

BEAR RIVER COMMISSION

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FACSIMILE COVER SHEET

To:	Tim Luke	Date:	June 14, 2001
Firm:	Water Resources	Time:	
Client:	300	From:	Jack A. Barnett
Facsimile #:	208-327-7866	Firm:	BRC

Re:

Message:

Total number of pages (including cover sheet): 8

Hard copy will __, will not ☒ follow.

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Sent via Facsimile

MEMORANDUM

TO: Tim Luke, Will Atkin
FROM: Jack A. Barnett
SUBJECT: Lower Division of the Bear River
DATE: June 14, 2001

I appreciate both of your efforts on the mock water emergency call for the Lower Diversion in the Lower Division of the Bear River. The Commission directed that this should occur "several" times this season. This first call was pre-noticed which gave you a warning. I have faxed to the two of you the other's response.

I think that more could be learned about issues associated with a real call if we were to get on a conference call and talk about your experience and what might be future expectations. As to this current effort, I only hope we can make some observations and learn from the experience. I don't see a concluding report coming out of this effort as to what would have been the appropriation regulation, say on June 12.

To move ahead with the conference call effort, let me suggest a call at 10:00 a.m. on June 19. We will call to see if this works for you. I would like to have Don on the phone and since Larry Anderson and Norm Young are at the top of the state calling tree and were the ones for each state that started the effort in motion, I feel that I should call them once we have set a time for the conference call and give them a chance to join us.



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER RIGHTS

Michael D. Leavitt
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FAX COVER SHEET

Date 6/14/01

★
TO:

Name Jack Barnett

Fax No. (801) 524-6320

FROM:

Name Will Atkin

Fax No. (435) 752-0062

Number of pages transmitted including cover sheet 6

Comments:

Sent via Facsimile**Memorandum**

To: Jack Barnett
From: Will Atkin
Re: Lower Bear River Model Results
Date: June 14, 2001

In response to the "Mock Water Emergency" and request for accounting model results, the following summary pages are provided for model dates of 5/27/2001 and 6/5/2001.

The results are based on data available on June 11, 2001. Diversion data from Idaho are available through June 6th, while Idaho data from UP&L are available through June 3rd. Utah diversion data are available through May 31st, however, UP&L provides a weekly operating report on Mondays that makes it possible to extend data at Cutler through June 10th. Therefore, the model can be run through June 5th, with the associated lag times.

The summary pages show the distribution of water down the system for the respective model days. The written notes provide explanation of the results and the priorities that are still taking natural flow. As the river gains natural flow, reach by reach, the priority of distribution is dependent on the gain and the natural flow available at the point of diversion.

I will be available this afternoon to discuss the results and answer questions in a conference call if you so desire.

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LOWER BEAR RIVER DISTRIBUTION SUMMARY - 5/27/2001

REACH - GAIN ANALYSIS

	Natural Flow				Storage	
	(T-3)	(T-2)	(T-1)	T	T	
Rainbow Canal + Dingle Canal + Mudlake	58.0	58.0	58.0	58.0		
+ Bear River at Alexander	1180.0	935.0	886.0	886.0		
- Bear Lake Outlet Canal	1090.0	1090.0	746.0	746.0		688.0
+ Diversions in Reach 1	11.0	11.0	11.0	11.0		1.0
+ Change in Contents of Soda Reservoir	-20.2	199.7	51.9	-72.6		-72.6
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= Natural Flow in Reach 1, (at Alex.)	138.8	113.7	260.9	136.4	Ave =	162.5
						- 133.6
+ Reach 1 Storage Transit Losses(T-1)	15.5	15.5	15.5	10.3		- 10.3
= Natural Flow in Reach 2a (at Grace)	154.3	129.1	276.4	146.7	Ave =	176.6 = 615.7
+ Estimated Gain from Grace to Cove	22.0	22.0	22.0	22.0		- 4.8
= Natural Flow in Reach 2b (at Cove)	176.3	151.1	298.4	168.7	Ave =	198.6
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+ Bear River at Oneida	982.0	750.0	740.0	578.0		
- Bear River at Alexander	1180.0	935.0	886.0	886.0		
+ Diversions in Reach 2	310.0	332.0	332.0	332.0		- 5.0
+ Change in Contents of Oneida Reservoir	-60.0	17.6	-26.7	51.4		- 51.4
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= Total Gain in Reach 2,	67.5	180.1	174.8	85.7	Ave =	127.0
Accumulated Natural Flow in Reach 2	206.3	293.8	435.7	222.1	Ave =	289.5
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+ Bear River at Idaho-Utah State Line	644.0	610.0	433.0	463.0		
- Bear River at Oneida	982.0	750.0	740.0	578.0		
+ Diversions in Reach 3	206.0	206.0	220.0	220.0		
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= Gain in Reach 3,	-132.0	66.0	-87.0	105.0	Ave =	-12.0
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32% of Gain is in Reach 3a	-42.2	21.1	-27.8	33.6		- 83.3
+ Reach 2 Storage Transit Losses	8.8	9.1	6.7	4.9		- 4.9
= Gain in Reach 3a	-33.4	30.3	-21.1	38.5		
Accumulated Natural Flow in Reach 3a	172.9	324.0	414.6	260.7	Ave =	293.0 = 466.2
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68% of Gain is in Reach 3b	-89.8	66.9	-59.2	71.4		- 43.0
+ Reach 3 Storage Transit Losses	10.1	9.6	6.1	3.9		- 3.9
Accumulated Natural Flow in Reach 3b	93.3	378.5	361.5	336.0	Ave =	292.3 = 419.3
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+ Bear River at Collinston	40.0	40.0	40.0	40.0		
- Bear River at Idaho-Utah State Line	644.0	610.0	433.0	463.0		
+ Diversions in Reach 4	946.2	943.8	945.5	939.2		- 471.1
+ Change in Contents of Cutler Reservoir	.0	-1035.6	1394.0	.0		- .0
+ Reach 4 Storage Losses	10.0	9.2	5.7	3.4		- 3.4
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= Gain in Reach 4,	526.4	212.0	512.7	605.2	Ave =	464.1
Accumulated Natural Flow in Reach 4	619.7	590.6	874.1	941.2	Ave =	756.4 = -55.2
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+ Bear River at Corinne	325.0	173.0	138.0	130.0		
- Bear River at Collinston	40.0	40.0	40.0	40.0		
+ Diversions in Reach 5	.0	.0	.0	.0		
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= Gain in Reach 5,	285.0	133.0	98.0	90.0	Ave =	151.5
Accumulated Natural Flow in Reach 5	904.7	723.6	972.1	1031.2	Ave =	907.9

5/27/2001

DISTRIBUTION

	DIVERSION	NATURAL	STORAGE		DIVERSION	NATURAL	STORAGE
TOTAL	1498.2	756.4	741.8				
IDAMO	563.0	292.3	270.7	UTAH	935.2	464.1	471.1
LAST CHANCE } *	110.0	153.4	133.6	BEAR RIVER CANAL	895.0	463.1	431.9
BENCH B }	177.0	.0	.0	UTAH PUMPS	40.2	1.0	39.2
GENTILE VALLEY	40.0	35.2	4.8	UPL		.0	.0
WEST CACHE CANAL **	150.0	65.7	79.3	CUTLER		.0	.0
CUB RIVER PUMPS	38.0	.0	38.0	BIRD REFUGE	130.0	130.0	.0

* Reach 2: Last Chance/Bench B are getting 153.4 cfs of the 1897 priority based on available natural flow in reach 2.

** Reach 3: West Cache is only getting 65.7 cfs of its 1899 priority, while Cub River Pumps don't get any natural flow at its 1914 priority.

*** Reach 4: Bear River Canal is getting natural flow with its 1889 priority and part of its 1901 priority.

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LOWER BEAR RIVER DISTRIBUTION SUMMARY - 6/5/2001

REACH - GAIN ANALYSIS

	Natural Flow				Storage	
	(T-3)	(T-2)	(T-1)	T	T	
Rainbow Canal + Dingle Canal + Mudlake	58.0	55.0	58.0	56.0		
+ Bear River at Alexander	811.0	811.0	811.0	1027.0		
- Bear Lake Outlet Canal	744.0	746.0	746.0	981.0		925.0
+ Diversions in Reach 1	10.0	10.0	8.0	8.0		- 2.0
+ Change in Contents of Soda Reservoir	.0	.0	.0	-395.3		-395.3
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= Natural Flow in Reach 1, (at Alex.)	135.0	130.0	131.0	-285.3	Ave =	27.7
						- 342.2
+ Reach 1 Storage Transit Losses(T-1)	10.3	10.3	10.4	10.3		- 10.3
= Natural Flow in Reach 2a (at Grace)	145.3	140.3	141.4	-274.9	Ave =	38.0
+ Estimated Gain from Grace to Cove	22.0	22.0	22.0	22.0		- 4.8
= Natural Flow in Reach 2b (at Cove)	167.3	162.3	163.4	-252.9	Ave =	60.0
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+ Bear River at Oneida	687.0	687.0	820.0	915.0		
- Bear River at Alexander	811.0	811.0	811.0	1027.0		
+ Diversions in Reach 2	370.0	405.0	406.0	408.0		- .0
+ Change in Contents of Oneida Reservoir	-28.2	.0	40.3	11.1		- 11.1
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= Total Gain in Reach 2,	228.1	291.3	465.7	317.4	Ave =	325.6
Accumulated Natural Flow in Reach 2	363.1	421.3	596.7	32.1	Ave =	353.3
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+ Bear River at Idaho-Utah State Line	505.0	572.0	654.0	615.0		
- Bear River at Oneida	687.0	687.0	820.0	915.0		
+ Diversions in Reach 3	240.0	252.0	262.0	262.0		
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= Gain in Reach 3,	58.0	137.0	96.0	-38.0	Ave =	63.3
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32% of Gain is in Reach 3a	18.6	43.8	30.7	-12.2		- .0
+ Reach 2 Storage Transit Losses	4.7	4.7	4.4	4.4		- 4.4
= Gain in Reach 3a	23.2	48.5	35.1	-7.7		
Accumulated Natural Flow in Reach 3a	386.3	469.8	631.8	24.4	Ave =	378.1
						= 945.4
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68% of Gain is in Reach 3b	39.4	93.2	65.3	-25.8		- 78.0
+ Reach 3 Storage Transit Losses	4.3	4.7	4.3	3.9		- 3.9
Accumulated Natural Flow in Reach 3b	430.0	567.6	701.4	2.5	Ave =	425.4
						= 863.5
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+ Bear River at Collinston	40.0	40.0	40.0	40.0		
- Bear River at Idaho-Utah State Line	505.0	572.0	654.0	615.0		
+ Diversions in Reach 4	895.0	895.0	895.0	895.0		- 356.0
+ Change in Contents of Cutler Reservoir	891.9-1237.2	.0	345.4			- 345.4
+ Reach 4 Storage Losses	3.6	4.0	3.5	3.1		- 3.1
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= Gain in Reach 4,	656.5	280.6	198.1	323.1	Ave =	304.6
Accumulated Natural Flow in Reach 4	1086.6	848.3	899.5	325.6	Ave =	790.0
						+20.0
						810.0
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+ Bear River at Corinne	106.0	115.0	114.0	114.0		
- Bear River at Collinston	40.0	40.0	40.0	40.0		
+ Diversions in Reach 5	.0	.0	.0	.0		
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= Gain in Reach 5,	66.0	75.0	74.0	74.0	Ave =	72.3
Accumulated Natural Flow in Reach 5	1152.6	923.3	973.5	399.6	Ave =	862.2

+ 20 cfs ± for
pump diversions
would add 20 cfs
for Bear River Canal
natural flow

data unavailable
doesn't affect distribution

6/5/2001

DISTRIBUTION

	DIVERSION	NATURAL	STORAGE		DIVERSION	NATURAL	STORAGE
TOTAL	1573.0	790.0	783.0				
DAHO	678.0	251.0	427.0	UTAH	895.0	539.0	356.0
LAST CHANCE } *	165.0	18.8	342.2	BEAR RIVER CANAL ***	895.0	539.0	356.0
BENCH B }	196.0	.0	.0	UTAH PUMPS	.0	.0	.0
SENTILE VALLEY	60.0	35.2	4.8	UPL		.0	.0
WEST CACHE CANAL **	160.0	155.0	.0	CUTLER		.0	.0
CUB RIVER PUMPS	75.0	.0	75.0	BIRD REFUGE	114.0	72.2	41.8

* Reach 2: Last Chance/Bench B are only getting 18.8 cfs of the 1897 priority based on available natural flow in reach 2.

** Reach 3: West Cache is getting all of its 1899 priority because of gains in reach 3, while Cub River Pumps doesn't get any natural flow at its 1914 priority.

*** Reach 4: Bear River Canal is getting natural flow with its 1889, 1901 and part of its 1904 rights.