



COLORADO

Parks and Wildlife

Department of Natural Resources

Aquatic Wildlife Section
6060 Broadway
Denver, CO 80216

January 9, 2026

Rob Viehl, Section Chief
Stream and Lake Protection Section
Colorado Water Conservation Board
1313 Sherman Street, 7th Floor
Denver, CO 80203

Re: Instream Flow Recommendations for Streams in Water Division 6, Garfield County; Lynx Creek, to be presented at the January 2026 CWCB Meeting

Dear Mr. Viehl:

The information contained within and referred to in this letter forms the scientific and biological basis for an instream flow (ISF) recommendation on Lynx Creek in Water Division 6. Lynx Creek is a first order stream that supports Colorado River cutthroat trout, a Tier 1 Species of Greatest Conservation Need (SGCN) according to CPW's State Wildlife Action Plan. Field investigations relating to this ISF recommendation were initiated by Colorado Parks and Wildlife (CPW) staff in 2017 and 2018. This ISF recommendation was first presented to interested parties at the ISF Workshop in January 2017. CPW and CWCB staff conducted outreach to the Garfield County Commissioners on numerous occasions, but most recently in 2025. It is CPW staff's opinion that the information contained in this letter is sufficient for the CWCB's staff to recommend an ISF appropriation to the Board on Lynx Creek as it specifically addresses the findings required in Rule 5(i) of the Instream Flow Program Rules.

CPW participates in the ISF Program and develops ISF recommendations for the Board's consideration in an effort to address CPW's legislative directives "... 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 ... 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" [§33-1-101 (1) C.R.S.], and "... that the natural, scenic, scientific, and outdoor recreation areas ... be protected, preserved, enhanced and managed for the use, benefit, and enjoyment of the people of this state and (its) visitors ... and that, to carry out such program and policy, there shall be a continuous operation of acquisition, development, and management of ... lands, waters, and facilities." [§33-10-101 (1) C.R.S.].



Laura Clellan, Acting Director, Colorado Parks and Wildlife

Parks and Wildlife Commission: Richard Reading, Chair · James 'Jay' Tutchton, Vice-Chair · Eden Vardy, Secretary · Jessica Beaulieu Frances Silva Blaney · John Emerick · Tai Jacober · Dallas May · Jack Murphy · Gabriel Otero

In addition to these broad statutory guidelines, CPW's strategic planning document (CPW Strategic Plan, 2015) explains the agency's current goals to, "[c]onserve wildlife and habitat to ensure healthy sustainable populations and ecosystems" in order to, "protect and enhance water resources for fish and wildlife populations," by pursuing, "partnerships and agreements to enhance instream flows, protect reservoir levels, and influence water management activities," and to, "[a]dvocate for water quality and quantities to conserve aquatic resources." In addition to the CPW Strategic Plan, the agency's fish and wildlife conservation activities are also informed by the State Wildlife Action Plan (SWAP 2015, revised 2025). The aforementioned documents direct CPW to advocate for the preservation of the state's fish and wildlife resources and natural environment, and therefore link CPW's mission to the goals and priorities of CWCB's Instream Flow and Natural Lake Level Program.

Recommended Segments & Land Status

CPW is proposing an ISF recommendation on Lynx Creek from its headwaters (UTM 13T 308390 4434446) to the confluence with the North Fork White River (UTM 13T 306571 4433035). The reach is approximately 1.6 miles in length. The entire length of the proposed reach is on the White River National Forest. A majority of the reach, approximately 1.25 miles, is within the Flat Tops Wilderness.

Colorado Cutthroat Trout Conservation Goals

In 2001, CPW entered into a multi-state and multi-agency conservation agreement and strategy concerning Colorado River cutthroat trout (*Oncorhynchus clarkii pleuriticus*). Colorado's partners in this plan and agreement include the natural resource management agencies from Utah and Wyoming, a number of federal agencies including the USFS, USFWS, BLM and NPS, and the Ute Indian Tribe of the Uintah and Ouray Reservation. The purpose of the strategy is to provide a framework for the long-term conservation of the Colorado River cutthroat trout (CRCT), and to reduce or eliminate the threats that warrant its status as a sensitive species or species of concern by federal resource agencies. Essentially, the parties agreed that in order to prevent listing of the subspecies, and to reach desired recovery goals without hindering further development of our state resources, continued implementation of the conservation strategy was necessary.

The objectives of the strategy are to identify and characterize all CRCT core and conservation populations, secure and enhance conservation populations, restore populations, and secure and enhance watershed conditions they rely upon. CPW believes that flow protection can be achieved by establishing an ISF water right. This is a measurable conservation action aligned with the goal of "securing and enhancing watershed conditions" that will support the conservation populations of CRCT. Information about the species and CPW's conservation strategy can be found here: [CPW Cutthroat Trout Research](#). CPW believes that securing ISF water rights for populations of CRCT is a critical step in the overall preservation of these important native species.

Natural Environment and Biological Summary

Lynx Creek is a tributary of the North Fork of the White River located east of the town of Buford. Its headwaters originate at over 10,200 feet in the Flat Tops Wilderness. Hydrology is

snowmelt-driven with stable baseflows following spring runoff. Average annual precipitation in the basin is approximately 37 inches. The watershed is approximately 1.2 square miles of forested land cover containing stands of aspen, lodgepole pine, spruce, and conifer. Lynx Creek supports a healthy riparian area with robust plants and mosses, including watercress and nettle. Upland and riparian communities support plenty of overhead cover and shading of the stream.

Lynx Creek is a first to second order stream that is moderate to high gradient. The channel type is typical of a headwaters stream with an entrenched V-shaped channel and substrate that is predominantly coarse to small cobble. Large cobble and small boulder features creates pocket pool habitat for fish. The channel over the observed reach is mainly single thread. There is considerable wood in the creek which supports habitat complexity, shading, and nutrient cycling. Much of the aquatic habitat observed by CPW staff includes high gradient riffles, cascades, and pool features that offer good holding habitat. Fish sampling conducted by CPW in 2012 indicates the stream supports Colorado River Cutthroat Trout (CRCT). CRCT are listed in CPW's SWAP as a Tier 1 Species of Greatest Conservation Need (SGCN). Macroinvertebrates were noted in the field to include caddisfly larvae.

R2Cross Background

Initial biological instream flow rates were developed using the R2Cross methodology (CWCB, 2024¹). R2Cross uses field data that has been collected in a riffle habitat type. Riffles are often the limiting habitat features in streams during low flow events, so maintaining specific hydraulic conditions across riffle habitat types will also maintain aquatic habitat in pools and runs for most life stages of fish and macroinvertebrates (Nehring, 1979²). The R2Cross model uses field data, including a survey of cross-sectional channel geometry, a longitudinal slope of the water surface, and a flow measurement as input to a single transect hydraulic model. R2Cross uses Ferguson's Variable-Power Equation (Ferguson, 2007³) to model a stage-discharge relationship and compute corresponding hydraulic parameters of average depth, average velocity, and percent wetted perimeter over modeled stages. Maintaining these three hydraulic parameters at specified levels should ensure conditions that allow movement of fish longitudinally across riffles and adequate depths, velocities, and oxygenation for production of macroinvertebrates and development of trout eggs. Baseflow recommendations are typically developed based on the flows that meet two of three hydraulic criteria and summer flow recommendations are based on hydraulic criteria that meet three of three hydraulic criteria (as described in Nehring 1979 and CWCB 2024).

¹Colorado Water Conservation Board, 2024, R2Cross field manual. <https://dnrweblink.state.co.us/cwcbsearch/0/edoc/224685/R2Cross%20Field%20Manual%202024.pdf>

²Nehring, B.R., 1979, Evaluation of Instream Flow Methods and Determination of Water Quantity Needs for Streams in the State of Colorado, Colorado Division of Wildlife.

³Ferguson, R.I., 2007. Flow resistance equations for gravel- and boulder-bed streams. Water Resources Research 43. <https://doi.org/10.1029/2006WR005422>

In 2017 and 2019, CPW collected two cross-section data sets on Lynx Creek. The results of the R2Cross analysis are summarized below.

	Bankfull Top Width	Date Surveyed	Flow measured	Flow Meeting Two Criteria	Flow Meeting Three Criteria
2	7.0'	7/11/2017	1.15 cfs	0.71 cfs	0.92 cfs
3	12.48'	8/19/2019	2.25 cfs	1.25 cfs	2.03 cfs
Recommended Biological Flow Rates				0.92 cfs	1.5 cfs

Based on these cross-sections, the biological flow recommendation during the baseflow period is approximately 0.9 cfs. This flow rate will support sufficient wetted perimeter criteria at both cross-sections, velocity criteria at cross-section 2, and depth criteria at cross-section 3. The biological flow recommendation during the high flow period is 1.5 cfs, which will maintain adequate average velocity of 1.0 feet per second (fps), average depth of 0.2 feet, and at least 50 percent wetted perimeter of the stream channel at both cross-sections.

Water Availability

In order to make a preliminary determination whether water is available for the biological flow recommendations and to determine the appropriate seasonal transition dates, CPW examined basic hydrologic data and water rights information for the North Fork White River basin. Median hydrology was analyzed by CWCB staff using prorated gage data from the historic gage on the North Fork White River (USGS 09302420 “North Fork White River above Ripple Creek near Trappers Lake”). This gage operated between 1965 to 1973. In addition, CPW is aware of the following water right within the reach: Idolsumhom Ditch (WDID: 4302828) which is a spring right decreed for 0.001 cfs with no diversion records.

Final Flow Recommendations

CPW’s analysis indicates that the following flows are needed to protect the natural environment to a reasonable degree. Based on median hydrology analyzed by CWCB staff, there is sufficient water available to meet the biological flow recommendations with slight modifications during the winter and spring baseflow periods. Therefore CPW’s flow recommendations are the following:

- Summer Flow Recommendation (May 15 through August 14): **1.5 cfs**
 - This flow rate supports sufficient depth, velocity, and wetted perimeter at both riffle cross-sections. This flow rate will support excellent habitat availability in riffles, pools, glides, and runs. Ample habitat availability is beneficial to fish during the spring and early summer when they are active feeding and spawning and need to move longitudinally throughout the channel to complete their life cycle requirements.

- Late Summer Flow Recommendation (August 15 through September 30): **1.2 cfs**
 - This flow rate supports sufficient depth, velocity, and wetted perimeter at most riffle cross-sections. Habitat availability will also be maintained in pools, glides, and runs. This is an important time period for fish as long days and warm water temperatures facilitate.
- Fall and Winter Baseflow Recommendation (October 1 through December 31): **0.9 cfs**
 - This flow rate supports sufficient wetted perimeter and adequate depth and velocity to allow fish to move longitudinally through the stream to find holding habitats that serve as overwintering habitat.
- Winter and Spring Baseflow Recommendation (January 1 through May 15): **0.8 cfs**
 - This flow rate has been reduced slightly due to water availability, but will support sufficient wetted perimeter and adequate depth and velocity in the channel to support overwintering habitat for fish.

The purpose of this letter is to formally transmit this ISF recommendation to CWCB for the Board's consideration. Based on CPW's opinion, there is a flow-dependent natural environment in Lynx Creek that can be preserved to a reasonable degree with an ISF water right in the recommended rates. Please refer to attachments which include; R2Cross field forms, R2Cross output, fish survey information, and photographs at each cross section location.

CPW personnel will be available at the January 2026 CWCB meeting to answer any questions that the Board might have regarding these flow recommendations. We appreciate your consideration.

Sincerely,

Katie Birch Digitally signed by Katie Birch
Date: 2026.01.09 14:46:47
-07'00'

Katie Birch, CPW Instream Flow Program Coordinator



Lynx Creek Fish Survey

Water **28058**
Station **WR0786**

Lynx Creek
ABT 200 M ABV CONFLUENCE W/ WHITE RIVER, N FK

Date **7/10/2012**

Drainage	White River	UtmX	306815	UtmY	4433072	Elevation	2732 m
		Length		Width		Area	
Surveyors	Battige et al						
Gear	NOT LISTED						
Total catch	11						
		Effort		Metric		Protocol	PRESENCE/ABSENCE

Species	Count	Length (mm)	Weight (gm)	Status	Mark	Tag ID	Habitat
CRN	1	196	78	1	1		Lower Station - about 25 miles upstream
CRN	1	206	90	1	1		Lower Station - about 25 miles upstream
CRN	1	191	70	1	1		Lower Station - about 25 miles upstream
CRN	1	174	50	1	1		Lower Station - about 25 miles upstream
CRN	1	169	50	1	1		Lower Station - about 25 miles upstream
CRN	1	115	14	1	1		Lower Station - about 25 miles upstream
CRN	1	142	28	1	2		Lower Station - about 25 miles upstream
CRN	1	160	50	1	2		Lower Station - about 25 miles upstream



Lynx Creek Fish Survey

Water **28058**

Lynx Creek

Date **7/10/2012**

Station **WR0786**

ABT 200 M ABV CONFLUENCE W/ WHITE RIVER, N FK

Species	Count	Length (mm)	Weight (gm)	Status	Mark	Tag ID	Habitat
CRN	1	181	60	1	2		Lower Station - about 25 miles upstream
CRN	1	161	45	1	2		Lower Station - about 25 miles upstream
CRN	1	119	18	1	2		Lower Station - about 25 miles upstream

Notes: Station number 2 held no fish. Steep with High gradient until this second section.; this reach is slightly flat with good current. NO FISH caught so only did one pass. Station 3: Near top. No fish. GPS Upper= Lynx Upper 3. GPS Lower= Lynx Lower 3; approx. .2 miles from springs-cobble substrate, flat flow, saw no fish. H2O=41F.



FIELD DATA FOR INSTREAM FLOW DETERMINATIONS



COLORADO WATER
CONSERVATION BOARD

LOCATION INFORMATION

STREAM NAME: <i>Lynx Creek (Lower) - Ab Rd</i>		CROSS-SECTION NO.:	
CROSS-SECTION LOCATION:			
DATE: <i>7/11/17</i>	OBSERVERS: <i>Skinner (Leslie level)</i>		
LEGAL DESCRIPTION	% SECTION:	SECTION:	TOWNSHIP: <i>N/S</i> RANGE: <i>E/W</i> PM:
COUNTY:	WATERSHED:	WATER DIVISION:	DOW WATER CODE:
MAP(S):	USGS:		
	USFS:		

SUPPLEMENTAL DATA

SAG TAPE SECTION SAME AS DISCHARGE SECTION: YES / NO	METER TYPE:
METER NUMBER:	DATE RATED:
CALIB/SPIN: _____ sec	TAPE WEIGHT: _____ lbs/foot
CHANNEL BED MATERIAL SIZE RANGE:	TAPE TENSION: _____ lbs
PHOTOGRAPHS TAKEN: YES/NO	NUMBER OF PHOTOGRAPHS:

CHANNEL PROFILE DATA

STATION	DISTANCE FROM TAPE (ft)	ROD READING (ft)	S K E T C H		LEGEND: Stake Station Photo Direction of Flow
Tape @ Stake LB	0.0				
Tape @ Stake RB	0.0				
WS @ Tape LB/RB	0.0				
WS Upstream					
WS Downstream					
SLOPE	<i>0.02</i>				

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:																	

COMMENTS

DISCHARGE/CROSS SECTION NOTES

STREAM NAME: <u>LYNX - Lower</u>	CROSS-SECTION NO.:	DATE: <u>7/11/17</u>	SHEET ___ OF ___
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BEGINNING OF MEASUREMENT	EDGE OF WATER LOOKING DOWNSTREAM: (0.0 AT STAKE)	LEFT / RIGHT	Gage Reading: _____ ft	TIME:
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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)		Area (ft ²)	Discharge (cfs)
									At Point	Mean in Vertical		
	S/G	0		4.5								
	WL	1		4.9	0							
		1.5		5.1	.2					1.00		
		2		5.3	.4					.41		
		2.5		5.1	.3					1.92		
		3		5.2	.3					1.06		
		3.5		5.2	.3					2.51		
		4		5.2	.3					0.94		
	WL	4.5		4.9	0							
		5		4.8								
		6		4.7								
		7		4.5								
	S/G	8		4.1								
TOTALS:												

End of Measurement	Time:	Gage Reading: _____ ft	CALCULATIONS PERFORMED BY:	CALCULATIONS CHECKED BY:
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10.
-2.8



FIELD DATA FOR INSTREAM FLOW DETERMINATIONS



COLORADO WATER
CONSERVATION BOARD

LOCATION INFORMATION

STREAM NAME: <u>Lynx</u>							CROSS-SECTION NO.: <u>1</u>	
CROSS-SECTION LOCATION: <u>Above Ditch / side channel - 0.3 mile upst</u>								
DATE: <u>8/19/19</u>		OBSERVERS: <u>KB BL RV JL KS</u>						
LEGAL DESCRIPTION	% SECTION:	SECTION:	TOWNSHIP: <u>N/S</u>	RANGE:	E/W	PM:		
COUNTY:	WATERSHED:		WATER DIVISION: <u>6</u>		DOW WATER CODE:			
MAP(S):	USGS: <u>13T</u>	<u>030306957</u>	USFS: <u>4433305</u>					

SUPPLEMENTAL DATA

SAG TAPE SECTION SAME AS DISCHARGE SECTION: YES/NO	<input checked="" type="radio"/> YES	METER TYPE: <u>FlwTracker</u>
METER NUMBER:	DATE RATED:	CALIB/SPIN: _____ sec
		TAPE WEIGHT: _____ lbs/foot
		TAPE TENSION: _____ lbs
CHANNEL BED MATERIAL SIZE RANGE: <u>Boulder/cobble</u>	PHOTOGRAPHS TAKEN <input checked="" type="radio"/> YES/NO	NUMBER OF PHOTOGRAPHS:

4.98 Bmark

CHANNEL PROFILE DATA Bmark END 4.99

STATION	DISTANCE FROM TAPE (ft)	ROD READING (ft)	S K E T C H		LEGEND: Stake (X) Station (1) Photo (diamond with arrow) Direction of Flow (arrow)
(X) Tape @ Stake LB	0.0				
(X) Tape @ Stake RB	0.0				
(1) WS @ Tape LB/RB	3.0 0.0 / 12.3	6.90 / 6.85			
(2) WS Upstream	2.5 ft	6.33			
(3) WS Downstream	7.2 ft	7.64			
SLOPE	1.31 / 9.7 = .135				

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:																	

COMMENTS

watercress, non stinging nettle, rams mes grasses, mixed aspen/pine
Macros-caddis larvae
Flw = 2.2 cfs

Right Bankwll =

WS = 6.875

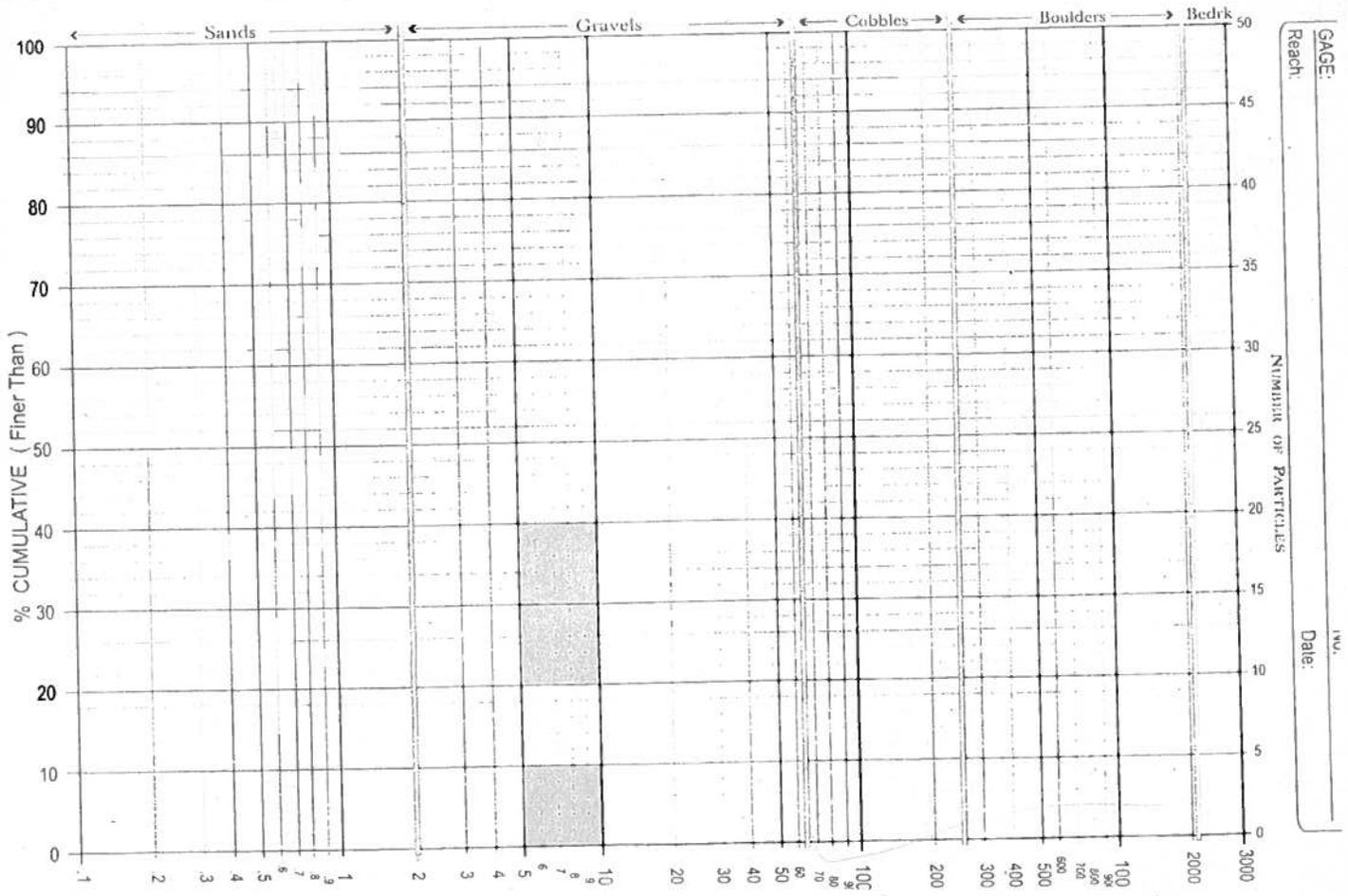
DISCHARGE/CROSS SECTION NOTES

STREAM NAME:				CROSS-SECTION NO.:		DATE:		SHEET ___ OF ___				
BEGINNING OF MEASUREMENT			EDGE OF WATER LOOKING DOWNSTREAM: (0.0 AT STAKE)			LEFT / RIGHT		Gage Reading: _____ ft		TIME:		
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)		Area (ft ²)	Discharge (cfs)
									At Point	Mean in Vertical		
LPin		0		5.85								
BF?		1.1		6.10								
		2.4		6.12								
B&D/WS		3.0		7.15	6.9	0						
		3.3		7.15		.3						
		3.6		7.15		.3						
		3.9		7.3		.4						
		4.2		7.25		.4						
		4.5		7.2		.4						
		4.8		7.2		.4						
		5.1		7.2		.4						
		5.4		7.25		.3						
		5.7		7.25		.3						
		6.0		7.2		.25						
		6.3		7.25		.3						
		6.6		7.3		.3						
		6.9		7.3		.3						
		7.2		7.3		.3						
		7.5		7.2		.2						
		7.8		7.25		.25						
		8.1		7.25		.2						
		8.4		7.25		.2						
		8.7		7.0		/	ROCK					
		9.0		6.95		/	ROCK					
		9.3		6.9		/						
		9.6		6.65		/						
		9.9		6.95		.2						
		10.2		7.1		.3						
		10.5		7.1		.3						
		10.8		7.1		.3						
		11.1		7.15		.5						
		11.4		7.25		.5						
		11.7		7.2		.5						
		12.0		6.95		.2						
		12.3		6.90		.1						
WS		12.31		6.85		0	recheck					
BF		14		5.85								
R PIN		14.7		5.65								
TOTALS:												
End of Measurement		Time:		Gage Reading: _____ ft		CALCULATIONS PERFORMED BY:				CALCULATIONS CHECKED BY:		

Site: <i>Lynx Creek</i>			Reach: <i>Crass</i>			Reach:			Reach:					
Party: <i>CPW + CWRB</i>			Date: <i>8/19/19</i>			Date:			Date:					
Inches	PARTICLE	Millimeters	PARTICLE COUNT			TOT #	ITEM %	% CUM	TOT #	ITEM %	% CUM	TOT #	ITEM %	% CUM
	Silt / Clay	< .062	1	2	3									
	Very Fine	.062 - .125												
	Fine	.125 - .25												
	Medium	.25 - .50												
	Coarse	.50 - 1.0												
.04 - .08	Very Coarse	1.0 - 2				4								
.08 - .16	Very Fine	2 - 4				0								
.16 - .22	Fine	4 - 5.7				3								
.22 - .31	Fine	5.7 - 8				3								
.31 - .44	Medium	8 - 11.3				4								
.44 - .63	Medium	11.3 - 16				5								
.63 - .89	Coarse	16 - 22.6				4								
.89 - 1.26	Coarse	22.6 - 32				8								
1.26 - 1.77	Very Coarse	32 - 45				7								
1.77 - 2.5	Very Coarse	45 - 64				20								
2.5 - 3.5	Small	64 - 90				14								
3.5 - 5.0	Small	90 - 128				15								
5.0 - 7.1	Large	128 - 180				7								
7.1 - 10.1	Large	180 - 256				1								
10.1 - 14.3	Small	256 - 362				5								
14.3 - 20	Small	362 - 512				0								
20 - 40	Medium	512 - 1024				0								
40 - 80	Large-Vry Large	1024 - 2048				0								
	Bedrock					0								
TOTALS →														



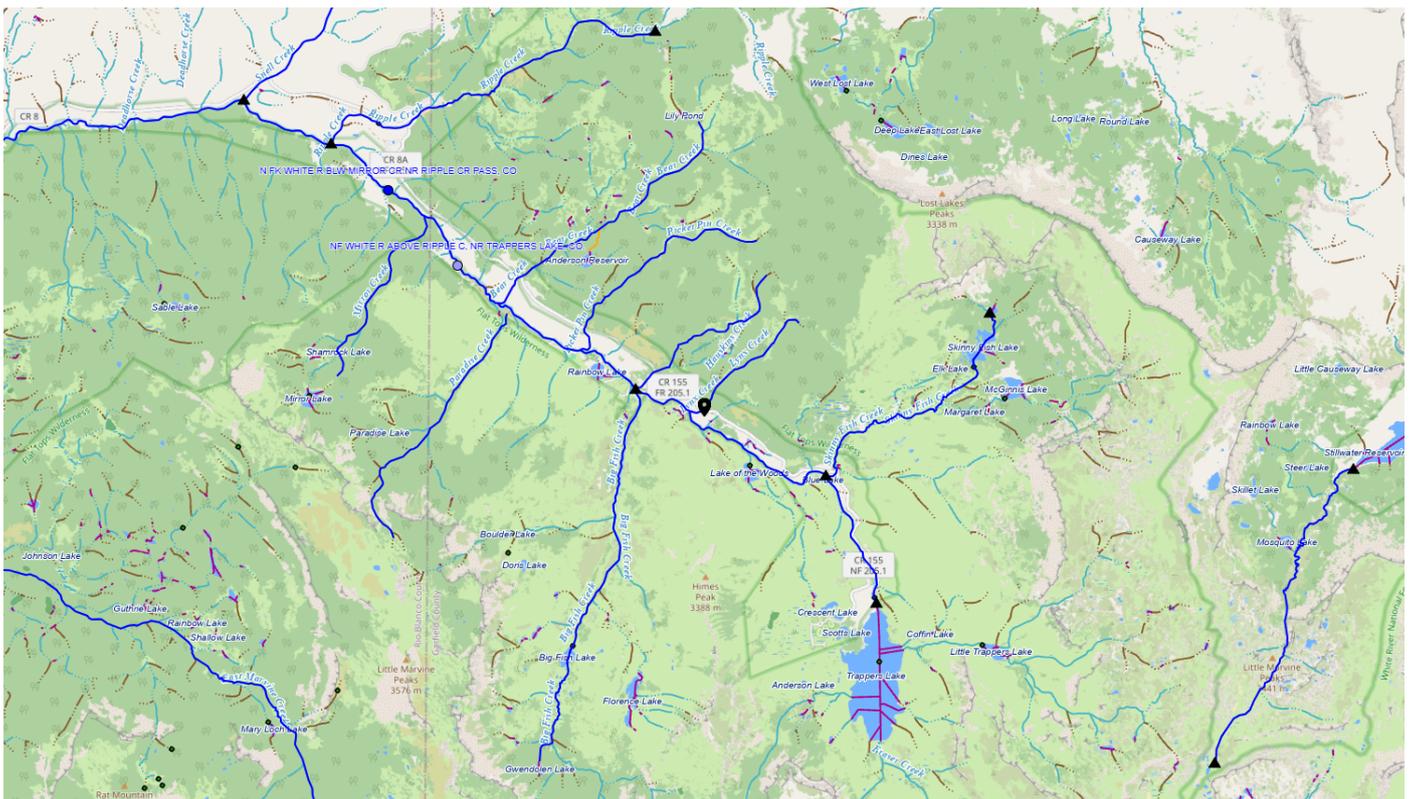
PEBBLE COUNT			PEBBLE COUNT			PEBBLE COUNT								
Site: <u>Lynx Creek</u>			Reach: <u>Just abv. Road</u>			Reach:								
Party: <u>CDW + CWCB</u>			Date: <u>8/19/19</u>			Date:								
Inches	PARTICLE	Millimeters	PARTICLE COUNT			TOT #	ITEM %	% CUM	TOT #	ITEM %	% CUM	TOT #	ITEM %	% CUM
	Silt / Clay	< .062	1	2	3									
	Very Fine	.062 - .125												
	Fine	.125 - .25												
	Medium	.25 - .50												
	Coarse	.50 - 1.0												
.04 - .08	Very Coarse	1.0 - 2				11								
.08 - .16	Very Fine	2 - 4				1								
.16 - .22	Fine	4 - 5.7				2								
.22 - .31	Fine	5.7 - 8				7								
.31 - .44	Medium	8 - 11.3				11								
.44 - .63	Medium	11.3 - 16				17								
.63 - .89	Coarse	16 - 22.6				8								
.89 - 1.26	Coarse	22.6 - 32				6								
1.26 - 1.77	Very Coarse	32 - 45				5								
1.77 - 2.5	Very Coarse	45 - 64				8								
2.5 - 3.5	Small	64 - 90				10								
3.5 - 5.0	Small	90 - 128				7								
5.0 - 7.1	Large	128 - 180				3								
7.1 - 10.1	Large	180 - 256				2								
10.1 - 14.3	Small	256 - 362				0								
14.3 - 20	Small	362 - 512				2								
20 - 40	Medium	512 - 1024				0								
40 - 80	Large-Vry Large	1024 - 2048				0								
	Bedrock					0								
TOTALS →														



R2Cross RESULTS

Stream Name: Lynx
Stream Locations: Above Trapper's Lake Road
Fieldwork Date: 07/11/2017
Cross-section: 2
Observers: Skinner
Coordinate System: UTM Zone 13
X (easting): 306805
Y (northing): 4433077
Date Processed: 10/23/2025
Slope: 0.02
Discharge: R2Cross data file: 1.15 (cfs)
Computation method: Ferguson VPE
R2Cross data filename: R2Cross_Lynx-2-07-11-2017.xlsx
R2Cross version: 2.0.4

LOCATION



ANALYSIS RESULTS

Habitat Criteria Results

Bankfull top width (ft) = 7.0

	Habitat Criteria	Discharge (cfs) Meeting Criteria
Mean Depth (ft)	0.2	0.59
Percent Wetted Perimeter (%)	50.0	0.92
Mean Velocity (ft/s)	1.0	0.71

STAGING TABLE

Feature	Distance to Water (ft)	Top Width (ft)	Mean Depth (ft)	Maximum Depth (ft)	Area (sq ft)	Wetted Perimeter (ft)	Percent Wetted Perimeter	Hydraulic Radius (ft)	Manning's n	Mean Velocity (ft/s)	Discharge (cfs)
Bankfull	4.5	7.0	0.42	0.8	2.97	7.32	100.0	0.41	0.05	2.43	7.22
	4.52	6.85	0.41	0.78	2.84	7.16	97.87	0.4	0.05	2.35	6.67
	4.54	6.7	0.4	0.76	2.7	7.01	95.74	0.39	0.05	2.28	6.15
	4.56	6.55	0.39	0.74	2.57	6.85	93.61	0.37	0.05	2.2	5.66
	4.58	6.4	0.38	0.72	2.44	6.7	91.48	0.36	0.05	2.13	5.19
	4.6	6.25	0.37	0.7	2.31	6.54	89.36	0.35	0.05	2.05	4.75
	4.62	6.1	0.36	0.68	2.19	6.39	87.23	0.34	0.05	1.98	4.33
	4.64	5.95	0.35	0.66	2.07	6.23	85.1	0.33	0.05	1.9	3.93
	4.66	5.8	0.34	0.64	1.95	6.07	82.97	0.32	0.05	1.83	3.56
	4.68	5.65	0.33	0.62	1.84	5.92	80.84	0.31	0.06	1.75	3.21
	4.7	5.5	0.31	0.6	1.72	5.76	78.71	0.3	0.06	1.67	2.88
	4.72	5.25	0.31	0.58	1.62	5.51	75.23	0.29	0.06	1.63	2.64
	4.74	5.0	0.3	0.56	1.51	5.25	71.75	0.29	0.06	1.59	2.42
	4.76	4.75	0.3	0.54	1.42	5.0	68.27	0.28	0.06	1.56	2.21
	4.78	4.5	0.29	0.52	1.32	4.74	64.79	0.28	0.06	1.53	2.03
	4.8	4.25	0.29	0.5	1.24	4.49	61.31	0.28	0.06	1.5	1.86
	4.82	4.1	0.28	0.48	1.15	4.33	59.18	0.27	0.06	1.44	1.66
	4.84	3.95	0.27	0.46	1.07	4.18	57.05	0.26	0.06	1.37	1.47
	4.86	3.8	0.26	0.44	1.0	4.02	54.92	0.25	0.06	1.31	1.3
	4.88	3.65	0.25	0.42	0.92	3.86	52.79	0.24	0.06	1.24	1.15
Waterline	4.89	3.61	0.25	0.41	0.9	3.82	52.16	0.24	0.07	1.23	1.1
	4.9	3.5	0.24	0.4	0.85	3.71	50.66	0.23	0.07	1.18	1.0
	4.92	3.42	0.23	0.38	0.78	3.62	49.39	0.22	0.07	1.09	0.85
	4.94	3.33	0.21	0.36	0.71	3.52	48.13	0.2	0.07	1.0	0.71
	4.96	3.25	0.2	0.34	0.65	3.43	46.86	0.19	0.08	0.91	0.59

4.98	3.17	0.18	0.32	0.58	3.34	45.59	0.17	0.08	0.82	0.48
5.0	3.08	0.17	0.3	0.52	3.24	44.33	0.16	0.09	0.73	0.38
5.02	3.0	0.15	0.28	0.46	3.15	43.06	0.15	0.09	0.63	0.29
5.04	2.92	0.14	0.26	0.4	3.06	41.79	0.13	0.1	0.54	0.22
5.06	2.83	0.12	0.24	0.34	2.97	40.53	0.12	0.11	0.46	0.16
5.08	2.75	0.1	0.22	0.29	2.87	39.26	0.1	0.12	0.37	0.11
5.1	2.67	0.09	0.2	0.23	2.78	37.99	0.08	0.14	0.29	0.07
5.12	2.43	0.07	0.18	0.18	2.53	34.6	0.07	0.16	0.23	0.04
5.14	2.2	0.06	0.16	0.14	2.28	31.2	0.06	0.19	0.17	0.02
5.16	1.97	0.05	0.14	0.09	2.04	27.81	0.05	0.23	0.12	0.01
5.18	1.73	0.03	0.12	0.06	1.79	24.41	0.03	0.31	0.07	0.0
5.2	0.5	0.05	0.1	0.02	0.54	7.36	0.05	0.23	0.12	0.0
5.22	0.4	0.04	0.08	0.02	0.43	5.89	0.04	0.27	0.09	0.0
5.24	0.3	0.03	0.06	0.01	0.32	4.41	0.03	0.35	0.06	0.0
5.26	0.2	0.02	0.04	0.0	0.22	2.94	0.02	0.48	0.03	0.0
5.28	0.1	0.01	0.02	0.0	0.11	1.47	0.01	0.86	0.01	0.0

This Manning's roughness coefficient was calculated based on velocity estimates from the Ferguson VPE method

MODEL SUMMARY

Measured Flow (Qm) =	1.15	(cfs)
Calculated Flow (Qc) =	1.12	(cfs)
$(Qm-Qc)/Qm * 100 =$	1.93%	
Measured Waterline (WLM) =	4.9	(ft)
Calculated Waterline (WLC) =	4.89	(ft)
$(WLM-WLC)/WLM * 100 =$	0.29%	
Max Measured Depth (Dm) =	0.4	(ft)
Max Calculated Depth (Dc) =	0.41	(ft)
$(Dm-Dc)/Dm * 100 =$	-3.52%	
Mean Velocity =	1.25	(ft/s)
Manning's n =	0.064	
$0.4 * Qm =$	0.46	(cfs)
$2.5 * Qm =$	2.87	(cfs)

FIELD DATA

Feature	Station (ft)	Rod Height (ft)	Water depth (ft)	Velocity (ft/s)
Bankfull	0	4.5		
Waterline	1	4.9	0	0
	1.5	5.1	0.2	1
	2	5.3	0.4	0.41
	2.5	5.1	0.3	1.92
	3	5.2	0.3	1.06
	3.5	5.2	0.3	2.51
	4	5.2	0.3	0.94
Waterline	4.5	4.9	0	0
	5	4.8		
	6	4.7		
	7	4.5		
Bankfull	8	4.1		

COMPUTED FROM MEASURED FIELD DATA

Wetted Perimeter (ft)	Water Depth (ft)	Area (ft ²)	Discharge (cfs)	Percent Discharge
0	0	0	0	0
0	0	0	0	0
0.54	0.2	0.1	0.1	8.72
0.54	0.4	0.2	0.08	7.15
0.54	0.3	0.15	0.29	25.12
0.51	0.3	0.15	0.16	13.87
0.5	0.3	0.15	0.38	32.84
0.5	0.3	0.15	0.14	12.3
0.58	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

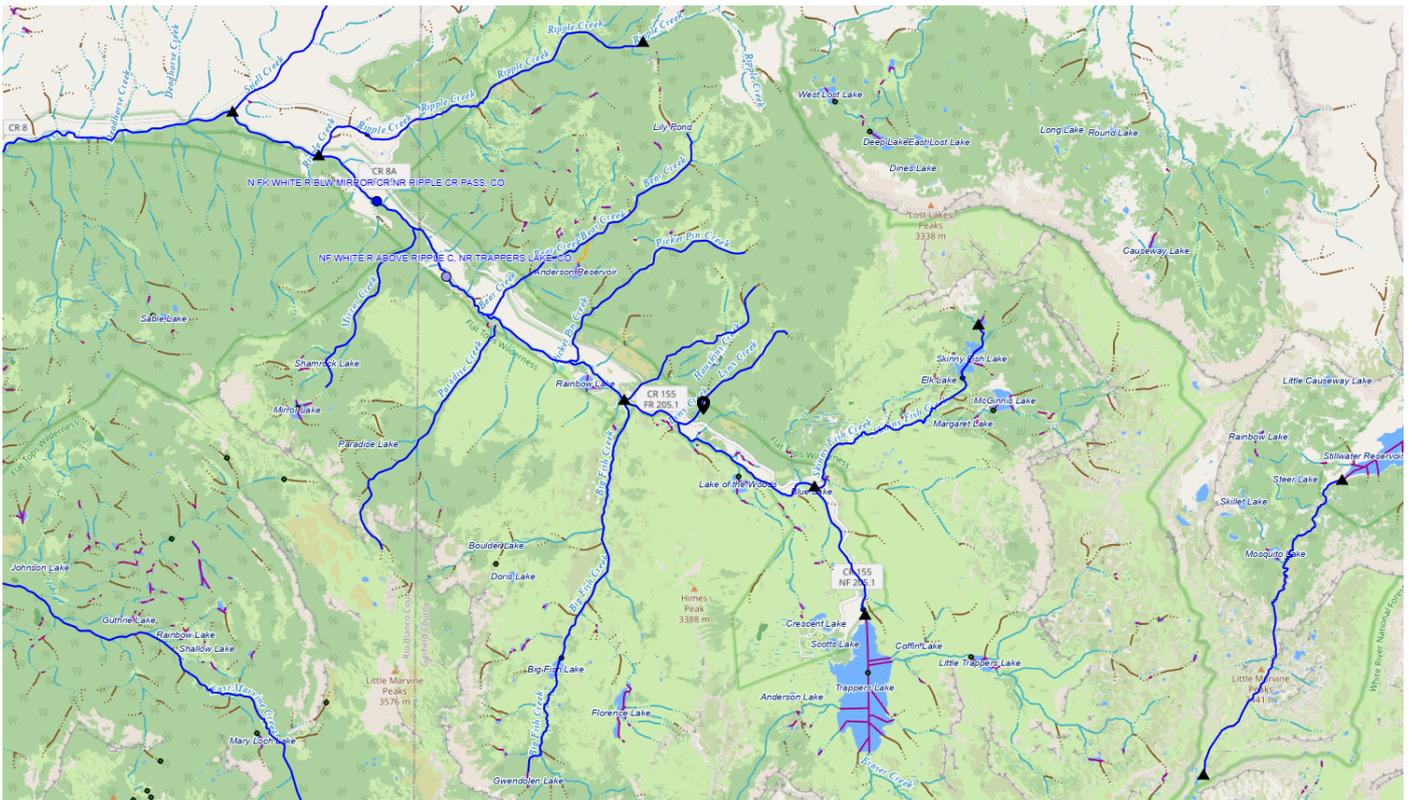
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R2Cross RESULTS

Stream Name: Lynx
Stream Locations: Above Trapper's Lake Road
Fieldwork Date: 08/19/2019
Cross-section: 3
Observers: Birch Logan Viehl Scheel Landers
Coordinate System: UTM Zone 13
X (easting): 306957
Y (northing): 4433305
Date Processed: 10/23/2025
Slope: 0.1351
Discharge: Entered Value: 2.25 (cfs)
Computation method: Ferguson VPE
R2Cross data filename: R2Cross_Lynx-3-08-19-2019_Q=2.249.xlsx
R2Cross version: 2.0.4

LOCATION



ANALYSIS RESULTS

Habitat Criteria Results

Bankfull top width (ft) = 12.48

	Habitat Criteria	Discharge (cfs) Meeting Criteria
Mean Depth (ft)	0.2	0.78
Percent Wetted Perimeter (%)	50.0	0.18
Mean Velocity (ft/s)	1.0	2.93

STAGING TABLE

Feature	Distance to Water (ft)	Top Width (ft)	Mean Depth (ft)	Maximum Depth (ft)	Area (sq ft)	Wetted Perimeter (ft)	Percent Wetted Perimeter	Hydraulic Radius (ft)	Manning's n	Mean Velocity (ft/s)	Discharge (cfs)
Bankfull	6.1	12.48	0.84	1.2	10.47	13.83	100.0	0.76	0.12	3.78	39.59
	6.13	11.12	0.91	1.17	10.13	12.45	90.08	0.81	0.11	4.18	42.29
	6.18	11.0	0.87	1.12	9.57	12.29	88.91	0.78	0.12	3.93	37.63
	6.23	10.87	0.83	1.07	9.03	12.13	87.75	0.74	0.12	3.69	33.27
	6.28	10.75	0.79	1.02	8.49	11.97	86.58	0.71	0.13	3.44	29.21
	6.33	10.63	0.75	0.97	7.95	11.81	85.42	0.67	0.13	3.2	25.43
	6.38	10.5	0.71	0.92	7.42	11.65	84.25	0.64	0.14	2.96	21.95
	6.43	10.38	0.66	0.87	6.9	11.49	83.08	0.6	0.14	2.72	18.75
	6.48	10.26	0.62	0.82	6.38	11.33	81.92	0.56	0.15	2.48	15.83
	6.53	10.14	0.58	0.77	5.87	11.16	80.75	0.53	0.16	2.24	13.19
	6.58	10.01	0.54	0.72	5.37	11.0	79.58	0.49	0.17	2.01	10.81
	6.63	9.89	0.49	0.67	4.87	10.84	78.42	0.45	0.18	1.78	8.7
	6.68	9.7	0.45	0.62	4.38	10.59	76.61	0.41	0.19	1.58	6.93
	6.73	9.47	0.41	0.57	3.9	10.28	74.36	0.38	0.21	1.39	5.44
	6.78	9.24	0.37	0.52	3.44	9.97	72.12	0.34	0.22	1.21	4.15
	6.83	9.0	0.33	0.47	2.98	9.66	69.88	0.31	0.24	1.03	3.06
Waterline	6.88	8.81	0.29	0.42	2.54	9.38	67.84	0.27	0.27	0.84	2.14
	6.93	8.35	0.25	0.37	2.1	8.84	63.91	0.24	0.3	0.7	1.47
	6.98	7.79	0.22	0.32	1.7	8.21	59.41	0.21	0.34	0.57	0.97
	7.03	7.46	0.18	0.27	1.32	7.8	56.42	0.17	0.4	0.42	0.56
	7.08	7.22	0.13	0.22	0.95	7.48	54.09	0.13	0.5	0.28	0.26
	7.13	6.26	0.1	0.17	0.62	6.44	46.59	0.1	0.63	0.18	0.11
	7.18	5.36	0.06	0.12	0.33	5.48	39.64	0.06	0.93	0.09	0.03
	7.23	3.26	0.03	0.07	0.11	3.32	23.98	0.03	1.57	0.04	0.0
	7.28	0.94	0.02	0.02	0.02	0.95	6.89	0.02	2.79	0.01	0.0

7.29	0.85	0.01	0.01	0.01	0.86	6.25	0.01	3.44	0.01	0.0
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This Manning's roughness coefficient was calculated based on velocity estimates from the Ferguson VPE method

MODEL SUMMARY

Measured Flow (Qm) =	2.25	(cfs)
Calculated Flow (Qc) =	2.2	(cfs)
$(Qm-Qc)/Qm * 100 =$	2.23%	
Measured Waterline (WLM) =	6.88	(ft)
Calculated Waterline (WLC) =	6.88	(ft)
$(WLM-WLC)/WLM * 100 =$	-0.07%	
Max Measured Depth (Dm) =	0.5	(ft)
Max Calculated Depth (Dc) =	0.42	(ft)
$(Dm-Dc)/Dm * 100 =$	15.98%	
Mean Velocity =	0.87	(ft/s)
Manning's n =	0.263	
$0.4 * Qm =$	0.9	(cfs)
$2.5 * Qm =$	5.62	(cfs)

FIELD DATA

Feature	Station (ft)	Rod Height (ft)	Water depth (ft)	Velocity (ft/s)
	0	5.85		
Bankfull	1.1	6.1		
	2.4	6.12		
Waterline	3	6.9	0	
	3.1	7.15	0.3	
	3.3	7.15	0.3	
	3.6	7.15	0.3	
	3.9	7.3	0.4	
	4.2	7.25	0.4	
	4.5	7.2	0.4	
	4.8	7.2	0.4	
	5.1	7.2	0.4	
	5.4	7.25	0.3	
	5.7	7.25	0.3	
	6	7.2	0.25	
	6.3	7.25	0.3	
	6.6	7.3	0.3	
	6.9	7.3	0.3	
	7.2	7.3	0.3	
	7.5	7.2	0.2	
	7.8	7.25	0.25	
	8.1	7.25	0.2	
	8.4	7.25	0.2	
	8.7	7	0	
	9	6.95	0	
	9.3	6.9	0	
	9.6	6.65	0	
	9.9	6.95	0.2	
	10.2	7.1	0.3	
	10.5	7.1	0.3	

	10.8	7.1	0.3
	11.1	7.15	0.5
	11.4	7.25	0.5
	11.7	7.2	0.5
	12	6.95	0.2
	12.3	6.9	0.1
Waterline	12.31	6.85	0
Bankfull	14	5.85	
	14.7	5.65	

COMPUTED FROM MEASURED FIELD DATA

Wetted Perimeter (ft)	Water Depth (ft)	Area (ft ²)	Discharge (cfs)	Percent Discharge
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0.27	0.3	0.04	0.04	1.77
0.2	0.3	0.07	0.07	2.96
0.3	0.3	0.09	0.08	3.55
0.34	0.4	0.12	0.11	4.73
0.3	0.4	0.12	0.11	4.73
0.3	0.4	0.12	0.11	4.73
0.3	0.4	0.12	0.11	4.73
0.3	0.4	0.12	0.11	4.73
0.3	0.3	0.09	0.08	3.55
0.3	0.3	0.09	0.08	3.55
0.3	0.25	0.07	0.07	2.96
0.3	0.3	0.09	0.08	3.55
0.3	0.3	0.09	0.08	3.55
0.3	0.3	0.09	0.08	3.55
0.3	0.3	0.09	0.08	3.55
0.3	0.3	0.09	0.08	3.55
0.32	0.2	0.06	0.05	2.37
0.3	0.25	0.07	0.07	2.96
0.3	0.2	0.06	0.05	2.37
0.3	0.2	0.06	0.05	2.37
0.39	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0.42	0.2	0.06	0.05	2.37
0.34	0.3	0.09	0.08	3.55
0.3	0.3	0.09	0.08	3.55

0.3	0.3	0.09	0.08	3.55
0.3	0.5	0.15	0.13	5.92
0.32	0.5	0.15	0.13	5.92
0.3	0.5	0.15	0.13	5.92
0.39	0.2	0.06	0.05	2.37
0.3	0.1	0.02	0.01	0.61
0.05	0	0	0	0
0	0	0	0	0
0	0	0	0	0

DISCLAIMER

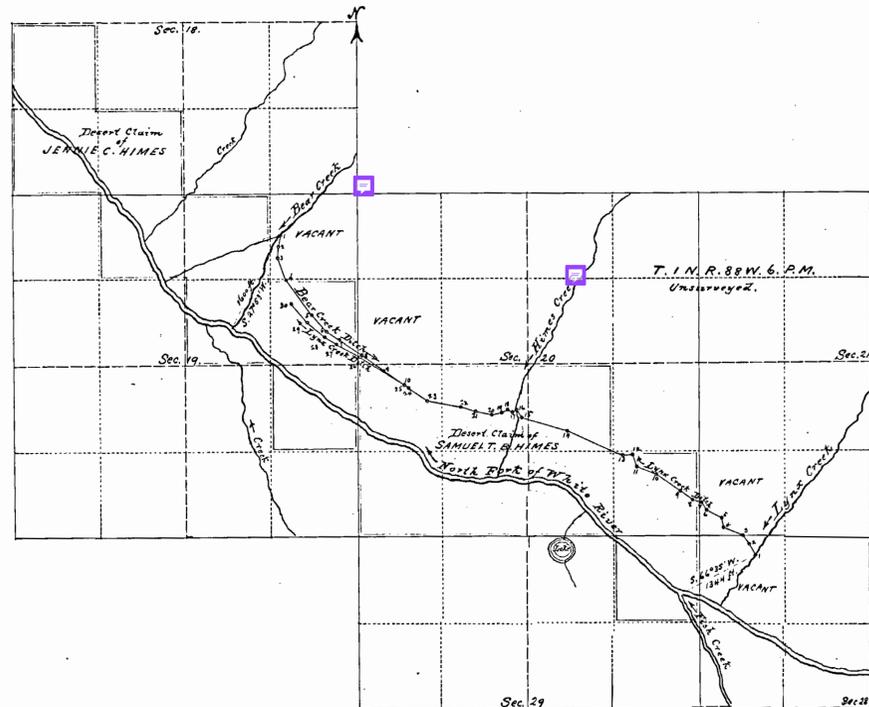
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Map and Statement

of

The Bear Creek Ditch and The Lynx Creek Ditch.

Scale: 1/15840



STATE OF COLORADO, } ss. STATEMENT OF CLAIM TO WATER RIGHT.
 COUNTY OF GARFIELD, } Irrigation Division No. 9. Water District No. 43.

Samuel T. B. Himes and Jennie C. Himes the owners of the following described ditches, in compliance with the requirements of the provisions of Chapter 126 of the Session Laws of 1903 of the State of Colorado, do hereby make this statement for filing. The names of the owners of said The Lynx Creek Ditch and The Bear Creek Ditch are Samuel T. B. Himes who owns three-fourths (3/4) interest and Jennie C. Himes who owns one-fourth (1/4) interest.

The headgate of The Lynx Creek Ditch is situated on the right bank of Lynx Creek from which stream said ditch derives its supply of water at a point whence the mouth of said creek bears S 61° 30' W 130 ft. Said ditch is also fed by Bear Creek at Station 16. From the headgate The Lynx Creek Ditch runs as follows:

Stations	Bearing	Distance	Stations	Bearing	Distance	Stations	Bearing	Distance
1-2	N 31° 00' W	161 ft.	8-9	N 46° 30' W	220 ft.	14-15	N 27° 30' W	108 ft.
2-3	N 34° 30' W	140 "	9-10	N 50° 00' W	244 "	15-16	N 33° 00' W	105 "
3-4	N 67° 30' W	346 "	10-11	N 57° 30' W	323 "	16-17	N 24° 30' W	78 "
4-5	N 71° 30' W	126 "	11-12	N 51° 30' W	196 "	17-18	N 24° 30' W	78 "
5-6	N 60° 30' W	228 "	12-13	N 44° 30' W	168 "	18-19	S 63° 00' W	163 "
6-7	N 33° 30' W	133 "	13-14	N 46° 30' W	240 "	19-20	S 74° 00' W	205 "
7-8	N 60° 30' W	163 "	14-15	N 70° 30' W	228 "	20-21	N 79° 00' W	234 "
						21-22	N 73° 30' W	234 "
						22-23	N 55° 00' W	140 "
						23-24	N 40° 00' W	100 "

Said ditch is 3 ft. wide on the bottom, 5 ft. wide at high water line, 1 ft. deep, has a minimum grade of 1/100 and is 8482 ft. long.
 The capacity of the said The Lynx Creek Ditch is 2 Second feet, computed by Kutter's Formula. Coefficient of roughness .015.
 Said ditch is built for the purpose of irrigating 175 acres of land on the N.E. 1/4, N.E. 1/4 Sec. 29, S. 1/4 S.E. 1/4, N.E. 1/4 S.E. 1/4 and S. 1/4 Sec. 20, N. 1/4 S.E. 1/4 and S. 1/4 N.E. 1/4 Sec. 19 T. 28 N. R. 88 W. 6. P. M. Unsurveyed.
 The claim is 2 cu. feet per second of the waters of Lynx Creek and Bear Creek for irrigation.
 Work was commenced on said ditch on May 1st 1901.
 The estimated cost of said ditch is \$550.

The headgate of The Bear Creek Ditch is situated on the left bank of Bear Creek from which stream said ditch derives its supply of water at a point whence the mouth of Bear Creek bears S 27° 30' W 160 ft. There is there:

Stations	Bearing	Distance
1-2	S 71° 30' W	180 ft.
2-3	S 70° 30' W	170 "
3-4	S 26° 30' W	340 "
4-5	S 34° 30' W	690 "
5-6	S 40° 30' W	327 "
6-7	S 32° 30' W	229 "
7-8	S 31° 30' W	446 "
8-9	S 37° 30' W	413 "
9-10	S 58° 30' W	408 "

Said ditch is 3 ft. wide on the bottom, 5 ft. wide at high water line, 1 ft. deep, has a minimum grade of 1/100 and is 2438 ft. long.
 The capacity of the said The Bear Creek Ditch is 1.2 Second feet, computed by Kutter's Formula, coefficient of roughness .015.
 Said ditch is built for the purpose of irrigating 100 acres of land on the N.W. 1/4, N.E. 1/4, S. 1/4 N.E. 1/4, N.E. 1/4 S.E. 1/4, N.W. 1/4 S.W. 1/4, Sec. 20 T. 28 N. R. 88 W. 6. P. M. Unsurveyed.
 The claim is 2 cu. feet per second of the waters of Bear Creek for irrigation.
 Work was commenced on said ditch on May 1st 1903.
 The estimated cost of said ditch is \$150.

State of Colorado, }
 County of Rio Blanco, } Samuel T. B. Himes and Jennie C. Himes being first duly sworn, on oath say that they have read the above and foregoing statement and examined the plat thereto attached and that the matters therein set forth are true to their best knowledge and belief.

Subscribed and sworn to before me this 11th day of November A.D. 1904
 J. C. Himes
 MY COMMISSION EXPIRES JUNE 27 08
 J. D. Moody
 Notary Public
 S. no. address Meeker, Colo.

State of Colorado, } ss. J. D. Moody being first duly sworn, says that he is the person who was employed to make the survey, that he has prepared the attached plat and that the matters therein set forth are true to his best knowledge.

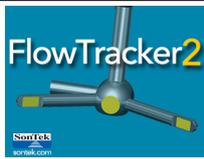
Subscribed and sworn to before me this 11th day of November A.D. 1904
 H. A. Wildhack
 NOTARY PUBLIC
 State Engineer's Office,
 Denver, Colo.

State of Colorado, } ss. I hereby certify that the attached map and statement has been examined and approved by me as appearing with the statement of the State of Colorado and the regulations of this office and was accepted for filing on the 7th day of February A.D. 1905.

J. G. Campbell
 State Engineer
 By Patsy J. Prater
 Deputy.

General Site Field Visit Data Report (Filters: Name begins with Lynx Creek;)

Type	Div	Name	CWCB Case Number	Segment ID	Visit Date	Location Description	Watershed Name
Stream	6	Lynx Creek		18/6/A-014	8/19/2019	Lynx Creek US of LT 0.36mi	Upper White
	Remarks	Date	Remark				
		19/08/19 16:45	Discharge Measurement taken for R2Cross. Steep channel (20%) that is very braided for lower part of reach. Large substrate; stable banks; very little fine sed. Old ditch starts approx 0.3mi US of LT; Flows through FS cabin pasture; rejoins stream above road. Riparian forest is some fir/spruce with abundant aspens and willows. Good riparian shading. Observed mayfly; stonefly; and caddis larvae. Lots of short filamentous algae / moss on rocks.				
	GPS Log	No GPS Log records for this visit.					
	Photo Log	No Photo Log records for this visit.					



Discharge Measurement Summary

Site name Lynx Cr
Site number 001
Operator(s) JEL
File name Lynx Cr_20190819-173929.ft
Comment R2cross xsec 1

Start time	8/19/2019 5:15 PM	Sensor type	Top Setting
End time	8/19/2019 5:36 PM	Handheld serial number	FT2H1747037
Start location latitude	40.058	Probe serial number	FT2P1747048
Start location longitude	-107.260	Probe firmware	1.23
Calculations engine	FlowTracker2	Handheld software	1.4

# Stations	Avg interval (s)	Total discharge (ft³/s)
21	40	2.2486

Total width (ft)	Total area (ft²)	Wetted Perimeter (ft)
6.700	1.4865	9.809

Mean SNR (dB)	Mean depth (ft)	Mean velocity (ft/s)
53	0.222	1.5127

Mean temp (°F)	Max depth (ft)	Max velocity (ft/s)
43.902	0.380	3.2605

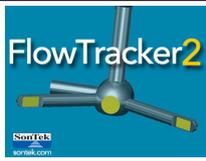
Discharge Uncertainty		
Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.4%	9.7%
Velocity	3.0%	13.0%
Width	0.1%	0.1%
Method	2.2%	
# Stations	2.6%	
Overall	4.7%	16.2%

Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

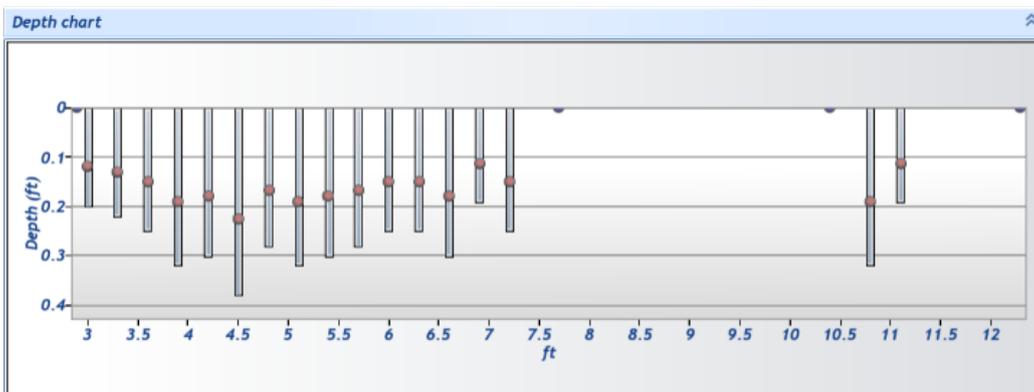
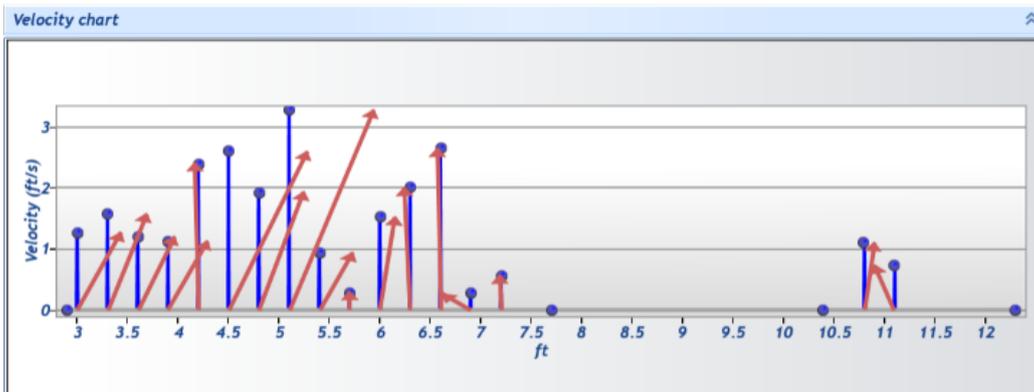
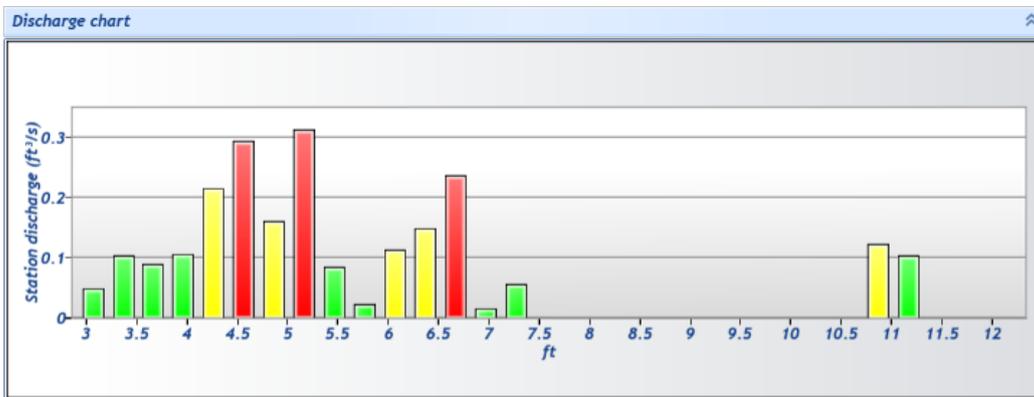
No changes were made to this file
Quality control warnings



Discharge Measurement Summary

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Station Warning Settings		
Station discharge OK	Station discharge < 5.00%	
Station discharge caution	5.00% >= Station discharge < 10.00%	
Station discharge warning	Station discharge >= 10.00%	



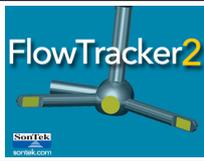


Discharge Measurement Summary

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Comment R2cross xsec 1

Measurement results

St#	Time	Location (ft)	Method	Depth (ft)	%Depth	Measured Depth (ft)	Samples	Velocity (ft/s)	Correcti on	Mean Velocity (ft/s)	Area (ft ²)	Flow (ft ³ /s)	%Q	
0	5:15 PM	2.900	None	0.000	0.0000	0.000	0	0.0000	1.0000	1.2711	0.0000	0.0000	0.00	✓
1	5:15 PM	3.000	0.6	0.200	0.6000	0.120	80	1.2711	1.0000	1.2711	0.0400	0.0508	2.26	✓
2	5:17 PM	3.300	0.6	0.220	0.6000	0.132	80	1.5694	1.0000	1.5694	0.0660	0.1036	4.61	✓
3	5:18 PM	3.600	0.6	0.250	0.6000	0.150	80	1.1978	1.0000	1.1978	0.0750	0.0898	4.00	✓
4	5:19 PM	3.900	0.6	0.320	0.6000	0.192	80	1.1235	1.0000	1.1235	0.0960	0.1079	4.80	✓
5	5:20 PM	4.200	0.6	0.300	0.6000	0.180	80	2.3929	1.0000	2.3929	0.0900	0.2154	9.58	✓
6	5:21 PM	4.500	0.6	0.380	0.6000	0.228	80	2.5864	1.0000	2.5864	0.1140	0.2948	13.11	✓
7	5:22 PM	4.800	0.6	0.280	0.6000	0.168	80	1.9264	1.0000	1.9264	0.0840	0.1618	7.20	✓
8	5:23 PM	5.100	0.6	0.320	0.6000	0.192	80	3.2605	1.0000	3.2605	0.0960	0.3130	13.92	✓
9	5:25 PM	5.400	0.6	0.300	0.6000	0.180	80	0.9387	1.0000	0.9387	0.0900	0.0845	3.76	✓
10	5:26 PM	5.700	0.6	0.280	0.6000	0.168	80	0.2959	1.0000	0.2959	0.0840	0.0249	1.11	✓
11	5:27 PM	6.000	0.6	0.250	0.6000	0.150	80	1.5137	1.0000	1.5137	0.0750	0.1135	5.05	✓
12	5:28 PM	6.300	0.6	0.250	0.6000	0.150	49	2.0035	1.0000	2.0035	0.0750	0.1503	6.68	✓
13	5:29 PM	6.600	0.6	0.300	0.6000	0.180	80	2.6374	1.0000	2.6374	0.0900	0.2374	10.56	✓
14	5:30 PM	6.900	0.6	0.190	0.6000	0.114	80	0.2826	1.0000	0.2826	0.0570	0.0161	0.72	✓
15	5:31 PM	7.200	0.6	0.250	0.6000	0.150	80	0.5709	1.0000	0.5709	0.1000	0.0571	2.54	✓
16	5:32 PM	7.700	None	0.000	0.0000	0.000	0	0.0000	1.0000	0.5709	0.0000	0.0000	0.00	✓
17	5:32 PM	10.400	None	0.000	0.0000	0.000	0	0.0000	1.0000	1.1004	0.0000	0.0000	0.00	✓
18	5:33 PM	10.800	0.6	0.320	0.6000	0.192	80	1.1004	1.0000	1.1004	0.1120	0.1232	5.48	✓
19	5:34 PM	11.100	0.6	0.190	0.6000	0.114	80	0.7336	1.0000	0.7336	0.1425	0.1045	4.65	✓
20	5:36 PM	12.300	None	0.000	0.0000	0.000	0	0.0000	1.0000	0.7336	0.0000	0.0000	0.00	✓



Discharge Measurement Summary

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Comment R2cross xsec 1

Quality Control Settings	
Maximum depth change	50.00%
Maximum spacing change	100.00%
SNR threshold	10 dB
Standard error threshold	0.0328 ft/s
Spike threshold	10.00%
Maximum velocity angle	20.0 deg
Maximum tilt angle	5.0 deg

Quality control warnings							
St#	Time	Location (ft)	Method	Depth (ft)	%Depth	Measured Depth (ft)	Warnings
1	5:15 PM	3.000	0.6	0.200	0.6000	0.120	Standard Error > QC
2	5:17 PM	3.300	0.6	0.220	0.6000	0.132	Standard Error > QC
3	5:18 PM	3.600	0.6	0.250	0.6000	0.150	Standard Error > QC
4	5:19 PM	3.900	0.6	0.320	0.6000	0.192	Boundary Interference, Large SNR Variation, Standard Error > QC
5	5:20 PM	4.200	0.6	0.300	0.6000	0.180	Standard Error > QC
6	5:21 PM	4.500	0.6	0.380	0.6000	0.228	Boundary Interference, Standard Error > QC, High Stn % Discharge
7	5:22 PM	4.800	0.6	0.280	0.6000	0.168	Boundary Interference, Standard Error > QC
8	5:23 PM	5.100	0.6	0.320	0.6000	0.192	Boundary Interference, Standard Error > QC, High Stn % Discharge
9	5:25 PM	5.400	0.6	0.300	0.6000	0.180	Boundary Interference, Standard Error > QC
10	5:26 PM	5.700	0.6	0.280	0.6000	0.168	Boundary Interference, Beam SNRs Not Similar, Standard Error > QC
11	5:27 PM	6.000	0.6	0.250	0.6000	0.150	Boundary Interference, Standard Error > QC
12	5:28 PM	6.300	0.6	0.250	0.6000	0.150	Boundary Interference, Standard Error > QC
13	5:29 PM	6.600	0.6	0.300	0.6000	0.180	Standard Error > QC, High Stn % Discharge
14	5:30 PM	6.900	0.6	0.190	0.6000	0.114	Standard Error > QC, Velocity Angle > QC
15	5:31 PM	7.200	0.6	0.250	0.6000	0.150	Standard Error > QC
18	5:33 PM	10.800	0.6	0.320	0.6000	0.192	Stn Spacing > QC
19	5:34 PM	11.100	0.6	0.190	0.6000	0.114	Stn Spacing > QC
20	5:36 PM	12.300	None	0.000	0.0000	0.000	Stn Spacing > QC



Discharge Measurement Summary

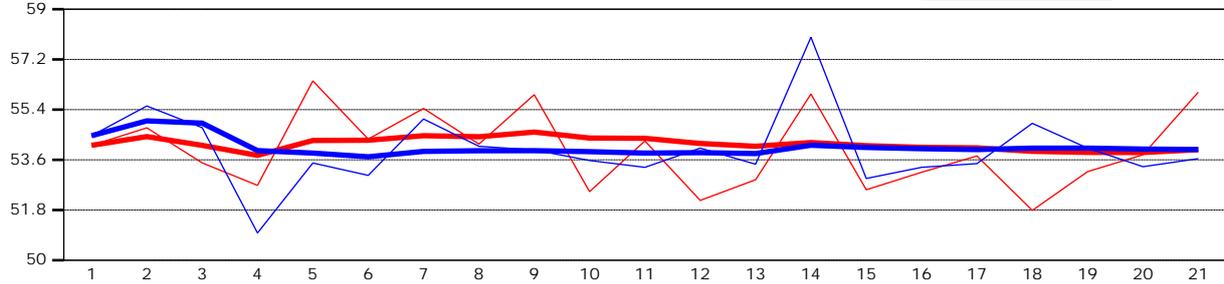
Site name Lynx Cr
Site number 001
Operator(s) JEL
File name Lynx Cr_20190819-173929.ft
Comment R2cross xsec 1

Beam 1	
Beam 2	

Automated beam check Start time 8/19/2019 5:14:53 PM

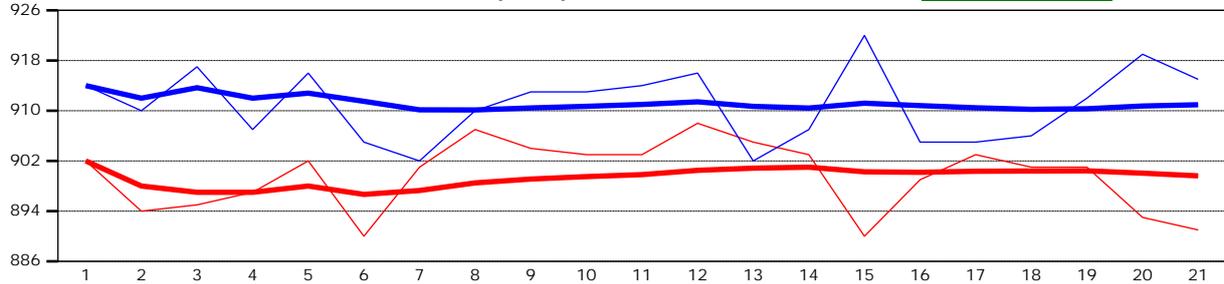
Automated beam check SNR(dB)

PASS



Automated beam check Noise level(cnts)

PASS



Automated beam check Quality control warnings
No quality control warnings



Discharge Measurement Summary

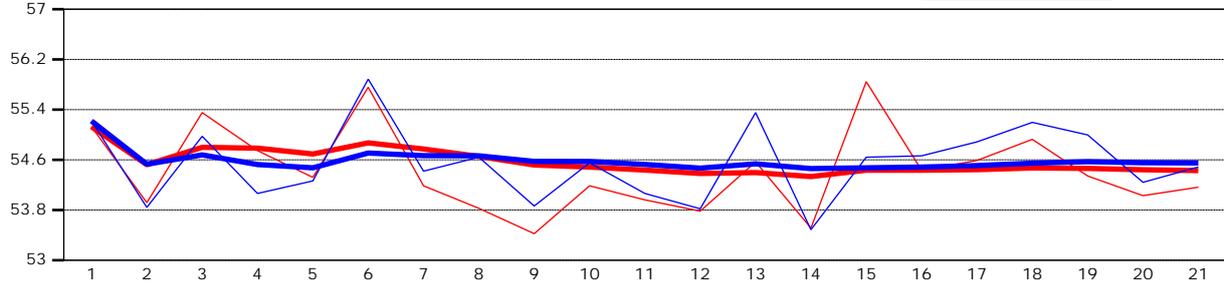
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Beam 1	
Beam 2	

Automated beam check Start time 8/19/2019 5:14:53 PM

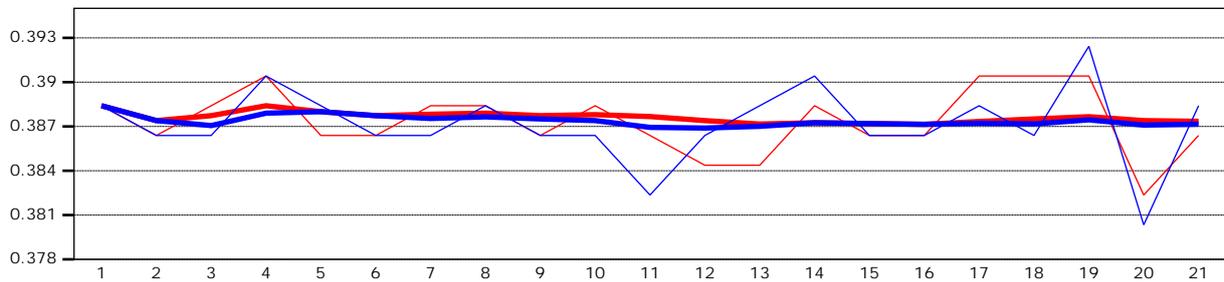
Automated beam check Peak level(dB)

PASS



Automated beam check Peak position(ft)

PASS



Automated beam check Quality control warnings
No quality control warnings

