DRAFT INSTREAM FLOW RECOMMENDATION

Mr. Dan Merriman
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, Colorado 80203

Dear Mr. Merriman:

The Bureau of Land Management (BLM) is writing this letter to formally communicate its instream flow recommendation for South Fork Big Creek, located in Water Division 6.

Location and Land Status. South Fork Big Creek is tributary to Big Creek north of the Colorado-Wyoming border. This recommendation covers the stream reach beginning at the confluence with Wheeler Creek downstream to the Colorado-Wyoming border. Approximately 98% of the 1.88-mile reach is federally owned, while the remaining 2% is privately owned.

Biological Summary. South Fork Big Creek is a moderate gradient stream with large substrate and a stable channel. Aquatic insects, water quality, pool habitat, and cover are excellent for salmonids. Fishery surveys indicate self-sustaining populations of brown trout, long-nose dace, and white sucker. The productivity of the fishery is very high. The riparian community is vigorous and diverse, and provides substantial cover for the stream environment.

R2Cross Analysis. BLM's data analysis, coordinated with the Division of Wildlife, indicates that the following flows are needed to protect the fishery and natural environment to a reasonable degree.

> 10.2 cubic feet per second is recommended for the high temperature period from May 1 to October 31. This recommendation is driven by the average velocity criteria and the average depth criteria. It is important to provide adequate velocity and physical habitat during this time for fish spawning and incubation of eggs. In addition, it is important to provide adequate depth and velocity to maintain low water temperatures during late summer and fall. Protecting flows during this time period is also important for recharging the alluvial aquifer, which discharges water to the stream and maintains flow levels during summer and fall.
>
> 8.2 cubic feet per second is recommended from November 1 through April 30. This recommendation is driven by the average depth criteria. This flow rate will allow fish to survive in pools, provide sufficient physical habitat in riffles between pools, and will prevent the riparian environment from being seriously stressed.

Water Availability. BLM is not aware of any decreed water rights within this reach. However, there are multiple diversions located upstream on South Fork Big Creek and on tributaries to this creek, including the East Lynne Ditch, Independence Ditch, and Plainwell Ditch. It appears that

some of these ditches deliver return flows back to Big Creek. In addition, Big Creek Reservoir is located in the headwaters of this stream system. BLM recommends that the CWCB utilize the Encampment River gage above Hog Park, WY or Elk River above Clark, Colorado, and perform a basin apportionment analysis

Relationship to Management Plans. This stream reach is one of the few fisheries managed by BLM in North Park. Accordingly, BLM places a strong emphasis on managing grazing, transportation routes, and recreation use to maintain and enhance both riparian and fisheries resources. BLM's efforts to maintain riparian and fisheries health will be supplemented by an instream flow appropriation that works to keep the riparian community watered, especially during high temperature periods.

The BLM requests that the Board recognize that this recommendation is based only upon the minimum flows necessary to support cold-water fishery values. BLM may wish to work with the Board and/or through the Colorado water rights system to appropriate flows to optimally protect fish values and to protect other water-dependent values specified in BLM resource management plans.

Data sheets, R2Cross output, fishery survey information, and photographs of the cross section are enclosed to support this recommendation. We thank both the Division of Wildlife and the Water Conservation Board for their cooperation in this effort.

If you have any questions regarding our instream flow recommendation, please contact Roy Smith at 303-239-3940.

Sincerely,

Linda Anania
Deputy State Director
Resources and Fire

4 Enclosures

cc: Paula Belcher, Kremmling FO
John Ruhs, Kremmling FO

~~The information provided in this report is preliminary and is subject to change~~

Stream: South Fork Big Creek

Executive Summary

Water Division: 6
Water District: 47
CDOW#: 10215
CWCB ID#: 07/6/A-007

Segment:

Upper Terminus: Confluence with Wheeler Creek
(Latitude 40° 58’ 51.4” N) (Longitude 106° 31’ 51.4” W)

Lower Terminus: Colorado-Wyoming Border
(Latitude 41° 0’ 6.8” N) (Longitude 106° 31’ 34.8” W)

Watershed: Upper North Platte (HUC#: 10180002)
County: Jackson
Length: Approximately 1.9 miles
USGS Quad(s): Pearl
Flow Recommendation: 5.0 cfs (December 1 to February 29)
8.2 cfs (March 1 to April 30)
10.2 cfs (May 1 to August 31)
8.2 cfs (September 1 to November 30)

Summary

The information contained in this report and the associated appendix 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.i.

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 Bureau of Land Management recommended this segment of South Fork Big Creek to the CWCB for a water right under the Instream Flow Program. South Fork Big Creek is being considered for an instream flow because it has a natural environment that can be preserved to a reasonable degree with an instream flow water right. The BLM is very interested in protecting stream flows because South Fork Big Creek is a highly productive fishery with good public access, and because the creek supports a diverse and productive riparian community. An instream flow appropriation will help BLM to maintain the health of South Fork Big Creek's diverse fishery and riparian environment.

Located within Jackson County, South Fork Big Creek is approximately 15 miles long and generally flows in a northeasterly direction. It begins in cirques on the east flanks of Davis Peak and Mount Zirkel in the Park Range. The headwaters is located within the Mount Zirkel Wilderness and the Routt National Forest at an elevation of approximately 10,945 feet. Three lakes with natural lake level water rights are found in the creek headwaters: Upper Big Creek Lake (case no. 79CW011), Eileen Lake (case no. W-1073-76), and Seven Lake #1 (case no. W-1082-76.)

South Fork Big Creek leaves Colorado at an elevation of approximately 8327 feet and terminates in its confluence with Big Creek in Wyoming. Of the approximately 1.9 mile segment addressed in this report, approximately 95% percent is on federal (BLM) lands with the remaining 5% on private. At the lower terminus, the creek's drainage area is approximately 35.6 square miles.

The subject of this report is the segment of South Fork Big Creek beginning at its confluence with Wheeler Creek and extending downstream to the Colorado – Wyoming border. The lower terminus is roughly two and three quarters miles upstream of the Big Creek - South Fork Big Creek confluence (see Map, Figures 2 and 3) at an elevation of 8,245 feet. The proposed segment is approximately 15 miles northwest of the Cowdrey and thirty eight miles north-northeast of Steamboat Springs. The upper terminus is approximately 0.9 miles east-southeast of Pearl, Colorado. The staff has received one recommendation for this segment from the BLM. That recommendation is discussed below.

Instream Flow Recommendation(s)

BLM recommended 10.2 cfs (summer), 8.2 cfs (winter), based on data collection efforts on July 28, 2005. The modeling results from these survey efforts are within the confidence interval produced by the R2Cross model.

Land Status Review

Upper Terminus	Lower Terminus	Total Length (miles)	Land Ownership	
			% Private	% Public
Confluence w/ Wheeler Cr	Colorado – Wyoming Border	1.9	5%	95%

All of the public land in this segment is managed by the Bureau of Land Management.

Biological Data

The BLM has conducted field surveys of the fishery resources on this stream and have found a natural environment that can be preserved. As reported in the letter from BLM to the CWCB "South Fork Big Creek is a moderate gradient stream with large substrate and a stable channel. Aquatic insects, water quality, pool habitat, and cover are excellent for salmonids." Fishery surveys indicate self-sustaining populations of brown trout, long-nose dace, and white sucker. The productivity of the fishery is very high." (See CDOW Fish Survey in Appendix).

Field Survey Data

BLM 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. The appendix contains copies of field data collected for this proposed segment.

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, two 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.

Table 1: Data

Party	Date	Q	250%-40%	Summer (3/3)	Winter (2/3)
BLM	07/28/2005	18.1	45.2 – 7.2	9.5	8.4
BLM	07/28/2005	17.5	43.8 – 7.0	10.9	7.9

BLM = Bureau of Land Management DOW = Division of Wildlife
(1) Predicted flow outside of the accuracy range of Manning's Equation. ? = Criteria never met in R2CROSS Staging Table.

Biologic Flow Recommendation

The summer flow recommendation, which meets 3 of 3 criteria and is within the accuracy range of the R2CROSS model is 10.2 cfs. The winter recommendation, which meets 2 of 3 criteria and is within the accuracy range of the R2Cross model is 8.2 cfs. The summer and winter recommendations were derived by averaging the results of the data sets. It is our belief 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.

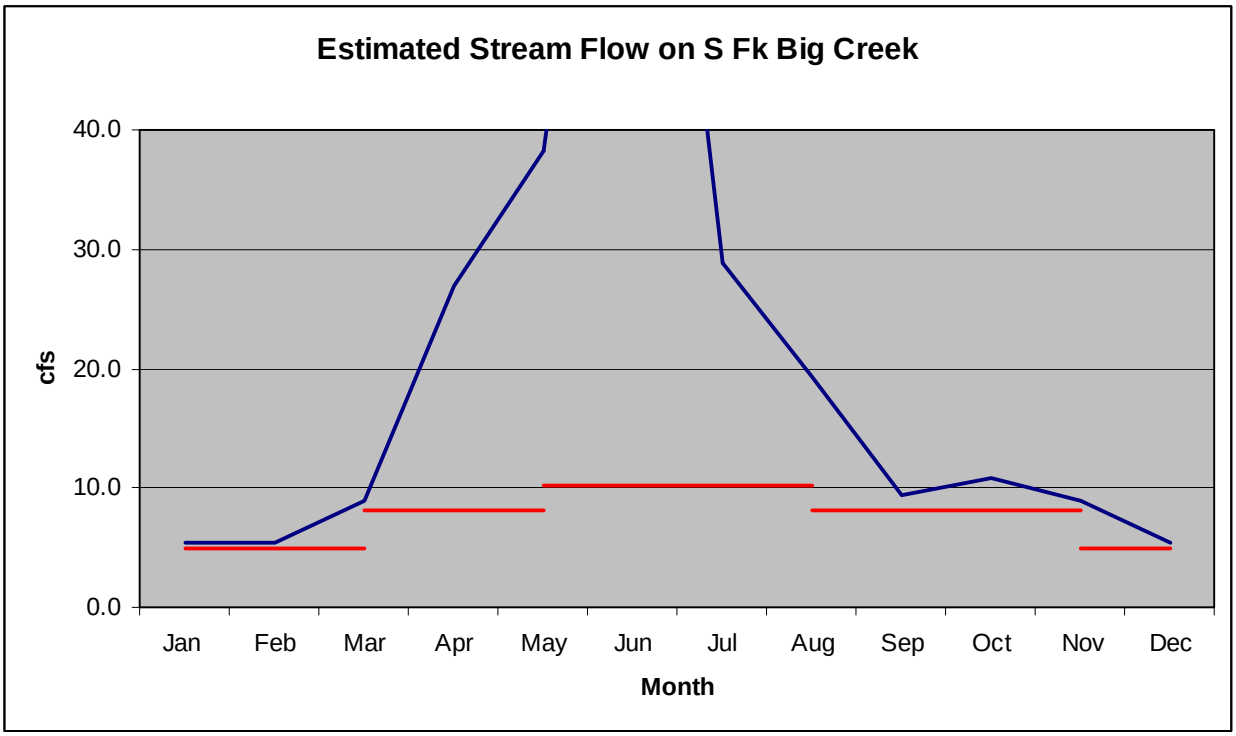
Hydrologic Data

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. There are no USGS gaging stations on South Fork of Big Creek. However, there are two historical gage sites located nearby which also drain the northeast facing slopes of the Park Range. The stations (USGS 06614000 North Fork North Platte River near Walden, CO, and USGS 06612500 Roaring Fork near Walden, CO) have been discontinued but had fifteen and twenty seven years of record, respectively. The stations are reasonably representative of conditions at South Fork of Big Creek because they have headwaters that border the subject stream, and have similar aspects and elevations. Of these two stations Roaring Fork is the more similar to the subject stream in terms of Size, elevation, etc.

Table 2 and Figure 1 below show that the recommended summer flow of 10.2 cfs is available on average during the period of May 1 through August 31. The winter flow recommendation of 8.2 cfs is available for the time periods of March 1 to April 30 and September 1 to November 30. Due to limited water availability, the winter flow was reduced to 5.0 cfs for the time period of December 1 to February 29.

Table 2: Estimated flow on South Fork Big Creek (cfs)

% Exceedence	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1%	9.0	9.0	13.5	149.6	203.4	253.4	167.2	71.1	53.1	41.5	21.6	11.3
5%	6.8	6.8	13.5	111.2	138.6	213.8	96.8	47.7	31.5	26.7	16.7	9.0
10%	6.8	6.8	11.3	83.3	115.8	187.7	73.4	39.2	24.3	20.7	15.8	9.0
20%	5.9	5.9	9.0	58.1	89.1	157.5	54.9	31.1	16.7	15.3	11.7	8.1
50%	5.4	5.4	9.0	27.0	38.3	93.6	28.8	19.4	9.5	10.8	9.0	5.4
80%	3.6	4.1	6.8	13.5	14.4	42.3	15.3	11.3	6.3	7.7	7.2	4.5
90%	3.2	3.6	5.9	12.2	9.0	25.2	9.2	9.0	4.5	5.4	5.9	4.5
95%	3.2	3.6	5.4	11.3	6.3	14.9	5.9	7.5	4.0	4.1	5.4	4.5
99%	2.7	2.7	4.5	6.3	5.0	3.3	2.3	5.4	2.7	3.1	4.5	4.1



Precipitation Data

Staff reviewed local precipitation data sets weather stations located in the proximity of the South Fork Big Creek drainage to indicate whether the gage measured stream flows during average, below average or above average years. All of the nearby weather stations collected data outside of the period of record for the Roaring Fork Near Walden, CO gage (06612500). Since the period of record is 43 years (1904 to 1947), staff believes that this gage approximates long-term/average conditions.

Existing Water Right Information

Staff has analyzed the water rights tabulation and consulted with the Division Engineer Office (DEO) to identify any potential water availability problems. There are five decreed surface diversions located upstream of the proposed instream flow segment. Three are located on South Fork Big Creek: Plainwell Ditch, East Lynne Ditch and Independence Ditch. Two are located on Wheeler Creek: Akers Ditch and Wheeler Ditch. These decreed rights total 131.5 cfs above the proposed instream flow segment. To provide an estimate of the cumulative diversions, the maximum diversion (the five diversions summed) occurred in 1973 with a total of 127 cfs.

There are no diversion rights downstream of the subject segment in Colorado. From its analysis staff has determined that water is available for appropriation on South Fork Big Creek, between its confluence with Wheeler Creek and the Colorado – Wyoming border, to preserve the natural environment to a reasonable degree without limiting or foreclosing the exercise of valid water rights.

CWCB Staff's Instream Flow Recommendation

Based on the CDOW recommendation, staff recommends the Board form its intent to appropriate on the following stream reach:

Segment:

Upper Terminus: Confluence with Wheeler Creek
(Latitude 40° 58' 51.4" N) (Longitude 106° 31' 51.4" W)
UTM = 4537770.6 N 371206.8 E
SW SE S30 T12N R81W; 6th PM
1969' West of East Section Line; 1141' South of North Section Line

Lower Terminus: Colorado-Wyoming Border
(Latitude 41° 0' 6.8" N) (Longitude 106° 31' 34.8" W)
UTM = 4540089.2 N 371634.2 E
SE NE S19 T12N R81W; 6th PM
301' West of East Section Line; 2' North of South Section Line

Watershed: Upper North Platte (HUC#: 10180002)
County: Jackson
Length: Approximately 1.9 miles
USGS Quad(s): Pearl
Flow Recommendation: 5.0 cfs (December 1 to February 29)
8.2 cfs (March 1 to April 30)
10.2 cfs (May 1 to August 31)
8.2 cfs (September 1 to November 30)

Figure 2: South Fork Big Creek--Land Ownership

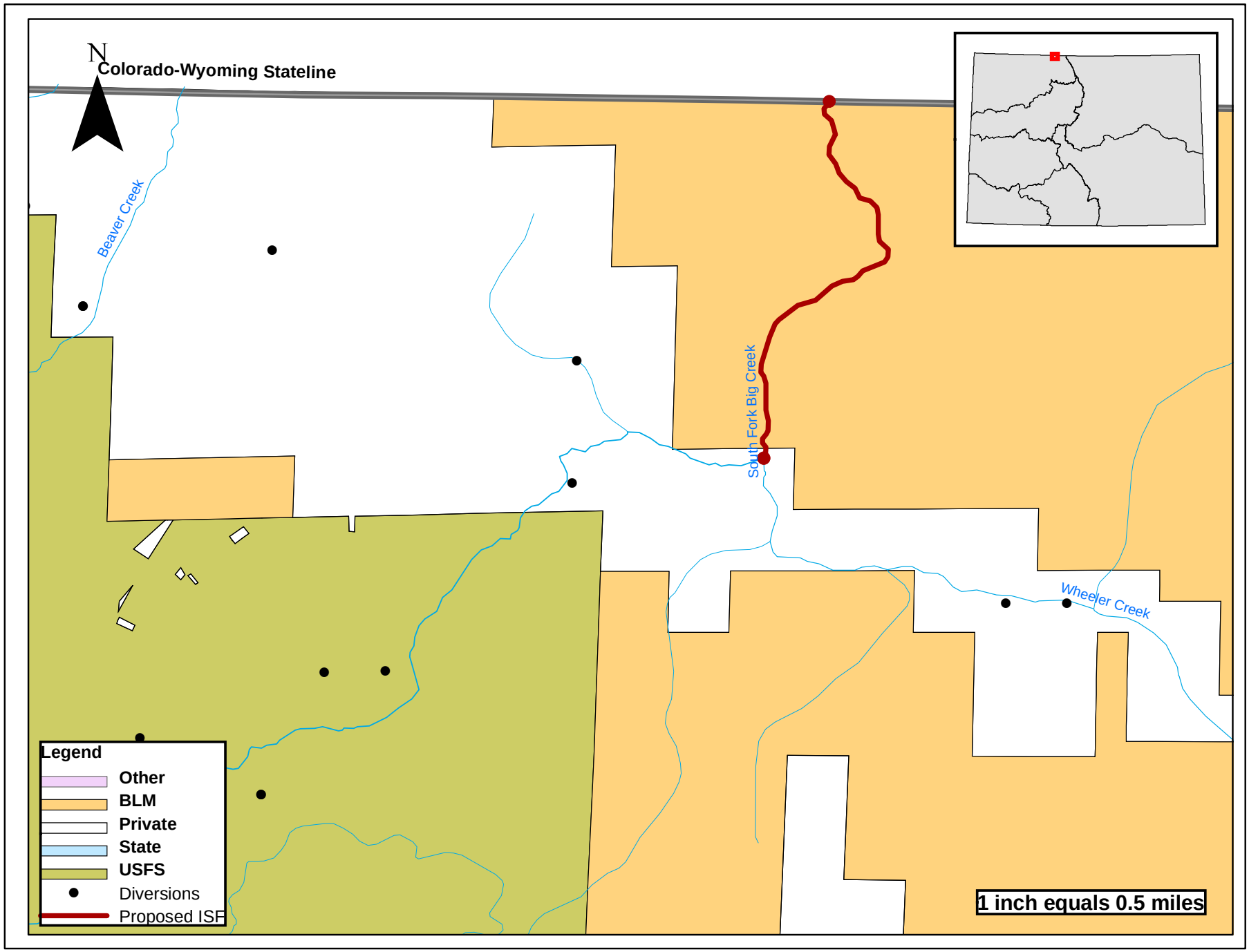
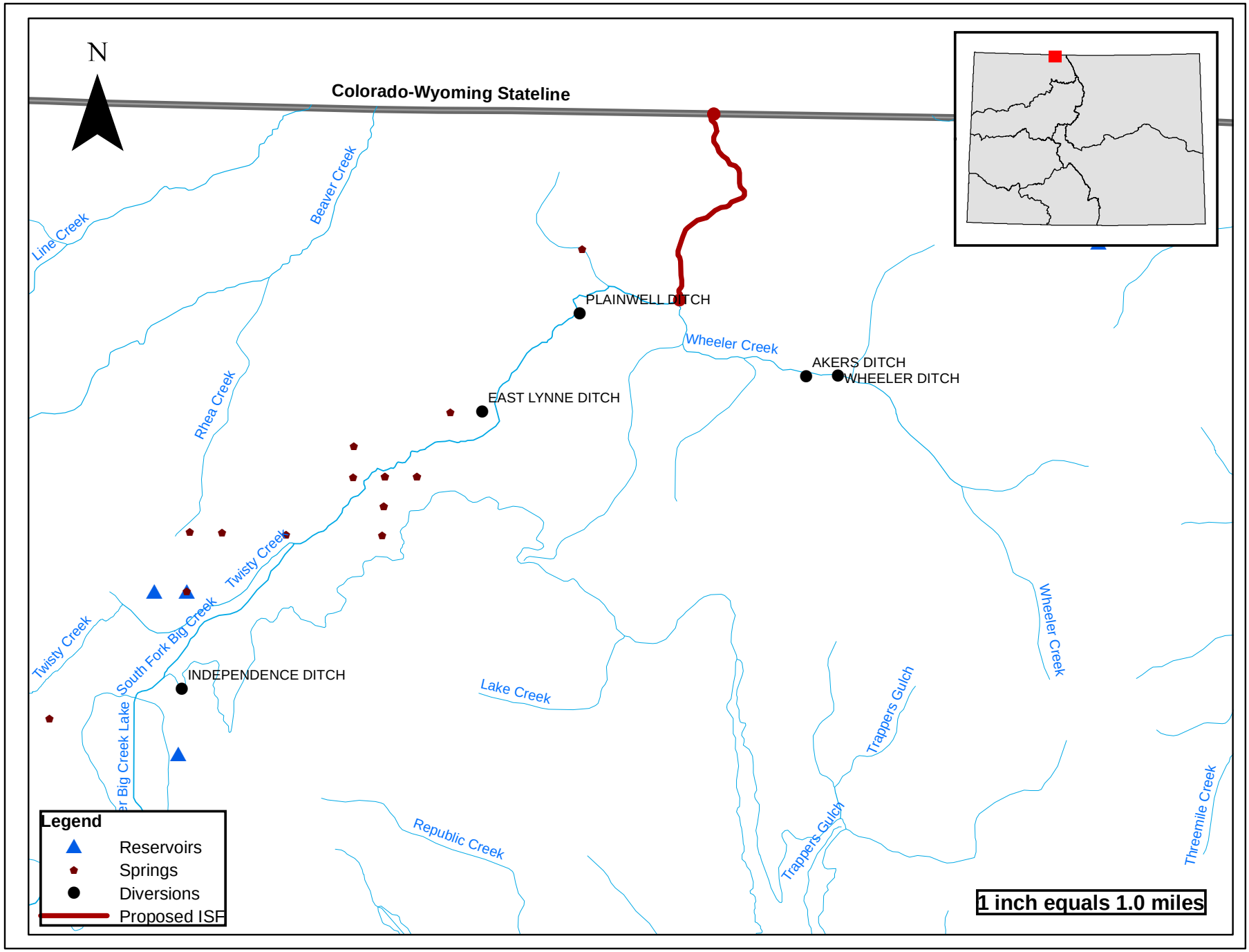


Figure 3: South Fork Big Creek--Water Rights



Field Data

COLORADO WATER CONSERVATION BOARD

FIELD DATA FOR INSTREAM FLOW DETERMINATIONS

COLORADO DIVISION OF WILDLIFE

LOCATION INFORMATION

STREAM NAME: Big Creek | CROSS-SECTION NO.: 1

CROSS-SECTION LOCATION: Approx. 1/4 mile upstream from Wyoming border

DATE: 7-28-05 | OBSERVERS: R. Smith, P. Belcher

LEGAL DESCRIPTION | ¼ SECTION: SE | SECTION: 19 | TOWNSHIP: 12 (N) S | RANGE: 81 E/(W) | PM: 6th

COUNTY: Jackson | WATERSHED: N. Platte | WATER DIVISION: 6 | DOW WATER CODE:

MAP(S): USGS: Pearl 7.5' | USFS:

GPS 0371812 4538958 8,262 ft.

SUPPLEMENTAL DATA

SAG TAPE SECTION SAME AS DISCHARGE SECTION: (YES) / NO | METER TYPE: Marsh-McBirney

METER NUMBER: | DATE RATED: | CALIB/SPIN: ____ sec | TAPE WEIGHT: surveyed ____ lbs/foot | TAPE TENSION: surveyed ____ lbs

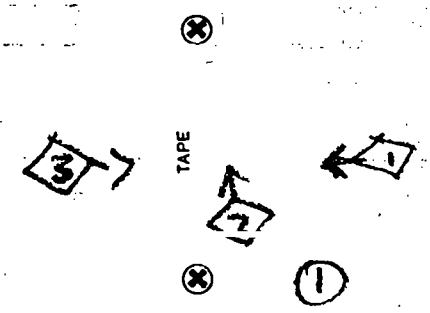
CHANNEL BED MATERIAL SIZE RANGE: gravel to 8" boulders | PHOTOGRAPHS TAKEN: (YES) NO | NUMBER OF PHOTOGRAPHS: 3

CHANNEL PROFILE DATA

STATION	DISTANCE FROM TAPE (ft)	ROD READING (ft)
⊗ Tape @ Stake LB	0.0	surveyed
⊗ Tape @ Stake RB	0.0	surveyed
① WS @ Tape LB/RB	0.0	4.38 / 4.40
② WS Upstream	30.0	4.10
③ WS Downstream	30.0	4.98

SLOPE | 0.88 / 60.0 = 0.0146

SKETCH



LEGEND:

Stake ⊗

Station ①

Photo ①→

Direction of Flow

AQUATIC SAMPLING SUMMARY

STREAM ELECTROFISHED: YES (NO) | DISTANCE ELECTROFISHED: ____ ft | FISH CAUGHT: YES (NO) | WATER CHEMISTRY SAMPLED: (YES) NO

LENGTH - FREQUENCY DISTRIBUTION BY ONE-INCH SIZE GROUPS (1.0-1.9, 2.0-2.9, ETC.)

SPECIES (FILL IN)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	>15	TOTAL

AQUATIC INSECTS IN STREAM SECTION BY COMMON OR SCIENTIFIC ORDER NAME:

mayfly, caddisfly, stonefly

COMMENTS

Ph= 8.3 TDS= 50 Temp= >60°F

~~The information provided in this report is preliminary and is subject to change~~

FORM #ISF FD 1-85

DISCHARGE/CROSS SECTION NOTES

STREAM NAME: Big Creek | CROSS-SECTION NO.: 1 | DATE: 7-28-05 | SHEET __ OF __

BEGINNING OF MEASUREMENT | EDGE OF WATER LOOKING DOWNSTREAM: (0.0 AT STAKE) | LEFT / RIGHT | Gage Reading: 0.5 ft | TIME: 10:15

Features (Stake (S), Grassline (G), Waterline (W), Rock (R))	Distance From Initial Point (ft)	Width (ft)	Total Vertical Depth From Tape/Inst (ft)	Water Depth (ft)	Depth of Observation (ft)	Revolutions	Time (sec)	Velocity (ft/sec) At Point	Velocity (ft/sec) Mean in Vertical	Area (ft^2)	Discharge (cfs)
RS	0.0		3.04								
G	1.2		3.52								
	2.1		3.77								
	2.4		4.80								
W	2.5	1.55	4.40	Ø				0		1.4	
	5.6	2.0	5.14	0.7				rock			
	6.5	0.7	5.26	0.85				rock			
	7.0	0.5	5.34	0.90				1.46			
	7.5	0.5	5.26	0.80				1.51			
	8.0	0.5	5.22	0.80				2.93			
	8.5	0.5	5.22	0.80				2.13			
	9.0	0.5	5.28	0.85				1.97			
	9.5	0.5	5.20	0.80				2.09			
	10.0	0.5	5.00	0.60				2.02			
	10.5	0.5	4.70	0.30				2.60			
	11.0	0.75	4.92	0.50				1.83			
	12.0	1.0	5.24	0.90				1.73		0.9	
	13.0	1.0	5.76	0.85				1.79		0.85	
	14.0	1.0	5.10	0.70				2.08		0.7	
	15.0	1.0	4.90	0.50				1.98		0.5	
	16.0	1.0	4.98	0.50				1.52		0.5	
	17.0	1.0	4.81	0.40				0.78		0.4	
	18.0	1.0	4.72	0.30				1.67		0.3	
	19.0	1.0	4.62	0.25				0.08		0.25	
	20.0	1.0	4.67	0.25				0.97		0.25	
	21.0	1.0	4.72	0.30				1.57		0.30	
	22.0	1.0	4.60	0.20				0.96		0.20	
	23.0	1.0	4.73	0.30				1.72		0.30	
	24.0	1.0	4.79	0.35				1.68		0.35	
	25.0	1.0	4.59	0.25				1.13		0.25	
	26.0	1.0	4.58	0.20				0.35		0.20	
	27.0	1.0	4.71	0.30				0.78		0.30	
	28.0	1.0	4.71	0.30				1.52		0.30	
	29.0	1.0	4.69	0.30				0.64		0.30	
	30.0	1.0	4.72	0.30				1.21		0.30	
	31.0	1.1	4.70	0.30				0.10			
W	32.2	0.6	4.38	Ø				⊖			
G	36.1		3.38								
LS	37.0		2.76								

29.7

TOTALS:

~~The information provided within report is preliminary and is subject to change~~

End of Measurement | Time: 11 AM | Gage Reading: 0.5 ft | CALCULATIONS PERFORMED BY: | CALCULATIONS CHECKED BY:

Data Input & Proofing

STREAM NAME: |Big Creek
XS LOCATION: |1/4 mi. upstream from WY border
XS NUMBER: |1
DATE: |7/28/05
OBSERVERS: |R. Smith, P. Belcher

1/4 SEC: |SE
SECTION: |19
TWP: |12N
RANGE: |81W
PM: |6th

COUNTY: |Jackson
WATERSHED: |N. Platte
DIVISION: |6
DOW CODE: |
USGS MAP: |Pearl 7.5'
USFS MAP: |

Level and Rod Survey

TAPE WT: |0.0106 lbs / ft
TENSION: |99999 lbs

SLOPE: | 0.0146|ft / ft

CHECKED BY:.....DATE.....

ASSIGNED TO: .....DATE.....

Total Data Points = 38

GL=1	FEATURE	DIST	VERT DEPTH	WATER DEPTH	VEL	A	Q	Tape to Water
	RS	0.00	3.04			0.00	0.00	0.00
1	GL	1.20	3.52			0.00	0.00	0.00
		2.10	3.77			0.00	0.00	0.00
		2.40	4.80			0.00	0.00	0.00
	W	2.50	4.40	0.00	0.00	0.00	0.00	0.00
	rock	5.60	5.14	0.70	0.00	1.40	0.00	4.44
	eddy	6.50	5.26	0.85	0.00	0.60	0.00	4.41
		7.00	5.34	0.90	1.46	0.45	0.66	4.44
		7.50	5.26	0.80	1.51	0.40	0.60	4.46
		8.00	5.22	0.80	2.93	0.40	1.17	4.42
		8.50	5.22	0.80	2.13	0.40	0.85	4.42
		9.00	5.28	0.85	1.97	0.43	0.84	4.43
		9.50	5.20	0.80	2.09	0.40	0.84	4.40
		10.00	5.00	0.60	2.02	0.30	0.61	4.40
		10.50	4.70	0.30	2.60	0.15	0.39	4.40
		11.00	4.92	0.50	1.83	0.38	0.69	4.42
		12.00	5.24	0.90	1.73	0.90	1.56	4.34
		13.00	5.26	0.85	1.79	0.85	1.52	4.41
		14.00	5.10	0.70	2.08	0.70	1.46	4.40
		15.00	4.90	0.50	1.98	0.50	0.99	4.40
		16.00	4.88	0.50	1.52	0.50	0.76	4.38
		17.00	4.81	0.40	0.78	0.40	0.31	4.41
		18.00	4.72	0.30	1.67	0.30	0.50	4.42
		19.00	4.62	0.25	0.08	0.25	0.02	4.37
		20.00	4.67	0.25	0.97	0.25	0.24	4.42
		21.00	4.72	0.30	1.57	0.30	0.47	4.42
		22.00	4.60	0.20	0.96	0.20	0.19	4.40
		23.00	4.73	0.30	1.72	0.30	0.52	4.43
		24.00	4.78	0.35	1.68	0.35	0.59	4.43
		25.00	4.59	0.25	1.63	0.25	0.41	4.34
		26.00	4.58	0.20	0.35	0.20	0.07	4.38
		27.00	4.71	0.30	0.78	0.30	0.23	4.41
		28.00	4.71	0.30	1.52	0.30	0.46	4.41
		29.00	4.69	0.30	0.64	0.30	0.19	4.39
		30.00	4.72	0.30	1.21	0.30	0.36	4.42
		31.00	4.70	0.30	0.10	0.33	0.03	4.40
	W	32.20	4.38	0.00	0.00	0.00	0.00	0.00
1	GL	36.10	3.38			0.00	0.00	0.00
					Totals	13.08	17.52	

COLORADO WATER CONSERVATION BOARD
INSTREAM FLOW / NATURAL LAKE LEVEL PROGRAM
STREAM CROSS-SECTION AND FLOW ANALYSIS

LOCATION INFORMATION

STREAM NAME:	Big Creek
XS LOCATION:	1/4 mi. upstream from WY border
XS NUMBER:	1
DATE:	28-Jul-05
OBSERVERS:	R. Smith, P. Belcher
1/4 SEC:	SE
SECTION:	19
TWP:	12N
RANGE:	81W
PM:	6th
COUNTY:	Jackson
WATERSHED:	N. Platte
DIVISION:	6
DOW CODE:	0
USGS MAP:	Pearl 7.5'
USFS MAP:	0

SUPPLEMENTAL DATA

*** NOTE ***
Leave TAPE WT and TENSION
at defaults for data collected
with a survey level and rod

TAPE WT:	0.0106
TENSION:	99999

CHANNEL PROFILE DATA

SLOPE:	0.0146

INPUT DATA CHECKED BY: .....DATE.....

ASSIGNED TO: .....DATE.....

~~The information provided in this report is preliminary and is subject to change~~

STREAM NAME: Big Creek
XS LOCATION: 1/4 mi. upstream from WY border
XS NUMBER: 1

DATA POINTS= 38

VALUES COMPUTED FROM RAW FIELD DATA

FEATURE	DIST	VERT DEPTH	WATER DEPTH	VEL	WETTED PERIM.	WATER DEPTH	AREA (Am)	Q (Qm)	% Q CELL
RS	0.00	3.04			0.00		0.00	0.00	0.0%
1 GL	1.20	3.52			0.00		0.00	0.00	0.0%
	2.10	3.77			0.00		0.00	0.00	0.0%
	2.40	4.80			0.00		0.00	0.00	0.0%
W	2.50	4.40	0.00	0.00	0.00		0.00	0.00	0.0%
rock	5.60	5.14	0.70	0.00	3.19	0.70	1.40	0.00	0.0%
eddy	6.50	5.26	0.85	0.00	0.91	0.85	0.60	0.00	0.0%
	7.00	5.34	0.90	1.46	0.51	0.90	0.45	0.66	3.7%
	7.50	5.26	0.80	1.51	0.51	0.80	0.40	0.60	3.4%
	8.00	5.22	0.80	2.93	0.50	0.80	0.40	1.17	6.7%
	8.50	5.22	0.80	2.13	0.50	0.80	0.40	0.85	4.9%
	9.00	5.28	0.85	1.97	0.50	0.85	0.43	0.84	4.8%
	9.50	5.20	0.80	2.09	0.51	0.80	0.40	0.84	4.8%
	10.00	5.00	0.60	2.02	0.54	0.60	0.30	0.61	3.5%
	10.50	4.70	0.30	2.60	0.58	0.30	0.15	0.39	2.2%
	11.00	4.92	0.50	1.83	0.55	0.50	0.38	0.69	3.9%
	12.00	5.24	0.90	1.73	1.05	0.90	0.90	1.56	8.9%
	13.00	5.26	0.85	1.79	1.00	0.85	0.85	1.52	8.7%
	14.00	5.10	0.70	2.08	1.01	0.70	0.70	1.46	8.3%
	15.00	4.90	0.50	1.98	1.02	0.50	0.50	0.99	5.6%
	16.00	4.88	0.50	1.52	1.00	0.50	0.50	0.76	4.3%
	17.00	4.81	0.40	0.78	1.00	0.40	0.40	0.31	1.8%
	18.00	4.72	0.30	1.67	1.00	0.30	0.30	0.50	2.9%
	19.00	4.62	0.25	0.08	1.00	0.25	0.25	0.02	0.1%
	20.00	4.67	0.25	0.97	1.00	0.25	0.25	0.24	1.4%
	21.00	4.72	0.30	1.57	1.00	0.30	0.30	0.47	2.7%
	22.00	4.60	0.20	0.96	1.01	0.20	0.20	0.19	1.1%
	23.00	4.73	0.30	1.72	1.01	0.30	0.30	0.52	2.9%
	24.00	4.78	0.35	1.68	1.00	0.35	0.35	0.59	3.4%
	25.00	4.59	0.25	1.63	1.02	0.25	0.25	0.41	2.3%
	26.00	4.58	0.20	0.35	1.00	0.20	0.20	0.07	0.4%
	27.00	4.71	0.30	0.78	1.01	0.30	0.30	0.23	1.3%
	28.00	4.71	0.30	1.52	1.00	0.30	0.30	0.46	2.6%
	29.00	4.69	0.30	0.64	1.00	0.30	0.30	0.19	1.1%
	30.00	4.72	0.30	1.21	1.00	0.30	0.30	0.36	2.1%
	31.00	4.70	0.30	0.10	1.00	0.30	0.33	0.03	0.2%
W	32.20	4.38	0.00	0.00	1.24		0.00	0.00	0.0%
1 GL	36.10	3.38			0.00		0.00	0.00	0.0%
TOTALS ----------					30.17	0.9 (Max.)	13.08	17.52	100.0%

Manning's n = 0.0767
Hydraulic Radius= 0.433377163

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STREAM NAME: Big Creek
XS LOCATION: 1/4 mi. upstream from WY border
XS NUMBER: 1

WATER LINE COMPARISON TABLE

WATER LINE	MEAS AREA	COMP AREA	AREA ERROR
	13.08	13.57	3.8%
4.14	13.08	21.17	61.9%
4.16	13.08	20.56	57.2%
4.18	13.08	19.94	52.5%
4.20	13.08	19.33	47.8%
4.22	13.08	18.71	43.1%
4.24	13.08	18.10	38.4%
4.26	13.08	17.49	33.8%
4.28	13.08	16.89	29.1%
4.30	13.08	16.28	24.5%
4.32	13.08	15.67	19.9%
4.34	13.08	15.07	15.3%
4.35	13.08	14.77	13.0%
4.36	13.08	14.47	10.7%
4.37	13.08	14.17	8.4%
4.38	13.08	13.87	6.1%
4.39	13.08	13.57	3.8%
4.40	13.08	13.27	1.5%
4.41	13.08	12.98	-0.8%
4.42	13.08	12.68	-3.0%
4.43	13.08	12.38	-5.3%
4.44	13.08	12.09	-7.6%
4.46	13.08	11.50	-12.1%
4.48	13.08	10.91	-16.5%
4.50	13.08	10.33	-21.0%
4.52	13.08	9.75	-25.4%
4.54	13.08	9.18	-29.8%
4.56	13.08	8.61	-34.2%
4.58	13.08	8.04	-38.5%
4.60	13.08	7.49	-42.7%
4.62	13.08	6.96	-46.8%
4.64	13.08	6.45	-50.7%

WATERLINE AT ZERO AREA ERROR = 4.407

STREAM NAME: Big Creek
XS LOCATION: 1/4 mi. upstream from WY border
XS NUMBER: 1

Constant Manning's n

STAGING TABLE

"GL" – lowest Grassline elevation corrected for sag
"WL" = Waterline corrected for variations in field measured water surface elevations and sag

	DIST TO WATER (FT)	TOP WIDTH (FT)	AVG. DEPTH (FT)	MAX. DEPTH (FT)	AREA (SQ FT)	WETTED PERIM. (FT)	PERCENT WET PERIM (%)	HYDR RADIUS (FT)	FLOW (CFS)	AVG. VELOCITY (FT/SEC)
"GL"	3.52	34.35	1.20	1.82	41.26	36.05	100.0%	1.14	105.64	2.56
	3.56	34.08	1.17	1.78	40.00	35.77	99.2%	1.12	100.87	2.52
	3.61	33.70	1.14	1.73	38.31	35.38	98.1%	1.08	94.54	2.47
	3.66	33.33	1.10	1.68	36.63	34.99	97.1%	1.05	88.39	2.41
	3.71	32.95	1.06	1.63	34.98	34.60	96.0%	1,01	82.44	2.36
	3.76	32.58	1.02	1.58	33.34	34.21	94.9%	0.97	76.68	2.30
	3.81	32.33	0.98	1.53	31.72	33.93	94.1%	0.93	70.96	2.24
	3.86	32.12	0.94	1.48	30.10	33.67	93.4%	0.89	65.38	2.17
	3.91	31.91	0.89	1.43	28.50	33.42	92.7%	0.85	60.00	2.10
	3.96	31.70	0.85	1.38	26.91	33.17	92.0%	0.81	54.80	2.04
	4.01	31.49	0.80	1.33	25.33	32.91	91.3%	0.77	49.80	1.97
	4.06	31.28	0.76	1.28	23.77	32.66	90.6%	0.73	45.00	1.89
	4.11	31.07	0.71	1.23	22.21	32.40	89.9%	0.69	40.39	1.82
	4.16	30.86	0.67	1.18	20.66	32.15	89.2%	0.64	36.00	1.74
	4.21	30.65	0.62	1.13	19.12	31.90	88.5%	0.60	31.81	1.66
	4.26	30.44	0.58	1.08	17.59	31.64	87.8%	0.56	27.84	1.58
	4.31	30.23	0.53	1.03	16.08	31.39	87.1%	0.51	24.08	1.50
	4.36	30.02	0.49	0.98	14.57	31.14	86.4%	0.47	20.55	1.41
"WL"	4.41	29.78	0.44	0.93	13.07	30.85	85.6%	0.42	17.26	1.32
	4.46	29.36	0.39	0.88	11.60	30.34	84.2%	0.38	14.29	1.23
	4.51	28.94	0.35	0.83	10.14	29.83	82.7%	0.34	11.56	1.14
	4.56	28.51	0.31	0.78	8.70	29.31	81.3%	0.30	9.06	1.04
	4.61	26.69	0.27	0.73	7.31	27.40	76.0%	0.27	7.09	0.97
	4.66	23.72	0.25	0.68	6.05	24.32	67.5%	0.25	5.59	0.93
	4.71	18.62	0.27	0.63	4.96	19.11	53.0%	0.26	4.72	0.95
	4.76	13.99	0.30	0.58	4.19	14.36	39.8%	0.29	4.32	1.03
	4.81	12 41	0.29	0.53	3.54	12.69	35.2%	0.28	3.54	1.00
	4.86	11.30	0.26	0.48	2.95	11.54	32.0%	0.26	2.77	0.94
	4.91	9.53	0.25	0.43	2.42	9.74	27.0%	0.25	2.24	0.93
	4.96	8.84	0.22	0.38	1.96	9.02	25.0%	0.22	1.66	0.85
	5.01	8.14	0.19	0.33	1.54	8.28	23.0%	0.19	1.17	0.76
	5.06	7.40	0.16	0.28	1.15	7.51	20.8%	0.15	0.77	0.67
	5.11	6.65	0.12	0.23	0.80	6.74	18.7%	0.12	0.45	0.56
	5.16	5.79	0.08	0.18	0.48	5.85	16.2%	0.08	0.22	0.44
	5.21	4.80	0.05	0.13	0.22	4.83	13.4%	0.05	0.07	0.30
	5.26	1.59	0.03	0.08	0.05	1.61	4.5%	0.03	0.01	0.22
	5.31	0.42	0.02	0.03	0.01	0.42	1.2%	0.02	0.00	0.15

0.34 $\bar{d}$ = 10.94 cfs = 3/3

1 fps 7.93 cfs = 2/3

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STREAM NAME: Big Creek
XS LOCATION: 1/4 mi. upstream from WY border
XS NUMBER: 1

SUMMARY SHEET

MEASURED FLOW (Qm)=	17.52	cfs
CALCULATED FLOW (Qc)=	17.26	cfs
(Qm-Qc)/Qm * 100 =	1.5	%
MEASURED WATERLINE (WLm)=	4.39	ft
CALCULATED WATERLINE (WLc)=	4.41	ft
(WLm-WLc)/WLm * 100 =	-0.4	%
MAX MEASURED DEPTH (Dm)=	0.90	ft
MAX CALCULATED DEPTH (Dc)=	0.93	ft
(Dm-Dc)/Dm * 100	-3.7	%
MEAN VELOCITY=	1.32	ft/sec
MANNING'S N=	0.077	
SLOPE=	0.0146	ft/ft
.4 * Qm =	7.0	cfs
2.5 * Qm=	43.8	cfs

RECOMMENDED INSTREAM FLOW:

FLOW (CFS)	PERIOD

RATIONALE FOR RECOMMENDATION:

RECOMMENDATION BY: ..... AGENCY..... DATE:.....

CWCB REVIEW BY: ..... DATE:.....

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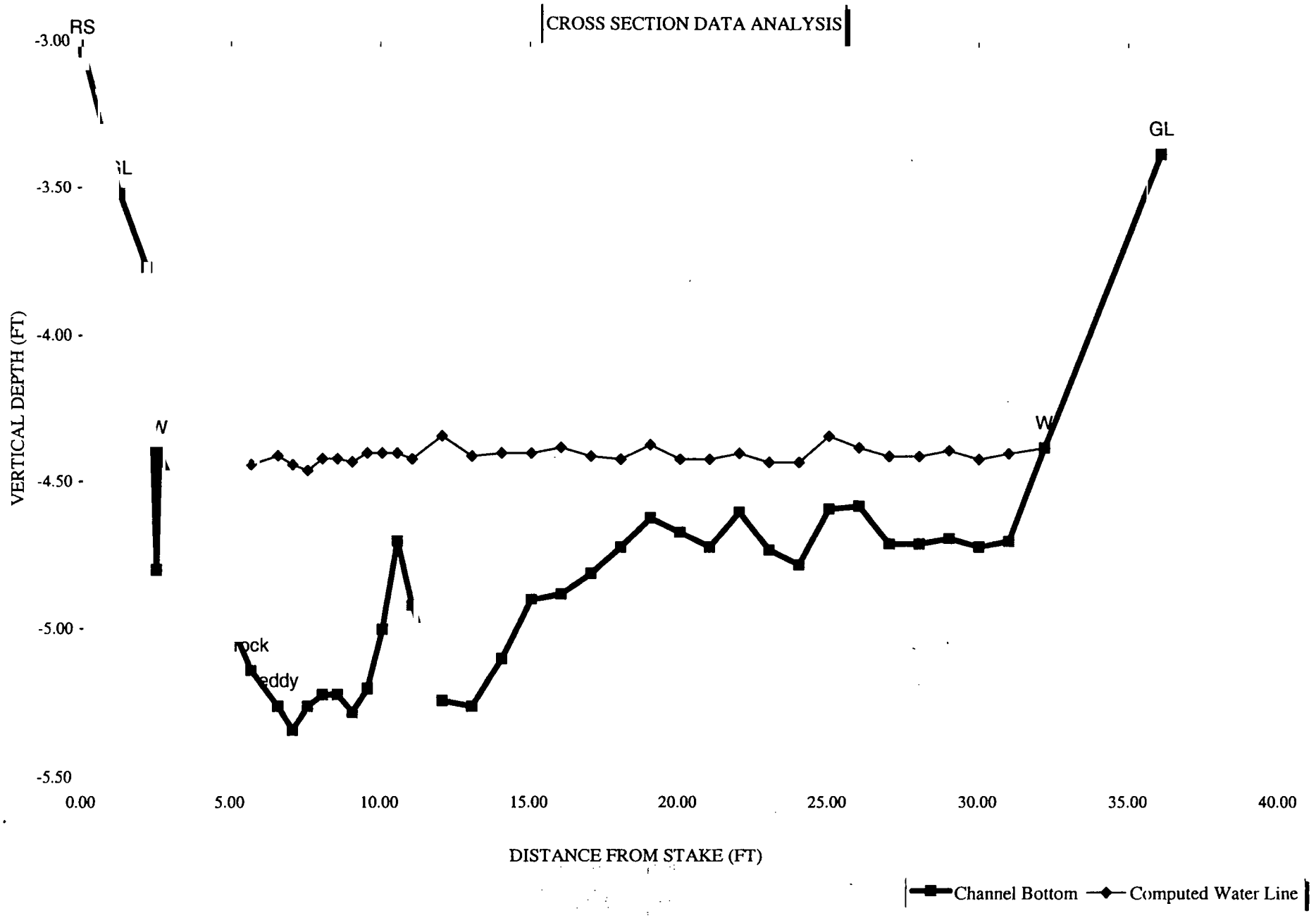
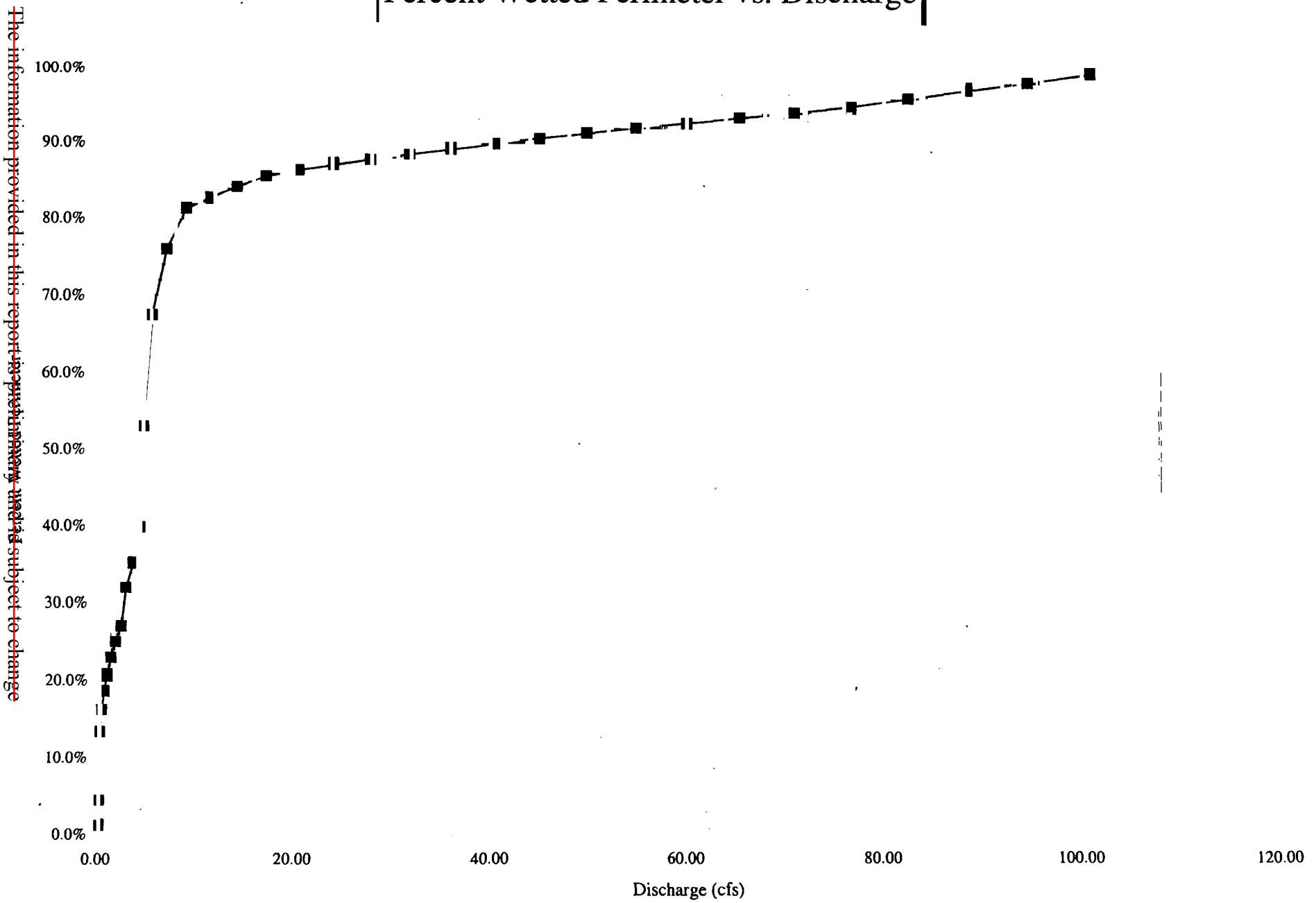
Big Creek



The information provided in this report is preliminary and is subject to change

Percent Wetted Perimeter vs. Discharge



COLORADO WATER CONSERVATION BOARD

FIELD DATA FOR INSTREAM FLOW DETERMINATIONS

COLORADO DIVISION OF WILDLIFE

LOCATION INFORMATION

STREAM NAME: Big Creek | CROSS-SECTION NO.: 2

CROSS-SECTION LOCATION: Approx. 1/4 mile upstream from Wyo. border

DATE: 7-28-05 | OBSERVERS: R. Smith, D. Belchar

LEGAL DESCRIPTION | ¼ SECTION: SE | SECTION: 19 | TOWNSHIP: 12 (N) S | RANGE: 81 E (W) | PM: 6th

COUNTY: Jackson | WATERSHED: N. Platte | WATER DIVISION: 6 | DOW WATER CODE:

MAP(S): USGS: Pearl 7.5' | USFS:

SUPPLEMENTAL DATA

SAG TAPE SECTION SAME AS DISCHARGE SECTION: (YES) NO | METER TYPE: Marsh-McBirney, surveyed

METER NUMBER: | DATE RATED: | CALIB/SPIN: ____ sec | TAPE WEIGHT: surveyed ____ lbs/foot | TAPE TENSION: surveyed ____ lbs

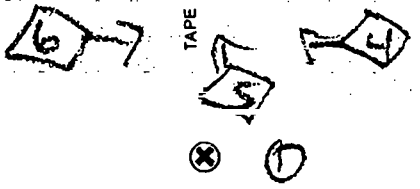
CHANNEL BED MATERIAL SIZE RANGE: gravel to 1-foot boulders | PHOTOGRAPHS TAKEN: (YES) NO | NUMBER OF PHOTOGRAPHS: 3

CHANNEL PROFILE DATA

STATION	DISTANCE FROM TAPE (ft)	ROD READING (ft)
⊗ Tape @ Stake LB	0.0	surveyed
⊗ Tape @ Stake RB	0.0	surveyed
① WS @ Tape LB/RB	0.0	6.06/6.08
② WS Upstream	30.0	5.88
③ WS Downstream	30.0	6.42

SLOPE | 0.54/60.0 = 0.009

SKETCH



LEGEND:
Stake ⊗
Station ①
Photo ①
Direction of Flow

AQUATIC SAMPLING SUMMARY

STREAM ELECTROFISHED: YES (NO) | DISTANCE ELECTROFISHED: ____ ft | FISH CAUGHT: (YES) NO | WATER CHEMISTRY SAMPLED: (YES) NO

LENGTH - FREQUENCY DISTRIBUTION BY ONE-INCH SIZE GROUPS (1.0-1.9, 2.0-2.9, ETC.)

SPECIES (FILL IN)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	>15	TOTAL

AQUATIC INSECTS IN STREAM SECTION BY COMMON OR SCIENTIFIC ORDER NAME:

mayfly, caddisfly, stonefly - high abundance

COMMENTS

Ph= 8.3 TDS= 80 Temp= 56° F

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FORM #ISF FD 1-85

DISCHARGE/CROSS SECTION NOTES

STREAM NAME: Big Creek | CROSS-SECTION NO.: 2 | DATE: 7-28-05 | SHEET __ OF __

BEGINNING OF MEASUREMENT | EDGE OF WATER LOOKING DOWNSTREAM: (0.0 AT STAKE) | LEFT / RIGHT | Gage Reading: 0.35 ft | TIME: 11:15

Features: Stake (S) Grassline (G) Waterline (W) Rock (R)	Distance From Initial Point (ft)	Width (ft)	Total Vertical Depth From Tape/Inst (ft)	Water Depth (ft)	Depth of Observation (ft)	Revolutions	Time (sec)	Velocity (ft/sec) At Point	Velocity (ft/sec) Mean in Vertical	Area (ft^2)	Discharge (cfs)
LS	0.0		3.86								
G	0.9		5.04								
	1.0		5.69								
W	2.0	0.25	6.08	Ø						0	
	2.5	0.75	6.28	0.2				0.24		1.50	
	3.6	1.0	6.52	0.45				0.86		0.45	
	4.5	1.0	6.52	0.45				0.68		0.45	
	5.5	1.0	6.80	0.70				0.94		0.7	
	6.5	1.0	6.90	0.85				1.16		0.85	
	7.5	1.0	6.83	0.80				1.60		0.8	
	8.5	1.0	6.94	0.90				1.31		0.9	
	9.5	1.0	6.86	0.80				1.97		0.8	
	10.5	1.0	6.80	0.75				1.37		0.75	
	11.5	1.0	6.76	0.70				1.40		0.7	
	12.5	1.0	6.61	0.50				1.98		0.5	
	13.5	1.0	6.59	0.50				1.74		0.5	
	14.5	1.0	6.40	0.30				1.71		0.3	
	15.5	1.0	6.66	0.55				0 [illegible]		0.55	
	16.5	1.5	6.74	0.65				1.33			
	18.5	2.0	6.74	0.65				1.73		1.30	
	20.5	2.0	6.69	0.60				1.11		1.20	
	22.5	2.0	6.58	0.50				1.32		1.0	
	24.5	2.0	6.42	0.35				1.31		0.7	
	26.5	2.0	6.34	0.25				0		0.5	
	28.5	2.0	6.28	0.20				0.25		0.4	
	30.5	1.85	6.20	0.15				0.16			
W	32.2	0.85	6.06	Ø							
G	35.0		5.16								
LS	38.6		4.39								

TOTALS: 30.2

~~The information provided in this report is preliminary and is subject to change~~

End of Measurement | Time: 12 noon | Gage Reading: 0.35 ft | CALCULATIONS PERFORMED BY: | CALCULATIONS CHECKED BY:

Data Input & Proofing

STREAM NAME: |Big Creek
XS LOCATION: |1/4 mi. upstream from WY border
XS NUMBER: |2
DATE: |7/28/05
OBSERVERS: |R. Smith, P. Belcher

1/4 SEC: |SE
SECTION: |19
TWP: |12N
RANGE: |81W
PM: |6th

COUNTY: |Jackson
WATERSHED: |N. Platte
DIVISION: |6
DOW CODE: |
USGS MAP: |Pearl 7.5'
USFS MAP: |

Level and Rod Survey
TAPE WT: |0.0106 lbs / ft
TENSION: |99999 lbs

SLOPE: | 0.009|ft / ft

CHECKED BY:.....DATE.....

ASSIGNED TO: .....DATE.....

GL=1	FEATURE	DIST	VERT DEPTH	WATER DEPTH	VEL	A	Q	Tape to Water
		Total Data Points = 28						
	RS	0.00	3.86			0.00	0.00	0.00
1	GL	0.90	5.04			0.00	0.00	0.00
		1.00	5.69			0.00	0.00	0.00
		2.00	6.08	0.00	0.00	0.00	0.00	0.00
	W	2.50	6.28	0.20	0.24	0.15	0.04	6.08
		3.50	6.52	0.45	0.86	0.45	0.39	6.07
		4.50	6.52	0.45	0.68	0.45	0.31	6.07
		5.50	6.80	0.70	0.94	0.70	0.66	6.10
		6.50	6.90	0.85	1.16	0.85	0.99	6.05
		7.50	6.83	0.80	1.60	0.80	1.28	6.03
		8.50	6.94	0.90	1.31	0.90	1.18	6.04
		9.50	6.86	0.80	1.97	0.80	1.58	6.06
		10.50	6.80	0.75	1.37	0.75	1.03	6.05
		11.50	6.76	0.70	1.40	0.70	0.98	6.06
		12.50	6.61	0.50	1.98	0.50	0.99	6.11
		13.50	6.59	0.50	1.74	0.50	0.87	6.09
		14.50	6.40	0.30	1.71	0.30	0.51	6.10
	eddy	15.50	6.66	0.55	0.00	0.55	0.00	6.11
		16.50	6.74	0.65	1.33	0.98	1.30	6.09
		18.50	6.74	0.65	1.73	1.30	2.25	6.09
		20.50	6.69	0.60	1.16	1.20	1.39	6.09
		22.50	6.58	0.50	1.32	1.00	1.32	6.08
		24.50	6.42	0.35	1.31	0.70	0.92	6.07
		26.50	6.34	0.25	0.00	0.50	0.00	6.09
		28.50	6.28	0.20	0.25	0.40	0.10	6.08
		30.50	6.20	0.15	0.10	0.28	0.03	6.05
	W	32.20	6.06	0.00	0.00	0.00	0.00	0.00
1	GL	35.00	5.16			0.00	0.00	0.00
	LS	38.60	4.38					
					Totals	14.75	18.09	

COLORADO WATER CONSERVATION BOARD
INSTREAM FLOW / NATURAL LAKE LEVEL PROGRAM
STREAM CROSS-SECTION AND FLOW ANALYSIS

LOCATION INFORMATION

STREAM NAME:	Big Creek
XS LOCATION:	1/4 mi. upstream from WY border
XS NUMBER:	2
DATE:	28-Jul-05
OBSERVERS:	R. Smith, P. Belcher
1/4 SEC:	SE
SECTION:	19
TWP:	12N
RANGE:	81W
PM:	6th
COUNTY:	Jackson
WATERSHED:	N. Platte
DIVISION:	6
DOW CODE:	0
USGS MAP:	Pearl 7.5'
USFS MAP:	0

SUPPLEMENTAL DATA

*** NOTE ***
Leave TAPE WT and TENSION at defaults for data collected with a survey level and rod

TAPE WT:	0.0106
TENSION:	99999

CHANNEL PROFILE DATA

SLOPE:	0.009

INPUT DATA CHECKED BY: .....DATE.....

ASSIGNED TO: .....DATE.....

~~The information provided in this report is preliminary and is subject to change~~

STREAM NAME: Big Creek
XS LOCATION: 1/4 mi. upstream from WY border
XS NUMBER: 2

DATA POINTS= 28

VALUES COMPUTED FROM RAW FIELD DATA

FEATURE	DIST	VERT DEPTH	WATER DEPTH	VEL	WETTED PERIM.	WATER DEPTH	AREA (Am)	Q (Qm)	% Q CELL
RS	0.00	3.86			0.00		0.00	0.00	0.0%
1 GL	0.90	5.04			0.00		0.00	0.00	0.0%
	1.00	5.69			0.00		0.00	0.00	0.0%
	2.00	6.08	0.00	0.00	0.00		0.00	0.00	0.0%
W	2.50	6.28	0.20	0.24	0.54	0.20	0.15	0.04	0.2%
	3.50	6.52	0.45	0.86	1.03	0.45	0.45	0.39	2.1%
	4.50	6.52	0.45	0.68	1.00	0.45	0.45	0.31	1.7%
	5.50	6.80	0.70	0.94	1.04	0.70	0.70	0.66	3.6%
	6.50	6.90	0.85	1.16	1.00	0.85	0.85	0.99	5.5%
	7.50	6.83	0.80	1.60	1.00	0.80	0.80	1.28	7.1%
	8.50	6.94	0.90	1.31	1.01	0.90	0.90	1.18	6.5%
	9.50	6.86	0.80	1.97	1.00	0.80	0.80	1.58	8.7%
	10.50	6.80	0.75	1.37	1.00	0.75	0.75	1.03	5.7%
	11.50	6.76	0.70	1.40	1.00	0.70	0.70	0.98	5.4%
	12.50	6.61	0.50	1.98	1.01	0.50	0.50	0.99	5.5%
	13.50	6.59	0.50	1.74	1.00	0.50	0.50	0.87	4.8%
	14.50	6.40	0.30	1.71	1.02	0.30	0.30	0.51	2.8%
eddy	15.50	6.66	0.55	0.00	1.03	0.55	0.55	0.00	0.0%
	16.50	6.74	0.65	1.33	1.00	0.65	0.98	1.30	7.2%
	18.50	6.74	0.65	1.73	2.00	0.65	1.30	2.25	12.4%
	20.50	6.69	0.60	1.16	2.00	0.60	1.20	1.39	7.7%
	22.50	6.58	0.50	1.32	2.00	0.50	1.00	1.32	7.3%
	24.50	6.42	0.35	1.31	2.01	0.35	0.70	0.92	5.1%
	26.50	6.34	0.25	0.00	2.00	0.25	0.50	0.00	0.0%
	28.50	6.28	0.20	0.25	2.00	0.20	0.40	0.10	0.6%
	30.50	6.20	0.15	0.10	2.00	0.15	0.28	0.03	0.2%
W	32.20	6.06	0.00	0.00	1.71		0.00	0.00	0.0%
1 GL	35.00	5.16			0.00		0.00	0.00	0.0%
TOTALS ----------					30.41	0.9 (Max.)	14.75	18.09	100.0%

Manning's n = 0.0710
Hydraulic Radius= 0.485116142

~~The information provided in this report is preliminary and is subject to change~~

STREAM NAME: Big Creek
XS LOCATION: 1/4 mi. upstream from WY border
XS NUMBER: 2

WATER LINE COMPARISON TABLE

WATER LINE	MEAS AREA	COMP AREA	AREA ERROR
	14.75	14.94	1.3%
5.82	14.75	22.66	53.6%
5.84	14.75	22.03	49.3%
5.86	14.75	21.40	45.1%
5.88	14.75	20.78	40.8%
5.90	14.75	20.15	36.6%
5.92	14.75	19.53	32.4%
5.94	14.75	18.91	28.2%
5.96	14.75	18.29	24.0%
5.98	14.75	17.68	19.8%
6.00	14.75	17.07	15.7%
6.02	14.75	16.45	11.5%
6.03	14.75	16.15	9.5%
6.04	14.75	15.85	7.4%
6.05	14.75	15.54	5.4%
6.06	14.75	15.24	3.3%
6.07	14.75	14.94	1.3%
6.08	14.75	14.64	-0.8%
6.09	14.75	14.34	-2.8%
6.10	14.75	14.04	-4.8%
6.11	14.75	13.75	-6.8%
6.12	14.75	13.45	-8.8%
6.14	14.75	12.87	-12.8%
6.16	14.75	12.29	-16.7%
6.18	14.75	11.72	-20.6%
6.20	14.75	11.15	-24.4%
6.22	14.75	10.59	-28.2%
6.24	14.75	10.04	-31.9%
6.26	14.75	9.51	-35.6%
6.28	14.75	8.98	-39.1%
6.30	14.75	8.47	-42.6%
6.32	14.75	7.97	-46.0%

WATERLINE AT ZERO AREA ERROR = 6.076

STREAM NAME: Big Creek
XS LOCATION: 1/4 mi. upstream from WY border
XS NUMBER: 2

Constant Manning's n

"GL" = lowest Grassline elevation corrected for sag
STAGING TABLE "WL" = Waterline corrected for variations in field measured water surface elevations and sag

	DIST TO WATER (FT)	TOP WIDTH (FT)	AVG. DEPTH (FT)	MAX. DEPTH (FT)	AREA (SQ FT)	WETTED PERIM. (FT)	PERCENT WET PERIM (%)	HYDR RADIUS (FT)	FLOW (CFS)	AVG. VELOCITY (FT/SEC)
"GL"	5.16	34.08	1.30	1.78	44.43	34.96	100.0%	1.27	103.53	2.33
	5.18	34.03	1.29	1.76	43.87	34.89	99.8%	1.26	101.53	2.31
	5.23	33.87	1.25	1.71	42.18	34.68	99.2%	1.22	95.46	2.26
	5.28	33.70	1.20	1.66	40.49	34.46	98.6%	1.17	89.54	2.21
	5.33	33.54	1.16	1.61	38.81	34.25	98.0%	1.13	83.78	2.16
	5.38	33.38	1.11	1.56	37.13	34.04	97.4%	1.09	78.17	2.11
	5.43	33.21	1.07	1.51	35.47	33.82	96.7%	1.05	72.72	2.05
	5.48	33.05	1.02	1.46	33.81	33.61	96.1%	1.01	67.44	1.99
	5.53	32.89	0.98	1.41	32.16	33.39	95.5%	0.96	62.31	1.94
	5.58	32.72	0.93	1.36	30.52	33.18	94.9%	0.92	57.35	1.88
	5.63	32.56	0.89	1.31	28.89	32.97	94.3%	0.88	52.56	1.82
	5.68	32.40	0.84	1.26	27.27	32.75	93.7%	0.83	47.94	1.76
	5.73	32.15	0.80	1.21	25.65	32.47	92.9%	0.79	43.55	1.70
	5.78	31.86	0.75	1.16	24.05	32.17	92.0%	0.75	39.36	1.64
	5.83	31.58	0.71	1.11	22.47	31.87	91.2%	0.70	35.35	1.57
	5.88	31.29	0.67	1.06	20.90	31.57	90.3%	0.66	31.52	1.51
	5.93	31.01	0.62	1.01	19.34	31.27	89.4%	0.62	27.88	1.44
	5.98	30.73	0.58	0.96	17.80	30.97	88.6%	0.57	24.43	1.37
	6.03	30.44	0.53	0.91	16.27	30.67	87.7%	0.53	21.17	1.30
"WL"	6.08	30.01	0.49	0.86	14.75	30.22	86.4%	0.49	18.17	1.23
	6.13	29.28	0.45	0.81	13.27	29.48	84.3%	0.45	15.48	1.17
	6.18	28.55	0.41	0.76	11.82	28.74	82.2%	0.41	12.99	1.10
	6.23	27.48	0.38	0.71	10.42	27.66	79.1%	0.38	10.80	1.04
	6.28	26.11	0.35	0.66	9.08	26.27	75.1%	0.35	8.88	0.98
	6.33	24.27	0.32	0.61	7.82	24.43	69.9%	0.32	7.27	0.93
	6.38	22.70	0.29	0.56	6.65	22.85	65.3%	0.29	5.80	0.87
	6.43	21.08	0.26	0.51	5.55	21.21	60.7%	0.26	4.51	0.81
	6.48	19.79	0.23	0.46	4.53	19.91	56.9%	0.23	3.35	0.74
	6.53	17.50	0.20	0.41	3.58	17.60	50.3%	0.20	2.46	0.69
	6.58	16.24	0.17	0.36	2.74	16.32	46.7%	0.17	1.65	0.60
	6.63	13.80	0.14	0.31	1.99	13.87	39.7%	0.14	1.08	0.54
	6.68	12.05	0.11	0.26	1.34	12.10	34.6%	0.11	0.61	0.46
	6.73	9.22	0.09	0.21	0.80	9.25	26.5%	0.09	0.31	0.39
	6.78	5.68	0.08	0.16	0.46	5.70	16.3%	0.08	0.17	0.37
	6.83	4.30	0.05	0.11	0.21	4.32	12.4%	0.05	0.05	0.26
	6.88	1.96	0.03	0.06	0.05	1.96	5.6%	0.03	0.01	0.17
	6.93	0.30	0.01	0.01	0.00	0.30	0.9%	0.01	0.00	0.07

0.34 d = 8.35 cfs 2/3

1 fps = 9.51 cfs 3/3

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STREAM NAME: Big Creek
XS LOCATION: 1/4 mi. upstream from WY border
XS NUMBER: 2

SUMMARY SHEET

MEASURED FLOW (Qm)=	18.09	cfs
CALCULATED FLOW (Qc)=	18.17	cfs
(Qm-Qc)/Qm * 100 =	-0.4	%
MEASURED WATERLINE (WLm)=	6.07	ft
CALCULATED WATERLINE (WLc)=	6.08	ft
(WLm-WLc)/WLm * 100 =	-0.1	%
MAX MEASURED DEPTH (Dm)=	0.90	ft
MAX CALCULATED DEPTH (Dc)=	0.86	ft
(Dm-Dc)/Dm * 100	4.0	%
MEAN VELOCITY=	1.23	ft/sec
MANNING'S N=	0.071	
SLOPE=	0.009	ft/ft
.4 * Qm =	7.2	cfs
2.5 * Qm=	45.2	cfs

RECOMMENDED INSTREAM FLOW:

FLOW (CFS)	PERIOD

RATIONALE FOR RECOMMENDATION:

RECOMMENDATION BY: ..... AGENCY..... DATE:.....

CWCB REVIEW BY: ..... DATE:.....

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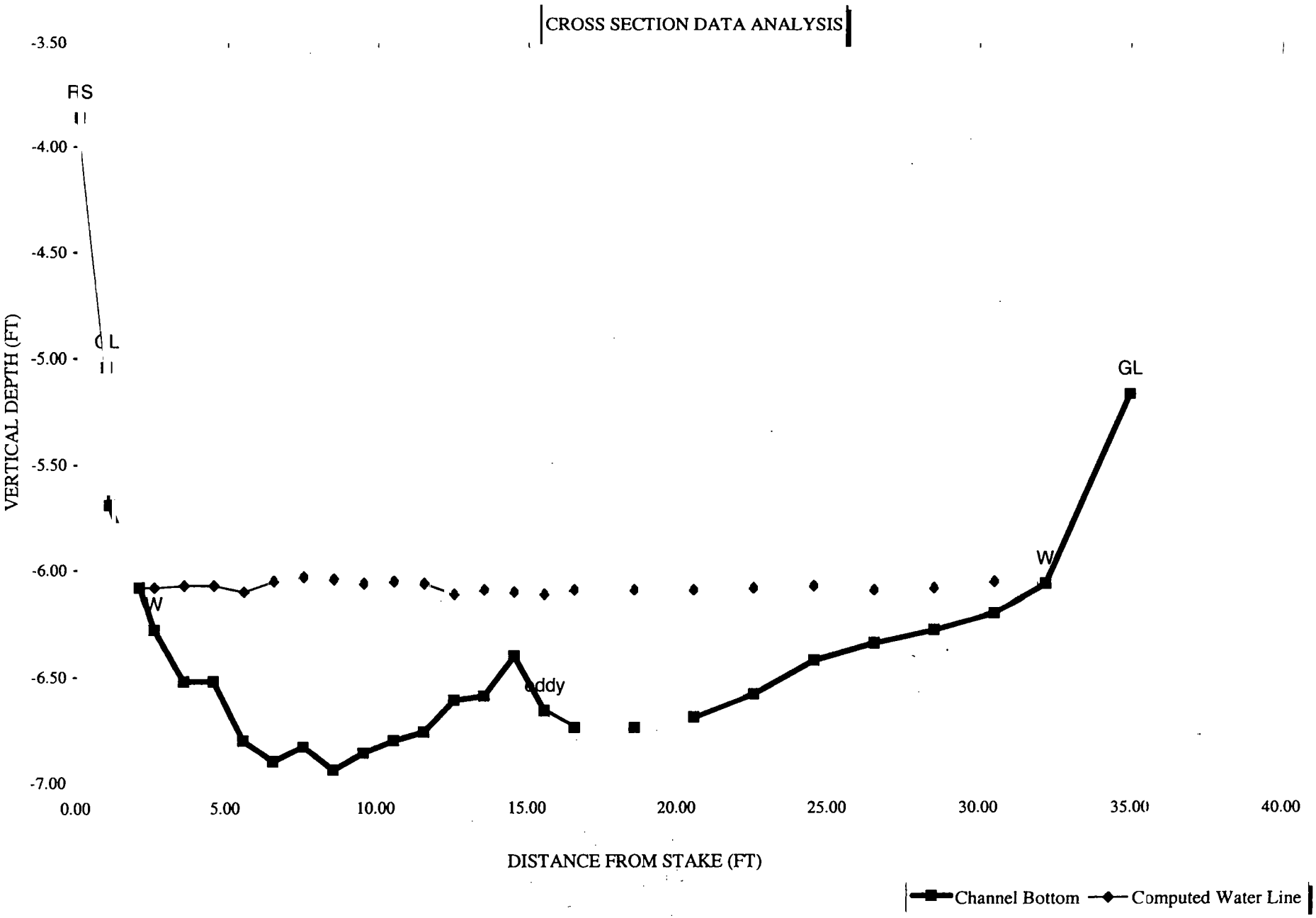
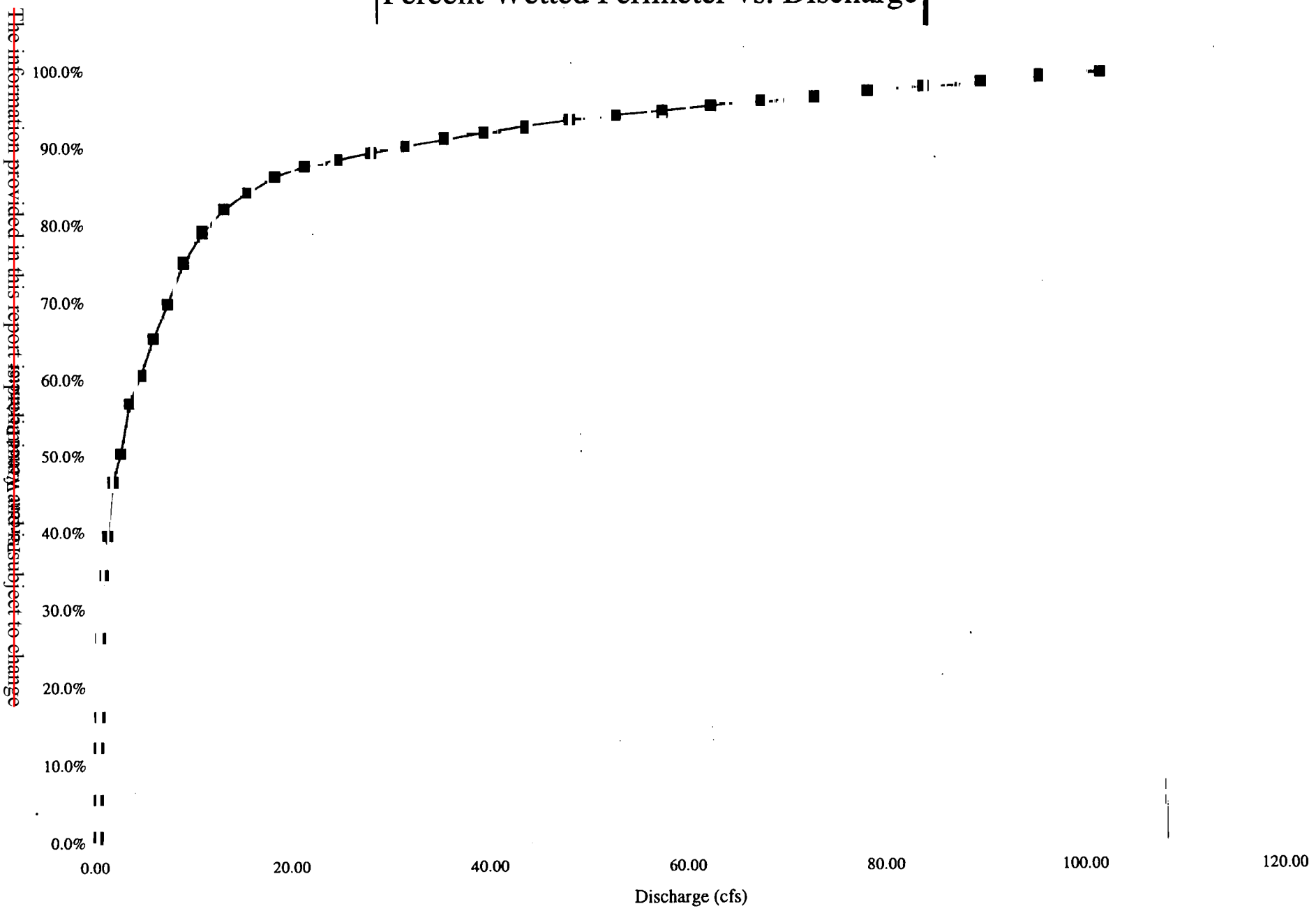
Big Creek



Percent Wetted Perimeter vs. Discharge



COLORADO WATER CONSERVATION BOARD

FIELD DATA FOR INSTREAM FLOW DETERMINATIONS

COLORADO DIVISION OF WILDLIFE

LOCATION INFORMATION

STREAM NAME: Indian Creek

CROSS-SECTION LOCATION: SW of Ironclad Mtn.

CROSS-SECTION NO.: 1

DATE: 9-29-05 OBSERVERS: R. Smith, P. Belcher

LEGAL DESCRIPTION: ¼ SECTION: NW SECTION: 14 TOWNSHIP: 5 (N)/S RANGE: 81 E(W) PM: 6th

COUNTY: Jackson WATERSHED: N. Platte WATER DIVISION: 6 DOW WATER CODE:

MAP(S): USGS: 13 0376435 GPS 4473750

USFS:

SUPPLEMENTAL DATA

SAG TAPE SECTION SAME AS DISCHARGE SECTION: (YES)/NO METER TYPE: Marsh-McBirney

METER NUMBER: DATE RATED: CALIB/SPIN: ____ sec TAPE WEIGHT: surveyed lbs/foot TAPE TENSION: surveyed lbs

CHANNEL BED MATERIAL SIZE RANGE: gravel to 3-inch cobbles

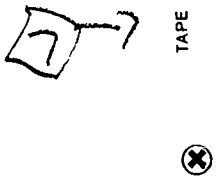
PHOTOGRAPHS TAKEN: (YES)/NO NUMBER OF PHOTOGRAPHS: 3

CHANNEL PROFILE DATA

STATION	DISTANCE FROM TAPE (ft)	ROD READING (ft)
⊗ Tape @ Stake LB	0.0	surveyed
⊗ Tape @ Stake RB	0.0	surveyed
① WS @ Tape LB/RB	0.0	5.85/5.85
② WS Upstream	29.0'	5.65
③ WS Downstream	28.0'	6.16

SLOPE | 0.51/57.0 = 0.009

SKETCH



LEGEND:
Stake ⊗
Station ①
Photo ①
Direction of Flow

AQUATIC SAMPLING SUMMARY

STREAM ELECTROFISHED: YES/(NO) | DISTANCE ELECTROFISHED ____ ft | FISH CAUGHT YES/NO | WATER CHEMISTRY SAMPLED (YES)/NO

LENGTH - FREQUENCY DISTRIBUTION BY ONE-INCH SIZE GROUPS (1.0-1.9, 2.0-2.9, ETC.)

SPECIES (FILL IN)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	>15	TOTAL
see attached survey																	

AQUATIC INSECTS IN STREAM SECTION BY COMMON OR SCIENTIFIC ORDER NAME.

mayfly, some caddisfly

COMMENTS

Ph = 8.0
TDS = 170
Temp = 53°

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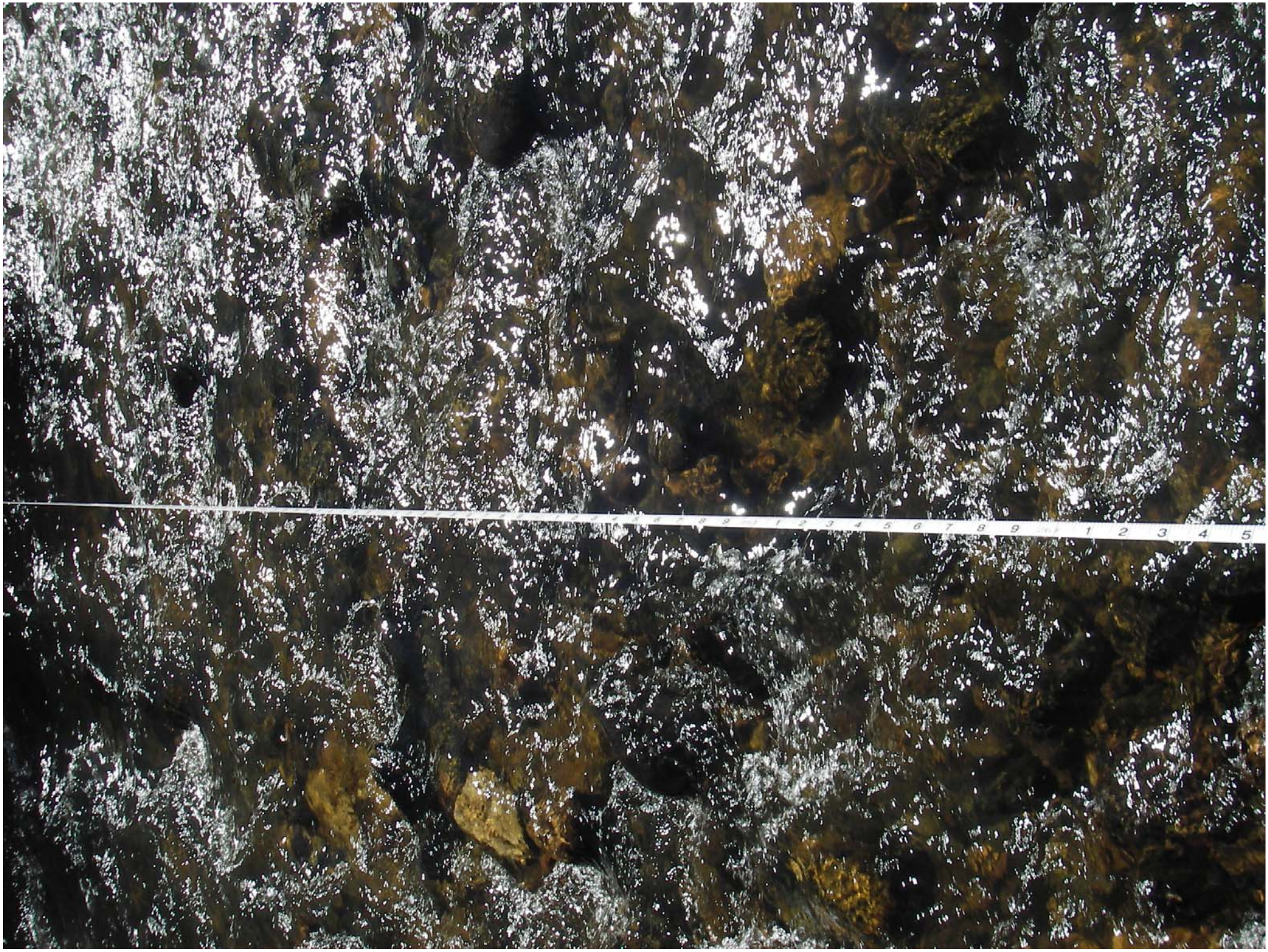
FORM #ISF ED 1-85

Water: Big Creek - South Fork
Date: 08/02/2005
Location: Near State Line
Drainage: NP
Water Code: 10215
UTM Zone: 13T
UTM X: 371668
UTM Y: 4541446
Station Length = 250
Station Width = 19.4
Crew:K2 Crew
Notes: 1st Pass YOY Count = 24, 2nd Pass YOY Count = 18

Species	Count	Length (m	Weight (g	Status	Mark	TagID
LOC	1	145	30	1		
LOC	1	224	110	1		
LOC	1	257	190	1		
LOC	1	345	470	1		
LOC	1	313	360	1		
LOC	1	130	30	1		
LOC	1	272	220	1		
LOC	1	148	40	1		
LOC	1	306	260	1		
LOC	1	145	50	1		
LOC	1	162	60	1		
LOC	1	262	210	1		
LOC	1	230	140	1		
LOC	1	142	35	1		
LOC	1	208	90	1		
LOC	1	137	40	1		
LOC	1	272	200	1		
LOC	1	145	30	1		
LOC	1	150	35	1		
LOC	1	145	35	1		
LOC	1	227	110	1		
LOC	1	135	20	1		
LOC	1	128	15	1		
LOC	1	143	20	1		
LOC	1	160	40	1		
LOC	1	157	40	1		
LOC	1	138	30	1		
LOC	1	129	15	1		
LOC	1	166	35	1		
LOC	1	157	25	1		
LOC	1	154	30	1		
LOC	1	166	40	1		
LOC	1	137	15	1		
LOC	1	160	30	1		
LOC	1	146	25	1		

LOC	1	148	35	1
LOC	1	137	30	1
LOC	1	145	35	1
LOC	1	141	20	1
LOC	1	152	35	1
LOC	1	156	40	1
LOC	1	154	40	1
LOC	1	159	40	1
LOC	1	132	20	1
LOC	1	151	30	1
LOC	1	143	30	1
LOC	1	148	40	1
LOC	1	149	35	1
LOC	1	137	30	1
LOC	1	138	30	1
LOC	1	124	20	1
LOC	1	138	30	1
LOC	1	132	25	1
LOC	1	137	25	1
LOC	1	150	35	1
LOC	1	127	20	1
LOC	1	127	20	1
LOC	1	127	20	1
LOC	1	148	25	1
LND	1	102	12	1
LOC	1	143	40	1
LOC	1	133	20	1
LOC	1	130	25	1
LOC	1	137	25	1
LOC	1	137	20	1
LOC	1	138	25	1
LOC	1	133	20	1
LOC	1	135	30	1
LOC	1	126	30	1
LOC	1	128	25	1
LOC	1	64	2.5	1
LOC	1	61	2.5	1
LOC	1	63	2.5	1
LOC	1	57	2.5	1
LOC	1	66	2.5	1
LOC	1	66	2.5	1
LOC	1	52	2.5	1
LOC	1	71	2.5	1
LOC	1	62	2.5	1
LOC	1	52	2.5	1
WHS	1	103	13	1
LND	1	34	3	1
WHS	1	92	8	1
WHS	1	115	16	1

WHS	1	102	13	1
LND	1	92	70	1
LND	1	93	8	1
LND	1	93	8	1
WHS	1	105	15	1
WHS	1	135	30	1
LND	1	39	2	1
LND	1	93	8	1
LOC	1	220	110	2
LOC	1	133	25	2
LOC	1	137	25	2
LOC	1	144	50	2
LOC	1	156	50	2
LOC	1	148	50	2
LOC	1	145	50	2
LOC	1	145	50	2
LOC	1	125	45	2
WHS	1	155	50	2
WHS	1	110	20	2
WHS	1	133	50	2
WHS	1	115	40	2
LND	1	70	6	2
LND	1	75	6	2
LND	1	99	8	2
LND	1	92	8	2
LND	1	81	7	2
LND	1	76	7	2



Water Availability

Station Name	ROARING FORK NEAR WALDEN, CO.
Station ID	6612500
Param	STREAM FLOW CFS
Statistic	Mean
State	CO
County	JACKSON
Latitude	40:40:59
Longitude	106:27:36
Elevation	8037.44
Start Year	1904
End Year	1947
Num Years	27

	January	February	March	April	May	June	July	August	September	October	November	December	Year
# Days	744	678	744	750	806	780	775	775	750	775	720	744	9041
Avg Day	11	11.46	18.88	84.34	117.8	223.4	82.95	48.86	27.9	27.42	21.85	14.07	58.95
Max Day	20	20	54	465	550	732	493	218	170	230	57	32	732
Min Day	6	6	10	7	4	5.5	4.2	8	4.5	6.2	6.8	9	4
# Months	24	24	24	25	26	26	25	25	25	25	24	24	24
SDev Month	3.19	2.98	5.03	52.71	69.71	93.53	50.63	22.54	18.19	14.51	7.4	4.33	21.06
Skew Month	0.868	0.784	0.625	0.826	0.668	-0.281	0.731	0.678	1.7	1.71	1.24	0.941	0.054
Min Month	6	6	10	21.23	29.68	17.47	7.03	15.53	7.21	7.98	12.18	9	21.46
Max Month	20	20	30	207.4	257.5	376.3	184.7	100.1	78.13	73.81	43.13	25	94.24
Exceedences													
1%	20	20	30	332.5	451.9	563	371.5	158	118	92.25	48	25	425
5%	15	15	30	247	308	475	215	106	70	59.25	37	20	252
10%	15	15	25	185	257.4	417	163	87	54	46	35	20	158
20%	13	13	20	129	198	350	122	69	37	34	26	18	80
50%	12	12	20	60	85	208	64	43	21	24	20	12	24
80%	8	9	15	30	32	94	34	25	14	17	16	10	12
90%	7	8	13	27	20	56	20.5	20	10	12	13	10	10
95%	7	8	12	25	14	33	13	16.75	8.8	9	12	10	9
99%	6	6	10	14	11	7.4	5	12	6	6.8	10	9	6

times 0.45006

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1%	9.0	9.0	13.5	149.6	203.4	253.4	167.2	71.1	53.1	41.5	21.6	11.3
5%	6.8	6.8	13.5	111.2	138.6	213.8	96.8	47.7	31.5	26.7	16.7	9.0
10%	6.8	6.8	11.3	83.3	115.8	187.7	73.4	39.2	24.3	20.7	15.8	9.0
20%	5.9	5.9	9.0	58.1	89.1	157.5	54.9	31.1	16.7	15.3	11.7	8.1
50%	5.4	5.4	9.0	27.0	38.3	93.6	28.8	19.4	9.5	10.8	9.0	5.4
80%	3.6	4.1	6.8	13.5	14.4	42.3	15.3	11.3	6.3	7.7	7.2	4.5
90%	3.2	3.6	5.9	12.2	9.0	25.2	9.2	9.0	4.5	5.4	5.9	4.5
95%	3.2	3.6	5.4	11.3	6.3	14.9	5.9	7.5	4.0	4.1	5.4	4.5
99%	2.7	2.7	4.5	6.3	5.0	3.3	2.3	5.4	2.7	3.1	4.5	4.1
	5	5	5								5	5
			8.2	8.2	8.2			8.2	8.2	8.2	8.2	
					10.2	10.2	10.2	10.2				

Monthly Climatic Data for PEARL for years 1931 - 1950
Station - 56382 Latitude - 4058 Longitude - 10634 Elevation - 8500

Total monthly precipitation.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1931	11	67	137	64	103	116	97	51	205	183	94	129	12.57
1932	151	242	306	144	81	80	71	266	20	176	63	123	17.23
1933	109	69	85	322	150	88	57	106	156	0	36	191	13.69
1934	66	174	145	66	281	66	133	187	137	45	89	170	15.59
1935	96	29	129	224	441	70	402	75	94	139	114	24	18.37
1936	156	384	147	102	25	112	271	237	54	88	49	128	17.53
1937	60	105	110	171	152	230	233	158	143	132	140	75	17.09
1938	M	M	M	M	M	119	179	346	226	73	M	M	
1939	M	M	M	M	M	71	113	60	158	87	M	M	
1940	M	M	M	M	M	92	131	116	119	210	M	M	
1941	M	M	M	M	M	156	230	181	148	218	M	M	
1942	M	M	M	M	M	129	168	61	228	156	140	M	
1943	M	M	M	M	M	231	31	166	7	119	M	M	
1944	M	M	M	M	M	79	234	12	100	179	M	M	
1945	M	M	M	M	M	361	185	272	117	75	M	M	
1946	M	M	M	M	M	86	94	223	116	255	M	M	
1947	M	M	M	M	M	281	205	134	156	167	150	136	
1948	M	M	M	M	M	M	M	91	176	88	0	0I	
1949	0	0	0	0	0	263	138	47	167	297	0	0I	9.12
1950	0	0	0	0	0	39	116	70	217I	M	M	M	
Ave	0.72	1.19	1.18	1.21	1.37	1.40	1.63	1.43	1.37	1.41	0.80	0.98	15.15
Max	1.56	3.84	3.06	3.22	4.41	3.61	4.02	3.46	2.28	2.97	1.50	1.91	18.37
Year	1936	1936	1932	1933	1935	1945	1935	1938	1942	1949	1947	1933	1935
Min	0.00	0.00	0.00	0.00	0.00	0.39	0.31	0.12	0.07	0.00	0.00	0.00	9.12
Year	1950+	1950+	1950+	1950+	1950+	1950	1943	1944	1943	1933	1949+	1949+	1949
Count	9	9	9	9	9	19	19	20	20	19	11	10	8

Monthly Climatic Data for COLUMBINE for years 1931 - 1949
Station - 51792 Latitude - 4051 Longitude - 10658 Elevation - 8700

Total monthly precipitation.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1931	88	83	242	117	240	104	186	117	339	206	216	242	21.80
1932	297	477	432	225	106	143	199	237	76	266	110	237	28.05
1933	165	127	293	266	225	30	75	183	172	0	70	323	19.29
1934	167	178	143	82	77	56	162	341	215	51	189	313	19.74
1935	241	48	196	455	302	52	261	250	118	337	135	124	25.19
1936	425	583	236	181	53	130	249	247	25	42	59	244	24.74
1937	73	325	180	279	151	116	237	156	55	143	192	136	20.43
1938	342	386	373	164	414	154	42	226	245	140	242	306	30.34
1939	430	228	35	90	82	35	81	T	249	117	33	196	15.76
1940	371	247	309	373	225	110	170	164	534	347	201	131	31.82
1941	394	212	253	447	254	375	150	276	237	348	140	426	35.12
1942	298	225	265	479	243	108	124	54	108	176	423	278	27.81
1943	262	324	349	134	270	175	72	M	M	M	M	M	
1948	M	M	M	M	M	M	M	M	M	125	0	0I	
1949	0	0	0	0	0	199I	81	21	148I	M	M	M	
Ave	2.54	2.46	2.36	2.35	1.89	1.28	1.49	1.75	1.94	1.77	1.55	2.27	25.01
Max	4.30	5.83	4.32	4.79	4.14	3.75	2.61	3.41	5.34	3.48	4.23	4.26	35.12
Year	1939	1936	1932	1942	1938	1941	1935	1934	1940	1941	1942	1941	1941
Min	0.00	0.00	0.00	0.00	0.00	0.30	0.42	0.00	0.25	0.00	0.00	0.00	15.76
Year	1949	1949	1949	1949	1949	1933	1938	1939	1936	1933	1948	1948	1939
Count	14	14	14	14	14	14	14	13	13	13	13	13	12

GREEN RIVER, WYOMING

Monthly Total Precipitation (inches)

(484065)

File last updated on Jul 25, 2006
*** Note *** Provisional Data *** After Year/Month 200603
a = 1 day missing, b = 2 days missing, c = 3 days, ..etc..,
z = 26 or more days missing, A = Accumulations present
Long-term means based on columns; thus, the monthly row may not
sum (or average) to the long-term annual value.
MAXIMUM ALLOWABLE NUMBER OF MISSING DAYS : 5
Individual Months not used for annual or monthly statistics if more than 5 days are missing.
Individual Years not used for annual statistics if any month in that year has more than 5 days missing.

YEAR(S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1915	0.14 a	0.32	0.36	1.23 a	0.68	0.88	0.10	0.05	1.68	0.39 a	0.76	0.29	6.88
1916	0.39	0.40	0.46	0.48	0.39	0.04	0.52	0.16	0.12	1.00	0.04	0.24	4.24
1917	0.15	1.09	0.10	1.06	2.36	0.40	0.00 f	0.09 p	1.27	0.17	0.17 b	0.01	6.78
1918	0.09	0.43	0.67	0.47 i	0.71 g	0.95	0.60 c	0.03 g	0.96	0.17	0.16	0.13	4.16
1919	0.00	0.19	0.21	1.56	0.45	0.00	0.25	0.02 b	0.46	2.01	0.23	0.24	5.62
1920	0.04	0.42	0.26	0.90	0.64	0.11	0.00 z	0.00 z	0.54	1.23	0.03	0.25	4.42
1921	0.17	0.28	0.49	1.41	2.35	2.23	0.12 q	0.49 k	0.40	0.18	0.07	0.52	8.10
1922	0.17	0.93	0.21	0.89	1.13 a	0.03	0.01	0.65	0.55	0.67	0.67	1.04	6.95
1923	0.53	0.19 a	0.32 a	0.87	2.03	0.03 a	1.00	0.05 a	2.62	0.93	0.39 a	0.38	9.34
1924	0.40	0.08	0.48	0.47	0.72	0.02	0.44	0.03	0.72	0.91	0.63	0.84	5.74
1925	0.60	0.59	0.09	0.39	1.45	1.78	2.26	1.83	1.87	0.72	0.16	0.49	12.23
1926	0.63	0.86	0.19	0.40	0.86	0.50	1.60	0.35	0.73	0.24	0.71	0.49	7.56
1927	0.22	1.00	1.17	0.90	0.88	1.26	0.12	0.26	2.58	0.50	0.51	0.38	9.78
1928	0.29	0.13	0.47	0.57	1.63	0.15	0.18	0.02	0.01	1.58 a	1.50	0.31	6.84
1929	0.43	0.60	0.44	1.35	1.09	0.52	0.02	0.54	1.90	0.71	0.24	0.06	7.90
1930	0.75	0.19	0.17	0.64	1.05	0.68	0.54	4.24	0.49	0.62	0.28	0.00	9.65
1931	0.05	0.16	1.08	0.40	0.13	0.55	0.36	1.58	0.56	0.48	0.89	0.15	6.39

1932	0.47 a	0.68	1.32	2.10	0.46	0.40	0.37	1.14	0.00	1.31	0.05	0.49	8.79
1933	0.35	0.73	0.54	0.98	1.36	0.12	0.46	0.34	0.31	0.00	0.14	0.19	5.52
1934	0.06	0.80	0.13	1.01	0.03	0.27	0.37	0.10 a	0.29	1.34	1.01	0.19	5.60
1935	0.11	0.35	0.27	2.16	2.23	0.20	0.33	0.31	0.03	0.11	0.26	0.19	6.55
1936	0.52	0.96	0.68	0.48	0.68	0.72	1.51	0.77	0.66	0.81	0.59	0.67	9.05
1937	0.48	0.79	0.29	0.75	0.86 a	1.47	3.69	0.75	0.44	0.69	0.49	0.36	11.06
1938	0.05	0.52	1.19	1.68	1.57	0.58	0.57	1.02	2.03 a	2.07 a	0.58	0.10	11.96
1939	0.11	0.62	0.20	0.87	0.31	0.60	0.21	0.11	0.81	0.71	0.00	0.03	4.58
1940	1.60	0.37	1.47	1.26 a	0.65	0.00	0.46	0.12	2.13 a	0.85	0.70	0.38	9.99
1941	0.28	0.12	0.94	2.30	1.13	1.15	1.15	2.48	0.51	1.38	0.48 a	0.49	12.41
1942	0.63	0.34	0.92	1.79	0.76	0.15	0.25	0.39	0.26	0.43 a	0.14 a	0.29	6.35
1943	0.24	0.16	0.40	0.98	1.03	1.67	0.35	1.29	0.51	2.19	0.14	0.56	9.52
1944	0.54	1.03	0.83	1.28	2.31	0.93	0.26	0.06	0.29	0.77	0.91	0.06	9.27
1945	0.30	0.45	0.70	0.84	0.99	2.07	0.49	1.73	0.58	0.03	0.62 a	0.59	9.39
1946	0.05	0.34	0.58	0.71	1.51	0.31	0.12	1.72	0.46	4.13	0.69	0.60	11.22
1947	0.88 a	0.38	0.49	1.40	2.15	2.73	0.53	2.03	0.66	1.71 a	0.92	0.20	14.08
1948	0.15	0.74	0.68	1.31	0.11	1.55	0.49	0.49	0.30	0.32	1.20	0.93	8.27
1949	1.69	0.37	0.92	0.30	2.72 f	0.64 e	0.08	0.34	0.40	2.28	0.00	1.10	8.12
1950	0.68	0.85	0.24	1.11	1.70	0.46	0.64 g	0.00 t	1.97	0.18 r	0.00 z	0.41	7.42
1951	0.47	0.47	0.54	0.41	2.34	1.55	0.11	1.41	0.03	1.42	0.17	0.50	9.42
1952	0.78	0.23	0.69	0.98	2.33	1.20 g	0.17	1.22	0.37	0.00	0.26	0.47	7.50
1953	0.29	0.09	0.12	0.38	1.65	0.44	0.52	1.27	0.07	1.14	0.56	0.09	6.62
1954	0.55	0.07	1.88	0.15	0.68	0.83	0.27	0.33	0.76	0.05	0.57	0.37	6.51
1955	0.42	1.83	0.50	0.32	0.43	0.87	0.99	0.52	1.39	0.44	0.20	0.55	8.46
1956	1.27	0.22	0.05	0.88	1.43	0.00	0.70	0.18	0.28	1.71	0.13	0.50	7.35
1957	0.53	0.36	1.55	1.95	2.33	2.10	0.16	0.83	0.35	1.19	0.65	0.40	12.40
1958	0.12	0.11	0.15	0.10	0.93	0.70	0.69	0.50	0.26	0.00	0.68	0.28	4.52
1959	0.17	0.57	0.58	0.57	1.10	1.42	0.42	1.72	2.15	0.16	0.15	0.16	9.17
1960	0.46	0.83	0.25	0.34	0.54	0.26	0.00	0.19	0.35	1.40	1.20	0.19	6.01
1961	0.03	0.24	0.43 a	0.05	0.95	0.26	0.08	0.41	1.60	1.15	0.15	0.06	5.41
1962	0.83	0.52	0.78	0.55	1.49	0.10	0.26	0.26	0.03 a	0.22	0.04	0.00	5.08
1963	0.27	0.52	0.35	1.80	0.55	0.73	0.35	0.64	1.12	0.46	0.66	0.15	7.60
1964	0.07	0.15	0.48	1.12	1.10	1.51	0.42	0.68	0.05	0.11	0.43	1.14	7.26

1965	0.31	0.13	0.49	0.93	2.03	2.16	1.15	0.63	0.95	0.51	0.51	0.70	10.50
1966	0.04	0.12	0.08	0.44	0.63	0.59	0.12	0.75	1.00	1.41	0.95	0.30	6.43
1967	0.12	0.13	0.47	0.40	1.24	2.09	0.92	0.18	0.28	0.73	0.18	0.64	7.38
1968	0.25	0.25	0.42	1.92	1.38	1.17	0.40	2.05	0.73	0.35	0.11	0.29	9.32
1969	0.61	0.50	0.69	1.19	0.00	1.39	0.20	0.35	0.52	0.82	0.02	0.29	6.58
1970	0.16	0.04	0.65	1.21	1.11	2.76	0.38	0.13	0.81	1.34	0.40	0.22	9.21
1971	0.25	0.13	0.29	1.16	3.39	0.16	1.01	0.26	1.05	1.50	0.66	0.10	9.96
1972	0.27	0.19	0.52	0.82	0.79	0.49	0.10	1.01	0.47	1.26	0.00 z	0.67	6.59
1973	0.63	0.37	0.38	1.39	0.40	1.14	1.84	0.60	2.51	0.22	0.57	0.24	10.29
1974	0.31	0.23	0.11	1.58	0.09	0.53	0.07	0.00	0.07	0.65	0.08	0.10	3.82
1975	0.29	0.05	1.12	1.00	1.26	1.50	0.50	0.33	0.17	0.87	0.53	0.54	8.16
1976	0.16	0.33	0.05	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 o	0.54
1977	0.16	0.00	0.17 b	0.65	0.00 z	0.00	4.87	1.22	0.50	0.53	0.21	0.00 z	8.31
1978	0.54	0.33	0.48	0.57	1.22	0.74	0.15	1.80	1.54	0.01	0.66	0.39	8.43
1979	0.59	0.18	0.23	0.09	0.44	0.32	0.88	1.58	0.02	0.50	0.57	0.32	5.72
1980	0.89	0.06	0.11	0.10	2.51	0.20	0.24	1.03	0.17	1.36	0.23	0.13	7.03
1981	0.19	0.09	0.51	0.35	1.59	0.01	0.58	0.02	0.72	1.25	0.26	1.18	6.75
1982	0.11	0.52	0.75	0.57	0.47	0.04	1.00	0.18	2.43	0.42	0.28	0.17	6.94
1983	0.23	0.50	1.50	0.57	1.26	1.51	0.48	1.33	0.96	0.60	0.96	1.18	11.08
1984	0.29	0.13	0.60	0.79	0.09 a	0.57	0.34	0.15	0.88	0.14	0.37	0.15	4.50
1985	0.67	0.41	0.25	0.49	0.36	0.69	0.43	0.00	0.85	0.91	0.58	0.51	6.15
1986	0.09	0.81	0.93	2.92	0.95	1.07	1.05	0.82	1.61	0.84	0.22	0.16	11.47
1987	0.49	0.23	0.52	0.06	1.90	0.17	1.12 a	0.89	0.50	0.36	0.52	0.69	7.45
1988	0.16	0.12	1.17	0.70	0.55	0.40	0.13	0.42	0.35	0.01	0.69	0.19	4.89
1989	0.11	0.79	0.85	0.01	1.20	0.96	0.79	0.33	0.40	0.20	0.13	0.22	5.99
1990	0.16	0.16	0.83	1.13	0.44	1.40	0.51	0.42	1.15	0.64	0.42	0.28	7.54
1991	0.37	0.19	0.60	1.86	2.45	1.34	0.94	1.05	0.80	0.74	1.27	0.12	11.73
1992	0.54	0.15	0.80	0.14	1.48	1.00	0.91	0.23	0.21	0.88	0.53	0.29 a	7.16
1993	0.71	0.40	1.44	0.51	1.37	1.91	1.11	0.63	0.06	0.59	0.22	0.19	9.14
1994	0.36	0.82	0.72	0.10	0.08	0.19	0.18	0.37	0.28	1.93	1.49	0.07 a	6.59
1995	0.40	0.40 a	0.78	1.39	2.30	0.61	0.74	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	6.62
1996	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00
1997	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00

1998	0.00z	0.63	0.86	1.29	1.76	2.51	0.38	0.33	1.10	1.30	0.22	0.16	10.54
1999	0.85f	1.18	0.09	2.38	2.88i	0.56	0.34e	0.87g	1.66d	0.06s	0.14j	0.32h	6.21
2000	0.48h	0.78	0.72	1.18c	0.58f	0.35m	0.30g	0.86l	1.65l	0.86f	0.78	0.13f	3.46
2001	0.45d	0.37b	0.16d	1.40	0.48b	0.50d	0.57j	0.78m	0.44d	0.64l	0.64n	0.49h	3.80
2002	0.04i	0.01c	0.54o	0.79t	0.37a	0.02n	0.00z	0.19j	0.58j	0.74s	0.64g	0.47k	0.38
2003	0.13h	0.42	0.97a	0.18o	1.39j	2.58k	0.13l	0.80j	0.35k	0.69h	2.00j	0.12u	1.39
2004	0.79a	0.94j	0.08n	1.25	0.26l	1.89	0.63b	0.95i	1.55f	2.62n	0.66i	0.08n	4.56
2005	0.42n	0.27k	0.97d	1.55m	1.00t	0.35o	0.00z	0.77d	1.28i	0.00z	1.31p	0.43n	1.74
2006	0.66n	0.46g	0.21f	0.00z	0.14c	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.14
Period of Record Statistics													
MEAN	0.39	0.42	0.58	0.94	1.13	0.84	0.62	0.72	0.78	0.83	0.47	0.37	7.98
S.D.	0.32	0.33	0.39	0.61	0.74	0.71	0.74	0.72	0.68	0.69	0.35	0.28	2.31
SKEW	1.74	1.34	0.93	0.74	0.60	0.87	3.53	1.99	1.15	1.66	0.89	1.23	0.43
MAX	1.69	1.83	1.88	2.92	3.39	2.76	4.87	4.24	2.62	4.13	1.50	1.18	14.08
MIN	0.00	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.82
NO YRS	83	87	87	84	81	83	79	76	82	79	79	79	70

Monthly Climatic Data for STEAMBOAT SPRINGS for years 1908 - 1999
Station - 57936 Latitude - 4030 Longitude - 10650 Elevation - 6770

Total monthly precipitation.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1908	M	M	M	M	M	M	M	M	140I	597	70	297	
1909	381	307	207	275	145	132	108	156	231	74	218	283	25.17
1910	138	353	49	121	145	37	123	60	185	187	137	227	17.62
1911	326	194	149	204	65	181	212	116	244	197	213	146	22.47
1912	267	357	320	176	127	265	497	324	125	154	109	191	29.12
1913	128	166	147	123	153	193	200	26	301	185	224	134	19.80
1914	458	250	123	221	332	276	218	536	196	386	13	105	31.14
1915	130	177	107	157	282	157	30	69	284	114	280	320	21.07
1916	420	421	187	117	239	6	123	282	174	257	188	465	28.79
1917	234	157	277	402	387	17	127	165	194	138	171	277	25.46
1918	500	270	212	186	46	79	306	102	270	208	131	115	24.25
1919	23	290	109I	149	62	0	115	69	63	295	294	240	17.09
1920	96	176	361	513	269	65	202	164	85	242	271	279	27.23
1921	313	326	235	368	261	363	251	200	133	111	131	252	29.44
1922	281	422	282	160	123	72	123	277	92	120	187	561	27.00
1923	209	200	390	210	186	83	190	283	215	218	81	166	24.31
1924	209	117	353	138	238	33	161	37	252	325	154	307	23.24
1925	299	201	146	95	175	189	140	274	239	259	134	151	23.02
1926	176	196	154	265	398	30	227	247	87	151	175	179	22.85
1927	198	420	311	319	144	268	286	213	340	318	283	223	33.23
1928	152	150	244	96	297	288	111	125	126	212	232	181	22.14
1929	248I	203	573I	133	142	32	227	161	426	244	M	128I	
1930	M	184	M	M	0	0	0	0	204	158	136	115	
1931	75	73	193	182	127	94	116	153	276	211	257	113	18.70
1932	263	230	438	222	133	110	145	250	13	305	160	284	25.53
1933	177	229	297	212	206	45	87	224	235	0	54	312	20.78
1934	90	216	108	66	200	61	72	131	150	41	178	268	15.81
1935	120	30	153	413	320	96	81	100	175	264	126	103	19.81
1936	447	513	139	192	62	131	168	118	73	112	64	227	22.46
1937	245	394	187	306	193	188	357	192	75	254	338	199	29.28
1938	200	153	373	184	310	110	159	115	305	147	166	303I	25.25
1939	329	307	169	148	136	109	76	31	295	131	25	150	19.06
1940	361	245	255	407	151	55	162	120	241	202	123	138	24.60
1941	209	171	176	274	190	268	163	191	133	301	193	205	24.74
1942	294	234	157	439	190	131	129	54	108	138	244	360	24.78
1943	135	200	254	125	287	309	48	142	24	151	64	112	18.51
1944	82	202	215	253	501	220	101	17	44	90	239	210	21.74
1945	134	345	261	233	265	430	50	211	148	127	287	286	27.77

1946	140	181	121	268	244	64	71	244	65	380	188	127	20.93
1947	147	259	167	268	181	328	136	297	184	296	255	196	27.14
1948	149	164	364	193	6	219	199	86	93	169	328	437	24.07
1949	225	179	209	182	368	276	88	30	116	312	98	224	23.07
1950	284	153	176	251	190	22	177	30	218	63	260	407	22.31
1951	343	249	121	401	137	178	177	202	54	250	143	726	29.81
1952	353	240	332	107	126	184	290	201	40	0	114	229	22.16
1953	408	182	256	214	171	154	193	154	7	134	189	172	22.34
1954	187	64	351	130	161	44	92	217	321	240	168	179	21.54
1955	261	200	129	95	200	173	58	200	50	202	413	212	21.93
1956	470	321	91	359	95	24	248	144	15	92	182	325	23.66
1957	501	273	283	327	442	384	218	125	71	314	298	277	35.13
1958	202	223	265	196	94	34	125	122	220	6	229	253	19.69
1959	191	334	246	220	191	154	97	241	517	309	110	82	26.92
1960	216	331	300	180	172	83	110	95	135	127	210	175	21.34
1961	69	159	175	289	294	116	151	108	815	126	177	268	27.47
1962	202	421	98	227	200	87	28	41	84	156	101	123	17.68
1963	331	120	168	308	51	138	94	217	125	115	117	129	19.13
1964	200	164	312	246	174	248	104	259	85	42	182	560	25.76
1965	436	86	185	216	374	239	252	303	367	7	268	155	28.88
1966	89	132	99	60	165	50	110	247	151	260	58	291	17.12
1967	299	208	215	125	255	229	215	196	172	118	159	424	26.15
1968	173	268	92	373	242	101	119	142	78	176	252	204	22.20
1969	326	185	59	192	34	359	292	202	150	367	142	245	25.53
1970	317	157	138	264	90	251	140	96	130	391	188	156	23.18
1971	341	311	180	263	236	33	14	70	97	176	232	337	22.90
1972	142	202	240	109	225	71	52	102	156	361	151	337	21.48
1973	103	154	170	288	196	200	186	100	120	101	364	363	23.45
1974	411	236	347	238	40	293	66	54	66	172	140	287	23.50
1975	306	225	215	215	202	97	209	52	23	129	296	91	20.60
1976	206	158	152	235	268	184	115	113	182	54	54	70	17.91
1977	102	129	122	150	238	72	122	279	102	144	271	497	22.28
1978	359	272	313	238	196	36	171	132	162	72	189	395	25.35
1979	462	214	268	146	263	75	51	164	24	153	190	63	20.73
1980	580	273	292	113	276	10	75	129	104	162	85	80	21.79
1981	76	142	254	63	542	161	256	79	140	429	114	416	26.72
1982	316	119	291I	157	160	57	197	137	263	204I	206	204	23.11
1983	135	229	280	322	305	245	213	156	88	266	528	679	34.46
1984	80	104	293	383	190	390	130	152	232	259	209	194	26.16
1985	212	169	255	416	164I	M	177	83	237	258	559	198	
1986	74	468	195	226	145	162	327	218	M	M	M	M	
1987	M	M	174	104	302	233	252	223	64	147	204	267	
1988	367	189	190	154	210	64	36	138	131	24	345	136	19.84
1989	159	244I	199	89	141	117	200	168	173	134I	194I	359	21.77

1990	111I	150I	151I	317	161	157	221I	M	216	377I	202I	146	
1991	232	121	306	253	202I	170	178	338	97	100	354	77I	24.28
1992	171	M	102	229	376	75	308	132	166	114	171	255	
1993	408I	359	251	368I	182	225	53	137	221	M	M	169	
1994	89I	182	83	293	111	93	29	137	124	181	288	165	17.75
1995	213	189	126	368	566	83	62	89	263	217	246	208	26.30
1996	586	382I	151I	219	209	108	199	42	212	303I	369I	440	32.20
1997	492	128	62I	409	329	189	92	345	648	202	182I	73I	31.51
1998	336	160	268	160	131I	336I	145	193	112	227	125	114	23.07
1999	265	148	60	233	191	200	177	169	296	39	97	184	20.59
Ave	2.49	2.25	2.14	2.28	2.08	1.49	1.54	1.58	1.75	1.92	1.97	2.42	23.81
Max	5.86	5.13	5.73	5.13	5.66	4.30	4.97	5.36	8.15	5.97	5.59	7.26	35.13
Year	1996	1936	1929	1920	1995	1945	1912	1914	1961	1908	1985	1951	1957
Min	0.23	0.30	0.49	0.60	0.00	0.00	0.00	0.00	0.07	0.00	0.13	0.63	15.81
Year	1919	1935	1910	1966	1930	1930+	1930	1930	1953	1952+	1914	1979	1934
Count	89	89	90	90	91	90	91	90	91	90	89	91	83

Water Rights

Name of Structure	Typ	Name of Source	WD	LOCATION	Use	Net Abs	Net Cond	AltP/Exch	U	Adj Date	P Adj Date	Appro Date	Or	AdminNumber
INDEPENDENCE DITCH		SOUTH FK of BIG CK	47	SE SE 9 11 N 82 W S	I	95.000			C	03/06/1923		11/10/1895		16750.00000
BIG CREEK RESERVOIR		SOUTH FK of BIG CK	47	SE NE 16 11 N 82 W S	I	6900.000			A	03/06/1923		12/31/1895		16801.00000
EAST LYNNE DITCH		SOUTH FK of BIG CK	47	NW SW 36 12 N 82 W S	I	14.000			C	06/20/1939	06/20/1939	04/17/1887		30280.13621
EAST LYNNE DITCH		SOUTH FK of BIG CK	47	NW SW 36 12 N 82 W S	I	6.000			C	01/10/1958	01/10/1958	10/31/1955		38654.00000
LAKE EILEEN MLL		SOUTH FK of BIG CK	47	25 11 N 83 W S	P	24.000			A	12/31/1976	12/31/1976	03/17/1976		46097.00000
TWISTY POND NO 1		SOUTH FK of BIG CK	47	NE NE 9 11 N 82 W S	RS	3.200			A	12/31/1977	12/31/1977	07/01/1953		46386.37802
TWISTY POND NO 2		SOUTH FK of BIG CK	47	NW NE 9 11 N 82 W S	RS	2.400			A	12/31/1977	12/31/1977	07/01/1960		46386.40359
UPPER BIG CK LAKE MLL		SOUTH FK of BIG CK	47	SW NW 21 11 N 82 W S		1620.000			A	12/31/1979	12/31/1979	09/19/1978		47116.47013
PLAINWELL DITCH		SOUTH FK of BIG CK	47	SE SE 25 12 N 82 W S	I	4.500			C	12/31/1981	12/31/1981	12/31/1887		47847.13879
BLOSSER SPRING NO 1		SOUTH FK of BIG CK	47	SW SW 35 12 N 82 W S	D	0.002			C	12/31/1981	12/31/1981	07/01/1950		47847.36706
TALLMAN SPG		SOUTH FK of BIG CK	47	SE NW 2 11 N 82 W S	D	0.022			C	12/31/1982	12/31/1982	08/26/1980		48212.47720
MISSY SPRING		SOUTH FK of BIG CK	47	NE SE 35 12 N 82 W S	PS	0.045			C	12/31/1986	12/31/1986	11/01/1986		49978.00000

STRUCTURE SUMMARY FOR: PLAINWELL DITCH

WATER DISTRICT: 47
ID NUMBER: 2057
WATER SOURCE: SOUTH FK of BIG CK AT STREAM MILE: 3.09
LOCATION: 12N 82W 25 SE SE IN JACKSON COUNTY
TOTAL IRRIGATED ACRES: See irrigated acres summary.
STRUCTURE TYPE: Headgate
CIU (CURRENTLY IN USE): Active Structure with contemporary diversion records
IS TRANSBASIN:
ESTIMATED CAPACITY:
DECREED CAPACITY (SUM OF ABSOLUTE NET AMOUNT RIGHTS): 4.5000 C
MEASURING DEVICE/RECORDER: NONE
CONTACT: WILLFORD, HARLAN (CLAIMANT)

WATER RIGHTS TRANSACTION INFORMATION

ADMIN NO	ADJ DATE	APPRO DATE	COURT NO	DECREED RATE (CFS)	DECREED VOL. (AF)	ADJUDICATION TYPE	USES	COMMENT
47847.13879	1981-12-31	1887-12-31	81CW0148	4.50		S	IRR	

WATER RIGHTS NET AMOUNT INFORMATION

ADMIN NO	ADJ DATE	PADJ DATE	APRO DATE	ORDER NO	PRIOR CASE NO	ADJ TYPE	RATE ABS (CFS)	VOL ABS (AF)	RATE COND (CFS)	VOL COND (AF)	RATE APEX (CFS)	VOL APEX (AF)	USE TYPE
47847.13879	1981-12-31	1980-12-31	1887-12-31	0	81CW0148	S	4.5000	0.0000	0.0000	0.0000	0.0000	0.0000	IRR

IRRIGATED ACRES SUMMARY -- TOTALS FROM VARIOUS SOURCES

GIS Total (Acres):	86.9	Reported: 2001
Diversion Comments Total (Acres):	83.0	Reported: 2005
Structure Total (Acres):	83.0	Reported: 1987

IRRIGATED ACRES FROM GIS DATA -- BY CROP, YEAR, AND IRRIGATION METHOD

YEAR	CROP	ACRES FLOOD	ACRES FURROW	ACRES SPRINKLER	ACRES DRIP	ACRES UNKNOWN	ACRES TOTAL (FOR CROP)	ACRES TOTAL ALL CROPS (FOR YEAR)
2001	GRASS_PASTURE	86.860	0.000	0.000	0.000	0.000	86.860	86.860

DIVERSION SUMMARY IN ACRE FEET - TOTAL THROUGH STRUCTURE

YEAR	FDU	LDU	DWC	MAXQ & DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	TOTAL
1973	05/20	07/25	67	6.00 05/20	0	0	0	0	0	0	143	357	298	0	0	0	797
1974	05/15	10/31	170	6.00 05/15	0	0	0	0	0	0	202	357	369	369	357	369	2023
1975	05/15	07/24	71	20.0 05/15	0	0	0	0	0	0	674	732	428	0	0	0	1835
1976	05/12	10/31	173	18.0 05/12	0	0	0	0	0	0	714	1071	1107	1107	1071	1107	6177
1982	06/01	07/14	44	5.00 06/01	0	0	0	0	0	0	0	298	139	0	0	0	436
1983	06/01	07/14	44	5.00 06/01	0	0	0	0	0	0	0	298	139	0	0	0	436
1984	06/01	07/14	44	4.00 06/01	0	0	0	0	0	0	0	238	111	0	0	0	349
1985	05/25	07/10	47	4.00 05/25	0	0	0	0	0	0	55.5	238	79.3	0	0	0	373
1986	05/28	07/10	44	4.00 05/28	0	0	0	0	0	0	31.7	238	79.3	0	0	0	349
1987	05/16	07/07	53	4.50 06/08	0	0	0	0	0	0	63.5	233	27.8	0	0	0	324
1988	05/22	07/07	47	4.50 05/22	0	0	0	0	0	0	89.3	253	41.7	0	0	0	384
1989	05/15	07/07	54	4.50 06/01	0	0	0	0	0	0	101	241	41.7	0	0	0	384
1990	05/26	07/07	43	4.50 06/08	0	0	0	0	0	0	35.7	247	62.5	0	0	0	345
1991	05/26	07/07	43	5.00 06/26	0	0	0	0	0	0	47.6	248	69.4	0	0	0	365
1992	05/03	07/08	67	4.50 06/01	0	0	0	0	0	0	188	223	47.6	0	0	0	459
1993	05/20	07/20	62	4.00 05/20	0	0	0	0	0	0	95.2	238	159	0	0	0	492
1994	05/21	07/14	55	6.00 05/21	0	0	0	0	0	0	131	262	83.3	0	0	0	476
1995	06/10	07/26	47	9.00 06/10	0	0	0	0	0	0	0	375	464	0	0	0	839
1996	05/25	07/31	68	5.00 05/25	0	0	0	0	0	0	69.4	298	254	0	0	0	621
1997	06/01	07/25	55	6.00 06/01	0	0	0	0	0	0	0	357	222	0	0	0	579
1998	06/01	07/08	38	8.00 06/18	0	0	0	0	0	0	0	375	95.2	0	0	0	470
1999	06/01	07/25	55	4.50 06/01	0	0	0	0	0	0	0	268	198	0	0	0	466
2000	05/20	07/14	56	6.00 06/23	0	0	0	0	0	0	95.2	315	111	0	0	0	522
2001	04/26	07/08	74	5.00 05/13	0	0	0	0	0	19.8	266	212	47.6	0	0	0	545
2002	04/25	06/30	67	4.50 05/19	0	0	0	0	0	17.9	210	112	0	0	0	0	340
2003	05/20	07/14	56	5.00 06/01	0	0	0	0	0	0	83.3	257	73.4	0	0	0	414
2004	05/17	07/14	59	10.0 06/12	0	0	0	0	0	0	131	528	135	0	0	0	793
2005	05/17	07/09	54	8.00 05/31	0	0	0	0	0	0	182	444	71.4	0	0	0	698
AVE:	05/21	07/21	62	6.45 05/30	0	0	0	0	0	1.35	129	333	177	52.7	51.0	52.7	796

28 years with diversion records Average Flow = 6.47 CFS

Notes: The average considers all years with diversion records, even if no water is diverted.
The above summary lists total monthly diversions.
* = Infrequent data. All other values are derived from daily records.
Average values include infrequent data if infrequent data are the only data for the year.

DIVERSION COMMENTS

YEAR	COMMENTS
1999	
	AKA ID 995 (ACRES IRRIG = 83.000)
2005	
	KW (ACRES IRRIG = 83.000)

Note: Diversion comments and reservoir comments may be shown for a structure, if both are available.

STRUCTURE SUMMARY FOR: INDEPENDENCE DITCH

WATER DISTRICT: 47
ID NUMBER: 683
WATER SOURCE: SOUTH FK of BIG CK AT STREAM MILE: 7.82
LOCATION: 11N 82W 9 SE SE IN JACKSON COUNTY
TOTAL IRRIGATED ACRES: See irrigated acres summary.
STRUCTURE TYPE: Headgate
CIU (CURRENTLY IN USE): Active Structure with contemporary diversion records
IS TRANSBASIN:
ESTIMATED CAPACITY:
DECREED CAPACITY (SUM OF ABSOLUTE NET AMOUNT RIGHTS): 95.0000 C
MEASURING DEVICE/RECORDER: NONE
CONTACT: SILVER SPUR RANCHES (OWNER)

WATER RIGHTS TRANSACTION INFORMATION

ADMIN NO	ADJ DATE	APPRO DATE	COURT NO	DECREED RATE (CFS)	DECREED VOL. (AF)	ADJUDICATION TYPE	USES	COMMENT
16750.00000	1923-03-06	1895-11-10	CA3571	95.00		O	IRR	

WATER RIGHTS NET AMOUNT INFORMATION

ADMIN NO	ADJ DATE	PADJ DATE	APRO DATE	ORDER NO	PRIOR CASE NO	ADJ TYPE	RATE ABS (CFS)	VOL ABS (AF)	RATE COND (CFS)	VOL COND (AF)	RATE APEX (CFS)	VOL APEX (AF)	USE TYPE
16750.00000	1923-03-06		1895-11-10	0	A-5	O	95.0000	0.0000	0.0000	0.0000	0.0000	0.0000	IRR

IRRIGATED ACRES SUMMARY -- TOTALS FROM VARIOUS SOURCES

GIS Total (Acres):	26.8	Reported: 2001
Diversion Comments Total (Acres):	500.0	Reported: 2005
Structure Total (Acres):	723.0	Reported: 1987

IRRIGATED ACRES FROM GIS DATA -- BY CROP, YEAR, AND IRRIGATION METHOD

YEAR	CROP	ACRES FLOOD	ACRES FURROW	ACRES SPRINKLER	ACRES DRIP	ACRES UNKNOWN	ACRES TOTAL (FOR CROP)	ACRES TOTAL ALL CROPS (FOR YEAR)
2001	GRASS_PASTURE	26.848	0.000	0.000	0.000	0.000	26.848	26.848

DIVERSION SUMMARY IN ACRE FEET - TOTAL THROUGH STRUCTURE

YEAR	FDU	LDU	DWC	MAXQ & DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	TOTAL
1973	05/01	06/14	45	95.0 05/01	0	0	0	0	0	0	5841	2638	0	0	0	0	8479
1974	05/30	07/16	48	45.8 07/16	0	0	0	0	0	0	159	2380	1281	0	0	0	3820
1975	06/10	07/28	49	40.0 06/10	0	0	0	0	0	0	0	1666	2222	0	0	0	3888
1976	06/01	07/25	55	50.0 06/01	0	0	0	0	0	0	0	2975	2241	0	0	0	5217
1977	05/10	08/01	84	39.0 07/01	0	0	0	0	0	0	480	1666	2398	57.5	0	0	4602
1978	05/25	07/20	57	25.0 07/01	0	0	0	0	0	0	278	1190	992	0	0	0	2460
1979	06/06	07/26	51	30.0 06/06	0	0	0	0	0	0	0	1488	1547	0	0	0	3035
1980	06/08	07/20	43	30.0 06/08	0	0	0	0	0	0	0	1369	1190	0	0	0	2559
1981	05/28	07/14	48	20.0 05/28	0	0	0	0	0	0	159	1176	533	0	0	0	1868
1982	06/01	07/20	50	35.0 06/01	0	0	0	0	0	0	0	2083	1388	0	0	0	3471
1983	06/06	07/21	46	40.0 06/06	0	0	0	0	0	0	0	1984	1666	0	0	0	3650
1984	06/06	07/20	45	39.0 06/22	0	0	0	0	0	0	0	1648	1547	0	0	0	3195
1985	05/26	07/14	50	40.0 06/11	0	0	0	0	0	0	238	2182	1111	0	0	0	3531
1986	06/06	07/14	39	40.0 06/06	0	0	0	0	0	0	0	1984	1111	0	0	0	3094
1987	05/26	07/14	50	33.5 06/15	0	0	0	0	0	0	238	1797	653	0	0	0	2688
1988	06/01	07/10	40	40.0 06/08	0	0	0	0	0	0	0	2142	595	0	0	0	2737
1989	05/07	07/15	70	30.0 06/08	0	0	0	0	0	0	992	1646	843	0	0	0	3481
1990	05/22	07/14	54	30.0 06/08	0	0	0	0	0	0	397	1646	833	0	0	0	2876
1991	05/26	07/10	46	45.0 06/11	0	0	0	0	0	0	357	2112	595	0	0	0	3065
1992	05/25	07/10	47	30.0 05/25	0	0	0	0	0	0	417	1785	595	0	0	0	2797
1993	06/01	08/01	62	35.0 06/01	0	0	0	0	0	0	0	2083	1260	19.8	0	0	3362
1994	05/21	08/03	75	35.0 05/21	0	0	0	0	0	0	764	2073	1480	59.5	0	0	4376
1995	06/01	08/04	65	30.0 06/23	0	0	0	0	0	0	0	1349	1317	63.5	0	0	2729
1996	06/01	08/04	65	35.0 06/10	0	0	0	0	0	0	0	1636	1636	119	0	0	3392
1997	06/01	07/06	36	35.0 06/10	0	0	0	0	0	0	0	1726	417	0	0	0	2142
1998	06/01	08/31	92	35.0 06/05	0	0	0	0	0	0	0	1924	1507	307	0	0	3739
1999	06/01	07/06	36	33.0 06/10	0	0	0	0	0	0	0	1642	393	0	0	0	2035
2000	06/01	07/06	36	18.0 06/10	0	0	0	0	0	0	0	1018	214	0	0	0	1232
2001	04/22	07/05	75	30.0 06/10	0	0	0	0	0	89.3	161	1277	232	0	0	0	1759
2002	05/01	06/29	60	25.0 06/16	0	0	0	0	0	0	855	1289	0	0	0	0	2144
2003	05/01	07/06	67	18.0 06/10	0	0	0	0	0	0	216	803	210	0	0	0	1230
2004	05/01	06/14	45	6.00 05/15	0	0	0	0	0	0	321	93.2	0	0	0	0	415
2005	05/19	06/30	43	24.6	0	0	0	0	0	0	377	1174	0	0	0	0	1551
AVE:	05/24	07/16	53	34.5 06/03	0	0	0	0	0	2.70	371	1686	970	19.0	0	0	3049

33 years with diversion records Average Flow = 29.00 CFS

Notes: The average considers all years with diversion records, even if no water is diverted.
The above summary lists total monthly diversions.
* = Infrequent data. All other values are derived from daily records.
Average values include infrequent data if infrequent data are the only data for the year.

DIVERSION COMMENTS

YEAR	COMMENTS
1973	Structure is not usable
2000	

new 8ft. parshall and ditch repaired (ACRES IRRIG = 723.000)
2005
KW (ACRES IRRIG = 500.000)

Note: Diversion comments and reservoir comments may be shown for a structure, if both are available.

STRUCTURE SUMMARY FOR: EAST LYNNE DITCH

WATER DISTRICT: 47
ID NUMBER: 605
WATER SOURCE: SOUTH FK of BIG CK AT STREAM MILE: 4.22
LOCATION: 12N 82W 36 SW NW IN JACKSON COUNTY
TOTAL IRRIGATED ACRES: See irrigated acres summary.
STRUCTURE TYPE: Headgate
CIU (CURRENTLY IN USE): Active Structure with contemporary diversion records
IS TRANSBASIN:
ESTIMATED CAPACITY:
DECREED CAPACITY (SUM OF ABSOLUTE NET AMOUNT RIGHTS):   20.0000 C
MEASURING DEVICE/RECORDER: 3 FT P F METAL
CONTACT: WILLFORD, LEON
ADDRESS 1: COWDREY COLO

WATER RIGHTS TRANSACTION INFORMATION

ADMIN NO	ADJ DATE	APPRO DATE	COURT NO	DECREED RATE (CFS)	DECREED VOL. (AF)	ADJUDICATION TYPE	USES	COMMENT
30280.13621	1939-06-20	1887-04-17	CA0286	14.00		S	IRR	
38654.00000	1958-01-10	1955-10-31	CA0511	6.00		S	IRR	

WATER RIGHTS NET AMOUNT INFORMATION

ADMIN NO	ADJ DATE	PADJ DATE	APRO DATE	ORDER NO	PRIOR CASE NO	ADJ TYPE	RATE ABS (CFS)	VOL ABS (AF)	RATE COND (CFS)	VOL COND (AF)	RATE APEX (CFS)	VOL APEX (AF)	USE TYPE
30280.13621	1939-06-20	1932-11-26	1887-04-17	0	644	S	14.0000	0.0000	0.0000	0.0000	0.0000	0.0000	IRR
38654.00000	1958-01-10	1941-10-24	1955-10-31	0	784	S	6.0000	0.0000	0.0000	0.0000	0.0000	0.0000	IRR

IRRIGATED ACRES SUMMARY -- TOTALS FROM VARIOUS SOURCES

GIS Total (Acres):	291.5	Reported: 2001
Diversion Comments Total (Acres):	312.0	Reported: 2005
Structure Total (Acres):	312.0	Reported: 2003

IRRIGATED ACRES FROM GIS DATA -- BY CROP, YEAR, AND IRRIGATION METHOD

YEAR	CROP	ACRES FLOOD	ACRES FURROW	ACRES SPRINKLER	ACRES DRIP	ACRES UNKNOWN	ACRES TOTAL (FOR CROP)	ACRES TOTAL ALL CROPS (FOR YEAR)
2001	GRASS_PASTURE	291.480	0.000	0.000	0.000	0.000	291.480	291.480

DIVERSION SUMMARY IN ACRE FEET - TOTAL THROUGH STRUCTURE

YEAR	FDU	LDU	DWC	MAXQ & DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	TOTAL
1971	06/17	07/19	33	13.9 06/17	0	0	0	0	0	0	0	386	524	0	0	0	910
1972	05/10	07/17	69	24.0 05/10	0	0	0	0	0	0	1047	1248	489	0	0	0	2784
1973	05/10	07/18	70	14.3 06/14	0	0	0	0	0	0	611	843	510	0	0	0	1964
1974	05/15	07/15	62	12.0 05/15	0	0	0	0	0	0	405	714	357	0	0	0	1476
1975	05/15	07/22	69	14.0 05/15	0	0	0	0	0	0	255	588	559	0	0	0	1402
1976	05/12	07/16	66	13.9 07/02	0	0	0	0	0	0	409	595	430	0	0	0	1433
1977	05/10	06/30	52	14.3 06/10	0	0	0	0	0	0	444	778	0	0	0	0	1222
1978	05/25	10/15	91	16.0 05/25	0	0	0	0	0	0	222	902	248	0	97.6	48.8	1519
1979	05/25	07/15	52	14.7 05/25	0	0	0	0	0	0	204	834	284	0	0	0	1322
1980	06/01	07/14	44	15.0 06/01	0	0	0	0	0	0	0	893	417	0	0	0	1309
1981	05/11	07/14	65	10.0 05/28	0	0	0	0	0	0	248	595	278	0	0	0	1121
1982	06/01	07/12	42	15.6 06/01	0	0	0	0	0	0	0	928	371	0	0	0	1300
1983	06/05	07/14	40	15.6 06/05	0	0	0	0	0	0	0	805	433	0	0	0	1238
1984	06/01	07/14	44	13.5 06/21	0	0	0	0	0	0	0	776	375	0	0	0	1150
1985	05/26	07/10	46	14.0 06/08	0	0	0	0	0	0	119	778	278	0	0	0	1174
1986	05/30	07/10	42	18.5 06/17	0	0	0	0	0	0	59.9	993	367	0	0	0	1420
1987	05/15	07/07	54	14.0 06/08	0	0	0	0	0	0	354	784	194	0	0	0	1333
1988	05/26	07/10	46	14.0 06/01	0	0	0	0	0	0	125	762	198	0	0	0	1085
1989	05/15	10/31	98	12.0 06/01	0	0	0	0	0	0	337	678	198	0	79.3	246	1539
1990	05/26	10/10	66	12.0 06/08	0	0	0	0	0	0	119	686	238	0	79.3	79.3	1202
1991	05/26	07/09	45	11.6 05/26	0	0	0	0	0	0	138	690	207	0	0	0	1035
1992	05/03	07/08	67	12.0 05/23	0	0	0	0	0	0	413	714	190	0	0	0	1317
1993	05/20	07/20	62	16.2 05/20	0	0	0	0	0	0	386	926	492	0	0	0	1804
1994	05/26	10/31	84	16.8 05/26	0	0	0	0	0	0	200	781	452	0	0	150	1582
1995	06/08	10/31	96	18.0 07/02	0	0	0	0	0	0	0	684	827	0	121	234	1866
1996	06/01	10/31	113	16.0 06/01	0	0	0	0	0	0	0	952	540	0	121	123	1736
1997	06/01	07/12	42	18.0 06/21	0	0	0	0	0	0	0	992	380	0	0	0	1371
1998	06/01	07/08	38	13.0 06/18	0	0	0	0	0	0	0	686	159	0	0	0	845
1999	05/19	07/05	48	15.0 06/13	0	0	0	0	0	0	206	774	149	0	0	0	1129
2000	05/18	07/09	53	15.0 06/10	0	0	0	0	0	0	167	678	89.3	0	0	0	934
2001	04/25	07/15	82	8.00 05/15	0	0	0	0	0	35.7	401	444	125	0	0	0	1006
2002	04/27	07/06	71	10.0 06/01	0	0	0	0	0	15.9	343	559	27.8	0	0	0	946
2003	05/24	07/15	53	8.00 06/01	0	0	0	0	0	0	31.7	454	167	0	0	0	653
2004	05/12	07/14	64	6.00 06/07	0	0	0	0	0	0	115	307	87.3	0	0	0	510
2005	05/18	07/14	58	6.00 05/18	0	0	0	0	0	0	167	331	97.2	0	0	0	595
AVE:	05/21	07/30	60	13.7 06/03	0	0	0	0	0	1.47	215	730	307	0	14.2	25.2	1292

35 years with diversion records Average Flow = 10.86 CFS

Notes: The average considers all years with diversion records, even if no water is diverted.
The above summary lists total monthly diversions.
* = Infrequent data. All other values are derived from daily records.
Average values include infrequent data if infrequent data are the only data for the year.

DIVERSION COMMENTS

YEAR	COMMENTS
2005	
	KW (ACRES IRRIG = 312.000)

Note: Diversion comments and reservoir comments may be shown for a structure, if both are available.

STRUCTURE SUMMARY FOR: AKERS DITCH

WATER DISTRICT: 47
ID NUMBER: 1002
WATER SOURCE: WHEELER CK AT STREAM MILE: 3.30
LOCATION: 12N 81W 32 NE SW IN JACKSON COUNTY
TOTAL IRRIGATED ACRES: See irrigated acres summary.
STRUCTURE TYPE: Headgate
CIU (CURRENTLY IN USE): Active Structure with contemporary diversion records
IS TRANSBASIN:
ESTIMATED CAPACITY:
DECREED CAPACITY (SUM OF ABSOLUTE NET AMOUNT RIGHTS): 6.0000 C
MEASURING DEVICE/RECORDER: NONE
CONTACT: SILVER SPUR RANCHES (OWNER)

WATER RIGHTS TRANSACTION INFORMATION

ADMIN NO	ADJ DATE	APPRO DATE	COURT NO	DECREED RATE (CFS)	DECREED VOL. (AF)	ADJUDICATION TYPE	USES	COMMENT
30280.17288	1939-06-20	1897-05-01	CA0286	6.00		S	IRR	

WATER RIGHTS NET AMOUNT INFORMATION

ADMIN NO	ADJ DATE	PADJ DATE	APRO DATE	ORDER NO	PRIOR CASE NO	ADJ TYPE	RATE ABS (CFS)	VOL ABS (AF)	RATE COND (CFS)	VOL COND (AF)	RATE APEX (CFS)	VOL APEX (AF)	USE TYPE
30280.17288	1939-06-20	1932-11-26	1897-05-01	0	684	S	6.0000	0.0000	0.0000	0.0000	0.0000	0.0000	IRR

IRRIGATED ACRES SUMMARY -- TOTALS FROM VARIOUS SOURCES

GIS Total (Acres):	13.6	Reported: 2001
Diversion Comments Total (Acres):	10.0	Reported: 2003
Structure Total (Acres):	0.0	Reported: 1988

IRRIGATED ACRES FROM GIS DATA -- BY CROP, YEAR, AND IRRIGATION METHOD

YEAR	CROP	ACRES FLOOD	ACRES FURROW	ACRES SPRINKLER	ACRES DRIP	ACRES UNKNOWN	ACRES TOTAL (FOR CROP)	ACRES TOTAL ALL CROPS (FOR YEAR)
2001	GRASS_PASTURE	13.578	0.000	0.000	0.000	0.000	13.578	13.578

DIVERSION SUMMARY IN ACRE FEET - TOTAL THROUGH STRUCTURE

YEAR	FDU	LDU	DWC	MAXQ & DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	TOTAL
1973	06/14	08/10	58	6.00 06/14	0	0	0	0	0	0	0	202	369	119	0	0	690
1974	05/13	07/15	64	6.00 05/13	0	0	0	0	0	0	226	357	179	0	0	0	762
1975	06/01	07/15	45	6.00 06/01	0	0	0	0	0	0	0	357	179	0	0	0	536
1976	05/14	07/01	49	6.00 05/14	0	0	0	0	0	0	214	357	11.9	0	0	0	583
1977	06/01	06/15	15	1.00 06/01	0	0	0	0	0	0	0	14.9	0	0	0	0	14.9
1978	05/18	06/30	44	0.50 05/18	0	0	0	0	0	0	13.9	14.9	0	0	0	0	28.8
1979	05/20	06/30	42	0.25 05/20	0	0	0	0	0	0	5.95	14.9	0	0	0	0	20.8
1980	05/20	06/15	27	0.25 05/20	0	0	0	0	0	0	5.95	7.44	0	0	0	0	13.4
1981	05/28	06/14	18	0.25 05/28	0	0	0	0	0	0	1.98	6.94	0	0	0	0	8.93
1982	06/01	06/14	14	0.50 06/01	0	0	0	0	0	0	0	13.9	0	0	0	0	13.9
1983	06/01	06/23	23	1.00 06/01	0	0	0	0	0	0	0	45.6	0	0	0	0	45.6
1984	05/22	06/21	31	1.00 05/22	0	0	0	0	0	0	19.8	41.7	0	0	0	0	61.5
1985	05/15	06/21	38	1.00 05/15	0	0	0	0	0	0	33.7	30.7	0	0	0	0	64.5
1986	05/25	06/30	37	1.00 05/25	0	0	0	0	0	0	13.9	44.6	0	0	0	0	58.5
1987	06/01	06/15	15	0.50 06/01	0	0	0	0	0	0	0	14.9	0	0	0	0	14.9
1988	05/15	06/20	37	1.00 05/15	0	0	0	0	0	0	33.7	26.8	0	0	0	0	60.5
1989	05/01	05/21	21	0.50 05/01	0	0	0	0	0	0	20.8	0	0	0	0	0	20.8
1990	05/08	06/12	36	0.75 05/22	0	0	0	0	0	0	28.8	14.4	0	0	0	0	43.1
1991	05/08	06/30	54	1.00 05/26	0	0	0	0	0	0	29.8	44.6	0	0	0	0	74.4
1992	05/24	06/10	18	0.50 05/24	0	0	0	0	0	0	7.93	9.92	0	0	0	0	17.9
1995	05/16	06/18	34	3.00 06/01	0	0	0	0	0	0	63.5	83.3	0	0	0	0	147
2000	05/01	06/07	38	2.00 05/12	0	0	0	0	0	0	101	13.9	0	0	0	0	115
2002	05/01	05/23	23	1.25 05/01	0	0	0	0	0	0	44.1	0	0	0	0	0	44.1
2003	04/01	05/25	55	1.50 05/01	0	0	0	0	0	44.6	66.9	0	0	0	0	0	112
2005																	
AVE:	05/17	06/20	34	1.78 05/21						1.86	38.8	71.5	30.7	4.96			148

25 years with diversion records — Average Flow = 2.19 CFS

Notes: The average considers all years with diversion records, even if no water is diverted.
The above summary lists total monthly diversions.
* = Infrequent data. All other values are derived from daily records.
Average values include infrequent data if infrequent data are the only data for the year.

DIVERSION COMMENTS

YEAR	COMMENTS
1993	Water available, but not taken
1994	Water available, but not taken
1996	Water available, but not taken
1997	Water available, but not taken
1998	Water available, but not taken
1999	Water available, but not taken
2001	No water is available
2004	Water available, but not taken
2005	

KW (NOT USED = C)

Note: Diversion comments and reservoir comments may be shown for a structure, if both are available.

STRUCTURE SUMMARY FOR: WHEELER DITCH

WATER DISTRICT: 47
ID NUMBER: 954
WATER SOURCE: WHEELER CK AT STREAM MILE: 3.04
LOCATION: 12N 81W 32 NE SE IN JACKSON COUNTY
TOTAL IRRIGATED ACRES: See irrigated acres summary.
STRUCTURE TYPE: Headgate
CIU (CURRENTLY IN USE): Active Structure with contemporary diversion records
IS TRANSBASIN:
ESTIMATED CAPACITY:
DECREED CAPACITY (SUM OF ABSOLUTE NET AMOUNT RIGHTS): 6.0000 C
MEASURING DEVICE/RECORDER: NONE
CONTACT: SILVER SPUR RANCHES (OWNER)

WATER RIGHTS TRANSACTION INFORMATION

ADMIN NO	ADJ DATE	APPRO DATE	COURT NO	DECREED RATE (CFS)	DECREED VOL. (AF)	ADJUDICATION TYPE	USES	COMMENT
30280.13635	1939-06-20	1887-05-01	CA0286	6.00		S	IRR	

WATER RIGHTS NET AMOUNT INFORMATION

ADMIN NO	ADJ DATE	PADJ DATE	APRO DATE	ORDER NO	PRIOR CASE NO	ADJ TYPE	RATE ABS (CFS)	VOL ABS (AF)	RATE COND (CFS)	VOL COND (AF)	RATE APEX (CFS)	VOL APEX (AF)	USE TYPE
30280.13635	1939-06-20	1932-11-26	1887-05-01	0	645	S	6.0000	0.0000	0.0000	0.0000	0.0000	0.0000	IRR

IRRIGATED ACRES SUMMARY -- TOTALS FROM VARIOUS SOURCES

GIS Total (Acres):	62.5	Reported: 2001
Diversion Comments Total (Acres):	15.0	Reported: 2003
Structure Total (Acres):	15.0	Reported: 1987

IRRIGATED ACRES FROM GIS DATA -- BY CROP, YEAR, AND IRRIGATION METHOD

YEAR	CROP	ACRES FLOOD	ACRES FURROW	ACRES SPRINKLER	ACRES DRIP	ACRES UNKNOWN	ACRES TOTAL (FOR CROP)	ACRES TOTAL ALL CROPS (FOR YEAR)
2001	GRASS_PASTURE	62.465	0.000	0.000	0.000	0.000	62.465	62.465

DIVERSION SUMMARY IN ACRE FEET - TOTAL THROUGH STRUCTURE

YEAR	FDU	LDU	DWC	MAXQ & DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	TOTAL
1972	05/15	07/10	57	6.00 05/15	0	0	0	0	0	0	202	357	119	0	0	0	678
1973	06/14	08/01	49	6.00 06/14	0	0	0	0	0	0	0	202	369	11.9	0	0	583
1974	05/13	07/15	64	6.00 05/13	0	0	0	0	0	0	226	357	179	0	0	0	762
1975	05/25	07/14	51	16.0 05/25	0	0	0	0	0	0	222	357	167	0	0	0	746
1976	05/14	07/01	49	6.00 05/14	0	0	0	0	0	0	214	357	11.9	0	0	0	583
1979	05/25	06/10	17	1.00 05/25	0	0	0	0	0	0	13.9	9.92	0	0	0	0	23.8
1980	05/25	06/07	14	1.00 05/25	0	0	0	0	0	0	13.9	6.94	0	0	0	0	20.8
1981	05/28	06/07	11	1.00 05/28	0	0	0	0	0	0	7.93	13.9	0	0	0	0	21.8
1982	06/01	06/14	14	1.00 06/01	0	0	0	0	0	0	0	27.8	0	0	0	0	27.8
1983	05/26	06/30	36	2.00 06/01	0	0	0	0	0	0	2.97	68.9	0	0	0	0	71.9
1984	05/22	06/21	31	1.00 05/22	0	0	0	0	0	0	19.8	31.2	0	0	0	0	51.1
1985	05/15	06/21	38	1.00 05/15	0	0	0	0	0	0	33.7	27.8	0	0	0	0	61.5
1986	05/25	06/30	37	1.00 05/25	0	0	0	0	0	0	13.9	44.6	0	0	0	0	58.5
1987	06/01	06/15	15	0.50 06/01	0	0	0	0	0	0	0	14.9	0	0	0	0	14.9
1988	05/16	06/21	37	1.00 05/16	0	0	0	0	0	0	31.7	27.8	0	0	0	0	59.5
1989	05/01	06/10	41	0.75 05/01	0	0	0	0	0	0	41.2	4.96	0	0	0	0	46.1
1990	05/15	06/30	47	0.75 05/15	0	0	0	0	0	0	25.3	32.2	0	0	0	0	57.5
1991	05/08	06/22	46	1.00 05/08	0	0	0	0	0	0	42.6	25.3	0	0	0	0	67.9
1992	05/03	06/15	44	1.00 05/21	0	0	0	0	0	0	39.7	18.3	0	0	0	0	58.0
1998	05/15	06/09	26	2.00 05/22	0	0	0	0	0	0	53.6	17.9	0	0	0	0	71.4
2000	05/14	06/10	28	1.50 06/01	0	0	0	0	0	0	24.8	25.8	0	0	0	0	50.6
2003	04/26	06/22	58	2.00 05/17	0	0	0	0	0	9.92	91.2	60.5	0	0	0	0	162
AVE:	05/18	06/23	36	2.70 05/22	0	0	0	0	0	0.45	60.0	95.0	38.4	0.54	0	0	194

22 years with diversion records Average Flow = 2.72 CFS

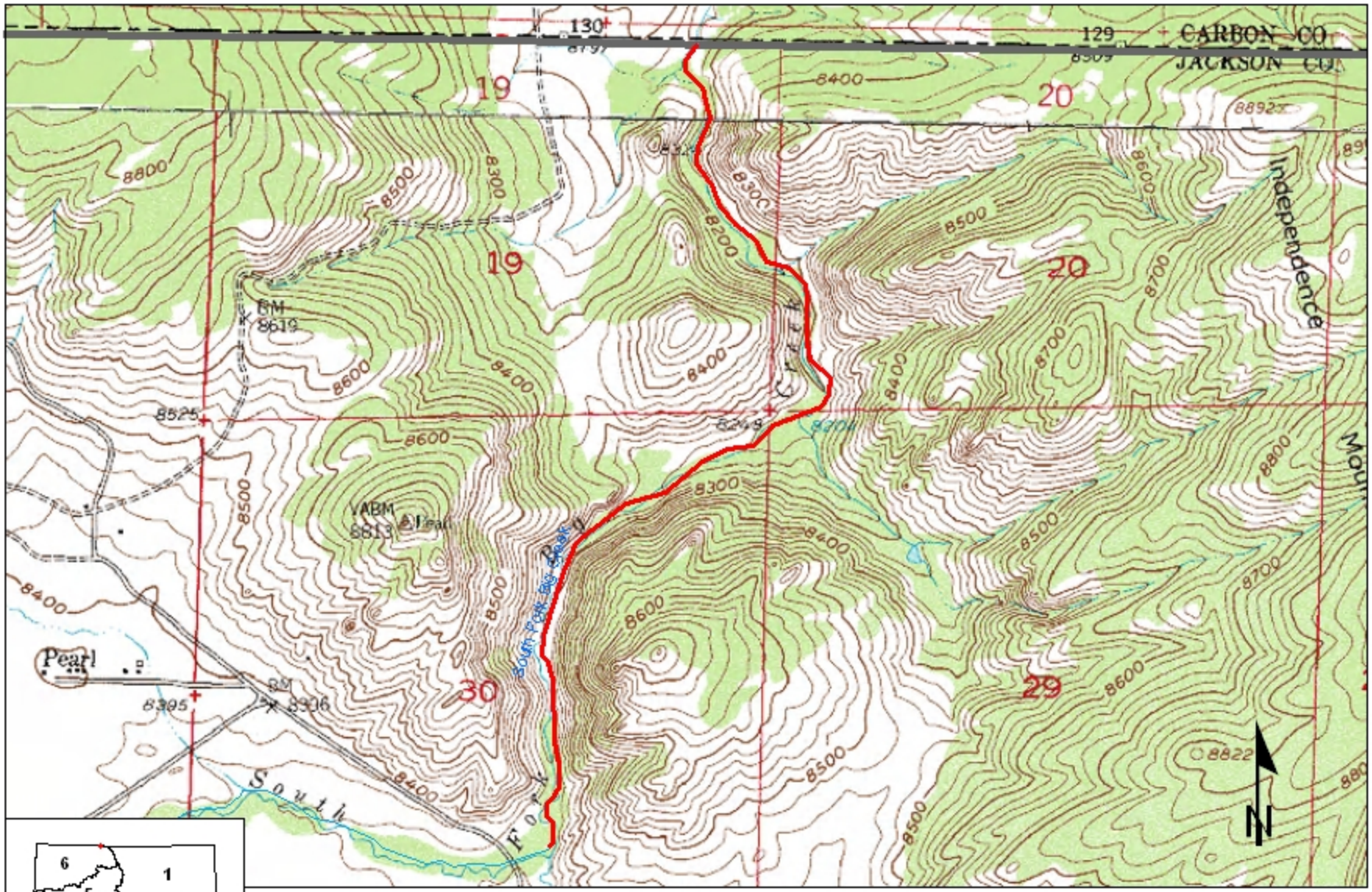
Notes: The average considers all years with diversion records, even if no water is diverted.
The above summary lists total monthly diversions.
* = Infrequent data. All other values are derived from daily records.
Average values include infrequent data if infrequent data are the only data for the year.

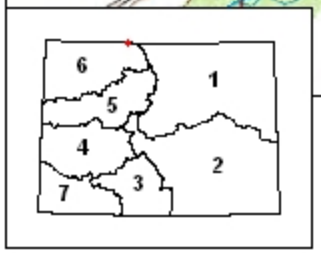
DIVERSION COMMENTS

YEAR	COMMENTS
1977	Water available, but not taken
1978	Water available, but not taken
1993	Water available, but not taken
1994	Water available, but not taken
1995	Water available, but not taken
1996	Water available, but not taken
1997	Water available, but not taken
1999	Water available, but not taken
2001	No water is available
2002	No water is available
2004	Water available, but not taken
2005	

KW (NOT USED = C)

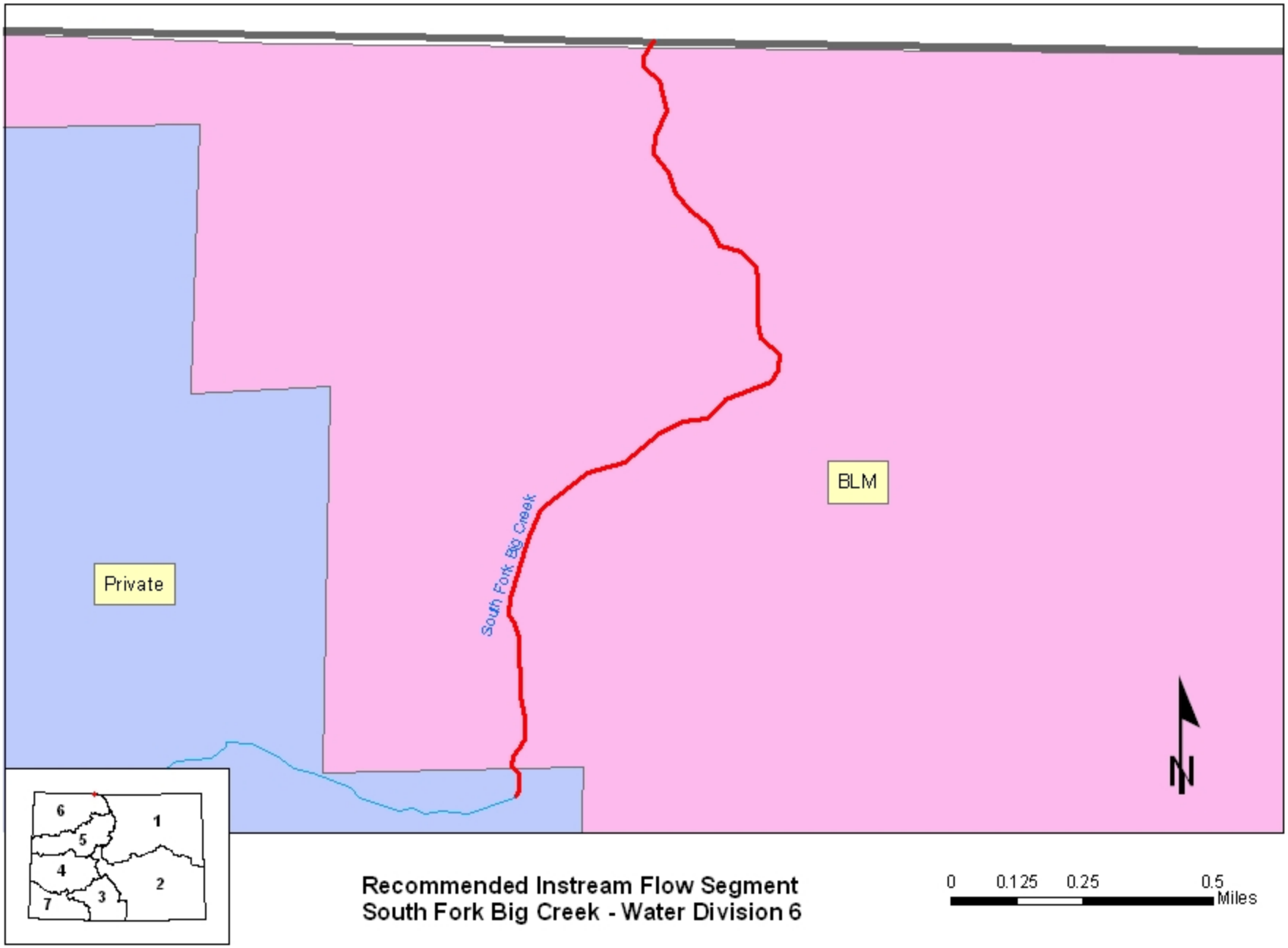
Note: Diversion comments and reservoir comments may be shown for a structure, if both are available.



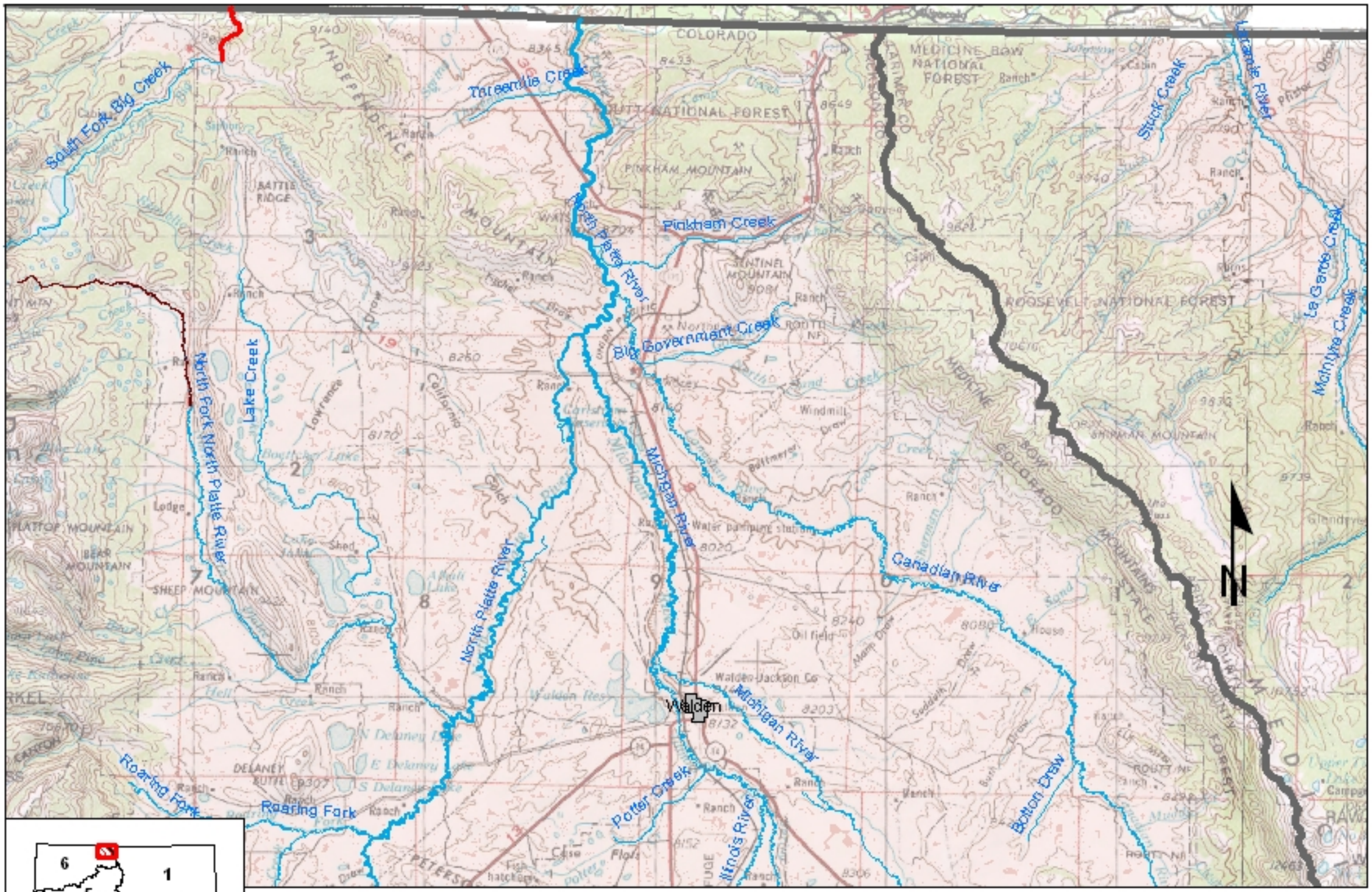


Recommended Instream Flow Segment
South Fork Big Creek - Water Division 6

0 0.125 0.25 0.5 Miles



Recommended Instream Flow Segment
South Fork Big Creek - Water Division 6



Recommended Instream Flow Segment
South Fork Big Creek - Water Division 6

0 2 4 8 Miles