

# STATE OF COLORADO

---

## Colorado Water Conservation Board Department of Natural Resources

1313 Sherman Street, Room 721  
Denver, Colorado 80203  
Phone: (303) 866-3441  
Fax: (303) 866-4474  
www.cwcb.state.co.us



TO: Colorado Water Conservation Board Members

John W. Hickenlooper  
Governor

FROM: Linda J. Bassi  
Kaylea White  
Stream and Lake Protection Section

Mike King  
DNR Executive Director

Jennifer L. Gimbel  
CWCB Director

DATE: November 3, 2011

SUBJECT: **Agenda Item 9, November 15-16, 2011 Board Meeting  
Stream and Lake Protection---Injury with Mitigation---Case No. 5-  
07CW210; Application of Vail Associates, Inc. and the U.S. Forest Service**

---

### Introduction

This agenda item addresses a proposed pretrial resolution under ISF Rule 8i. (3) (Injury Accepted with Mitigation). Rule 8i. (3) requires the Board to consider an injury with mitigation ("IWM") proposal using a two-meeting process. Staff first presented this proposal to the Board in May 2008. The delay in bringing it back to the Board resulted from: (1) the Water Division 5 Referee ruling in this case that the CWCB had no authority to enter into IWM pre-trial resolutions; (2) the lengthy process of the CWCB's successful appeal of that ruling; and (3) extensive negotiations on the mitigation to be provided by the Applicant.

This proposal is to mitigate impacts of one alluvial well used for snow-making purposes. The mitigation includes operational limitations on well pumping and the provision of 1 acre-foot of mitigation water to the Eagle River from Eagle Park Reservoir, in addition to the 1 acre-foot of augmentation water that will be required to replace depletions from the subject well. The mitigation proposal has changed since May 2008 for reasons outlined below. The proposal would allow some injury to the Two Elk Creek instream flow ("ISF") water right, but it appears that the operational limitations and provision of 1 acre-foot of mitigation water proposed by Vail Associates will provide the mitigation necessary to enable the CWCB to continue to preserve the natural environment to a reasonable degree on Two Elk Creek, despite any injury that could otherwise result from diversions by the alluvial well.

### Staff Recommendation

Staff recommends that the Board:

- 1) Determine that the natural environment of Two Elk Creek could be preserved to a reasonable degree with the proposed injury if Vail Associates provides the proposed mitigation; and
- 2) Authorize staff and the AG's Office to enter into a stipulation incorporating this IWM proposal.

## Background

Applicant Vail Associates has requested water rights for a low-capacity snowmaking well, tributary to Two Elk Creek which is tributary to the Eagle River. Vail Associates seeks approval of a conditional water right, including approval of a plan for augmentation and appropriative rights of exchange, to replace out-of-priority depletions associated with diversions from Tea Cup Bowl Well No. 1, up to a maximum of 1 acre-foot per year. The exchange reach is from the confluence of Two Elk Creek and the Eagle River up to points of impact from the well on Two Elk Creek.

The Board filed a statement of opposition to this application because, although the injury qualifies as “de minimis,” pursuant to ISF Rule 8(e), the Applicant requested assurance that CWCB would not place a call for its ISF water right against the Applicant’s water right. Under ISF Rule 8(e), the CWCB must still enforce its ISF water right. Based upon discussions and a site visit with the Applicant prior to the filing of this application, the CWCB filed a statement of opposition and became a party in this case with the intent of negotiating terms and conditions related to an injury with mitigation proposal to include in a stipulation and final decree. The exercise of the proposed rights could adversely impact the Board’s ISF water rights listed below.

<b>CWCB Case No.</b>	<b>Stream/Lake</b>	<b>Amount (cfs)</b>	<b>Approp. Date</b>	<b>Watershed</b>	<b>County</b>
5-78W3797	Two Elk Creek	4	5/12/78	Eagle River	Eagle
5-78W3788	Eagle River	25/11	5/12/78	Eagle River	Eagle
5-78W3796	Eagle River	50/20	5/12/78	Eagle River	Eagle
5-80CW134	Eagle River	85/35	3/17/80	Eagle River	Eagle
5-80CW126	Eagle River	110/45	3/17/80	Eagle River	Eagle
5-80CW124	Eagle River	130/50	3/17/80	Eagle River	Eagle

(See map attached to this memo). This IWM proposal only addresses impacts to the Two Elk Creek ISF water right. Depletions affecting the Eagle River will be augmented under the Applicant’s plan for augmentation with releases from Eagle Park Reservoir. CWCB staff will negotiate separate terms and conditions to assure 100% protection of the CWCB’s Eagle River ISF water rights.

The Two Elk Creek ISF water right extends through the Vail Mountain Ski Resort in the White River National Forest, and diversions associated with the well claimed in Vail Associates’ application will occur within the ISF reach. Vail Associates has agreed to protect Two Elk Creek by adjusting its pumping schedule so that impacts on stream flows in Two Elk Creek will be minimized. Vail Associates also has agreed to provide 1 acre-foot of mitigation water to the CWCB from Eagle Park Reservoir, in addition to the 1 acre-foot required to replace depletions to the Eagle River from well pumping and the amount required for transit losses down to the confluence with Two Elk Creek.

## Extent of proposed injury

The alluvial snowmaking well that is the subject of this IWM proposal is known as the Tea Cup Bowl Well. The Applicant has proposed this well as the least environmentally damaging alternative to develop a water supply for snow making in this part of the ski area. The well will be placed at a distance of 120 feet from Two Elk Creek.

Depletions from the Tea Cup Bowl snowmaking well will not impact streamflows in the Eagle River below Two Elk Creek so long as the augmentation plan by exchange is operated properly. As part of the augmentation plan by exchange, Vail Associates seeks approval to release up to one acre-foot (the maximum depletion) of water from Eagle Park Reservoir, plus the amount

required for transit loss, to the Eagle River to replace all of the depletions from the well, thus preventing injury to any downstream water rights on the Eagle River and Colorado River below Two Elk Creek.

The extent of depletions to Two Elk Creek would not exceed one acre-foot of water per year. Under the proposed operating plan for the Tea Cup Bowl Well, pumping would be limited to 10 hours per day beginning on November 1<sup>st</sup> and ending on December 31<sup>st</sup>. The actual start and finish dates and hours of pumping for snowmaking operations would vary from year to year depending upon when air temperatures become consistently cold enough for snowmaking operations. Under optimal conditions, the desired snowmaking would be completed in a period of about 36 days, with well pumping to occur for 10 hours per day. Under normal operating conditions, it is likely that there will be intermittent 1 to 3 day periods of sub-optimal conditions when no pumping would occur, allowing the stream flow to recover to near natural conditions. The potential reduction to the ISF during well pumping would fluctuate from approximately 0.009 cfs to 0.019 cfs.

The one acre-foot of water pumped from the Tea Cup Bowl Well is assumed to be 100% consumptive to Two Elk Creek and the Eagle River at the time of diversion, with 80% of the snowmaking diversions returning to Two Elk Creek and the Eagle River during the ensuing spring and summer. During winter snowmaking operations, it is expected that there will be a small amount of return flows to Two Elk Creek.

### **Evolution of Mitigation Proposal**

Under the original mitigation proposal, Vail Associates would have: (1) imposed operational limitations on its well pumping to minimize impacts on stream flows in Two Elk Creek; and (2) installed three stream habitat improvement structures in Two Elk Creek to create new pools, enhance existing pools, or deepen the channel so as to improve the hydraulic conditions for fish habitat during periods of low flow. However, site visits and consultations with Colorado Parks and Wildlife (“CPW”) and U.S. Forest Service (“USFS”) biologists resulted in the conclusion that due to the excellent existing stream habitat conditions, modifications and/or improvements to the stream channel of Two Elk Creek are neither necessary nor feasible. CWCB staff, CPW, USFS and Vail Associates also discussed the possibility of Vail Associates helping to fund the installation of a fish barrier on Two Elk Creek just above the Eagle River to prevent brown and brook trout from migrating up Two Elk Creek in anticipation of a potential reintroduction of Colorado River cutthroat trout to the creek. Ultimately, the USFS determined that it would provide the engineering, materials and funding for such an installation, should it occur. Consequently, because no reasonable alternative for on-site mitigation exists, the mitigation proposal now consists of the operational limitations contained in the original proposal, and the provision of 1 acre-foot of water from Eagle Park Reservoir to the CWCB to supplement existing ISF water rights on the Eagle River (in addition to that required to augment depletions resulting from Vail Associates’ well pumping).

### **Operational Limitations on Well Pumping**

Vail Associates has devised a plan to minimize impacts of the well depletions on Two Elk Creek. Rather than pumping continuously, the well will be pumped in 10-hour intervals. This will allow Two Elk Creek to recover partially for 14 hours each day. The purpose of this plan is to spread the impact of pumping over a longer period of time. For the same volume of depletions, the depletion rate is minimized, resulting in a reduction of the impact on streamflow. The maximum pumping rate of 15 gpm will not impact Two Elk Creek at 100%, but rather the percent of pumping rate impact on the stream will fluctuate between 57% and 27% each day. The

maximum well pumping impact is 0.019 cfs and will only occur for a few hours at a time while the well is pumping, during November and December.

### **Provision of Additional Water from Eagle Park Reservoir**

Vail Associates has proposed to provide 1 acre-foot of mitigation water from Eagle Park Reservoir each calendar year during the time period(s) and at the rate(s) requested by the CWCB. This water will be in addition to the 1 acre-foot of augmentation water required under the decree.

### **Benefits of mitigation**

At the May 2008 Board meeting, Mr. Robert Weaver of AMEC Earth and Environmental, Inc. gave a presentation on the reduction of impacts on Two Elk Creek resulting from limitations on the well operation. The USFS has conducted a biological evaluation and biological assessment to evaluate potential impacts of the proposed Tea Cup Bowl Well on sensitive and endangered species. Based upon this evaluation, the Forest Service East Zone Fisheries Biologist characterized the Two Elk Creek fish and macroinvertebrate communities as “robust” and concluded that the proposed well and snowmaking operations would not result in a measurable change in habitat for the Colorado River cutthroat trout (Healy 2007). In May 2008, the Board received a “Fisheries Biological Evaluation and Decision Memo,” documenting the Forest Service approval of the Tea Cup Bowl Well, which will be available at this Board meeting.

Fishery and hydrology studies for Two Elk Creek and other similar high-elevation streams have found that the critical factor for trout populations is limited adult habitat due to low-flow conditions during the mid-winter months of January and February (Bio/West 1990). Based upon this assumption, the operational regime outlined above has been designed to assure that snowmaking operations are complete and that the flow in Two Elk Creek will return to natural flow conditions prior to the critical mid-January through February low-flow period. In addition, the amount of flow reduction during snowmaking operations will be effectively reduced, or buffered, through the use of alternating 10-hour pumping with 14-hour recovery periods, such that the impact of snowmaking operations will not reduce the flow in Two Elk Creek below the levels expected to occur during the critical low-flow period.

Releases of mitigation water from Eagle Park Reservoir would benefit the Eagle River ISF water rights listed on page 2 of this memo, and the ISF water rights listed below:

<b>CWCB Case No.</b>	<b>Stream/Lake</b>	<b>Amount (cfs)</b>	<b>Approp. Date</b>	<b>Watershed</b>	<b>County</b>
5-78W3805	Eagle River	12/6	5/12/78	Eagle River	Eagle
5-78W3811	Eagle River	15/8	5/12/78	Eagle River	Eagle

The CWCB could either request Vail Associates to release the mitigation water at times when the ISF water rights on the Eagle River (most likely above the confluence with Two Elk Creek) are not being met, or if that need does not arise in a given year, request Vail Associates to double its augmentation releases under this plan for augmentation, which would occur in the winter months. The CWCB has placed calls for its Eagle River ISF water rights in the past, usually in August. The release request would be based upon the most suitable stream gages, which are on the Eagle River at Red Cliff (upstream of Two Elk Creek) and the Eagle River near Minturn.

## **Alternatives Considered**

The proposed Tea Cup Bowl Well will provide snowmaking coverage for the areas surrounding the base of the Tea Cup and Skyline Express ski lifts. The Skyline Express Lift provides the primary access point for Blue Sky Basin portion of the Vail Ski Area, which includes approximately 20% of the ski area's total available skiable terrain. Because of a variety of factors, including high skier traffic, sun exposure, and relatively low elevation, the natural snowpack in the areas around the base of these lifts is often insufficient to support consistent skiing and lift access throughout the ski season. Without skier access to the Skyline Express and Tea Cup Express Lifts, the entire Blue Sky Basin and Lower Tea Cup Bowl areas must be closed to skiing. Vail Associates, in consultation with the USFS, has explored the following alternatives to the injury with mitigation proposal described herein:

- i. Extension of a pipeline from the existing snowmaking water distribution system, which utilizes water diverted from Gore Creek above the confluence of Red Sandstone Creek and from the Eagle River at the mouth of Gore Creek. This option would require the installation of about 14,000 linear feet of air and water pipelines buried to a depth of 7 feet to prevent freezing, which would result in a disturbance of about 10 acres of land on relatively steep slopes. Due to the high cost and issues associated with permitting and environmental concerns, this alternative was found not feasible.
- ii. Installation of a surface water diversion on Two Elk Creek with (or without) a water storage tank. Under this option, water would be diverted from the creek directly to the snowmaking system or pumped into a storage tank, which would serve to buffer the impact of the snowmaking diversions on Two Elk Creek. Construction of a diversion structure on Two Elk Creek at the base of the Tea Cup Bowl would result in impacts to undisturbed wetlands and riparian areas that provide important aquatic and wildlife habitat. In addition, a surface water diversion would be difficult to operate and maintain due to the extreme weather conditions that occur in this area. Due to concerns about reliability, operational and maintenance requirements, and potential environmental impacts, this alternative was found not feasible.
- iii. The other two alternatives considered are described above in the "Evolution of Mitigation Proposal" section of this memo.

## **Consultation with CPW and Division of Water Resources on Proposal**

Staff has consulted with CPW on this updated mitigation proposal. The CPW staff's analysis and recommendation are set forth in a letter attached to this memo. Additionally, Staff and the Attorney General's Office have consulted with the Division Engineer on this proposal. The Division Engineer has concluded that this proposal is administrable because, in this particular case, the stipulation will not result in a selective call or subordination because no other junior water rights exist on the subject reach of Two Elk Creek.

## **Off-site Mitigation**

Because this proposal includes off-site mitigation, ISF Rule 8i.(3)(k) applies. That rule provides

The Board will consider mitigation on a different reach of stream or another stream ("off-site mitigation") as a last resort and will only consider mitigation in an area other than the affected stream reach if no reasonable alternative exists for mitigation on the affected stream reach. The Board only will consider off-site mitigation on stream(s) located in the same drainage as the affected stream. Factors that the Board may consider in looking at such a proposal include, but are not limited to, the degree and frequency of impact to the affected stream; the environmental

benefits provided to the off-site stream by the mitigation; whether the proposal could, in effect, constitute a modification of the ISF water right on the affected stream; or whether the proposal could result in the Division of Water Resources being unable to administer the affected ISF water right(s) in accordance with the priority system or with Colorado water law.

Staff recommends that the Board accept the proposed off-site mitigation for the following reasons:

- No reasonable alternative exists for mitigation on the affected reach of Two Elk Creek.
- The off-site mitigation is located in the same drainage as Two Elk Creek.
- The degree and frequency of the impact to Two Elk Creek are minimal.
- Additional water in the Eagle River will provide environmental benefits.
- Given the infrequency and small amount of impact to the Two Elk Creek ISF, this proposal will not constitute a modification of that ISF.
- As noted above, the Division Engineer has concluded that this proposal is administrable.

### **Terms and Conditions**

Staff, the Attorney General's Office and Vail Associates have discussed proposed terms and conditions related to the injury with mitigation proposal. Some terms and conditions are yet to be negotiated, but injury with mitigation terms and conditions in the final decree should include the following:

1. Well Operations. Diversions from the Tea Cup Bowl Well shall be limited to the period beginning on November 1st of each year and ending on January 1st of the following year. A maximum of 1 acre-foot will be pumped from the well each year. During operation of the Tea Cup Bowl Well, pumping will be limited to 10 hours of operation per each 24-hour day. Each 10-hour pumping period will be followed by 14 hours with no well pumping. Intermittent 10-hour daily pumping with alternating 14-hour recovery periods will buffer the impact on Two Elk Creek due to the delayed impact of well pumping on stream flows.
2. Mitigation Water. In addition to the 1 acre-foot of augmentation water required under the decree, Vail Associates will cause the release of an additional 1 acre-foot of water from Eagle Park Reservoir each calendar year during the time period(s) and at the rate(s) requested by the CWCB. If the CWCB has not determined a need for and requested a release of Eagle Park Reservoir water by November 1, Vail Associates will double its augmentation releases to provide the 1 acre-foot of mitigation water.
3. If Vail Associates ceases limiting diversions from the Tea Cup Bowl Well, as described above, or ceases to provide the 1 acre-foot of mitigation water, the CWCB will no longer accept injury to Two Elk Creek when such diversions bring flows below the decreed ISF amount. In that event, if the CWCB places a call for the Two Elk Creek ISF water right, it will notify the Division Engineer that this provision of the decree is in effect, and that the CWCB is not accepting the injury.
4. Retained jurisdiction. Vail Associates will include in any final decree a retained jurisdiction provision allowing the water court to enforce the provisions of the injury with mitigation stipulation as a water matter.

Staff anticipates that the parties will work to refine the above-listed terms and conditions and incorporate them into a stipulation and the resulting water court decree, along with standard protective terms and conditions.

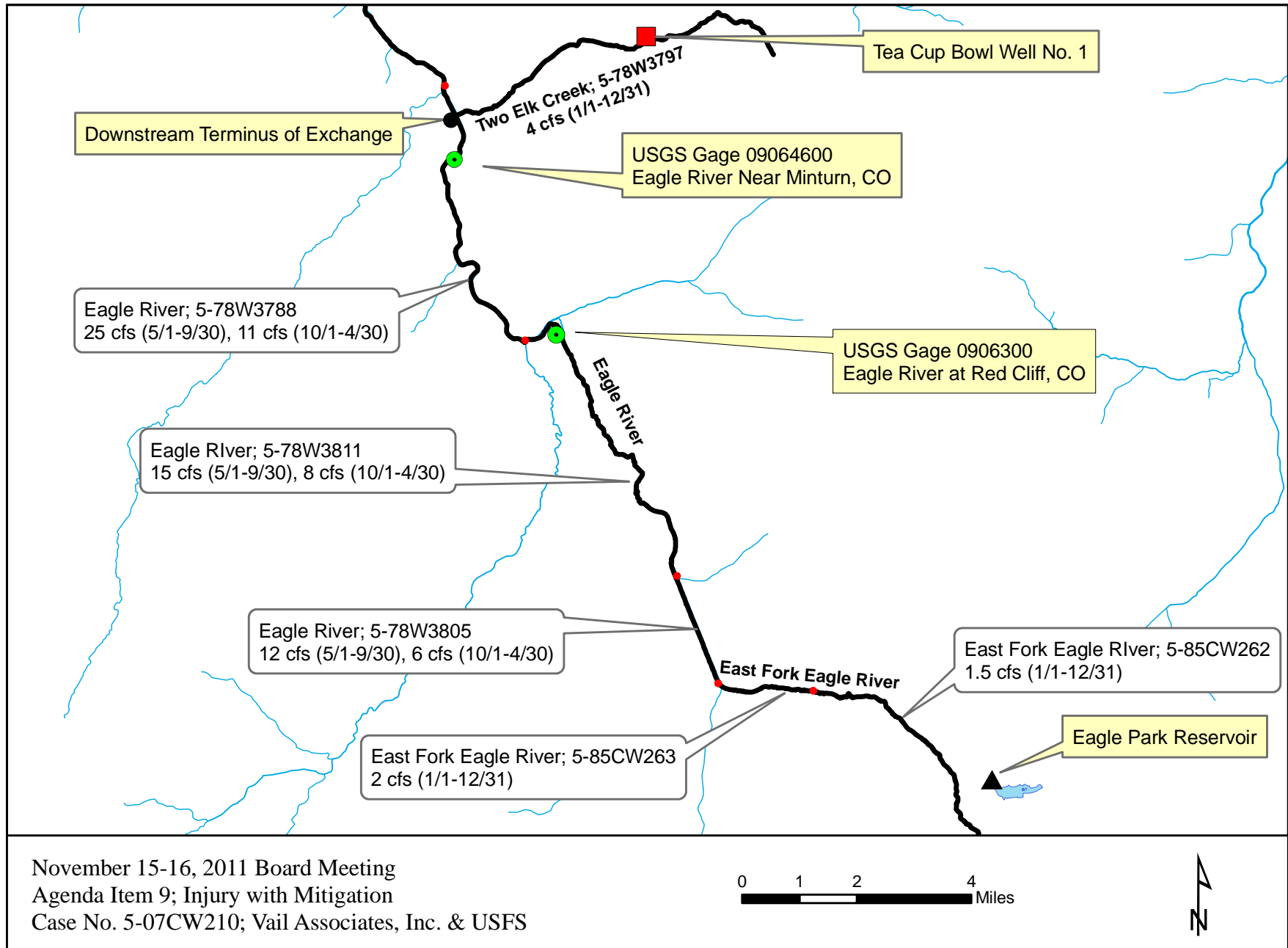
Based upon the information provided by AMEC Earth and Environmental, Inc. on the operational limitations, the Decision Memo by USFS, and upon CPW's evaluation, it appears that Vail Associates' plan for limiting well operations and providing an additional 1 acre-foot of water from Eagle Park Reservoir will enable the Board to continue to preserve the natural environment of Two Elk Creek to a reasonable degree under the conditions described herein as a result of the mitigation provided by Vail Associates.

### **Staff Recommendation**

Staff recommends that the Board:

- 3) Determine that the natural environment of Two Elk Creek could be preserved to a reasonable degree with the proposed injury if Vail Associates provides the proposed mitigation; and
- 4) Authorize staff and the AG's Office to enter into a stipulation incorporating this IWM proposal.

Attachments







## COLORADO PARKS & WILDLIFE

711 Independent Avenue • Grand Junction, Colorado 81505  
Phone (970) 255-6100  
wildlife.state.co.us • parks.state.co.us

October 31, 2011

Ms. Linda Bassi  
Colorado Water Conservation Board  
Stream and Lake Protection Section  
1313 Sherman Street, Room 723  
Denver, Colorado 80203

**Re: Vail Associates, Inc. and the U.S. Forest Service Injury with Mitigation Proposal**

Dear Ms. Bassi,

The purpose of this letter is to transmit the Colorado Parks and Wildlife's (CPW) recommendation regarding the Vail Associates, Inc. and the U.S. Forest Service Injury with Mitigation Proposal regarding Two Elk Creek in Eagle County. The Colorado Water Conservation Board (CWCB) has requested the CPW to provide an analysis of the Injury with Mitigation Proposal received from Vail Associates, Inc. (VA) and the U.S. Forest Service (USFS). As you know, this proposal is to mitigate impacts to CWCB's decreed Two Elk Creek and Eagle River water rights.

**Extent of proposed injury**

The CWCB holds the following instream flow (ISF) water rights that could be injured by the proposed operation:

CWCB Case No.	Stream/Lake	Amount (cfs)	Approp. Date	Watershed	County
5-78W3797	Two Elk Creek	4	5/12/1978	Eagle River	Eagle
5-78W3788	Eagle River	25/11	5/12/1978	Eagle River	Eagle
5-78W3796	Eagle River	50/20	5/12/1978	Eagle River	Eagle
5-80CW134	Eagle River	85/35	3/17/1980	Eagle River	Eagle
5-80CW126	Eagle River	110/45	3/17/1980	Eagle River	Eagle
5-80CW124	Eagle River	130/50	3/17/1980	Eagle River	Eagle

VA seeks to install an alluvial groundwater well near Two Elk Creek for purposes of snowmaking around the base areas of Chairs 36 (Tea Cup Express Lift) and 37 (Skyline Express Lift) at the Vail Ski Area. The proposed Tea Cup Bowl Well would produce up to 18 inches of artificial snow coverage over an area of about 1.0 acre, using up to 1 acre-foot of water per snowmaking season. Development of the proposed snowmaking well

STATE OF COLORADO

John W. Hickenlooper, Governor • Mike King, Executive Director, Department of Natural Resources  
Rick D. Cables, Director, Colorado Parks and Wildlife  
Parks and Wildlife Commission: David R. Brougham • Gary Butterworth, Vice-Chair • Chris Castilian  
Dorothea Farris • Tim Glenn, Chair • Allan Jones • Bill Kane • Gaspar Perricone • Jim Pribyl • John Singletary  
Mark Smith, Secretary • Robert Streeter • Lenna Watson • Dean Wingfield  
Ex Officio Members: Mike King and John Salazar

requires a water right and a court approved plan for augmentation to replace out of priority depletions. VA filed an Application for Water Rights and Approval of Plan for Augmentation and Exchange on November 30, 2007 (Case No. 07CW210, Water Division 5).

As part of the augmentation plan by exchange, VA seeks approval to release up to one acre-foot of water from Eagle Park Reservoir, plus the amount required for transit loss, to the Eagle River to replace all of the depletions from the well, thus preventing injury to any downstream water rights on the Eagle River and Colorado River below Two Elk Creek. When water is pumped from the Tea Cup Bowl snowmaking well, there would be no change in streamflows in the Eagle River below Two Elk Creek because of the release of augmentation water from Eagle Park Reservoir.

The extent of depletions to Two Elk Creek would not exceed one acre-foot of water per year. Under the proposed operating plan for the Tea Cup Bowl Well, pumping would be limited to 10 hours per 24 hour period beginning on November 1<sup>st</sup> and ending on December 31<sup>st</sup>. The actual start and finish dates and hours of pumping for snowmaking operations would vary from year to year depending upon when air temperatures become consistently cold enough for snowmaking operations. Under optimal conditions, allowing well pumping to occur for 10 hours per 24 hour period, the desired snowmaking would be completed in a period of about 36 days. Under normal operating conditions, it is likely that there will be intermittent 1 to 3 day periods of sub-optimal conditions when no pumping would occur, allowing the streamflow to recover to near natural conditions. The potential reduction to the ISF would fluctuate from approximately 0.009 cfs to 0.019 cfs, which would result in a 2% to 4% reduction of the estimated dry year natural flow in Two Elk Creek below the Tea Cup Bowl Well.

The one acre-foot of water pumped from the Tea Cup Bowl Well is assumed to be 100% consumptive to Two Elk Creek and the Eagle River at the time of diversion, with 80% of the snowmaking diversions returning to Two Elk Creek and the Eagle River during the ensuing spring and summer. During winter snowmaking operations, it is expected that there will be a small amount of return flows to Two Elk Creek.

#### **Efforts to Minimize Injury on Two Elk Creek**

CPW and CWCB staff worked with VA to develop an operations plan that would minimize impacts to Two Elk Creek. That plan included the following:

- The operation of the Tea Cup Bowl Well shall be limited to a maximum annual diversion of one acre-foot per year during the period beginning on November 1<sup>st</sup> and ending on December 31<sup>st</sup>;
- Well pumping will terminate on or before December 31<sup>st</sup> to ensure that instream flows in Two Elk Creek will return to natural flow conditions prior to the critical low flow period which typically occurs in February and early March;

---

#### STATE OF COLORADO

John W. Hickenlooper, Governor • Mike King, Executive Director, Department of Natural Resources  
Rick D. Cables, Director, Colorado Parks and Wildlife

Parks and Wildlife Commission: David R. Brougham • Gary Butterworth, Vice-Chair • Chris Castilian  
Dorothea Farris • Tim Glenn, Chair • Allan Jones • Bill Kane • Gaspar Perricone • Jim Pribyl • John Singletary  
Mark Smith, Secretary • Robert Streeter • Lenna Watson • Dean Wingfield  
Ex Officio Members: Mike King and John Salazar

- During operation of the Tea Cup Bowl Well, pumping will be limited to 10 hours of operation per 24 hour period;
- Each 10 hour pumping period will be followed by 14 hours with no well pumping; and,
- Intermittent 10 hour daily pumping with alternating 14 hour recovery periods will effectively buffer any impact on Two Elk Creek due to the delayed impact of well pumping on streamflows.

### **Mitigation Plan**

CPW, CWCB, USFS and VA investigated several alternatives to provide onsite mitigation to Two Elk Creek. These alternatives included:

- The feasibility of extending a pipeline from the existing snowmaking water distribution system, which utilizes water diverted from Gore Creek above the confluence of Red Sandstone Creek and from the Eagle River at the mouth of Gore Creek. The existing snowmaking system only covers areas on the front (north facing) side of Vail Mountain. This option would require the installation of about 14,000 linear feet of air and water pipelines running up Ramshorn trail from a location near Eagle's Nest to the first ridge and down to the base of Chair Lifts 36 and 37 via Sleepytime and Tea Cup Bowl. An additional pump station would also be required. The estimated cost of this alternative was \$2.6 million, not including the costs associated with environmental permitting. Water supply pipelines on Vail Mountain must be buried to a depth of 7 feet to prevent freezing, which, for 14,000 feet of pipeline, would result in the disturbance of about 10 acres of land on relatively steep slopes. Due to the high cost and issues associated with permitting and environmental concerns (possible Whirling Disease contamination of Two Elk Creek from Gore Creek water), this alternative was found not feasible.
- The feasibility of installing a surface water diversion on Two Elk Creek with (or without) a water storage tank. Under this option, water would be diverted from the creek directly to the snowmaking system or pumped into a storage tank, which would serve to buffer the impact of the snowmaking diversions on Two Elk Creek. Construction of a diversion structure on Two Elk Creek at the base of the Tea Cup Bowl would result in impacts to undisturbed wetlands and riparian areas that provide important aquatic and wildlife habitat. In addition, a surface water diversion would be difficult to operate and maintain due to the extreme weather conditions that occur in this area. Due to concerns about reliability, operational and maintenance requirements, and potential environmental impacts, this alternative was found not feasible.

---

#### STATE OF COLORADO

John W. Hickenlooper, Governor • Mike King, Executive Director, Department of Natural Resources  
Rick D. Cables, Director, Colorado Parks and Wildlife

Parks and Wildlife Commission: David R. Brougham • Gary Butterworth, Vice-Chair • Chris Castilian  
Dorothea Farris • Tim Glenn, Chair • Allan Jones • Bill Kane • Gaspar Perricone • Jim Pribyl • John Singletary  
Mark Smith, Secretary • Robert Streeter • Lenna Watson • Dean Wingfield  
Ex Officio Members: Mike King and John Salazar



- The feasibility of constructing stream habitat improvement structures in Two Elk Creek at suitable locations within the stream reach extending from the confluence of the Tea Cup tributary drainage downstream for a distance of 300 yards. These structures would have been designed to create new pools, enhance existing pools, or deepen the channel so as to improve the hydraulic conditions of the stream for fish habitat during periods of low streamflows. Due to the excellent existing stream habitat conditions this alternative was eliminated from consideration.
- The feasibility of constructing a fish barrier near the confluence with the Eagle River to aid in possible future native cutthroat restoration efforts. This alternative was determined to be feasible. However, the USFS determined they would provide the engineering, materials and funding for such an effort, if such a barrier was constructed.

Because on site mitigation did not appear to be economically feasible, CPW, CWCW and VA staff elected to pursue an off-site mitigation alternative. As per Rule 8i.(3)(k):

The Board will consider mitigation on a different reach of stream or another stream ("off-site mitigation") as a last resort and will only consider mitigation in an area other than the affected stream reach if no reasonable alternative exists for mitigation on the affected stream reach. The Board only will consider off-site mitigation on stream(s) located in the same drainage as the affected stream. Factors that the Board may consider in looking at such a proposal include, but are not limited to, the degree and frequency of impact to the affected stream; the environmental benefits provided to the off-site stream by the mitigation; whether the proposal could, in effect, constitute a modification of the ISF water right on the affected stream; or whether the proposal could result in the Division of Water Resources being unable to administer the affected ISF water right(s) in accordance with the priority system or with Colorado water law.

VA's off-site mitigation proposal was to increase the amount of augmentation water provided to the Eagle River downstream of the confluence with Two Elk Creek. VA has offered to provide an additional one acre-foot of mitigation/augmentation water to the Eagle River. Stream flows in the Eagle River have at times been less than the CWCW's decreed instream flows. Providing additional mitigation/augmentation water to the Eagle River will help to ensure that the CWCW's instream flow rights will be satisfied. Since the mitigation/augmentation water is being released from Eagle Park Reservoir, a reservoir located near the top of the watershed, all instream flow segments of the Eagle River will be benefited. Including Eagle River segments located upstream of Two Elk Creek (See Case Nos. 5-78W3805 & 5-78W3811).

---

STATE OF COLORADO

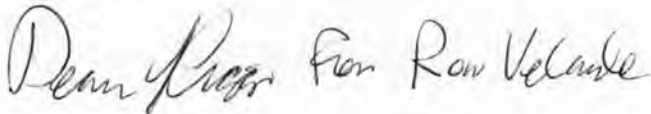
John W. Hickenlooper, Governor • Mike King, Executive Director, Department of Natural Resources  
 Rick D. Cables, Director, Colorado Parks and Wildlife  
 Parks and Wildlife Commission: David R. Brougham • Gary Butterworth, Vice-Chair • Chris Castilian  
 Dorothea Farris • Tim Glenn, Chair • Allan Jones • Bill Kane • Gaspar Perricone • Jim Pribyl • John Singletary  
 Mark Smith, Secretary • Robert Streeter • Lenna Watson • Dean Wingfield  
 Ex Officio Members: Mike King and John Salazar

### CPW Recommendation

CPW recommends that the CWCB approve the proposed injury with mitigation plan proposed by VA. The proposed mitigation plan limits the impact to Two Elk Creek by restricting the season of use (November 1 through December 31), the total amount of injury (up to 1 acre-foot) and restricts the amount of daily pumping (10 hours out of every 24 continuous hours). In addition to limiting the impact to Two Elk Creek, VA has agreed to make augmentation releases from Eagle Park Reservoir to cover 100% of their depletions, including any transit losses. Releasing water from Eagle Park Reservoir benefits the entire reach of the Eagle River including reaches upstream of the confluence with Two Elk Creek. VA have also agreed to provide an additional one acre-foot of mitigation water annually to the Eagle River upon the request of the CWCB, VA will cause the release of an additional 1 acre-foot of water from Eagle Park Reservoir each calendar year during the time period requested by the CWCB. This additional mitigation water will help to ensure that the CWCB's instream flow rights on the Eagle River will be satisfied.

If you have any questions regarding this letter please contact Mark Uppendahl, Instream Flow Coordinator at (303)-291-7267.

Sincerely,



Ron D. Velarde  
Northwest Regional Wildlife Manager

cc: Jay Skinner, CPW Water Resources Unit Manager  
Sherman Hebein, CPW Northwest Region Senior Fish Biologist  
Kendall Bakich, CPW Aquatic Biologist  
Perry Will, CPW Area Wildlife Manager  
Bill Andree, CPW District Wildlife Manager

---

#### STATE OF COLORADO

John W. Hickenlooper, Governor • Mike King, Executive Director, Department of Natural Resources  
Rick D. Cables, Director, Colorado Parks and Wildlife  
Parks and Wildlife Commission: David R. Brougham • Gary Butterworth, Vice-Chair • Chris Castilian  
Dorothea Farris • Tim Glenn, Chair • Allan Jones • Bill Kane • Gaspar Perricone • Jim Pribyl • John Singletary  
Mark Smith, Secretary • Robert Streeter • Lenna Watson • Dean Wingfield  
Ex Officio Members: Mike King and John Salazar