State of Idaho
Department of Water Resources

Water Right License

Water Right No. 96-9522

Priority: August 13, 2013

Maximum Diversion Rate: 1.66 CFS
Maximum Diversion Volume: 129.0 AF

It is hereby certified that:

KARL BERKENKAMP 773 WHITTUM RD PRIEST RIVER ID 83856-7772

has complied with the terms and conditions of the permit, issued pursuant to Application for Permit dated August 13, 2013, and has submitted Proof of Beneficial Use on October 29, 2015. An examination confirms water is diverted from:

Source : CURTIS CREEK **Tributary:** SINKS

Beneficial Use	Period of Use	Rate of Diversion	Annual Volume
WILDLIFE	04/01 to 06/15	1.66 CFS	129.0 AF

Location of Point(s) of Diversion
CURTIS CREEK NE¼ SE¼, Sec. 21, Twp 55N, Rge 04W, B.M. BONNER County

Place of Use: WILDLIFE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
55N	04W	21			X	X									X				

Conditions of Approval

1. Use of water under this right is for wildlife habitat purposes.
2. This right does not grant any right-of-way or easement across the land of another.

This license is issued pursuant to the provisions of Idaho Code § 42-219. The water right confirmed by this license is subject to all prior water rights and shall be used in accordance with Idaho law and applicable rules of the Department of Water Resources.

Signed this 25th day of October, 2022.

ADAM FREDERICK
Water Rights Supervisor

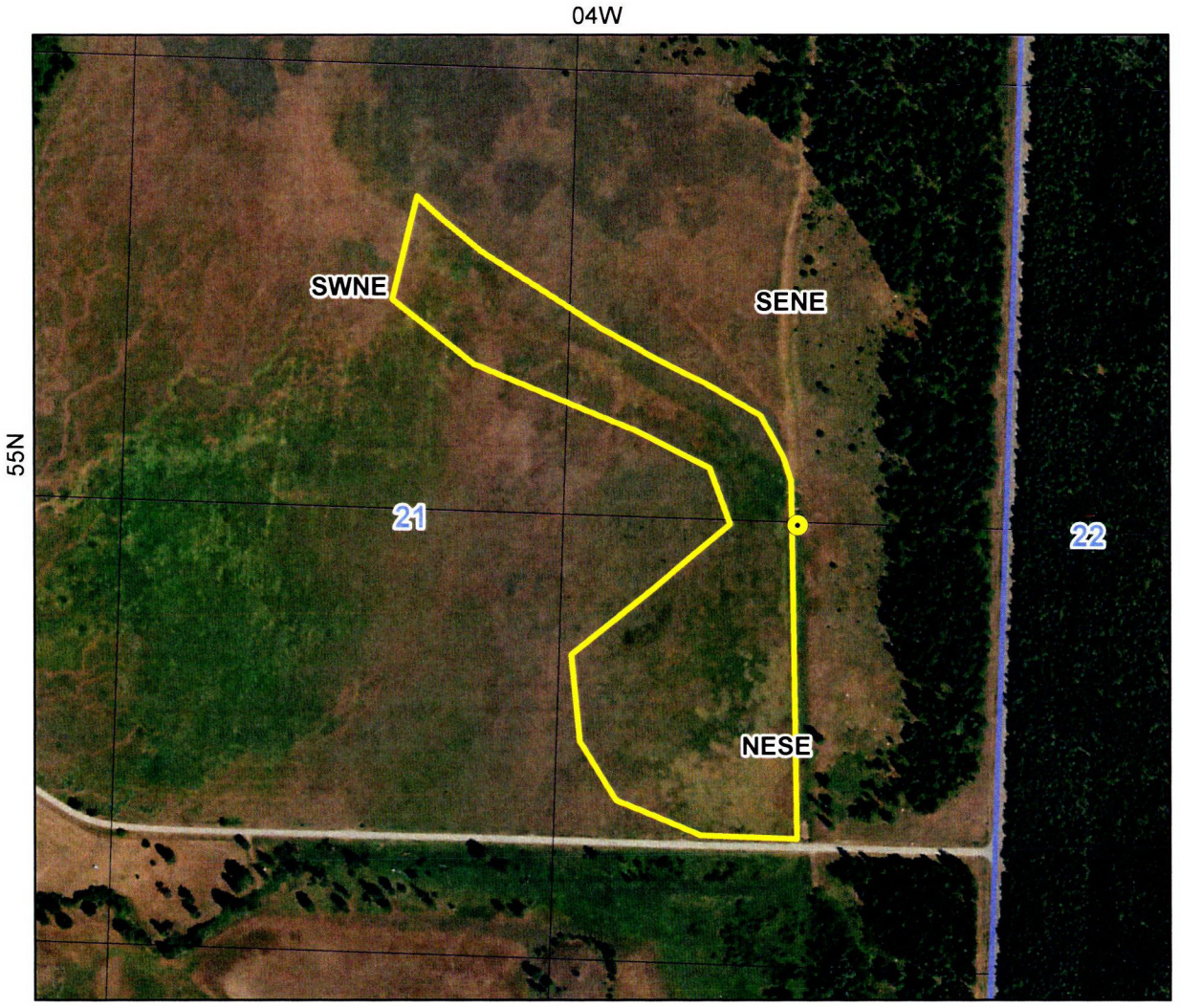
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State of Idaho
Department of Water Resources

Attachment to Water Right License

96-9522

This map depicts the WILDLIFE place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



Point of Diversion
Place Of Use Boundary
Townships
PLS Sections
Quarter Quarters

0 0.05 0.1 0.2 Miles

N

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IDAHO DEPARTMENT OF
WATER RESOURCES

Northern Region • 7600 N Mineral Drive, Suite 100 • Coeur D'Alene, ID 83815-7763
Phone: 208-762-2800 • Fax: 208-762-2819 • Email: northerninfo@idwr.idaho.gov • Web: idwr.idaho.gov

Governor Brad Little

Director Gary Spackman

May 25, 2022

KARL BERKENKAMP
773 WHITTUM RD
PRIEST RIVER ID 83856-7772

RE: Water Right Permit No. 96-9522

Dear Permit Holder(s):

The Department of Water Resources is reviewing the permit(s) referenced above prior to issuing water right license(s). By issuing a license, the Department confirms the extent of development that has been established in compliance with the terms of the permit.

The examiner who verified your water use reported that certain elements of the permit(s) have been developed differently than described on your permit(s). Changes that do not increase the authorized use of water under the permit(s) can be requested and approved in accordance with Idaho Code § 42-211. Before license(s) can be issued, your permit(s) must be amended to depict your water use as it was actually developed.

Based on the examiner's report, the following elements were developed differently than described on your permit(s):

_____ Point(s) of Diversion

_____ Place(s) of Use

__X__ Other – Clarification of beneficial use from Irrigation-to-Wildlife

The enclosed Application for Amendment form(s) depicts the elements of the water right(s) as they will appear on the license(s) when issued. Please review the amendment form(s) carefully. If you concur with the information presented, please sign and return the form(s) within fourteen (14) days.

If you have any questions, please call me at (208) 762-2817.

Sincerely,

Luke Bates

Enclosure(s): Application for Amendment w/Map, Copy of Permit w/Map

Electronic cc: Greg Becker - NRCS

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State of Idaho
Department of Water Resources

Application for Amendment

(For Licensing Purposes)
Water Right No. 96-9522

Priority: August 13, 2013

Maximum Diversion Rate: 1.66 CFS
Maximum Diversion Volume: 129.0 AF

The owner and holder of Permit to Appropriate the Public Waters of the State of Idaho No. 96-9522

KARL BERKENKAMP 773 WHITTUM RD PRIEST RIVER ID 83856-7772

requests the permit be changed as follows:

Source : CURTIS CREEK **Tributary:** SINKS

Beneficial Use	Period of Use	Rate of Diversion	Annual Volume
WILDLIFE	04/01 to 06/15	1.66 CFS	129.0 AF

Location of Point(s) of Diversion
CURTIS CREEK NE¼ SE¼, Sec. 21, Twp 55N, Rge 04W, B.M. BONNER County

Place of Use: WILDLIFE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
55N	04W	21			X	X									X				

Permit holder asserts that no one will be injured by such change and that such change will be made at permit holder's own risk.

Signed this 5th day of July, 2022.

K. Berkenkamp
(Signature)

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State of Idaho
Department of Water Resources

Application for Amendment

(For Licensing Purposes)
Water Right No. 96-9522

FOR DEPARTMENT USE ONLY

Preliminary check by _____ Fee = $100 Receipted by _____ # _____ Date _____

ACTION OF THE DEPARTMENT OF WATER RESOURCES

The Idaho Department of Water Resources hereby approves the above Application for Amendment for Permit No. 96-9522 with the following:

Conditions of Approval

1. Use of water under this right is for wildlife habitat purposes.
2. This right does not grant any right-of-way or easement across the land of another.

This amendment is issued pursuant to the provisions of Idaho Code § 42-211.

Signed this 25th day of October, 2022

Adam Frederick

ADAM FREDERICK
Water Rights Supervisor

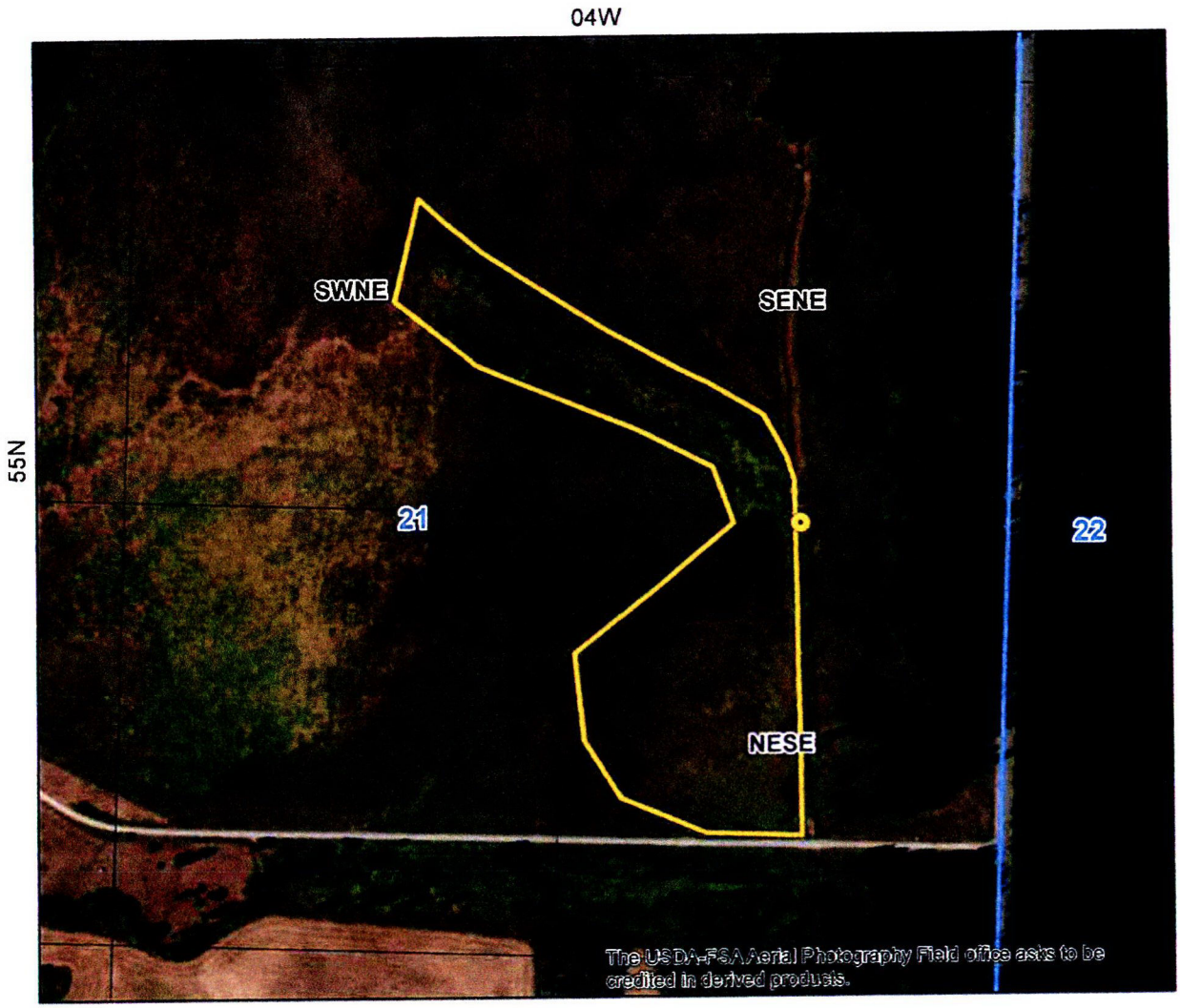
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State of Idaho
Department of Water Resources

Attachment for Application to Amend a Permit

96-9522

This map depicts the WILDLIFE place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



Point of Diversion
Place Of Use Boundary
Township
PLS Sections
Quarter Quarters

0 0.05 0.1 0.2 Miles

N

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JUL 12 2022
IDWR / NORTH

Hello Luke,

Could you send Greg Becker a stamped copy of the permit application?

Thanks,

Karl Berkenkamp

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ADDENDUM 1: VOLUME CALCULATION & SEASON OF USE CALCULATION

Mr. Karl Berkenkamp,

In order to determine the volume (acre-feet) to assign to this permit for licensing purposes I used the following calculations:

Factors

- 1 af = 325,850 gal
- Permit authorized development of 83.0 acres, but the NENE, NWNE, & SESE quarter-quarter(s) of Section 21, TWP 55N, RGE 04W were not developed and shall not receive credit. The remaining Place of Use acreage equals **43.0 ac** located in the SWNE (7.0 ac), SENE (21.0 ac), & NESE (15.0 ac) of Section 21.
- 43.0 ac x 3.0 afa = 129 af (largest volume I can apply to permit without enlarging it)
- Diversion rate = 1.66 cfs
- 1.66 cfs = 1,072,883.2 gal per day

Calculations

- (129 af x 325,850 gal per af) / 1,072,883.2 gal per day = 43 days (af & gal factor out)
    - Season of use equals 43 days starting on April 1st annually, but I recommended extending it through June 15th annually to afford flexibility with seasonal flow rates from year to year.
    - At a rate of 1.66 cfs you will exhaust 129.0 af by May 13th, but if flow reduces the volume may take you out to a later date.

Feel free to give me a call to discuss these calculations.

Thanks,

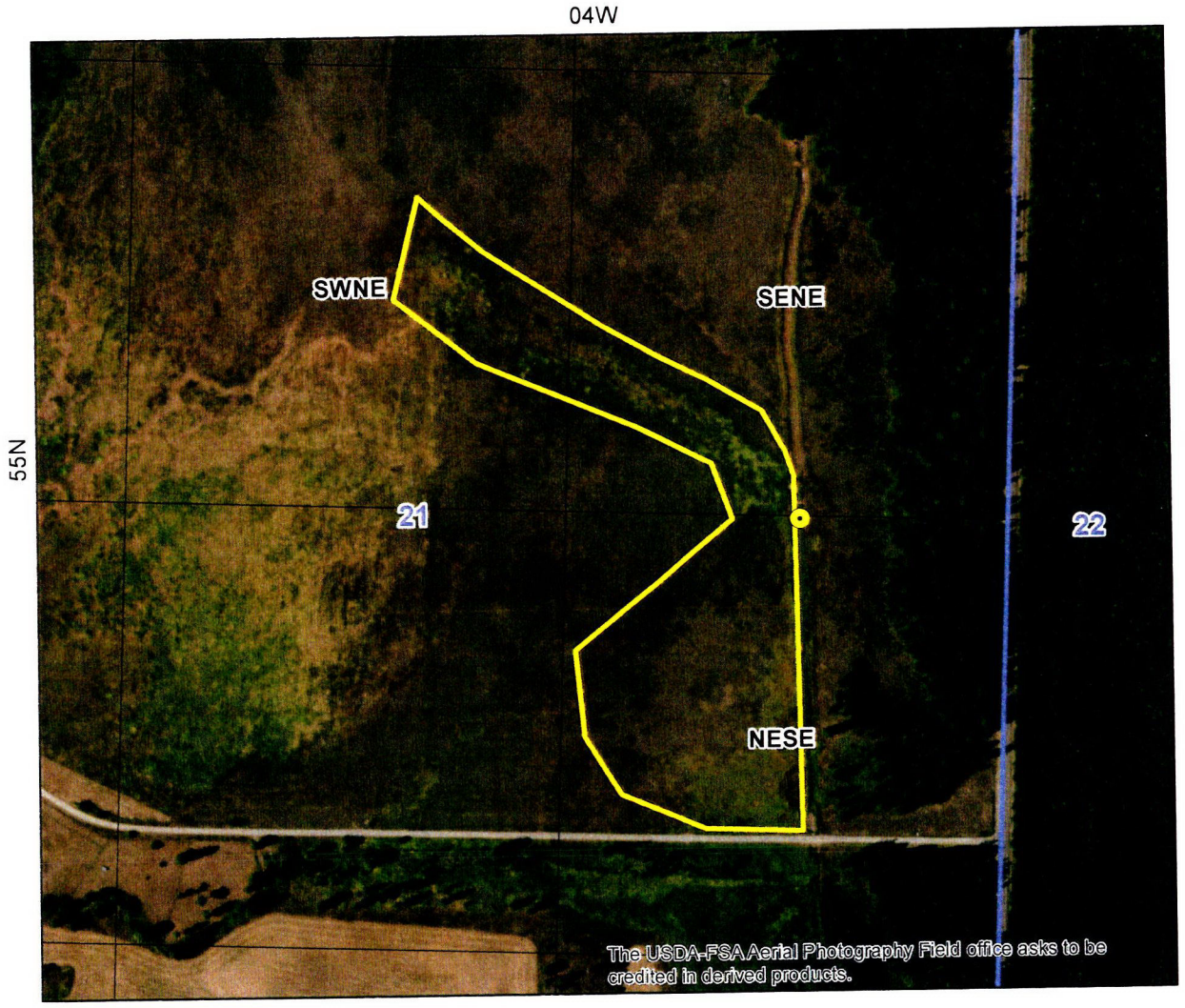
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State of Idaho
Department of Water Resources

Attachment for Application to Amend a Permit

96-9522

This map depicts the WILDLIFE place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



Point of Diversion
Place Of Use Boundary
Townships
PLS Sections
Quarter Quarters

0 0.05 0.1 0.2 Miles

N

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IDAHO DEPARTMENT OF
WATER RESOURCES

Northern Region • 7600 N Mineral Drive, Suite 100 • Coeur D'Alene, ID 83815-7763
Phone: 208-762-2800 • Fax: 208-762-2819 • Email: northerninfo@idwr.idaho.gov • Web: idwr.idaho.gov

Governor Brad Little Director Gary Spackman

November 07, 2022

KARL BERKENKAMP
773 WHITTUM RD
PRIEST RIVER ID 83856-7772

RE: License No. 96-9522

ISSUANCE OF LICENSE

Dear Water Right Holder(s):

The Department of Water Resources ("Department") has issued the enclosed Water Right License confirming that a water right has been established in accordance with your permit. Please be sure to thoroughly review all the conditions of approval listed on your license. The conditions may include ongoing requirements, such as maintenance of a measuring device or implementation of mitigation, as well as information about how your water use may be administered, such as regulation by a watermaster in a water district.

The license is a PRELIMINARY ORDER issued by the Department pursuant to Rule 730 of the Department's Rules of Procedure (IDAPA 37.01.01.730). It can and will become a final order without further action by the Department unless a party petitions for reconsideration, files exceptions, or requests a hearing as described in the enclosed information sheet.

Also, please note that water right owners are required to report any change of water right ownership and/or mailing address to the Department within 120 days of the change. Water right forms are available from any office of the Department or on the Department's website at idwr.idaho.gov

If you have any questions concerning the enclosed information, please contact the Northern Region Office at (208) 762-2800.

Sincerely,

Adam Frederick

Adam Frederick
Water Right Supervisor

Enclosure(s)

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CERTIFICATE OF SERVICE

I hereby certify that on November 07, 2022, I served a true and correct copy of Water Right License No. 96-9522 by U.S. Mail, postage prepaid, to the following:

KARL BERKENKAMP (Current Owner)
773 WHITTUM RD
PRIEST RIVER ID 83856-7772

Tammy Alleman
Administrative Assistant 1

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EXPLANATORY INFORMATION TO ACCOMPANY A PRELIMINARY ORDER

(To be used in connection with actions when a hearing was **not** held)

(Required by Rule of Procedure 730.02)

The accompanying order or approved document is a "**Preliminary Order**" issued by the department pursuant to section 67-5243, Idaho Code. **It can and will become a final order without further action of the Department of Water Resources ("department") unless a party petitions for reconsideration, files an exception and brief, or requests a hearing as further described below:**

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a preliminary order with the department within fourteen (14) days of the service date of this order. **Note: the petition must be received by the department within this fourteen (14) day period.** The department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See Section 67-5243(3) Idaho Code.

EXCEPTIONS AND BRIEFS

Within fourteen (14) days after: (a) the service date of a preliminary order, (b) the service date of a denial of a petition for reconsideration from this preliminary order, or (c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration from this preliminary order, any party may in writing support or take exceptions to any part of a preliminary order and may file briefs in support of the party's position on any issue in the proceeding with the Director. Otherwise, this preliminary order will become a final order of the agency.

REQUEST FOR HEARING

Unless a right to a hearing before the Department or the Water Resource Board is otherwise provided by statute, any person aggrieved by any final decision, determination, order or action of the Director of the Department and who has not previously been afforded an opportunity for a hearing on the matter may request a hearing pursuant to section 42-1701A(3), Idaho Code. A written petition contesting the action of the Director and requesting a hearing shall be filed within fifteen (15) days after receipt of the denial or conditional approval.

ORAL ARGUMENT

If the Director grants a petition to review the preliminary order, the Director shall allow all parties an opportunity to file briefs in support of or taking exceptions to the preliminary order and may schedule oral argument in the matter before issuing a final order. If oral arguments are to be heard, the Director will within a reasonable time period notify each party of the place, date and hour for the argument of the case. Unless the Director orders otherwise, all oral arguments will be heard in Boise, Idaho.

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CERTIFICATE OF SERVICE

All exceptions, briefs, requests for oral argument and any other matters filed with the Director in connection with the preliminary order shall be served on all other parties to the proceedings in accordance with IDAPA Rules 37.01.01302 and 37.01.01303 (Rules of Procedure 302 and 303).

FINAL ORDER

The Director will issue a final order within fifty-six (56) days of receipt of the written briefs, oral argument or response to briefs, whichever is later, unless waived by the parties or for good cause shown. The Director may remand the matter for further evidentiary hearings if further factual development of the record is necessary before issuing a final order. The department will serve a copy of the final order on all parties of record.

Section 67-5246(5), Idaho Code, provides as follows:

> Unless a different date is stated in a final order, the order is effective fourteen (14) days after its service date if a party has not filed a petition for reconsideration. If a party has filed a petition for reconsideration with the agency head, the final order becomes effective when:
>
> (a) The petition for reconsideration is disposed of; or
> (b) The petition is deemed denied because the agency head did not dispose of the petition within twenty-one (21) days.

APPEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, if this preliminary order becomes final, any party aggrieved by the final order or orders previously issued in this case may appeal the final order and all previously issued orders in this case to district court by filing a petition in the district court of the county in which:

i. A hearing was held,
ii. The final agency action was taken,
iii. The party seeking review of the order resides, or
iv. The real property or personal property that was the subject of the agency action is located.

The appeal must be filed within twenty-eight (28) days of this preliminary order becoming final. See section 67-5273, Idaho Code. The filing of an appeal to district court does not itself stay the effectiveness or enforcement of the order under appeal.

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STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9522
Exam Date: 03/25/2021

1. Current Owner:
KARL BERKENKAMP 773 WHITTUM RD PRIEST RIVER ID 83856-7772

2. Accompanied by: Karl Berkenkamp
Phone No: 208-263-2203
Address: Same as above
Relationship to permit Holder: Permit holder

3. **SOURCE:** CURTIS CREEK

Tributary SINKS

Method of Determination: Arcmap and DRG.

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
96-2131	Unnamed Stream	Irrigation	License

Comments: Licensed Right 96-2131 uses unnamed stream water, which is tributary to Curtis Creek (this Permit's source) for irrigation of a large pastureland that has minor overlapping POU with this Permit. Due to both of the water sources used by the applicant being at the end of the Curtis Creek system prior to sinking on the applicant's property (ref DRG layer), and the bulk generic shape applied to 96-2131 when licensed including potential area not impacted by the diversion of water from the unnamed stream following review of Arcmap aerial imagery, no overlap is recommended for licensing Permit 96-9522. During the CFPRBA process adjudication staff should consider refining the POU shape for 96-2131 & any overlap when making claim recommendations for the two water rights.

2. Other water rights with the same point-of-diversion: NO Overlap

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
CURTIS CREEK NE¼ SE¼, Sec. 21, Twp 55N, Rge 04W, B.M. BONNER County

Method of Determination: GPS. POD located at -116°49.894, 48°06.045.

PLACE OF USE: WILDLIFE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
55N	04W	21			X	X									X				

Method of Determination: Beneficial use field examination & Arcmap aerial imagery.

3.

X Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

X Aerial Photo Attached (required for irrigation of 10+ acres).

X Photo of Diversion and System Attached

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4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Open Channel Ditch		Gravity Flow			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
FlowTracker2	Handheld unit with Probe	SonTech		FT2H2142002 (handheld) & FT2P2140030 (Probe)		

2. Measurements: Department staff used a SonTech brand handheld top probe sensor type FlowTracker2 to capture flow measurements immediately upstream of the open ditch channel point of diversion. Flow measurement equals 6.4 cfs total discharge considering department rounding standards.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: SonTech - FlowTracker2 S/N FT2H2142002 was used to take a cross sectional stream channel flow measurement (see attached computation sheets) with flowrate equal to 6.4 CFS capture date 4/7/2022.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: Clarified Irrigation beneficial use to reflect Wildlife beneficial use during licensing review.

$V_{I.R}$ = (Acres Irrigated) x (Irrigation Requirement) = 43 ac x 3.0 afa = 129 af

$V_{D.R}$ = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 = 1.66 cfs x 76 days x 1.9835 = 250 af

V = Smaller of $V_{I.R}$ and $V_{D.R}$ = **129 af**

2. Volume Calculations for Other Uses:

- Wildlife direct flow component annual volume derived using irrigation standard rate of 3.0 afa per acre, see above.

G. NARRATIVE/REMARKS/COMMENTS

An initial beneficial use field examination was performed on 3/25/2021 with the applicant, Karl Berkenkamp, which showed Curtis Creek water flowing into the applicant's field (POU) via an open channel breach in a pre-existing ditch. At the point of diversion (POD), the applicant breached a historic ditch/canal that was developed to dry out the applicant's field to allow farming to take place in the past. Review of Curtis Creek using the USGS DRG Arcmap layer illustrates the Creek ending just north of Whittum RD, but the POD for Curtis Creek is being designated as the ditch breach for licensing purposes.

A flow measurement was not obtained during the 2021 field examination, but photographs were taken of the pooling of water in the field which naturally sinks to the benefit of naturally growing grasses. The applicant's intent for irrigation was to re-

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establish wildlife habitat by flood irrigating the field as it once was prior to the ditch/canal being developed in the 1900s. The applicant engaged in development of his project with the Natural Resource Conservation Service (NRCS), who cost shared the project that results in perpetual easements for wildlife habitat restoration on the applicant's property.

A follow-up site visit was completed on 4/7/2022 by department staff to complete flow measurements. A SonTech - FlowTracker2 S/N FT2H2142002 was used to take a cross sectional stream channel flow measurement (see attached computation sheets) resulting in a flow rate equal to 6.4 CFS. The applicant is limited by the permit approved maximum diversion rate of **1.66 cfs**, which is recommended for licensing. Peak spring runoff directly impacts flow in Curtis Creek, and the applicant benefits from the additional flow of 6.4 cfs – 1.66 cfs = 4.74 cfs which floods the POU prior to sinking within his parcel. Annual variance in climate may vary flow rates year to year, but it is reasonable to assume the applicant's diversion rate of 1.66 cfs will be achieve even in mild winter and low flow spring runoff years.

Following the field examination several meetings were held between the Northern Region office and State office staff to determine if the permit should be licensed with irrigation as the beneficial use considering Curtis Creek water was being returned to its natural flow path pre-dating the development of straight-line ditch/canal in the early 1900s. Several options were vetted, and the applicant, NRCS, & Department collaborated on the impact of each plan of action working toward licensing. As a result, Department staff concluded the permit approved irrigation beneficial use shall be clarified to be Wildlife for licensing purposes. The applicant submitted a letter to the Department on 4/13/2022 requesting the beneficial use be changed from irrigation to wildlife (received by IDWR on 4/18/2022). An application for amendment was mailed to the applicant on 5/22/2022 for Clarification of beneficial use from Irrigation-to-Wildlife. No fee was recommended as part of the clarification process. IDWR received the amendment back from the applicant on 7/12/2022.

The Wildlife POU was walked during the initial field examination on 3/25/2021, with GPS points taken at interval to determine the extent of wildlife flooding occurring on the property. This is difficult to ascertain as early spring runoff mixes within the field and it is uncertain how much acreage is solely benefitting solely from the wildlife flood practices. I backed each GPS point off 20 feet to create a buffer zone to accommodate seasonal variances in flow and created the POU shape using Arcmap aerial imagery. Once developed, the shape was viewed with several years of aerial imagery and consistently aligns with the area grasses benefitted from the flooding practices (observed by green growing grass appearance versus dry agriculture land appearance).

The wildlife POU acreage equals 43 acres. The permit approved development of 83 acres but included legally described QQs that were not developed by the applicant via wildlife flood practices from the POD. As a result, beneficial use in the NE¼NE¼, NW¼NE¼,and SE¼SE¼ of Section 21, Twp 55N, Rge 04W were removed from the permit during licensing review. The annual volume for wildlife licensing purposes was derived using the Department standards for irrigation which equals 43.0 ac x 3.0 afa = **129 af**.

Provided climate variances year to year provide adequate water, the applicant will exhaust the 129 af as shown below:

- 1.66 cfs 24hrs per day is equivalent to 1,072,883.2 gal per day
- (129 af x 32,850 gal per af) / 1,072,883.2 gal per day = 40 days (af & gal factor out).
    - Season of use equals 40 days starting on 4/1 annually, and at a rate of 1.66 cfs the volume of 129 af will be exhausted by 5/10.

I recommend revising the **season of use** to reflect **4/1 to 6/15** for licensing purposes. Extending through June 15th will afford flexibility with seasonal flow rates from year to year in case 1.66 cfs is not achieved daily throughout the first 40 days of that period.

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The applicant in working with NRCS has prepared and submitted a new application for permit No. 96-10951, which will impound Curtis Creek water in a shallow storage area for wildlife storage purposes. If development takes place and future statement of completion occurs for this WR, the natural ponding of water prior to sinking within the applicant's field will become storage use water toward wildlife habitat restoration.

Conditions R62, X15, and 26A were removed from the Permit during licensing review. The irrigation condition R62 was no longer applicable and condition X15 for fish screen requirements is not applicable due to the end reach of the Curtis Creek system open ditch diverting into the applicant's field. A text condition was added describing the clarified use of water for this right is for wildlife habitat purposes. Condition 004 shall be carried to the license. There is no concern for overlap with this water right.

Have conditions of permit approval been met? _X_ Yes ____ No

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use	Rate of Diversion	Annual Volume
WILDLIFE	04/01 to 06/15	1.66 CFS	129.0 AF
	Totals:	1.66 CFS	129.0 AF

2. Recommended Amendments

____ Change P.D. as reflected above ____ Add P.D. as reflected above _X_ None

____ Change P.U. as reflected above ____ Add P.U. as reflected above _X_ None

_X_ Other – Clarify Beneficial Use Component

I. AUTHENTICATION

Luke Bates -

Field Examiner's Name _____ Date 8/10/2022

Reviewer _____ Date 10/25/2022

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April 13, 2022

RECEIVED
APR 18 2022
IDWR / NORTH

Luke Bates
Water Resource Agent
Northern Region
P: 208-762-2817

Idaho Department of Water Resources
7600 N. Mineral Dr., Suite 100
Coeur D'Alene, ID 83815-7763

Luke,

I am requesting that the Beneficial Use of my Water Right No. 96-09522 be changed from Irrigation to Wildlife. This will better serve the original intended purpose of returning Curtis Creek to its natural stream flow for the purpose of restored and improved wildlife habitat.

Please feel free to contact me with any questions.

Respectfully,

K. Berkenkamp

Karl Berkenkamp

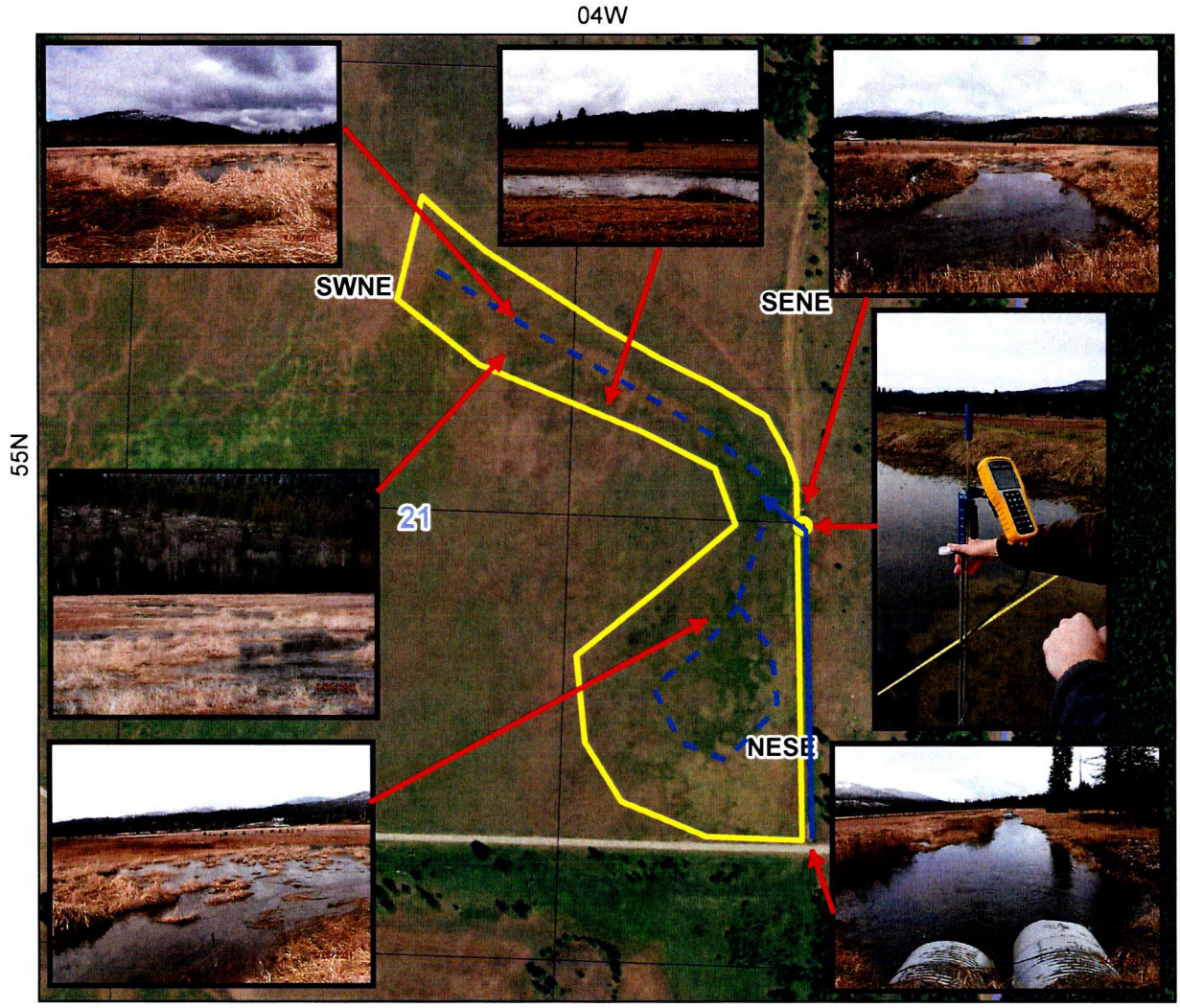
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State of Idaho
Department of Water Resources

Attachment to Field Exam

96-9522

WILDLIFE system diagram.



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Discharge Measurement Summary

Site name	Curtis Creek at Berkenkamp Property
Site number	
Operator(s)	E Roda
File name	Curtis Creek at Berkenkamp Property_20220407-182829.ft
Comment	

Start time	4/7/2022 4:32 PM
End time	4/7/2022 6:25 PM
Start location latitude	48.101
Start location longitude	-116.832
Calculations engine	FlowTracker2

Sensor type	Top Setting
Handheld serial number	FT2H2142002
Probe serial number	FT2P2140030
Probe firmware	1.30
Handheld software	1.7

# Stations	Avg interval (s)	Total discharge (ft³/s)
44	60	6.4335

Total width (ft)	Total area (ft²)	Wetted Perimeter (ft)
23.900	20.5295	24.131

Mean SNR (dB)	Mean depth (ft)	Mean velocity (ft/s)
29	0.859	0.3134

Mean temp (°F)	Max depth (ft)	Max velocity (ft/s)
39.479	1.350	0.7691

Discharge Uncertainty		
Category	**ISO**	**IVE**
Accuracy	1.0%	1.0%
Depth	0.1%	1.5%
Velocity	0.6%	2.2%
Width	0.1%	0.1%
Method	1.5%	
# Stations	1.2%	
Overall	**2.2%**	**2.9%**

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

4/7/2022 1:33:16 PM

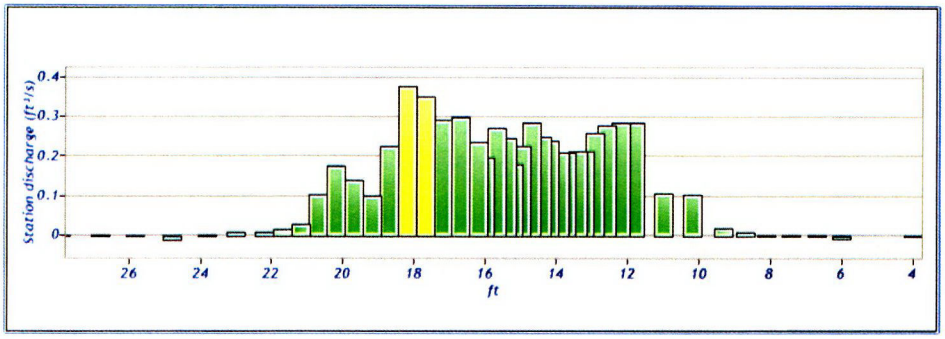
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Discharge Measurement Summary

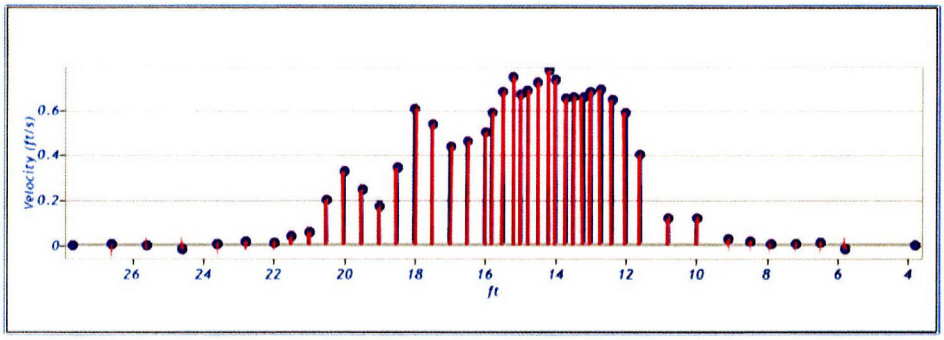
Site name	Curtis Creek at Berkenkamp Property
Site number	
Operator(s)	E Roda
File name	Curtis Creek at Berkenkamp Property_20220407-182829.ft
Comment	

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%

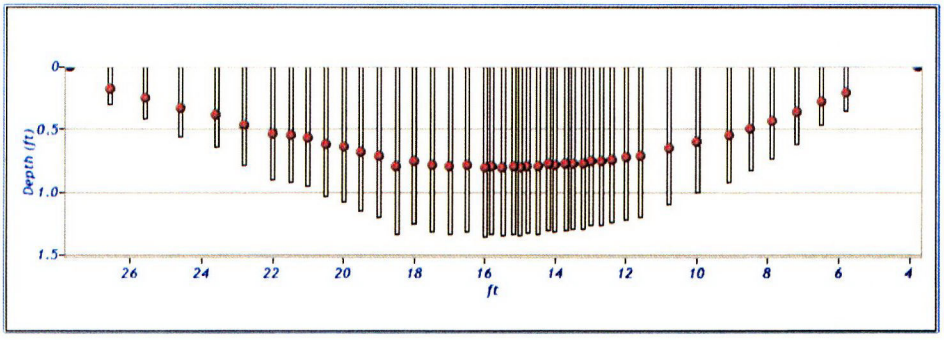
Discharge chart



Velocity chart



Depth chart



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Discharge Measurement Summary

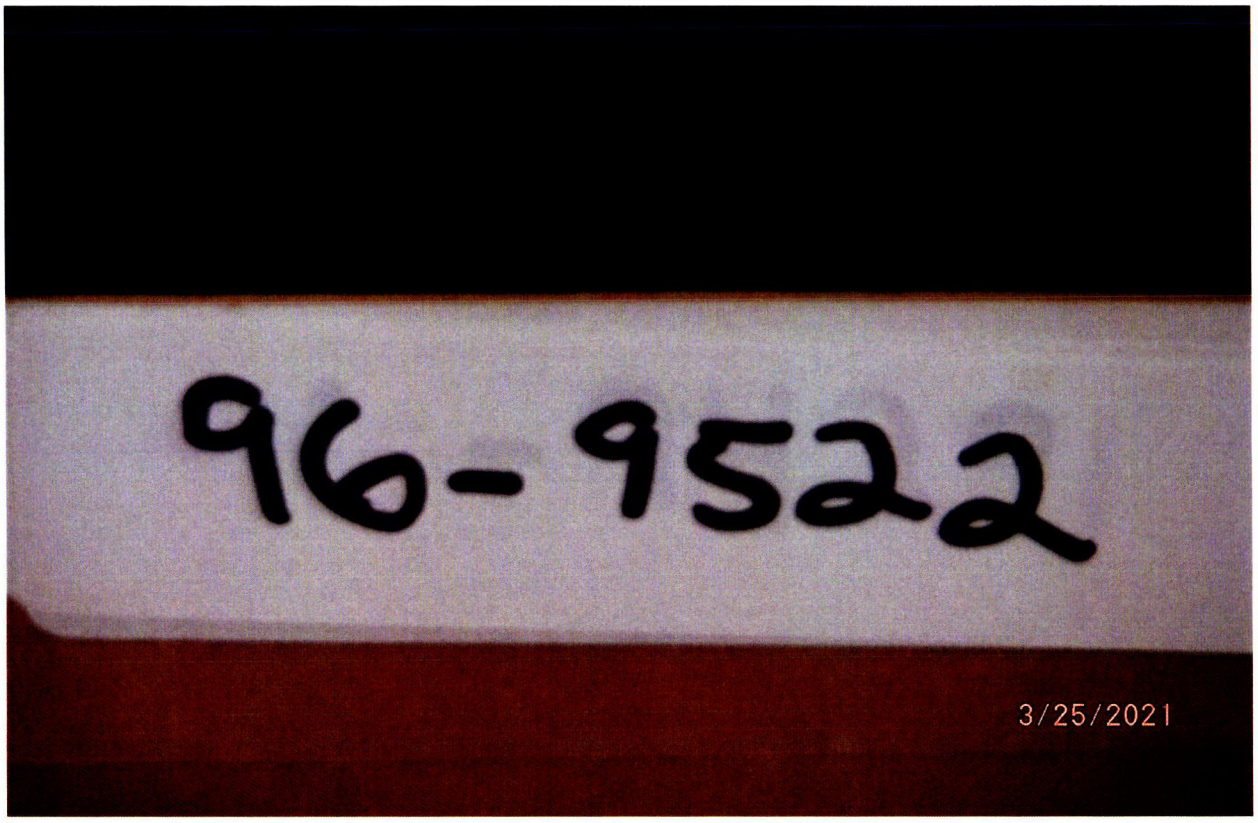
Site name	Curtis Creek at Berkenkamp Property
Site number	
Operator(s)	E Roda
File name	Curtis Creek at Berkenkamp Property_20220407-182829.ft
Comment	

Measurement results

St#	Time	Location (ft)	Method	Depth (ft)	%Depth	Measured Depth (ft)	Samples	Velocity (ft/s)	Correction	Mean Velocity (ft/s)	Area (ft²)	Flow (ft³/s)	%Q	
0	4:32 PM	3.800	None	0.000	0.0000	0.000	0	0.0000		-0.0203	0.0000	0.0000	0.00	✓
1	4:34 PM	5.800	0.6	0.350	0.6000	0.210	120	-0.0203	1.0000	-0.0203	0.4725	-0.0096	-0.15	✓
2	4:40 PM	6.500	0.6	0.460	0.6000	0.276	120	0.0089	1.0000	0.0089	0.3220	0.0029	0.04	✓
3	4:46 PM	7.200	0.6	0.610	0.6000	0.366	120	0.0012	1.0000	0.0012	0.4270	0.0005	0.01	✓
4	4:48 PM	7.900	0.6	0.730	0.6000	0.438	120	0.0033	1.0000	0.0033	0.4745	0.0016	0.02	✓
5	4:51 PM	8.500	0.6	0.820	0.6000	0.492	120	0.0179	1.0000	0.0179	0.4920	0.0088	0.14	✓
6	4:56 PM	9.100	0.6	0.910	0.6000	0.546	120	0.0277	1.0000	0.0277	0.6825	0.0189	0.29	✓
7	5:00 PM	10.000	0.6	1.000	0.6000	0.600	120	0.1208	1.0000	0.1208	0.8500	0.1026	1.60	✓
8	5:03 PM	10.800	0.6	1.090	0.6000	0.654	120	0.1212	1.0000	0.1212	0.8720	0.1057	1.64	✓
9	5:06 PM	11.600	0.6	1.190	0.6000	0.714	120	0.3994	1.0000	0.3994	0.7140	0.2851	4.43	✓
10	6:09 PM	12.000	0.6	1.210	0.6000	0.726	120	0.5876	1.0000	0.5876	0.4840	0.2844	4.42	✓
11	5:10 PM	12.400	0.6	1.240	0.6000	0.744	120	0.6417	1.0000	0.6417	0.4340	0.2785	4.33	✓
12	6:12 PM	12.700	0.6	1.260	0.6000	0.756	120	0.6887	1.0000	0.6887	0.3780	0.2603	4.05	✓
13	5:12 PM	13.000	0.6	1.260	0.6000	0.756	120	0.6799	1.0000	0.6799	0.3150	0.2142	3.33	✓
14	6:14 PM	13.200	0.6	1.290	0.6000	0.774	120	0.6549	1.0000	0.6549	0.3225	0.2112	3.28	✓
15	5:15 PM	13.500	0.6	1.290	0.6000	0.774	120	0.6528	1.0000	0.6528	0.3225	0.2105	3.27	✓
16	6:16 PM	13.700	0.6	1.300	0.6000	0.780	120	0.6471	1.0000	0.6471	0.3250	0.2103	3.27	✓
17	5:18 PM	14.000	0.6	1.310	0.6000	0.786	120	0.7301	1.0000	0.7301	0.3275	0.2391	3.72	✓
18	6:19 PM	14.200	0.6	1.300	0.6000	0.780	120	0.7691	1.0000	0.7691	0.3250	0.2500	3.89	✓
19	5:20 PM	14.500	0.6	1.330	0.6000	0.798	120	0.7179	1.0000	0.7179	0.3990	0.2864	4.45	✓
20	6:21 PM	14.800	0.6	1.320	0.6000	0.792	120	0.6821	1.0000	0.6821	0.3300	0.2251	3.50	✓
21	5:22 PM	15.000	0.6	1.340	0.6000	0.804	120	0.6647	1.0000	0.6647	0.2680	0.1781	2.77	✓
22	6:25 PM	15.200	0.6	1.330	0.6000	0.798	120	0.7414	1.0000	0.7414	0.3325	0.2465	3.83	✓
23	5:24 PM	15.500	0.6	1.340	0.6000	0.804	120	0.6785	1.0000	0.6785	0.4020	0.2727	4.24	✓
24	6:23 PM	15.800	0.6	1.330	0.6000	0.798	120	0.5880	1.0000	0.5880	0.3325	0.1955	3.04	✓
25	5:26 PM	16.000	0.6	1.350	0.6000	0.810	120	0.5000	1.0000	0.5000	0.4725	0.2362	3.67	✓
26	5:28 PM	16.500	0.6	1.310	0.6000	0.786	120	0.4572	1.0000	0.4572	0.6550	0.2994	4.65	✓
27	5:31 PM	17.000	0.6	1.330	0.6000	0.798	120	0.4382	1.0000	0.4382	0.6650	0.2914	4.53	✓
28	5:33 PM	17.500	0.6	1.310	0.6000	0.786	120	0.5339	1.0000	0.5339	0.6550	0.3497	5.44	✓
29	5:35 PM	18.000	0.6	1.250	0.6000	0.750	120	0.6056	1.0000	0.6056	0.6250	0.3785	5.88	✓
30	5:37 PM	18.500	0.6	1.330	0.6000	0.798	120	0.3412	1.0000	0.3412	0.6650	0.2269	3.53	✓
31	5:40 PM	19.000	0.6	1.190	0.6000	0.714	120	0.1705	1.0000	0.1705	0.5950	0.1015	1.58	✓
32	5:43 PM	19.500	0.6	1.140	0.6000	0.684	120	0.2454	1.0000	0.2454	0.5700	0.1399	2.17	✓
33	5:45 PM	20.000	0.6	1.070	0.6000	0.642	120	0.3290	1.0000	0.3290	0.5350	0.1760	2.74	✓
34	5:47 PM	20.500	0.6	1.030	0.6000	0.618	120	0.2017	1.0000	0.2017	0.5150	0.1039	1.61	✓
35	5:49 PM	21.000	0.6	0.950	0.6000	0.570	120	0.0572	1.0000	0.0572	0.4750	0.0272	0.42	✓
36	5:51 PM	21.500	0.6	0.910	0.6000	0.546	120	0.0356	1.0000	0.0356	0.4550	0.0162	0.25	✓
37	5:54 PM	22.000	0.6	0.890	0.6000	0.534	120	0.0116	1.0000	0.0116	0.5785	0.0067	0.10	✓
38	5:56 PM	22.800	0.6	0.780	0.6000	0.468	120	0.0148	1.0000	0.0148	0.6240	0.0092	0.14	✓
39	5:58 PM	23.600	0.6	0.640	0.6000	0.384	120	0.0053	1.0000	0.0053	0.5760	0.0030	0.05	✓
40	6:00 PM	24.600	0.6	0.550	0.6000	0.330	120	-0.0192	1.0000	-0.0192	0.5500	-0.0106	-0.16	✓
41	6:03 PM	25.600	0.6	0.410	0.6000	0.246	120	-0.0041	1.0000	-0.0041	0.4100	-0.0017	-0.03	✓
42	6:05 PM	26.600	0.6	0.290	0.6000	0.174	120	0.0013	1.0000	0.0013	0.3045	0.0004	0.01	✓
43	6:07 PM	27.700	None	0.000	0.0000	0.000	0	0.0000		0.0013	0.0000	0.0000	0.00	✓

4/7/2022 1:33:16 PM

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FIELD EXAM DATE 3/25/2021



CURTIS CREEK – UPSTREAM FLOW FROM WHITTUM RD CULVERT CROSSING

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CURTIS CREEK – DOWNSTREAM FLOW FROM WHITTUM RD CULVERT CROSSING



CURTIS CREEK – ENTERING CORNER OF POD – BREACH OF CANAL

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POD – EARTHEN BREAK OF CANAL



WILDLIFE POU – WILDLIFE HABITAT RESTORATION FIELD

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WILFLIFE POU



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WILDLIFE POU



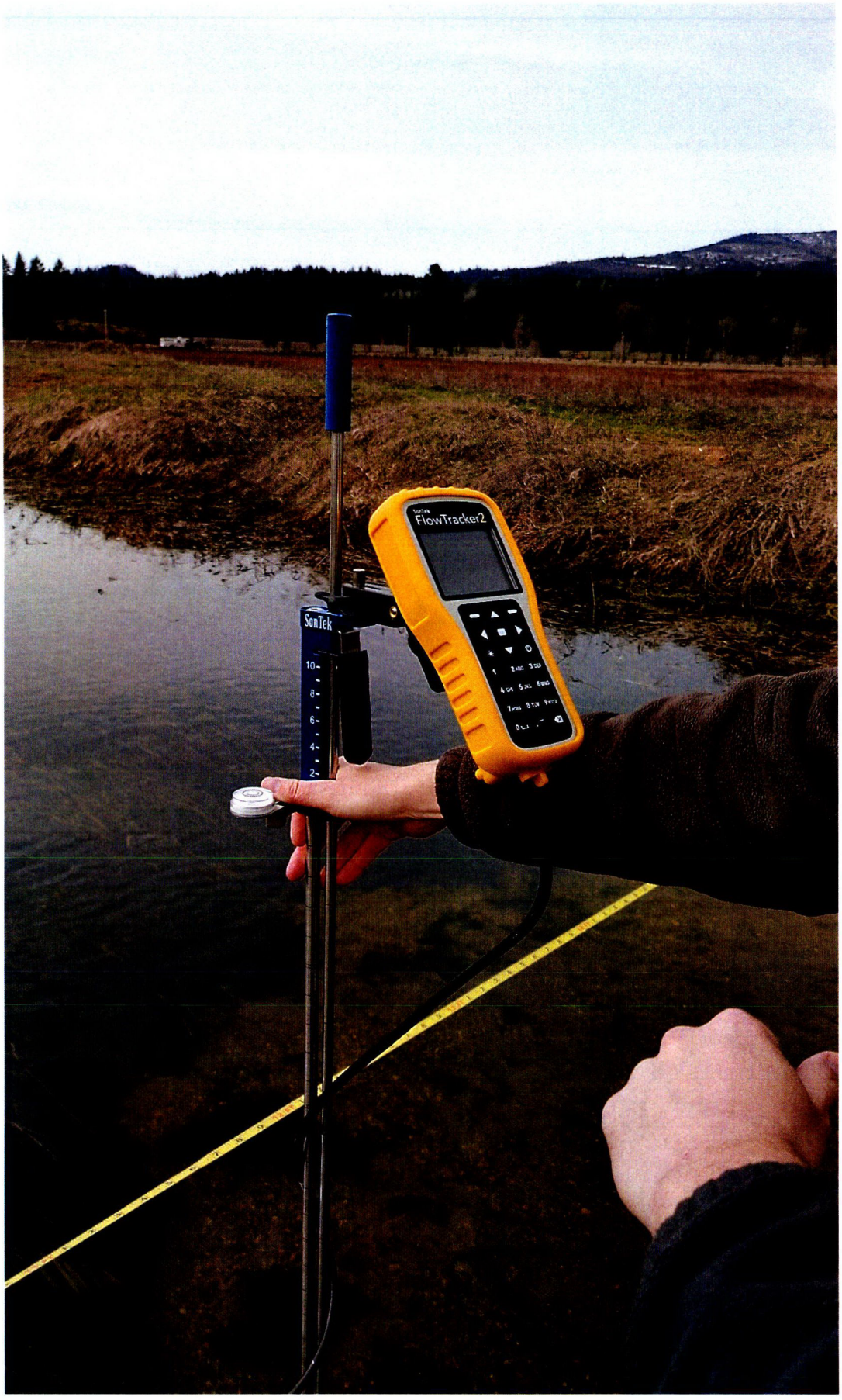
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WILDLIFE POU



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FLOW TRACKER – FLOW MEASUREMENT CAPTURE DATE 4/7/2022

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FLOW TRACKER 2 S/N FT2H2142002

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FLOW MEASUREMENT IN STRAIGHT SECTION OF CURTIS CREEK IMMEDIATELY UPSTREAM FROM POD

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