



**State of Idaho**  
**DEPARTMENT OF WATER RESOURCES**

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WD 43 B 2000  
DIRK KEMPTHORNE  
GOVERNOR

KARL J. DREHER  
DIRECTOR

June 1, 2000

Dave Sundberg  
Watermaster, Water District 43-B  
Box 1  
Malta, ID 83342

Re: 1999 Distribution of Clear Creek

Dear Mr. Sundberg,

Vikie Hancock, IDWR Southern Regional office, advised me that you had talked to her at this year's water district meeting concerning whether I had compiled any information concerning measurements of Clear Creek at the old USGS gage by the Utah Division of Water Rights (UDWR). I know you raised this question last year because you had concerns about proper delivery of the 57%-43% split and timing of the 12 day Idaho run. IDWR did receive some information from UDWR this winter, including miscellaneous measurements at the old gage and the 1999 Utah Clear Creek distribution report. I believe you also obtained copies of the gage station recorder charts and provided an extra copy to IDWR. I reviewed the Idaho delivery records that you submitted to IDWR for 1999.

Attached to this letter is a spreadsheet showing Clear Creek deliveries to Idaho as reported by both the Utah commissioner and the Idaho watermaster. The spreadsheet also shows deliveries as reported by Utah on the miscellaneous dates that the UDWR made stream measurements at the old USGS gage in Utah. I used this data to compute reach gains for those select dates. I offer the following comments and observations concerning the reported data from both Utah and Idaho.

- There are some significant discrepancies in the amount of water delivered to Idaho as reported by Utah and Idaho. During late June and early July, the reported difference was at or near 50 percent. Although I would anticipate some differences due to the condition of the Idaho weir, these reported differences are much higher than I would expect.
- Computation of reach gains of the creek using the reported Utah data between the old USGS gage site and the Idaho weir shows a positive gain of nearly 21 cfs on June 28<sup>th</sup>. When substituting the Utah commissioner's reported amount at the Idaho line with the amount reported by the Idaho watermaster, the gain changes to +3.0 cfs. These types of differences seem questionable and may indicate a problem in one or more of the measurements on this particular day.

- The water level recorder charts from the installed continuous recorder at the old USGS gage displays a relatively flat and steady declining stage. This water level trend does not seem characteristic of a typical stream gage in an area such as Clear Creek. The water level change as reported by UDWR staff between June 28 and July 19 was 0.4 ft. (1.53 – 1.13 ft.). Assuming that each vertical division on the recorder chart is 0.05 ft., which is normal for an A10 recorder, then this total change does match the total change shown on the recorder charts. I recently asked Bob Fotheringham of UDWR about the recorder and he reported that there was no problem with the recorder or stilling well in 1999 and that the charts are an accurate representation of water level changes. He also mentioned that UDWR has already installed a data logger at the site this year. The logger should provide a good record of water levels this year.
- You expressed concern last year that the 12-day run to Idaho did not start early enough. You mentioned that it began on July 7<sup>th</sup> and that UDWR measured the creek at about 29 cfs (1.38 ft.) on July 6<sup>th</sup>. Review of the recorder chart indicates that the flow was at the 29 to 30 cfs level from about July 5<sup>th</sup> through July 6<sup>th</sup>. The level appeared to be about 1.43 ft. from July 2<sup>nd</sup> to July 4<sup>th</sup>. I am not certain what this stage equates to without an updated rating chart. This level could equate to a flow below 36 cfs. If it does, then the 12-day run may have started late. However, I think it is important to keep in mind that the Utah Commissioner had to rely on the measurement of the wood weir below the old gage prior to the measurement taken by the UDWR. Potential inaccuracy of this weir could easily have provided a measurement that exceeded 36 cfs. Had UDWR not measured the creek on July 6<sup>th</sup>, the 12-day run may have started even later.
- You also expressed concern that the split between the states was not done properly before the 12-day run. Again, this is difficult to determine given the large discrepancy in flows at the state line as reported by the two watermasters. Using the June 28<sup>th</sup> UDWR gage measurement, the Utah commissioner's reported Utah stream diversion total and your weir measurements at the state line, the split is 51.8% to 48.2% in favor of Utah. Assuming that the states were on the 57-43% split at this time, it appears that Idaho may have been shorted nearly 9% but much of this difference may be within the error of the weir measurements at the Idaho line.

The distinct differences in measurements by the two watermasters at the Idaho weir during critical delivery times are alarming. We are not certain which measurements are more correct or what is the cause of the discrepancies but such differences may cause further disputes regarding the proper split of water between the respective states. IDWR believes that this problem should be resolved immediately. At a minimum, you and the Utah commissioner should agree on a consistent method for measuring the weirs at the Idaho line. If agreement can not be reached, then another meeting between the two states may be necessary.

Posting additional measurements at the Naf store by both you and the Utah commissioner may also improve this situation. The distribution agreement made between UDWR, IDWR and the two state watermasters did not require posting of measured flows once water was turned to Idaho. Continuing this practice after the water

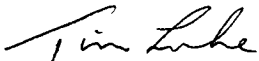
is turned to Idaho may help address questions or concerns related to the proper split and rotation of water between the states. Measuring at or near the same time of day is also suggested if this is not already being done. Installing a staff gage at the Idaho weir and recording water levels by both watermasters is also suggested.

Additional measurements by UDWR this year and UDWR's upgrade of the recorder equipment will improve the quality of the stream flow data at the old USGS site. IDWR appreciates the time and effort Utah and the UDWR has taken to implement improvements at the old USGS gage site. Given these improvements made by Utah, the Idaho water users must commit toward making improvements to the Idaho weir. The current structure does not meet minimum measuring device standards. Problems and inaccuracy with measuring the weir may be the source of distribution concerns and disputes. IDWR may be reluctant to support future concerns of Idaho water users if this device is not improved or replaced while Utah takes steps to improve measuring at the old USGS gage. Consideration should be given to installing a new measuring device a short distance above or below the present structure so that the structure can continue to serve as the diversion works. One of several different measuring flumes may be considered to address problems related to velocity of approach and siltation. The users may wish to contact the Idaho Water Resource Board to inquire about financial assistance for design and construction of a measuring device.

You should begin compiling an annual report that is similar to the Utah commissioner's report. The 1999 Idaho logbook contained several entries that were difficult to read or interpret. We encourage you to transfer the handwritten log book entries to a personal computer spreadsheet or word processor document. The new annual report should contain a separate entry for the total amount of water delivered at the Idaho weir. An additional entry or summary should also be provided for daily stream flows at the old USGS gage site as recorded by either the UDWR or the Utah commissioner. IDWR can assist the watermaster in preparing annual reports.

Please contact Allen Merritt or me if you wish to discuss the contents of this letter or other distribution matters.

Sincerely,



Tim Luke  
Water Allocations

Cc: Allen Merritt, IDWR Southern Region Mgr.  
Bob Fotheringham, UDWR  
Lee Sim, UDWR  
Advisory Committee, Water District 43-B  
Idaho Clear Creek Water Users

## Review of Utah and Idaho Water Delivery Records, Clear Creek

Water Distribution to Idaho

Date	Utah	Idaho
28-Jun	44.39	72
6-Jul	29.49	18.9
12-Jul	24.97	21.7
19-Jul	14.8	16
27-Jul	9.6	10.8
27-Aug	3.85	NR
10-Jul	22	20
11-Jul	22	18
12-Jul	21.7	17
13-Jul	21.5	15
14-Jul	21.3	14
15-Jul	18	11
16-Jul	18	11
17-Jul	16.4	11
18-Jul	16	11
19-Jul	16	11
20-Jul	16	11
21-Jul	16	11

Utah report did not list water delivery to Idaho after 7/21

1999 Utah Commissioner Report Records and  
Utah DWR Miscellaneous Stream Gage Measurements

Date	(A) UDWR Gage Station Meas. (cfs)	(B) Sum of Clear Ck Diversions (cfs)	(C) Sum of Clear Ck Divs. Below Gage (cfs)	(D) Sum of Clear Ck Divs. Abv. Gage (cfs)	(E) Clear Ck Delivery to Idaho (cfs)	(F) Clear Ck Nat Flow at Idaho Weir (B) + (E) (cfs)
28-Jun	44.39	28	21.3	6.7	44	72
6-Jul	29.49	0	0	0	18.9	18.9
12-Jul	24.97	0	0	0	21.7	21.7
19-Jul	14.8	0	0	0	16	16
27-Jul	9.6	10.8	9.4	1.4	0	10.8
27-Aug	3.85	NR	NR	NR	NR	NR

NR = not reported

Reach Gain Calculations Using Utah Delivery Records: Reach between old USGS Gage Station and Idaho Weir

$G = Q_{out} + (\text{Sum of Diversions}) - Q_{in}$   
 where G = reach gain/loss  
 $Q_{out}$  = Clear Ck Delivery to Idaho  
 Sum of Diversions = sum of Utah diversions below USGS gage  
 $Q_{in}$  = measured discharge at old USGS gage site

Date	Gain w/Utah meas at Idaho Weir (cfs)	Nat Flow at Gage Station (cfs)	Nat Flow at Idaho Weir (cfs)	Gain w/Idaho meas at Idaho Weir (cfs)
28-Jun	20.91	51.09	72	3.01
6-Jul	-10.59	29.49	18.9	-17.5
12-Jul	-3.27	24.97	21.7	-7.97
19-Jul	1.2	14.8	16	NR
27-Jul	-0.2	11	10.8	NR

## Mailing List

Letter to: Dave Sundberg, Water Master, Water District 43-B  
Malta, Id

Re: 1999 Distribution of Clear Creek

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### UDWR

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Lee Sim  
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### WD 43-B Advisory Committee Members *(see attached)*

#### Idaho Clear Creek Water Users

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