Permit No 86-12088

#### STATE OF IDAHO DEPARTMENT OF WATER RESOURCES BENEFICIAL USE FIELD REPORT

Tributary POTLATCH RIVER

#### **GENERAL INFORMATION** Α.

#### 1. Current Owner: AISC INC 1311 BRUSH CREEK RD DEARY ID 83823

2. Accompanied by: Edward French Phone No: 208-877-1600 Address: Same as above Relationship to permit Holder: Representative to AISC INC

3. SOURCE:		
UNNAMED STREAM		

Method of Determination: Arcmap and DRG.

#### **B. OVERLAP REVIEW**

1. Other water rights wi	th the same place of use:	YES Overlap	
Water Right No.	Source	Purpose of Use	Basis
86-11985	UNNAMED STREAM	STOCKWATER FROM STORAGE	PERMIT IN PROCESS FOR LICENSING
86-11986	UNNAMED STREAM	STOCKWATER FROM STORAGE	PERMIT IN PROCESS FOR LICENSING

Comments: WRs 86-11985 and 86-11986 use water from ponds filled by unnamed streams for stockwater from storage use that overlaps this water rights stockwater from storage POU. Condition X35 has been incorporated in licensing to limit the three WRs to state and irrigation when combined shall not exceed a total annual diversion volume of 0.7 af for stockwater from storage use for 50 head of mixed stock

vith the same point-of-diversion:	<u>NO</u> Overlap		
Source	Purpose of Use	Basis	
	vith the same point-of-diversion: Source	vith the same point-of-diversion: <u>NO</u> Overlap Source Purpose of Use	vith the same point-of-diversion: <u>NO</u> Overlap  Source Purpose of Use Basis

Comments:

#### C. DIVERSION AND DELIVERY SYSTEM

#### 1. LOCATION OF POINT(S) OF DIVERSION:

UNNAMED STREAM NW¼ NW¼, Sec. 32, Twp 40N, Rge 01W, B.M. LATAH County

Method of Determination: GPS; POD (dam) for POND 1 located at -116º29.815, 46º46.214.

# PLACE OF USE: IRRIGATION STORAGE, STOCKWATER STORAGE, WILDLIFE STORAGE, RECREATION STORAGE, and FIRE PROTECTION STORAGE

	Sec		N	IE			N\	N			SV	N			SI	Ξ		Totals
Twp Rng Sec	Sec	NE	NW	SW	SE													
40N 01W	32						Х			1	_							

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#### PLACE OF USE: IRRIGATION FROM STORAGE

Turn	Dog	See		N	IE .			N\	N			SI	N			S	E	_	Totals
Twp	Ring	Sec	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
40N	01W	30																0.7	0.7
40N	01W	31	12.0																12.0

Total Acres: 12.7

#### PLACE OF USE: STOCKWATER FROM STORAGE

Two	Png	Soc	ĺ	N	IE			N١	N			S	N			S	Ę.		Totals
1 wyp	Ring	Jec	NE	NW	SW	SE													
40N	01W	30																Х	
40N	01W	31	Х		l	Х													
40N	01W	32						Х	X					_					

Method of Determination: Field exam and Arcmap

3,

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

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

4.

Well or Diversion ID No.*	Motor Make	Нр	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
N/A					

## D. FLOW MEASUREMENTS

1						
Measurement Equipment	Туре	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: N/A

### E. FLOW CALCULATIONS

Measured Method: N/A

### F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

V<sub>1.R</sub> = (Acres Irrigated) x (Irrigation Requirement) = 12.7 acres x 3.0 afa = 38.1 af

 $V_{D,R}$  = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 = N/A, there is no diversion rate applied. V = Smaller of V<sub>LR</sub> and V<sub>DR</sub> = 38.1 af

2. Volume Calculations for Other Uses:

See attached pond analysis sheet.

Stockwater from Storage annual volume = 50 head mixed stock x 12 gpd x 365 days = 219,000.00 gal / 325,850 gal per af = 0.67 af, which is rounded up to **0.7 af**, conforming to department administrative memorandum, application processing memo No. 6, Significant Figures for Numerical Values.

Wildlife storage, recreation storage, and fire protection storage annual volume = 13.7 af (pond capacity) + 2.1 af (seepage loss) + 2.7 af (evaporation loss) = **18.5 af** 

Maximum diversion volume = 38.1 af (irrigation from storage) + 0.7 af (stockwater from storage) + 18.5 af (multiple pond storage components) = **57.3 af** 

#### G. NARRATIVE/REMARKS/COMMENTS

Administrative note: This WR was split from 86-11986, due to southern pond originally incorporated in WR 86-11986 having separate source and pond storage not interconnected with other ponds.

Field exam performed on 7/1/2020 with the applicant's representative, Edward French, showed a pond that was being fed by an unnamed stream. Overflow from the pond fed back to the natural stream channel. The applicant's pond was used for multiple storage components, and irrigation/stockwater from storage uses. Water flowed from the pond via gravity flow for irrigation from storage and stockwater from storage usage. As the pond is considered an instream pond, there is no diversion rate for this water right. Applicant only used water from the ponds, so the irrigation and stockwater components as a diversion rate were removed at time of licensing.

The pond has a surface area of 1.9 acres and pond capacity of 13.7 af. The pond has a maximum depth of 18 feet, an average depth of 7.2 feet, seepage loss of 2.1 af, and evaporation loss of 2.7 af. The pond has a multi-fill component equaling the combined irrigation and stockwater from storage volumes of 38.8 af annually. The total volume required for the pond equals 57.3 af, the sum of afore mentioned pond components.

During the field exam, irrigated acreage was identified and sketched on a map. During licensing review, arcmap was used to trace out irrigated acreage equal to 13.0 acres. The annual volume applied to the irrigation from storage component equals 12.7 acres x 3.0 afa = **38.1 af**. Irrigation was done using a main trunk line installed below ground, with pvc riser pipes directing at intervals to allow above ground sprinkler systems to access water. Photographs were taken showing the pvc pipe sprinkler lines that could be manually rotated within the irrigated fields.

During field exam, stock was observed on the applicant's property, with stock tanks in use. The stockwater from storage annual volume = 50 head mixed stock x 12 gpd x 365 days = 219,000.00 gal / 325,850 gal per af = 0.67 af, which is rounded up to **0.7 af**, conforming to department administrative memorandum, application processing memo No. 6, Significant Figures for Numerical Values.

The wildlife storage, recreation storage, and fire protection storage components from the two ponds annual volume equals 13.7 af (pond capacity) + 2.1 af (seepage loss) + 2.7 af (evaporation loss) = **18.5 af**, which is not additive for each component.

Conditions 26A, 029, and a department text condition related to combined irrigation of 32 acres was removed from license. Condition X02 was updated to reflect 50 head of mixed stock that was identified by applicant's representative at time of field exam, which is less than the permitted value of 125 head. Conditions 220 and 259 were added describing the pond's size, capacity, and volume factors. Condition X35 was added describing overlap between three water rights for stockwater from storage use listed below. WRs 86-11985 and 86-11986 use water from ponds filled by unnamed streams for stockwater from storage use that overlaps this water rights stockwater from storage and irrigation from storage POU. Condition X35 has been incorporated in licensing to limit the three WRs to state when combined shall not exceed a total annual diversion volume of 0.7 af for stockwater from storage use for 50 head of mixed stock. There are no other overlap concerns for this water right.

Have conditions of permit approval been met? <u>X</u> Yes <u>No</u>

# H. RECOMMENDATIONS

# 1. Recommended Amounts

Beneficial Use	Period of Use	Annual Volume
IRRIGATION STORAGE	01/01 to 12/31	38.1 AF
IRRIGATION FROM STORAGE	04/01 to 10/31	38.1 AF
STOCKWATER STORAGE	01/01 to 12/31	0.7 AF
STOCKWATER FROM STORAGE	01/01 to 12/31	0.7 AF
WILDLIFE STORAGE	01/01 to 12/31	18.5 AF
RECREATION STORAGE	01/01 to 12/31	18.5 AF
FIRE PROTECTION STORAGE	01/01 to 12/31	18.5 AF

Totals:

57.3 AF

# 2. Recommended Amendments

 Change P.D. as reflected above	Add P.D. as reflected above	<u> </u>	None
 Change P.U. as reflected above	Add P.U. as reflected above	_X_	None

I.	AUTHENTICATION	Luke Bates - Water Resource Agent			
	Field Examiner's Name	FOR	Date	7/7/2020	
	Reviewer and Fr	A	Date	7/7/2020	







# **Total Storage Calculations**

FILE NUMBER	86-12088
REVIEWER	Luke Bates
DATE	7/7/2020

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond. User Input Calculated value Formula Explanations

Surface Area (AC.)	1.9	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	7.2	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	13.7	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.
		we may be the effect of the ef
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	38.8	component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	2.1	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	2.7	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	57.3	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.



WR SPLIT FROM 86-11986





MULTIPLE STORAGE POU – POND



IRRIGATION FROM STORAGE POU



IRRIGATION FROM STORAGE POU



IRRIGATION FROM STORAGE AND STOCKWATER FROM STORAGE POU



IRRIGATION RISER



IRRIGATION SYSTEM FROM RISER TO SPRINKLER LINE HOSE



PVC PIPE AND SPRINKLER LINE



STOCKWATER FROM STORAGE POU



STOCKWATER FROM STORAGE POU - STOCK TANK

