semi-arid land. The reservoirs are owned by various state, federal, industrial and private interests. For purposes of this plan, reservoirs larger than 1,000 AF are focused upon although some that are smaller are also discussed. The list below includes reservoirs discussed in the Framework Water Plan (Wyoming Water Planning Program, 1970) and others that have been constructed, funded, or elevated in importance since. A map of these reservoirs in the Green River Basin is provided as Figure 1 at the end of this document.

In alphabetical order, the reservoirs discussed herein include:

	<u>Water Course</u>	<u>Maximum Storage, AF</u>
➤ Big Sandy	Big Sandy River	39,700
➤ Black Joe Lake	Black Joe Creek	1,102
➤ Boulder Lake	Boulder Creek	22,280
➤ Bush Creek	Bush Creek	17,267
➤ Bush Lake	Bush Creek	1,686
➤ Divide Lake	Divide Creek	1,027
➤ Eden	Big & Little Sandy Rivers	18,490*
➤ Elkhorn	Little Sandy River	1,450
➤ Flaming Gorge	Green River	3,789,000
➤ Fontenelle	Green River	345,397
➤ Fremont Lake	Pine Creek	30,899
➤ Hay Reservoir	Red Creek	8,327
➤ High Savery**	Savery Creek	22,400
➤ Kemmerer City (Kemmerer No. 1)	Hams Fork	1,058
➤ McNinch No. 1	North Piney Creek	1,086
➤ McNinch No. 2	North Piney Creek	198
➤ Meeks Cabin	Blacks Fork	33,571
➤ Middle Piney	Middle Piney Creek	4,201
➤ New Fork Lake	West Fork New Fork River	20,340

	<u>Water Course</u>	<u>Maximum Storage, AF</u>
➤ Paterson Lake	Blacks Fork	1,237
➤ Pacific No. 1	Pacific Creek	107
➤ Pacific No. 2	Pacific Creek	1,394
➤ Silver Lake	Silver Creek	933
➤ Sixty-Seven	North Piney Creek	5,211
➤ Stateline	East Fork Smiths Fork	14,000
➤ Viva Naughton	Hams Fork	42,393
➤ Willow Lake	Lake Creek	18,816

\* currently reduced to 12,190 AF because of stability concerns at higher water levels

\*\* not yet built; construction scheduled to be completed by 2003

A brief description of each follows:

### **Big Sandy Reservoir**

A Bureau of Reclamation project, the Big Sandy Reservoir is formed by an earthen dam located on the Big Sandy River about 10 miles north of Farson, Wyoming. The storage capacity of 39,700 AF is permitted for irrigation use, but the reservoir also provides local recreational benefits. The reservoir is operated by the Eden Valley Irrigation and Drainage District. Additional information and data are available at <http://dataweb.usbr.gov/html/eden.html> on the internet.

Big Sandy Reservoir Outlet



### **Black Joe Lake**

Black Joe Lake, located high in the Wind River Range in the upper reaches of the Big Sandy River, is a natural lake with its storage increased using a small dam. The dam is constructed of rock-filled timber cribbing and is approximately 13.5 feet in height. This embankment increases storage in the reservoir by 1,101.8 AF, which is permitted for irrigation. Nearby is Clear Lake, a sister lake with a similar dam, also enlarged, with a permitted capacity of 318.6 AF.

### **Boulder Lake**

Boulder Lake, as currently configured, is a natural lake which has been raised by the addition of a dam at the outlet. With an enlargement, the reservoir now impounds over 22,000 AF above the natural lake level. The additional storage is permitted for irrigation use. Boulder Lake is a morainal lake located on the western flank of the Wind River Mountains and is, in this regard, similar to Fremont, New Fork and Willow Lakes. Boulder Lake has no staff gage or lake level instrumentation, so storage fluctuations can only be estimated. Boulder Lake irrigation releases are managed by the Boulder Irrigation District.

### **Bush Lake**

See Hay Reservoir.

### **Bush Creek Reservoir**

Bush Creek Reservoir is constructed to be fed by a canal from Bush Creek, located in the Great Divide Basin. On maps it is sometimes denoted John Hay Reservoir. The outlet is not tributary to the Green River. This reservoir has a permitted capacity of 17,266.651 AF designated for irrigation, stock, and domestic uses.

### **Divide Lake**

Divide Lake is located in the Wind River Range on Divide Creek, tributary to Boulder Creek (upstream of Boulder Lake) and the New Fork River. It is an enlargement of a natural lake, with a dam constructed of a combination earthfill/rock filled cribbing structure. The dam stores a permitted capacity of 1,027.36 AF designated for irrigation, stock, and domestic uses in the Scab Creek drainage.

### **Eden Reservoir**

Originally permitted as “Eden Irrigation and Land Company No. 1,” the Eden Reservoir is an off-channel reservoir fed from the Little Sandy River and from Big Sandy Dam. Impoundment is created by three irregular dikes. Its total storage capacity, as permitted, is almost 18,500 AF, although current operations limit storage to 12,190 AF for stability reasons. Along with Big Sandy, Eden serves the Eden Valley Irrigation District. Originally planned for removal by the Bureau of Reclamation, Eden Reservoir still exists to provide irrigation water. Additional information and data are available at <http://dataweb.usbr.gov/html/eden.html> on the internet.

### **Elkhorn**

Alternately named Little Sandy Reservoir, Elkhorn Reservoir is located high on Little Sandy Creek in the southern Wind River Range. It is an enlargement of a natural lake, containing 1,450 AF permitted for stock and irrigation uses.

### **Flaming Gorge**

Created by a concrete arch dam in Utah, Flaming Gorge is a Bureau of Reclamation Project on the main stem of the Green River. The reservoir has no Wyoming water right, and serves no lands in Wyoming, although a significant amount of its surface area is in Wyoming. The capacity of Flaming Gorge is 3,789,000 AF, which is used for irrigation, power, fish and wildlife, and recreation. More information can be found at <http://dataweb.usbr.gov/dams/ut10121.html> on the internet. Because it contains no Wyoming water rights, Flaming Gorge Reservoir is not described in the Reservoir Summary Sheets.

### **Fontenelle**

Another Bureau of Reclamation project, Fontenelle Reservoir is an earthen dam on the main stem of the Green River, located just downstream of the town of LaBarge. With a storage capacity of 345,397 AF, Fontenelle is a multi-purpose project with permitted uses that include irrigation, domestic, industrial, municipal, stock, fisheries, recreation, and hydropower. Additional information and data are available at <http://dataweb.usbr.gov/html/seedskadee.html> on the internet.



Fontenelle Dam

### **Fremont Lake**

A morainal lake, Fremont is the seventh deepest lake in the contiguous United States, excluding the Great Lakes. Like Boulder, Willow, and New Fork Lakes, its level has been raised over time by the addition of a dam at the outlet. Having been enlarged several times, Fremont Lake now impounds over 30,000 AF above the natural lake level, of which about 25,400 AF is usable (available to the newest outlet). Fremont Lake has outstanding clarity. It serves not only irrigation and recreation uses, but is also the municipal supply for the Town of Pinedale, Wyoming. Other uses listed on permits for Fremont Lake include hydropower, industrial, and fisheries. The “Fremont Lake Reservoir Operating Guide” (Gilbert, 1996) provides detailed information on the lake, its watershed characteristics, and general operating recommendations.

### **Hay Reservoir**

The Hay Irrigation Project includes both Hay and Bush Lake Reservoirs. These reservoirs are situated about 30 miles north of I-80 nearly midway between Rawlins and Rock Springs, and are about 10 miles southeast of Bush Creek (John Hay) Reservoir. Hay Reservoir, which has been enlarged, is permitted to store approximately 5,840 AF for irrigation and stock uses. The Bush Lake Reservoir stores approximately 1,390 AF.

### **High Savery Reservoir**

Yet to be constructed, High Savery Reservoir will provide supplemental irrigation water to the Savery Creek and Little Snake River valleys in the southeastern corner of Wyoming's Green River Basin. Located high on Savery Creek in Carbon County, High Savery will impound over 22,400 AF to provide an annual 12,000 AF yield of supplemental late-season irrigation water. As planned, High Savery will be impounded by an earthen dam. The reservoir will be owned and permitted by the State of Wyoming, and operated by the Savery - Little Snake Water Conservancy District.

### **Kemmerer City (Kemmerer No. 1) Reservoir**

Located on the Hams Fork near the Town of Kemmerer, Wyoming, this reservoir serves as a diversion point for the town's municipal water supply. With 1,058 AF of storage, it is not large in comparison with other reservoirs in the basin.

### **McNinch No. 1 & 2 Reservoirs**

The McNinch reservoirs are private impoundments located on McNinch Wash, tributary to North Piney Creek. They are situated about one mile west of Sixty Seven Reservoir. McNinch No. 1 is fed by Beaver Creek and Spring Creek, both tributary to North Piney Creek. McNinch No. 2 is fed by McNinch Wash (McNinch Draw). Capacities are 1,086 AF for No. 1, and 198 AF for No. 2. Both reservoirs are permitted for irrigation, stock, and domestic uses.

### **Meeks Cabin Reservoir**

Meeks Cabin Dam is a Bureau of Reclamation Project on the Blacks Fork (of the Green) River. Located near the Utah border, Meeks Cabin provides water for irrigation and stock from its 33,571 AF permitted capacity. The reservoir is operated by the Bridger Valley Water Conservancy District. Additional information



Meeks Cabin Dam

and data are available at <http://dataweb.usbr.gov/html/lyman.html> on the internet.

### **Middle Piney Lake**

Middle Piney Lake is located on the headwaters of Middle Piney Creek in the Bridger National Forest. It is situated about 15 miles due west of the McNinch reservoirs. The reservoir contains 4,201 AF of storage permitted for irrigation, stock, and domestic uses. In 1997, the interest in the reservoir was assigned to the USDA Forest Service. Currently, the reservoir is operated with the outlet gates fully open, essentially passing water through the reservoir.

### **New Fork Lake**

Among those listed here, New Fork Lake is the northernmost of the morainal lakes on the east flank of the upper Green River Basin. It is located on the upper New Fork River, a major tributary of the Green River. As with Fremont, Boulder, and Willow Lakes, its capacity has been increased by man. Currently, the lake stores 20,340 AF over and above the natural lake level. Water in this storage is permitted for irrigation use. Releases for use by the New Fork Irrigation District do not enter any single large canal near the dam. Instead, the river itself is the major conveyance, with individual irrigators taking storage water from the river at their own headgates.

### **Pacific Reservoirs No. 1 and 2**

These two reservoirs are located on the very upper reaches of the Pacific Creek Basin, which is tributary to Little Sandy Creek, in Fremont County. Permitted capacities for the two reservoirs are 106.91 AF for No. 1 and 1,394.21 for No. 2. Interestingly, both reservoirs store water from the Sweetwater River via transbasin diversion. Both reservoirs are permitted for irrigation and stock uses.

### **Paterson Lake**

Located about 1 mile northwest of Lyman, Paterson Reservoir is also denoted as Rollins Reservoir on some maps. It is an off-channel reservoir fed by the Fort Bridger Canal from the Blacks Fork River. The reservoir contains 1,237 AF permitted for irrigation use.

### **Silver Lake**

Silver Lake is located in the Wind River Range on Silver Creek, tributary to the East Fork New Fork River and the New Fork River. Permitted for irrigation and stock use, the maximum capacity of the reservoir, as enlarged, is 2,151.63 AF.

### **Sixty-Seven**

This reservoir is an off-channel structure fed by the Hughes Ditch from North Piney Creek and from Spring Creek, a tributary of North Piney Creek. As enlarged, the reservoir stores 4,329 AF for irrigation, stock, and domestic purposes. The reservoir is located about 6 miles northwest of the Town of Big Piney.

### **Stateline Reservoir**

Stateline reservoir is located entirely within the State of Utah, and has no State of Wyoming permits. However, water within its storage capacity is used for irrigation of Wyoming lands and for municipal use in the Lyman/Fort Bridger valley. Additional information and data are available at <http://dataweb.usbr.gov/html/lyman.html> on the internet.

### **Viva Naughton**

Viva Naughton Reservoir is operated by the Naughton Power Plant in Kemmerer. This plant (previously owned by PacifiCorp, now owned by Scottish Power) uses water from the reservoir for cooling needs of the coal-fired process. While no irrigation uses are explicitly listed in the permit, Naughton does release water for downstream irrigation during times of sufficient supply. Similarly, while Viva Naughton is not a flood control structure, the owner does try to operate the plant in a fashion to minimize downstream flooding. Constructed capacity of the reservoir is 45,465 AF.



Viva Naughton Reservoir

### **Willow Lake**

Willow Lake is the last morainal lake on this list. This lake is located on Lake Creek, tributary to the New Fork River. Operation is not by any particular district or political entity, but by owners of “shares” in the lake’s storage. Located north of Fremont Lake, the man-made storage is permitted for irrigation, stock, and domestic uses. The total permitted amount of the additional storage is 18,816 AF.

## Evaporation

Evaporation from reservoirs constructed by man is a consumptive use associated with the beneficial use of water for other purposes and is charged against Wyoming's allocation under the Upper Colorado River Basin Compact. Traditionally, evaporation estimates are calculated by the Bureau of Reclamation and published in the "Consumptive Uses and Losses Report," (CULR) which is prepared every five years. In this report, the larger Bureau reservoirs in the Green and Colorado River Basins are classified as "main stem" reservoirs, the evaporation from which is tabulated and carried separately from evaporation calculated for in-state reservoirs. Upper Colorado River Basin main stem reservoirs include Flaming Gorge, Blue Mesa, Morrow Point and Lake Powell.

For these main stem reservoirs, the aggregate evaporation is charged against the various states' apportionment in the percentage allowed for each state by the Upper Colorado River Basin Compact, under *full development* (full use of allowed depletions). By this Compact Wyoming is allowed 14 percent of the total depletions allowed the States of the Upper Division (the Upper Basin States minus Arizona) by the Colorado River Compact; therefore, at full development, 14 percent of the Upper Basin mainstem evaporation is charged to Wyoming. Prior to full development, Article V of the Upper Colorado River Basin Compact states that Wyoming's share will be calculated as the same fraction of main stem evaporation as Wyoming's consumptive use bears to the total consumptive use by States of the Upper Division.

For the years 1986-1990, Wyoming's fraction of the total consumptive use of the Upper Division states was 13.55 percent. In these same years, the average main stem evaporation was 653,000 acre-feet. Therefore, Wyoming's charge for main stem evaporation would be calculated as 88,482 acre-feet. This value, however, overstates the amount of Wyoming's main stem evaporation portion when the basin sees full development. Under full development of all states' full compact allotments, reservoir levels will average lower than they do now, due to increased drawdowns. Under this scenario the Bureau estimates a full development main stem evaporation of 520,000 acre-feet annually, from which Wyoming's 14 percent charge can be estimated to be 72,800 acre-feet annually (Bureau of Reclamation, January 1999).

Reservoirs not included in the main stem calculations are handled separately and the evaporation therefrom is charged totally to the state within which they reside. In Wyoming, the Bureau has identified 76 individual reservoirs in the Green River Basin for which evaporation is explicitly calculated. Table 1 lists these reservoirs and the net annual evaporation at each for the years 1986-1990, which is the last full five year period for which a final CULR is available. The Bureau charges evaporation without regard to the uses for which a reservoir is permitted. That is, no separate accounting is kept for evaporation from irrigation, recreation, fish and wildlife or other pools.

In Table 1, Bureau evaporation values have been altered for New Fork, Boulder, Willow and Fremont Lakes. In the CULR supporting documentation for these lakes, all of which originally were natural lakes raised by dams added at their outlets, the evaporation calculated uses the full high water line areas in the calculation. Because only that depletion caused by the actions of man should be counted against



the Compact allocation, these estimates have been revised to reflect only the incremental evaporation loss due to the incremental surface area increase caused by raising the lakes. To do this, evaporation was calculated for the *increase* in high water line surface area, not for the lake as a whole. These changes result in a net savings in evaporation of approximately 4,082 acre-feet, as described below:

Reservoir	Natural HWL Surface Area, ac	Enlarged HWL Surface Area, ac	Difference, ac	Net Evaporation, from CULR, in.	Actual Evaporation due to Man, AF	CULR Evap, as reported, AF	Difference, AF (savings)
<i>Boulder</i>	1540	1676	136	22.3	253	1872	1619
<i>Fremont</i>	4888	5122	234	20	390	0	-390
<i>New Fork</i>	1296	1416	120	19	190	1345	1155
<i>Willow</i>	1800	1958	158	20	263	1961	1698
<b>Total</b>					<b>1096</b>	<b>5178</b>	<b>4082</b>

Two sources of data exist for estimating evaporative losses from reservoirs in Wyoming. These include the National Weather Service (Farnsworth et al, June 1982) and Lewis (1978). Because it is newer, of national scope, and used by the Bureau of Reclamation in its Consumptive Uses and Losses Report calculations, the NWS document is used for annual gross (free water surface) evaporation values herein. However, the NWS document does not give a monthly distribution of evaporation rates. For this, the distribution pattern for Pathfinder Dam (Lewis, 1978) is used.

The net evaporation rate at a reservoir, or the true amount lost after correction for rainfall, is calculated as gross evaporation minus average precipitation by month. Data describing gross evaporation and precipitation on an average monthly basis are provided as part of Appendix A. The source of precipitation data for use in estimating net evaporation is Daly and Taylor (1998).

## Attachments

Attached to this memo is more information regarding the reservoirs listed above. Table 2, Green River Basin Reservoir Summary lists all of the reservoirs along with location, permit information, owner, etc. Following this table is Appendix A, where each reservoir is detailed on a Reservoir Summary Sheet, listing, in addition to most of the information from Table 1, summaries of the outlet works and spillway construction and capacities, monthly evaporation and precipitation rates, and operating notes. When available, the end-of-month contents are also listed. Following the summary sheet, area-capacity tables are presented for reservoirs if they could be obtained. The sources for the information contained in these attachments are the permits on file at the Wyoming State Engineer's Office and in the list of references to follow.

## References

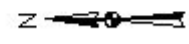
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<b>Table 2 - Green River Basin Reservoir Summary</b>											
<b>Reservoir or Lake</b>	<b>Watercourse</b>	<b>County</b>	<b>S, T(N), R(W)</b>	<b>Permit No.</b>	<b>Priority Date</b>	<b>Permitted Uses</b>	<b>HWL Area (Ac)</b>	<b>HWL Capacity (AF)</b>	<b>Reservoir Owner/Manager</b>	<b>Year of Cert. of Const.</b>	<b>Notes</b>
Big Sandy	Big Sandy River	Sweetwater	11, 26, 106	947R	11/09/1906	I	1,660.8	39,700	Eden Valley Irr Dist & USBR	1983	
Black Joe	Black Joe Creek	Sublette	17, 32, 103	5397R	03/21/1935	I	102.49	1,101.8	USA, c/o Farm Security Adm.	1945	
Boulder	Boulder Creek	Sublette	14, 33, 108	4038R	01/27/1927	I	1,698	16,207	Boulder Irr. Dist	1956	4,453 AF Irr, 1,621 AF FI & W
				6572R	04/26/1961	I, D, Ind, M, S, FI, R	1,676.5	6,073		1970	
Bush Creek	Bush Creek	Sweetwater	15, 25, 98	4058R	02/24/1928	I, S, D	2,629.243	17,266.651	Blair and Hay Land and Livestock Company	1959	Reservoir has 2 dams: Outlet No. 1 in Sec. 15, Outlet No. 2 in Sec. 14
Divide	Divide Creek	Sublette	14, 33, 106	5365R	07/30/1934	I, S, D	133.28	1,028.36	Mr. John Blatt	1967	Releases used in Scab Cr. Drainage
Eden	Big & Little Sandy Rivers	Sweetwater	20, 26, 105	818R	12/30/1905	I, D	1,361.85	18,489.93	Eden Irrigation & Land Co.	1925	off-channel storage
Elkhorn (Little Sandy)	Little Sandy Creek	Sublette	27, 31, 103	1025R	07/23/1906	I	145	1,450	Joe Thompson Jr. Livestock Co.	1947	Also known as Little Sandy
Flaming Gorge	Green River	Sweetwater	22, 12, 108	Utah							Dam is in UT
Fontenelle	Green River	Lincoln	25, 24, 112	6629R	01/22/1962	I, D, Ind, M, S, H, FI, R	8,058	345,397	USBR	1992	Enlargement activated prev. inactive cap.
				9502R	12/07/1973	I, D, Ind, M, S, H, FI, R	No Change	No Change			
Fremont	Pine Creek	Sublette	23, 34, 109	4452R	09/10/1931	I, M, H, Man, FI, Ind, R	5,067.96	9,844.12	Town of Pinedale	1962	Total Cap = 30,899.44 AF
				4453R	09/15/1931	I, S, D	5,087.02	5,377.92	L. H. Hennick et al		
				4465R	11/29/1951	I, S, D	5,105.72	5,385.4	Fremont Lake Res. Assn.	1956	
				8937R	02/02/1977	I, M	5,122.28	10,292.00	Town of Pinedale & Highland Irrigation District	1997	

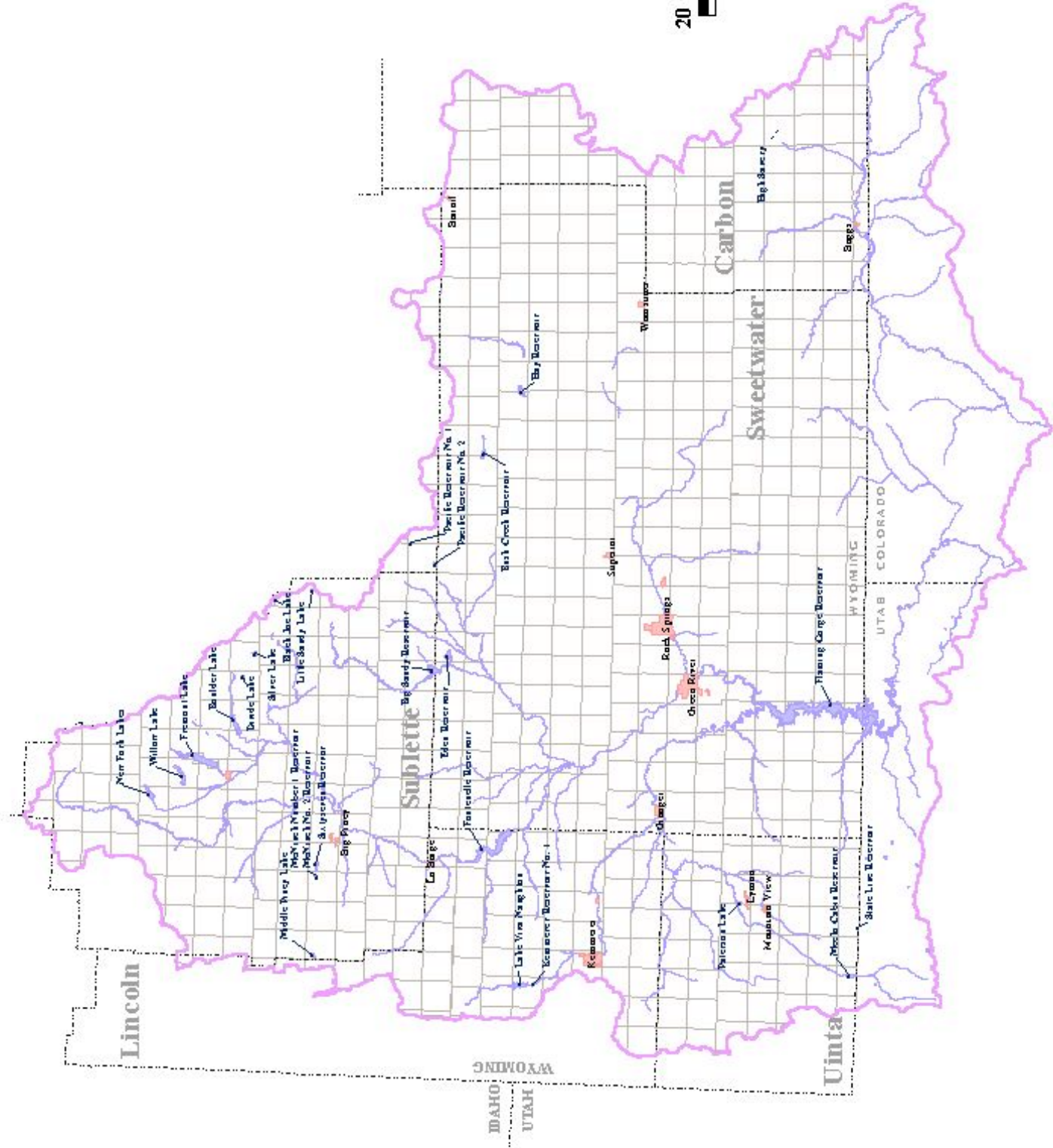
<b>Table 2 - Green River Basin Reservoir Summary</b>											
<b>Reservoir or Lake</b>	<b>Watercourse</b>	<b>County</b>	<b>S, T(N), R(W)</b>	<b>Permit No.</b>	<b>Priority Date</b>	<b>Permitted Uses</b>	<b>HWL Area (Ac)</b>	<b>HWL Capacity (AF)</b>	<b>Reservoir Owner/Manager</b>	<b>Year of Cert. of Const.</b>	<b>Notes</b>
Hay	Red Creek	Sweetwater	33, 24, 97	547R	07/20/1904	I, S	310	2,480	Sweetwater Cattle Company	1930	Total Capacity = 5,846.59AF
High Savery	Savery Creek	Carbon	16, 15, 88	2339R	08/11/1911	I, S	1,036.63	3,366.59		1917	
Kemmerer No. 1	Ham's Fork	Lincoln	26, 23, 117	NA		I	482	22,433	State of Wyoming	NA	Under Construction
McNinch No. 1	Spring Creek	Sublette	11, 30, 113	5302R	05/24/1935	Ind, M	134.27	1,058	City of Kemmerer	1958	Total Cap = 1,768.78 AF
				9776R	01/12/1990	Ind, M	182.93	710.78		1990	
McNinch No. 1	Spring Creek	Sublette	11, 30, 113	5413R	03/05/1941	I, S, D	108.2	873	E.W. McNinch and Lois C. McNinch	1956	Total Cap = 1086.35 AF
				5801R	07/17/1947	I, S, D	107.04	213.35		1956	
McNinch No. 2	NcNinch Draw	Sublette	11, 30, 113	5412R	03/05/1941	I, S, D	26.4	198	E.W. McNinch and Lois C. McNinch	1957	
Meeks Cabin	Blacks Fork	Uinta	11, 12, 117	6276R	03/26/1935	I, S	326	16,301.5	USBR	1979	Total Cap = 33,571 AF : Enl Transfer from Willow Cr Res.
				5547R	04/06/1939		765	17,269.5			
Middle Piney	Middle Piney Creek	Sublette	8, 30, 115	3578R	07/04/1919	I, S, D	164.56	4,201	USDA Forest Service	1944	
New Fork Lake	W Fk New Fork River	Sublette	7, 36, 109	480R	11/11/1903	I	1,416	20,340		1951	
Pacific No. 1	Pacific Creek	Fremont	1, 27, 102	4025R	08/14/1926	I, S	23.27	106.91		1926	Source is Sweetwater River (transbasin)
Pacific No. 2	Whitehorse Creek	Fremont	32, 27, 102	4026R	08/14/1926	I, S	257.88	1394.21		1926	Source is Whitehorse Draw and Sweetwater River
Paterson Lake	Black's Fork River	Uinta	19, 16, 114	443R	08/12/1903	I, D, H	200	1,237	Farmer's Land and Livestock Co.	1955	
Silver Lake	Silver Creek	Sublette	34, 33, 105	3970R	11/19/1924	I	157.52	1,219.11	Silver Lake Reservoir Company	1948	Total Cap = 2,151.63 AF
				5769R	11/20/1950	I, S	180.0	932.52	Silver Lake Irrigation District		
Sixty Seven	North Piney Creek	Sublette	17, 30, 112	535R	07/08/1904	S, D	293.568	3,373.732	Mr. Jay Downes	1935	Total Cap = 4329 AF.
				2878R	07/12/1915	S, D	333	953.268		1935	
State Line	E. Fk. Smith's Fk	in Utah							USBR		dam and res in UT; UT permits not shown
Viva Naughton	Ham's Fork	Lincoln	14, 23, 117	6418R	08/01/1957	Ind	1,458.18	42,393	UP&L	1977	3,072 AF of 7476R Built; Total Cap. = 45,465 AF.
				7476R	08/20/1971	Ind, I	1,935.65	27,252	assigned to PacifiCorp	NA	
				7599R	08/20/1973	Ind	2,200	12,250			
Willow	Lake Creek (Trib. Willow Cr.)	Sublette	19, 35, 109	3831R	03/24/1922	I, S, D	1,945	15,120	Burleigh Binning	1931	Total Cap = 22,630 AF
				4475R	11/04/1931	I, S, D	1,856	3,696		1949	
				6257R		I, S, D	1,958	3,814		1962	



State Water  
Resource Corporations



**Figure 1**  
**Major Reservoirs**  
**Green River Basin**  
**Wyoming**



Reservoir Name: Big Sandy  
 Owner/Operator: Eden Valley Irr. Dist and U.S. Bureau of Reclamation  
 Storage Permit Nos: 947R  
 HWL Data: Area, ac: 1,660.80 Cap, ac-ft: 39,700 Elev, ft ms 6,760  
 Permitted Uses: Irr 39,700 ac-ft Water Right Owners: Eden Valley Irr Dist  
 Use: \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 Service Outlet: Type: 5'6" dia. Horseshoe cor Capacity, cfs 650  
 Principal Spillway: Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Emergency Spillway Type: weir Capacity, cfs 7,600  
 Miscellaneous Spillway Info: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 40.00

Average Monthly Gross Evaporation (in.):

Oct <u>3.04</u>	Feb <u>1.00</u>	Jun <u>5.24</u>	
Nov <u>1.56</u>	Mar <u>1.56</u>	Jul <u>6.84</u>	
Dec <u>1.04</u>	Apr <u>3.20</u>	Aug <u>6.24</u>	
Jan <u>1.08</u>	May <u>4.60</u>	Sep <u>4.60</u>	Total, in: 40.00

Average Monthly Precipitation (in.):

Oct <u>0.68</u>	Feb <u>0.34</u>	Jun <u>1.01</u>	
Nov <u>0.40</u>	Mar <u>0.52</u>	Jul <u>0.88</u>	
Dec <u>0.41</u>	Apr <u>0.63</u>	Aug <u>0.71</u>	
Jan <u>0.37</u>	May <u>1.16</u>	Sep <u>0.90</u>	Total, in: 8.01

Average EOM Contents (ac-ft):

Oct <u>13,500</u>	Feb <u>13,400</u>	Jun <u>30,000</u>
Nov <u>15,000</u>	Mar <u>19,700</u>	Jul <u>26,800</u>
Dec <u>9,500</u>	Apr <u>22,300</u>	Aug <u>18,400</u>
Jan <u>12,100</u>	May <u>23,400</u>	Sep <u>13,100</u>

Operating Notes: Eden Valley Irrigation and Drainage District operates the Big Sandy Reservoir. The reservoir is operated to provide water to the district members on a call basis, through a canal system. The canals include the Means and Eden Canals, the Eden and West Side Laterals, and the Farson Lateral. Recent construction of regulating reservoirs for pump stations has decreased delivery delays to farmers, which used to be significant, and helped with application efficiency. EOM data developed from USBR Consumptive Uses and Losses Report, 1986-1990.

Reservoir Name: Black Joe Lake

Owner/Operator: USA, c/o Farm Security Adm.

Storage Permit Nos: 5397R \_\_\_\_\_

HWL Data: Area, ac: 102.5 Cap, ac-ft: 1,102 Elev, ft ms 9,944

Permitted Uses:		Water Right Owners:
Use: <u>Irrigation</u>	<u>1,102</u> ac-ft	<u>5397R Farm Security Adm.</u>
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____

Service Outlet: Type: Gated Outlet Capacity, cfs NR  
 Principal Spillway: Type: Weir Capacity, cfs NR  
 Emergency Spillway Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Miscellaneous Spillway Info: \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 36.17

Average Monthly Gross Evaporation (in.):

Oct <u>2.75</u>	Feb <u>0.90</u>	Jun <u>4.74</u>	
Nov <u>1.41</u>	Mar <u>1.41</u>	Jul <u>6.19</u>	
Dec <u>0.94</u>	Apr <u>2.89</u>	Aug <u>5.64</u>	
Jan <u>0.98</u>	May <u>4.16</u>	Sep <u>4.16</u>	Total, in: <u>36.17</u>

Average Monthly Precipitation (in.):

Oct <u>2.25</u>	Feb <u>3.25</u>	Jun <u>1.95</u>	
Nov <u>4.00</u>	Mar <u>3.00</u>	Jul <u>1.80</u>	
Dec <u>4.25</u>	Apr <u>2.85</u>	Aug <u>1.75</u>	
Jan <u>4.25</u>	May <u>2.85</u>	Sep <u>1.95</u>	Total, in: <u>34.15</u>

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes:  
No operating data are available  
 \_\_\_\_\_  
 \_\_\_\_\_

Reservoir Name: Boulder Lake

Owner/Operator: Boulder Irrigation District

Storage Permit Nos: 4038R 6572R

HWL Data: Area, ac: 1,676.5 Cap, ac-ft: 22,208 Elev, ft ms 7289.5

Permitted Uses:		Water Right Owners:
Use: <u>Irr.</u>	<u>16,207</u> ac-ft	<u>4038R</u>
<u>Irr.</u>	<u>4,453</u> ac-ft	<u>6572R</u>
<u>Fish &amp; WL</u>	<u>1,621</u> ac-ft	<u>6572R</u>
<u>                    </u>	<u>                    </u> ac-ft	<u>                    </u>
<u>                    </u>	<u>                    </u> ac-ft	<u>                    </u>

Service Outlet: Type: 2 - 4.5 ft x 4.5 ft RCP Capacity, cfs 900

Principal Spillway: Type: concrete weir Capacity, cfs 6,160

Emergency Spillway Type:                      Capacity, cfs:                     

Miscellaneous Spillway Info: Maps show location of emergency spillway, but give no details.

Average Annual Gross FWS Evaporation (in.): 35.34

Average Monthly Gross Evaporation (in.):

Oct <u>2.69</u>	Feb <u>0.88</u>	Jun <u>4.63</u>	
Nov <u>1.38</u>	Mar <u>1.38</u>	Jul <u>6.04</u>	
Dec <u>0.92</u>	Apr <u>2.83</u>	Aug <u>5.51</u>	
Jan <u>0.95</u>	May <u>4.06</u>	Sep <u>4.06</u>	Total, in: <u>35.34</u>

Average Monthly Precipitation (in.):

Oct <u>0.95</u>	Feb <u>0.97</u>	Jun <u>1.35</u>	
Nov <u>1.27</u>	Mar <u>0.98</u>	Jul <u>1.30</u>	
Dec <u>1.25</u>	Apr <u>1.06</u>	Aug <u>1.25</u>	
Jan <u>1.38</u>	May <u>1.85</u>	Sep <u>1.42</u>	Total, in: <u>15.03</u>

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes: Irrigation releases are typically in the range of 360 cfs from May 15 to July 15. Releases occur at the dam and are picked up at the Boulder Irrigation Canal approximately 2 miles below the dam. Fall operations include a diversion of 100 to 125 cfs in September to increase soil moisture before winter. Approximately 35 cfs is diverted in October for stock water. The Howard-Ruff ditch is directly below the dam and annually purchases storage water from the lake. Boulder Reservoir has no staff gage, and no storage records are kept.



Reservoir Name: Bush Creek Reservoir

Owner/Operator: Blair and Hay Land and Livestock Company

Storage Permit Nos: 4058R \_\_\_\_\_

HWL Data: Area, ac: 2,629.2 Cap, ac-ft: 17,267 Elev, ft msl: \_\_\_\_\_

Permitted Uses:		Water Right Owners:
Use: <u>Irr., Stock, Dom.</u>	<u>17,267</u> ac-ft	<u>4058R, Blair and Hay Land &amp; Livestock</u>
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____

Service Outlet: Type: 2x30" Dia. Gated Condu Capacity, cfs NR

Principal Spillway: Type: Weir Capacity, cfs NR

Emergency Spillway Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_

Miscellaneous Spillway Info: \_\_\_\_\_

Note: Reservoir contains 2 dams, each dam containing it's own outlet.  
 \_\_\_\_\_  
 \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 40.00

Average Monthly Gross Evaporation (in.):

Oct <u>3.04</u>	Feb <u>1.00</u>	Jun <u>5.24</u>	
Nov <u>1.56</u>	Mar <u>1.56</u>	Jul <u>6.84</u>	
Dec <u>1.04</u>	Apr <u>3.20</u>	Aug <u>6.24</u>	
Jan <u>1.08</u>	May <u>4.60</u>	Sep <u>4.60</u>	Total, in: 40.00

Average Monthly Precipitation (in.):

Oct <u>0.94</u>	Feb <u>0.46</u>	Jun <u>1.05</u>	
Nov <u>0.50</u>	Mar <u>0.70</u>	Jul <u>0.99</u>	
Dec <u>0.47</u>	Apr <u>0.95</u>	Aug <u>0.89</u>	
Jan <u>0.46</u>	May <u>1.45</u>	Sep <u>0.99</u>	Total, in: 9.85

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes:  
 \_\_\_\_\_  
 No reservoir operating data were obtained; impoundment is in the Great Divide Basin.  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Reservoir Name: Divide

Owner/Operator: Mr. John Blatt

Storage Permit Nos: 5365R \_\_\_\_\_

HWL Data: Area, ac: 133.3 Cap, ac-ft: 1,027 Elev, ft msl: \_\_\_\_\_

Permitted Uses:		Water Right Owners:
Use: <u>Irr., Stock, Dom.</u>	<u>1,027</u> ac-ft	<u>5365R, T.J Land &amp; Cattle</u>
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____

Service Outlet: Type: Gated 24" Corr. Iron Pij Capacity, cfs NR

Principal Spillway: Type: Weir Capacity, cfs NR

Emergency Spillway Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_

Miscellaneous Spillway Info: \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 35.00

Average Monthly Gross Evaporation (in.):

Oct <u>2.66</u>	Feb <u>0.88</u>	Jun <u>4.59</u>	
Nov <u>1.37</u>	Mar <u>1.37</u>	Jul <u>5.99</u>	
Dec <u>0.91</u>	Apr <u>2.80</u>	Aug <u>5.46</u>	
Jan <u>0.95</u>	May <u>4.03</u>	Sep <u>4.03</u>	Total, in: 35.00

Average Monthly Precipitation (in.):

Oct <u>1.80</u>	Feb <u>2.75</u>	Jun <u>1.70</u>	
Nov <u>3.45</u>	Mar <u>2.45</u>	Jul <u>1.55</u>	
Dec <u>3.70</u>	Apr <u>2.12</u>	Aug <u>1.35</u>	
Jan <u>4.06</u>	May <u>2.20</u>	Sep <u>1.75</u>	Total, in: 28.88

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes:

No reservoir operating data were obtained. Releases are made into the Scab Creek drainage.

Reservoir Name: Eden  
 Owner/Operator: U.S. Bureau of Reclamation / Eden Valley Irr. Dist  
 Storage Permit Nos: 818R  
 \_\_\_\_\_  
 \_\_\_\_\_  
 HWL Data: Area, ac: 1,361.85 Cap, ac-ft: 18,489.93 Elev, ft ms 6,710  
 Permitted Uses: \_\_\_\_\_ Water Right Owners: \_\_\_\_\_  
 Use: Irr., Dom 18,489.93 ac-ft 818R Eden Valley Irr Dist  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 Service Outlet: Type: gated 5'x6' tunnel Capacity, cfs NR  
 Principal Spillway: Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Emergency Spillway Type: NA Capacity, cfs: \_\_\_\_\_  
 Miscellaneous Spillway Info: NR = not rated. There is no emergency spillway because this is an off-channel structure.  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 40.00

Average Monthly Gross Evaporation (in.):

Oct <u>3.04</u>	Feb <u>1.00</u>	Jun <u>5.24</u>		
Nov <u>1.56</u>	Mar <u>1.56</u>	Jul <u>6.84</u>		
Dec <u>1.04</u>	Apr <u>3.20</u>	Aug <u>6.24</u>		
Jan <u>1.08</u>	May <u>4.60</u>	Sep <u>4.60</u>	Total, in:	<u>40.00</u>

Average Monthly Precipitation (in.):

Oct <u>0.68</u>	Feb <u>0.34</u>	Jun <u>1.01</u>		
Nov <u>0.40</u>	Mar <u>0.52</u>	Jul <u>0.88</u>		
Dec <u>0.41</u>	Apr <u>0.63</u>	Aug <u>0.71</u>		
Jan <u>0.37</u>	May <u>1.16</u>	Sep <u>0.90</u>	Total, in:	<u>8.01</u>

Average EOM Contents (ac-ft):

Oct <u>400</u>	Feb <u>1,400</u>	Jun <u>5,000</u>
Nov <u>600</u>	Mar <u>1,800</u>	Jul <u>3,700</u>
Dec <u>1,000</u>	Apr <u>2,600</u>	Aug <u>1,100</u>
Jan <u>1,200</u>	May <u>5,200</u>	Sep <u>800</u>

Operating Notes: Eden Reservoir is operated by the Eden Valley Irrigation and Drainage District. It is operated to compliment the operation of Big Sandy Reservoir. Average EOM content data developed from USBR Consumptive Uses and Losses Report, 1986-1990.  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Reservoir Name: Elk Horn (Little Sandy)

Owner/Operator: Joe Thompson Jr. Livestock Co.

Storage Permit Nos: 1025R \_\_\_\_\_

HWL Data: Area, ac: 145.0 Cap, ac-ft: 1,450 Elev, ft msl: \_\_\_\_\_

Permitted Uses:		Water Right Owners:
Use: <u>Irrigation</u>	<u>1,450</u> ac-ft	<u>1025R, Joe Thompson Jr. Livestock Co.</u>
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____

Service Outlet: Type: 2' x 4' conduit Capacity, cfs NR  
 Principal Spillway: Type: Weir Capacity, cfs NR  
 Emergency Spillway Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Miscellaneous Spillway Info: \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 35.00

Average Monthly Gross Evaporation (in.):

Oct <u>2.66</u>	Feb <u>0.88</u>	Jun <u>4.59</u>	
Nov <u>1.37</u>	Mar <u>1.37</u>	Jul <u>5.99</u>	
Dec <u>0.91</u>	Apr <u>2.80</u>	Aug <u>5.46</u>	
Jan <u>0.95</u>	May <u>4.03</u>	Sep <u>4.03</u>	Total, in: <u>35.00</u>

Average Monthly Precipitation (in.):

Oct <u>1.88</u>	Feb <u>2.85</u>	Jun <u>1.75</u>	
Nov <u>3.55</u>	Mar <u>2.50</u>	Jul <u>1.55</u>	
Dec <u>3.70</u>	Apr <u>2.30</u>	Aug <u>1.45</u>	
Jan <u>4.08</u>	May <u>2.40</u>	Sep <u>1.85</u>	Total, in: <u>29.86</u>

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Reservoir Name: Fontenelle  
 Owner/Operator: U.S. Bureau of Reclamation  
 Storage Permit Nos: 6629R 9502R  
 HWL Data: Area, ac: 8,058 Cap, ac-ft: 345,397 Elev, ft ms 6,506  
 Permitted Uses: various 345,397 ac-ft Water Right Owners:  
U.S. Bureau of Reclamation  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 Service Outlet: Type: 11 ft dia. conduit Capacity, cfs 19,000  
 Principal Spillway: Type: east - 2 - 4'x4' conduits Capacity, cfs NR  
 Principal Spillway: Type: west - 2 - 4'x6' conduits Capacity, cfs 20,000  
 Emergency Spillway Type: weir Capacity, cfs 20,500  
 Miscellaneous Spillway Info: NR = not rated

Average Annual Gross FWS Evaporation (in.): 41.33  
 Average Monthly Gross Evaporation (in.):  
 Oct 3.14 Feb 1.03 Jun 5.41  
 Nov 1.61 Mar 1.61 Jul 7.07  
 Dec 1.07 Apr 3.31 Aug 6.45  
 Jan 1.12 May 4.75 Sep 4.75 Total, in: 41.33  
 Average Monthly Precipitation (in.):  
 Oct 0.59 Feb 0.26 Jun 0.95  
 Nov 0.35 Mar 0.36 Jul 0.73  
 Dec 0.27 Apr 0.65 Aug 0.63  
 Jan 0.23 May 1.07 Sep 0.91 Total, in: 7.00  
 Average EOM Contents (ac-ft):  
 Oct 237,876 Feb 153,123 Jun 261,477  
 Nov 225,472 Mar 141,568 Jul 274,370  
 Dec 202,975 Apr 140,839 Aug 262,723  
 Jan 177,489 May 175,654 Sep 251,799

Operating Notes: Fontenelle is generally operated to maximize storage, power generation and flood mitigation. It also is used to maintain the aquatic and riparian habitat at Seedskafee Wildlife Refuge. Releases are typically 1,200 to 1,400 cfs from August to April. During spring runoff, releases are increased to maintain reservoir pool elevation increases to 1 to 2 feet daily. The maximum elevation target is 6,506 feet, or 345,000 AF in storage. The operator (Bureau) endeavors to keep release peaks below inflow peaks, which average about 11,000 cfs. After spring runoff ceases and peak storage is met, releases are again set back to 1,200 to 1,400 cfs.

Reservoir Name: Fremont Lake

Owner/Operator: \_\_\_\_\_

Storage Permit Nos: 4452R                      4453R  
4465R                      8937R

HWL Data:                      Area, ac: 5,400      Cap, ac-ft: 30,899.44      Elev, ft ms 7,411.45

Permitted Uses:		Water Right Owners:
Use:	_____ ac-ft	_____
	_____ ac-ft	_____
	_____ ac-ft	_____
	_____ ac-ft	_____
	_____ ac-ft	_____

Service Outlet:      Type: gated                      Capacity, cfs NR  
Principal Spillway:      Type: weir/flashboards                      Capacity, cfs NR  
Emergency Spillway Type: \_\_\_\_\_ Capacity, cfs NR  
Miscellaneous Spillway Info: Entire dam and control works act as the service and emergency spillway. Both the Highland and Fremont Ditch headgates are built directly into the face of the dam.

Average Annual Gross FWS Evaporation (in.):                      35.90

Average Monthly Gross Evaporation (in.):

Oct <u>2.73</u>	Feb <u>0.90</u>	Jun <u>4.70</u>	
Nov <u>1.40</u>	Mar <u>1.40</u>	Jul <u>6.14</u>	
Dec <u>0.93</u>	Apr <u>2.87</u>	Aug <u>5.60</u>	
Jan <u>0.97</u>	May <u>4.13</u>	Sep <u>4.13</u>	Total, in:      35.90

Average Monthly Precipitation (in.):

Oct <u>0.95</u>	Feb <u>1.00</u>	Jun <u>1.35</u>	
Nov <u>1.20</u>	Mar <u>0.98</u>	Jul <u>1.30</u>	
Dec <u>1.20</u>	Apr <u>1.10</u>	Aug <u>1.30</u>	
Jan <u>1.38</u>	May <u>1.85</u>	Sep <u>1.38</u>	Total, in:      14.99

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes: Highland Irrigation District is the operator of the dam. Operating procedures are as follows: Beginning Nov. 1 each year, inflow bypasses are adjusted in an effort to satisfy storage rights while maintaining a reasonable fishery in Pine Creek below the dam. During spring runoff, inflows will be used to meet storage rights as well as downstream irrigation rights. Otherwise, endeavor to operate the reservoir such that all rights, even those not signatory to the operating procedures, are not adversely affected in times of water shortage. Discharges from the reservoir can be taken directly into the Highland and Fremont Irrigation Canals or returned to Pine Creek.

Reservoir Name: Hay

Owner/Operator: Sweetwater Cattle Company

Storage Permit Nos: 547R 2339R

HWL Data: Area, ac: 1,036.6 Cap, ac-ft: 5,847 Elev, ft msl: \_\_\_\_\_

Permitted Uses:		Water Right Owners:
Use: <u>Irr, Stock</u>	<u>2,480</u> ac-ft	<u>547R, Sweetwater Cattle Company</u>
<u>Irr, Stock</u>	<u>3,363</u> ac-ft	<u>2339R, Sweetwater Cattle Company</u>
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____

Service Outlet: Type: 2'3"x2'0" Conc. Culvert Capacity, cfs NR  
 Principal Spillway: Type: Weir Capacity, cfs NR  
 Emergency Spillway Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Miscellaneous Spillway Info: \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 44.50

Average Monthly Gross Evaporation (in.):

Oct <u>3.38</u>	Feb <u>1.11</u>	Jun <u>5.83</u>	
Nov <u>1.74</u>	Mar <u>1.74</u>	Jul <u>7.61</u>	
Dec <u>1.16</u>	Apr <u>3.56</u>	Aug <u>6.94</u>	
Jan <u>1.20</u>	May <u>5.12</u>	Sep <u>5.12</u>	Total, in: <u>44.50</u>

Average Monthly Precipitation (in.):

Oct <u>0.85</u>	Feb <u>0.40</u>	Jun <u>0.95</u>	
Nov <u>0.45</u>	Mar <u>0.46</u>	Jul <u>0.97</u>	
Dec <u>0.42</u>	Apr <u>0.93</u>	Aug <u>0.87</u>	
Jan <u>0.40</u>	May <u>1.25</u>	Sep <u>0.94</u>	Total, in: <u>8.89</u>

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Reservoir Name: High Savery

Owner/Operator: State of Wyoming (under construction)

Storage Permit Nos: \_\_\_\_\_

HWL Data: Area, ac: 482.3 Cap, ac-ft: 22,432.90 Elev, ft ms 7,305

Permitted Uses:		Water Right Owners:
Use: <u>inactive</u>	<u>47.7</u> ac-ft	<u>State of Wyoming</u>
<u>active - rec</u>	<u>4,955</u> ac-ft	_____
<u>irr</u>	<u>17,430.20</u> ac-ft	_____
<u>flood pool</u>	<u>10,932.30</u> ac-ft	_____
_____	_____ ac-ft	_____

Service Outlet: Type: 48 inch conduit Capacity, cfs 397

Principal Spillway: Type: concrete chute Capacity, cfs 9,586

Emergency Spillway Type: earthen - excavated Capacity, cfs 41,110

Miscellaneous Spillway Info: \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 45.10

Average Monthly Gross Evaporation (in.):

Oct <u>3.7</u>	Feb <u>1</u>	Jun <u>5.9</u>	
Nov <u>1.6</u>	Mar <u>1.8</u>	Jul <u>7.7</u>	
Dec <u>1.2</u>	Apr <u>3.9</u>	Aug <u>6.7</u>	
Jan <u>1.2</u>	May <u>5.3</u>	Sep <u>5.1</u>	Total, in: <u>45.10</u>

Average Monthly Precipitation (in.):

Oct <u>1.60</u>	Feb <u>0.80</u>	Jun <u>1.40</u>	
Nov <u>1.00</u>	Mar <u>1.20</u>	Jul <u>1.30</u>	
Dec <u>1.20</u>	Apr <u>1.40</u>	Aug <u>1.40</u>	
Jan <u>1.10</u>	May <u>1.40</u>	Sep <u>1.30</u>	Total, in: <u>15.10</u>

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes: High Savery dam is currently under construction, with completion scheduled for spring of 2004. The reservoir will primarily serve agriculture with a 12,000 AF yield of late season irrigation water from a 17,430.2 AF irrigation pool. Irrigation water would be allocated by the Savery - Little Snake Water Conservancy District. The reservoir also includes a recreation pool of 4,955 AF. EIS operation studies indicate annual average evaporation of 869 AF and annual depletions of 6,855 / for total annual depletions of 7,724 AF. Source of Precip and Evap data: WWC Temperature Study,



Reservoir Name: Kemmerer No. 1

Owner/Operator: City of Kemmerer

Storage Permit Nos: 5302R 9776R

HWL Data: Area, ac: 182.93 Cap, ac-ft: 1,768.78 Elev, ft ms 7,145.90

Permitted Uses:		Water Right Owners:
Use: <u>M&amp;I</u>	<u>1,025.00</u> ac-ft	<u>5302R</u>
<u>M&amp;I</u>	<u>710.78</u> ac-ft	<u>9776R</u>
<u>inactive</u>	<u>33.00</u> ac-ft	

Service Outlet: Type: 2 - 36" CMP w/ 28" line Capacity, cfs 185  
 Principal Spillway: Type: weir Capacity, cfs 1,120  
 Emergency Spillway Type: weir Capacity, cfs 27,000  
 Miscellaneous Spillway Info: Emergency spillway capacity includes principal spillway. Liners inside service pipes are HDPE.

Average Annual Gross FWS Evaporation (in.): 38.63

Average Monthly Gross Evaporation (in.):

Oct <u>2.94</u>	Feb <u>0.97</u>	Jun <u>5.06</u>	
Nov <u>1.51</u>	Mar <u>1.51</u>	Jul <u>6.61</u>	
Dec <u>1.00</u>	Apr <u>3.09</u>	Aug <u>6.03</u>	
Jan <u>1.04</u>	May <u>4.44</u>	Sep <u>4.44</u>	Total, in: <u>38.63</u>

Average Monthly Precipitation (in.):

Oct <u>0.84</u>	Feb <u>0.65</u>	Jun <u>1.15</u>	
Nov <u>0.87</u>	Mar <u>0.73</u>	Jul <u>0.82</u>	
Dec <u>0.75</u>	Apr <u>0.96</u>	Aug <u>0.91</u>	
Jan <u>0.69</u>	May <u>1.22</u>	Sep <u>1.19</u>	Total, in: <u>10.78</u>

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes: This reservoir serves the City of Kemmerer. The reservoir itself used to be the point of diversion for the city treatment plant; however operational changes are such that the city now diverts from the Hams Fork River downstream of the reservoir. There are no special operating criteria for this reservoir, it is typically operated as a flow-through structure with little, if any, changes made to the gate settings.

Reservoir Name: McNinch No. 1

Owner/Operator: E.W. McNinch and Lois C. McNinch

Storage Permit Nos: 5413R 5801R

HWL Data: Area, ac: 107.0 Cap, ac-ft: 1,086 Elev, ft msl: \_\_\_\_\_

Permitted Uses: \_\_\_\_\_ Water Right Owners: \_\_\_\_\_

Use: Irr., Stock, Dom. 1,086 ac-ft 5801R, E.W. & Lois C. McNinch

\_\_\_\_\_ ac-ft \_\_\_\_\_

\_\_\_\_\_ ac-ft \_\_\_\_\_

\_\_\_\_\_ ac-ft \_\_\_\_\_

\_\_\_\_\_ ac-ft \_\_\_\_\_

Service Outlet: Type: Gated 18" CMP Capacity, cfs NR

Principal Spillway: Type: Weir Capacity, cfs 548

Emergency Spillway Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_

Miscellaneous Spillway Info: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 38.95

Average Monthly Gross Evaporation (in.):

Oct <u>2.96</u>	Feb <u>0.97</u>	Jun <u>5.10</u>		
Nov <u>1.52</u>	Mar <u>1.52</u>	Jul <u>6.66</u>		
Dec <u>1.01</u>	Apr <u>3.12</u>	Aug <u>6.08</u>		
Jan <u>1.05</u>	May <u>4.48</u>	Sep <u>4.48</u>	Total, in:	<u>38.95</u>

Average Monthly Precipitation (in.):

Oct <u>0.58</u>	Feb <u>0.47</u>	Jun <u>1.01</u>		
Nov <u>0.60</u>	Mar <u>0.55</u>	Jul <u>0.89</u>		
Dec <u>0.52</u>	Apr <u>0.69</u>	Aug <u>0.89</u>		
Jan <u>0.52</u>	May <u>1.17</u>	Sep <u>0.97</u>	Total, in:	<u>8.86</u>

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>		
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>		
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>		
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>		

Operating Notes: The McNinch Reservoirs are private storage reservoirs the operation of which is at the whim of the owner. Sources of supply are the numerous springs and draws tributary to North Piney Creek as outlined in the Tabulation of Adjudicated Water Rights.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Reservoir Name: McNinch No. 2

Owner/Operator: E.W. McNinch and Lois C. McNinch

Storage Permit Nos: 5412R \_\_\_\_\_

HWL Data: Area, ac: 26.4 Cap, ac-ft: 198 Elev, ft msl: \_\_\_\_\_

Permitted Uses:		Water Right Owners:
Use: <u>Irr., Stock, Dom.</u>	<u>198</u> ac-ft	<u>5412R, E.W. &amp; Lois C. McNinch</u>
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____

Service Outlet: Type: 18" Cast Iron Pipe Capacity, cfs NR  
 Principal Spillway: Type: Weir Capacity, cfs NR  
 Emergency Spillway Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Miscellaneous Spillway Info: \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 38.96

Average Monthly Gross Evaporation (in.):

Oct <u>2.96</u>	Feb <u>0.97</u>	Jun <u>5.10</u>	
Nov <u>1.52</u>	Mar <u>1.52</u>	Jul <u>6.66</u>	
Dec <u>1.01</u>	Apr <u>3.12</u>	Aug <u>6.08</u>	
Jan <u>1.05</u>	May <u>4.48</u>	Sep <u>4.48</u>	Total, in: <u>38.96</u>

Average Monthly Precipitation (in.):

Oct <u>0.58</u>	Feb <u>0.47</u>	Jun <u>1.01</u>	
Nov <u>0.60</u>	Mar <u>0.55</u>	Jul <u>0.89</u>	
Dec <u>0.52</u>	Apr <u>0.69</u>	Aug <u>0.89</u>	
Jan <u>0.52</u>	May <u>1.17</u>	Sep <u>0.97</u>	Total, in: <u>8.86</u>

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes: The McNinch Reservoirs are private storage reservoirs the operation of which is at the whim of the owner. Sources of supply are the numerous springs and draws tributary to North Piney Creek as outlined in the Tabulation of Adjudicated Water Rights.

Reservoir Name: Meeks Cabin  
 Owner/Operator: U.S. Bureau of Reclamation/Bridger Valley Water Conservation District  
 Storage Permit Nos: 6276R 5547R

HWL Data: Area, ac: 326.6 Cap, ac-ft: 16,301.50 Elev, ft ms 8,740.0

Permitted Uses:		Water Right Owners:	
Use:	<u>Irr.</u>	<u>16,301.50</u>	ac-ft <u>6276R U.S. Bureau of Reclamation</u>
	<u>Irr., Stock, Power</u>	<u>17,269.50</u>	ac-ft <u>5547R U.S. Bureau of Reclamation</u>
	<u>        </u>	<u>        </u>	<u>        </u>
	<u>        </u>	<u>        </u>	<u>        </u>
	<u>        </u>	<u>        </u>	<u>        </u>

Service Outlet: Type:          Capacity, cfs:           
 Principal Spillway: Type:          Capacity, cfs:           
 Emergency Spillway Type: concrete lined channel Capacity, cfs:           
 Miscellaneous Spillway Info:         

Average Annual Gross FWS Evaporation (in.): 35.00

Average Monthly Gross Evaporation (in.):

Oct <u>2.66</u>	Feb <u>0.88</u>	Jun <u>4.59</u>	
Nov <u>1.37</u>	Mar <u>1.37</u>	Jul <u>5.99</u>	
Dec <u>0.91</u>	Apr <u>2.80</u>	Aug <u>5.46</u>	
Jan <u>0.95</u>	May <u>4.03</u>	Sep <u>4.03</u>	Total, in: <u>35.00</u>

Average Monthly Precipitation (in.):

Oct <u>2.25</u>	Feb <u>1.85</u>	Jun <u>1.85</u>	
Nov <u>1.85</u>	Mar <u>2.80</u>	Jul <u>1.50</u>	
Dec <u>1.78</u>	Apr <u>2.85</u>	Aug <u>1.75</u>	
Jan <u>1.85</u>	May <u>2.75</u>	Sep <u>1.75</u>	Total, in: <u>24.83</u>

Average EOM Contents (ac-ft):

Oct <u>8,950</u>	Feb <u>10,700</u>	Jun <u>&gt;16,300</u>
Nov <u>9,270</u>	Mar <u>11,290</u>	Jul <u>&gt;16,300</u>
Dec <u>9,760</u>	Apr <u>18,070</u>	Aug <u>12,550</u>
Jan <u>10,170</u>	May <u>&gt;16,300</u>	Sep <u>9,950</u>

Operating Notes: Meeks Cabin Reservoir is operated by the Bridger Valley Water Conservancy District on a call basis. District members are provided water upon demand, usually after their requirements cannot be met from direct flow water rights due to recession of runoff. Typically, about 30 percent of the annual reservoir demand is used prior to the hay cutting (July 24, in a typical year), with the remainder used in the fall to fill the soil profile. Meeks Cabin Reservoir has a 10-cfs minimum by-pass amount.

Reservoir Name: Middle Piney

Owner/Operator: USDA Forest Service

Storage Permit Nos: 3578R \_\_\_\_\_

HWL Data: Area, ac: 164.6 Cap, ac-ft: 4,201 Elev, ft msl: \_\_\_\_\_

Permitted Uses:		Water Right Owners:
Use: <u>Irr, Stock, Dom</u>	<u>4,201</u> ac-ft	<u>3578R, USDA Forest Service</u>
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____

Service Outlet: Type: Gated 24" and 42" CMF Capacity, cfs NR

Principal Spillway: Type: Weir Capacity, cfs 603

Emergency Spillway Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_

Miscellaneous Spillway Info: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 37.75

Average Monthly Gross Evaporation (in.):

Oct <u>2.87</u>	Feb <u>0.94</u>	Jun <u>4.95</u>	
Nov <u>1.47</u>	Mar <u>1.47</u>	Jul <u>6.46</u>	
Dec <u>0.98</u>	Apr <u>3.02</u>	Aug <u>5.89</u>	
Jan <u>1.02</u>	May <u>4.34</u>	Sep <u>4.34</u>	Total, in: <u>37.75</u>

Average Monthly Precipitation (in.):

Oct <u>2.30</u>	Feb <u>5.00</u>	Jun <u>1.85</u>	
Nov <u>5.75</u>	Mar <u>4.00</u>	Jul <u>1.50</u>	
Dec <u>6.25</u>	Apr <u>2.82</u>	Aug <u>1.55</u>	
Jan <u>6.75</u>	May <u>3.25</u>	Sep <u>1.80</u>	Total, in: <u>42.82</u>

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes: Middle Piney Reservoir has recently (1997) had its agricultural storage rights abandoned and all interest in the reservoir has been assigned to the U. S. Forest Service. The State Engineer's Office reports that operation of the reservoir is essentially unmanaged, and that the discharge gates are simply left wide open.

\_\_\_\_\_  
 \_\_\_\_\_

Reservoir Name: New Fork Lake  
 Owner/Operator: \_\_\_\_\_  
 Storage Permit Nos: 480R \_\_\_\_\_  
 HWL Data: Area, ac: 1,416 Cap, ac-ft: 20,340 Elev, ft ms 7,819  
 Permitted Uses: \_\_\_\_\_ Water Right Owners: \_\_\_\_\_  
 Use: Irr \_\_\_\_\_ 1,416 ac-ft New Fork Lake Irrigation District  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 Service Outlet: Type: 3 gated concrete condu Capacity, cfs 838  
 Principal Spillway: Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Emergency Spillway Type: weir Capacity, cfs 2,260  
 Miscellaneous Spillway Info: \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.):		35.00	
Average Monthly Gross Evaporation (in.):			
Oct	<u>2.66</u>	Feb	<u>0.88</u>
Nov	<u>1.37</u>	Mar	<u>1.37</u>
Dec	<u>0.91</u>	Apr	<u>2.80</u>
Jan	<u>0.95</u>	May	<u>4.03</u>
		Jun	<u>4.59</u>
		Jul	<u>5.99</u>
		Aug	<u>5.46</u>
		Sep	<u>4.03</u>
		Total, in:	35.00
Average Monthly Precipitation (in.):			
Oct	<u>1.45</u>	Feb	<u>2.38</u>
Nov	<u>2.85</u>	Mar	<u>2.00</u>
Dec	<u>3.25</u>	Apr	<u>1.85</u>
Jan	<u>3.45</u>	May	<u>1.95</u>
		Jun	<u>1.45</u>
		Jul	<u>1.45</u>
		Aug	<u>1.35</u>
		Sep	<u>1.48</u>
		Total, in:	24.91
Average EOM Contents (ac-ft):			
Oct	<u>N/A</u>	Feb	<u>N/A</u>
Nov	<u>N/A</u>	Mar	<u>N/A</u>
Dec	<u>N/A</u>	Apr	<u>N/A</u>
Jan	<u>N/A</u>	May	<u>N/A</u>
		Jun	<u>N/A</u>
		Jul	<u>N/A</u>
		Aug	<u>N/A</u>
		Sep	<u>N/A</u>

Operating Notes: New Fork Lake is owned and operated by the New Fork Lake Irrigation District. It is operated primarily as an irrigation storage reservoir. Runoff is stored in the reservoir until elevation 38.0 is exceeded, at which point water will begin to flow through the spillway. Release of water through the outlet is dependent on manual operation of three (3) slide gates, and is governed by irrigation needs and adjudicated water rights. There is no major District canal or ditch which is fed by the reservoir; the New Fork River itself is the primary conveyance with individual irrigators diverting directly therefrom.

Reservoir Name: Pacific Reservoir No. 1

Owner/Operator: \_\_\_\_\_

Storage Permit Nos: 4025R \_\_\_\_\_

HWL Data: Area, ac: 23.27 Cap, ac-ft: 106.91 Elev, ft ms 7220 +/-

Permitted Uses:		Water Right Owners:
Use: <u>Irr, Stock</u>	<u>106.91</u> ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____

Service Outlet: Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Principal Spillway: Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Emergency Spillway Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Miscellaneous Spillway Info: \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 35.00

Average Monthly Gross Evaporation (in.):

Oct <u>2.66</u>	Feb <u>0.88</u>	Jun <u>4.59</u>	
Nov <u>1.37</u>	Mar <u>1.37</u>	Jul <u>5.99</u>	
Dec <u>0.91</u>	Apr <u>2.80</u>	Aug <u>5.46</u>	
Jan <u>0.95</u>	May <u>4.03</u>	Sep <u>4.03</u>	Total, in: <u>35.00</u>

Average Monthly Precipitation (in.):

Oct <u>0.75</u>	Feb <u>0.70</u>	Jun <u>1.50</u>	
Nov <u>0.75</u>	Mar <u>1.00</u>	Jul <u>1.00</u>	
Dec <u>0.75</u>	Apr <u>1.25</u>	Aug <u>0.75</u>	
Jan <u>0.75</u>	May <u>1.30</u>	Sep <u>1.00</u>	Total, in: <u>11.50</u>

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Reservoir Name: Pacific Reservoir No. 2

Owner/Operator: \_\_\_\_\_

Storage Permit Nos: 4026R \_\_\_\_\_

HWL Data: Area, ac: 257.88 Cap, ac-ft: 1,394.21 Elev, ft ms 7010 +/-

Permitted Uses:		Water Right Owners:
Use: <u>Irr, Stock</u>	<u>106.91</u> ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____

Service Outlet: Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Principal Spillway: Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Emergency Spillway Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Miscellaneous Spillway Info: \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 38.00

Average Monthly Gross Evaporation (in.):

Oct <u>2.89</u>	Feb <u>0.95</u>	Jun <u>4.98</u>	
Nov <u>1.48</u>	Mar <u>1.48</u>	Jul <u>6.50</u>	
Dec <u>0.99</u>	Apr <u>3.04</u>	Aug <u>5.93</u>	
Jan <u>1.03</u>	May <u>4.37</u>	Sep <u>4.37</u>	Total, in: <u>38.00</u>

Average Monthly Precipitation (in.):

Oct <u>0.60</u>	Feb <u>0.55</u>	Jun <u>1.30</u>	
Nov <u>0.60</u>	Mar <u>0.80</u>	Jul <u>0.90</u>	
Dec <u>0.60</u>	Apr <u>1.00</u>	Aug <u>0.60</u>	
Jan <u>0.60</u>	May <u>1.20</u>	Sep <u>0.90</u>	Total, in: <u>9.65</u>

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



Reservoir Name: Paterson Lake

Owner/Operator: Famer's Land and Livestock Company

Storage Permit Nos: 433R \_\_\_\_\_

HWL Data: Area, ac: 200.0 Cap, ac-ft: 1,874 Elev, ft msl: \_\_\_\_\_

Permitted Uses:	Water Right Owners:
Use: <u>Irr, Dom, HydroPowe</u> <u>1,874</u> ac-ft	<u>433R, Farmer's Land &amp; Livestock Co.</u>
_____ ac-ft	_____
_____ ac-ft	_____
_____ ac-ft	_____
_____ ac-ft	_____

Service Outlet: Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Principal Spillway: Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Emergency Spillway Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Miscellaneous Spillway Info: \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 41.02

Average Monthly Gross Evaporation (in.):

Oct <u>3.12</u>	Feb <u>1.03</u>	Jun <u>5.37</u>	
Nov <u>1.60</u>	Mar <u>1.60</u>	Jul <u>7.01</u>	
Dec <u>1.07</u>	Apr <u>3.28</u>	Aug <u>6.40</u>	
Jan <u>1.11</u>	May <u>4.72</u>	Sep <u>4.72</u>	Total, in: <u>41.02</u>

Average Monthly Precipitation (in.):

Oct <u>0.83</u>	Feb <u>0.31</u>	Jun <u>1.11</u>	
Nov <u>0.48</u>	Mar <u>0.52</u>	Jul <u>0.90</u>	
Dec <u>0.44</u>	Apr <u>0.86</u>	Aug <u>0.89</u>	
Jan <u>0.36</u>	May <u>1.15</u>	Sep <u>0.95</u>	Total, in: <u>8.80</u>

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Reservoir Name: Silver Lake

Owner/Operator: Silver Lake Reservoir Company

Storage Permit Nos: 3790R 5769R

HWL Data: Area, ac: 180.0 Cap, ac-ft: 2,152 Elev, ft msl: \_\_\_\_\_

Permitted Uses:

Use: Irrigation 1,219 ac-ft  
Irr, Stock 933 ac-ft  
 \_\_\_\_\_ ac-ft  
 \_\_\_\_\_ ac-ft  
 \_\_\_\_\_ ac-ft

Water Right Owners:

3790R, Silver Lake Reservoir Company  
5769R, Silver Lake Irrigation Company  
 \_\_\_\_\_  
 \_\_\_\_\_

Service Outlet: Type: Gated 30" CMP Capacity, cfs NR

Principal Spillway: Type: Weir Capacity, cfs 784

Emergency Spillway Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_

Miscellaneous Spillway Info: \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 35.00

Average Monthly Gross Evaporation (in.):

Oct <u>2.66</u>	Feb <u>0.88</u>	Jun <u>4.59</u>	
Nov <u>1.37</u>	Mar <u>1.37</u>	Jul <u>5.99</u>	
Dec <u>0.91</u>	Apr <u>2.80</u>	Aug <u>5.46</u>	
Jan <u>0.95</u>	May <u>4.03</u>	Sep <u>4.03</u>	Total, in: <u>35.00</u>

Average Monthly Precipitation (in.):

Oct <u>1.85</u>	Feb <u>3.10</u>	Jun <u>1.75</u>	
Nov <u>3.70</u>	Mar <u>2.50</u>	Jul <u>1.65</u>	
Dec <u>4.10</u>	Apr <u>2.25</u>	Aug <u>1.40</u>	
Jan <u>4.30</u>	May <u>2.30</u>	Sep <u>1.75</u>	Total, in: <u>30.65</u>

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Reservoir Name: Sixty Seven

Owner/Operator: Mr. Jay Downes

Storage Permit Nos: 535R 2878R

HWL Data: Area, ac: 333.0 Cap, ac-ft: 4,329 Elev, ft msl: \_\_\_\_\_

Permitted Uses:		Water Right Owners:
Use: <u>Stock, Dom</u>	<u>3,376</u> ac-ft	<u>535R, Perry W. Jenkins</u>
<u>Stock, Dom</u>	<u>953</u> ac-ft	<u>2878R, Perry W. Jenkins</u>
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____
_____	_____ ac-ft	_____

Service Outlet: Type: 2 x 16" CIP Capacity, cfs NR  
 Principal Spillway: Type: Weir Capacity, cfs NR  
 Emergency Spillway Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Miscellaneous Spillway Info: \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 39.18

Average Monthly Gross Evaporation (in.):

Oct <u>2.98</u>	Feb <u>0.98</u>	Jun <u>5.13</u>	
Nov <u>1.53</u>	Mar <u>1.53</u>	Jul <u>6.70</u>	
Dec <u>1.02</u>	Apr <u>3.13</u>	Aug <u>6.11</u>	
Jan <u>1.06</u>	May <u>4.51</u>	Sep <u>4.51</u>	Total, in: <u>39.18</u>

Average Monthly Precipitation (in.):

Oct <u>0.58</u>	Feb <u>0.47</u>	Jun <u>1.01</u>	
Nov <u>0.60</u>	Mar <u>0.55</u>	Jul <u>0.89</u>	
Dec <u>0.52</u>	Apr <u>0.69</u>	Aug <u>0.89</u>	
Jan <u>0.52</u>	May <u>1.17</u>	Sep <u>0.97</u>	Total, in: <u>8.86</u>

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes: Sixty Seven is a privately owned reservoir the operation of which is at the whim of the owner.

Reservoir Name: State Line  
 Owner/Operator: U.S. Bureau of Reclamation/Bridger Valley Water Conservation District

Storage Permit Nos: Utah Permit \_\_\_\_\_  
 \_\_\_\_\_

HWL Data: Area, ac: \_\_\_\_\_ Cap, ac-ft: \_\_\_\_\_ Elev, ft msl: \_\_\_\_\_

Permitted Uses: \_\_\_\_\_ Water Right Owners: \_\_\_\_\_  
 Use: \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_  
 \_\_\_\_\_ ac-ft \_\_\_\_\_

Service Outlet: Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Principal Spillway: Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Emergency Spillway Type: \_\_\_\_\_ Capacity, cfs: \_\_\_\_\_  
 Miscellaneous Spillway Info: \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 34.00  
 Average Monthly Gross Evaporation (in.):  
 Oct 2.58 Feb 0.85 Jun 4.45  
 Nov 1.33 Mar 1.33 Jul 5.81  
 Dec 0.88 Apr 2.72 Aug 5.30  
 Jan 0.92 May 3.91 Sep 3.91 Total, in: 34.00

Average Monthly Precipitation (in.):  
 Oct \_\_\_\_\_ Feb \_\_\_\_\_ Jun \_\_\_\_\_  
 Nov \_\_\_\_\_ Mar \_\_\_\_\_ Jul \_\_\_\_\_  
 Dec \_\_\_\_\_ Apr \_\_\_\_\_ Aug \_\_\_\_\_  
 Jan \_\_\_\_\_ May \_\_\_\_\_ Sep \_\_\_\_\_ Total, in: 0.00

Average EOM Contents (ac-ft):  
 Oct N/A Feb N/A Jun N/A  
 Nov N/A Mar N/A Jul N/A  
 Dec N/A Apr N/A Aug N/A  
 Jan N/A May N/A Sep N/A

Operating Notes: State Line Reservoir is operated by the Bridger Valley Water Conservancy District on a call basis. District members are provided water upon demand, usually after their requirements cannot be met from direct flow water rights due to recession of runoff. Typically, about 30 percent of the annual reservoir demand is used prior to the hay cutting (July 24, in a typical year), with the remainder used in the fall to fill the soil profile. In addition, municipal supplies are provided from June through September each year by agreement between the District and the Lyman-Fort Bridger Joint Powers Board. The State Line Reservoir has a 7-cfs minimum by-pass amount.

Reservoir Name: Viva Naughton  
 Owner/Operator: Naughton Power Plant (Scottish Power)  
 Storage Permit Nos: 6418R 7476R\* \* 3,072 AF Constructed  
7599R\*\* \*\* = not constructed  
 HWL Data: Area, ac: 1458.18 Cap, ac-ft: 45,465 Elev, ft ms 7,240  
 Permitted Uses: Water Right Owners:  
 Use: Ind, 6418R 42,393 ac-ft assigned to Pacificorp  
Ind, 7476R 3,072 ac-ft  
 \_\_\_\_\_ ac-ft  
 \_\_\_\_\_ ac-ft  
 \_\_\_\_\_ ac-ft

Service Outlet: Type: 2 hydropower penstock Capacity, cfs 840 (740 + 100)  
 Principal Spillway: Type: 2 slide gates Capacity, cfs 12,000 total  
 Emergency Spillway Type: fuse plug Capacity, cfs: \_\_\_\_\_  
 Miscellaneous Spillway Info: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Average Annual Gross FWS Evaporation (in.): 38.54

Average Monthly Gross Evaporation (in.):

Oct <u>2.93</u>	Feb <u>0.96</u>	Jun <u>5.05</u>	
Nov <u>1.50</u>	Mar <u>1.50</u>	Jul <u>6.59</u>	
Dec <u>1.00</u>	Apr <u>3.08</u>	Aug <u>6.01</u>	
Jan <u>1.04</u>	May <u>4.43</u>	Sep <u>4.43</u>	Total, in: <u>38.54</u>

Average Monthly Precipitation (in.):

Oct <u>0.84</u>	Feb <u>0.65</u>	Jun <u>1.15</u>	
Nov <u>0.87</u>	Mar <u>0.73</u>	Jul <u>0.82</u>	
Dec <u>0.75</u>	Apr <u>0.96</u>	Aug <u>0.91</u>	
Jan <u>0.69</u>	May <u>1.22</u>	Sep <u>1.19</u>	Total, in: <u>10.78</u>

Average EOM Contents (ac-ft):

Oct <u>N/A</u>	Feb <u>N/A</u>	Jun <u>N/A</u>
Nov <u>N/A</u>	Mar <u>N/A</u>	Jul <u>N/A</u>
Dec <u>N/A</u>	Apr <u>N/A</u>	Aug <u>N/A</u>
Jan <u>N/A</u>	May <u>N/A</u>	Sep <u>N/A</u>

Operating Notes: Viva Naughton is operated to provide a continuous supply of 25 cfs for cooling water to the Naughton Power Plant. The reservoir is sized to provide this amount under a 2-year drought scenario. Irrigation is not explicitly permitted in the reservoir's water right, but prior rights are bypassed and water for irrigation is released from storage for downstream irrigators if water supplies are sufficient. Flood control is also not explicitly stated in the permit, but the reservoir can and has been operated to reduce flooding effects downstream.

Reservoir Name: Willow Lake

Owner/Operator: Binning et al.

Storage Permit Nos: 3831R 4475R  
6257R

HWL Data: Area, ac: 1,958 Cap, ac-ft: 22,630 Elev, ft ms 7,700

Permitted Uses:		Water Right Owners:
Use: <u>Irr., Stock, Dom.</u>	<u>15,120</u> ac-ft	<u>3831R</u> <u>Binning</u>
<u>Irr., Stock, Dom.</u>	<u>3,696</u> ac-ft	<u>4475R</u> <u>Binning et al</u>
<u>Irr., Stock, Dom.</u>	<u>3,814</u> ac-ft	<u>6257R</u> <u>Binning et al</u>
	ac-ft	
	ac-ft	

Service Outlet: Type: Gated Outlet Capacity, cfs NR

Principal Spillway: Type: Weir Capacity, cfs 625

Emergency Spillway Type: Weir Capacity, cfs: \_\_\_\_\_

Miscellaneous Spillway Info: Drawings only define one spillway which apparently serves as both principal and emergency spillway.

Average Annual Gross FWS Evaporation (in.): 35.03

Average Monthly Gross Evaporation (in.):

Oct <u>2.66</u>	Feb <u>0.88</u>	Jun <u>4.59</u>	
Nov <u>1.37</u>	Mar <u>1.37</u>	Jul <u>5.99</u>	
Dec <u>0.91</u>	Apr <u>2.80</u>	Aug <u>5.46</u>	
Jan <u>0.95</u>	May <u>4.03</u>	Sep <u>4.03</u>	Total, in: <u>35.03</u>

Average Monthly Precipitation (in.):

Oct <u>1.20</u>	Feb <u>1.45</u>	Jun <u>1.40</u>	
Nov <u>1.82</u>	Mar <u>1.20</u>	Jul <u>1.35</u>	
Dec <u>1.82</u>	Apr <u>1.40</u>	Aug <u>1.25</u>	
Jan <u>2.00</u>	May <u>1.85</u>	Sep <u>1.45</u>	Total, in: <u>18.19</u>

Average EOM Contents (ac-ft):

Oct <u>33,695</u>	Feb <u>29,293</u>	Jun <u>42,618</u>
Nov <u>32,735</u>	Mar <u>27,235</u>	Jul <u>39,724</u>
Dec <u>31,638</u>	Apr <u>29,129</u>	Aug <u>36,866</u>
Jan <u>30,530</u>	May <u>38,580</u>	Sep <u>34,601</u>

Operating Notes: Willow Lake is operated primarily for irrigation. The lake ownership, unique to the area, is divided into "shares," the majority of which are owned by the Binning family. The operational and maintenance history of the reservoir is incomplete. The 2nd enlargement is unadjudicated with some information that the first two permits are not fully built.