STATE OF COLORADO

DIVISION OF WATER RESOURCES
WATER DIVISION FOUR
Office of the State Engineer
Department of Natural Resources

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May 19, 2015

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-Coats Bros Ditch
Pursuant to Section 37-83-105, C.R.S.
Section 3, T 48 N, R 3 E and Section 23, T 49 N, R 2 E, N.M. P.M.
Water Division 4, Water District 28, Gunnison County

Approval Period: May 6, 2015 through December 31, 2024
Contact Phone Number for Ms. Linda J. Bassi: 303-866-3441

Dear Ms. Bassi:

We have reviewed your letter dated April 16, 2015 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 April 20, 2015 to all parties who have subscribed to the Division 4 Substitute Water Supply Plan ("SWSP") Notification List. The Division of Water Resources ("DWR") did not receive any comments during the statutory 15-day comment period. The statutory $100 filing fee (receipt no. 3669238) was submitted with this request.

Statement of Duration and Description

CWCB is seeking approval of a temporary loan for water rights leased from Gregory and Patricia Kruthaupt ("Kruthaupts") via the Colorado Water Trust ("CWT") and Trout Unlimited ("TU") for ISF use. The water right leased from the Kruthaupts was identified as the Coats Bros Ditch (WDID 2800532), which diverts water from Tomichi Creek, in the NE1/4 of the SE1/4 of Section 3, Township 48 North, Range 3 East of the N.M. P.M. The term of the temporary water lease agreement ("Agreement") is from the approval date of this letter and extends through December 31, 2024. Pursuant to Section 37-83-105, C.R.S., an approved loan is limited to 120 days in a calendar year and shall not be exercised for more than three years in a ten-year period.

CWCB currently holds ISF water rights on Tomichi Creek decreed in Case No. 80CW132. The leased water will be used for the benefit the CWCB's ISF water right on the Segment 2 of the decree in Case No. 80CW132. The portion of Tomichi Creek in which Segment 2 of ISF water right is decreed is located between the confluence

with Marshall Creek and the confluence with Quartz Creek, and is more specifically described in the Table 1 below:

Table 1-CWCB water right

Case Number	Upstream Terminus	Downstream Terminus	ISF decreed amount (cfs)	Appropriation Date
80CW132 (Segment 2)	SW1/4 NW1/4, Sec. 21, T 48 N, R 5 E, N.M.P.M. (confluence of Tomichi Creek with Marshall Creek)	NW1/4 NW1/4, Sec. 23, T 49 N, R 2 E, N.M.P.M.(confluence of Tomichi Creek with Quartz Creek	18	March 7, 1980

The CWCB water right on the Tomichi Creek was decreed to preserve the natural environment to a reasonable degree. The leased water will be used for ISF purposes on Tomichi Creek between the Coats Bros Ditch headgate (NE1/4 of the SE1/4 of Section 3, Township 48 North, Range 3 East of the N.M. P.M.) to the confluence of Tomichi Creek with Quartz Creek; both upstream and downstream of the point of historical return flow (as shown on the attached Figure 2). CWCB proposes to use the historical diversion amounts in the approximately 2.6 mile segment of Tomichi Creek located between Coats Bros Ditch headgate and the point of historical return flow (Reach 1 on attached Figure 2). The point of the historical return flow was identified to be located just upstream from Goodrich Ditch Alternate Point of Diversion (as shown on the attached Figure 3). CWCB also proposes to use the historical consumptive use amounts in the approximately 9.7 mile segment of Tomichi Creek between the point of historical return flow and the confluence with Quartz Creek (Reach 2 on attached Figure 2). The ground water return flow from the historically irrigated parcel with the Coats Bros Ditch water right will be maintained under this temporary loan approval. The loan water from the Coats Bros Ditch to CWCB for ISF use will be used for split season irrigation and ISF use during the historical irrigation season from April 1 through October 31. During the early irrigation season, from approximately April through June 30th, the Coats Bros Ditch water will be used for irrigation of hay meadows and pasture grass on the same lands historically irrigated by Kruthaupt's ownership of the water rights in the Coats Bros Ditch. Beginning July 1st and continuing through the end of historical irrigation season in late October, irrigation will be discontinued and the water rights will be made available for ISF use by the CWCB. Pursuant to paragraph 1c of the Agreement, the Kruthaupts may extend the irrigation use through July 31, so long as they provide written notice to CWCB, CWT and TU on or before May 31st of each implementation year. The loan water is expected to increase stream depth and wetted perimeter and to lower water temperature for the fish.

Proponent's legal right to use the loaned water right

CWCB, CWT, and TU have entered into a Temporary Water Lease Agreement ("Agreement") with Gregory and Patricia Kruthaupt ("Kruthaupts"). Under the Agreement, the Kruthaupts will make water available to CWCB for ISF use, 0.651 cfs (Priority 18) and 2.5 cfs (Priority 40) of its ownership in the Coats Bros Ditch water rights when conditions permit. A copy of the Agreement was provided to DWR with this request and is attached to this letter. The Kruthaupts ownership in the Coats Bros Ditch was evidenced by the deeds and decree in case nos. CA949 and CA1266, which were provided to DWR with this request and copies are attached to this letter. In addition, the Colorado Cattlemen's Agricultural Land Trust ("CCALT") holds a Conservation Easement ("Easement") on 470 acres of the Kruthaupt's property. The Coats Bros Ditch is encumbered by the Easement; however paragraph 15 of the Easement does allow the water rights to be leased so long as certain terms and conditions are met. In compliance with the requirements of the Easement, Colorado Parks and Wildlife ("CPW") has reviewed this proposed water right lease for the potential impact on wildlife and determined that this temporary lease would not negatively affect the intent of wildlife values in the Easement and could be extremely beneficial to aquatic species, especially during dry years. CCALT has also determined that the proposed short term lease would not compromise the terms or intent of the Conservation Easement. Based on the ownership in the Coats Bros Ditch, the Kruthaupts have the right to the water rights in the Coats Bros 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 right decreed in Case No. 80CW132 was identified as being more junior than the existing water rights on the segment of Tomichi Creek and may be out of priority during much of the irrigation season. Consistent with the terms and conditions of the Agreement, CWCB shall notify the Division Engineer when the Coats Bros Ditch water rights are being used for ISF purposes. The Kruthaupts agreed that it may not irrigate with the loaned water rights in the Coats Bros Ditch while the water rights are being used by CWCB for ISF use. Therefore, any time during the irrigation season that water is used for ISF use, the Kruthaupts cannot continue to irrigate with the Coats Bros Ditch water rights, leased herein.

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

The Coats Bros Ditch diverts water from Tomichi Creek, in the NE1/4 of the SE1/4 of Section 3, Township 48 North, Range 3 East of the N.M. P.M. The historically irrigated lands are adjacent to Tomichi Creek. The Coats Bros Ditch water rights that are subject of the Agreement, along with the Kruthaupt's ownership are summarized in the Table 2 below:

Table 2- The Coats Bros Ditch water rights

Water Right Name	Priority Number	Decreed Amount (cfs)	Case Number	Appropriation Date	Adjudication Date	Kruthaupt's Ownership (cfs)
Coats Bros Ditch	18	1.3020	CA 949	05/31/1881	05/01/1894	0.651
	40	5.0	CA1266	05/01/1879	04/29/1904	2.5
	250	12.85	CA2079	05/01/1887	04/19/1943	N/A
Total		19.152				3.151

Mr. Tyler Martineau, Water Resource Engineer, has prepared an engineering report ("Report") dated October 20, 2014 that summarized the historical diversions, historical consumptive use ("HCU") and return flow patterns attributable to the leased water for both average year and dry year (2002) conditions. According to the Report, diversions under the ditch typically begin in April and continue into October and take place primarily during two periods of time. The first period starts in the spring and ends within few weeks before or after August 1st prior to the single annual cutting of hay. The second period occurs after the cutting of hay and lasts into the fall for the purpose of re-growing hay for use as pasture in the fall and winter. The average year HCU for the Coats Bros Ditch water rights was quantified based on the average monthly diversion for the period 1970 through 2013. The dry year consumptive use was estimated to be equal to the diversions for 2002, the driest year on record. Three scenarios were presented in the Report. First is an analysis of the depletions associated with the full irrigation season (April through October). In this scenario the depletions would be available for ISF use if the historical irrigation was discontinued for a full year (April through October). Second is an analysis of the depletions associated with diversions that occurred from July through October. In this scenario the depletions would be available for ISF use if historical irrigation took place from April through June and discontinued thereafter for the remainder of the year. Third is an analysis of the depletions associated with diversion that occurred from August through October. In this scenario the depletions would be available for ISF use if historical irrigation took place from April through July and discontinued thereafter for the remainder of the year. Since the Agreement is contemplated based on a split season irrigation and ISF use, only the July through October scenario and August through October scenario were considered in our analysis for the ISF use of the Coats Bros Ditch.

The following modeling assumptions were made in estimating the HCU and river depletions for the Coats Bros Ditch:

- The Modified Blaney-Criddle Method within the State CU program with TR-21 crop coefficients with ET adjustments available in the State CU was used for both the dry-year and average year analysis. State CU provides a standard option for estimating irrigation water requirements for grass pasture above 6500 feet in elevation throughout the state using high altitude consumptive use crop coefficients identified in the model as the Denver Water High Altitude Calibration Coefficients. These coefficients are very similar to the coefficients developed for the Upper Gunnison Basin, and therefore were used in the model.
- The Kruthaupts water rights in the Coats Bros Ditch have been historically used for flood irrigation of pasture grass on the Kruthaupt Ranch. The Kruthaupt Ranch is located on Tomichi Creek approximately 19 miles east of the City of Gunnison in Section 34, Township 49 North, Range 3 East of the N.M. P.M. and Section 3, Township 48 North, Range 3 East of the N.M. P.M. The Kruthaupts own 50 percent of the water in the two senior priorities in the Coats Bros Ditch. These two priorities were decreed for a total of 330 acres of irrigation. Based on 50 percent ownership in the Coats Bros Ditch, the amounts of consumptive use and river depletions estimated in the Report were associated with 165 acres of historic irrigation (330 acres x 0.50=165 acres).
- For the 1970-2013, diversion records for the Coats Bros Ditch were downloaded from Hydrobase. Daily diversions for the Coats Bros Ditch were adjusted to include only the diversions of the two senior priorities.
- Temperature and precipitation data available from Gunnison 3SW weather station from 1970 through 2013. Missing data for individual months were filled with long term average monthly data for the period 1970-2013.
- Soil Conservation Service ("SCS") methodology for calculation of effective precipitation.
- Assumed conveyance efficiency of 85 percent.
- The Kruthaupt Ranch was flood irrigated. A maximum 50 percent efficiency for this parcel was proposed based upon the potential efficiency for uncontrolled flood irrigation as published by the USDA Soil Conservation Service in the Farm Irrigation Rating Index, Table 3 (1991).
- The soil moisture water content applied in the HCU analysis is 0.09 inches of water per inches of soil.
- The soils consist of Gas Creek Sandy Loams (44 percent), Gold creek Silty Clay Loam (31 percent), Irim Loam (23 percent) and Duffson Loam (2 percent) obtained from USDA Soil Conservation Service (1975).
- Return flows assumed to be 50 percent surface and 50 percent deep percolation accruing to the river in the NE1/4 of the SE1/4 of Section 33, Township 49 North, Range 3 East of the N.M. P.M.
- Deep percolation return flow was analyzed using AWAS software and the Glover methodology according to the parameters summarized in Table 3. No data as to site-specific transmissivity and specific yield were available for the Kruthaupt Ranch, therefore for the purpose of this temporary loan plan the basin-wide aquifer parameters decreed in the Aspinall plan for augmentation in case no. 2003CW49 for the Upper Gunnison River Water Conservancy District, were used.

Table 3- Summary of Glover Parameters

Distance from the Centroid of the Farm to River (ft)	Distance from boundary to River (ft)	Transmissivity (gpd/ft)	Specific Yield
950	1,800	50,000	0.15

The results of the Glover analysis show that there is a relatively short lag time and relatively rapid return of water to the stream. The lagged return flow factors are as follows: 0.395 first month, 0.396 second month, 0.134 third month, 0.048 fourth month, 0.017 fifth month, 0.006 sixth month, 0.002 seventh month and 0.001 eighth month.

The HCU results based on the average years 1970-2013 for the proposed split season irrigation and ISF use for the period July through October are summarized in Tables 4 below.

Table 4- HCU Results for July though October period (average years)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Farm Headgate Delivery (acre-feet)	0	0	0	0	0	0	113.7	22.6	31.6	35.2	0	0	203.2
On Farm Depletion of Surface Water (acre-feet)	0	0	0	0	0	0	59.3	11.2	12.9	5.9	0	0	89.3
Surface Return Flows	0	0	0	0	0	0	28.4	5.7	7.9	9.6	0	0	51.6
Ground Water Return Flow	0	0	0	0	0	0	28.4	5.7	7.9	9.6	0	0	51.6
Lagged Ground Water Return Flows	0.7	0.3	0.1	0	0	0	11.2	13.5	9.2	9.1	5.6	1.9	51.6
Total Return Flow	0.7	0.3	0.1	0	0	0	39.6	19.2	17.1	18.7	5.6	1.9	103.2
Average Net Depletion	-0.7	-0.3	-0.1	0	0	0	74.1	3.4	14.5	16.5	-5.6	-1.9	100

The HCU results based on the average years 1970-2013 for the proposed split season irrigation and ISF use for the period August through October are summarized in Tables 5 below.

Table 5- HCU Results for August through October period (average years)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Farm Headgate Delivery (acre-feet)	0	0	0	0	0	0	0	22.6	31.6	35.2	0	0	89.5
On Farm Depletion of Surface Water (acre-feet)	0	0	0	0	0	0	0	11.2	12.9	5.9	0	0	30.0
Surface Return Flows	0	0	0	0	0	0	0	5.7	7.9	9.6	0	0	23.2
Ground Water Return Flow	0	0	0	0	0	0	0	5.7	7.9	9.6	0	0	23.2
Lagged Ground Water Return Flows	0.6	0.2	0.1	0	0	0	0	2.2	5.4	7.7	5.1	1.8	23.2
Total Return Flow	0.6	0.2	0.1	0	0	0	0	7.9	13.3	17.3	5.1	1.8	46.4
Average Net Depletion	-0.6	-0.2	-0.1	0	0	0	0	14.7	18.3	17.9	-5.1	-1.8	43.1

The HCU results based on the 2002 dry year for the proposed split season irrigation and ISF use for the period July through October are summarized in Tables 6 below.

Table 6- HCU Results for July through October period (dry year)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Farm Headgate Delivery (acre-feet)	0	0	0	0	0	0	75.2	2.1	22.6	20.3	0	0	120.2
On Farm Depletion of Surface Water (acre-feet)	0	0	0	0	0	0	37.6	1.1	11.3	10.2	0	0	60.1
Surface Return Flows	0	0	0	0	0	0	18.8	0.5	5.6	5.1	0	0	30.0
Ground Water Return Flow	0	0	0	0	0	0	18.8	0.5	5.6	5.1	0	0	30.0
Lagged Ground Water Return Flows	0.4	0.1	0	0	0	0	7.4	7.7	5.0	5.2	3.1	1.1	30.0
Total Return Flow	0.4	0.1	0	0	0	0	26.2	8.2	10.6	10.3	3.1	1.1	60.0
Net Depletion	-0.4	-0.1	0	0	0	0	49.0	-6.1	12.0	10.0	-3.1	-1.1	60.2

The HCU results based on the 2002 dry year for the proposed split season irrigation and ISF use for the period August through October are summarized in Tables 7 below.

Table 7- HCU Results for August through October period (dry year)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Farm Headgate Delivery (acre-feet)	0	0	0	0	0	0	0	2.1	22.6	20.3	0	0	45.0
On Farm Depletion of Surface Water (acre-feet)	0	0	0	0	0	0	0	1.1	11.3	10.2	0	0	22.5
Surface Return Flows	0	0	0	0	0	0	0	0.5	5.6	5.1	0	0	11.2
Ground Water Return Flow	0	0	0	0	0	0	0	0.5	5.6	5.1	0	0	11.2
Lagged Ground Water Return Flows	0.3	0.1	0	0	0	0	0	0.2	2.4	4.3	2.8	1.0	11.2
Total Return Flow	0.3	0.1	0	0	0	0	0	0.7	8.0	9.4	2.8	1.0	22.4
Net Depletion	-0.3	-0.1	0	0	0	0	0	1.4	14.6	10.9	-2.8	-1.0	22.6

Diversions of water under the Coats Bros Ditch have historically caused a depletion of the flow in Tomichi Creek downstream of the point of diversion. In the stretch of the river immediately below the point of diversion, the historic river depletion is equal to the amount of water historically diverted at the farm headgate. This portion of the river is identified in Figure 2 as Reach 1. The amounts of historic diversion to be made available for ISF use within Reach 1 based on average years and dry year are presented in Table 8 and 9 below:

Table 8- Historical diversions available for ISF use-July through October

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Average Year Farm Headgate Delivery (acre-feet)	0	0	0	0	0	0	113.7	22.6	31.6	35.2	0	0	203.2
Average Year Farm Headgate Delivery (cfs)	0	0	0	0	0	0	1.85	0.37	0.53	0.57	0	0	
2002 Dry Year delivery (acre-feet)	0	0	0	0	0	0	75	2	23	20	0	0	120
2002 Dry Year delivery (cfs)	0	0	0	0	0	0	1.22	0.03	0.38	0.33	0	0	

Table 9- Historical diversions available for ISF use-August through October

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Average Year Farm Headgate Delivery (acre-feet)	0	0	0	0	0	0	0	22.6	31.6	35.2	0	0	89.1
Average Year Farm Headgate Delivery (cfs)	0	0	0	0	0	0	0	0.37	0.53	0.57	0	0	
2002 Dry Year delivery (acre-feet)	0	0	0	0	0	0	0	2	23	20	0	0	45
2002 Dry Year delivery (cfs)	0	0	0	0	0	0	0	0.03	0.38	0.33	0	0	

When water is diverted for irrigation not all of the water is consumed. Some water returns to the river as surface return flow and subsurface return flow. Below the point where returns came back to the river there is a net river depletion which is equal to the amount diverted from the river at the point of diversion less the surface and subsurface return flows. This portion of the river is identified in Figure 2 as Reach 2. The amounts of net stream depletion water that would be available for ISF use within Reach 2 based on average years and dry year are presented in Table 10 and 11 below:

Table 10- HCU available for ISF use-July through October

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Average Net Depletion (acre-feet)	-0.7	-0.3	-0.1	0	0	0	74.1	3.4	14.5	16.5	-5.6	-1.9	100
Average Net Depletion (cfs)	-0.01	0	0	0	0	0	1.2	0.06	0.24	0.27	-0.09	-0.03	
2002 Dry Year depletion (acre-feet)	-0.4	-0.1	0	0	0	0	49.0	-6.1	12.0	10.0	-3.1	-1.1	60.2
2002 Dry Year depletion (cfs)	-0.01	0	0	0	0	0	0.80	-0.10	0.20	0.16	-0.05	-0.02	

Table 11- HCU available for ISF use-August through October

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Average Net Depletion (acre-feet)	-0.6	-0.2	-0.1	0	0	0	0	14.7	18.3	17.9	-5.1	-1.8	43.1
Average Net Depletion (cfs)	-0.01	0	0	0	0	0	0	0.24	0.31	0.29	-0.09	-0.03	
2002 Dry Year depletion (acre-feet)	-0.3	-0.1	0	0	0	0	0	1.4	14.6	10.9	-2.8	-1.0	22.6
2002 Dry Year depletion (cfs)	-0.01	0	0	0	0	0	0	0.02	0.24	0.18	-0.05	-0.02	

The above results, however, did not take into account any groundwater contribution to the crop irrigation requirement. Portions of the lands irrigated by the ditch shares lie within areas of potentially high groundwater and may be significantly subirrigated. These areas are locally known as hay meadows or sloughs and are typically located near the creeks. Other portions of the fields at higher elevation are locally called pasture and may have a lesser contribution from groundwater. The historical consumptive use calculated for the ditch shares to be changed by this temporary loan shall not include any credit resulting from the consumption of ground water. **In order to ensure to ensure no credit is given for the consumption of ground water, prior to the operation of this temporary loan, the Applicant shall implement a ground water monitoring program and determine the depth to groundwater for the different areas (slough and pasture) and Applicant shall update Tables 4 - 11 using the following table to account for any ground water contribution. The updated Tables 4 - 11 and data showing the measured depth to ground water shall be provided to the division engineer for his approval prior to operation of the temporary loan.** The Applicant shall provide records of monthly monitoring of depth to ground water for all fields required to be dried-up during the operation of this temporary loan. Information regarding depth to ground water may be provided using existing irrigation wells, existing or new monitoring wells, or piezometers located on the dried-up fields. Applicant may utilize wells or piezometers located within ¼ mile of each field, provided the Applicant can demonstrate to the satisfaction of the division engineer, that the depth to ground water information available off-site is representative of the depth to ground water on the dried-up field. **A map delineating the different areas of the fields (slough and pasture) must be provided to the division engineer and shall identify the acres associated with each area.** The Applicant shall modify accounting to reflect that the credit from any dried-up fields containing alfalfa or native grass was reduced according to the following table.

(a) Depth to ground water 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 prior approval by the division engineer.

Depth to Ground Water (Feet)	Percent Reduction in CU Credit[1]	
	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

Under this lease proposal 165 acres will be removed from irrigation during the later part of the season in years when the lease is implemented for ISF use. Implementation of the short-term lease will reduce historical return flow in Tomichi Creek from the Kruthaupt Ranch. The lagging of the deep percolation return flows continues for approximately six months after the water is being used for ISF purposes. In the months where a downstream water right holder would experienced a water shortage as a result of a reduction in the historical return flow, replacement of the historical return flow amounts will be required. During the irrigation season return flows will be maintained by leaving that portion of historical diversions in the river. According to Table 10, when the lease is implemented beginning July 1st of a 2002 type dry year there will be an irrigation season replacement requirement during the month of August. Therefore to prevent injury to downstream senior water rights under the July 1st dry year implementation, CWCB would either secure sufficient in-basin augmentation water to replace depletions to Tomichi Creek during the month of August or delay the ISF use and lease implementation until August 31st.

During the non-irrigation season, return flows will be replaced at any time a valid water right call is in effect. The Report did not identify any historical, non-irrigation calls on either the Gunnison River or Tomichi Creek. However the Report indicates that calls from the Redlands Power Canal (Adm. No. 22283.20300) located downstream from Blue Mesa, Morrow Point and Crystal Reservoirs are possible any time of the year. Additionally, the CWCB's ISF water right on Tomichi Creek could experience small shortages during the non-irrigation season, and could potentially place a call for water. Replacement for shortages to the water rights during the non-irrigation season could be provided locally in the Tomichi Creek drainage or could be obtained by leasing water from Upper Gunnison Water Conservancy District, if needed to replace depletions to a potential call on the Gunnison River downstream from Blue Mesa Reservoir.

In the event that Tomichi Creek and/or the Gunnison River basin are projected to experience drought conditions during an implementation year, CWT, TU, and CWCB seek approval to claim historical diversions and net depletions consistent with the dry year yields for the leased water. The diversions used in the analysis to estimate dry year consumptive use are assumed to be equal to the diversion in 2002, which according to the Surface Water Supply Index ('SWSI")(Figure 1) experienced similar drought conditions. The SWSI developed by DWR and the U.S.D.A. Natural Resources Conservation Service ("NRCS") is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on snowpack, reservoir storage, and precipitation for the winter period of November through April. For the operation of this plan, a dry-year scenario shall be based on a SWSI value for the Gunnison River of November through April of the current water year that is equal to or less than the 2002 value, or otherwise determined by the division engineer. When the lease water is proposed to be used for ISF use, CWCB shall notify DWR if the lease is exercised based on the dry year scenario or the average year scenario.

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 Gunnison'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 May 6, 2015 through December 31, 2024.
2. When CWCB seeks to implement the Agreement, CWCB shall notify the division engineer of its intention prior to using the Coats Bros Ditch water for ISF use.
3. Approval of this temporary loan of water is for the purposes stated herein, specifically for temporary lease of the Kruthaupts ownership in the Coats Bros Ditch water rights for CWCB ISF use on Tomichi Creek reach as identified in Case No. 80CW132.
4. The diversion period of the subject Coats Bros Ditch approved under this temporary loan of water is April 1 through October 31 under the proposed split season irrigation and ISF use.
5. For the operation of this plan, a dry-year scenario shall be based on a SWSI value for the Colorado River of November through April of the current water year that is equal to or less than the 2002 value, or otherwise determined by the division engineer. When the lease water is proposed to be used for ISF use, CWCB shall notify DWR if the lease is exercised based on the dry year scenario or the average year scenario.
6. 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 Division Engineer (Bob Hurford, P.O. Box 456, Montrose, CO 81402, telephone 970-249-6622), and the Water Commissioner (Jack Branzinsky, P.O. Box 456, Montrose, CO 81402, telephone 970-964-7947) with the required accounting forms.
7. 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 for operation of this temporary loan.
8. **In order to ensure to ensure no credit is given for the consumption of ground water, prior to the operation of this temporary loan, the Applicant shall implement a ground water monitoring program and determine the depth to groundwater for the different areas (slough and pasture) and Applicant shall update Tables 4 - 11 using the following table to account for any ground water contribution. The updated Tables 4 - 11 and data showing the measured depth to ground water shall be provided to the division engineer for his approval prior to operation of the temporary loan.** The Applicant shall provide records of monthly monitoring of depth to ground water for all fields required to be dried-up during the operation of this temporary loan. Information regarding depth to ground water may be provided using existing irrigation wells, existing or new monitoring wells, or piezometers located on the dried-up fields. Applicant may utilize wells or piezometers located within ¼ mile of each field, provided the Applicant can demonstrate to the satisfaction of the division engineer, that the depth to ground water information available off-site is representative of the depth to ground water on the dried-up field. **A map delineating the different areas of the fields (slough and pasture) must be provided to the division engineer and shall identify the acres associated with each area.** The Applicant shall modify accounting to reflect that the credit from any dried-up fields containing alfalfa or native grass was reduced according to the following table.

   (a) Depth to ground water 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[1]	
	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 daily accounting reports to the Division Engineer (Bob Hurford, P.O. Box 456, Montrose, CO 81402, telephone 970-249-6622), and the Water Commissioner (Jack Branzinsky, P.O. Box 456, Montrose, CO 81402, telephone 970-964-7947) on a monthly basis or other interval acceptable to both. The Applicant shall also provide a report to the division engineer and water commissioner by November 15th, 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 reported in cfs, volumes shall be reported in acre-feet.

10. Operation of this temporary loan will require the Kruthaupts to ensure that portions of the Coats Bros. Ditch water right that is not included in this loan Agreement will be delivered to down ditch owners without diversion on the Kruthaupts' property. This may require the Kruthaupts to restrict flow through laterals on their property during operation of this temporary loan.

11. 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.

12. 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 4 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) 249-6622.

Sincerely,

Bob Hurford, P.E.
Division Engineer

Attachments: Map of the Benefiting ISF Reach (Figure 2), Map with the Location of the Kruthaupt Ranch (Figure 3)
Temporary Water Lease Agreement
Case Nos. CA949 and CA1246
SWSI Figure 1

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

Jack Branzinsky, Water Commissioner
P.O. Box 456
Montrose, CO 81402
Telephone 970-964-7947