BEFORE THE COLORADO WATER CONSERVATION BOARD

STATE OF COLORADO

Prehearing Statement of Flying Diamond Resources and James A. Larson

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IN THE MATTER OF AN INSTREAM FLOW APPROPRIATION IN MORRISON CREEK, WATER DIVISION 6

Pursuant to Rule 5n of the Rules Concerning the Colorado Instream Flow and Natural Lake Level, 2 CCR 408-2 ("ISF Rules"), Flying Diamond Resources and James A. Larson ("Proponents") hereby submit their prehearing statement in support of the Colorado Water Conservation Board's ("CWCB") intent to appropriate an instream flow ("ISF") on the subject reach of Morrison Creek ("Subject Reach") in the amounts set forth in the CWCB staff recommendation. CWCB Staff Recommendation, Exhibit A.

A. FACTUAL CLAIMS

1. There is a natural environment that can be preserved to a reasonable degree with the Board's water right if granted.

Morrison Creek is approximately 21.0 miles long. It begins at an elevation of 8,400 feet and generally flows northwesterly until it terminates at the confluence with the Yampa River at an elevation of 7,200 feet. Morrison Creek is located within Routt County and has a total drainage area of approximately 76.52 square miles. Exhibit A.

The area surrounding Morrison Creek contains varied ecology and landscape, and supports diverse riparian habitats including willow shrublands, wet grassy meadows, and fens. Wetlands occur along the entire reach of Morrison Creek. Much of the habitat remains in its native state, undisturbed by agriculture and development. Morrison Creek supports myriad wildlife species, with golden eagle and sandhill crane nesting areas and winter range area for elk. The Yampa River Basin, Alternative Feasibility Study, Final Report issued by Hydrosphere Resource Consultants in March, 1993, Exhibit B. As observed by local landowners, the area also provides habitat to deer, bear, mountain lions, coyotes, and moose. Letter from John R. Adams to CWCB, January 21, 2010, Exhibit C. Morrison Creek supports a naturally reproducing brook trout population, Colorado Division of Wildlife ("DOW") ISF Recommendation, Exhibit D, and cutthroat trout and rainbow trout have also been observed in the stream. Draft Summary of Morrison Creek Site Visit and Habitat Assessment, Tom Wesche, Habitech, Inc., September 16, 2008, Exhibit E. The fishery was classified as excellent by the DOW in 1993. Exhibit A.

At the request of the proponents, Dr. Tom Wesche conducted an evaluation of the natural habitat along Morrison Creek. The result of a stream reach inventory and channel stability evaluation was "Fair." The result of a Site Habitat Quality Evaluation form was 60.5% of

optimum. The result of a Montana Habitat Assessment Field Data Sheet was 55% of optimum. Exhibit E.

2. The natural environment will be preserved to a reasonable degree by the water available for the appropriation to be made.

By appropriating an instream flow water right for the Subject Reach, the CWCB would preserve and protect the existing natural environment against degradation from new appropriations or changes in decreed water rights. Approximately 80% of the lands along the Subject Reach are private. The development of these lands may prompt future appropriations or changes in existing water rights that would result in new diversions from Morrison Creek. Exhibit A. Therefore, there is a need for an instream flow right on Morrison Creek to protect the natural environment

The recommended ISF appropriation amounts were based upon standard scientific methodology and an accurate R2Cross analysis. The CDOW based its recommendations on instream flow hydraulic parameters, which, if maintained, would ensure adequate levels for "most life stages of fish and aquatic invertibrates." Exhibit D. Dr. Wesche concluded in his report that his recommended instream flow minimums, which are higher in summer months and lower in winter months than the CWCB's intended ISF appropriation, would "provide some level of trout habitat protection." Exhibit E. The CWCB concluded that there was water available to appropriate in the recommended amounts. Exhibit A.

The Subject Reach would connect decreed ISF water rights on Silver Creek and the Yampa River. The CWCB holds ISF water rights on Silver Creek from its headwaters to its confluence with Morrison Creek. In Case No. 1326-77, the Water Court, Water Division No. 6 entered a decree for 1 c.f.s., for ISF purposes from the headwaters of Silver Creek to its confluence with the South Fork of Silver Creek. Exhibit F. In Case No. 1328-77, the Water Court, Water Division No. 6 entered a decree for 5 c.f.s., for ISF purposes on Silver Creek from the confluence of the South Fork of Silver Creek to its confluence with Morrison Creek. Exhibit G. The CWCB also holds an instream flow water right on the Yampa River, from the confluence of Morrison Creek downstream to the inlet of Lake Catamount. That right was decreed for 72.5 c.f.s., absolute, from April 1 through August 14; and 47.5 c.f.s. from August 15 through March 31, in Case No. 01CW106, Water Division No. 6. Exhibit H.

3. The natural environment will be preserved to a reasonable degree by the instream flow appropriation without material injury to water rights.

The Upper Yampa Water Conservancy District ("District") holds a water right which was changed in Case No. 07CW61, Water Division No. 6, for storage in a reservoir on Morrison Creek ("Morrison Creek Reservoir"), Exhibit I. The dam for the Morrison Creek Reservoir would be located on Morrison Creek just below its confluence with Silver Creek. The District's right would be senior to any right that may be appropriated by the CWCB. Therefore, the instream flow appropriation would not injure the District's right, or any other senior water right. The CWCB is not claiming a right to call water out-of-priority for instream flow purposes. Furthermore, instream flow rights are subject to the statutory mandate that "any such

appropriation shall be subject to the present uses or exchanges of water being made by other water users pursuant to appropriation or practices in existence of the date of such appropriation, whether or not previously confirmed by court order or decree." § 37-92-102(3)(b). The instream flow appropriation would not, therefore, injure any present uses or exchanges of water even if undecreed.

Mr. Scott Fifer of Resource Engineering, Inc. also stated in a letter to Kevin McBride of the District, dated March 17, 2009, Exhibit J, that the implementation of a bypass flow through Morrison Creek Reservoir in the amount of the appropriated instream flow "would not diminish the potential firm yield of the project."

4. Because of the lack of information regarding the potential impacts of the Morrison Creek Reservoir, the CWCB may make the necessary factual findings to appropriate an instream flow right on the Subject Reach and later decide the District's inundation request.

On July 7, 2010, the District submitted a letter to the CWCB requesting permission to inundate a portion of Silver Creek by construction of the Morrison Creek Reservoir. Exhibit K. Construction of the Reservoir would also inundate a portion of the Subject Reach. Because the District has not yet obtained necessary permits for the Reservoir which may include terms and conditions relevant to the effect of the Reservoir on the natural environment, claims as to the Reservoir's impact on the Subject Reach are merely speculative at this time. Consideration of this inundation request would be more appropriate at a later date, with knowledge of terms and conditions imposed on the Reservoir by other permitting agencies, and with the aid of recommendations from the CDOW and other state or federal agencies. See Rules Concerning the Colorado Instream Flow and Natural Lake Level Program, 2 CCR § 408-2(7j) ("When it appears that other governmental agencies may impose terms and conditions upon the issuance of a permit to construct a facility which will cause an inundation, the Board may defer consideration of the request to inundate until all other governmental bodies have finalized the permit or approval conditions.").

The District admitted in its stipulation with the CWCB in Case Nos. 07CW61 and 07CW72, Exhibit L, that "[t]he extent of this possible inundation of the CWCB's instream flow right as it relates to the proposed Morrison Creek Reservoir is not known with precision at this time." The District committed in the stipulation that "[d]uring the permitting process and prior to commencing construction of the Morrison Creek Reservoir that would inundate any existing CWCB instream flow right . . . the District shall request and obtain approval from the CWCB for such storage pursuant to the provisions of CCR 408-2, Section 7...." Exhibit K (emphasis added). According to the terms of this stipulation, the District's inundation request is premature. Furthermore, given the indeterminacy of the Reservoir project at this time, its possible construction and unknown impacts need not be considered by the CWCB in its decision to appropriate an instream flow right on the Subject Reach.

B. LEGAL CLAIMS

1. An instream flow right is subject to C.R.S. § 37-92-102(3)(b) (2009): "Any such appropriation shall be subject to the present uses or exchanges of water being made by other water users pursuant to appropriation or practices in existence on the date of such appropriation, whether or not previously confirmed by court order or decree."

2. The appropriation of instream flow rights by the CWCB are subject to the procedural and substantive requirements of C.R.S. § 37-92-102(3).

3. The Rules Concerning the Colorado Instream Flow and Natural Lake Level Program, 2 CCR § 408-2, apply to the appropriation of instream flow rights by the CWCB and contests of the CWCB's intent to appropriate.

4. The CWCB must conduct a public review process prior to deciding the District's request to inundate a portion of Silver Creek and the Subject Reach, and therefore may not decide the District's inundation request at this time. "The Board shall follow the public review process in Rules 11a – 11c prior to any Board decision on a request to inundate an ISF right." Rules Concerning the Colorado Instream Flow and Natural Lake Level Program, 2 CCR § 408-2(7n).

5. Without knowledge of terms and conditions which may be imposed on Morrison Creek Reservoir by other permitting agencies, the CWCB cannot assess the impact of the District's inundation request on the natural environment. The CWCB may defer consideration of the District's request until the District has obtained other necessary permits. "When it appears that other governmental agencies may impose terms and conditions upon the issuance of a permit to construct a facility which will cause an inundation, the Board may defer consideration of the request to inundate until all other governmental bodies have finalized the permit or approval conditions." Rules Concerning the Colorado Instream Flow and Natural Lake Level Program, 2 CCR § 408-2(7j).

6. The District is bound by its stipulation with the CWCB in Case Nos. 07CW61 and 07CW72 which states that "[t]he extent of this possible inundation of the CWCB's instream flow right as it relates to the proposed Morrison Creek Reservoir is not known with precision at this time. During the permitting process and prior to commencing construction of the Morrison Creek Reservoir that would inundate any existing CWCB instream flow right . . . the District shall request and obtain approval from the CWCB for such storage pursuant to the provisions of 2 CCR 408-2, Section 7 . . . ." Exhibit L.

7. Because of the necessity of a public review process prior to the CWCB deciding the District's inundation request and the inability of the CWCB to assess the impact of the requested inundation on the natural environment without knowledge of the terms and conditions that may be imposed by other permitting agencies, any conclusions as to the likelihood and potential impacts of inundation would be merely speculative. The District's request is too indeterminate at this time to be considered as relevant to the factual findings underlying the CWCB's decision to appropriate an instream flow right on the Subject Reach.

C. EXHIBITS TO BE INTRODUCED AT HEARING

The following is a list of exhibits that the Proponents may provide at the Hearing:

1. CWCB, Executive Summary, Staff Recommendation Morrison Creek Instream Flow Appropriations, Upper and Lower Segments, Exhibit A.

2. Final Report, Yampa River Basin Alternatives Feasibility Study, Colorado River Water Conservation District, Colorado Water Conservation Board, and Bureau of Reclamation, March 1993, Exhibit B.

3. Letters to the Colorado Water Conservation Board from John R. Adams, January 21, 2010; Peter Van De Carr, Director, Friends of the Yampa, September 16, 2009; and Becky Long, Colorado Environmental Coalition, September 4, 2009, Exhibit C.

4. Letter, Mark Uppendahl, Colorado Division of Wildlife, Instream Flow Program Coordinator to Linda Bassi, Colorado Water Conservation Board, January 8, 2010 with attachments, Exhibit D.

5. Draft Summary of Morrison Creek Site Visit and Habitat Assessment, Tom Wesche, Habitech, Inc., September 16, 2008 ("Habitat Assessment"), Exhibit E.

6. Decree, Case No. 1326-77, Water Court, Water Division No. 6, In the Matter of the Application for Water Rights of the Colorado Water Conservation Board, on behalf of the People of the State of Colorado, in Silver Creek, a Natural Stream, in the Watershed of the Yampa River, in Routt County, Colorado, Exhibit F.

7. Decree, Case No. 1328-77, Water Court, Water Division No. 6, In the Matter of the Application for Water Rights of the Colorado Water Conservation Board, on behalf of the People of the State of Colorado, in Silver Creek, a Natural Stream, in the Watershed of the Yampa River, in Routt County, Colorado, Exhibit G.

8. Decree, Case No. 01CW106, Water Court, Water Division No. 6, Concerning the Application for Water Rights of the Colorado Water Conservation Board, on behalf of the People of the State of Colorado, in the Yampa River, a Natural Stream, in the Watershed of the Yampa River, in Routt County, Colorado, Exhibit H.

9. Decree, Case No. 07CW61, Water Court, Water Division No. 6, Concerning the Application for Water Rights of: Upper Yampa Water Conservancy District in the Yampa River and its Tributaries, in Routt County, Colorado, Exhibit I.

10. Letter, Scott Fifer, Resource Engineering, Inc. to Kevin McBride, Upper Yampa Water Conservancy District, March 17, 2009, Exhibit J.

11. Letter, Scott Fifer, Resource Engineering, Inc. to Linda Bassi, Colorado Water Conservation Board, Re: Request for Permission to Inundate a Portion of Silver Creek, Water Division No. 6, CWCB Case No. 77CW1382, July 7, 2010, Exhibit K.

12. Stipulation, Decree Case Nos. 07CW61 and 07CW72, Concerning the Application for Water Rights of Upper Yampa Water Conservancy District, in Routt and Moffat Counties, Colorado, Exhibit L.

13. Decree, Case No. 95CW35, Water Court, Water Division No. 6, In the Matter of the Application for Water Rights of: Dequine Family, LLC of Morrison Creek Ranch in Routt County, State of Colorado, Exhibit L.

14. Letter, Flying Diamond Resources, Dequine Family, LLC, and James A. Larson to Linda Bassi, Colorado Water Conservation Board, February 20, 2009, with attachments, Exhibit M.

Copies of these exhibits are attached to the prehearing statement. The Proponents reserve the right to update its list of exhibits in its rebuttal statement based on the information included in the Prehearing Statements provided by the Contesting Parties or others with Party or Contested Hearing Participant status. The Proponents may also rely on information and exhibits provided by other Parties to this matter.

D. WITNESSES

The Proponents provide the following list of witnesses that may testify at the hearing as described below, may give rebuttal testimony, and may be available at the hearing to answer questions from the Board:

1. Mr. Thomas A. Wesche, PhD, Principal Scientist, Habitech, Inc., Water Resource Consultants. Dr. Wesche may testify as to his site visits to Morrison Creek, the study that he conducted on Morrison Creek and documented in the Habitat Assessment, other content in the Habitat Assessment, and other matters within his expertise as a fisheries scientist and surface water hydrologist. Dr. Wesche's testimony may include relevant facts or opinions as to whether the natural environment will be preserved to a reasonable degree by the water available for the Morrison Creek instream flow appropriation; that there is a natural environment that can be preserved to a reasonable degree by an instream flow water right on Morrison Creek; and that such environment can exist without material injury to other water rights.

2. Mr. John Adams and Mr. Jim Larson. Mr. Adams and Mr. Larson are owners of land along Morrison Creek. They may testify as to the natural environment in and along Morrison Creek. Their testimony may include relevant facts or opinions as to whether the natural environment will be preserved to a reasonable degree by the water available for the Morrison Creek instream flow appropriation; that there is a natural environment that can be preserved to a reasonable degree by an instream flow water right on Morrison Creek; and that such environment can exist without material injury to other water rights.

3. Any other witness listed in the Prehearing Statement of Contesting Parties or others with Party or Contested Hearing Participant status.

E. ALTERNATIVE PROPOSAL

The Proponents support the CWCB's intent to appropriate an instream flow right in Morrison Creek in the amounts stated in the CWCB Staff Recommendation and do not, at this time, submit an alternate proposal. The Proponents did submit an initial recommendation to the CWCB for a minimum instream flow which varies from the recommendation of the CDOW. However, the Proponents do not, at this time, propose that the CWCB alter its intent to appropriate an instream flow in Morrison Creek. The Proponents reserve the right to provide an alternate proposal in its rebuttal statement based on the information included in the Prehearing Statements provided by the Contesting Parties or others with Party or Contested Hearing Participant status.

The Proponents object to any alternative proposal in which the CWCB would approve the inundation of any portion of Silver Creek or the Subject Reach by the District at this time and as part of its decision to appropriate an instream flow on the Subject Reach.

F. WRITTEN TESTIMONY

In the event that Dr. Thomas A. Wesche is unable to testify at the hearing, the Proponents submit the Habitat Assessment as his written testimony to be considered by the CWCB. The Proponents are not submitting any additional written testimony with this prehearing statement, but reserve the right to submit written testimony in their rebuttal statement based on the information included in the Prehearing Statements provided by the Contesting Parties or others with Party or Contested Hearing Participant status.

G. LEGAL MEMORANDA

The Proponents are not submitting legal memoranda with this prehearing statement, but reserve the right to submit legal memoranda in their rebuttal statement based on the information included in the Prehearing Statements provided by the Contesting Parties or others with Party or Contested Hearing Participant status.

Dated this 9th day of July, 2010

PETROS & WHITE, LLC

By: _____
Charles B. White, No. 9241
Nicole L. Johnson, No. 40564

ATTORNEYS FOR FLYING DIAMOND RESOURCES AND JAMES A. LARSON

CERTIFICATE OF SERVICE

I certify that a true and correct copy of the **PREHEARING STATEMENT** has been served via courier, e-mail, or U.S. Mail, postage prepaid, on this 9th day of July, 2010, addressed to the following:

Jeff Baessler
Colorado Water Conservation Board
1313 Sherman, Room 721
Denver, CO 80203
Jeffrey.baessler@state.co.us

Linda Bassi
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203
Linda.bassi@state.co.us

Susan Schneider – Staff Attorney
Natural Resources and Environment Section
1525 Sherman Street, 5th Floor
Denver, CO 80203
Susan.schneider@state.co.us

Casey Shpall
Colorado Attorney General's Office
1525 Sherman Street, 5th Floor
Denver, CO 80203
Casey.shpall@state.co.us

Mark Uppendahl
Colorado Division of Wildife
6060 Broadway
Denver, CO 80216
Mark.uppendahl@state.co.us

Robert G. Weiss
Weiss & Van Scoyk, LLP
600 S. Lincoln, Suite 202
Steamboat Springs, CO 80488
bweiss@wvsc.com

Drew Peternell
Trout Unlimited
1320 Pearl Street, Suite 320
Boulder, CO 80302
dpeternell@tu.org

David C. Hallford, Esq.
Balcomb & Green, P.C.
818 Colorado Avenue
Drawer 790
Glenwood Springs, CO 81602
dhallford@balcombgreen.com

Kari Neumayer

Stream: Morrison Creek (Lower Segment)

Executive Summary

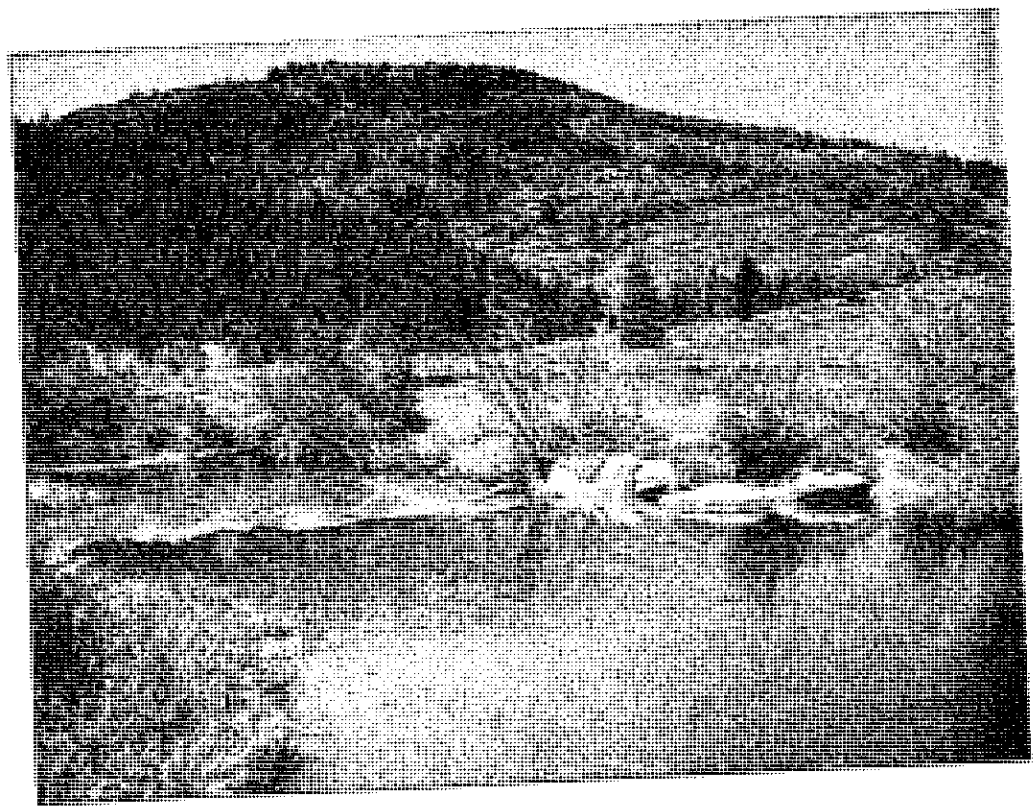
Water Division: 6
Water District: 58
CDOW#: 21294
CWCB ID: 10/6/A-003

Segment: Confluence with Silver Creek to Confluence with Yampa River

Lower Terminus: CONFLUENCE WITH SILVER CREEK
(Latitude 40° 14' 42.44"N) (Longitude 106° 47' 10.75"W)

Lower Terminus: CONFLUENCE WITH YAMPA RIVER
(Latitude 40° 17' 23.60"N) (Longitude 106° 48' 57.05"W)

Watershed: Upper Yampa (HUC#: 14050001)
Counties: Routt
Length: 4.91 miles
USGS Quads: Green Ridge, Blacktail Mountain
Flow Recommendation: 13.2 cfs (April 1 – August 15)
8.1 cfs (August 16 – March 31)



Staff Analysis and Recommendation

Summary

The information contained in this report and the associated instream flow file folder forms the basis for staff's instream flow recommendation to be considered by the Board. It is staff's opinion that the information contained in this report is sufficient to support the findings required in Rule 5.40.

Colorado's Instream Flow Program was created in 1973 when the Colorado State Legislature recognized "the need to correlate the activities of mankind with some reasonable preservation of the natural environment" (see 37-92-102 (3) C.R.S.). The statute vests the CWCB with the exclusive authority to appropriate and acquire instream flow and natural lake level water rights. In order to encourage other entities to participate in Colorado's Instream Flow Program, the statute directs the CWCB to request instream flow recommendations from other state and federal agencies. The Colorado Division of Wildlife (CDOW) and a group of local land owners (Larson, Dequine Family L.L.C, and Flying Diamond Resources) recommended this segment of Morrison Creek to the CWCB for inclusion into the Instream Flow Program. Morrison Creek is being considered for inclusion into the Instream Flow Program because it has a natural environment that can be preserved to a reasonable degree with an instream flow water right.

Morrison Creek is approximately 21.0 miles long. It begins at an elevation of 8,400 feet and generally flows northwesterly until it terminates at the confluence with the Yampa River at an elevation of 7,200 feet. Of the 4.91 mile segment addressed by this report, approximately 20.0% of the segment is located on federal lands. Morrison Creek is located within Routt County and has a total drainage area of approximately 76.52 square miles.

The subject of this report is a segment of Morrison Creek beginning at the confluence with Silver Creek and extending downstream to the confluence with the Yampa River. The proposed segment is located approximately 8.3 miles northeast of the town of Yampa. Staff has received recommendations for this segment, from the CDOW and Larson et al. Although two separate recommendations were received for this reach, the CDOW and the land owners have collaborated on the analysis of the data and have arrived at the joint recommendation discussed below.

Instream Flow Recommendation

The CDOW and Larson et al, are recommending 13.2 cfs (April 1 – August 15) and 8.1 cfs (August 16 – March 31) based on their data collection efforts and staff's water availability analyses.

Land Status Review

Upper Terminus	Lower Terminus	Total Length (miles)	Land Ownership	
			% Private	% Public
Confluence w/ Silver Creek	Confluence w/ Yampa River	4.91	80%	20%

100% of the public lands are owned by the Bureau of Land Management (BLM).

Biological Data

The CDOW, Bureau of Land Management (BLM) and local land owners have collected stream cross section information, natural environment data, and other data needed to quantify the instream flow needs for this reach of Morrison Creek. Morrison Creek is classified as a medium stream (between 20 to 35 feet wide) and fishery surveys indicate the stream environment of Morrison Creek supports a naturally reproducing brook trout (*Salvelinus fontinalis*) population. In addition, cutthroat trout (*Oncorhynchus clarki*) and rainbow trout (O. mykiss) were reported by Larson et al.

Field Survey Data

CDOW staff used the R2Cross methodology to quantify the amount of water required to preserve the natural environment to a reasonable degree. The R2Cross method requires that stream discharge and channel profile data be collected in a riffle stream habitat type. Riffles are most easily visualized as the stream habitat types that would dry up first should streamflow cease. This type of hydraulic data collection consists of setting up a transect, surveying the stream channel geometry, and measuring the stream discharge.

Biological Flow Recommendation

The CWCB staff relied upon the biological expertise of the cooperating agencies to interpret output from the R2Cross data collected to develop the initial, biologic instream flow recommendation. This initial recommendation is designed to address the unique biologic requirements of each stream without regard to water availability. Three instream flow hydraulic parameters, average depth, percent wetted perimeter, and average velocity are used to develop biologic instream flow recommendations. The CDOW has determined that maintaining these three hydraulic parameters at adequate levels across riffle habitat types, aquatic habitat in pools and runs will also be maintained for most life stages of fish and aquatic invertebrates (Nehring 1979; Espegren 1996).

For this segment of stream, six data sets were collected with the results shown in Table 1 below. Table 1 shows who collected the data (Party), the date the data was collected (Date), the measured discharge at the time of the survey (Q), the accuracy range of the predicted flows based on Manning's Equation (240% and 40% of Q), the summer flow recommendation based on meeting 3 of 3 hydraulic criteria and the winter flow recommendation based upon 2 of 3 hydraulic criteria. It is believed that recommendations that fall outside of the accuracy range of the model (Over 250% of the measured discharge or under 40% of the measured discharge) may not give an accurate estimate of the necessary instream flow required.

Table 1: Data

Party	Date	Q	250%-40%	Summer (3/3)	Winter (2/3)
BLM	9/3/2005	8.8	22.0 – 3.5	Out of range	9.3
BLM	9/3/2005	8.0	20.0 – 3.2	Out of range	Out of range
BLM	7/11/2007	11.6	29.0 – 3.0	11.2	7.6
BLM	7/11/2007	12.8	32.0 – 5.1	16.0	8.8
CDOW	10/1/2008	6.1	15.3 – 2.4	12.5	11.0

CDOW	10/1/2008	5.9	14.8 – 2.4	Out of range	3.7

The summer flow recommendation, which met 3 of 3 criteria and is within the accuracy range of the R2CROSS model, is 13.2 cfs. The winter flow amount, which meets 2 of 3 criteria, is 8.1 cfs. The summer and winter flow recommendations were derived by averaging the results of the data sets.

Hydrologic Data and Analysis

After receiving the cooperating agency's biologic recommendation, the CWCB staff conducted an evaluation of the stream hydrology to determine if water was physically available for an instream flow appropriation. This evaluation was done through a computation that is, in essence, a "water balance". In concept, a "water balance" computation can be viewed as an accounting exercise. When done in its most rigorous form, the water balance parses precipitation into all the avenues water pursues after it is deposited as rain, snow, or ice. In other words, given a specified amount of water deposition (input), the balance tries to account for all water depletions (losses) until a selected end point is reached. Water losses include depletions due to evaporation and transpiration, deliveries into ground water storage, temporary surface storage, incorporations into plant and animal tissue and so forth. These losses are individually or collectively subtracted from the input to reveal the net amount of stream runoff as represented by the discharge measured by stream gages. Of course, the measured stream flow need not be the end point of interest; indeed, when looking at issues of water use to extinction, stream flow measurements may only describe intermediate steps in the complex accounting process that is a water balance carried out to a net value of zero.

In its analysis, CWCB staff has attempted to use this idea of balancing inputs and losses to determine if water is available for the recommended instream flow appropriation. Of course, this analysis must be a practical exercise rather than a lengthy, and costly, scientific investigation. As a result, staff has simplified the process by lumping together some variables and employing certain rational and scientifically supportable assumptions. The process may be described through the following description of the steps used to complete the evaluation for this particular stream.

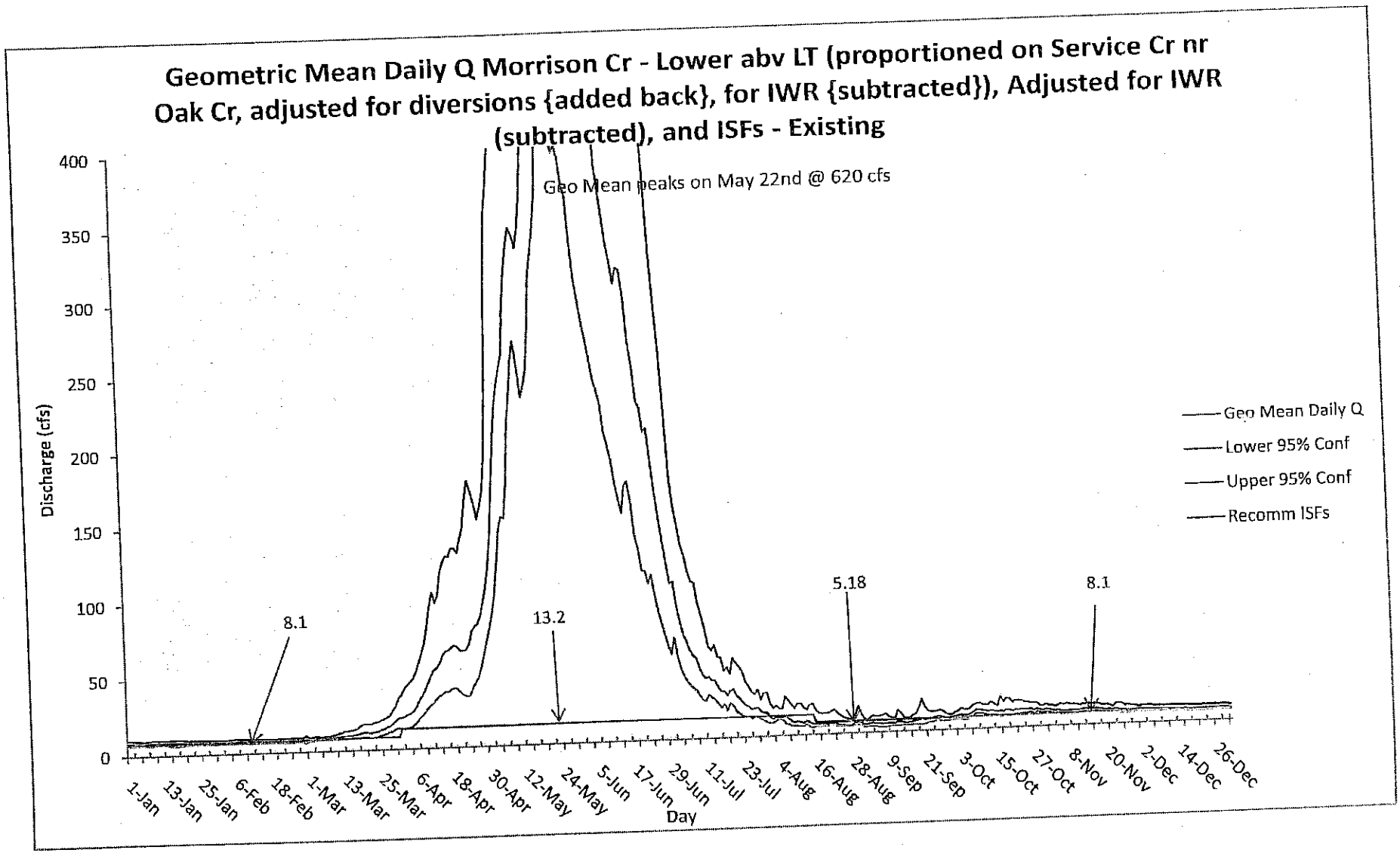
The first step required in determining water availability is a determination of the hydrologic regime at the Lower Terminus (LT) of the recommended ISF reach. In the best case, this means looking at the data from a gage at the LT. Further, this data, in the best case, has been collected for a long period of time (the longer the better) including wet and dry periods. In the case of **Morrison Creek - Lower** there was a Colorado DWR gage record of discharge on the stream. However, the gage station is upstream from the LT. The DWR gage is MORRISON CREEK ABOVE MILES RANCH, CO. (MORCRECO); it has a period of record (POR), of 1 year collected between 1990 and 1991. Because of the short POR this gage was not useable for this analysis. It is thus necessary to describe the normal flow regime at Morrison Creek - Lower above the LT through a "representative" gage station. The gage station selected for this purpose was SERVICE CREEK NEAR OAK CREEK, CO (USGS 09237800), a gage with an 8 year POR collected between 1965 and 1973. The gage is at an elevation of 7,000 ft above mean sea level (amsl) and has a drainage area of 38.26 mi^2. The hydrograph (plot of discharge over time) produced from this gage includes a diversion's consumptive use. However, the existence of this

diversion does not preclude use of the data from the gage. To make the measured data transferable to Morrison Creek - Lower above the LT, the consumptive portion of this diversion was added back to the measured hydrograph. The resulting "adjusted" hydrograph could then be used on Morrison Creek - Lower above the LT by multiplying the "adjusted" gage discharge values by an area ratio; specifically, the area of Morrison Creek - Lower above the LT (76.52 mi^2) to Service Creek near Oak Creek, CO (38.26 mi^2). The resulting proportioned hydrograph was itself "adjusted" (decreased) to reflect the consumptive irrigation depletions of several diversions upstream of the LT. The final hydrograph thus represents a distribution of flow over time that has been reduced to reflect existing human uses.

{The following discussion is based upon the US Geological Survey's *Techniques of Water-Resources Investigations* Series, *Book 4: Hydrologic Analysis and Interpretation, Chapter A3: Statistical Methods in Water Resources* (Chapter 3: Describing Uncertainty) by D.R. Helsel and R. M. Hirsch. This technical reference provides the scientific background and guidance important to the systematic interpretation of hydrologic data. The document is available online and is a valuable aid to understanding and interpreting the analyses described here.}

The next step in producing a representation of the discharge at Morrison Creek - Lower is to compute the Geometric Mean of the area-prorated "adjusted" data values from the Service Creek near Oak Creek, CO hydrograph. This step is of value because of the inherent statistical weaknesses found in any collection of data intended to measure natural stream discharge. Without getting into the details of statistical theory, it is worth noting that a set of discharge measurements is inherently inaccurate, no matter how well collected, due to the difficulties attendant to data collection, especially hydrologic data. To give deference to this fact and to increase the value of the hydrograph product of this analysis, the Geometric Means of the data were computed and plotted along with the 95% Confidence Intervals about the data. The resultant hydrograph, including recommended Instream Flow values, is displayed in Figure 1 with the data displayed in Table 2.

Figure 1


Geometric Mean Daily Q Morrison Cr - Lower abv LT (proportioned on Service Cr nr Oak Cr, adjusted for diversions {added back}, for IWR {subtracted}), Adjusted for IWR (subtracted), and ISFs - Existing
Geo Mean peaks on May 22nd @ 620 cfs
Discharge (cfs)
400
350
300
250
200
150
100
50
0
8.1
13.2
5.18
8.1
Geo Mean Daily Q
Lower 95% Conf
Upper 95% Conf
Recomm ISFs
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13-Jan
25-Jan
6-Feb
18-Feb
1-Mar
13-Mar
25-Mar
6-Apr
18-Apr
30-Apr
12-May
24-May
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29-Jun
11-Jul
23-Jul
4-Aug
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28-Aug
9-Sep
21-Sep
3-Oct
15-Oct
27-Oct
8-Nov
20-Nov
2-Dec
14-Dec
26-Dec
Day

Table 2. Geometric Mean Discharge and Recommended Instream Flows			
Date	Existing ISF	Recommended ISF	Proportioned Adjusted GM (abv gage) Adj (-) for Irr & OoB in Morrison Cr - Lower abv LT
1-Jan		8.1	8.34
2-Jan		8.1	8.24
3-Jan		8.1	8.18
4-Jan		8.1	8.20
5-Jan		8.1	8.14
6-Jan		8.1	8.02
7-Jan		8.1	7.99
8-Jan		8.1	8.07
9-Jan		8.1	7.97
10-Jan		8.1	8.20
11-Jan		8.1	8.39
12-Jan		8.1	8.25
13-Jan		8.1	8.30
14-Jan		8.1	8.14
15-Jan		8.1	7.85
16-Jan		8.1	7.69
17-Jan		8.1	7.61
18-Jan		8.1	7.63
19-Jan		8.1	7.90
20-Jan		8.1	7.88
21-Jan		8.1	7.93
22-Jan		8.1	7.96
23-Jan		8.1	7.94
24-Jan		8.1	7.93
25-Jan		8.1	7.93
26-Jan		8.1	7.93
27-Jan		8.1	7.92
28-Jan		8.1	7.75
29-Jan		8.1	7.78
30-Jan		8.1	7.69
31-Jan		8.1	7.73
1-Feb		8.1	7.81
2-Feb		8.1	7.85
3-Feb		8.1	7.84
4-Feb		8.1	7.87
5-Feb		8.1	7.95
6-Feb		8.1	8.05
7-Feb		8.1	7.99
8-Feb		8.1	7.91
9-Feb		8.1	7.90
10-Feb		8.1	7.77
11-Feb		8.1	7.66
12-Feb		8.1	7.76
13-Feb		8.1	7.76
14-Feb		8.1	7.80
15-Feb		8.1	7.77
16-Feb		8.1	7.66
17-Feb		8.1	7.66
18-Feb		8.1	7.69

			7.53
19-Feb		8.1	7.63
20-Feb		8.1	7.82
21-Feb		8.1	7.51
22-Feb		8.1	7.61
23-Feb		8.1	7.59
24-Feb		8.1	7.69
25-Feb		8.1	7.90
26-Feb		8.1	7.92
27-Feb		8.1	7.92
28-Feb		8.1	7.60
29-Feb		8.1	8.04
1-Mar		8.1	8.03
2-Mar		8.1	8.25
3-Mar		8.1	8.49
4-Mar		8.1	8.18
5-Mar		8.1	8.37
6-Mar		8.1	8.50
7-Mar		8.1	8.59
8-Mar		8.1	8.75
9-Mar		8.1	8.91
10-Mar		8.1	9.18
11-Mar		8.1	9.38
12-Mar		8.1	9.70
13-Mar		8.1	9.73
14-Mar		8.1	9.87
15-Mar		8.1	10.16
16-Mar		8.1	10.41
17-Mar		8.1	10.87
18-Mar		8.1	11.43
19-Mar		8.1	11.70
20-Mar		8.1	11.27
21-Mar		8.1	11.21
22-Mar		8.1	11.61
23-Mar		8.1	11.91
24-Mar		8.1	12.98
25-Mar		8.1	13.42
26-Mar		8.1	14.37
27-Mar		8.1	15.14
28-Mar		8.1	16.68
29-Mar		8.1	18.61
30-Mar		8.1	20.22
31-Mar		8.1	20.39
1-Apr		13.2	20.89
2-Apr		13.2	22.15
3-Apr		13.2	23.02
4-Apr		13.2	24.48
5-Apr		13.2	27.40
6-Apr		13.2	31.38
7-Apr		13.2	34.55
8-Apr		13.2	38.32
9-Apr		13.2	42.91
10-Apr		13.2	47.26
11-Apr		13.2	51.41
12-Apr		13.2	

Exhibit A

13-Apr		13.2	52.70
14-Apr		13.2	55.45
15-Apr		13.2	60.61
16-Apr		13.2	63.10
17-Apr		13.2	64.06
18-Apr		13.2	65.54
19-Apr		13.2	67.20
20-Apr		13.2	66.08
21-Apr		13.2	63.57
22-Apr		13.2	63.56
23-Apr		13.2	64.15
24-Apr		13.2	67.33
25-Apr		13.2	75.88
26-Apr		13.2	78.91
27-Apr		13.2	80.58
28-Apr		13.2	85.05
29-Apr		13.2	94.50
30-Apr		13.2	105.33
1-May		13.2	118.71
2-May		13.2	138.14
3-May		13.2	168.08
4-May		13.2	199.85
5-May		13.2	224.45
6-May		13.2	239.10
7-May		13.2	249.24
8-May		13.2	260.04
9-May		13.2	295.43
10-May		13.2	318.12
11-May		13.2	334.95
12-May		13.2	346.10
13-May		13.2	340.57
14-May		13.2	332.03
15-May		13.2	346.21
16-May		13.2	370.45
17-May		13.2	415.43
18-May		13.2	451.97
19-May		13.2	494.41
20-May		13.2	541.57
21-May		13.2	574.19
22-May		13.2	620.79
23-May		13.2	606.81
24-May		13.2	568.85
25-May		13.2	571.66
26-May		13.2	576.19
27-May		13.2	564.74
28-May		13.2	580.94
29-May		13.2	577.25
30-May		13.2	563.41
31-May		13.2	541.58
1-Jun		13.2	509.34
2-Jun		13.2	500.17
3-Jun		13.2	492.71
4-Jun		13.2	481.46
5-Jun		13.2	469.23

6-Jun		13.2	454.62
7-Jun		13.2	434.26
8-Jun		13.2	428.55
9-Jun		13.2	424.89
10-Jun		13.2	386.85
11-Jun		13.2	369.40
12-Jun		13.2	351.16
13-Jun		13.2	332.69
14-Jun		13.2	320.54
15-Jun		13.2	305.52
16-Jun		13.2	315.94
17-Jun		13.2	314.35
18-Jun		13.2	296.70
19-Jun		13.2	265.11
20-Jun		13.2	248.83
21-Jun		13.2	225.44
22-Jun		13.2	220.78
23-Jun		13.2	204.28
24-Jun		13.2	206.63
25-Jun		13.2	183.05
26-Jun		13.2	163.51
27-Jun		13.2	146.45
28-Jun		13.2	131.10
29-Jun		13.2	116.35
30-Jun		13.2	103.15
1-Jul		13.2	104.42
2-Jul		13.2	88.30
3-Jul		13.2	76.88
4-Jul		13.2	68.88
5-Jul		13.2	64.34
6-Jul		13.2	58.75
7-Jul		13.2	55.42
8-Jul		13.2	53.64
9-Jul		13.2	46.98
10-Jul		13.2	42.24
11-Jul		13.2	39.85
12-Jul		13.2	40.49
13-Jul		13.2	38.20
14-Jul		13.2	38.06
15-Jul		13.2	33.87
16-Jul		13.2	30.82
17-Jul		13.2	30.59
18-Jul		13.2	27.76
19-Jul		13.2	30.50
20-Jul		13.2	31.68
21-Jul		13.2	27.13
22-Jul		13.2	25.38
23-Jul		13.2	23.11
24-Jul		13.2	20.98
25-Jul		13.2	19.88
26-Jul		13.2	17.72
27-Jul		13.2	18.49
28-Jul		13.2	18.75
29-Jul		13.2	16.17

30-Jul		13.2	15.79
31-Jul		13.2	15.30
1-Aug		13.2	12.89
2-Aug		13.2	12.29
3-Aug		13.2	13.58
4-Aug		13.2	13.83
5-Aug		13.2	13.27
6-Aug		13.2	13.78
7-Aug		13.2	12.30
8-Aug		13.2	10.72
9-Aug		13.2	10.01
10-Aug		13.2	10.41
11-Aug		13.2	10.03
12-Aug		13.2	9.59
13-Aug		13.2	10.64
14-Aug		13.2	9.60
15-Aug		13.2	8.71
16-Aug		8.1	8.68
17-Aug		8.1	8.37
18-Aug		8.1	8.25
19-Aug		8.1	8.39
20-Aug		8.1	8.27
21-Aug		8.1	8.90
22-Aug		8.1	8.82
23-Aug		8.1	8.07
24-Aug		8.1	7.33
25-Aug		8.1	7.01
26-Aug		8.1	6.70
27-Aug		8.1	6.33
28-Aug		8.1	6.59
29-Aug		8.1	8.14
30-Aug		8.1	8.91
31-Aug		8.1	7.81
1-Sep		8.1	5.75
2-Sep		8.1	5.76
3-Sep		8.1	6.40
4-Sep		8.1	6.59
5-Sep		8.1	6.15
6-Sep		8.1	5.88
7-Sep		8.1	5.64
8-Sep		8.1	5.78
9-Sep		8.1	5.85
10-Sep		8.1	5.87
11-Sep		8.1	5.70
12-Sep		8.1	6.82
13-Sep		8.1	6.73
14-Sep		8.1	6.14
15-Sep		8.1	5.78
16-Sep		8.1	6.08
17-Sep		8.1	6.60
18-Sep		8.1	6.76
19-Sep		8.1	7.30
20-Sep		8.1	8.11
21-Sep		8.1	7.30

			7.91
22-Sep		8.1	7.92
23-Sep		8.1	8.31
24-Sep		8.1	9.02
25-Sep		8.1	9.00
26-Sep		8.1	8.39
27-Sep		8.1	7.94
28-Sep		8.1	7.78
29-Sep		8.1	8.01
30-Sep		8.1	10.66
1-Oct		8.1	9.10
2-Oct		8.1	9.44
3-Oct		8.1	8.88
4-Oct		8.1	8.77
5-Oct		8.1	9.26
6-Oct		8.1	10.40
7-Oct		8.1	12.10
8-Oct		8.1	11.88
9-Oct		8.1	11.34
10-Oct		8.1	10.81
11-Oct		8.1	10.35
12-Oct		8.1	10.78
13-Oct		8.1	10.52
14-Oct		8.1	9.89
15-Oct		8.1	10.49
16-Oct		8.1	9.85
17-Oct		8.1	11.10
18-Oct		8.1	10.76
19-Oct		8.1	9.84
20-Oct		8.1	10.94
21-Oct		8.1	10.58
22-Oct		8.1	10.82
23-Oct		8.1	10.78
24-Oct		8.1	10.72
25-Oct		8.1	11.13
26-Oct		8.1	9.82
27-Oct		8.1	11.08
28-Oct		8.1	10.25
29-Oct		8.1	9.85
30-Oct		8.1	10.56
31-Oct		8.1	11.25
1-Nov		8.1	10.35
2-Nov		8.1	9.98
3-Nov		8.1	10.48
4-Nov		8.1	9.58
5-Nov		8.1	9.75
6-Nov		8.1	9.75
7-Nov		8.1	9.52
8-Nov		8.1	9.66
9-Nov		8.1	10.03
10-Nov		8.1	9.90
11-Nov		8.1	10.44
12-Nov		8.1	10.70
13-Nov		8.1	10.41
14-Nov		8.1	

			10.58
15-Nov		8.1	10.79
16-Nov		8.1	10.76
17-Nov		8.1	10.39
18-Nov		8.1	10.04
19-Nov		8.1	9.78
20-Nov		8.1	9.84
21-Nov		8.1	9.47
22-Nov		8.1	10.18
23-Nov		8.1	9.38
24-Nov		8.1	8.94
25-Nov		8.1	9.32
26-Nov		8.1	8.61
27-Nov		8.1	8.61
28-Nov		8.1	8.78
29-Nov		8.1	9.15
30-Nov		8.1	9.18
1-Dec		8.1	9.23
2-Dec		8.1	9.28
3-Dec		8.1	9.31
4-Dec		8.1	9.12
5-Dec		8.1	9.01
6-Dec		8.1	9.07
7-Dec		8.1	9.03
8-Dec		8.1	8.91
9-Dec		8.1	8.97
10-Dec		8.1	8.43
11-Dec		8.1	8.32
12-Dec		8.1	8.64
13-Dec		8.1	8.50
14-Dec		8.1	8.42
15-Dec		8.1	8.46
16-Dec		8.1	8.32
17-Dec		8.1	8.14
18-Dec		8.1	8.26
19-Dec		8.1	8.33
20-Dec		8.1	8.18
21-Dec		8.1	8.22
22-Dec		8.1	8.32
23-Dec		8.1	8.38
24-Dec		8.1	8.46
25-Dec		8.1	8.56
26-Dec		8.1	8.55
27-Dec		8.1	8.56
28-Dec		8.1	8.50
29-Dec		8.1	8.32
30-Dec		8.1	8.17
31-Dec		8.1	

Existing Water Right Information

Staff has analyzed the water rights tabulation and contacted the Division Engineer Office (DEO) to identify any potential water availability problems. There are two decreed surface diversion within this reach of stream: Morrison Creek Ditch No. 1 (1.17 cfs, 1901 appropriation) and Morrison Creek Ditch No. 2 (1.33 cfs with an 1891 appropriation). Staff has determined that

water is available for appropriation on Morrison Creek, between the confluence with Silver Creek and the confluence with the Yampa River, to preserve the natural environment to a reasonable degree without limiting or foreclosing the exercise of valid existing water rights.

CWCB Staff's Instream Flow Recommendation

Staff recommends the Board form its intent to appropriate on the following stream reach:

Segment: Confluence with Silver Creek to Confluence with Yampa River

Lower Terminus: CONFLUENCE WITH SILVER CREEK
(Latitude 40° 14' 42.44"N) (Longitude 106° 47' 10.75"W)
UTM North: 4456494.46 UTM East: 348062.75
NW SW S11 T3N R84W 6th PM
15' East of the West Section Line; 2550' South of the North Section Line

Lower Terminus: CONFLUENCE WITH YAMPA RIVER
(Latitude 40° 17' 23.60"N) (Longitude 106° 48' 57.05"W)
UTM North: 4461514.71 UTM East: 345653.01
NE SW S28 T4N R84W 6th PM
2200' East of the West Section Line; 2490' North of the South Section Line

Watershed: Upper Yampa (HUC#: 14050001)
Counties: Routt
Length: 4.91 miles
USGS Quads: Green Ridge, Blacktail Mountain
Flow Recommendation: 13.2 cfs (April 1 – August 15)
8.1 cfs (August 16 – March 31)

Vicinity Map

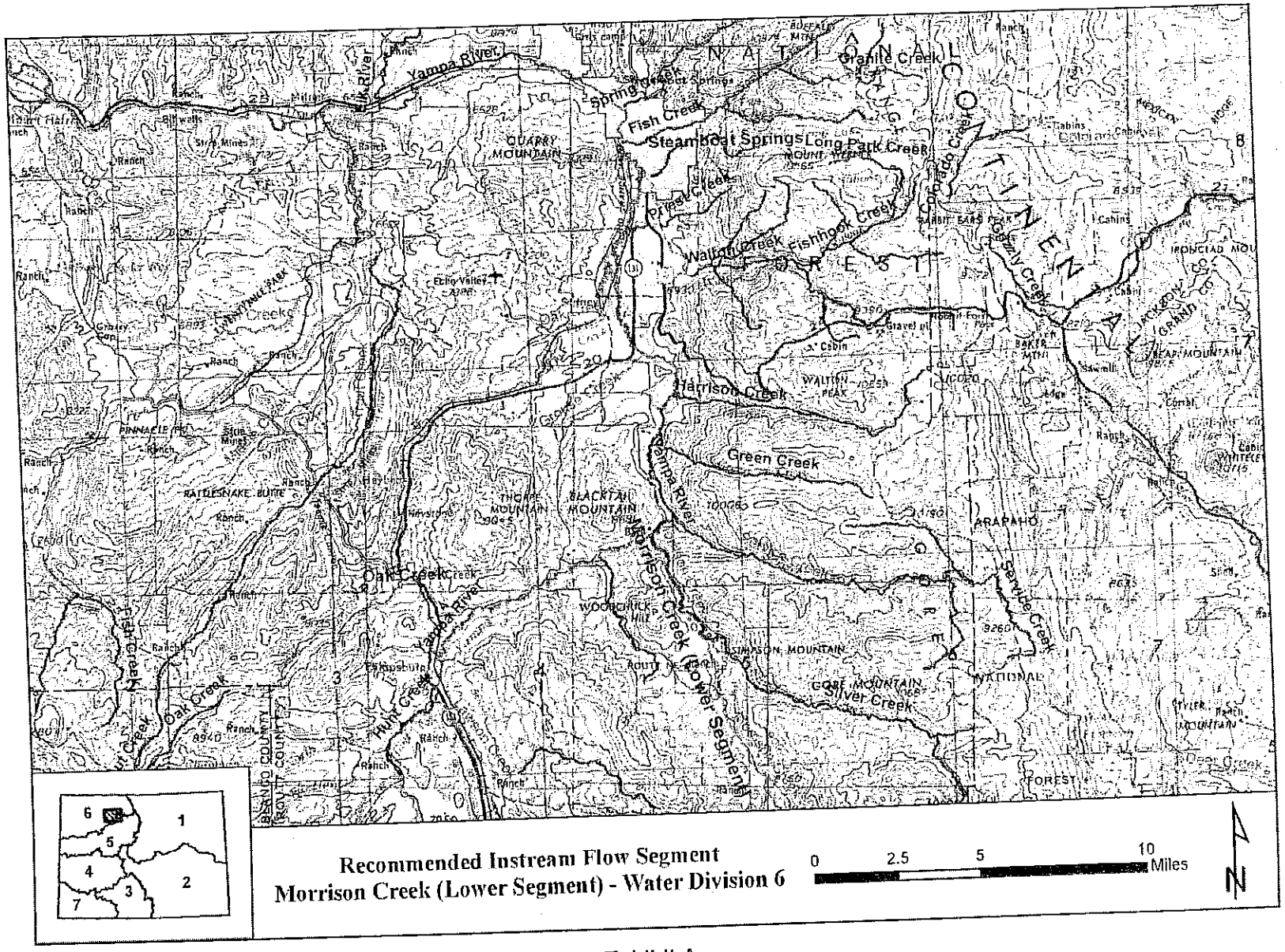


Exhibit A

Land Use Map

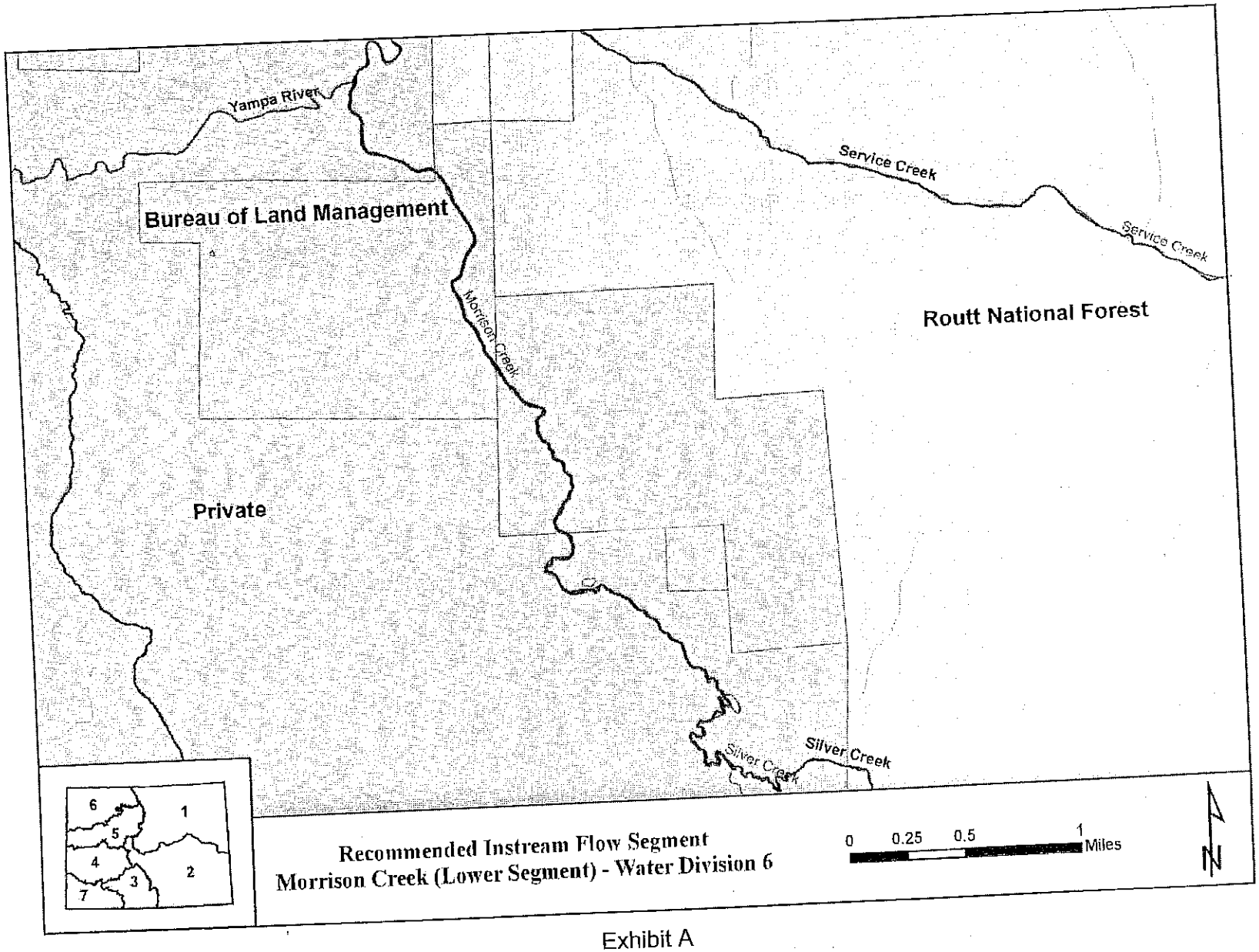


Exhibit A

Topographic and Water Rights Map

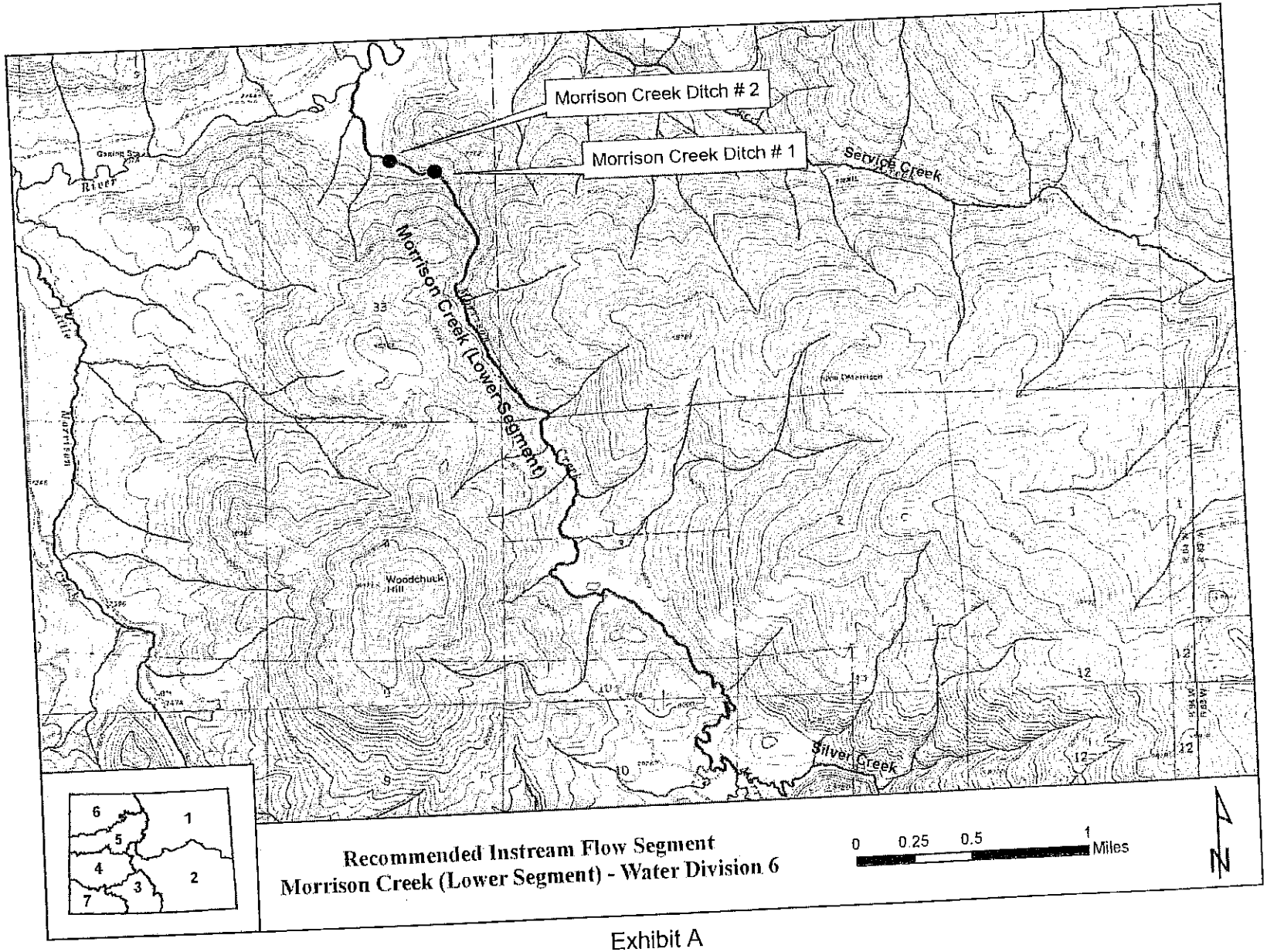


Exhibit A

Stream: Morrison Creek (Upper Segment)

Executive Summary

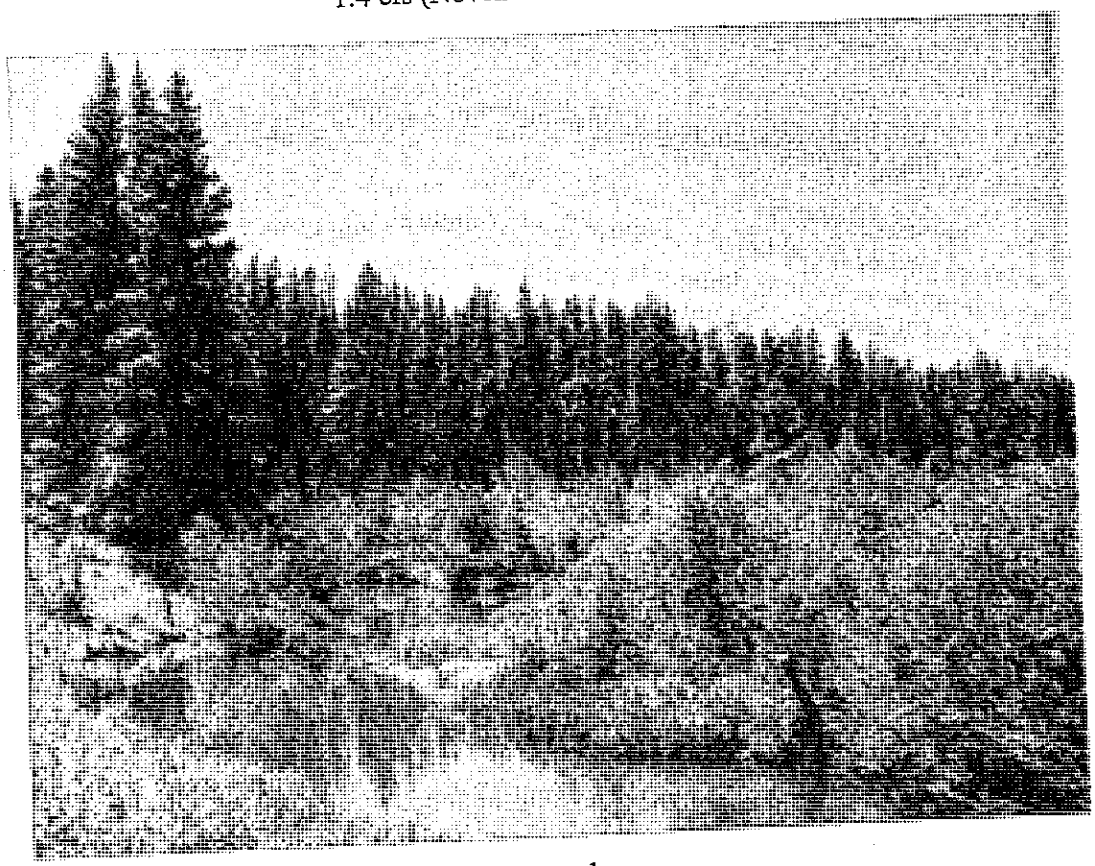
Water Division: 6
Water District: 58
CDOW#: 21294
CWCB ID: 10/6/A-003

Segment: Confluence with Muddy Creek to Confluence with Silver Creek

Upper Terminus: CONFLUENCE WITH MUDDY CREEK
(Latitude 40° 10' 54.50"N) (Longitude 106° 45' 0.35"W)

Lower Terminus: CONFLUENCE WITH SILVER CREEK
(Latitude 40° 14' 42.44"N) (Longitude 106° 47' 10.75"W)

Watershed: Upper Yampa (HUC#: 14050001)
Counties: Routt
Length: 8.99 miles
USGS Quad: Green Ridge
Flow Recommendation: 3.1 cfs (April 1 – October 31)
1.4 cfs (November 1 – March 31)



Staff Analysis and Recommendation

Summary

The information contained in this report and the associated instream flow file folder forms the basis for staff's instream flow recommendation to be considered by the Board. It is staff's opinion that the information contained in this report is sufficient to support the findings required in Rule 5.40.

Colorado's Instream Flow Program was created in 1973 when the Colorado State Legislature recognized "the need to correlate the activities of mankind with some reasonable preservation of the natural environment" (see 37-92-102 (3) C.R.S.). The statute vests the CWCB with the exclusive authority to appropriate and acquire instream flow and natural lake level water rights. In order to encourage other entities to participate in Colorado's Instream Flow Program, the statute directs the CWCB to request instream flow recommendations from other state and federal agencies. The Colorado Division of Wildlife (CDOW) recommended this segment of Morrison Creek to the CWCB for inclusion into the Instream Flow Program. Morrison Creek is being considered for inclusion into the Instream Flow Program because it has a natural environment that can be preserved to a reasonable degree with an instream flow water right.

Morrison Creek is approximately 21.0 miles long. It begins at an elevation of 8,400 feet and generally flows northwesterly until it terminates at the confluence with the Yampa River at an elevation of 7,200 feet. Of the 8.99 mile segment addressed by this report, approximately 23.0% of the segment is located on public lands. Morrison Creek is located within Routt County and has a total drainage area of approximately 76.52 square miles.

The subject of this report is a segment of the Morrison Creek beginning at the confluence with Sugar Creek and extending downstream to the confluence with Silver Creek. The proposed segment is located approximately 8.3 miles northeast of the town of Yampa. Staff has received only one recommendation for this segment, from the CDOW. The recommendation for this segment is discussed below.

Instream Flow Recommendation

The CDOW is recommending 3.1 cfs (April 1 – October 31) and 1.4 cfs (November 1 – March 31) based on their data collection efforts and staff's water availability analyses.

Land Status Review

Upper Terminus	Lower Terminus	Total Length (miles)	Land Ownership	
			% Private	% Public
Confluence w/ Muddy Creek	Confluence w/ Silver Creek	3.59	77%	23%

100% of the public lands are owned by the State Land Board.

Biological Data

The CDOW and Bureau of Land Management (BLM) have collected stream cross section information, natural environment data, and other data needed to quantify the instream flow needs for this reach of the Morrison Creek. Morrison Creek is classified as a medium stream (between 20 to 35 feet wide) and fishery surveys indicate the stream environment of Morrison Creek supports a naturally reproducing brook trout (*Salvelinus fontinalis*) population.

Field Survey Data

CDOW staff used the R2Cross methodology to quantify the amount of water required to preserve the natural environment to a reasonable degree. The R2Cross method requires that stream discharge and channel profile data be collected in a riffle stream habitat type. Riffles are most easily visualized as the stream habitat types that would dry up first should streamflow cease. This type of hydraulic data collection consists of setting up a transect, surveying the stream channel geometry, and measuring the stream discharge.

Biological Flow Recommendation

The CWCB staff relied upon the biological expertise of the cooperating agencies to interpret output from the R2Cross data collected to develop the initial, biologic instream flow recommendation. This initial recommendation is designed to address the unique biologic requirements of each stream without regard to water availability. Three instream flow hydraulic parameters, average depth, percent wetted perimeter, and average velocity are used to develop biologic instream flow recommendations. The CDOW has determined that maintaining these three hydraulic parameters at adequate levels across riffle habitat types, aquatic habitat in pools and runs will also be maintained for most life stages of fish and aquatic invertebrates (Nehring 1979; Espegren 1996).

For this segment of stream, four data sets were collected with the results shown in Table 1 below. Table 1 shows who collected the data (Party), the date the data was collected (Date), the measured discharge at the time of the survey (Q), the accuracy range of the predicted flows based on Manning's Equation (240% and 40% of Q), the summer flow recommendation based on meeting 3 of 3 hydraulic criteria and the winter flow recommendation based upon 2 of 3 hydraulic criteria. It is believed that recommendations that fall outside of the accuracy range of the model (Over 250% of the measured discharge or under 40% of the measured discharge) may not give an accurate estimate of the necessary instream flow required.

Table 1: Data

Party	Date	Q	250%-40%	Summer (3/3)	Winter (2/3)
CDOW	10/17/1997	15.7	39.2 – 6.3	Out of range	Out of range
CDOW	7/25/2005	2.3	5.8 – 0.9	1.7	1.4
CDOW	6/29/2006	7.2	17.9 – 2.9	4.5	Out of range
CDOW	9/4/2007	1.1	2.7 – 0.4	Out of range	2.7

The summer flow recommendation, which met 3 of 3 criteria and is within the accuracy range of the R2CROSS model, is 3.1 cfs. The winter flow amount, which meets 2 of 3 criteria, is 2.0 cfs

but was lowered to 1.4 cfs due to water availability constraints. The winter and summer flow recommendations were derived by averaging the results of the data sets.

Hydrologic Data and Analysis

After receiving the cooperating agency's biologic recommendation, the CWCB staff conducted an evaluation of the stream hydrology to determine if water was physically available for an instream flow appropriation. This evaluation was done through a computation that is, in essence, a "water balance". In concept a "water balance" computation can be viewed as an accounting exercise. When done in its most rigorous form, the water balance parses precipitation into all the avenues water pursues after it is deposited as rain, snow, or ice. In other words, given a specified amount of water deposition (input), the balance tries to account for all water depletions (losses) until a selected end point is reached. Water losses include depletions due to evaporation and transpiration, deliveries into ground water storage, temporary surface storage, incorporations into plant and animal tissue and so forth. These losses are individually or collectively subtracted from the input to reveal the net amount of stream runoff as represented by the discharge measured by stream gages. Of course, the measured stream flow need not be the end point of interest; indeed, when looking at issues of water use to extinction stream flow measurements may only describe intermediate steps in the complex accounting process that is a water balance carried out to a net value of zero.

In its analysis, CWCB staff has attempted to use this idea of balancing inputs and losses to determine if water is available for the recommended Instream Flow Appropriation. Of course, this analysis must be a practical exercise rather than a lengthy, and costly, scientific investigation. As a result, staff has simplified the process by lumping together some variables and employing certain rational and scientifically supportable assumptions. The process may be described through the following description of the steps used to complete the evaluation for this particular stream.

The first step required in determining water availability is a determination of the hydrologic regime at the Lower Terminus (LT) of the recommended ISF reach. In the best case this means looking at the data from a gage at the LT. Further, this data, in the best case, has been collected for a long period of time (the longer the better) including wet and dry periods. In the case of **Morrison Creek – Upper New** there was a Colorado DWR gage record of discharge on the stream. However, the gage station is upstream from the LT. The DWR gage is MORRISON CREEK ABOVE MILES RANCH, CO. (MORCRECO); it has a period of record (POR) of 1 year collected between 1990 and 1991. Because of the short POR, this gage was not useable for this analysis. It is thus necessary to describe the normal flow regime at Morrison Creek – Upper New above the LT through a "representative" gage station. The gage station selected for this purpose was SERVICE CREEK NEAR OAK CREEK, CO (USGS 09237800), a gage with an 8 year POR collected between 1965 and 1973. The gage is at an elevation of 7,000 ft above mean sea level (amsl) and has a drainage area of 38.26 mi^2. The hydrograph (plot of discharge over time) produced from this gage includes a diversion's consumptive use. However, the existence of this diversion does not preclude use of the data from the gage. To make the measured data transferable to Morrison Creek – Upper New above the LT, the consumptive portion of this diversion was added back to the measured hydrograph. The resulting "adjusted" hydrograph could then be used on Morrison Creek – Upper New above the LT by multiplying the "adjusted"

gage discharge values by an area ratio; specifically, the area of Morrison Creek – Upper New above the LT (47.25 mi^2) to Service Creek near Oak Creek, CO (38.26 mi^2). The resulting proportioned hydrograph was itself "adjusted" (decreased) to reflect the consumptive irrigation depletions of several diversions upstream of the LT. The final hydrograph thus represents a distribution of flow over time that has been reduced to reflect existing human uses.

{The Following discussion is based upon the US Geological Survey's *Techniques of Water-Resources Investigations* Series, *Book 4: Hydrologic Analysis and Interpretation, Chapter A3: Statistical Methods in Water Resources* (Chapter 3: Describing Uncertainty) by D.R. Helsel and R. M. Hirsch. This technical reference provides the scientific background and guidance important to the systematic interpretation of hydrologic data. The document is available online and is a valuable aid to understanding and interpreting the analyses described here.}

The next step in producing a representation of the discharge at Morrison Creek – Upper New is to compute the Geometric Mean of the area-prorated "adjusted" data values from the Service Creek near Oak Creek, CO hydrograph. This step is of value because of the inherent statistical weaknesses found in any collection of data intended to measure natural stream discharge. Without getting into the details of statistical theory, it is worth noting that a set of discharge measurements is inherently inaccurate, no matter how well collected, due to the difficulties attendant to data collection, especially hydrologic data. To give deference to this fact and to increase the value of the hydrograph product of this analysis, the Geometric Means of the data were computed and plotted along with the 95% Confidence Intervals about the data. The resultant hydrograph, including recommended Instream Flow values, is displayed in Figure 1 with the data displayed in Table 2.

Figure 1

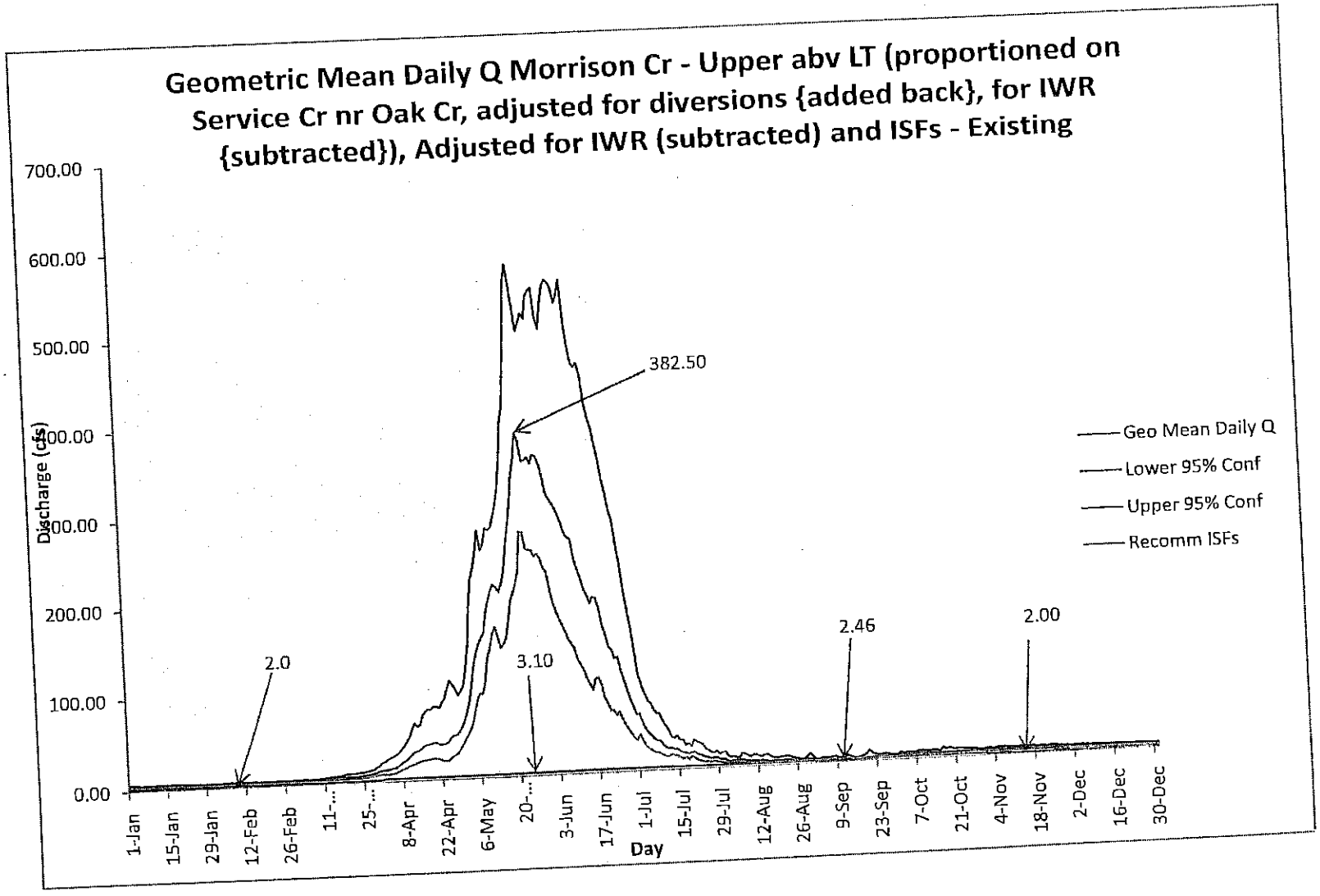


Exhibit A

Table 2. Geometric Mean Discharge and Recommended Instream Flows			
Date	Existing ISF	Recommended ISF	Proportioned Adjusted GM (abv gage) Adj (-) for Irr & OoB in Morrison Cr – Upper New abv LT
1-Jan		1.4	5.15
2-Jan		1.4	5.09
3-Jan		1.4	5.05
4-Jan		1.4	5.06
5-Jan		1.4	5.03
6-Jan		1.4	4.95
7-Jan		1.4	4.93
8-Jan		1.4	4.98
9-Jan		1.4	4.92
10-Jan		1.4	5.06
11-Jan		1.4	5.18
12-Jan		1.4	5.10
13-Jan		1.4	5.13
14-Jan		1.4	5.03
15-Jan		1.4	4.85
16-Jan		1.4	4.75
17-Jan		1.4	4.70
18-Jan		1.4	4.71
19-Jan		1.4	4.88
20-Jan		1.4	4.87
21-Jan		1.4	4.90
22-Jan		1.4	4.92
23-Jan		1.4	4.90
24-Jan		1.4	4.90
25-Jan		1.4	4.90
26-Jan		1.4	4.89
27-Jan		1.4	4.89
28-Jan		1.4	4.78
29-Jan		1.4	4.80
30-Jan		1.4	4.75
31-Jan		1.4	4.77
1-Feb		1.4	4.82
2-Feb		1.4	4.85
3-Feb		1.4	4.84
4-Feb		1.4	4.86
5-Feb		1.4	4.91
6-Feb		1.4	4.97
7-Feb		1.4	4.94
8-Feb		1.4	4.89
9-Feb		1.4	4.88
10-Feb		1.4	4.80
11-Feb		1.4	4.73
12-Feb		1.4	4.79
13-Feb		1.4	4.79
14-Feb		1.4	4.81
15-Feb		1.4	4.80
16-Feb		1.4	4.73
17-Feb		1.4	4.73
18-Feb		1.4	4.75

			4.65
19-Feb		1.4	4.71
20-Feb		1.4	4.83
21-Feb		1.4	4.64
22-Feb		1.4	4.70
23-Feb		1.4	4.69
24-Feb		1.4	4.75
25-Feb		1.4	4.88
26-Feb		1.4	4.89
27-Feb		1.4	4.89
28-Feb		1.4	4.69
29-Feb		1.4	4.97
1-Mar		1.4	4.96
2-Mar		1.4	5.09
3-Mar		1.4	5.24
4-Mar		1.4	5.05
5-Mar		1.4	5.17
6-Mar		1.4	5.25
7-Mar		1.4	5.30
8-Mar		1.4	5.40
9-Mar		1.4	5.50
10-Mar		1.4	5.67
11-Mar		1.4	5.79
12-Mar		1.4	5.99
13-Mar		1.4	6.01
14-Mar		1.4	6.10
15-Mar		1.4	6.27
16-Mar		1.4	6.43
17-Mar		1.4	6.71
18-Mar		1.4	7.06
19-Mar		1.4	7.23
20-Mar		1.4	6.96
21-Mar		1.4	6.92
22-Mar		1.4	7.17
23-Mar		1.4	7.35
24-Mar		1.4	8.01
25-Mar		1.4	8.29
26-Mar		1.4	8.87
27-Mar		1.4	9.35
28-Mar		1.4	10.30
29-Mar		1.4	11.49
30-Mar		1.4	12.48
31-Mar		1.4	12.44
1-Apr		3.1	12.76
2-Apr		3.1	13.53
3-Apr		3.1	14.07
4-Apr		3.1	14.98
5-Apr		3.1	16.78
6-Apr		3.1	19.24
7-Apr		3.1	21.19
8-Apr		3.1	23.51
9-Apr		3.1	26.36
10-Apr		3.1	29.04
11-Apr		3.1	31.59
12-Apr		3.1	

Exhibit A

			32.36
13-Apr		3.1	34.04
14-Apr		3.1	37.16
15-Apr		3.1	38.68
16-Apr		3.1	39.16
17-Apr		3.1	40.04
18-Apr		3.1	41.04
19-Apr		3.1	40.29
20-Apr		3.1	38.73
21-Apr		3.1	38.72
22-Apr		3.1	39.08
23-Apr		3.1	41.03
24-Apr		3.1	46.26
25-Apr		3.1	48.07
26-Apr		3.1	49.00
27-Apr		3.1	51.74
28-Apr		3.1	57.56
29-Apr		3.1	64.23
30-Apr		3.1	73.02
1-May		3.1	85.02
2-May		3.1	103.46
3-May		3.1	123.07
4-May		3.1	138.18
5-May		3.1	147.21
6-May		3.1	153.46
7-May		3.1	160.13
8-May		3.1	181.97
9-May		3.1	195.92
10-May		3.1	206.29
11-May		3.1	213.17
12-May		3.1	209.75
13-May		3.1	204.47
14-May		3.1	213.14
15-May		3.1	228.09
16-May		3.1	255.85
17-May		3.1	278.39
18-May		3.1	304.59
19-May		3.1	333.63
20-May		3.1	353.74
21-May		3.1	382.50
22-May		3.1	373.84
23-May		3.1	350.38
24-May		3.1	352.02
25-May		3.1	354.78
26-May		3.1	347.69
27-May		3.1	357.67
28-May		3.1	355.40
29-May		3.1	346.80
30-May		3.1	333.34
31-May		3.1	313.32
1-Jun		3.1	307.62
2-Jun		3.1	303.01
3-Jun		3.1	296.05
4-Jun		3.1	288.46
5-Jun		3.1	

			279.42
6-Jun		3.1	266.83
7-Jun		3.1	263.30
8-Jun		3.1	261.02
9-Jun		3.1	237.53
10-Jun		3.1	226.73
11-Jun		3.1	215.47
12-Jun		3.1	204.06
13-Jun		3.1	196.55
14-Jun		3.1	187.26
15-Jun		3.1	193.71
16-Jun		3.1	192.70
17-Jun		3.1	181.80
18-Jun		3.1	162.29
19-Jun		3.1	152.26
20-Jun		3.1	137.80
21-Jun		3.1	134.95
22-Jun		3.1	124.77
23-Jun		3.1	126.23
24-Jun		3.1	111.70
25-Jun		3.1	99.65
26-Jun		3.1	89.12
27-Jun		3.1	79.66
28-Jun		3.1	70.58
29-Jun		3.1	62.47
30-Jun		3.1	63.08
1-Jul		3.1	53.15
2-Jul		3.1	46.12
3-Jul		3.1	41.19
4-Jul		3.1	38.45
5-Jul		3.1	35.03
6-Jul		3.1	33.00
7-Jul		3.1	31.92
8-Jul		3.1	27.87
9-Jul		3.1	25.01
10-Jul		3.1	23.56
11-Jul		3.1	23.98
12-Jul		3.1	22.57
13-Jul		3.1	22.52
14-Jul		3.1	20.01
15-Jul		3.1	18.14
16-Jul		3.1	18.02
17-Jul		3.1	16.33
18-Jul		3.1	18.05
19-Jul		3.1	18.81
20-Jul		3.1	16.01
21-Jul		3.1	14.95
22-Jul		3.1	13.56
23-Jul		3.1	12.28
24-Jul		3.1	11.65
25-Jul		3.1	10.34
26-Jul		3.1	10.84
27-Jul		3.1	11.01
28-Jul		3.1	9.42
29-Jul		3.1	

			9.21
30-Jul		3.1	8.94
31-Jul		3.1	6.82
1-Aug		3.1	6.66
2-Aug		3.1	7.50
3-Aug		3.1	7.73
4-Aug		3.1	7.46
5-Aug		3.1	7.82
6-Aug		3.1	6.95
7-Aug		3.1	6.03
8-Aug		3.1	5.67
9-Aug		3.1	5.97
10-Aug		3.1	5.80
11-Aug		3.1	5.56
12-Aug		3.1	6.21
13-Aug		3.1	5.57
14-Aug		3.1	5.08
15-Aug		3.1	5.09
16-Aug		3.1	4.90
17-Aug		3.1	4.88
18-Aug		3.1	4.98
19-Aug		3.1	4.93
20-Aug		3.1	5.39
21-Aug		3.1	5.34
22-Aug		3.1	4.88
23-Aug		3.1	4.43
24-Aug		3.1	4.24
25-Aug		3.1	4.05
26-Aug		3.1	3.83
27-Aug		3.1	3.99
28-Aug		3.1	4.94
29-Aug		3.1	5.41
30-Aug		3.1	4.73
31-Aug		3.1	2.56
1-Sep		3.1	2.70
2-Sep		3.1	3.06
3-Sep		3.1	3.15
4-Sep		3.1	2.89
5-Sep		3.1	2.74
6-Sep		3.1	2.54
7-Sep		3.1	2.58
8-Sep		3.1	2.63
9-Sep		3.1	2.57
10-Sep		3.1	2.46
11-Sep		3.1	3.10
12-Sep		3.1	3.04
13-Sep		3.1	2.68
14-Sep		3.1	2.56
15-Sep		3.1	2.75
16-Sep		3.1	3.06
17-Sep		3.1	3.18
18-Sep		3.1	3.52
19-Sep		3.1	4.00
20-Sep		3.1	3.52
21-Sep		3.1	

			3.88
22-Sep		3.1	3.88
23-Sep		3.1	4.13
24-Sep		3.1	4.55
25-Sep		3.1	4.55
26-Sep		3.1	4.20
27-Sep		3.1	3.93
28-Sep		3.1	3.83
29-Sep		3.1	4.00
30-Sep		3.1	6.56
1-Oct		3.1	4.96
2-Oct		3.1	5.17
3-Oct		3.1	4.83
4-Oct		3.1	4.76
5-Oct		3.1	5.06
6-Oct		3.1	5.77
7-Oct		3.1	6.81
8-Oct		3.1	6.68
9-Oct		3.1	6.35
10-Oct		3.1	6.02
11-Oct		3.1	5.73
12-Oct		3.1	6.00
13-Oct		3.1	5.84
14-Oct		3.1	5.45
15-Oct		3.1	5.82
16-Oct		3.1	5.43
17-Oct		3.1	6.20
18-Oct		3.1	5.99
19-Oct		3.1	5.42
20-Oct		3.1	6.10
21-Oct		3.1	5.88
22-Oct		3.1	6.02
23-Oct		3.1	6.00
24-Oct		3.1	5.96
25-Oct		3.1	6.22
26-Oct		3.1	5.41
27-Oct		3.1	6.19
28-Oct		3.1	5.67
29-Oct		3.1	5.43
30-Oct		3.1	5.96
31-Oct		3.1	6.94
1-Nov		1.4	6.39
2-Nov		1.4	6.16
3-Nov		1.4	6.47
4-Nov		1.4	5.91
5-Nov		1.4	6.02
6-Nov		1.4	6.02
7-Nov		1.4	5.88
8-Nov		1.4	5.96
9-Nov		1.4	6.19
10-Nov		1.4	6.11
11-Nov		1.4	6.44
12-Nov		1.4	6.61
13-Nov		1.4	6.43
14-Nov		1.4	

			6.53
15-Nov		1.4	6.66
16-Nov		1.4	6.64
17-Nov		1.4	6.42
18-Nov		1.4	6.20
19-Nov		1.4	6.04
20-Nov		1.4	6.08
21-Nov		1.4	5.85
22-Nov		1.4	6.29
23-Nov		1.4	5.79
24-Nov		1.4	5.52
25-Nov		1.4	5.75
26-Nov		1.4	5.32
27-Nov		1.4	5.32
28-Nov		1.4	5.42
29-Nov		1.4	5.65
30-Nov		1.4	5.67
1-Dec		1.4	5.70
2-Dec		1.4	5.73
3-Dec		1.4	5.75
4-Dec		1.4	5.63
5-Dec		1.4	5.57
6-Dec		1.4	5.60
7-Dec		1.4	5.57
8-Dec		1.4	5.50
9-Dec		1.4	5.54
10-Dec		1.4	5.20
11-Dec		1.4	5.14
12-Dec		1.4	5.33
13-Dec		1.4	5.25
14-Dec		1.4	5.20
15-Dec		1.4	5.23
16-Dec		1.4	5.14
17-Dec		1.4	5.03
18-Dec		1.4	5.10
19-Dec		1.4	5.15
20-Dec		1.4	5.05
21-Dec		1.4	5.08
22-Dec		1.4	5.14
23-Dec		1.4	5.18
24-Dec		1.4	5.22
25-Dec		1.4	5.28
26-Dec		1.4	5.28
27-Dec		1.4	5.29
28-Dec		1.4	5.25
29-Dec		1.4	5.14
30-Dec		1.4	5.05
31-Dec		1.4	

Existing Water Right Information

Staff has analyzed the water rights tabulation and contacted the Division Engineer Office (DEO) to identify any potential water availability problems. There are four decreed surface diversion within this reach of stream: Balanced Rock Ditch (3.0 cfs, 1945 appropriation), Alamo Ditch No. 1 (1.25 cfs , 1907 appropriation), Silver View Ditch (1.65 cfs, 1939 appropriation) and Dequine Ditch (1.25 cfs, 1991 appropriation). Staff has determined that water is available for appropriation on Morrison Creek, between the confluence with Muddy Creek and the confluence with Silver Creek, to preserve the natural environment to a reasonable degree without limiting or foreclosing the exercise of valid existing water rights.

CWCB Staff's Instream Flow Recommendation

Staff recommends the Board form its intent to appropriate on the following stream reach:

Segment: Confluence with Muddy Creek to Confluence with Silver Creek

Upper Terminus: CONFLUENCE WITH MUDDY CREEK
(Latitude 40° 10' 54.50"N) (Longitude 106° 45' 0.35"W)
UTM North: 4449404.70 UTM East: 351005.19
SE SE S36 T3N R84W 8th PM
70' West of the East Section Line; 740' North of the South Section Line

Lower Terminus: CONFLUENCE WITH SILVER CREEK
(Latitude 40° 14' 42.44"N) (Longitude 106° 47' 10.75"W)
UTM North: 4456494.46 UTM East: 348062.75
NW SW S11 T3N R84W 6th PM
15' East of the West Section Line; 2550' South of the North Section Line

Watershed: Upper Yampa (HUC#: 14050001)
Counties: Routt
Length: 8.99 miles
USGS Quad: Green Ridge
Flow Recommendation: 3.1 cfs (April 1 – October 31)
1.4 cfs (November 1 – March 31)

Vicinity Map

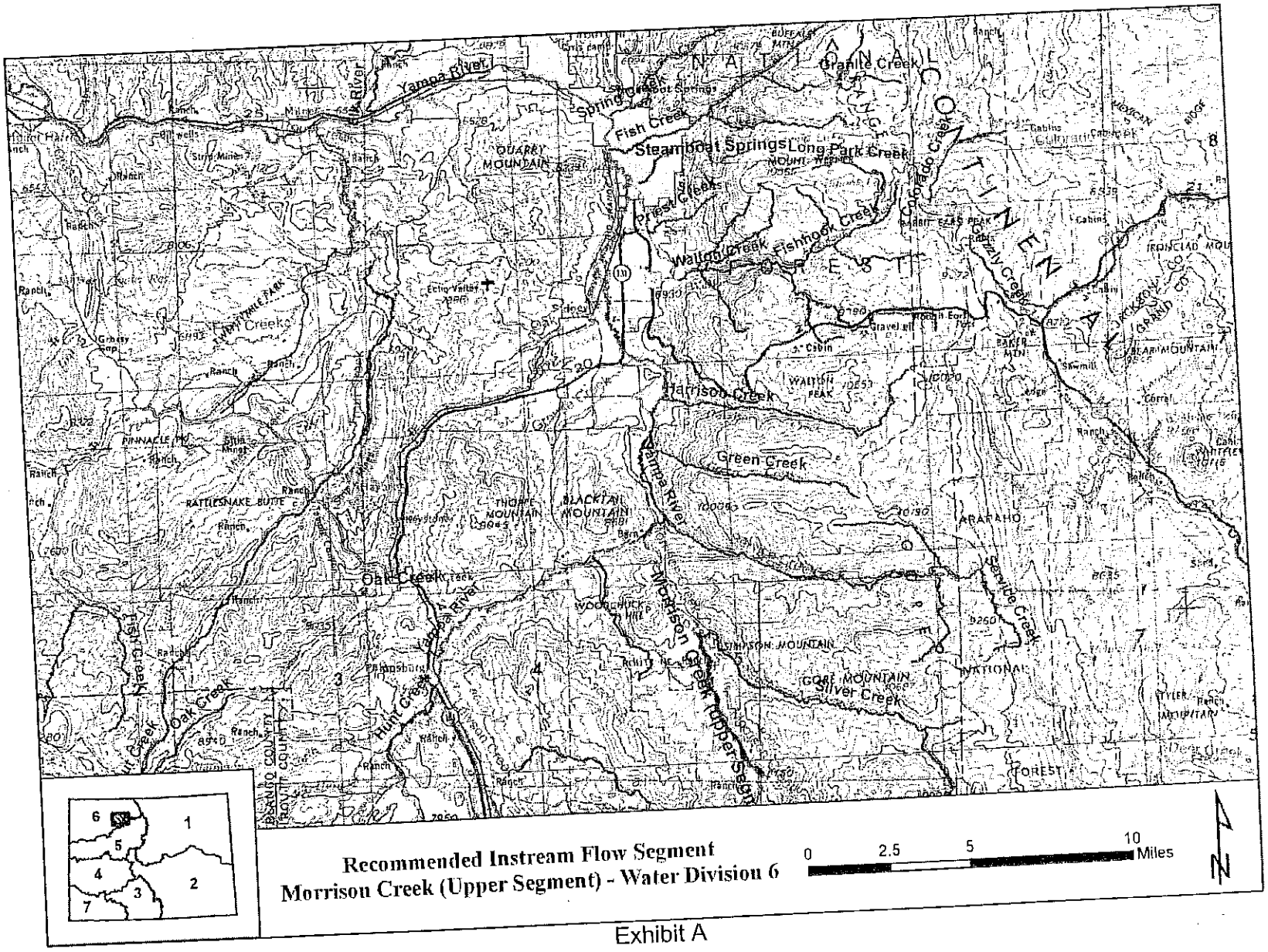


Exhibit A

Land Use Map

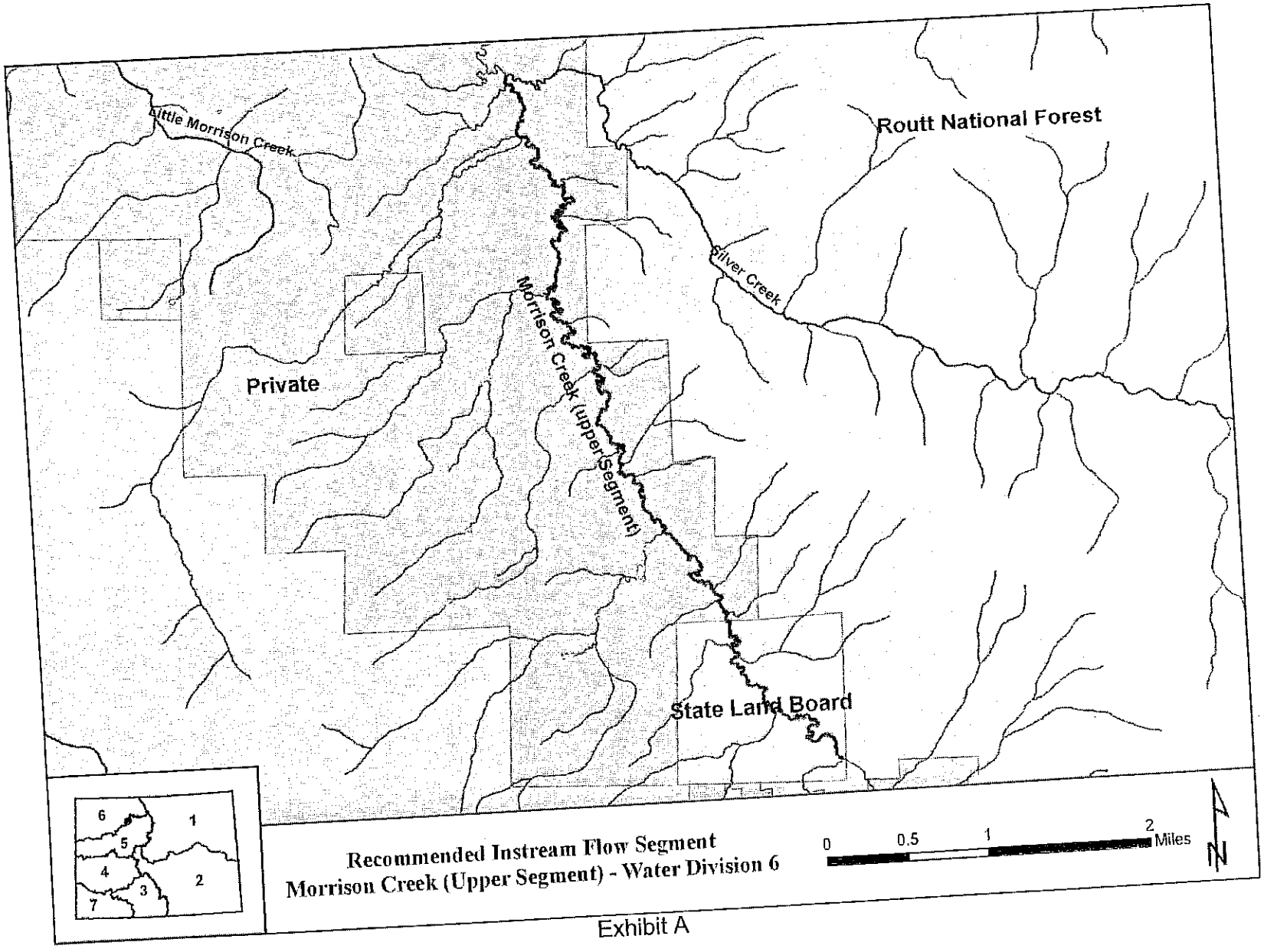


Exhibit A

Topographic and Water Rights Map

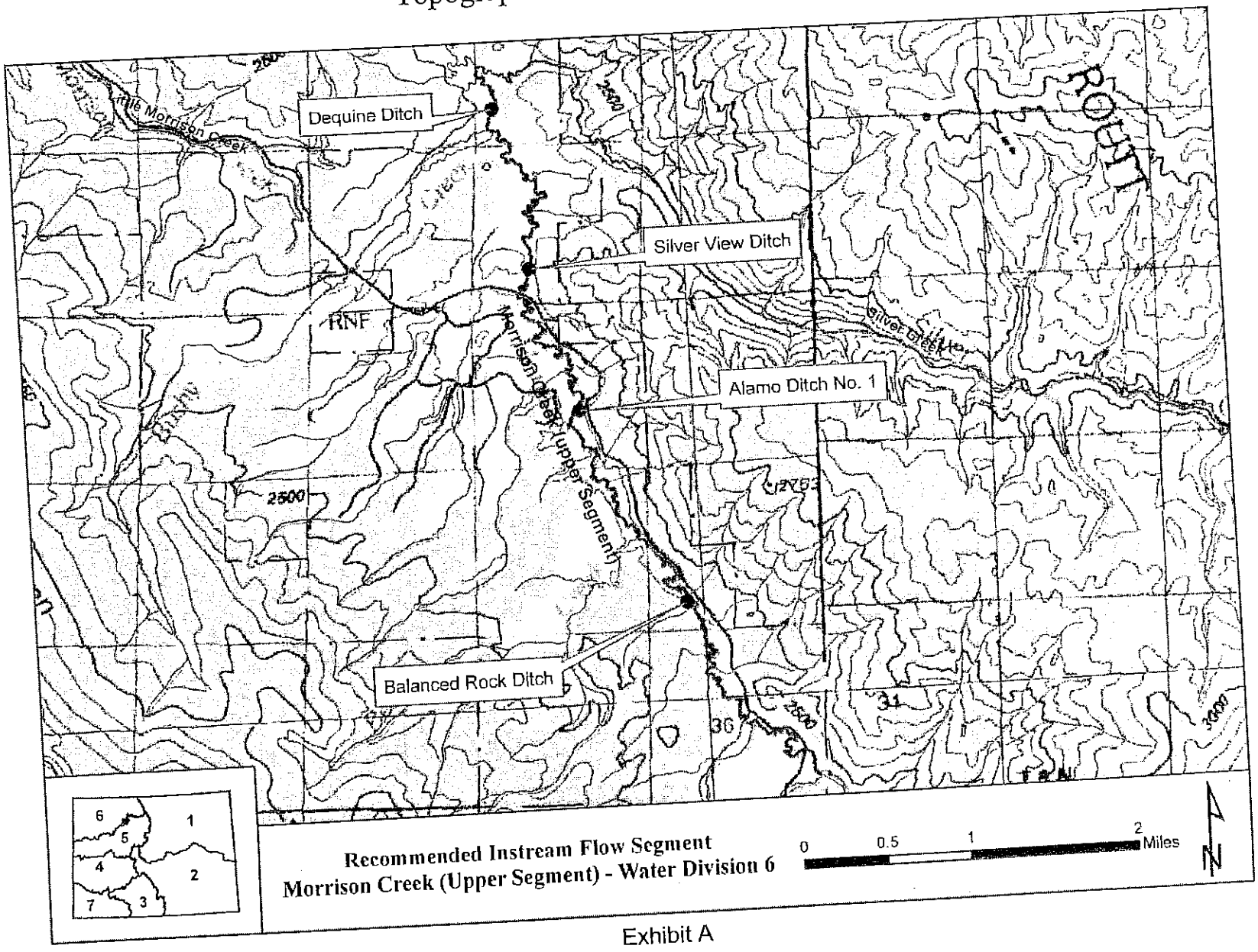


Exhibit A

YAMPA RIVER BASIN

Alternatives Feasibility Study

COLORADO RIVER WATER CONSERVATION DISTRICT

COLORADO WATER CONSERVATION BOARD
DEPARTMENT OF NATURAL RESOURCES

BUREAU OF RECLAMATION
U.S. DEPARTMENT OF THE INTERIOR

FINAL REPORT

March 1993

HYDROSPHERE
Resource Consultants
1002 Walnut Suite 200
Boulder, CO 80302

Exhibit B

uncertainty about current CDOW and Service policy regarding the stocking of non-native species other than salmonids in the Yampa River basin.

The data collection at each site was limited to a visual evaluation of the existing stream habitat conditions, narrative description of the potential reservoir area, and stream channel stability rating. The existing stream habitat, reservoir characteristics and narrative description were recorded on "General Stream Habitat Survey" forms. The stream channel stability was rated using the Pfankuch (1978) method and recorded on the survey form. Water temperature and water quality were evaluated using the available USGS water quality records. Fishery information was obtained from the CDOW Database. Reservoir fishery potential was evaluated using the model of McConnell, et al. (1984).

Cultural Resources

The potential for impacts on cultural and historical resources was examined by reviewing readily available information from the Colorado Historical Society. A literature search was performed to ascertain which, if any, portions of the sites had been surveyed for archaeological and historical sites. The file search was completed in August of 1991. Ten sites were identified and twelve surveys were found. The relevant survey reports were reviewed and the identified sites' locations relative to the reservoirs determined. A brief discussion was held with officers of the State Historical Preservation office to determine the general likelihood of cultural resources in the vicinity of the reservoirs.

The file search reports list the types of sites and an assessment as to the sites' eligibility for the National Register. Assessments are either from the field, i.e. the surveyor, or official, from the State Historical Preservation Office. All sites and findings are classified as one of eleven different types. The only site types identified in this file search were "other historical site" type, "isolated find", "open camp" and "open lithic". Open camp refers to sites located in an open topographic situation and consisting of features or artifacts which indicate domestic activity, defined by the presence of one or more of the following: groundstone, ceramics, fire hearths, middens, and usually containing waste flakes and chipped tools. Open lithic refers to sites containing lithic (stone) material, usually waste flakes and chipped stone tools, located in an open topographic situation.

Summary of Field Evaluations

Morrison Creek Site

Engineering Aspects. Two possible dam sites were identified along the lower reach of Morrison Creek. Only the upper site was included in the field survey; however, it appeared that the lower site has very similar characteristics. The site is situated within a narrow canyon with steep rock abutments on either side of the creek. Although a dam was at one time considered at the canyon entrance upstream of the sites viewed in the field, it apparently never received serious consideration as no engineering documentation for such a project has been located. Virtually no other background information exists for the Morrison Creek site, and USGS 7.5' quadrangle sheets provide the best available mapping.

Morrison Creek through the canyon is a high gradient stream but appears to carry only a light sediment load. No evidence of mining activity in the area was seen. This site would be best suited for either a rockfill or roller-compacted concrete dam with an overtopping spillway; the dam crest would be approximately 450 feet long. Construction access and a staging area

would need to be constructed near the site, which lies in rugged terrain. No geological hazards were noted at this level of evaluation.

Hydrology. This site is desirable from a water delivery perspective since it lies upstream of most potential demand areas. Average annual inflow is estimated to be about 59,000 acre-feet. The maximum size reservoir that the site topography would allow would be about 31,000 acre-feet, and site characteristics would logically suggest development to this capacity.

Site Development Cost. A reservoir of 31,000 acre-feet (af) total volume at the Morrison Creek site would have development costs in the range of 14 to 21 million dollars. This figure represents a cost of approximately $900 per acre foot of reservoir active storage.

Recreation. The recreation potential of a Morrison Creek reservoir is limited by distance from Craig, by the relatively poor access to the site itself, and by competition from the nearby and more accessible Stagecoach Reservoir. Although a reservoir at Morrison Creek would be very scenic when full, with relatively small amounts of drawdown it would exhibit extensive mudflats in those portions of the basin that are most accessible and visible. The reservoir would have a surface area of roughly 400 acres at the high water line. Given the poor access and good substitutes available close by, about 100,000 visits might be expected annually under current conditions.

Terrestrial Ecology. The Morrison Creek site is located in an upper montane/subalpine valley that is characterized by a high degree of ecological and landscape diversity. In addition to the diverse riparian habitats including willow shrublands, wet grassy meadows and fens, there are spruce-fir forests (some of which are old growth in character), aspen woodlands, meadows and various types of shrublands. The native habitat types show only limited evidence of past disturbance from agricultural activities.

Wildlife populations in the valley and nearby vicinity are undoubtedly diverse in terms of both game and non-game species. Large year-round populations of mule deer and elk occur. WRIS mapping information identifies the area as being within elk "winter range" as well as within elk "severe winter range". Also, the site is within greater Sandhill crane and sharp-tailed grouse "overall range". Sandhill crane and golden eagle nesting areas have been identified within the area that would be inundated.

Wetlands occur along the entire reach of Morrison Creek with the greatest extent of development occurring in the upper reaches of the areas that would be inundated by a reservoir. These wetlands consist of wet meadows dominated by grasses and sedges and willow shrublands.

Aquatic Ecology. Stream habitat in the Morrison Creek Reservoir area is predominantly riffle-run habitat with some pools on the outside of meander bends. Stream substrate in the reservoir area is cobble and gravel. There is spawning habitat at the pool-riffle interfaces. Water clarity is good even at bankfull discharge. Bank stability is good throughout the site. There is extensive bank cover on the stream with little evidence of grazing. The existing fishery is classified as excellent by CDOW. There are no limiting factors listed for this site.

The lower half of the potential reservoir area is heavily forested with large coniferous forests with tree heights exceeding 80 feet. Large organic debris from the stands is in the channel and along the stream banks. Tree rootwads and downed trees provide instream cover in many sections of the stream.

The upper reservoir area is currently hay meadows and has the potential to be exposed during reservoir operations which would elevate turbidity levels in the reservoir. The reservoir elevation is approximately 7800 feet and therefore water temperatures should remain suitable for trout. The tailwater area is relatively steep gradient stream with large boulders, step pools and cascades. Stream habitat is more limited in this section of the stream than that found in the reservoir area.

Cultural Resources. No specific surveys of the area to be inundated were identified. However, a total of six archaeological sites were identified which would be impacted by the Morrison Creek reservoir. No official determination as to the sites' eligibility to the National Register has been made. Three of the sites are open lithic sites which have a "field needs data" status, which means that a determination has been made by the surveyor that more information is necessary before an unofficial (field) or official determination can be made. An additional open lithic site and two isolated finds have "field not eligible" status, meaning the surveyor thought the sites would not be eligible for listing on the National Register. Official determination would need to be made if the site were to be considered further.

Of the sites considered at this stage, Morrison Creek reservoir had the greatest potential impact on known archaeological resources.

Walton Creek Site

Engineering Aspects. USGS 7.5' quadrangle sheets provide the best available mapping for the Walton Creek site since virtually no other background information exists. The dam axis at the Walton Creek site would be located at the narrowest section of the drainage basin approximately 4 miles above the confluence with the Yampa River. The site would require a dam approximately 1,250 feet long and 300 feet high.

Both abutments are of moderate slope consisting largely of metamorphic and igneous rock with some silty clay. Material available for dam construction in the immediate vicinity consists of rock and clay. The most probable dam construction method would be earthfill or rockfill. This site would require an overtopping type of spillway or possibly a spillway constructed along the right abutment. Side slopes within the reservoir area are moderate to very steep. No geologic hazards were noted at this level of evaluation.

Hydrology. This site is favorable in terms of water delivery, being upstream of most potential demand areas. Average annual inflow is estimated to be about 64,000 acre-feet. The maximum size reservoir that the site topography would allow would be about 25,000 acre-feet, and site characteristics would logically suggest development of this capacity. The sediment load in Walton Creek appears to be light.

Site Development Costs. A reservoir of 25,000 af total volume at the Walton Creek site would have development costs in the range of 120 to 150 million dollars, due primarily to the large dam size required. This figure represents a cost of approximately $6,400 per acre foot of reservoir active storage.

Recreation. Access to the Walton Creek site is better than that for Morrison Creek, the site itself being only a few miles off of U.S. Highway 40. Still, the site is quite remote from Craig. The reservoir would have fairly steep side slopes and a rather uniform "bathtub" shape with few opportunities for boat ramps and campgrounds. The reservoir would provide only about 200 acres of surface area when full. About 50,000 annual visits might be expected under 1991 conditions.

was added partly at the suggestion of TSG at its August 16, 1991 meeting. This suggestion was followed up when it appeared that the evaluation would lead to the elimination of all but one upper basin long-term storage site. The evaluation data for the Stagecoach Enlargement alternative was derived from the Final EIS for the Stagecoach Project.

Site Selection Recommendations

Based on the foregoing evaluations, the multi-disciplinary evaluation team developed a set of preliminary recommendations regarding the sites that should be carried forward into formulation of alternatives. The sites recommended for further consideration are listed in Table 4-6 and shown in Figure 4-3.

Table 4-6

Sites Recommended for Further Consideration

1. Stagecoach Reservoir Enlargement
2. Elk Creek Off-channel Storage
3. Elkhead Reservoir Enlargement
4. Williams Fork near Hamilton
5. East Fork Williams Fork above Willow Creek

Morrison Creek

It was recommended that the Morrison Creek site be eliminated primarily on environmental grounds, although it is arguably the best reservoir site from a technical and economic perspective. A reservoir at the Morrison Creek site would inundate a well-developed and diverse forest ecosystem, much of which is old growth in nature. The upper reaches of the reservoir would inundate relatively large areas of subalpine wetland; with cyclical operation, these wetland areas would become broad mud flats. In addition, Morrison Creek is the only stream visited which is currently rated as an excellent fishery by CDOW. The reservoir would also inundate the greatest number of known archaeological sites.

Walton Creek

It was recommended that the Walton Creek site be eliminated primarily on the basis of development cost. While the site has good inflow and few environmental constraints, the shape of the valley is such that a relatively large dam embankment is unavoidable. Other sites studied offer substantially lower cost per unit of storage.

Pilot Knob

It was recommended that the Pilot Knob site be eliminated from further consideration based on both technical and environmental grounds. From a technical perspective, the site is inferior to the enlargement of Elkhead Reservoir with which it would compete for a water supply. The site is also relatively inconvenient to get to, which limits its recreational value. From an environmental perspective, development of any long-term water storage capacity would encroach upon large wetland areas which are known Sandhill crane habitat.

January 21, 2010

Board of Directors
CWCB
1313 Sherman St
Room 721
Denver, Colorado
80203

Dear Members

I am writing this letter in support of CWCB's staff recommendation to protect the instream flow of Morrison Creek located in Routt County. I strongly urge the Board to follow their recommendation.

My family has owned property on Morrrison Creek for approximately 40 years. We have enjoyed use of the stream for trout fishing and recreation. We built a cabin near the creek and use it frequently for family reunions. In fact, we followed my father's wishes and buried him on a site overlooking the Creek in 1982.

The area is home to an abundant number of wildlife including elk, deer, bear, mountain lion, coyote and occasional moose. Morrison Creek is a vital component of their ecosystem. In addition, the area of the Creek recommended for protection embodies one of the most spectacular river canyons in Routt County if not the entire State.

One important tributary to Morrison Creek is Silver Creek. CWCB has already wisely protected the instream flow of Silver Creek. It makes logical sense to continue this protection down stream until Morrison Creek reaches the Yampa River below Stagecoach Reservoir.

In my opinion, Morrison Creek epitomizes Colorado's wild and scenic beauty which we all hope to enjoy for decades to come. Protecting it is the absolute right thing to do.

Thank You for considering Morrison Creek as part of CWCB's inflow protection program.

Sincerely

John R Adams

John R Adams
Flying Diamond Resources

Viehl, Rob

From: Bassi, Linda
Sent: Thursday, September 17, 2009 10:03 AM
To: Viehl, Rob
Cc: Baessler, Jeffrey
Subject: FW: Morrison Creek instream flow discussion

Please keep (and post) this with the other letters regarding the Morrison Creek ISF recommendation. thanks.

-----Original Message-----
From: Peter Van De Carr [mailto:peter@backdoorsports.com]
Sent: Wednesday, September 16, 2009 7:29 AM
To: Bassi, Linda
Cc: peter@backdoorsports.com
Subject: Morrison Creek instream flow discussion

Colorado Water Conservation Board
Department of Natural Resources
1313 Sherman Street, Room 721
Denver, CO 80203

Dear Board,

On behalf of the Friends of the Yampa, a river advocacy group based in Steamboat Springs and founded in 1980, we would like to express our support for the proposed instream flow on Morrison Creek.

The Friends of the Yampa are strong supporters of instream flows be it for low flow conditions or allowing for high water peaks; both of which are equally important for recreational and environmental resources and the health of each and every aquatic system in Colorado.

Morrison Creek is important to our Upper Basin as it contributes water and habitat to the Yampa tailwaters below Stagecoach which supports a rainbow trout fishery that is unparalleled in our basin.

Though we understand that there are some in the Upper Yampa Water Conservancy District who oppose this filing and wish to postpone it, we believe that the CWCB should move forward and decree an instream flow on this creek. The reasons for this are not to block or impede any future water development potentials on this creek, but to provide for the base flows in the system, something that we feel strongly should be on any and all creek, stream or river.

We'd like to commend you in advance for allowing us the opportunity for public comment and hope that you do move forward with this filing. Thank you for the past, current and future work you do with instream flows. It is critical for us as a State to protect these flows.

Thanks again.

Peter Van De Carr, Director

Friends of the Yampa
PO Box 774703
Steamboat Springs, CO 80477

COLORADO
ENVIRONMENTAL
COALITION

Colorado's voice for
conservation since 1965

DENVER
1536 Wynkoop Street, 5C
Denver, CO 80202
303.534.7066

GRAND JUNCTION
546 Main Street, #402
Grand Junction, CO 81501
970.243.0002

CRAIG
11 W. Victory Way, #208
Craig, CO 81625
970.824.5241

September 4, 2009

Colorado Water Conservation Board
Department of Natural Resources
1313 Sherman Street, Room 721
Denver, CO 80203

Dear Board,

The undersigned organizations, which represent xxxx thousand Colorado citizens, would like to extend our support for the proposed Instream Flow Filing on Morrison Creek. We commend CWCB staff in the work that has been completed thus far, in compiling a well thought out detailed recommendation. This filing will help provide critical flows to preserve Morrison Creek, while balancing the needs of other water users in the Yampa River Basin.

We are aware that some stakeholders have requested this filing be delayed for 2 years, we feel this is unnecessary as the CWCB has a detailed and extended process by which to accommodate concerns raised by all stakeholders. The process by which the CWCB appropriates water rights, provides ample time for all stakeholders to engage in the filing and voice concerns, this additional 2 year delay is unneeded.

Additionally it is our understanding that the Morrison Creek Reservoir Application is likely to see a water right decreed before the end of 2009. Because this project is likely to have water rights senior to any appropriated by the Board, we feel it is prudent to move forward with the Staff's recommendation at this time.

We look forward to your consideration of Staff's recommendation and encourage you to support moving forward on the Morrison Creek instream flow appropriation.

Sincerely,

Becky Long
Colorado Environmental Coalition

STATE OF COLORADO

Bill Ritter, Jr., Governor
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE
AN EQUAL OPPORTUNITY EMPLOYER

Thomas E. Remington, Director
6060 Broadway
Denver, Colorado 80216
Telephone: (303) 297-1192
wildlife.state.co.us

For Wildlife-
For People

January 8, 2010

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

Re: Colorado Division of Wildlife Instream Flow Recommendations for Morrison Creek.

Dear Linda,

The purpose of this letter is to formally transmit the Colorado Division of Wildlife's (CDOW) Instream Flow Recommendations for Morrison Creek pursuant to Rule 5n of the Rules Concerning the Colorado Instream Flow and Natural Lake Levels. The CDOW believes that Morrison Creek should be considered for inclusion into the Instream Flow Program (ISFP) because it has a natural environment that can be preserved to a reasonable degree with an instream flow water right. As you know, the State of Colorado's Instream Flow Program (ISFP) was created in 1973 when the Colorado State Legislature recognized "the need to correlate the activities of mankind with some reasonable preservation of the natural environment" (See §37-92-102 (3) C.R.S.). The statute vests the Colorado Water Conservation Board (Board) with the exclusive authority to appropriate and acquire instream flow and natural lake level water rights. In order to encourage other entities to participate in Colorado's ISFP, the statute directs the Board to request instream flow recommendations from other state and federal agencies.

Location and Land Status

The Morrison Creek instream flow recommendations begin at the confluence of Muddy Creek and extend downstream to the confluence with the Yampa River. The Morrison Creek instream flow recommendation was segmented at the confluence with Silver Creek. The proposed instream flow segments are located north of the City of Steamboat Springs. 23% of the proposed segments (Muddy Creek to Yampa River) are located on public lands and 77% of the proposed segments are located on private lands. It should be noted that there is strong support for these instream flow appropriations from the local land owners (see attached February 20, 2009 letter).

Biological Summary and R2CROSS Analysis

The CDOW, Bureau of Land Management (BLM) and local land owners have collected stream cross section information, natural environment data, and other data needed to quantify the instream flow needs for this reach of the Morrison Creek. Morrison Creek is classified as a medium stream (between 20 to 35 feet wide) and fishery surveys indicate the stream environment of the Morrison Creek supports a naturally reproducing brook trout (*Salvelinus fontinalis*) population. The Board staff relies upon the biological expertise of the cooperating agencies to interpret output from the R2CROSS data collected to develop the initial, biologic instream flow recommendation. This initial recommendation is designed to address the unique biologic requirements of each stream without regard to water availability. Three instream flow hydraulic parameters, average depth, percent wetted perimeter, and average velocity are used to develop biologic instream flow recommendations. The CDOW has determined that maintaining these three hydraulic parameters at adequate levels across riffle habitat types,

aquatic habitat in pools and runs will also be maintained for most life stages of fish and aquatic invertebrates (Nehring 1979; Espegren 1996).

The results of the R2CROSS data collection efforts for the upper segment indicate that an instream flow recommendation of 3.1 cfs, is required to maintain the three principal hydraulic criteria of average depth, average velocity and percent wetted perimeter, and 1.4 cfs, is required to maintain two of the three principal hydraulic criteria. The results of the R2CROSS data collection efforts for the lower segment indicate that an instream flow recommendation of 13.2 cfs, is required to maintain the three principal hydraulic criteria of average depth, average velocity and percent wetted perimeter, and 8.1 cfs, is required to maintain two of the three principal hydraulic criteria. However, these results are only based on the physical and biological data collected to date and do not incorporate any water availability constraints.

Water Availability Analysis and Instream Flow Recommendation

The CDOW staff conducted a preliminary evaluation of the stream hydrology to determine if water was physically available for an instream flow appropriation based on data collected at the USGS stream gage for Service Creek near Oak Creek, CO (#09237800). Subsequent to this preliminary analysis, the CWCB completed their geometric mean analysis of daily flows for Morrison Creek. We have used the CWCB's water availability analysis to adjust the seasonality and quantities of the R2CROSS instream flow recommendation so that the estimated daily flow of Morrison Creek reasonably exceeds the recommended instream flow amounts. These seasonal adjustments are reflected in the final instream flow recommendations shown below:

Muddy Creek to Silver Creek

- 3.1 cfs (April 1 through October 31)
- 1.4 cfs (November 1 through March 31)

Silver Creek to Yampa River

- 13.2 cfs (April 1 through August 15)
- 8.1 cfs (August 16 through March 31)

Relationship to State Policy

The CDOW supports the Instream Flow Program because the appropriation of instream flow water rights helps the CDOW meet our statutory mission as described in Title 33 of the Colorado Revised Statutes (CRS):

> §33-1-101 – "It is the policy of the state of Colorado that the wildlife and their environment are to be protected, preserved, enhanced, and managed for the use, benefit, and enjoyment of the people of this state and its visitors … that there shall be provided a comprehensive program designed to offer the greatest possible variety of wildlife-related recreational opportunity to the people of this state and its visitors and that, to carry out such program and policy, there shall be a continuous operation of planning, acquisition, and development of wildlife habitats and facilities for wildlife related opportunities."
>
> §33-2-106 – "(1) The division [of Wildlife] shall establish such programs including acquisition of land or aquatic habitat as are deemed necessary for management of nongame, endangered, or threatened wildlife. (2) … the division may enter into agreements with federal agencies or political subdivisions of this state or with private persons for administration and management of any area established under this section or utilized for management of nongame, endangered, or threatened wildlife."
>
> §33-5-101 – "It is declared to be the policy of the state that its fish and wildlife resources, and particularly the fishing waters within the state, are to be protected and preserved from the actions of any state agency to the end that they be available for all time and without change in their natural existing state, except as may be necessary and appropriate after due consideration of all factors involved."

In addition to meeting the state policy discussed above Morrison Creek satisfies criteria identified by the CWCB for ISF appropriations, including:

a) The recommendations have broad public support;

b) The proposed appropriations will have a positive impact on state or local economies;

c) The recommendations are part of a water acquisition strategy;

d) The recommendations are part of a collaborative solution to a unique natural resource issue with federal, state or local partners; and

e) The instream flow amount and timing recommended by CDOW and CWCB staff:

- Is based upon standard scientific methodology and an accurate R2CROSS analysis;
- Reflects the amount of water available for appropriation as an instream flow water right; and
- Is required to preserve the natural environment to a reasonable degree.

I have also attached copies of the field data sheets, the R2CROSS modeling runs, and stream photographs. If you have any questions regarding the attached information or the instream flow recommendations please contact me at (303)-291-7267.

Sincerely,

Mark Uppendahl
Colorado Division of Wildlife
Instream Flow Program Coordinator

Cc: Grady McNeill, CDOW Resource Support Section Manager – w/o attachments
Jay Skinner, CDOW Water Unit Program Manager – w/o attachments
Dave Graf, CDOW Water Resource Specialist – w/o attachments
Sherman Hebein, CDOW Senior Aquatic Biologist – w/o attachments
Ron Velarde, CDOW Northwest Regional Manager - w/o attachments
Bill Atkinson, CDOW Area Aquatic Biologist – w/o attachments
Jim Haskins, CDOW Area 10 Wildlife Manager - w/o attachments
Libby Miller, CDOW District Wildlife Manager – w/o attachments

Stream: Morrison Creek

Executive Summary

Water Division: 6
Water District: 44
CDOW#: 21294

Segment: Muddy Creek to Silver Creek

Upper Terminus: Muddy Creek
Latitude: 40º 10’ 57.8”N Longitude: 106º 45’ 00.0"W

Lower Terminus: Silver Creek
Latitude: 40º 14’ 40.6”N Longitude: 106º 47’ 13.3"W

Counties: Routt
Length: 5.0 miles
ISF Appropriation: 3.1 cfs (04/01 – 10/31)
2.0 cfs (11/01 – 03/31)

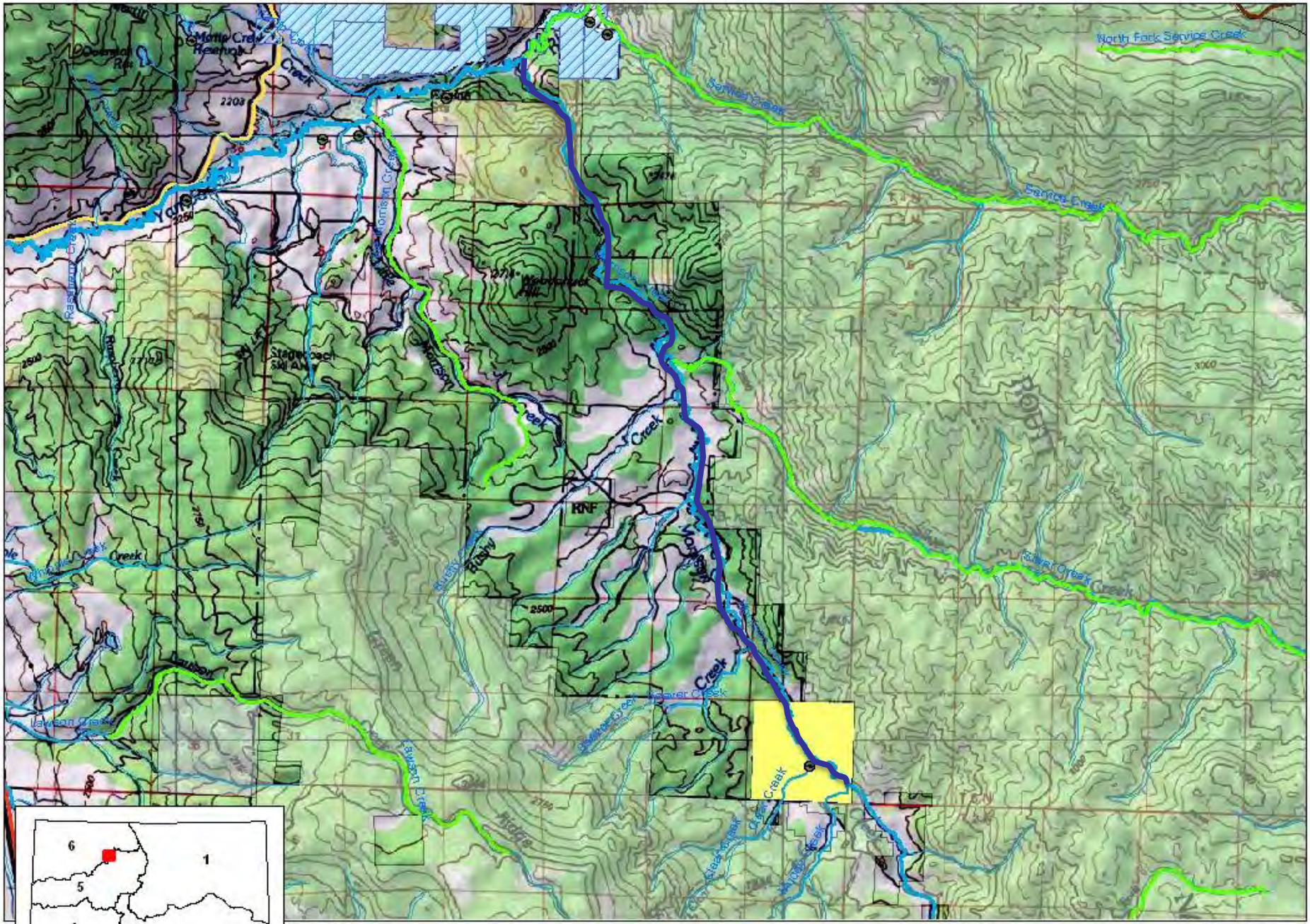
Segment: Silver Creek to Yampa River

Upper Terminus: **Silver Creek**
Latitude: 40º 14’ 40.6”N Longitude: 106º 47’ 13.3"W

Lower Terminus: Yampa River
Latitude: 40º 14’ 40.6”N Longitude: 106º 47’ 13.3"W

Counties: Routt
Length: 4.5 miles
ISF Appropriation: 13.2 cfs (04/01 – 07/31)
10.0 cfs (08/01 – 08/31)
7.9 cfs (09/01 – 03/31)

Exhibit D



Colorado Division of Wildlife
Routt County
Morrison Creek

Exhibit D

0 0.4 0.8 1.6 2.4
Miles


Yampa River
Silver Creek
Morrison Creek - SLB
Google
40°14'00.56" N 106°46'04.48" W
Jun 17, 2005 Eye alt 46466 ft

Exhibit D

HabiTech, Inc.

Water Resource Consultants

P.O. Box 944
Laramie, WY 82073
(307) 742-4902 (Office)
(307) 742-4752 (Fax)

Lora B. Wesche, President
Thomas A. Wesche, PhD, Principal Scientist

E-mail: lwesche@aol.com

16 September 2008

TO: Charles B. White, Petros & White, LLC
FROM: Tom Wesche
SUBJECT: **DRAFT** Summary of Morrison Creek Site Visit and Habitat Assessment

Introduction:

As you requested, I made a site visit to Morrison Creek (MC) on the Flying Horse Ranch in Routt County, CO on 23 August 2008. My purpose was to 1) assess the condition of the MC channel and trout habitat, 2) collect data to develop a preliminary estimate of MC's instream flow needs following the Colorado Water Conservation Board's (CWCB) procedures, and 3) establish a study site for conducting a Physical Habitat Simulation (PHABSIM) investigation to further identify the instream flow needs of MC for maintaining fish habitat. This **draft** memorandum summarizes my findings to date.

Methods:

I walked and surveyed MC from the downstream boundary of the ranch up to the confluence with Silver Creek. Numerous photographs were taken at waypoints marked on a Garmin GPSmap60CSx. These will be sent to you on a CD in the near future. Channel condition and stability was evaluated using the Stream Reach Inventory and Channel Stability Evaluation (SRI/CSE) procedure developed by the USDA Forest Service (Pfankuch 1975). Aquatic habitat condition was evaluated using both the EPA Rapid Assessment and the Montana Department of Environmental Quality Habitat Assessment protocols. The field data forms for these assessment tools are appended.

Following my walk-through, I established a PHABSIM study site just below the confluence of Silver Creek, following the guidance of Bovee (1997). Four cross-channel transects were selected to represent riffle, run and pool habitats and measurements of water depth, velocity, substrate and cover were made across each at a series of up to 23 locations. These measurements will likely be repeated in the spring and summer of 2009 at two other stream flow levels and habitat-flow modeling will then be performed following the guidance of the U. S. Geological Survey (2001). One of these four transects (Transect 3) was placed across a shallow riffle for preliminary instream flow analysis following the CWCB's R2CROSS procedure, as described by Nehring (1979), Wesche and Rechard (1980), Annear and Conder (1983) and Roach (2008). Transect hydraulics were modeled using the USDA Forest Service WinXSPRO program (Hardy et al 2005). The results for Transect 3 (TR3) are appended. A staff gage was installed on river right about 40 ft downstream of the bridge at the Silver Creek confluence to monitor water stage during transect measurement and to allow development of a stage-discharge relation following future site visits.

Results:
During my walk-through, I observed a number of trout, most appearing to be less than 10 inches in length. Mr. Dequine indicated the predominant game fish was brook trout (*Salvelinus fontinalis*), with lesser numbers of cutthroat trout (*Oncorhynchus clarki*) and rainbow trout (*O. mykiss*). Stream flow was measured at 7.44 cfs (staff gage reading = 1.35 ft), with conditions being low and clear.

Channel stability based on the SRI/CSE was rated as "fair" with an overall score of 101 ("fair" range, 77 - 114). Most Upper Bank attributes scored in the "good" category, while 9 of 11 Lower Bank and Channel Bottom attributes fell into the "fair" category. Of particular concern is the accelerated bar formation and stream bed deposition observed due to the apparent transport of relatively large volumes of sand and finer gravels into the study reach from the upstream Morrison Creek watershed. Sediment movement into the study reach from the Silver Creek watershed appeared to be substantially less.

Habitat quality for most parameters in the EPA and Montana assessment procedures scored as either "marginal" or "sub-optimal". Of particular concern are the marginal ratings for "aquatic structure as cover", "channel flow status", "riffle development", "benthic substrate", "embeddedness", and "sediment deposition". These ratings suggest the likely impairment of trout resting areas, food-production, and reproductive capacity due to the accelerated bar formation and sediment deposition discussed above. Such conditions could be further degraded by future water withdrawals. Overall, habitat quality was 60.5% of optimum based on the EPA procedure and 55% of optimum based on the Montana protocol.

Instream flow recommendations following the CWCB protocol are based upon the hydraulic criteria established by Nehring (1979). These criteria include maintaining a wetted perimeter of at least 50% of the bankfull condition, an average cross-section depth of 0.39 ft for a channel the width of MC, and an average cross-section velocity of 1.0 ft/sec. Protecting salmonids during the summer season is accomplished by ensuring all three criteria are met while winter protection is accomplished by meeting two of the three criteria (Roach 2008). Based upon these criteria and our hydraulic modeling results for Transect 3, a summer instream flow of about 18 cfs and a winter flow of about 4 cfs would be appropriate for trout protection on MC below the Silver Creek confluence.

Conclusions and Recommendations:
My overall assessment of the Morrison Creek channel and the habitat provided is that current conditions are well below optimum, with likely impairment of trout resting areas and cover, food production and reproductive capacity. Such reduced habitat quality is due to the relatively high volumes of sand and finer gravels being transported into the study reach from the upper MC watershed. Future water withdrawals would likely degrade trout habitat quality even further. A watershed-based restoration effort by concerned landowners and agencies could prove beneficial in reducing sediment loading to the system and improving trout habitat quality.

The instream flow recommendations presented above will provide some level of trout habitat

protection, but should be considered as preliminary at this time, pending completion of the recommended PHABSIM analysis in 2009. Recommendations developed using the PHABSIM approach will be more ecologically-based as they take into consideration the specific physical habitat requirements of the trout species and life stages residing within MC. The weighted-usable area versus flow plots developed for each species and life stage will provide greater insight into the benefits of protecting different stream flow levels and allow the trade-offs of different future water development scenarios to be more thoroughly evaluated. Further, the extended spatial (multiple transects and habitat types) and temporal (3 flow levels field-measured) coverage afforded by PHABSIM will provide more comprehensive and defensible instream flow recommendations.

Finally, based upon the degraded habitat conditions observed resulting from the excessive accumulation of finer sediments, I recommend flushing flow recommendations also be developed for MC to assure protection of at least a portion of the annual high flow runoff. Such high magnitude, short term flow events can "flush" accumulated fine sediments from the stream bed and help to improve and/or maintain overall trout habitat quality. The analysis necessary to develop such recommendations would use the hydraulic data already being collected at the PHABSIM transects in conjunction with a bed load transport model such as described by Parker (1990). The programs needed for this modeling effort are already contained within the WinXSPRO software package and would require little additional time and expense.

Literature Cited:

Annear, T. C. and A. L. Conder. 1983. Evaluation of instream flow methods for use in Wyoming. Completion Report, Wyoming Game and Fish Department, Cheyenne, WY.

Bovee, K. D. 1997. Data collection procedures for the Physical Habitat Simulation System. U. S. Geological Survey, Biological Resources Division, Mid-Continent Ecological Service Center, Fort Collins, CO.

Hardy, T., P. Panja and D. Mathias. 2005. WinXSPRO, a cross-section analyzer, user's manual, Version 3.0. USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-147. Fort Collins, CO.

Nehring, B. 1979. Evaluation of instream flow methods and determination of water quantity needs in the state of Colorado. CO Division of Wildlife, Fort Collins, CO.

Parker, G. 1990. Surface-based bed load transport relation for gravel rivers. Journal of Hydraulic Research , IAHR 28:4.

Pfankuch, D. J. 1975. Stream reach inventory and channel stability evaluation, a watershed management procedure. USDA Forest Service, Northern Region, Missoula, MT.

Roach, W. J. 2008. Letter to L. Bassi and J. Baessler, Colorado Water Conservation Board, Denver, CO. Trout Unlimited, Colorado Water Project, Boulder, CO, February 13.

U. S. Geological Survey. 2001. Open File Report 01-340, Mid-Continent Ecological Science Center, Fort Collins, CO.

Wesche, T. A. And P. A. Rechard. 1980. A summary of instream flow methods for fisheries and related research needs. Eisenhower Consortium Bulletin 9, 122.

Stream Reach Inventory and Channel Stability Evaluation (SRI/CSE) ratings by attribute

	Attribute	Excellent		Good		Fair		Poor	
	Upper Banks								
1	Landform slope	Bank slope gradient <30%	2	Bank slope gradient 30-40%	(4)	Bank slope gradient 40 - 80%	6	Bank slope gradient 60%+	8
2	Mass wasting hazard	No evidence of past or any potential for future mass wasting into channel	3	Infrequent and/or very small. Mostly healed over. Low future potential	(6)	Moderate frequency and size, with some raw spots eroded by water during high flows.	9	Frequent or large, causing sediment nearly yearlong or imminent danger of same	12
3	Debris jam potential	Essentially absent from immediate channel area	2	Present but mostly small twigs and limbs.	4	Present, volume and size are both increasing.	(6)	Moderate to heavy amounts, predominantly larger sizes.	8
4	Vegetation bank protection	90% + plant density. Vigor and variety suggests a deep, dense, soil binding, root mass	3	70-90% density. Fewer plant species or lower vigor suggests a less dense or deep root mass.	(6)	50-70%density. Lower vigor and still fewer species form a somewhat shallow and discontinuous root mass.	9	<50% density plus fewer species and less vigor indicate poor, discontinuous, and shallow root mass.	12
	Lower Banks								
5	Channel capacity	Ample for present plus some increases. Peak flows contained. W/D ratio <7	1	Adequate. Overbank flows rare. W/D ratio 8 to 15.	2	Barely contains present peaks. Occasional overbank floods. W/D ratio 15-25.	(3)	Inadequate. Overbank flows common.W/D ratio >25	4
6	Bank rock content	65% with large, angular boulders 12"+ numerous	2	40 to 65%, mostly small boulder to cobbles 6-12"	4	20 to 40% with most in the 3-6" diameter class.	(6)	<20%rock fragments of gravel sizes, 1-3" or less.	8
7	Obstructions - Flow deflectors, sediment traps	Rocks and old logs firmly embedded. Flow pattern without cutting or deposition. Pools and riffles stable	2	Some present, causing erosive cross currents and minor pool filling. Obstructions and deflectors newer and less firm.	4	Moderately frequent, moderately unstable obstructions and deflectors move with high water causing bank cutting and filling of pools.	(6)	Frequent obstructions and deflectors cause bank erosion yearlong. Sediment traps full, channel migration occurring.	8
8	Cutting	Little or non evident. Infrequent raw banks less than 6" high generally	4	Some, intermittently at outcurves and constrictions. Raw banks may be up to 12".	(8)	Significant. Cuts 12 to 24" high. Root mat overhangs and sloughing evident.	12	Almost continuous cuts, some over 24" high. Failure of overhangs frequent.	16
9	Deposition	Little or no enlargement of channel or point bars	4	Some new increase in bar formation, mostly from coarse gravels.	8	Moderate deposition of new gravel and coarse sand on old and some new bars.	(12)	Extensive deposits of predominantly fine particles. Accelerated bar development.	16
	Channel Bottom								
10	Rock Angularity	Sharp edges and corners, plan surfaces roughened	1	Rounded corners and edges, surfaces smooth and flat.	(2)	Corners and edges well rounded in two dimensions.	3	Well rounded in all dimensions, surface smooth.	4
11	Brightness	Surface dull, darkened, or stained. Generally not "bright"	1	Mostly dull, but may have up to 35% bright surfaces.	2	Mixture, 50-50% dull and bright, range: 35 - 65%	(3)	Predominantly bright, 65%+ exposed or scoured surfaces.	4
12	Consolidation or particle packing	Assorted sizes tightly packed and/or overlapping	2	Moderately packed with some overlapping.	4	Mostly a loose assortment with no apparent overlap.	(6)	No packing evident. Loose assortment, easily moved.	8
13	Bottom size distribution and percent stable materials	No changes in sizes evident. Stable materials 80-100%	4	Distribution shift slight. Stable materials 50-80%.	8	Moderate change in sizes. Stable materials 20-50%.	(12)	Marked distribution change. Stable materials 0-20%.	16
14	Scouring and deposition	Less than 5% of the bottom affected by scouring and deposition	6	5-30% affected. Scour at constrictions and where grades steepen. Some deposition in pools.	12	30-50% affected. Deposits and scour at obstructions, constrictions, and bends. Some filling of pools.	(18)	More than 50% of the bottom in a state of flux or change nearly yearlong.	24
15	Clinging aquatic vegetation (moss and algae)	Abundant. Growth largely moss-like, dark green, perennial. In swift water too.	1	Common. Algal forms in low velocity & pool areas. Moss here too and swifter waters.	2	Present but spotty, mostly in backwater areas. Seasonal blooms make rocks slick.	(3)	Perennial types scarce or absent. Yellow-green, short term bloom may be present.	4
	Overall rating		50		76		75		101

Add each column, add column scores

<38 = Excellent, 39-76 = Good, 77-114 = Fair, 115+ = Poor.

Stream Name: Morrison Ck Observer: TAV Date: 8/23/08 Overall Score: 101

Notes: Flying Horse Ranch "Fair"

Q lowa c loor

Appendix B

EPA

SITE HABITAT QUALITY EVALUATION FORM

Reach: Morrison Ck
Site: Flying Horse Ranch
Date: 8/25/08
Observer: TAW

Weather Conditions: Warm - Clear early - Lt breeze
River Flow Notes (Qualitatively describe volume, turbidity, recent precipitation, human-caused flow alterations):
Flow low + clear

Estimated channel width:_____
Approximate length of reach evaluated:_____

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
1. Aquatic Habitat Barriers and Diversion Sinks	No physical barriers prevent or inhibit movement of fish or other aquatic organisms through the stream reach; diversion structures are absent or prevent movement of aquatic organisms into ditches or other population sinks.	Minimal physical barriers exist but mostly do not inhibit movement of fish or other aquatic organisms through the stream reach; diversion structures partially prevent movement of aquatic organisms into ditches or other population sinks.	Some physical barriers exist that partially inhibit movement of fish or other aquatic organisms through the stream reach; diversion structures may allow movement of aquatic organisms into ditches or other population sinks.	Substantial physical barriers exist that mostly or entirely prevent movement of fish or other aquatic organisms through the stream reach; diversion structures encourage movement of aquatic organisms into ditches or other population sinks.
SCORE ___	20 19 (18) 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1

Shallow riffles may impede passage

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
2. Aquatic Structure as Cover	Greater than 70% of substrate provides fish cover; mix of snags, submerged logs, undercut banks, in-stream rocks larger than cobbles; structures stable (predicted to remain at least 5 years).	40-70% mix of stable habitat; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed, removed, or absent.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
SCORE ___	20 19 18 17 16	15 14 13 12 11	10 (9) 8 7 6	5 4 3 2 1

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
3. Velocity/ Depth Regimes	All 4 velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (slow is <0.3 m/s, deep is >0.5 m).	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity/ depth regime (usually slow-deep).
SCORE ___	20 19 18 17 16	15 14 13 12 (11)	10 9 8 7 6	5 4 3 2 1

Deep - Fast absent
Shallow - Slow abundant

Appendix B

Reach: Morrison Ck EPA
Site: Flying Horse 2/4
Date: 8/23/08
Observer: TJW

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
4. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
SCORE ___	20 19 18 17 16	15 14 13 12 11	10 9 (8) 7 6	5 4 3 2 1

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
5. Channel Alteration	Channelization absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.
SCORE ___	20 19 18 17 (16)	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
6. Frequency of Riffles	Occurrence of riffles relatively frequent; distance between riffles divided by width of the stream <7 (generally 5 to 7); variety of habitat is key.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is 7 to 15.	Occasional riffles; bottom contours provide some habitat; distance between riffles divided by the width of the stream is 15 to 25.	Generally all flat water or shallow runs; poor habitat; distance between riffles divided by the width of the stream is >25.
SCORE ___	20 19 18 17 16	15 14 13 12 (11)	10 9 8 7 6	5 4 3 2 1

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
7. Channel Sinuosity NOTE—evaluate in office	Bends in the stream increase stream length 3 to 4 times longer than if it was straight.	Bends in the stream increase stream length 2 to 3 times longer than if it was straight.	Bends in the stream increase stream length 1 to 2 times longer than if it was straight.	Channel straight; waterway has been channelized for a long distance.
SCORE ___	20 19 18 17 16	15 14 13 12 11	10 9 (8) 7 6	5 4 3 2 1

Appendix B

EPA 3/4

Reach: Morrison Ck
Site: Flying Horse
Date: 8/23/05
Observer: TBV

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
8. Bank Stability (score each bank, left bank is on left facing downstream)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
SCORE ___ Left Bank	10 9	8 (7) 6	5 4 3	2 1
SCORE ___ Right Bank	10 9	8 (7) 6	5 4 3	2 1

	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
9. Riparian Vegetation Cover and Disturbance (score each bank)	More than 75% of the streambank and riparian zone to 50 ft boundary covered by riparian vegetation including trees, shrubs, herbaceous vegetation, or wetland emergents; vegetative disruption by grazing or cutting minimal or absent; almost all plants allowed to grow naturally.	50-75% of the streambank and riparian zone to 50 ft boundary covered by riparian vegetation; disruption by grazing or cutting may be evident but not seriously affecting riparian vegetation structure.	25-50% of the streambank and riparian zone to 50 ft boundary covered by riparian vegetation; extensive areas of bare cobble or patches of bare soil; disruption by grazing or cutting may be evident and seriously affecting riparian vegetation structure.	Less than 25% of the streambank and riparian zone to 50 ft boundary covered by riparian vegetation; mostly bare cobble or bare soil; disruption by grazing or cutting may be present and severely affecting riparian vegetation structure.
SCORE ___ Left Bank	10 9	8 7 (6)	5 4 3	2 1 0
SCORE ___ Right Bank	10 9	8 7 (6)	5 4 3	2 1 0

Appendix B

Morrison Ck - Flying Horse Road EPA 7/4

8/23/05 TM	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
10. Riparian Vegetation zone width (score each bank)	Width of riparian zone > 50 ft; human activities (development, crops, parks, roads) have not impacted zone.	Width of riparian zone 35 to 50 ft; human activities have impacted zone only minimally.	Width of riparian zone 15 to 35 ft; human activities have impacted zone a great deal.	Width of riparian zone, 15 ft; little or no vegetation due to human activities.
SCORE ___ Left Bank	10 9	8 (7) 6	5 4 3	2 1 0
SCORE ___ Right Bank	10 9	8 (7) 6	5 4 3	2 1 0

COMMENTS

Total Score = 121 121/200 = 60.5% of optimum

Appendix B

Montana Habitat Assessment Field Data Sheet — Riffle/Run Prevalence

Stream Morrison Ck — Site Flying Horse Ranch
Date 8/23/08 — Investigator TAV

Habitat Parameter	Category			
	Optimal	Sub-Optimal	Marginal	Poor
1A. Riffle Development SCORE ( )	Well-developed riffle; riffle as wide as stream and extends two times width of stream. 9-10	Riffle as wide as stream but length less than two times width. 6-8	Reduced riffle area that is not as wide as stream and its length less than two times width. (5) 3-5	Riffles virtually non-existant 0-
1B. Benthic Substrate SCORE ( )	Diverse Substrate dominated by cobble. 9-10	Substrate diverse, with abundant cobble but bedrock boulder, fine gravel, or sand prevalent. 6-8	Substrate dominated by bedrock, boulders, fine gravel, sand or silt; cobble present. (4) 3-5	Monotonous fine gravel, sand, silt or bedrock substrate. 0-
2. Embeddedness SCORE ( )	Gravel, cobble, or boulder particles are between 0-25% surrounded by fine sediment (particles less than 6.35mm [.25"]) 16-20	Gravel, cobble, or boulder particles are between 25-50% surrounded by fine sediment. 11-15	Gravel, cobble, or boulder particles are between 50-75% surrounded by fine sediment. (8) 6-10	Gravel, cobble, or boulder particles are over 75% surrounded by fine sediment. 0-
3. Channel Alteration (channelization, straightening, dredging, other alterations) SCORE ( )	Channel alterations absent or minimal; stream pattern apparently in natural state. (16) 16-20	Some channelization present, usually in areas of crossings, etc. evidence of past alterations (before past 20 yr) may be present, but more recent channel alteration is not present. 11-15	New embankments present on both banks; and 40 to 80% of the stream reach channelized and disrupted. 6-10	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. 0-
4. Sediment Deposition SCORE ( )	Little or no enlargement of bars and less than 5% of the bottom affected by sediment deposition. 16-20	Some new increase in bar formation, mostly from coarse gravel; 5-30% of the bottom affected; slight deposition in pools. 11-15	Moderate deposition of new gravel, coarse sand on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition in pools prevalent. (7) 6-10	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition. 0-

MT DEQ (cont) 2/2

Morrison Ck at Flying Horse Ranch

8/23/08 TAW

Habitat Parameter	Category: Optimal	Sub-Optimal	Marginal	Poor
5. Channel Flow Status SCORE [ ]	Water fills baseflow channel; minimal amount of channel substrate exposed. 16-20	Water fills > 75% of the baseflow channel; < 25% channel substrate exposed. 11-15	Water fills 25-75% of the baseflow channel; riffle substrates mostly exposed. (8) 6-10	Very little water in channel, and mostly present as standing pools. 0-5
6. Bank Stability (Score each bank) *Note: determine left or right side while facing downstream.* SCORE [ ] (left) SCORE [ ] (right)	Banks stable; no evidence of erosion or bank failure; little apparent potential for future problems. 9-10	Moderately stable; infrequent, small areas of erosion mostly healed over. (7) (7) 6-8	Moderately unstable; moderate frequency and size of erosional areas; up to 60% of banks in reach have erosion; high erosion potential during high flow. 3-6	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of banks have erosion scars on side slopes. 0-2
7. Bank Vegetation Protection (note: reduce scores for annual crops and weeds which do not hold soil well, eg knapweed) SCORE [ ] (left) SCORE [ ] (right)	Over 90% of the streambank surfaces covered by stabilizing vegetation; vegetative disruption minimal or not evident; almost all plants allowed to grow naturally. 9-10	70-90% of the streambank surfaces covered by vegetation; disruption evident, but not affecting full plant growth potential to any great extent; more than one-half of potential plant height evident. (6) (6) 6-9	50-70% of the streambank surfaces covered in vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of potential plant height remaining. 3-5	Less than 50% of the streambank surfaces covered by vegetation; extensive disruption of vegetation; vegetation removed to 2 inches or less. 0-2
8. Vegetated Zone Width (score zone for each side of stream) SCORE [ ] (left) SCORE [ ] (right)	Width of vegetated zone > 100 feet. 9-10	Width of vegetated zone 30-100 feet. (7) (7) 6-8	Width of vegetated zone 10-30 feet. 3-5	Width of vegetated zone < 10 feet. 0-2

TOTAL SCORE (88)

88/160 = 55% of Optimum

STAGE (ft)	#SEC	AREA (sq ft)	PERIM (ft)	WIDTH (ft)	R (ft)	DHYD (ft)	SLOPE (ft/ft)	n	VAVG (ft/s)	Q (cfs)	SHEAR (psf)
0.3	T	1.79	16.83	16.77	0.11	0.11	0.003	0.026	0.69	1.23	0.02
0.4	T	3.68	20.62	20.55	0.18	0.18	0.003	0.026	0.98	3.61	0.03
0.5	T	5.8	21.9	21.81	0.26	0.27	0.003	0.026	1.28	7.46	0.05
0.6	T	7.99	22.17	21.99	0.36	0.36	0.003	0.026	1.59	12.68	0.07
0.7	T	10.31	27.36	27.09	0.38	0.38	0.003	0.026	1.64	16.93	0.07
0.8	T	13.19	30.46	30.11	0.43	0.44	0.003	0.026	1.81	23.92	0.08
0.9	T	16.26	31.36	30.94	0.52	0.53	0.003	0.026	2.06	33.44	0.1
1	T	19.37	31.79	31.3	0.61	0.62	0.003	0.025	2.3	44.62	0.11
1.1	T	22.52	32.21	31.66	0.7	0.71	0.003	0.025	2.54	57.17	0.13
1.2	T	25.7	32.64	32.02	0.79	0.8	0.003	0.025	2.76	71.06	0.15
1.3	T	28.92	33.07	32.38	0.87	0.89	0.003	0.025	2.98	86.26	0.16
1.4	T	32.18	33.47	32.71	0.96	0.98	0.003	0.025	3.2	102.82	0.18
1.5	T	35.46	33.79	32.95	1.05	1.08	0.003	0.025	3.41	120.84	0.2
1.6	T	38.77	34.1	33.19	1.14	1.17	0.003	0.025	3.62	140.15	0.21
1.7	T	42.1	34.42	33.43	1.22	1.26	0.003	0.024	3.82	160.76	0.23
1.8	T	45.45	34.74	33.67	1.31	1.35	0.003	0.024	4.02	182.65	0.24
1.9	T	48.84	35.15	34.02	1.39	1.44	0.003	0.024	4.21	205.52	0.26
2	T	52.26	35.6	34.42	1.47	1.52	0.003	0.024	4.39	229.52	0.27

IN THE DISTRICT COURT IN AND FOR

WATER DIVISION NO. 6

STATE OF COLORADO

Case No. 1326-77

IN THE MATTER OF THE APPLICATION FOR WATER RIGHTS OF THE COLORADO WATER CONSERVATION BOARD, ON BEHALF OF THE PEOPLE OF THE STATE OF COLORADO

IN SILVER CREEK, A NATURAL STREAM

IN THE WATERSHED OF THE YAMPA RIVER

IN ROUTT COUNTY.

RULING OF THE REFEREE

The undersigned water referee, having investigated the matter of the application on file herein, hereby makes the following ruling thereon:

That the applicant has provided acceptable proof to the court. That the applicant be, and is hereby, awarded an absolute surface water right to wit:

NAME AND ADDRESS

The Colorado Water Conservation Board
1313 Sherman Street, Room 823
Denver, Colorado 80203

WATER RIGHT

NAME OF DITCH, SPRING, OR OTHER STRUCTURE:

Silver Creek, a natural stream.

LOCATION:

Legal description of beginning and end points of minimum stream flow claimed: The natural stream channel from headwaters in sec 25, T3N, R83W 6th PM as the upstream terminus and confluence South Fork Silver Creek in sec 26, T3N, R83W 6th PM as the downstream terminus, being a distance of approximately 1 miles. This segment can be located on the Gore Pass, Green Ridge U.S.G.S. quadrangle.

W-1326

DESCRIPTION OF DITCH AND/OR PIPELINE:

(Means of Diversion): Not applicable

PRIORITY DATE:

September 23, 1977 provided, however, that this right shall be junior to all priorities awarded in cases filed prior to 1977, and otherwise junior as provided in C.R.S. 1973, 37-92-306.

AMOUNT OF WATER:

Flow in C.F.S.: 1 cfs.

USE OF WATER:

To maintain such minimum flows as are required to preserve the natural environment to a reasonable degree, pursuant to C.R.S. 1973, 37-92-103.

That the United States of America filed a statement of opposition. That a stipulation has been reached between the United States and the applicant herein and such stipulation is made part of and incorporated into any order entered in this case.

That the Colorado River Water Conservation District timely filed a statement of opposition and subsequently withdrew said opposition.

IT IS FURTHER ORDERED that applicant shall install and maintain such water measurement devices, recording devices, content gauges and inlet and outlet measurement and recording devices, as the case may be, as are deemed essential by the Office of the State Engineer, and the same shall be installed and operated in accordance with instructions from said office.

DATED this 18th day of November, 1980.

WATER REFEREE
Water Division No. 6
State of Colorado

No protest was filed in this matter. The foregoing ruling is confirmed and approved, and is made the Judgment and Decree of this court.

Dated: 12-31-80

Water Judge

NR WC WCM
CNR/2124/33

Exhibit F

FILED WATER COURT
DIV. 6
STATE OF COLORADO
OCT 19 1979
Ruth Ann Newlin
CLERK
BY .... DEPUTY

IN THE DISTRICT COURT IN AND FOR
WATER DIVISION NO. 6
STATE OF COLORADO

Case Nos. W-1262 through W-1269
W-1271 through W-1285
W-1306 through W-1322
W-1325 through W-1376
W-1378 through W-1389

IN THE MATTER OF THE APPLICATION FOR WATER RIGHTS OF THE COLORADO WATER CONSERVATION BOARD ON BEHALF OF THE PEOPLE OF THE STATE OF COLORADO)

STIPULATION

COME NOW the United States of America, by its attorneys, and the Applicant, Colorado Water Conservation Board, by and through its attorneys, and hereby stipulate and agree as follows:

1. The inclusion of the following provisions in the Referee's ruling and decree of Court entered thereon will protect the interests of the United States of America:

a. Applicant's rights are subject to all senior rights of the United States of America in the subject source, including properly decreed reserved rights, as are now or will hereafter be determined by law.

b. Applicant shall apply for any special use permits or rights-of-way, as the case may be, if the same are required by law for the use of public resources contemplated by the subject application and shall abide by the conditions set forth therein.

2. The parties hereto consent to the determination of this matter by the Referee pursuant to applicable statutes, and consistent with this Stipulation.

Exhibit F

3. Upon the issuance of the ruling and entry of a decree thereon consistent with this Stipulation, the opposition of the United States of America herein shall be deemed to have been withdrawn.

DATED this 3rd day of October, 1979.

FOR THE UNITED STATES ATTORNEY

HANK MESHORER, #6977
Trial Attorney
Department of Justice
Land and Natural Resources Division

P. O. Drawer 3607
Denver, Colorado 80201
Telephone: (303) 837-4961

FOR THE ATTORNEY GENERAL
OF THE STATE OF COLORADO

CONNIE L. PETERSON, #7604
Assistant Attorney General
Natural Resources Section

1525 Sherman Street, 3rd Floor
Denver, Colorado 80203
Telephone: (303) 839-3611

IN THE DISTRICT COURT IN AND FOR

WATER DIVISION NO. 6

STATE OF COLORADO

Case No. 1328-77

IN THE MATTER OF THE APPLICATION FOR WATER RIGHTS OF THE COLORADO WATER CONSERVATION BOARD, ON BEHALF OF THE PEOPLE OF THE STATE OF COLORADO

IN SILVER CREEK, A NATURAL STREAM

IN THE WATERSHED OF THE YAMPA RIVER

IN ROUTT COUNTY.

RULING OF THE REFEREE

The undersigned water referee, having investigated the matter of the application on file herein, hereby makes the following ruling thereon:

That the applicant has provided acceptable proof to the court. That the applicant be, and is hereby, awarded an absolute surface water right to wit:

NAME AND ADDRESS

The Colorado Water Conservation Board
1313 Sherman Street, Room 823
Denver, Colorado 80203

WATER RIGHT

NAME OF DITCH, SPRING, OR OTHER STRUCTURE:

Silver Creek, a natural stream.

LOCATION:

Legal description of beginning and end points of minimum stream flow claimed: The natural stream channel from confluence with the South Fork Silver Creek in sec 26, T3N, R83W, 6th PM as the upstream terminus and confluence with Morrison Creek in sec 11, T3N, R84W, 6th PM as the downstream terminus, being a distance of approximately 12 miles. This segment can be located on the Gore Pass, Green Ridge U.S.G.S. quadrangle.

W-1328

DESCRIPTION OF DITCH AND/OR PIPELINE:

(Means of Diversion): Not applicable

PRIORITY DATE:

September 23, 1977 provided, however, that this right shall be junior to all priorities awarded in cases filed prior to 1977, and otherwise junior as provided in C.R.S. 1973, 37-92-306.

AMOUNT OF WATER:

Flow in C.F.S.: 5 cfs.

USE OF WATER:

To maintain such minimum flows as are required to preserve the natural environment to a reasonable degree, pursuant to C.R.S. 1973, 37-92-103.

That the United States of America filed a statement of opposition. That a stipulation has been reached between the United States and the applicant herein and such stipulation is made part of and incorporated into any order entered in this case.

That the Colorado River Water Conservation District timely filed a statement of opposition and subsequently withdrew said opposition.

IT IS FURTHER ORDERED that applicant shall install and maintain such water measurement devices, recording devices, content gauges and inlet and outlet measurement and recording devices, as the case may be, as are deemed essential by the Office of the State Engineer, and the same shall be installed and operated in accordance with instructions from said office.

DATED this 18th day of November, 1980.

WATER REFEREE
Water Division No. 6
State of Colorado

No protest was filed in this matter.
The foregoing ruling is confirmed
and approved, and is made the
Judgment and Decree of this court.

Dated: 12-31-80

Water Judge

NR WC WCM
CNR/2124/31

Exhibit G

FILED WATER COURT
DIV. 6
STATE OF COLORADO

OCT 19 1973

Ruth Ann Mewborn
CLERK
BY ..... DEPUTY

IN THE DISTRICT COURT IN AND FOR

WATER DIVISION NO. 6

STATE OF COLORADO

Case Nos. W-1262 through W-1269
W-1271 through W-1285
W-1306 through W-1322
W-1325 through W-1376
W-1378 through W-1389

IN THE MATTER OF THE APPLICATION FOR WATER RIGHTS OF THE COLORADO WATER CONSERVATION BOARD ON BEHALF OF THE PEOPLE OF THE STATE OF COLORADO	)	STIPULATION

COME NOW the United States of America, by its attorneys, and the Applicant, Colorado Water Conservation Board, by and through its attorneys, and hereby stipulate and agree as follows:

1. The inclusion of the following provisions in the Referee's ruling and decree of Court entered thereon will protect the interests of the United States of America:

a. Applicant's rights are subject to all senior rights of the United States of America in the subject source, including properly decreed reserved rights, as are now or will hereafter be determined by law.

b. Applicant shall apply for any special use permits or rights-of-way, as the case may be, if the same are required by law for the use of public resources contemplated by the subject application and shall abide by the conditions set forth therein.

2. The parties hereto consent to the determination of this matter by the Referee pursuant to applicable statutes, and consistent with this Stipulation.

Exhibit G

3. Upon the issuance of the ruling and entry of a decree thereon consistent with this Stipulation, the opposition of the United States of America herein shall be deemed to have been withdrawn.

DATED this 3rd day of October, 1979.

FOR THE UNITED STATES ATTORNEY

HANK MESHORER, #6977
Trial Attorney
Department of Justice
Land and Natural Resources Division

P. O. Drawer 3607
Denver, Colorado 80201
Telephone: (303) 837-4961

FOR THE ATTORNEY GENERAL
OF THE STATE OF COLORADO

CONNIE L. PETERSON, #7604
Assistant Attorney General
Natural Resources Section

1525 Sherman Street, 3rd Floor
Denver, Colorado 80203
Telephone: (303) 839-3611

DISTRICT COURT, WATER DIVISION 6, COLORADO 522 Lincoln Steamboat Springs, CO 80487 **Concerning The Application For Water Rights Of:** THE COLORADO WATER CONSERVATION BOARD ON BEHALF OF THE PEOPLE OF THE STATE OF COLORADO, IN THE YAMPA RIVER, A NATURAL STREAM IN THE WATERSHED OF THE YAMPA RIVER, IN ROUTT COUNTY, COLORADO.	▲ **COURT USE ONLY** ▲
	Case No.: 01 CW 106 Div.:

FINDINGS OF FACT, JUDGMENT AND DECREE OF THE WATER COURT

This Application was filed on December 20, 2001 and was re-referred to the Water Judge on April 30, 2002. All notices required by law of the filing of this Application have been fulfilled and the Court has jurisdiction of this Application. Timely Statements of Opposition were filed by the Upper Yampa Water Conservancy District and the Robert and Elaine Gay Family Limited Partnership. On April 4, 2002, the Division Engineer submitted a Summary of Consultation and the Court has given it due consideration.

Having made such investigations as are necessary to determine whether the statements in the Application are true and being fully advised with respect to the subject matter of the Application;

THE WATER COURT FINDS AS FOLLOWS:

1. The name and address of the applicant is: Colorado Water Conservation Board, 1313 Sherman Street, Suite 721, Denver, Colorado 80203. Telephone number (303) 866-3441.

2. The name of the stream involved: Yampa River.

3. The source of the water is: Yampa River.

4. Legal description of the stream segment through which an instream flow is claimed:

The natural stream channel from the confluence with Morrison Creek at latitude 40° 17' 23"N and longitude 106° 48' 55"W as the upstream terminus and extending to the inlet of Lake Catamount at latitude 40° 20' 47"N and longitude 106° 48' 29"W as the downstream terminus, being a distance of approximately 5.4 miles. This segment can be located on the Blacktail Mountain U.S.G.S. quadrangle.

5. Use of the water: Instream flow to preserve the natural environment to a reasonable degree.

6. Date of initiation of appropriation: July 24, 2001.

7. Beneficial use: Water was first applied to beneficial use on July 24, 2001 pursuant to sections 37-92-102 (3), 103 (3) and 103 (4), C.R.S. (2001).

8. Amount of water claimed (ABSOLUTE): Instream flow of 72.5 cfs (April 1 – August 14); 47.5 cfs (August 15 – March 31).

9. The water rights of the Upper Yampa Water Conservancy District that have been decreed conditional or absolute for diversion to, storage in, or use in or from Stagecoach Reservoir, including the additional use of augmentation as may be decreed in Case No. 01CW41, Water Division No. 6, and including any existing decreed conditional water right that is made absolute in connection with enlargement of Stagecoach Reservoir, are senior in priority to the instream flow water right decreed herein. The water right of the Upper Yampa Water Conservancy District out of Morrison Creek as decreed in Case No. 94CW149 is senior in priority to the instream flow water right decreed herein.

10. The Board has determined that water is available for the full amount decreed herein, taking into account the operation of Stagecoach Reservoir consistent with its existing federal permits and/or licenses, the inflows into Stagecoach Reservoir from the Yampa River, and the inflows from Morrison Creek and side tributaries below Morrison Creek. However, the Board recognizes that the Upper Yampa Water Conservancy District's water rights in Stagecoach Reservoir are senior in priority to the instream flow water right decreed herein, and that the operation of the Stagecoach Reservoir and Dam, as it now exists and may hereafter be enlarged under its existing decrees as of July 19, 2001, in accordance with all applicable permits and licenses may limit the availability of water for this instream flow water right.

IT IS THEREFORE ORDERED, ADJUDGED AND DECREED:

The application is granted and a decree (ABSOLUTE) in the amount of 72.5 cfs (April 1 – August 14); 47.5 cfs (August 15 – March 31) is entered to preserve the natural environment to a reasonable degree through the stream segment as described in paragraph 4 above. The appropriation date for this water right is July 24, 2001.

The priority herein awarded was filed in the water court in the year of 2001 and shall be junior to all priorities filed in previous years. As between all rights filed in the same calendar year, priorities shall be determined by historical date of appropriation and not affected by the date of entry of ruling. The Applicant shall install and maintain such measuring devices and keep such records as the Division Engineer may require for administration of this right.

It is further **ORDERED** that a copy of this Ruling shall be filed with the Division Engineer and the State Engineer.

Dated this 8th day of December, 2003.

BY THE COURT

Michael O'Hara
Water Judge
Water Division No. 6

DISTRICT COURT, WATER DIVISION 6, COLORADO P.O. Box 773117 Steamboat Springs, Colorado 80477 Phone Number: (970) 879-5020	
CONCERNING THE APPLICATION FOR WATER RIGHTS OF: **UPPER YAMPA WATER CONSERVANCY DISTRICT** IN THE YAMPA RIVER OR ITS TRIBUTARIES IN ROUTT COUNTY, COLORADO.	▲ COURT USE ONLY ▲ **Case No. 07CW61** WATER DIVISION 6

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND JUDGMENT AND DECREE

This matter came before the Court upon the Application for Change of Water Rights. The Court having reviewed the Application and other pleadings in this case, and now being fully advised with respect to this matter, enters the following Findings of Fact, Conclusions of Law and Judgment and Decree:

FINDINGS OF FACT

1. **Applicant.** The Applicant is the Upper Yampa Water Conservancy District, c/o Kevin McBride, General Manager, whose address is P. O. Box 880339, Steamboat Springs, Colorado 80488 (hereafter, the "Applicant" or "District"). Applicant is represented in this matter by Weiss & Van Scoyk, LLP, 600 South Lincoln Avenue, Suite 202, Steamboat Springs, Colorado 80487, (970) 879-6053, and Balcomb & Green, P.C., P.O. Drawer 790, Glenwood Springs, Colorado 81602, (970) 945-6546.

A. The District was formed under the Water Conservancy Act of the State of Colorado by decree of the Routt County District Court in Civil Action 3815 on March 8, 1966. See generally C.R.S. § 37-45-101 through 153. The District's purpose was and is to conserve, develop, and stabilize supplies of water for domestic, irrigation, manufacturing and other beneficial uses and by the construction of works for such purposes as well as plan for and assist with the development of water resources of the District for municipal, domestic, industrial, recreational and other beneficial uses of water resources within the District among other purposes. The District is divided into three (3) divisions with a total of nine (9) directors, three from each division, who constitute the District's Board of Directors.

B. The District is authorized to appropriate water rights and initiate and implement plans for augmentation for the benefit of water users within the District's boundaries. C.R.S. §§37-45-118 and 37-92-302(5).

2. **Application**. The District filed an Application for Change of Water Rights on October 30, 2007. The Application requested to change a portion of the conditional water storage rights owned by the District and decreed to the Pleasant Valley Reservoir and Pleasant Valley Feeder Canal (the "Pleasant Valley Project Rights") upstream for storage in the Morrison Creek Reservoir from which it may be released to Morrison Creek for beneficial uses within Applicant's service area and/or delivered over the Morrison divide and down the Little Morrison Creek drainage for storage in Stagecoach Reservoir as it exists or may be enlarged for subsequent release and beneficial use within the District.

3. **Notice and Jurisdiction**. The Application was properly published in the resume for Water Division No. 6. All notices required by law have been properly made, including as required under C.R.S. § 37-92-302(3). The Court has jurisdiction over the Application and over all entities or persons who had standing to appear, even though they did not do so. The Court finds that the relief granted herein is consistent with the relief originally requested in the Application and for which public notice was provided.

4. **Opposition.** Statements of Opposition to the Application were timely filed by the following persons and entities: Dorothy J. Dickerson, Betty Jane Lay, and Hattie M. Miles (*pro se*), DeQuine Family, LLC, Flying Diamond Resources, and Kim Singleton (represented by Petros & White, LLC), James A. Larson (represented by Petros & White, LLC), the Colorado Water Conservation Board (represented by the Colorado Attorney General), the State and Division Engineer, Water Division 6 (represented by the Colorado Attorney General), the Catamount Metropolitan District (represented by Holland & Hart LLP), Catamount Development, Inc. (represented by Petros & White, LLC), the United States of America, through the United States Forest Service (represented by the United States Department of Justice), and the Robert and Elaine Gay Limited Partnership (*pro se*).

5. **Settlements.** The District has entered into stipulations approving the entry of a decree granting the Application in the form of this Decree with the following parties:

A. State Engineer and Division Engineer, Water Division 6, dated August 29, 2009.

B. Colorado Water Conservation Board, dated August 31, 2009.

C. Catamount Development Inc. and Catamount Metropolitan District, dated September 3, 2009.

D. Dorothy J. Dickerson, Betty Jane Lay, and Hattie M. Miles, dated September 5, 2009.

E. United States of America c/o U.S.D.A. Forest Service, dated September 21, 2009

F. DeQuine Family, LLC, Flying Diamond Resources, Kim Singleton, and James A. Larson withdrew their statements of opposition on May 22, 2009.

G. The Robert and Elaine Gay Limited Partnership withdrew its statement of opposition on October 1, 2009.

6. **District's Uses and Service Area.**

A. The District provides raw water for domestic, municipal, irrigation, commercial, industrial and other uses to its constituents and contractees within its service area. The District's service area covers nearly all of Routt County and a portion of Moffat County. It extends from the headwaters of the Yampa River and its tributaries downstream to an area just south and west of the City of Craig.

B. The District has existing contracts for delivery of water from Stagecoach Reservoir in the annual amount of 13,192 acre-feet for such uses. The District's contractees use and will use their contracted water supplies either by direct delivery and diversion for beneficial use or by augmentation under judicially approved plans that they have secured. The District also has adjudicated an area-wide augmentation plan, approved by this Court in Case No. 06CW49, to provide for additional contracts in the amount of up to 2,000 acre feet of annual releases for augmentation to additional District contractees. The District also operates a hydropower operation at Stagecoach Reservoir.

C. Water demand for domestic, irrigation, industrial, commercial and municipal uses in the upper Yampa Basin within Applicant's service area will increase in the future. The District has an identified planning period of 50 years. During that period, the demands for water under the District's existing contracts and anticipated future contracts are expected to increase because of changes in water rights administration requiring contractees to use more water directly or by exchange and growth within the individual service areas.

D. Applicant has an identified non-speculative use for the Pleasant Valley Project Rights as changed herein.

7. **Existing District Supplies and Need for Additional Supplies.** The District has existing water rights associated with Stagecoach Reservoir. The evidence demonstrates that the yield of Stagecoach Reservoir may not be adequate to provide for the full delivery of existing and anticipated contracts during a drought period. Therefore, in order to have a reliable supply, the District needs additional supplies, developed either by an enlargement of Stagecoach Reservoir and/or by the delivery of water from a basin such as Morrison Creek basin that is not tributary to Stagecoach Reservoir.

8. **Water Rights to be Changed**: The District owns and the following conditional water rights, collectively referred to as the "Pleasant Valley Project Rights" that are changed by this decree:

A. **Pleasant Valley Reservoir**:

(1) *Previous Decrees*: Case No. Civil Action 3926, as modified by decree entered in Case No. W-946-76, and Case No. 01CW41.

(2) *Court*: Routt County District Court, and District Court for Water Division No. 6, Colorado.

(3) *Decreed Places of Storage*: The left abutment is located at a point whence the SW corner of Section 33, Township 5 N., R. 84 W., bears South 38˚42' West at a distance of 11,076.6 feet. Pleasant Valley Reservoir also has the following three alternate storage locations as decreed in Case No. W-946-76:

(a) Alternate Storage Location No. 1: Woodchuck Reservoir: The intersection of the centerline axis of said dam and the left abutment thereof being located at a point whence the SW corner of Sec. 30, T4N, R84W, 6th P.M., bears S 66°30' W a distance of 16.660 feet.

(b) Alternate Storage Location No. 2: Yamcolo Reservoir: The intersection of the centerline axis of said dam and the right abutment thereof being located at a point whence the E1/4 corner of Sec. 16, T1N, R86W, 6th P.M., bears N 41°53' E a distance of 873 feet.

(c) Alternate Storage Location No. 3: Stagecoach Reservoir, formerly known as Bear Reservoir: The intersection of the centerline axis of said dam and the right abutment thereof being located at a point whence the W1/4 corner of Sec. 32, T4N, R84W, 6th P.M., bears S 47°35' W a distance of 4633 feet.

(4) *Source*: Yampa River and water discharged into the reservoir from the Pleasant Valley Feeder Canal.

(5) *Appropriation Date*: June 29, 1959, Priority No. 39A, for irrigation, domestic, stock watering, municipal, industrial and power uses (the "1959 Pleasant Valley Reservoir Right"), and June 29, 2001 priority date for augmentation and exchange for replacement purposes and all other augmentation uses as decreed in Case No. 01CW41, District Court, Water Division 6 (the "2001 Pleasant Valley Reservoir Right").

(6) *Amount*: 10,620 acre-feet out of 43,220 acre-feet conditionally decreed.

(7) *Decreed Uses*: Irrigation, domestic, stock watering, municipal, industrial and power uses and appropriative rights of exchange and substitution, augmentation and exchange for replacement purposes and all other augmentation uses.

B. **Pleasant Valley Feeder Canal**:

(1) *Previous Decrees*: Case No. Civil Action 3926 as modified by decree entered in Case No. W-946-76 and Case No. 01CW41.

(2) *Court*: Routt County District Court and District Court for Water Division No. 6, Colorado.

(3) *Decreed Point of Diversion and Places of Storage*: The Canal takes its water from Walton Creek and McKinnis Creek: The first headgate and point of diversion is located on the left bank of Walton Creek at a point whence the SW Corner of Sec. 10, Township 5 N., Range 84 W. bears S. 55˚41' West a distance of 5112.6 feet. The second headgate is located on the left bank of McKinnis Creek at a point whence the SW Corner of Sec. 16, Township 5 N., Range 84 W. bears S. 73˚22' West a distance of 7,576.6 feet. The Canal also has the same three alternate storage locations as Pleasant Valley Reservoir described above, as decreed in Case No. W-946-76.

(4) *Source*: Walton Creek and McKinnis Creek, tributaries to the Yampa River.

(5) *Appropriation Date*: June 29, 1959, Priority No. 39, for irrigation, domestic, stock watering, municipal, industrial and power uses (the "1959 Pleasant Valley Feeder Canal Right"), and June 29, 2001 priority date for augmentation and exchange for replacement purposes and all other augmentation uses as decreed in Case No. 01CW41, District Court, Water Division 6 (the "2001 Pleasant Valley Feeder Canal Right").

(6) *Amount*: 300 c.f.s., conditional.

(7) *Decreed Uses*: Irrigation, domestic, stock watering, municipal, industrial and power uses and appropriative rights of exchange and substitution, augmentation and exchange for replacement purposes and all other augmentation uses.

9. **Changes of Water Rights**: This Decree changes a portion of the Pleasant Valley Reservoir right to allow for storage at Morrison Creek Reservoir and subsequent delivery to Stagecoach Reservoir and provides for an alternate point of diversion for the Pleasant Valley Feeder Canal right at Morrison Creek Reservoir. Stagecoach Reservoir is described above in paragraph 8.A(3)(c). Morrison Creek Reservoir is more specifically described as follows:

A. *Location*: The centerline of the proposed Morrison Creek Reservoir dam intersects Morrison Creek at a location within the SE1/4, NE1/4, Section 10, Township 3 North, Range 84 West of the 6th P.M. at a point located 244 feet west of the east section line and 1,539 feet south of the north section line of said Section 10.

B. *Amount*: The Application claimed a total annual storage by fill and refill of 10,620 AF. Of this amount, 4,965 AF will be accounted for under the first fill, 4,965 will be accounted for under the second fill, and an additional estimated 690 AF will be lost to evaporation. Under this practice, the Morrison Creek Reservoir will be allowed annually to store water available to the Pleasant Valley Project Rights with deliveries then made to Stagecoach Reservoir, described below, and account for evaporative loss from Morrison Creek Reservoir.

C. *Source*: The Morrison Creek Reservoir is an on-channel reservoir to be located on Morrison Creek.

D. *Surface Area*. 330.45 acres.

E. *Height of Dam*: 47 feet

F. *Length*: 336 feet

G. *Capacity*: 4,965 AF

(1) Active Capacity: 4,900 AF

(2) Dead Storage: 65 AF

10. **Uses of Water**.

A. Water diverted and stored in the Morrison Creek Reservoir under the Pleasant Valley Project Rights may be released from the Morrison Creek Reservoir for the decreed uses identified in paragraph 8 above within the District's service area, and/or may be subsequently delivered to Stagecoach Reservoir and any future enlargement of said Reservoir for subsequent use within the District's service area.

B. Delivery from Morrison Creek Reservoir to Stagecoach Reservoir may be made by pipeline and/or ditch across the Morrison Divide and further pipeline, ditch and/or use of the stream channel of Little Morrison Creek and/or any tributary of Little Morrison Creek.

11. **Contemplated Draft of Rights to be Changed**.

A. The Court received evidence concerning the contemplated draft of the water rights to be changed, specifically the amount that would be available for diversion and storage at the original dam site of the Pleasant Valley Reservoir and the headgate of the Pleasant Valley Feeder Canal. The District's experts utilized available and reliable stream flow records regarding the Yampa River and its tributaries and a study period of 1985 through the 2007 water year in order to simulate the available diversions for the Pleasant Valley Reservoir and its Feeder Canal as if they were constructed at their original points of diversion and storage. Appropriate adjustments were made in the data to reflect the development of major diversion facilities, specifically including the District's Stagecoach Reservoir.

B. The analysis revealed that, if operated pursuant to their originally decreed priorities, the Pleasant Valley Project Rights could have diverted on average 42,607 acre-feet per year of storage, assuming that all of the water stored in Pleasant Valley Reservoir had been released prior to the end of each modeled storage year (March through February). The analysis considered a demand of existing water rights on Walton Creek totalling 289 cfs. During the most extreme dry periods, at least 34,200 acre feet of water was available for storage. This amount of water is sufficient to account for the 23,354 acre feet already made absolute in Yamcolo and Stagecoach Reservoirs and the additional 10,620 acre feet proposed for the Morrison Creek Reservoir. Accordingly, junior rights located downstream from the original points of diversion and storage shall not be required to by-pass any of the amount determined to be legally and physically available. In addition, terms and conditions have been included at paragraph 12, below, to prevent an enlargement of the draft on Morrison Creek or Walton Creek.

C. The Court has recognized in Case No. 01CW41, District Court, Water Division 6, that the Pleasant Valley Project Rights may be stored under the 2001 priority and used for augmentation and exchange for replacement purposes and all other augmentation uses. Consequently, the water stored under the Pleasant Valley Project Water Rights at the Morrison Creek Reservoir under the 2001 priority may be fully consumed and issues of contemplated diversion and return flows are not relevant in the Court's analysis of the contemplated draft.

D. The evidence establishes that water was available in the amounts claimed at the original points of diversion and place of storage, which points of diversion and places of storage are moved upstream as decreed herein.

12. **Administrative Conditions**.

A. *Storage limitations.*

(1) Applicant will, in consultation with the Division Engineer, establish a reservoir accounting system for Morrison Creek Reservoir. The accounting year shall have a start date of April 1. Water stored in the Morrison Creek Reservoir under the Pleasant Valley Project Rights will be first accounted for under the first fill up to an amount being the lesser of 4,965 acre feet or the actual constructed capacity of the Reservoir. Subject to the provisions of this decree, this first fill will be accounted for and administered under the 1959 Rights. Some or all of this water may be subsequently delivered to Stagecoach Reservoir as above provided and/or may be released for delivery down Morrison Creek and the Yampa River for beneficial use.

(2) As reservoir storage space becomes available in the Morrison Creek Reservoir as a result of deliveries to Stagecoach Reservoir, the District will continue to fill the Morrison Creek Reservoir, when in priority under the Pleasant Valley Project Rights, under a second fill with the total yearly storage and diversions not to exceed the lesser of 10,620 AF or the sum of the first and second fills of the actual constructed capacity of the Reservoir, plus evaporation replacement calculated by multiplying the surface area of the Reservoir by 1.84 feet/year. Subject to the provisions of this decree, the second fill under the Pleasant Valley Project Rights will be accounted for and administered under the 2001 Rights. Some or all of this water may be subsequently delivered to Stagecoach Reservoir as above provided for such beneficial use, and/or may be released for delivery down Morrison Creek and the Yampa River for such beneficial use. The District shall develop and implement an accounting system that tracks the amount and priority of water stored in Morrison Creek Reservoir and water that has been stored and subsequently delivered to Stagecoach Reservoir. The accounting system will be developed in concert with the Division Engineer's Office.

(3) The District shall separately account for water diverted and stored in Stagecoach Reservoir under the Pleasant Valley Project Rights changed herein (the "Morrison Creek Pool"). At the start of each accounting year (April 1st), all water remaining in storage in Stagecoach Reservoir in the Morrison Creek Pool and in Morrison Creek Reservoir, pursuant to the Pleasant Valley Project Rights changed herein, shall be credited against the first fill of Morrison Creek Reservoir for that year and shall be accounted for and administered under the 1959 Rights, in an amount not to exceed 4,965 AF. Any amount in excess of the first fill will be credited against the second fill of Morrison Creek Reservoir and accounted for and administered under the 2001 Rights, and will be considered to be stored in Morrison Creek Reservoir unless prior to April 1 the District notifies the Division Engineer that some portion of the 2001 Rights are being stored in Stagecoach Reservoir.

(4) In establishing its annual release schedule from Stagecoach Reservoir, the District may elect to first release water from its Morrison Creek Pool before releasing water that is stored in Stagecoach Reservoir from Yampa River Sources. The District shall separately account for releases made from the Morrison Creek Pool stored in Stagecoach Reservoir. Prior to any release of water from the Morrison Creek Pool in Stagecoach Reservoir the District shall notify the Division Engineer's Office of the date and rate of such release. After providing such notice, and to account for fluctuations in releases from the Reservoir, all releases of water stored in Stagecoach Reservoir shall be attributed to the Morrison Creek Pool until such time when the Morrison Creek Pool is vacated or the District notifies the Division Engineer of any cessation in the rate of release of water from Morrison Creek Pool or combination of releases from the Morrison Creek Pool and other Yampa River Sources. Absent such notice that the District is releasing water from the Morison Creek Pool, storage releases from Stagecoach Reservoir will be accounted as a release of water stored in Stagecoach Reservoir from Yampa River Sources.

B. *Bypass and other requirements*:

(1) In the event of a call placed by the Colorado Water Conservation Board for its instream flow right on the Yampa River decreed in Case No. 01CW106, which call is recognized and administered by the Division Engineer, the District shall maintain a bypass flow through the Morrison Creek Reservoir as the lesser of 1) the natural inflows to the Reservoir, or 2) the amount necessary to bring the Yampa River flow just downstream of the confluence with Morrison Creek up to the decreed instream flow amount.

(2) During such times when the District is filling Morrison Creek Reservoir under the Pleasant Valley Project Rights as changed herein, bypasses will be made at the dam of the Morrison Creek Reservoir as necessary to satisfy a call recognized and administered by the Division Engineer from existing decreed water rights with priorities senior to October 30, 2007, but junior to the June 29, 1959 appropriation for the Pleasant Valley Project Rights, that are then diverting from points located on potentially affected reaches of Morrison Creek, and the Yampa River from its confluence with Morrison Creek down to its confluence with Walton Creek, but only as further described below:

(a) In the event of a call placed by any water right(s) located between the confluence of Morrison Creek and the Yampa River and the confluence of Walton Creek and the Yampa River, which call is recognized and administered by the Division Engineer, bypasses will be made in the amount necessary (in conjunction with other rights junior to October 30, 2007) to satisfy such a call by such water right(s).

(b) In addition, should the Division Engineer allow the District to store the water changed herein out-of-priority as allowed by section 37-80-120(1), C.R.S. (2008), the District shall release, in the same reservoir accounting year, such water stored out-of-priority on demand (made in the same reservoir accounting year) of a downstream senior water storage right with a priority date senior to October 30, 2007 and that is located on Morrison Creek or the Yampa River between Morrison Creek Reservoir and the confluence of the Yampa River and Walton Creek whenever needed by such senior for its decreed uses in the same reservoir accounting year.

(3) In order to recognize the draft on Morrison Creek of the Pleasant Valley Reservoir Water Right, and to avoid an enlarged draft on the Morrison Creek basin, during such times when the District is filling under the 2001 Pleasant Valley Reservoir Right, the District shall not place a call on any water rights with priority senior to October 30, 2007. Additionally, during such times when the District is filling Morrison Creek Reservoir under the Pleasant Valley Feeder Canal 1959 or 2001 Rights, the District shall not place a call on any water rights diverting from Morrison Creek with priorities senior to October 30, 2007.

(4) So as not to enlarge the draft on Walton Creek, the District will only divert the Pleasant Valley Feeder Canal 1959 or 2001 Rights at Morrison Creek Reservoir when the flows in Walton Creek exceed 289 cfs. During such times when the District is filling Morrison Creek Reservoir under the Pleasant Valley Feeder Canal 1959 or 2001 Rights, the District shall not place a call on any water rights diverting from Morrison Creek with priorities senior to October 30, 2007.

(5) Bypasses made by the District under Subparagraph B.(1) above for the benefit of the Colorado Water Conservation Board's instream flow right on the Yampa River as decreed in Case No. 01CW106 may also be accounted to meet the bypasses required under Subparagraph B.(2) above for calling water rights senior to October 30, 2007 then diverting between the inlet to Lake Catamount and the confluence of the Yampa River and Walton Creek, less transit losses, if any, between Morrison Creek Reservoir and the inlet to Lake Catamount.

C. *Contract releases*. Contract releases of the Pleasant Valley Project Rights as changed herein and stored in Morrison Creek Reservoir or in Stagecoach Reservoir after delivery from Morrison Creek Reservoir in the same water administration year shall be in addition to any minimum by-pass or release obligations that exist or may be imposed for the respective reservoir.

D. *Existing gage*. If the existing Division of Water Resource's gage on Morrison Creek at the reservoir site is inundated by the District's project, the District shall move the gage to a location on Morrison Creek downstream of the reservoir for which the Division of Water Resources or Colorado Water Conservation Board has obtained a legal right to permanently place and maintain such gage. The relocated gage shall maintain its current configuration with a satellite monitoring system.

E. *Access*. The District shall grant the CWCB reasonable access to any measuring devices on Morrison Creek or Morrison Creek Reservoir that are installed by the District and come within the District's possession or control.

F. *Inundation*.

(1) The CWCB holds an instream flow water right ("ISF") decreed, in Case No. 77CW1328, District Court, Water Division 6, which extends upstream from the confluence of Morrison Creek and Silver Creek. Storage in the Morrison Creek Reservoir may inundate a portion of the CWCB's instream flow right on Silver Creek. The extent of this possible inundation of the CWCB's instream flow right as it relates to the proposed Morrison Creek Reservoir is not known with precision at this time. During the permitting process and prior to commencing construction of the Morrison Creek Reservoir that would inundate any existing CWCB instream flow right on Silver Creekdecreed in Case No. 77CW1328, the District shall request and obtain approval from the CWCB for such storage pursuant to the provisions of 2 CCR 408-2, Section 7, or any successor regulation regarding inundation then in effect. The District shall provide the Court and Division Engineer, Water Division 6, with a copy of any resolution, order, or other relevant proof, authorizing the inundation of the CWCB's instream flow right. Inundation shall not be allowed absent such approval and notice to the Court and Division Engineer, so long as the CWCB instream flow right decreed in Case No. 77CW1328 remains in effect.

(2) Storage of 4,645 AF under conditions of a probable maximum flood in the Morrison Creek basin may inundate lands within the boundary of the Sarvis Creek Wilderness Area. The boundary of the Wilderness Area as it relates to the proposed Morrison Creek Reservoir is not known with precision at this time. During the planning for design of the reservoir dam, the District shall cause the boundary line of the Wilderness Area at the inlet of the proposed reservoir adjacent to the Wilderness Area to be surveyed to the satisfaction of the United States Forest Service. The dam and spillway shall then be designed to the satisfaction of the United States Forest Service so that under the calculated probable maximum flood condition in the Morrison Creek basin the reservoir will not inundate any lands within the Wilderness Area as it then exists. Such design may result in a decrease in the anticipated dam and spillway crest elevation and a decrease in the volume that can be stored. If that occurs, the decreed volume will be

decreased accordingly in future diligence or absolute conversion applications regarding the right decreed in this case.

G. *National Forest System Lands*. To the extent that any of the diversion or conveyance structures described herein are to be located on National Forest System lands within the Routt National Forest the following conditions apply:

(1) The Routt National Forest is managed by the Untied States Department of Agriculture ("USDA") Forest Service. Applicant acknowledges that entry of a decree in this matter does not create any right, title or interest in the use of federal lands in the Routt National Forest. Any use of federal lands is contingent on and subject to Applicant having or obtaining appropriate authorization issued by the USDA Forest Service pursuant to pertinent statutes, regulations and policies applicable to the occupancy and use of National Forest System Lands.

(2) Applicant acknowledges that, absent other appropriate authorization recognized by the Forest Service, it must apply for and obtain appropriate authorization and approval for use and operation on federal lands before it can construct, reconstruct alter or revise any diversion or conveyance facilities on National Forest System Lands. For those water rights diverting on, traversing or otherwise occupying federal lands, any decree making the conditional water rights decreed in this matter absolute shall be consistent with nay limitations contained in the special use permit, easement or other authorization applicable to the exercise of that right on or across federal lands.

(3) Applicant recognizes that the consideration of and action on requests for necessary federal permits and authorizations shall be carried out pursuant to all pertinent statutes, regulations and policies applicable to the occupancy and use of National Forest System Lands, including, but not limited to the National Forest Management Act, federal Land Policy and Management Act, National Environmental Policy Act, and the Endangered Species Act. Applicant agrees that the entry of the decree herein shall not in any way limit the Authority of the USDA Forest Service with respect to the agency's consideration of and action on such requests for permits, approvals, or authorizations. Applicant recognizes that the USDA Forest Service can impose terms and conditions, and/or deny such requested contracts, approvals, or authorizations, and is not in any way limited or affected by the entry of the requested conditional water rights decree.

13. **Anti-Speculation**. The change of water right claimed herein is based upon a non-speculative intent, and the Applicant has a specific plan and intent to divert, store, capture, posses, and control water for specific beneficial uses.

14. **Feasibility**. Based upon the totality of the facts and circumstances of this case, the Court hereby concludes the Applicant has established that water can and will be diverted under the

subject conditional water right and will be beneficially used, and that this water supply project can and will be completed with diligence and within a reasonable time.

15. **No Injury**. Subject to the terms and conditions decreed herein, the change of water rights described herein will not injuriously affect the owner of or persons entitled to use water under any vested water right or a decreed conditional water right.

CONCLUSIONS OF LAW

16. To the extent they constitute legal conclusions, the foregoing Findings of Fact are incorporated herein.

17. **Change of Rights.** A "change of water right" includes a change of conditional water rights to new points of diversion or places of storage. C.R.S. § 37-92-103(5). Such a change shall be approved if it will not injuriously affect the owners of or persons entitled to use water under any vested water right or decreed conditional water right. C.R.S. § 37-92-305(3)(a). An adjudicated water right is entitled to maintenance of stream conditions existing at the time of its appropriation. *Colorado Water Conservation Board v. City of Central*, 125 P.3d 424 (Colo. 2005).

18. **Contemplated Draft of Conditional Water Rights**. A change of a conditional water right is limited to the contemplated draft of the original appropriation. *Twin Lakes Reservoir & Canal Co. v. City of Aspen*, 568 P.2d 45 (Colo. 1977).

19. **Substantiated Demands.** A governmental water entity must establish a reasonable water supply planning period, substantiated population projections based on a normal rate of growth, the amount of water necessary to satisfy projected demands above its current supply, and that it can and will complete the appropriation within a reasonable time. *Pagosa Area Water & Sanitation Dist. v. Trout Unlimited*, 170 P.3d 307 (Colo. 2007). "A governmental agency need not be certain of its future water needs; it may conditionally appropriate water to satisfy a projected normal increase in population within a reasonable planning period." *Id*. at 315; C.R.S. § 37-92-103(3)(a)(I) (2008).

JUDGMENT AND DECREE

20. The foregoing Findings of Fact and Conclusions of Law are incorporated herein.

21. **Change of Water Rights.** The change of water rights for the Pleasant Valley Project Rights is granted subject to the terms and conditions above stated, and the following additional conditions:

A. *Measurement*. The District shall install, maintain and operate such measuring devices as determined by the Division Engineer as necessary to administer the change of water rights approved herein.

B. *Accounting*. The District shall maintain and submit such accounting of the operation of the Pleasant Valley Project Rights as determined by the Division Engineer is necessary to administer the change of water rights approved herein.

C. *Avoidance of Wilderness Area*. The District shall not inundate any lands located within the Sarvis Creek Wilderness Area with the construction and operation of the Morrison Creek Reservoir.

D. *Effect of changes*. Applicant's analysis of the Pleasant Valley Project Rights established that the water would be available for diversion every year. In addition, terms and conditions have been considered to avoid any enlargement to the contemplated draft of the Pleasant Valley Project Rights. Therefore, existing decreed junior rights located downstream from the original points of diversion and storage shall not be required to by-pass any of the amount determined to be legally and physically available as a result of this upstream change in place of storage.

E. *Physically and legally available*. Any water diverted at Morrison Creek Reservoir under the Pleasant Valley Project Rights must be physically and legally available at the original points of diversion.

22. **Retained Jurisdiction**. The Court shall retain jurisdiction for reconsideration of the change of water rights approved herein for a period of five years after Morrison Creek Reservoir has been constructed and water delivered to Stagecoach Reservoir. The District shall give notice to the Court, the Division Engineer, and all opposers of the initiation of such operation for any of such decreed uses.

23. **Fully Integrated System**. As decreed in Case No. 01CW41, the conditional water rights decreed herein are individual components of Applicant's integrated water supply system. Consequently, in subsequent diligence proceedings, work on any one feature of Applicant's supply system as described in such Case No. 01CW41 and as may be supplemented by court decree in the future shall be considered in finding that reasonable diligence has been shown in the development of water rights for all features of Applicant's water supply system, including the Pleasant Valley Project Rights changed by this case. C.R.S. § 37-92-301(4)(b).

24. **Water Matters**. Review of determinations made by the Division Engineer or the State Engineer in administration of the change of water rights is a water matter over which the Water Court has exclusive jurisdiction.

****

It is accordingly ordered that these Findings of Fact, Conclusions of Law, Judgment and Decree shall be filed with the State Engineer and the Division Engineer for Water Division No. 6.

Done at the City of Steamboat Springs, Colorado, this 5th day of October, 2009.

BY THE COURT:

Michael A. O'Hara, III, Water Judge
Water Division No. 6

This document constitutes a ruling of the court and should be treated as such.

Court: CO Routt County District Court 14th JD

Judge: Michael Andrew O'Hara

File & Serve Transaction ID: 27360013

Current Date: Oct 05, 2009

Case Number: 2007CW61

Case Name: In the interest of: UPPER YAMPA WATER CONSERVANCY DISTRICT

/s/ Judge Michael Andrew O'Hara III

RESOURCE
ENGINEERING INC.

Kevin McBride
Upper Yampa Water Conservancy District
PO Box 880339
Steamboat Springs CO 80488

March 17, 2009

RE: CWCB Instream Flow Recommendations – Lower Morrison Creek

Dear Kevin:

Pursuant to your request, Resource Engineering, Inc, (RESOURCE) has examined the potential impact to the calculated firm yield of the District's proposed Morrison Creek Reservoir assuming a by-pass flow commitment of 13.2 cfs. It is our understanding that the 13.2 cfs bypass was selected for analysis as it coincides with the Colorado Water Conservation Board's (CWCB) recommended instream flow water right on Morrison Creek. The CWCB is planning to file for an instream flow right within the reach of Morrison Creek between its confluence with Silver Creek (upper terminus) and the Yampa River (lower terminus). The claimed flows will total 13.2 cfs between April 1st and July 31st, 10.0 cfs during August and 7.9 cfs September 1st through March 31st.

In order to assess the impact of providing a bypass flow equal to 13.2 cfs, or natural flow whichever is less, RESOURCE ran its Stagecoach/Morrison Creek firm yield model both with and without a 13.2 cfs bypass for lower Morrison Creek. The modeling reveals that the implementation of such a bypass would not diminish the potential firm yield of the project. The basis for this finding is summarized below.

1. The firm yield model operates such that sufficient inflow to the reservoir is bypassed during the spring/early summer fill season as necessary to satisfy the CWCB's instream flow right on the Yampa River below its confluence with Morrison Creek. During dry years, a bypass flow of approximately 30 cfs was necessary during the fill season in order to satisfy the Yampa River CWCB instream flow. This bypass for the Yampa River exceeds the 13.2 cfs of interest in this analysis and therefore, represents the controlling water right with respect to storage in Morrison Creek.

2. The reason that the firm yield of the Morrison Creek Reservoir remains consistent over a range of assumed bypass flows is due to the relatively high volume of water available to the reservoir over the spring runoff period. For example, during a dry year the basin will produce 15,000 to 20,000 AF of yield over the April through June fill season. As a result, the reservoir has opportunity to store a significant volume of water in excess of the various assumed bypass amounts.

We trust that this information will be helpful to you in your continuing study of the Morrison Creek Reservoir.

Sincerely,

RESOURCE ENGINEERING, INC.

R. Scott Fifer
Hydrologist

RSF/mmm
1047-1.4
Kevin McBride cwcb instream flow.doc

RESOURCE ENGINEERING INC.

Linda Bassi, Esq
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

July 7, 2010

RE: Request for Permission to Inundate a Portion of Silver Creek
Water Division No. 6, CWCB Case No. 77CW1328

1.0 INFORMATION

On behalf of the Upper Yampa Water Conservancy District (District), Resource Engineering, Inc. (RESOURCE) submits this request for permission to inundate a portion of the Colorado Water Conservation Board's (CWCB) instream flow water right (ISF) decreed on Silver Creek in Case No. 77CW1328, Water Division No. 6. This request for inundation is made pursuant to the provisions of 2 CCR 408-2, Section 7 and in fulfillment of certain terms and conditions contained in the District's Stipulation and Agreement entered into with the CWCB in Case Nos. 07CW61 and 07CW72, consolidated.

This request to inundate a portion of Silver Creek is necessitated by the District's plans to construct the Morrison Creek Reservoir. The reservoir's dam is located on Morrison Creek approximately 0.5 river miles downstream of its confluence with Silver Creek. The resulting storage pool would potentially cause inundation of approximately 3,720 feet of lower Silver Creek. The CWCB's Silver Creek ISF that is the subject of the request is decreed for 5.0 cfs and extends from its confluence with Morrison Creek upstream a distance of approximately 12 miles to its confluence with the South Fork of Silver Creek. The location of the planned Morrison Creek Reservoir and the CWCB's affected ISF right is shown in Figure 1, attached.

1.1 Background Information

The District was formed under the Water Conservancy Act of the State of Colorado by decree of the Routt County District Court in Civil Action 3815 on March 8, 1966. The District's purpose was and is to conserve, develop, and stabilize supplies of water for domestic, irrigation, manufacturing and other beneficial uses and by the construction of works for such purposes. The District is authorized to appropriate water rights and initiate and implement plans for augmentation for the benefit of water users within the District's boundaries. C.R.S. §§ 37-45-118 and 37-92-302(5). The construction and operation of the planned Morrison Creek Reservoir is an authorized use under the State's Water Conservancy Act.

Application and Decree. The District filed two applications for water storage rights on Morrison Creek in 07CW61 and 07CW72. In Case No. 07CW61, the District requested to change a portion of its conditional storage right associated with the Pleasant Valley Reservoir and Feeder Canal to an upstream location on Morrison Creek for beneficial uses within its service area and/or delivery to nearby Stagecoach Reservoir. In Case

No. 07CW72, the District requested a new storage right for the Morrison Creek Reservoir in the same location on Morrison Creek and for the same purposes as described in 07CW61. The application for a new junior right was filed by the District as a backup to its request for a change in the location of a portion of its Pleasant Valley Reservoir at the upstream Morrison Creek site. The water court subsequently consolidated the two cases due to their similarities.

Opposition was filed to the two applications by several individuals, the State and Division Engineer, and the CWCB. The District subsequently entered into stipulations with the parties and obtained a final decree from the court awarding storage rights on Morrison Creek of up to 10,620 acre feet (AF) associated with its Pleasant Valley Reservoir and Feeder Canal water rights. By stipulation with the parties, the District's application in Case No. 07CW72 was dismissed. As part of its Stipulation and Agreement entered into with the CWCB, the District agreed that prior to inundating any of the CWCB's instream flow right on Silver Creek it would request and obtain approval from the CWCB for such storage and partial inundation of Silver Creek pursuant to the provisions of 2 CCR 408-2, Section 7. This request by the District is made in fulfillment of this agreement.

The District delayed its pursuit of this inundation request in order to facilitate a coordinated discussion between the numerous State, local and federal agencies that would be involved in permitting the project. While that process is ongoing, the District has decided to pursue this request at this time as a result of conversations with CWCB staff and the CWCB's current instream flow request on Morrison Creek (CWCB ID: 10/6/A-003.).

2.0 PURPOSE AND NEED

The purpose of the Morrison Creek Reservoir is to help firm the storage supply in the District's nearby Stagecoach Reservoir and/or provide direct reservoir release for domestic, municipal, irrigation, and other uses to its constituents and contractees within its service area. The District's service area covers nearly all of Routt County and a portion of Moffat County. It extends from the headwaters of the Yampa River and its tributaries downstream to an area just south and west of the City of Craig. The Morrison Creek Reservoir is an "indentified project" to meet the objectives of the CWCB's "Water for the 21st Century" initiative.

The District has existing contract commitments in its Stagecoach Reservoir for delivery of approximately 13,000 AF annually. It also has adjudicated an area-wide augmentation plan, approved by the court in Case No. 06CW49, to provide for additional contracts in the amount of up to 2,000 AF of annual releases for augmentation to additional District contractees (total storage commitment of 15,000 AF). Hydrologic studies completed by the District conclude that the firm yield of water available for storage in Stagecoach Reservoir is approximately 9,247 AF annually, 5,753 AF short of the District's existing contract pool totals. Construction of the Morrison Creek Reservoir is planned to help firm the yield of Stagecoach Reservoir by importing water from the adjacent Morrison Creek basin into Stagecoach during dry year conditions. This imported supply would not otherwise have been available to Stagecoach Reservoir and

therefore helps firm its dry year yield. Modeling by RESOURCE has estimated that the Morrison Creek Reservoir has potential to improve the yield of Stagecoach Reservoir by approximately 5,300 AF annually. Thus, there is an existing need to construct the Morrison Creek Reservoir. The delivery of water to Stagecoach Reservoir will be made by pipeline and/or ditch across the Morrison Divide and further pipeline, ditch, and/or use of the stream channel of Little Morrison Creek for conveyance to Stagecoach Reservoir.

In addition to importing Morrison Creek water into Stagecoach Reservoir for project firming, some additional water supply would be available for release from Morrison Creek Reservoir for benefit of future users. Water demand for domestic, irrigation, commercial, and municipal uses in the Upper Yampa Basin within Applicant's service area will increase in the future. The District has an identified planning period of 50 years. During that period, the demands for water under the District's existing contracts and anticipated future contracts are expected to increase because of changes in water rights administration requiring contractees to use more water directly or by exchange and growth within the individual service areas. As a result, the reservoir will provide local economic benefits as it will help support continued residential and industrial development within Routt and Moffat Counties. The development of additional water for these purposes would facilitate development of Colorado's allotment of interstate waters.

3.0 RESERVOIR IMPACT ON SILVER CREEK ISF

This section addresses the requirements of 2 CCR 408-2, Section 7e: Required Information. It includes information concerning the location, size, and impact of the proposed inundation on the CWCB's Silver Creek ISF.

3.1 Location and Size of Inundation

The location of the planned Morrison Creek Reservoir is generally shown in Figure 1, Morrison Creek Reservoir Vicinity Map. Figure 2 provides the reviewer with additional detail of the planned reservoir site and possible inundation. As summarized in Figure 2, the Morrison Creek Reservoir, at the planned high water elevation of 7,915 feet, will impound approximately 4,965 AF and inundate 330 acres of land. Of this amount, 25.6 acres of lower Silver Creek will be inundated. Thus, approximately 7.7 percent of the reservoir's surface area is associated with the Silver Creek vicinity and is the subject of this inundation request.

3.2 Impact of Inundation on CWCB ISF and Natural Environment

Figure 3 provides additional detail concerning the potential impact of the Morrison Creek Reservoir inundation of Silver Creek. The inundation will directly impact approximately 3,720 linear feet of lower Silver Creek. This represents approximately 5.8 percent of the total 12 mile ISF reach. Information available from CWCB staff reports indicates that fishing surveys within the region have found a naturally reproducing brook trout

(Salvelinus fontinalis) population[1]. In addition, cutthroat trout (Oncorhynchus clarki) and rainbow trout (O. mykiss) have been reported in the area by Larson, et al.

Figure 3 displays that there is potential to inundate approximately 100 feet of Silver Creek within the National Forest Wilderness Area. However, additional boundary surveys of this area are planned and such survey might conclude that the inundation does not impact wilderness areas. In any event, inundation within the wilderness area will be avoided unless specifically authorized pursuant to federal law.

Section 404 Permit. The diversion and storage of water into the Morrison Creek Reservoir will also require a number of permits and approvals at the federal, state, and local levels prior to construction. At the federal level, a Section 404 Permit under the Clean Water Act will be required from the U.S. Army Corps of Engineers (Corps). To help determine the probability of whether or not a Section 404 Permit could be obtained for the Project, the District completed a wetlands investigation of the Morrison Creek Reservoir site. The District retained the services of IME, a company specializing in wetland evaluation and permitting. During a 15 day period between April 14, 2008, and November 6, 2008, IME identified and mapped wetland species within the study area. The level of investigation, although detailed, is considered preliminary and additional studies will be necessary in the future.

The field delineation methods used in the IME wetland delineation are those described in Vegetation Sections of the 1987 ***Corps of Engineers Wetlands Delineation Manual,*** specifically: *Step 7 – Characterize Each Plant Community Type, Step 9 – Determine Whether Hydrophytic Vegetation Is Present,* and *Step 18 – Establish a Baseline as Defined in the Routine – Onsite Inspection Methodology*. No formal wetland sample plots or field data sheets were evaluated in this initial evaluation. The primary emphasis in the initial wetland delineation was to identify dominant plant species along the wetland boundary as outlined in Step 7 of the Corps Manual.

Once the wetlands were identified, IME surveyed their location using GPS units capable of sub-meter accuracy. The data files were downloaded and inserted into 2 foot contour interval topographic mapping and the potential acres of impacts calculated. Based upon this study process the following findings were made:

1. Three wetland community types were identified within a 637.6 acre study area including:
    a. Tall Shrub Wetland Plants,
    b. Mid-height Herbaceous Wetland Plant, and
    c. Short Herbaceous Wetland Plants.
2. Within the entire study area, 50.3 acres of jurisdictional wetlands could be impacted by the Project.
3. Within the smaller Silver Creek study area there are approximately 16.5 acres of jurisdictional wetlands that could be impacted (Figure 3).
4. No fens or organic soils were found anywhere within the study area.

[1] CWCB Staff ISF Executive Summary Report for Morrison Creek (Lower Segment), undated

5 The investigation found no potential threatened, endangered, or sensitive plant species that could occur on this site.
6 IME determined that there were no specific fatal flaws relative to this site.

Threatened and Endangered Species. Under the Section 404 process, the Corps will complete a NEPA review of the Project merits. As part of its review, the Corps is required under the Endangered Species Act of 1973 to protect threatened and endangered species and their habitat. The effect of this Act is that the Corps, as part of the NEPA process, will review the project to determine if the proposed action will affect any species which are listed under the Endangered Species Act. Additionally, the Corps must review a list maintained by the Colorado Division of Wildlife (CDOW) that includes species of special concern, which are not legally protected but are considered when assessing impacts. During the evaluation of threatened, endangered, and other species of concern, the Corps will undergo formal consultation with the United States Fish and Wildlife Service (USFWS) as required by Section 7 of the Act.

The USFWS has previously determined that existing water depletions are adversely impacting four endangered fish species in the Yampa River basin. The four endangered species include: Colorado Pike Minnow, Razorback Sucker, Humpback Chub, and Bonytail Chub. Due to poor conditions that currently exist, the USFWS has determined that depletions associated with future water development projects may jeopardize the continued existence of the four fish species.

In 2005, the USFWS, in cooperation with the State of Colorado, prepared a Programmatic Biological Opinion (PBO) regarding the four endangered fish species in the Yampa River[2]. The PBO sets forth specific recovery actions designed to aid in the recovery of the four fish species while allowing water users in the Yampa River to develop new depletions estimated to be up to 53,000 AF per year. Under the PBO, new water projects involving depletions of more than 100 AF per year require signing of a Recovery Agreement and payment of a one time fee to fund recovery efforts under the USFWS's "Management Plan for Endangered Fishes in the Yampa River Basin and Environmental Assessment."[3] By signing the Recovery Agreement, the water users simply agree not to interfere with implementation of recovery actions under the management plan.

The potential stream depletions associated with the Morrison Creek Reservoir fall under the umbrella of the Programmatic Biological Opinion prepared by the USFWS. Because the depletions will exceed 100 AF per year, the District will have to formally recognize and sign the Recovery Agreement and pay a one-time fee to fund various recovery actions. As of 2006, the required fee was $16.67 per acre foot. Thus, for example, if the total stream depletions associated with the Project were estimated to be 1,000 AF, a one-time payment of $16,670 would be required. The exact amount of Project

[2] U.S. Fish and Wildlife Service (USFWS), 2005. Final Programmatic Biological Opinion on the Management Plan for Endangered Fishes in the Yampa River Basin. USFWS Mountain-Prairie Region (6), Lakewood, Colorado.
[3] Roehm, G.W., 2004. Management Plan for the Endangered Fishes in the Yampa River Basin and Environmental Assessment. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Lakewood, Colorado, 214 pages.

depletions are not known at this time. Not all of the reservoir storage will actually be depleted as much of the water will eventually return to the Yampa River basin as treated effluent or irrigation return flows. The actual depletions will depend upon the end use and will be assessed during the District's continuing review of the Morrison Creek Reservoir.

Cultural Resource. When a federal agency permits an activity that may affect cultural resources, the agency must consult with Colorado's State Historic Preservation Officer. State Agencies also become involved when the activity involved a nominated or listed State Registered property. The process involves the following three steps:

1. Evaluating the eligibility of the cultural resources.
2. Determining effects of proposed work on eligible or listed properties.
3. Seeking alternatives to avoid, minimize, or mitigate effects to such.

A 1993 study assessing a potential reservoir site on Morrison Creek downstream of the proposed Project did locate a number of isolated archaeological sites in the basin[4]. No determinations were made as to their eligibility to the National Register. These sites, as well as other potential sites in the study area, will be examined as part of a new archaeological survey.

4.0 PROPOSED MITIGATION

To help offset the inundation of a maximum of 3,720 linear feet of Silver Creek due to construction of the planned Morrison Creek Reservoir, the District will provide the following mitigation:

1. The District will work with CWCB staff and the Colorado Division of Wildlife to develop a reservoir management plan specific to Morrison Creek Reservoir. Such plan shall identify desirable fish species and set forth procedures to introduce and maintain populations in the reservoir.

2. The District will maintain minimum bypass flows on Morrison Creek below the planned Morrison Creek Reservoir. Presently, there are no ISF rights on Morrison Creek; however, the CWCB has declared its intent to appropriate new ISF rights on Morrison Creek in amounts of 13.2 cfs (April 1 – August 15) and 8.1 cfs (August 16 – March 31). If decreed, the CWCB ISF rights would be junior in priority to the Morrison Creek Reservoir. Under its mitigation proposal, the District would forego storage opportunities as necessary and agree to bypass the lesser of the recommended ISF water right or the natural flow of Morrison Creek.

In addition to the proposed mitigation measures, the District will also be required to meet the requirements of other state, local, and federal agencies' permitting requirements

[4] Hydrosphere Resource Consultants, 1993. Yampa River Basin Alternatives Feasibility Study Final Report. Colorado River Water Conservation District, Colorado Water Conservation Board, U.S. Bureau of Reclamation, Boulder, Colorado.

made at the time of application for the Morrison Creek Reservoir. This includes the COE wetlands (404), CDPHE's water quality certifications (401), USEPA 403b reviews, Federal Energy Regulatory Commissions (FERC) review, and Routt County's 1041 process.

We trust that this letter contains sufficient information to assess the District's request to inundate a portion of Silver Creek. Should you have any questions or require additional information, please do not hesitate to contact us.

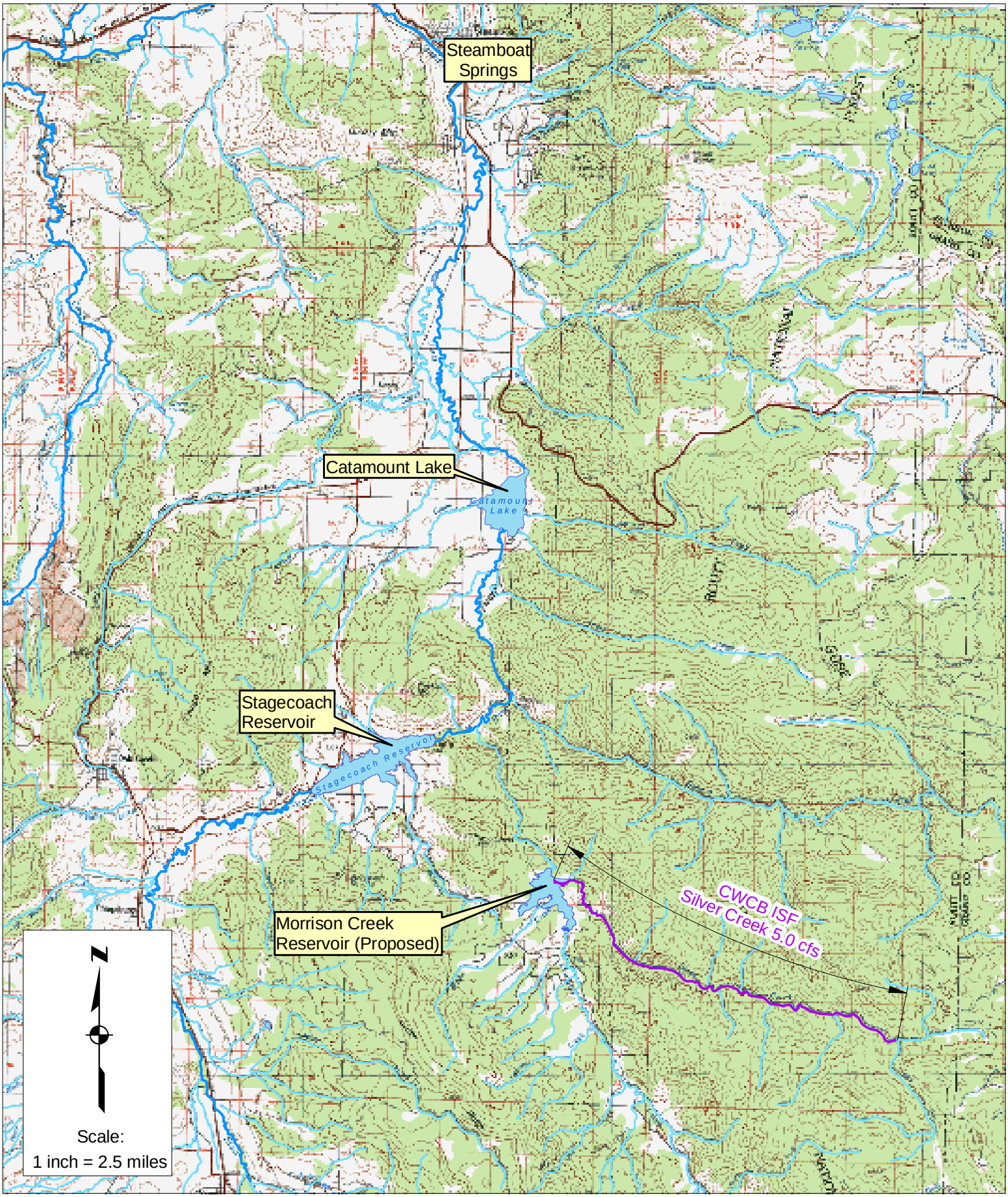
Sincerely,

RESOURCE ENGINEERING, INC.

R. Scott Fifer
Hydrologist

RSF/ll
1047-7.2.1

cc: Kevin McBride
David Hallford



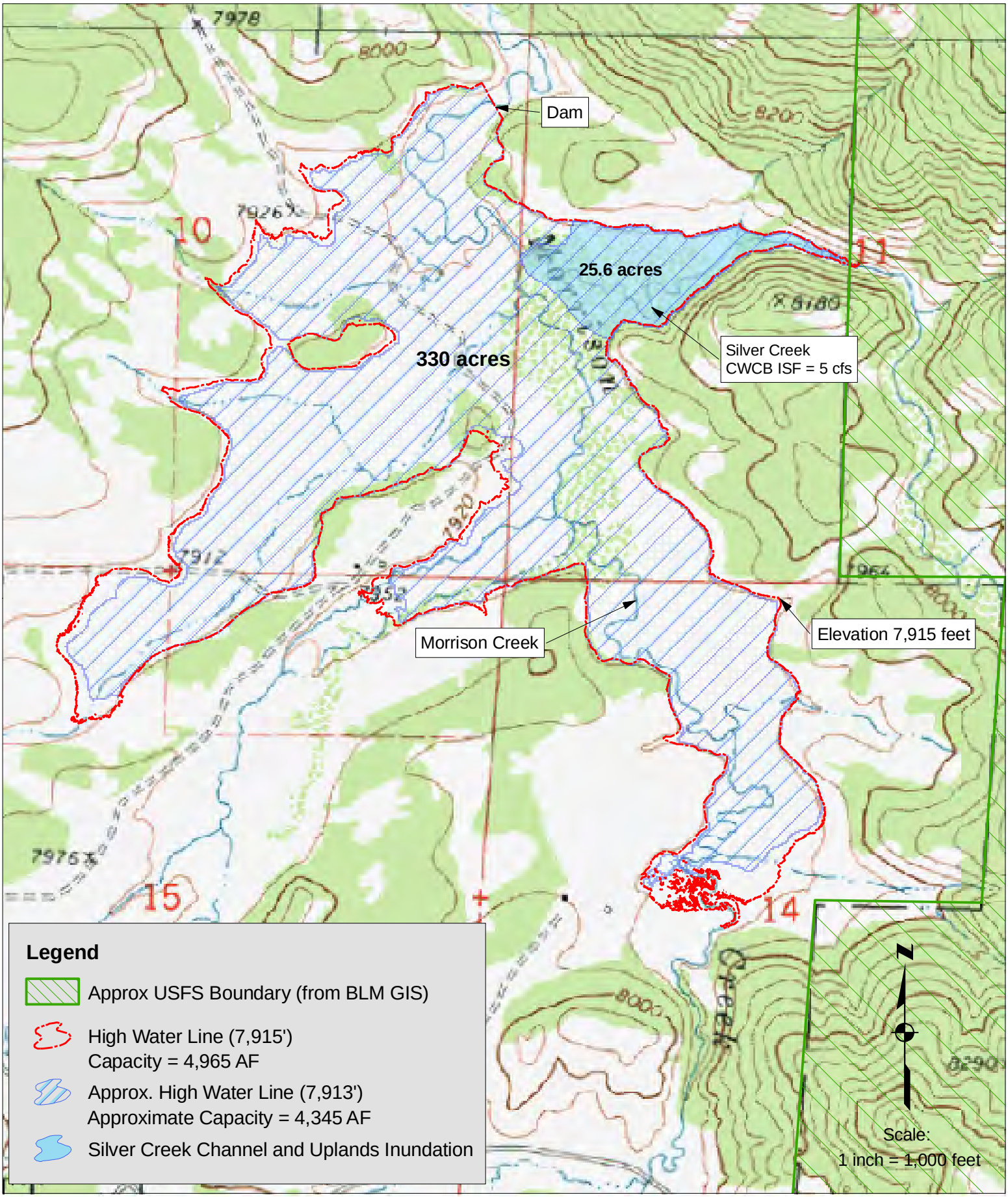
RESOURCE ENGINEERING, INC
909 Colorado Avenue
Glenwood Springs, CO 81601
(970) 945-6777 Voice (970) 945-1137 Facsimile

UPPER YAMPA WATER CONSERVANCY DISTRICT

Exhibit K
UYWCD Exhibit 6

FIGURE 1
Vicinity Map
CWCB Silver Creek ISF
Morrison Creek Reservoir

Date: 7/06/2010
File: 1047-7.0
Drawn by: RP
Approved by: RSF



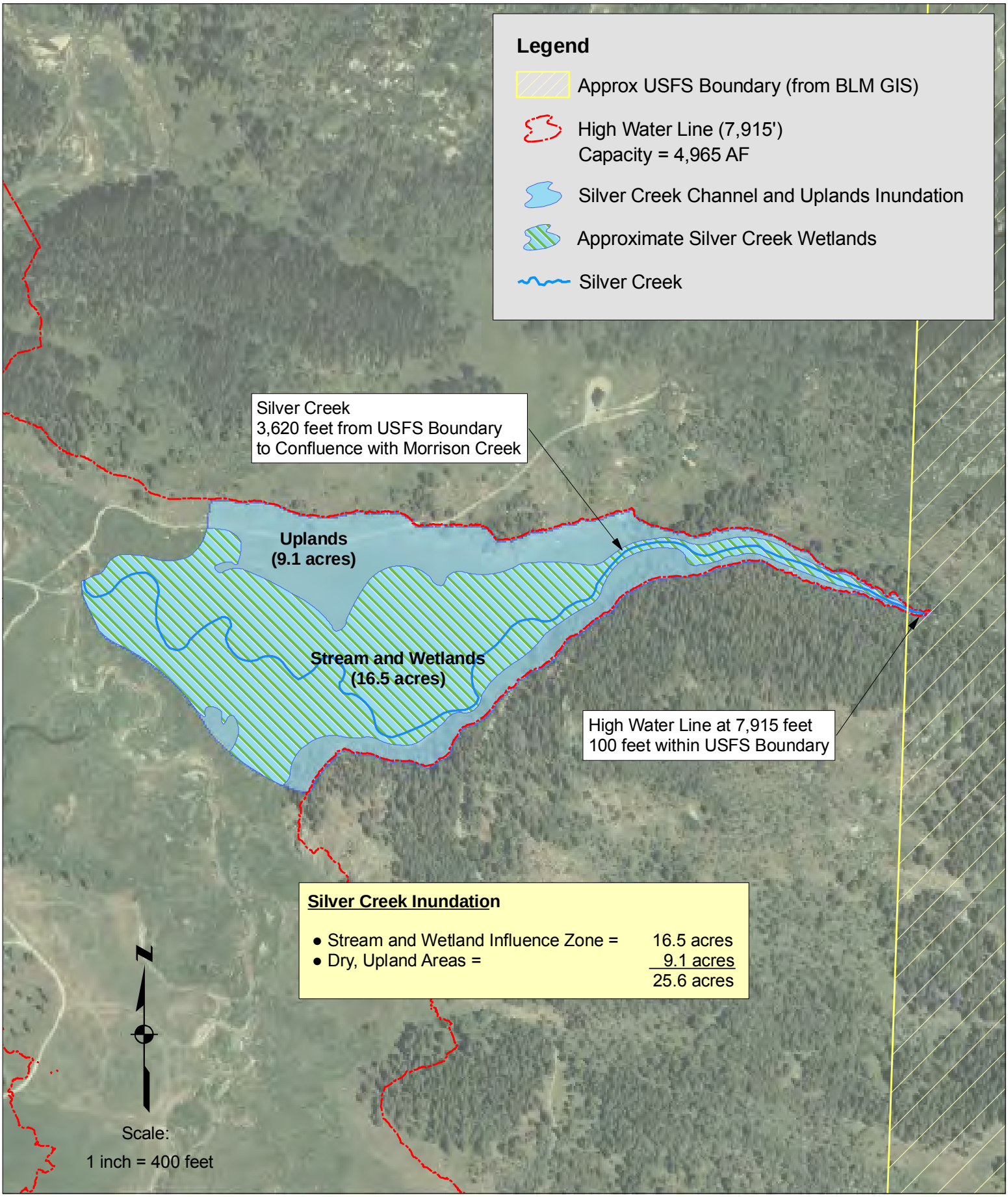
RESOURCE ENGINEERING, INC
909 Colorado Avenue
Glenwood Springs, CO 81601
(970) 945-6777 Voice (970) 945-1137 Facsimile

UPPER YAMPA WATER CONSERVANCY DISTRICT

FIGURE 2
Morrison Creek Reservoir
CWCB Inundation Request

Date: 7/06/2010
File: 1047-7.0
Drawn by: RP
Approved by: RSF

Exhibit K
UYWCD Exhibit 6



RESOURCE ENGINEERING, INC
909 Colorado Avenue
Glenwood Springs, CO 81601
(970) 945-6777 Voice (970) 945-1137 Facsimile

UPPER YAMPA WATER CONSERVANCY DISTRICT

FIGURE 3
Morrison Creek Reservoir
CWCB Inundation Request
Silver Creek Tributary

Date: 7/06/2010
File: 1047-7.0
Drawn by: RP
Approved by: RSF

DISTRICT COURT, WATER DIVISION 6, COLORADO
P.O. Box 773117
Steamboat Springs, Colorado 80477
Phone Number: (970) 879-5020

CONCERNING THE APPLICATION FOR WATER RIGHTS OF:
UPPER YAMPA WATER CONSERVANCY DISTRICT

IN ROUTT AND MOFFAT COUNTIES, COLORADO.

COURT USE ONLY

CASES NO. 07CW61 AND 07CW72 (CONSOLIDATED)

WATER DIVISION 6

ATTORNEYS FOR APPLICANT: UPPER YAMPA WATER CONSERVANCY DISTRICT

ROBERT G. WEISS, ATTY. REG. NO. 8521
JASON M. YANOWITZ, ATTY. REG. NO.32631
WEISS AND VAN SCOYK, LLP
600 SO. LINCOLN, SUITE 202
STEAMBOAT SPRINGS, CO 80487
TELEPHONE: (970) 879-6053
FAX: (970) 879-6058

DAVID C. HALLFORD, ATTY. REG. # 10510
SCOTT A. GROSSCUP, ATTY. REG. #35871
BALCOMB & GREEN, P.C.
POST OFFICE DRAWER 790
GLENWOOD SPRINGS, CO 81602
TELEPHONE: (970) 945-6546
E-MAIL: dhallford@balcombgreen.com
sgrosscup@balcombgreen.com

STIPULATION AND AGREEMENT AND MOTION TO APPROVE STIPULATION BETWEEN THE APPLICANT AND COLORADO WATER CONSERVATION BOARD

Applicant, Upper Yampa Water Conservancy District, and Opposer Colorado Water Conservation Board ("CWCB") through their respective attorneys, hereby stipulate and agree to the following and move the Court to enter an Order approving said Stipulation:

1. The District filed an application in Case No. 07CW61 to change conditional water rights decreed to the Pleasant Valley Reservoir and Pleasant Valley Feeder Canal ("Pleasant Valley Rights") to the Morrison Creek Reservoir Site on October 30, 2007. The

District also filed an application in Case No. 07CW72 for new conditional water storage rights for the Morrison Creek Reservoir on November 29, 2007.

2. The CWCB filed timely statements of opposition to the Application in Case No. 07CW61 on November 21, 2007 and in Case No. 07CW72 on January 31, 2008. These cases have been consolidated for purposes of trial by Order of the Court dated, February 18, 2009.

3. The District has incorporated terms and conditions into its proposed decree as requested by the CWCB. The CWCB consents to and will not oppose entry of a decree in this case that is no less restrictive than the decree versions dated 8-31-2009 attached hereto as **Exhibits A and B**, so long as the decree contains the agreed upon language in paragraph 4 and 5 of this stipulation.

4. Any decree entered in either of the two pending cases shall contain the following provision:

a. The CWCB holds an instream flow water right ("ISF") decreed, in Case No. 77CW1328, District Court, Water Division 6, which extends upstream from the confluence of Morrison Creek and Silver Creek. Storage in the Morrison Creek Reservoir may inundate a portion of the CWCB's instream flow right on Silver Creek. The extent of this possible inundation of the CWCB's instream flow right as it relates to the proposed Morrison Creek Reservoir is not known with precision at this time. During the permitting process and prior to commencing construction of the Morrison Creek Reservoir that would inundate any existing CWCB instream flow right on Silver Creek decreed in Case No. 77CW1328, the District shall request and obtain approval from the CWCB for such storage pursuant to the provisions of 2 CCR 408-2, Section 7, or any successor regulation regarding inundation then in effect. The District shall provide the Court and Division Engineer, Water Division 6, with a copy of any resolution, order, or other relevant proof, authorizing the inundation of the CWCB's instream flow right. Inundation shall not be allowed absent such approval and notice to the Court and Division Engineer, so long as the CWCB instream flow right decreed in Case No. 77CW1328 remains in effect.

5. The CWCB holds an instream flow ("ISF") on the Yampa River decreed in Case No. 01CW106, District Court, Water Division 6, which extends downstream from the confluence of Morrison Creek to the inlet of Lake Catamount Reservoir. The

decreed instream flow amount is 72.5 cfs from April 1 through August 14, and 47.5 cfs from August 15 through March 31. In the 01CW106 decree, dated December 8, 2003, and stipulation between UYWCD, US DOI, Trout Unlimited, and CWCB, dated July 19, 2001, all parties agreed that the ISF on the Yampa River relies on flows from Morrison Creek as follows: "The Board has determined that water is available for the full amount decreed herein, taking into account the operation of Stagecoach Reservoir consistent with its existing federal permits and/or licenses, the inflows into Stagecoach Reservoir from the Yampa River, and the inflows from Morrison Creek and side tributaries below Morrison Creek." In light of the 01CW106 decree and stipulation, any decree entered in either of the two pending cases shall contain the following provisions:

a. In the event of a call placed by the Colorado Water Conservation Board for its instream flow right on the Yampa River decreed in Case No. 01CW106, which call is recognized and administered by the Division Engineer, the District shall maintain a bypass flow through the Morrison Creek Reservoir as the lesser of 1) the natural inflows to the Reservoir, or 2) the amount necessary to bring the Yampa River flow just downstream of the confluence with Morrison Creek up to the decreed instream flow amount, after taking into account the curtailment of any junior rights on Morrison Creek and the Yampa River as a result of such call.

b. If the existing DWR gage on Morrison Creek at the reservoir site is inundated by the applicant's project, applicant agrees to move the gage to a location on Morrison Creek downstream of the reservoir for which the Division of Water Resources or Colorado Water Conservation Board has obtained a legal right to permanently place and maintain such gage. The relocated gage shall maintain its current configuration with a satellite monitoring system.

c. Applicant agrees, for purposes of this Stipulation, to grant the CWCB reasonable access to any measuring devices on Morrison Creek or Morrison Creek Reservoir that are installed by Applicant and come within Applicant's possession or control.

6. This Stipulation is entered into by way of compromise and settlement of this litigation and any agreement by the CWCB not to oppose entry of this proposed decree shall not be construed as a commitment to include any specific finding of fact, conclusion of law or specific engineering methodologies or administrative practices in future stipulations or as binding on the CWCB other than in the current proceeding.

7. The CWCB shall continue to receive copies of all pleadings in this case so as to ensure compliance with the provisions of this Stipulation.

8. The Stipulation shall be binding on the parties, their successors and assigns.

9. Each Party shall bear its own costs and attorney's fees.

10. The District shall file this Stipulation with the Water Court and may request an Order from the Court approving that Stipulation. This Stipulation shall be enforceable as an agreement between the Parties and, upon Court approval, as an Order of the Court.

Dated this 31st day of August 2009.

JOHN W. SUTHERS, ATTORNEY GENERAL

By: */s/ John J. Cyran*
John J. Cyran, #
First Assistant Attorney General
1525 Sherman Street, 7th Floor
Denver, CO 80203

Attorneys for Opposer
Colorado Water Conservation Board

WEISS AND VAN SCOYK, LLP
BALCOMB & GREEN, P.C.

BY: */s/ Scott A. Grosscup*
David C. Hallford, #10510
Scott A. Grosscup, #35871
P. O. Drawer 790
Glenwood Springs, CO 81602

Attorneys for Applicant
Upper Yampa Water Conservancy District

CERTIFICATE OF SERVICE

I hereby certify that I have this date of August 31, 2009 a copy of the above and foregoing STIPULATION AND AGREEMENT AND MOTION TO APPROVE STIPULATION BETWEEN THE APPLICANT AND COLORADO WATER CONSERVATION BOARD were electronically served and sent by U.S. Mail upon the following:

1-19 of 19 Case Parties				
Party Name	Party Type	Attorney	Attorney Type	Firm
CATAMOUNT DEVELOPMENT, INC.	Opposer	White, Charles B.	Privately Retained Attorney	Petros & White LLC
CATAMOUNT METROPOLITAN DISTRICT.	Opposer	Hamilton, Mark E	Privately Retained Attorney	Holland & Hart LLP-Denver
CATAMOUNT METROPOLITAN DISTRICT.	Opposer	Winokur, Meghan	Privately Retained Attorney	Holland & Hart LLP-Denver
COLORADO WATER CONSERVATION BOARD.	Opposer	Odell, Devin	Attorney General	CO Attorney General
DICKERSON, DOROTHY J	Opposer	Pro Se	N/A	Pro Se-
LAY, BETTY JANE	Opposer	Pro Se	N/A	Pro Se-
LIGHT, ERIN	Division Engineer	Div 6 Water Engineer	Privately Retained Attorney	Division 6 Engineer
MILES, HATTIE M	Opposer	Pro Se	N/A	Pro Se-
ROBERT AND ELAINE GAY LIMITED PARTNERSHI.	Opposer	Pro Se	N/A	Pro Se-
STATE AND DIVISION ENGINEERS.	Opposer	Odell, Devin	Attorney General	CO Attorney General
UPPER YAMPA WATER CONSERVANCY DISTRICT.	Applicant	Weiss, Robert Gary	Privately Retained Attorney	Weiss & Van Scoyk LLP
USDA FOREST SERVICE.	Opposer	Dubois, James J	Alternate Defense Counsel	US Department of Justice-Denver

/s/ Elaine L. Benson
Elaine L. Benson, Paralegal

This document was filed electronically. An original signature copy is available for inspection at the office of the originating attorney, pursuant to Colorado Rule of Civil Procedure 121, § 1-26.

WATER COURT, WATER DIVISION NO. 6, STATE OF COLORADO

Case No. 95CW35

REFEREE'S RULING - SURFACE (CONDITIONAL IN PART, ABSOLUTE IN PART)

IN THE MATTER OF THE APPLICATION FOR WATER RIGHTS OF:

DEQUINE FAMILY LLC OF MORRISON CREEK RANCH

IN ROUTT COUNTY, STATE OF COLORADO

The above captioned Application was filed on February 24, 1995, amended on December 1, 1995 and was referred to the Water Referee in accordance with Sections 37-92-101, et seq., C.R.S. On May 1, 1995 the Division Engineer submitted a Summary of Consultation recommending approval of the Application with certain clarifications which are incorporated herein.

No Statement of Opposition to the Application has been filed and the time for filing such statement has expired.

The Water Referee has made such investigations as are necessary to determine whether or not the statements in the Application are true and has become fully advised with respect to the subject matter of the Application.

IT IS HEREBY THE RULING OF THE WATER REFEREE:

GENERAL FINDINGS

1. The name and address of the Applicant is:

   Lou Dequine
   22100 RCR 16
   Oak Creek, CO 80467

2. The name of the structures are:

   Dequine Ditch, Dequine Ditch Alt Point #1, Dequine Ditch Alt Point #2, Dequine Spring.

3. The legal description for each point of diversion is:

   Dequine Ditch: SW 1/4 SW 1/4 of Section 11 Township 3 North, Range 84 West of the 6th P.M. at a point 500 feet East of the West Section line and 1200 feet North of the South Section line of said Section;

Dequine Ditch Alt Point #1: NW 1/4 SW 1/4 of Section 11 Township 3 North, Range 84 West of the 6th P.M. at a point 2600 feet South of the North Section line and on the West line of said Section;

Dequine Ditch Alt Point #2: NW 1/4 NW 1/4 of Section 14 Township 3 North, Range 84 West of the 6th P.M. at a point 1000 feet East of the West Section line and 600 feet South of the North Section line of said Section;

Dequine Spring: NE 1/4 SE 1/4 of Section 10 Township 3 North, Range 84 West of the 6th P.M. at a point 200 feet West of the East Section line and 1800 feet North of the South Section line of said Section.

4. The source of the water for each structure is:

Dequine Ditch: Morrison Creek of Yampa River;

Dequine Ditch Alt Point #1: Morrison Creek of Yampa River;

Dequine Ditch Alt Point #2: Morrison Creek of Yampa River;

Dequine Spring: Morrison Creek of Yampa River.

5. The date of the appropriation is:

Dequine Ditch: August 31, 1991;

Dequine Ditch Alt Point #1: August 31, 1991;

Dequine Ditch Alt Point #2: August 31, 1991;

Dequine Spring: June 1, 1968.

6. The appropriation was initiated by:

Dequine Ditch: pumped from creek into ditch;

Dequine Ditch Alt Point #1: pumped from creek into ditch;

Dequine Ditch Alt Point #2: pumped from creek into ditch;

Dequine Spring: livestock drinking water.

ABSOLUTE SURFACE WATER RIGHT

7. Water was applied to beneficial use in connection with following structure on the date indicated:

Dequine Ditch: August 31, 1991;

Dequine Ditch Alt Point #1: August 31, 1991;

Dequine Ditch Alt Point #2: August 31, 1991;

Dequine Spring: June 1, 1968.

8. The amount of water awarded absolutely is:

Dequine Ditch: 1.25 cfs, absolute;

Dequine Ditch Alt Point #1: 1.25 cfs, absolute;

Dequine Ditch Alt Point #2: 1.25 cfs, absolute;

Dequine Spring: 0.033 cfs, absolute.

9. The use of water under this absolute water right is:

Dequine Ditch: irrigation, livestock;

Dequine Ditch Alt Point #1: irrigation, livestock;

Dequine Ditch Alt Point #2: irrigation, livestock;

Dequine Spring: livestock.

10. The water right awarded herein is awarded absolutely and unconditionally, subject, however, to all earlier priority rights of others and to the integration and tabulation by the Division Engineer of such priorities and changes in accordance with the law.

CONDITIONAL SURFACE WATER RIGHTS

11. The amount of water awarded conditionally is:

Dequine Spring: no additional amount of water is awarded conditionally.

12. The use of water under this conditional water rights is:

Dequine Spring: domestic and irrigation of one acre.

13. The water rights awarded herein are conditional and are hereby continued in full force and effect until July, 2002. If Applicant desires to maintain such conditional decree, an application for a quadrennial finding of reasonable diligence shall be filed on or before the last day of July 2002 or a showing made on or before such date that the conditional water rights have become an absolute water right by reason of the completion of the appropriation.

14. The conditional water rights herein awarded are subject to all earlier priority rights of others and to the integration and tabulation by the Division Engineer of such priorities and changes in accordance with law.

It is accordingly ORDERED that this Ruling shall be filed with the Water Clerk subject to Judicial review.

It is further ORDERED that a copy of this Ruling shall be mailed to the owner of the land on which the diversion is located:

It is further ORDERED that a copy of this Ruling shall be filed with the appropriate Division Engineer and the State Engineer.

Dated June 12, 1996.

BY THE REFEREE

Daniel R. Birch
Water Referee
Water Division No. 6
State of Colorado

No protest was filed in this matter. The foregoing Ruling is confirmed and approved, and is made the Judgment and Decree of this Court.

Dated 7-16-96.

BY THE COURT

Richard P. Doucette
Water Judge
Water Division No. 6
State of Colorado

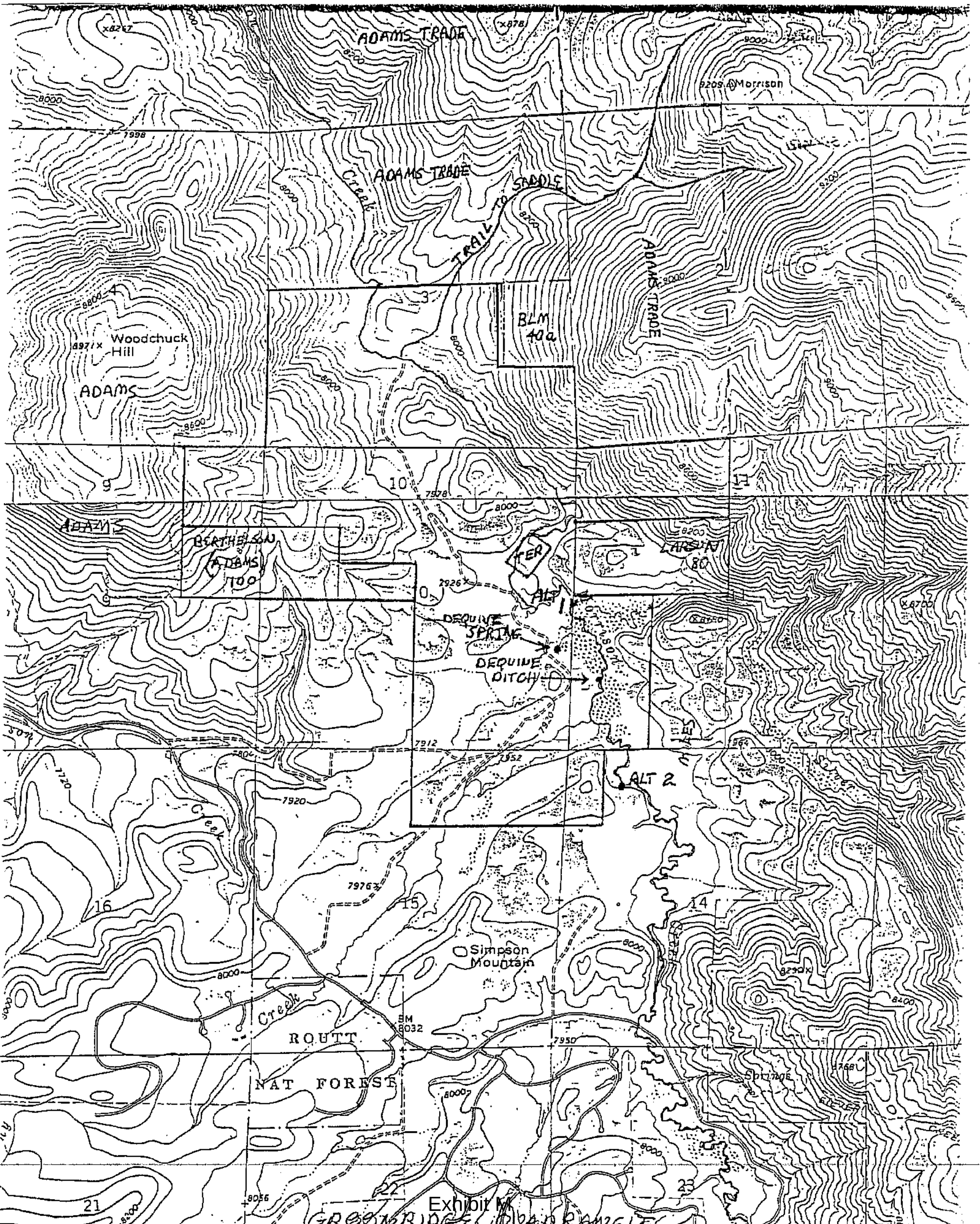


Exhibit M

GROUSE RIDGE QUADRANGLE

MORRISON CREEK WATER YEAR 1991

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3	4.02	5	5	5	5	5	23.3	108	12.5	5.46	4.1
2	3.03	4.05	5	5	5	5	7.5	50.2	108	11.8	5.78	4.03
3	3.07	4.08	5	5	5	5	10	77.2	109	11	6.1	3.96
4	3.1	4.11	5	5	5	5	12.5	70.4	110	10.3	6.03	3.88
5	3.13	4.15	5	5	5	5	15	63.7	111	9.51	5.96	3.81
6	3.16	4.18	5	5	5	5	16.8	56.9	112	8.76	5.89	3.74
7	3.2	4.21	5	5	5	5	18.5	78.8	113	8.01	5.83	3.67
8	3.23	4.25	5	5	5	5	20.3	133	102	7.87	5.76	3.59
9	3.26	4.28	5	5	5	5	22.1	139	90.4	7.73	5.69	3.52
10	3.3	4.31	5	5	5	5	23.9	132	79.1	7.6	5.62	3.45
11	3.33	4.34	5	5	5	5	25.6	119	67.7	7.46	5.55	3.38
12	3.36	4.38	5	5	5	5	27.4	94.1	56.3	7.32	5.48	3.3
13	3.39	4.41	5	5	5	5	29.2	76	57.6	7.19	5.41	3.23
14	3.43	4.44	5	5	5	5	30.9	81.3	53.8	7.05	5.34	3.16
15	3.46	4.48	5	5	5	5	32.7	100	50	6.91	5.27	3.09
16	3.49	4.51	5	5	5	5	34.5	108	46.2	6.78	5.2	3.01
17	3.52	4.54	5	5	5	5	36.3	81.7	42.4	7.27	5.14	2.94
18	3.56	4.57	5	5	5	5	38	80.6	38.6	7.77	5.07	2.87
19	3.59	4.61	5	5	5	5	39.8	79.5	34.9	8.26	5	2.8
20	3.62	4.64	5	5	5	5	41.6	96.7	32	8.76	4.93	2.72
21	3.66	4.67	5	5	5	5	43.3	114	29.1	9.25	4.86	2.65
22	3.69	4.7	5	5	5	5	45.1	114	26.2	9.75	4.79	2.58
23	3.72	4.74	5	5	5	5	46.9	115	24.5	10.2	4.72	2.51
24	3.75	4.77	5	5	5	5	48.7	118	22.8	10.7	4.65	2.43
25	3.79	4.8	5	5	5	5	50.4	121	21.1	11.2	4.58	2.36
26	3.82	4.84	5	5	5	5	45.9	124	18.5	10.2	4.51	2.29
27	3.85	4.87	5	5	5	5	41.4	127	16	9.2	4.45	2.22
28	3.89	4.9	5	5	5	5	36.9	110	13.5	8.19	4.38	2.14
29	3.92	4.93	5	5		5	32.4	105	13.2	7.17	4.31	2.07
30	3.95	4.97	5	5		5	27.8	106	12.8	6.16	4.24	2
31	3.98		5	5		5		107		5.14	4.17	
TOTAL	108	135	155	155	140	155	906	3001	1721	267	160	91.5
MEAN	3.49	4.49	5	5	5	5	30.2	96.8	57.4	8.61	5.17	3.05
AF	215	267	307	307	278	307	1798	5952	3413	530	318	181

TOTAL = 6995 CFS-DAYS
MAX = 139 CFS
MIN = 2 CFS
MEAN FOR 365 DAYS = 19.2 CFS
VOLUME TOTAL = 13874 ACRE-FT.

02/05/95

100 AF 1 DAY Apx.
50 CFS = A/F

Exhibit M

February 20, 2009

Linda Bassi, Esq.
Stream and Lake Protection Division
Colorado Water Conservation Board
1313 Sherman, Suite 721
Denver, CO 80203

Re: Morrison Creek Instream Flow Recommendation

Dear Linda,

James Larson, Dequine Family L.L.C. and Flying Diamond Resources, (the "Parties") are writing to recommend that the CWCB appropriate a water right for instream flow purposes on Morrison Creek, under ISF Rule 5 and sections 37-92-102(3) and -302, C.R.S. (2008). Morrison Creek is located in the Yampa River basin in Routt County, Water District No. 58, Water Division No. 6, Colorado. In particular, the Parties recommend the CWCB appropriate water rights for instream flow purposes on Morrison Creek from immediately below the Dequine Ditch Alt Point #1, as described in the Judgment and Decree, Case No. 95CW35, Water Division No. 6, downstream to the confluence with the Yampa River (the "Recommended Reach"). A copy of that decree is attached to this letter as Appendix A. The Recommended Reach is approximately five miles, and is shown on the Green Ridge and Blacktail Mountain USGS Quadrangle Maps. A significant portion of the Recommended Reach is located on property owned by one or more of the Parties.

A. NATURAL ENVIRONMENT TO BE PRESERVED

Morrison Creek originates in the western Gore Mountains in the Routt National Forest. The creek flows northwest to its confluence with the Yampa River. The area surrounding Morrison Creek contains varied ecology and landscape, and supports diverse riparian habitats. Much of the habitat remains in its native state, undisturbed by agriculture and development. Morrison Creek supports myriad wildlife species and provides winter range area for elk. Golden eagle and sandhill crane nesting areas have been identified along Morrison Creek. In 1993, the Colorado Division of Wildlife classified the fishery as excellent. Recent studies, however, indicate that the quality of the natural environment and fishery habitat has degraded, despite decreed instream flow water rights upstream and downstream of the Recommended Reach.

The Recommended Reach would connect decreed instream flow water rights on Silver Creek and the Yampa River. The CWCB holds instream flow water rights on Silver Creek from its headwaters to its confluence with Morrison Creek. In Case No. 1326-77, the Water Court, Water Division No. 6 entered a decree for 1 c.f.s., for instream flow purposes from the headwaters of Silver Creek to its confluence with the South Fork of Silver Creek. In Case No. 1328-77, the Water Court, Water Division No. 6 entered a decree for 5 c.f.s., for instream flow purposes on Silver Creek from the confluence of the South Fork of Silver Creek to its confluence with Morrison Creek. The CWCB also holds an instream flow water right on the Yampa River, from the confluence of Morrison Creek downstream to the inlet of Lake Catamount. That right was decreed for 72.5 c.f.s.,

absolute, from April 1 through August 14; and 47.5 c.f.s. from August 15 through March 31, in Case No. 01CW106, Water Division No. 6.

B. DRAFT HABITAT ASSESSMENT

In the interest of protecting and improving the unique aquatic habitat of Morrison Creek, the Parties engaged a private consulting firm to analyze the existing conditions and to identify a course of action to maintain and improve those conditions.

Habitech, Inc. conducted a site visit and habitat assessment on August 23, 2008. On September 16, 2008, Habitech, Inc. sent to counsel for the Parties a DRAFT Summary of Morrison Creek Site Visit and Habitat Assessment (the "Draft Assessment"). A copy of the Draft Assessment is attached hereto as Appendix B. The Draft Assessment describes the methods that were used to analyze channel stability, habitat quality and recommends instream flow rates to protect and improve aquatic habitat in Morrison Creek below its confluence with Silver Creek, following the CWCB's protocol.

The Draft Assessment concludes that current conditions are well below optimum and that trout resting areas and cover, food production and reproductive capacity are likely impaired due to high volumes of sand and fine gravels transported in Morrison Creek. The Draft Assessment concludes that future water withdrawals from Morrison Creek would likely further degrade the quality of trout habitat.

C. AMOUNT OF RECOMMENDED APPROPRIATION

Habitech, Inc. developed instream flow recommendations based upon the criteria followed by the CWCB. Those criteria are summarized on page 2 of the Draft Assessment. Based upon the recommendations of Habitech, Inc. and the information provided above, the Parties recommend the CWCB appropriate instream-flow water rights in the Recommended Reach, in at least the following amounts: 18 c.f.s. during the summer months and 4 c.f.s. during the winter months. These flow recommendations may be adjusted based on more detailed field study, including a PHABSIM analysis. The Parties would support any higher stream flow recommendations developed by the Division of Wildlife or CWCB staff.

D. RESOURCE THREATS

There are several existing and potential threats to the existing natural environment within the Recommended Reach. The Upper Yampa Water Conservancy District (the "District") has decrees and pending water rights applications for several water projects that would divert water from Morrison Creek for storage in Stagecoach Reservoir, including a new reservoir on Morrison Creek. Admittedly, an appropriation by the CWCB would be junior to those projects. Ultimately, the District may not obtain decrees for some of those projects, or may choose to pursue other projects. Under those circumstances, a new appropriation by the CWCB would preserce the Recommended Reach in its existing condition. In addition, an appropriation by the CWCB would be senior to later appropriations and protect against additional changes in the stream regimen that would result from those new appropriations or changes in existing water rights.

One of the existing threats to the Recommended Reach is a proposed reservoir on Morrison Creek. In March, 1993, Hydrosphere Resource Consultants issued the Yampa River Basin, Alternative Feasibility Study, Final Report (the "Report"). Hydrosphere prepared the Report for the CWCB, the Colorado River Water Conservation District and the Bureau of Reclamation as part of the Statewide Water Supply Initiative ("SWSI"). Among other things, the Report evaluates potential reservoir sites in the Yampa River Basin, including but not limited to a reservoir on Morrison Creek. Excerpted portions of the Report are attached hereto as Appendix C.

The Report describes the existing natural environment that would be affected by a reservoir on Morrison Creek. The Report states that "[t]he existing fishery is classified as excellent by CDOW." Hydrosphere Report, at 4-14. The Report states that "wetlands occur along the entire reach of Morrison Creek [...]." *Id.* In addition, the Report describes diverse and abundant wildlife and ecology.

Ultimately, the Report recommends "that the Morrison Creek site be eliminated primarily on environmental grounds, although it is arguably the best reservoir site from a technical and economic perspective." *Id.* at 4-29.

The Upper Yampa Water Conservancy District is now proposing to build a reservoir on Morrison Creek (the "Reservoir") near the site studied and rejected in the Report. The District has pending two applications for water rights related to the Reservoir. Case No. 07CW61 involves claims for a change of existing water rights to allow them to be stored in the Morrison Creek Reservoir. Case No. 07CW72 includes claims for new conditional water rights to be stored in the Reservoir. The applications in both cases locate the dam for the Reservoir on Morrison Creek, just below its confluence with Silver Creek.

The Reservoir would significantly alter the natural stream flow regime of Morrison Creek by storing high flows during the spring runoff for later release during summer, fall and/or winter months when stream flows would normally be much lower. The Reservoir could alter the temperature, sediment load, and other characteristics of the existing environment, and introduce foreign aquatic species, such as Northern Pike, that prey on native trout populations. In addition, the District's water court applications include claims to pump water stored in the Reservoir into the Little Morrison Creek drainage for storage in Stagecoach Reservoir. It is likely that much of the water stored in the Reservoir would be transported to Stagecoach Reservoir for storage and never released to Morrison Creek.

Case Nos. 07CW61 and 07CW72 have been consolidated for trial, beginning on October 7, 2009. There are several issues for trial that could prevent the District from obtaining decrees in those cases. Significantly, the Reservoir would inundate a portion of Silver Creek that has a decreed instream flow right, Case No. W-1328-77, Water Division No. 6. The Reservoir might also inundate a portion of the Sarvis Creek Wilderness Area, which would require federal approval. There are other issues that could prevent the District from obtaining decrees in these cases. For example, in Case No. 03CW53, the Division 6 Water Court recently dismissed the District's application for new conditional water rights based on the District's failure to satisfy its burden of proof including, but not limited to, demonstrating a need for the claimed water rights.

In addition, the District's other decreed water rights could affect the Recommended Reach. For example, the Division 6 Water court recently entered a finding of reasonable diligence and decree continuing the District's conditional water rights for diversion of 50 c.f.s. from Morrison Creek in Case No. 04CW10. Under that decree, water would be diverted from Morrison Creek and released into Little Morrison Creek for storage in Stagecoach Reservoir.

To continue those conditional water rights, the District must file an application for finding of reasonable diligence by the end of February, 2015. However, the District may choose not to develop those conditional water rights in favor of another project, or file an application for a change of water rights to divert them at a different location on Morrison Creek. According to the recent testimony of Thomas Sharp, a member of the District's board of directors, the District is considering at least six different alternatives to divert water from Morrison Creek to increase the yield of Stagecoach Reservoir. A copy of a memorandum summarizing those alternatives is attached as Appendix D. By appropriating an instream flow water right for the Recommended Reach now, the CWCB could preserve and protect the existing natural environment against degradation from new appropriations for those alternatives or changes in points of diversion for decreed water rights.

A new appropriation could also protect the Recommended Reach against depletions from future exchanges of water rights on Morrison Creek or changes in points of diversion and/or places of storage for other existing water rights. For example, the district holds several decrees for conditional water rights for the Four Counties Ditch Nos. 1 and 3 and the Four Counties Ditch No. 3 First Enlargement. The District changed those water rights to allow them to be stored in Stagecoach Reservoir. The District may, in the future, seek to change those rights to allow them to be diverted by exchange on Morrison Creek, or stored in the Morrison Creek Reservoir. A new appropriation by the CWCB would be senior to a later appropriative right of exchange on Morrison Creek, and would protect against diminished stream flows resulting from future changes of existing water rights.

In summary, there are numerous threats to the natural environment within the Recommended Reach. Although some of those projects have decreed water rights or pending applications for water rights that would senior to a new appropriation by the CWCB, the District may not build those projects or obtain those decrees. In addition, by appropriating an instream flow right in the near future, the CWCB could protect the Recommended Reach from degradation that would result from future changes of the District's existing water rights and new appropriations.

D. RECOMMENDATION

Based upon the information provided above, and the preliminary conclusions of Habitech, Inc., the Parties recommend the CWCB appropriate instream-flow water rights on Morrison Creek, from its confluence with Silver Creek to its confluence with the Yampa River, in at least the following amounts: 18 c.f.s. during the summer months and 4 c.f.s. during the winter months. The Parties further recommend that the CWCB file an application for such water rights in the near future to obtain a senior priority against future appropriations and preserve the stream conditions existing at the time of the instream-flow appropriation against future changes in water rights.

Very truly yours,

FLYING DIAMOND RESOURCES

By: Scott Steinbrecher

DEQUINE FAMILY L.L.C.

By: Scott Steinbrecher

James A. Larson

For additional information, please contact:

Charles B. White
Scott Steinbrecher
Petros & White LLC
1999 Broadway, Suite 3200
Denver, CO 80202
(303) 825-1980
scott@petros-white.com