



DEPARTMENT OF NATURAL RESOURCES

## DIVISION OF WATER RESOURCES

John W. Hickenlooper  
Governor

Mike King  
Executive Director

Dick Wolfe, P.E.  
Director/State Engineer

Alan C. Martellaro, P.E.  
Division Engineer

July 26, 2012

Ms. Linda J. Bassi  
Colorado Water Conservation Board  
1313 Sherman Street, Room 721  
Denver, Colorado 80203

**Re: Temporary Loan of Water Rights for Colorado Water Conservation Board for Instream Flow**  
**Pursuant to Section 37-83-105, C.R.S.**  
**Section 11, T 2 N, R 76 W, Section 25, T 2 N, R 77, Section 18, T 1 N, R 78, and Sections 12 and 19, T 1 N, R 80 W 6<sup>TH</sup> P.M.**  
**Water Division 5, Water District 51, Grand County**

**Approval Period: July 26, 2012 through June 30, 2022**  
*Contact Phone Number for Ms. Linda J. Bassi: 303-866-3441*

Dear Ms. Bassi:

We have reviewed your letter dated July 5, 2012 in which you request approval of a temporary loan of water pursuant to Section 37-83-105, C.R.S., for the Colorado Water Conservation Board ("CWCB" or "Applicant") for instream flow ("ISF") use. As required by § 37-83-105(2)(b)(II), C.R.S., written notice of the request for approval of a temporary loan of water was provided on July 6, 2012 to all parties who have subscribed to the Division 5 Substitute Water Supply Plan ("SWSP") Notification List. The Division of Water Resources ("DWR") did not receive comments during the statutory 15-day comment period. The statutory \$100 filing fee (receipt no. 3656021) was submitted with this request.

### **Statement of Duration and Description**

CWCB is seeking approval of a temporary loan for water rights leased from Aspen Shorefox, LLC ("Shorefox") via the Colorado Water Trust ("CWT") for ISF use. The water rights leased from Shorefox consist of three direct flow rights in the Bunte Highline Ditch ("Bunte Ditch"), which diverts water from Willow Creek, a tributary of the Colorado River. The term of the temporary water lease agreement ("Agreement") is for the period of July 1, 2012 through June 30, 2022. Although the term of the Agreement is for a 10-year period, for the purpose of this approval the Agreement is only implemented for a one-year term of July 1, 2012 through June 30, 2013. Upon mutual agreement of all

parties, water may be available for an additional one-year term subject to execution of a lease extension. If CWCB seeks to implement the Agreement for a second-year term or a third-year term, CWCB shall notify the Division Engineer of its intention and provide a copy of the Agreement Extension prior to using the Bunte Ditch water for ISF use.

CWCB currently holds ISF water rights on the Colorado River decreed in Case Nos. 80CW446, 80CW447, 80CW448 and 90CW300, which are more specifically described in the table below:

Case Number	Upstream Terminus	Downstream Terminus	ISF decreed amounts (cfs)	Appropriation Date
80CW446	NW1/4 NW1/4, Sec. 18, T 1 N, R 78 W, 6 <sup>th</sup> P.M.	SW1/4 SE1/4, Sec. 12, T 1 N, R 80 W, 6 <sup>th</sup> P.M.	135	July 8, 1980
80CW447	Lat: 40°06'20"N Long:105°58'27"W (SW1/4 NW1/4, Sec. 25, T 2 N, R 77 W, 6 <sup>th</sup> P.M.)	NW1/4 NW1/4, Sec. 18, T 1 N, R 78 W, 6 <sup>th</sup> P.M.	90	July 8, 1980
80CW448	SW1/4 SE1/4, Sec. 12, T 1 N, R 80 W, 6 <sup>th</sup> P.M.	NW1/4 NE1/4, Sec. 19, T 1 N, R 80 W, 6 <sup>th</sup> P.M.	150	July 8, 1980
90CW300	NE1/4 SE1/4, Sec. 11, T 2 N, R 76 W, 6 <sup>th</sup> P.M.	Lat: 40°06'01"N Long:105°58'25"W (SW1/4 SW1/4, Sec. 25, T 2 N, R 77 W, 6 <sup>th</sup> P.M.)	40 (May 1- August 31) 20 (September 1-April 30)	November 27, 1990

The Colorado River ISF water rights were decreed to preserve the natural environment to a reasonable degree. The temporary loan of water leased from Shorefox will be for ISF use within the same segments of the Colorado River as identified in Case Nos. 80CW446, 80CW447, 80CW448 and 90CW300 and shown on the attached map, except that the loan water will enter the Colorado River ISF reach at the confluence of Willow Creek and the Colorado River, which is below its upstream terminus. CWCB seeks to use the historical average monthly diversion rate of the Bunte Ditch for ISF use in the 3.5 mile segment of the Colorado River between Willow Creek and the Fraser River, which represents the portion of the ISF reach that historically did not show accretions of return flows from irrigation. However a portion of the historical monthly diversion will be delivered to a recharge pond in order to maintain the historical return flow that occurred below the 3.5 mile segment of the Colorado River. Downstream of the historical return flow location, CWCB seeks to use the historical consumptive use of the Bunte Ditch to benefit the ISF water rights in a 30.7 mile segment of the Colorado River between Windy Gap Reservoir and the confluence of the Colorado River with the Blue River. The ground water return flow from the historically irrigated parcel with the Bunte Ditch water rights will be maintained under this temporary loan approval. The loan water from the Bunte Ditch to CWCB for ISF use will be limited to the amount needed, when combined with the native flow, to achieve the decreed flow rates of each ISF water right. The loan water is expected to increase stream depth and wetted perimeter and to lower water temperature for the fish.

The temporary loan will provide water for up to 120 days in each year, not to exceed 3 years during the 10-year period ending in 2022.

### **Proponent's legal right to use the loaned water right**

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CWCB and the CWT have entered into a Temporary Water Lease Agreement (“Agreement”) with Aspen Shorefox, LLC (“Shorefox”). Under the Agreement, Shorefox will make water available to CWCB for ISF use from its ownership in the Bunte Ditch water rights when conditions permit. A copy of the Agreement was provided to DWR with this request and is attached to this letter. Shorefox ownership in the Bunte Ditch was evidenced by the Public Trustee Deed that was provided to DWR with this request and a copy is attached to this letter. Based on its ownership in the Bunte Ditch, Shorefox has the right to the water rights in the Bunte Ditch, and, therefore the right to loan the water pursuant to the conditions set forth in Section 37-83-105 (2), C.R.S., and in Rule 6(k) of the Rules Concerning the Colorado Instream Flow and Natural Lake Level Program.

The CWCB existing ISF water rights decreed in Case Nos. 80CW446, 80CW447, 80CW448 and 90CW300 were identified as being more junior than the existing water rights on this segment of the Colorado River and may be out of priority during much or all of the 2012 irrigation season. Consistent with the terms and condition of the Agreement, CWCB shall notify the Division Engineer when the Bunte Ditch water rights are being used for ISF purposes. Shorefox agrees that it may not irrigate with the water rights in the Bunte Ditch while the water rights are being leased to CWCB.

### **Historical Use and Estimate of the Consumptive Use of the loaned water right**

The Bunte Ditch water rights that are subject of the Agreement are summarized in the table below:

<b>Appropriation and Priority Number</b>	<b>Decreed Amount (cfs)</b>	<b>Amount Owned by Shorefox (cfs)</b>	<b>Case Number</b>	<b>Appropriation Date</b>	<b>Adjudication Date</b>
168	22.82	17.82	CA183	05/31/1887	08/03/1911
459-10	14.14	14.14	CA814	10/31/1914	10/31/1955
491-11	8.04	8.04	CA814	09/15/1941	10/28/1955

All water rights in the Bunte Ditch were decreed for direct flow irrigation use. The Bunte Ditch diverts water from Willow Creek in the NE1/4 of Section 17, Township 2 North, Range 76 West of the 6<sup>th</sup> P.M., approximately 1 mile downstream from Willow Creek Dam and it was historically used to irrigate approximately 494.6 acres of grasses and legumes (with timothy and clover being the dominant species) on the original Horn Ranch property located in Sections 19, 20 and 30, Township 2 North, Range 76 West of the 6<sup>th</sup> P.M. and Section 25, Township 2 North, Range 77 West of the 6<sup>th</sup> P.M. In 2003 Grand Elk, LLC acquired much of the Horn Ranch property and its water rights for development of a residential and recreational project. Horn Ranch retained the home site and approximately 190 acres in the western portion of the ranch. The 2004 irrigation season was the last year that the Bunte Ditch irrigated the entire property. Horn Ranch continued to use the Bunte Ditch for irrigation on their retained portion and the developer used it in a substitute water supply plan for a gravel mining operation. The Horn Ranch is located adjacent to the Colorado River near the Town of Granby. The irrigated fields under the Bunte Ditch are at an elevation of about 7,940 feet. Approximately 63 acres of the historically irrigated land under the Bunte Ditch are owned by Horn Ranch. The remaining irrigated acreage totals 431.6 acres. This season the Bunte Ditch began diverting water on May 7 for irrigation of the Horn Ranch property and portions of Shorefox property. Irrigation of Shorefox property will cease and instead Shorefox’s interest in the Bunte Ditch water right will be bypassed at the headgate less the amount of water required to maintain the historical return flow.

Willow Creek Reservoir, an on-channel reservoir constructed on Willow Creek and operated by the Northern Colorado Water Conservancy District (“NCWCD”) is located upstream of the headgate of the Bunte Ditch. The Bunte Ditch water right (priority 168) is senior to Willow Creek Reservoir, therefore the operator of the Willow Creek Reservoir has bypassed inflows in an amount equal to the decreed

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amount of downstream diversion. This practice is in accordance with the legislation for the Colorado-Big Thompson Project ("C-BT") which requires the project to operate in a manner to preserve vested water rights. Under the proposed use of the Bunte Ditch water rights for ISF use, CWCB and Shorefox will coordinate with NCWCD for releases of Willow Creek Reservoir water when water is needed at the Bunte Ditch headgate.

The historical consumptive use of the irrigation supply for the 431.6 acres was quantified by Thomas A. Williamsen from Helton & Williamsen, P.C. based on the average monthly diversion for the period 1950 through 2004, using the Modified Blaney-Criddle Method (USDA, 1970) with crop coefficients developed from research conducted in Grand County (Carlson, 1991). Monthly temperature and precipitation data were taken from published records (NOAA 1950-2004) for stations near Grand Lake and Hot Sulphur Springs. The ditch loss from the headgate to the irrigated fields was assumed to be 20 percent and an irrigation efficiency of 40 percent was used. The water not stored in the soil root zone or consumed by the crop was distributed as one third to tail water and two-thirds deep percolation. Water in excess of the irrigation requirement was added to the soil moisture bank, which was assumed to be 10 to 24 inches deep in the fields adjacent to the river and 10 to 14 inches deep on the terrace fields. The average annual historical stream depletion from the senior water rights in the Bunte Ditch is estimated to be about 682.2 acre-feet, as shown in the attached Table 3. The timing of the ground water return flows was lagged to the Colorado River using the Glover method with the following aquifer parameters:  $X = 1,300$  feet,  $W = 4,000$  feet,  $S=0.2$ , and  $T = 170,000$  gpd/ft (determined by Wright Water Engineers for the alluvial aquifer of Colorado River using pump tests and recovery tests).

Lagged ground water return flows will be replaced to the Colorado River using a recharge pond located near the center of the historically irrigated property. The recharge pond was excavated to a depth of approximately 13 feet and has a surface area of 14.7 acres. A measuring device will be installed at or near a turnout along the Bunte Ditch to control and measure the water delivered to the recharge site. The amount of water to be delivered to the recharge pond and water available under the Agreement are identified in the table below as a percentage of the water available at the Bunte Ditch headgate:

		APR	MAY	JUNE	JUL	AUG	SEP	OCT
Recharge	Ditch Loss	20%	20%	20%	20%	20%	20%	20%
	Delivery to the Recharge Pond	39.1%	41.2%	45.9%	47.1%	39.6%	36.6%	40.9%
Bypass at Headgate	HCU	21.3%	18.2%	11.1%	9.3%	20.6%	25.0%	18.6%
	Surface water return flow	19.6%	20.6%	23.0%	23.6%	19.8%	18.4%	20.4%
	Total bypass	40.9%	38.8%	34.1%	32.9%	40.4%	43.4%	39.1%

The maximum amount of leased water available for ISF use in the Colorado River segment between Willow Creek and the Fraser River is presented in the following table, which is based on the average monthly diversions less the percentage required for recharge:

Maximum Amount of Water available for ISF Use in the Colorado River between Willow Creek and the Fraser River

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	APR	MAY	JUN	JUL	AUG	SEP	OCT
Average Monthly diversion (cfs)	1	14.8	34.2	29.2	4.5	1.9	2.1
Amount required for recharge( cfs)	0.59	9.06	22.54	19.59	2.68	1.08	1.28
Amount available for ISF use	0.41	5.74	11.66	9.61	1.82	0.82	0.82

The amount of leased water available for ISF use in the Colorado River segment between Windy Gap Reservoir and the confluence of the Colorado River with the Blue River is identified in the table below and is based on the average historical consumptive use of the Bunte Ditch:

Maximum Amount of Water available for ISF Use in the Colorado River between Windy Gap and the Blue River

Month	APR	MAY	JUN	JUL	AUG	SEP	OCT
CFS	0.21	2.69	3.8	2.7	0.93	0.48	0.39

The Division Engineer has reviewed the loan allowing the new time, place and use of this water right and determined, as required by 37-83-105(2)(a) and (2)(b), that it will not injure the existing water rights of others and will not affect Colorado's compact entitlements.

### Conditions of Approval

This temporary loan of water is hereby approved pursuant to Section 37-83-105, C.R.S., subject to the conditions below:

1. This approval applies to diversions/releases beginning July 26, 2012 through June 30, 2022.
2. If CWCB seeks to implement the Agreement for a second-year term or a third-year term, CWCB shall notify the Division Engineer of its intention and provide a copy of the Agreement Extension prior to using Bunte Ditch water for ISF use.
3. Approval of this temporary loan of water is for the purposes stated herein, specifically for temporary lease of Shorefox ownership in the Bunte Ditch water rights for CWCB ISF use on the Colorado River reaches as identified in Case Nos. 80CW446, 80CW447, 80CW448 and 90CW300.
4. The Applicant must provide the name, address and phone number of the person who will be responsible for the operation of this temporary loan of water to the SEO, the Division Engineer (Alan Martellaro, P.O. Box 396, Glenwood Springs, CO 81602, telephone 970-945-5665), and the water commissioner (Neal Misbach, P.O. Box 396, Glenwood Springs, CO 81602, 970-531-1159) within 20 days of the receipt of this approval.
5. All instream flow shall be measured in a manner acceptable to the Division Engineer. The Applicant shall install and maintain measuring devices as required by the Division Engineer

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for operation of this temporary loan.

6. The flow into the recharge pond must be metered and equipped with a continuous flow recorder unless the water commissioner in conjunction with the Division Engineer determines that adequate records may be kept without such equipment.
7. The recharge pond must be maintained in such a way as to minimize consumptive use of the water by vegetation.
8. The Applicant shall perform verification for all parcels of dried up land used to generate credits during the term of this plan. The Applicant shall provide an affidavit and a map to the water commissioner and division engineer that identifies and confirms the lands that are dried up during this irrigation season. If the Agreement is implemented for the second-year term or third-year term, than the Applicant shall provide a written notification to the Water Commissioner and Division Engineer identifying the lands to be dried up for that irrigation season.

The Applicant shall modify accounting to reflect that the credit from any dried up fields containing alfalfa or native grass was assessed in the following manner:

- (a) For fields deep tilled or chemically treated to successfully kill alfalfa or native grass, 100% credit will be given for consumptive use as otherwise computed under the conditions of this approval.
- (b) For fields not deep tilled or chemically treated to successfully kill alfalfa or native grass, records of monthly monitoring of depth to ground water at existing irrigation wells or existing or new monitoring wells or piezometers within ¼-mile of each alfalfa or native grass field must be maintained to the extent required by the Division Engineer. Credits will be reduced according to the following table when depth to ground water is less than the depth assumed to provide no significant contribution to native grass or alfalfa growth. Measurements taken at the start of each month will determine the necessary reduction in credit to be applied during the following month. The applicant may use another methodology upon review and approval by the Division Engineer.

Depth to Ground Water (Feet)	Percent Reduction in CU Credit <sup>1</sup>	
	Native Grass	Alfalfa
1	85%	100%
2	50%	90%
3	30%	75%
4	20%	50%
5	15%	35%
6	10%	20%
7	5%	15%
8	0%	10%

1. Adapted from *EVAPOTRANSPIRATION AND AGRONOMIC RESPONSES IN FORMERLY IRRIGATED MOUNTAIN MEADOWS, South Park, Colorado*, March 1, 1990; Revised September 1, 1991

9. The Applicant must submit accounting reports to the Division Engineer ((Alan Martellaro, P.O. Box 396, Glenwood Springs, CO 81602, telephone 970-945-5665), and the Water Commissioner (Neal Misbach, P.O. Box 396, Glenwood Springs, CO 81602, 970-531-1159) on a daily basis or other interval acceptable to both of them. The Applicant shall also provide a report to the Division Engineer and water commissioner by November 15<sup>th</sup>, which summarizes diversions/releases made pursuant to this temporary loan of water. Accounting forms are subject to modification and approval by the Division Engineer. Flow rates shall be

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reported in cfs, volumes shall be reported in acre-feet.

10. This temporary loan of water may be revoked or modified at any time should it be determined that injury to other vested water rights has occurred or will occur as a result of the operation of this temporary loan of water.
11. The decision of the Division Engineer shall have no precedential or evidentiary force, shall not create any presumptions, shift the burden of proof, or serve as a defense in a water court case or any other legal action that may be initiated concerning the loan. This decision shall not bind the Division Engineer to act in a similar manner in any other applications involving other loans and shall not imply concurrence with any findings of fact or conclusions of law contained herein, or with the engineering methodologies used by the Applicant. Any appeal of a decision made by the Division Engineer concerning a temporary loan of water pursuant to Section 37-83-105, C.R.S., shall be to the Division 5 Water Judge within fifteen days of the date of this decision.

Should you have any questions regarding this temporary loan of water, please contact me at (970) 945-5665.

Sincerely,



Alan Martellaro, P.E.  
Division Engineer

Attachments: Map of the ISF reaches  
Public Trustee Deed  
Temporary Water Lease Agreement  
Table 3

cc: Dick Wolfe, State Engineer  
1313 Sherman Street, Room 818  
Denver, Co 80203  
Telephone 303-866-3581

Neal Misbach,  
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