IDWR WD 43-B - SOUTHERN REGION

State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, Boise, ID 83706 - P.O. Box 83720, Boise, ID 83720-0098
Phone: (208) 327-7900 Fax: (208) 327-7866 Web Site: www.idwr.state.id.us

DIRK KEMPTHORNE
Governor
KARL J. DREHER
Director

COPY

June 16, 2004

Rick Neff
Watermaster, Water District 43-B
PO Box 55
Malta, ID 83342

Re: 2004 Order Requiring Measuring Devices and Headgates

Dear Mr. Neff,

As per your request, please find enclosed a copy of the order issued by the Idaho Department of Water Resources ("IDWR") on March 29, 2004. Please note that the order requires installation of acceptable measuring devices and lockable controlling works on or before June 1, 2004. Please also note that the order authorizes you, as watermaster, to shut off and refuse delivery of water to any diversion in the water district that for which an adequate measuring device and/or lockable control works have not been installed after June 1, 2004. IDWR therefore directs you to shut off and refuse delivery of water to any user who has a diversion that is not in compliance with the order. Any water user who has a diversion that cannot be locked or controlled, and/or who fails to install adequate measuring devices may also be subject to the issuance of a Notice of Violation from IDWR. Diversions that cannot be controlled and that may divert out of priority should also be subject to a Notice of Violation from IDWR. You should identify such diversions to IDWR for further review and action.

Also attached to this letter is a copy of the procedures for Distribution of the Flows of Clear Creek Between Utah and Idaho. This document was developed by Utah and Idaho in 1998 to assist in coordinating distribution efforts on Clear Creek between the two state watermasters. This guidance document should still be followed by the two state watermasters.

On a related issue, I reviewed some past notes and correspondence regarding delivery of the Reid Stewart and Arimo water rights on Clear Creek. You asked me last evening about delivering the Stewart rights at the Idaho weir and deducting some loss at the Stewart point of diversion because Stewart's measuring device is not adequate. Again, delivery of water to a point of diversion can be refused if the owner has neglected to install adequate measuring devices. However, if there are adequate measuring devices at the Stewart and Arimo diversions, then the rights at those diversions should be delivered in priority sequence and without any loss. The decreed point of diversion for the Holmgren Land and Livestock water rights on Clear Creek is the Idaho weir. The other locations you mentioned appear to be points of re-diversion under the Holmgren rights. The Holmgren rights therefore should be measured and delivered at the Idaho weir.

Please contact me directly at 327-7864 if you have any additional questions regarding these issues or need any further assistance.

Sincerely,

Tim Luke
Water Distribution Section

Cc: Southern Region

Enclosures

WR 93-B 2004

State of Idaho
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Phone: (208) 327-7900 Fax: (208) 327-7866 Web Site: www.idwr.state.id.us

DIRK KEMPTHORNE
Governor

KARL J. DREHER
Director

March 29, 2004

Re: Order Requiring Measuring Devices and Headgates in Water District 43-B, Upper Raft River and Tributaries

Dear Water User,

The Idaho Department of Water Resources (the Department) has issued the enclosed order requiring installation of measuring devices and headgates for all diversions of water in Wate rDistrict 43-B, the Upper Raft River and tributaries. Please note that headgates and measuring devices must be installed on or before June1, 2004. The order also requires that water users provide notification to the watermaster and call for delivery of water at least 48 hours in advance of actual delivery if water is to be diverted on or after April 1. A copy of the order and this letter is being sent to those users identified in Attachment A of the order.

Pursuant to Section 42-701, Idaho Code, users who neglect to comply with any provision of Department orders requiring installation of measuring devices and lockable controlling works may be subject to the administrative enforcement actions provided by Section 42-1701B, Idaho Code. Enforcement actions may include the issuance of Notices of Violation and Cease and Desist Orders, as well as possible civil penalties. The Department will seek a court order if necessary to ensure compliance with the order requiring measuring devices and controlling works.

Also attached to this letter is a copy of the Department's Minimum Acceptable Standards for Open Channel and Closed Conduit Measuring Devices. This document and other links to water measurement publications may be found on the Department's web site at www.idwr.state.id.us/water/districts/water_measurement.htm .

The department asks for your full cooperation concerning this matter. If you have questions concerning this matter please contact the IDWR Southern Regional office in Twin Falls at 208-736-3033 or the Water Distribution Section, IDWR State Office, at 208-327-7900.

Respectfully,

Tim Luke
Manager, Water Distribution Section

Cc: Allen Merritt, IDWR Southern Regional Manager
Rick Neff, Water District 43-B Watermaster
Nolan Branch, Chairman, Water District 43-B Advisory Committee

Attachments: Order Requiring Measuring Devices and Controlling Works
Minimum Standards for Measuring Surface Water Diversions

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BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE

STATE OF IDAHO

IN THE MATTER OF REQUIRING MEASURING DEVICES AND CONTROLLING WORKS ON THE UPPER RAFT RIVER AND TRIBUTARIES, WATER DISTRICT 43-B	)	ORDER

This matter has come before the Idaho Department of Water Resources ("Department") as a result of a request by the advisory committee of Water District 43-B, Upper Raft River and tributaries, to require the installation of measuring devices and controlling works on diversions of water in Water District 43-B. Upon discussion of this issue with the water users present at the Water District 43-B 2004 annual meeting and after further consultation with the water district advisory committee, the Department finds that inadequate measuring devices and lockable controlling works presently exist for many diversions on the Upper Raft River and tributaries in Water District 43-B.

Section 42-701, Idaho Code, provides in pertinent part as follows:

42-701. INSTALLATION AND MAINTENANCE OF CONTROLLING WORKS AND MEASURING DEVICES BY WATER APPROPRIATORS – PROCEDURE UPON FAILURE TO INSTALL AND MAINTAIN – MEASURING AND REPORTING OF DIVERSIONS – PENALTY FOR FAILURE TO COMPLY – REPORT FILING FEE.

> 1. The appropriators or users of any public waters of the state of Idaho shall maintain to the satisfaction of the director of the department of water resources suitable headgates and controlling works at the point where the water is diverted. Each device shall be of such construction that it can be locked and kept closed by the watermaster or other officer in charge, and shall also be of such construction as to regulate the flow of water at the diversion point. Each such appropriator shall construct and maintain, when required by the director of the department of water resources, a rating flume or other measuring device at such point as is most practical in such canal, ditch, wellhead or pipeline for the purpose of assisting the watermaster or department in determining the amount of water that may be diverted into said canal, ditch, wellhead or pipeline from the stream, well or other source of public water. Plans for such headgates, rating flumes or other measuring devices shall be approved by the department of water resources.
>
> . . .

3. Any appropriator or user of the public waters of the state of Idaho that neglects or refuses to construct or maintain such headgates, controlling works, or measuring devices..., upon receiving ten (10) days' notice from the director of the department of water resources within which to begin and diligently pursue to completion the construction or installation of the required device or devices or to begin and diligently pursue to completion a remedy to such defects as exist in accordance with said notice, then the director of the department of water resources may order the duly qualified and acting watermaster of the water district to shut off and refuse to deliver at the point of diversion, the water owned by such appropriator or user until the user does construct and maintain such headgates, controlling works or measuring devices or remedy the defects which exist or the director may take action pursuant to section 42-1701B, Idaho Code, to enforce the requirement to construct, install or maintain such devices.

4. The appropriators or users of the public waters of the state of Idaho shall be given a reasonable time within which to complete construction of such headgates, controlling works or measuring devices, depending upon the size and extent thereof, when due diligence has been used in the prosecution of such work.

. . .

ORDER

IT IS HEREBY ORDERED AS FOLLOWS:

1. Those water users identified in Attachment A to this order and all other users diverting water from the Upper Raft River and tributaries shall install measuring devices and lockable controlling works of a type acceptable to the Department on or before June 1, 2004.

2. The watermaster shall shut off and refuse to deliver water to any diversion in the Upper Raft River and tributaries that does not have an adequate measuring device and/or lockable controlling works at any and all times after June 1, 2004.

3. No water user shall divert water from the Upper Raft River and tributaries on or after April 1, 2004 without providing notification to the watermaster of Water District 43-B. Each water user must call for all water deliveries to the watermaster at least forty-eight (48) hours in advance of actual delivery.

Dated this 29th day of March, 2004.

L. GLEN SAXTON
Administrator, Water Management Division

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES (IDWR)

MINIMUM ACCEPTABLE STANDARDS FOR OPEN CHANNEL AND CLOSED CONDUIT MEASURING DEVICES

The source and means of diversion of water, whether surface or ground water, generally determines the measurement and reporting process. Surface water sources such as streams, springs and waste channels are normally diverted into open channels (ditches or canals), but closed conduits (pipes or culverts) are also used. Ground water is usually diverted into pipes (which may also discharge into open channels).

Measuring devices are required at or near the point of diversion from the public water source.

Open Channel

SURFACE WATER DIVERSIONS

I. Flow Measurement

The following discussion is applicable only to diversions from surface water sources. Measurement of a ground water diversion with an open channel measuring device must be pre-approved by the Department.

A. Standard Open Channel Measuring Devices

All open channel flow diversions should be measured using one of the following standard open channel flow measuring devices commonly used in Idaho:

- contracted rectangular weir
- suppressed rectangular weir
- Cipolletti weir
- 90 degree V-notch weir
- ramped broad crested weir (or ramped flume)
- Parshall flume
- trapezoidal flume
- submerged rectangular orifice
- constant head orifice

Construction and installation of these devices should follow published guidelines. References are available upon request.

B. Non-standard open channel devices: Rated Structures or Rated Sections

IDWR may authorize the use of non-standard devices and rated sections provided the device or section is rated or calibrated against a set of flow measurements using an acceptable open channel current meter or a standard portable measuring device. Further restrictions and requirements are available from the Department upon request.

CLOSED CONDUIT MEASURING DEVICES

Closed conduit or pipe line diversions require installation of a flowmeter.

I. Flow Measurement

There are many flowmeters on the market, with costs ranging from several hundred dollars to several thousand dollars. In general, the higher priced meters are more accurate and require less maintenance. Most meters on the market have an acceptable accuracy rating for IDWR's guidelines. However, some types and designs are much more prone to maintenance problems. Moving parts tend to wear when sand or silt is present, and moss often plugs small orifices and slows moving parts. No single flowmeter is best for every situation. We recommend that you visit with qualified dealers and discuss your needs with them.

A. Minimum Standards

The following are minimum standards for closed conduit flowmeters:

- Minimum manufacturers' design accuracy of +/- 2 percent of reading
- Installed accuracy of at least +/- 10 percent of reading
- Meter must be calibrated with an independent, secondary measuring device when installed, and at least once every four years thereafter
- Must read instantaneous flow or be capable of flow rate calculation
- Must record total volume
- Non-volatile memory (power outage does not zero volume reading)
- Sufficient digits to assure "roll-over" to zero does not occur within 2 years
- Volume reading cannot be "reset" to zero
- Installed to manufacturers' specifications

Meter manufacturers typically specify that a meter must be located in a section of straight pipe at least 10 pipe diameters downstream and 5 pipe diameters upstream of any valves, bends, contractions, or other interferences which will distort the flow pattern. However, some types of meters will produce acceptable results when installed in shorter sections of straight pipe. For example, at least one electro-magnetic flowmeter provides excellent measurement accuracy with only 5 lengths of straight pipe upstream from the meter.

Each manufacturer should provide the installation specifications for its meters. These **specifications must be adhered to** in order to achieve the accuracy required for the water measurement program. Again, we stress the importance of visiting with a qualified dealer and discussing your specific needs with them.

B. Types of Measuring Devices for Closed Conduits

Types	Pipe Sizes	Maintenance Required	Relative Purchase Price
Differential Head • Orifice • Venturi • Annubar	small to large	Low to high. Sand wears on sharp edges, and particles can plug small orifices and tubes.	low to medium
Force Velocity • Turbine • Propeller • Impeller	small to large	Typically moderate to high. Often problematic when exposed to sand or moss. Some cannot measure low velocities	low to medium
Ultrasonic	small to large	Low. Typically non-invasive with no moving parts to wear	high
Vortex	small to medium (about 12 to 14 inch maximum pipe diameter	Low. Few or no moving parts to wear.	high
Electro-Magnetic	small to medium (about 12 to 14 inch maximum pipe diameter	Low. No moving parts. Can provide good results with shorter lengths of straight pipe.	high

ATTACHMENT A

WD43B labels.xls

2004 add to order

Re-Sent 4/8/04 JR

Name	Address	City State Zip
CHRISTOPHER ROBINSON ARIMO CORP	139 EAST SOUTH TEMPLE	SALT LAKE CITY UT 84111
NOLAN BRANCH	1823 S 2330 E	MALTA ID 83342
DOUGLAS FREESTONE SR C-BAR CATTLE CO/ARI	2666 S HWY 81	MALTA ID 83342
BRUCE DURFEE	BOX 187	ALMO ID 83312
PETER GRUSH	2025 S HWY 81	MALTA ID 83342
RODNEY HALL	PO BOX 631	MALTA ID 83342
BRIAN HANSEN	26705 N ONE MILE CANYON	MALTA ID 83342
MURRAY HANSEN	375 E USTICK	MERIDIAN ID 83642
JAY HARPER	1926 S 2350 E	MALTA ID 83342
ALAN HARPER	2436 E 1850 S	MALTA ID 83342
MARK HIGLEY	3951 S 5500 W	HOOPER UT 84315
BRENT HOBSON C/O NAF STORE	2595 E 3600 S	MALTA ID 83342
STEVEN HOLMGREN VP HOLMGREN LAND & LIVESTOCK	785 N 350 E	TREMONTON UT 84337
BOYD I HOSKINS C/O NAF STORE	3548 S BRIDGE NAF RD	MALTA ID 83342
WILLIAM JONES	BOX 152	ALMO ID 83312
GLENN JONES	2385 E 2425 S	MALTA ID 83342
SYLVIA P KNIGHT	115 S MAIN	MANTUA UT 84324
RHL FINANCIAL INC	2323A RENAISSANCE DR	LAS VEGAS NV 89119
ROUND MOUNTAIN RANCH JEFF SESSIONS	3175 S ROUND MTN LANE	MALTA ID 83342
SPENCER BROTHERS	63155 W 25400 N	MALTA ID 83342
REID S STEWART	1655 SUNSET DR	LOGAN UT 84321
ROSCOE WARD	BOX 208	ALMO ID 83312
OLENE WARR	2231 S 2350 E	MALTA ID 83342
JODEE WILLETT	2534 S 2400 E	MALTA ID 83342

DISTRIBUTION OF THE FLOWS OF CLEAR CREEK BETWEEN UTAH AND IDAHO

The following is from notes taken at a meeting held in Malta, Idaho on June 18, 1998. Those in attendance were Norm Young, Tim Luke, and Allen Merrit (State of Idaho); Dave Sundberg (Idaho watermaster); Lee Sim and Bob Fotheringham (State of Utah); Vern Kempton (Utah commissioner); and Mont Campbell (Utah wateruser).

DESCRIPTION OF WATER DISTRIBUTION PRACTICES

The basis of distribution in Utah has been the Christensen Decree, the Johnson Decree, and the Naf Irrigation Company rules (the company shareholders divert directly from Clear Creek rather than from a main company canal, so the Utah commissioner distributes water among shareholders). The distribution of water according to these documents was described as follows:

Depending on the weather, the Utah irrigators will start using water sometime in April or early May - the creek is usually at about 3 cfs at this point. The water continues to be entirely used in Utah until the flow increases to an average of 20 cfs or more for a period of 24 hours. The Johnson decree said this flow was to be determined by adding the measurement made at the USGS gaging station with the measurements made at the diversions above the gaging station. After the gaging station was abandoned, they started determining the flow by adding the measurement taken at the Astage crossing≅ (Kemptons= diversions) and adding it to the measurements of the diversions above the Astage crossing≅. In 1995, in an effort to more closely follow the decree, they began taking measurements at the Atemporary weir≅ (just below the old USGS gaging station and near the Sundberg and Campbell diversions) and adding the diversions above the Atemporary weir≅ to determine the flow of the creek. There are six measurements that must be made to make this determination: two Scofield diversions, two Sundberg diversions, one Campbell diversion, and the flow over the Atemporary weir≅. It was generally agreed at the meeting that measuring the water at these points would provide an adequate representation of the flow of the creek.

After the flow reaches an average of 20 cfs, it is turned down to the Idaho water users. They use the entire flow of the creek, except the Scofield right to 0.33 cfs and the Naf I.C. right to 0.5 cfs, until they have taken a volume of 560 acre feet. The flow used to determine this volume is measured at the Idaho weir.

Once the 560 acre feet has been delivered to the Idaho water users, the flow of the creek is then split between the water users - 57% to the Idaho water users and 43% to the Utah water users. The Idaho water is measured at the Idaho weir and the Utah water is the sum of the measurements taken at each of the diversions in Utah. The sum of the Idaho weir and the Utah diversions is taken to be the total flow of the creek. The water continues to be distributed on this basis until a total of 750 acre feet has been delivered under the 57%- 43% split.

After 750 acre feet has been delivered, if the flow of the creek is still above 36 cfs the water continues to be distributed according to the 57% - 43% split. If the flow drops below 36 cfs, then the entire flow goes to Idaho for 12 days (the A12 day run≅) except the Scofield right to 0.33 cfs and the Naf I.C. right to 0.5 cfs. After 12 days, the water is again split between the water users in the two states according to the 57% - 43% split until the flow of the creek drops to 17 cfs.

Once the flow of the creek drops to an average of 17 cfs for 24 hours, the entire flow is kept for use in Utah. This usually occurs in the end of July or August, however, any time the

creek drops to an average of 17 cfs or below for 24 hours during the distribution season, the entire flow of the stream is kept for use in Utah.

PROCEDURES FOR COORDINATING THE DISTRIBUTION EFFORTS OF THE UTAH COMMISSIONER AND THE IDAHO WATERMASTER

DETERMINING WHEN THE FLOW SHOULD BE RELEASED TO IDAHO IN THE SPRING

The Utah commissioner will take measurements at the ATemporary Weir≅ and at the diversions above between 7:00 a.m. and 10:00 a.m. When the flow of the creek reaches 10 cfs, the Utah commissioner will begin posting each of these measurements plus the total creek flow at the Naf store by noon each day. When the creek flow reaches 12 cfs, the Utah commissioner will notify the Idaho watermaster. When the average of the current day=s total creek flow and the previous day=s total creek flow (based on the measurements posted at the Naf store) is equal to or greater than 20 cfs, the water will be released to Idaho. The Utah commissioner will contact the Idaho watermaster when he believes it is likely that the water will be released to Idaho the next day. Once the determination has been made that water should be released to Idaho, the Utah commissioner will immediately begin to open the control structures on the Utah diversions to release the flow downstream. He will begin at the lowest diversion on the Utah system and continue up the system until all control structures have been opened. Creek flow measurements will not be posted at the Naf store after the water has been released to Idaho.

DETERMINING WHEN THE 57% - 43% SPLIT SHOULD BEGIN

After the water has been turned to Idaho, the Utah commissioner will monitor the flow of the creek at the Idaho weir. When it appears that delivery of the 560 acre feet will be completed in the next day or so, the Idaho watermaster and the Utah commissioner will coordinate with each other about the start the 57% - 43% split. The Idaho watermaster will determine when the 560 acre feet has been delivered and the split should begin.

REVIEW OF WATER MEASUREMENT PRACTICES IN UTAH

At any time during the season, if the Idaho watermaster desires to accompany the Utah commissioner on his rounds, he should make arrangements with him the night before. It is anticipated that this will occur three times a season, however, more times a season will not create a problem as long as arrangements are made the night before.

There was a general consensus that because of the time of year the first and second of the procedures listed above would be implemented starting in 1999 and the third would be implemented immediately. These procedures are subject to review and may be modified from year to year as the need arises and as the Utah commissioner, Idaho watermaster, and the Utah and Idaho state officials can agree.