

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9838
Exam Date: 3/8/2021

1. Current Owner:
WESTWOOD VILLAGE HOMEOWNERS ASSN PO BOX 1941 SANDPOINT ID 83864-0905
2. Accompanied by: In office exam – prior field exam completed in conjunction with 96-9691

3. **SOURCE:**
PEND OREILLE RIVER

Tributary
COLUMBIA RIVER

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
96-9691	PEND OREILLE RIVER	Irrigation, Irrigation storage & from storage, wildlife storage, recreation storage, diversion to storage	LICENSE

Comments: Licensed right 96-9691 is for the same property, diversion system, and storage pond system as this permit. 96-9691's pond storage beneficial uses overlap this permit's POU, and condition X35 has been added to the permit stating that Rights 96-9691 and 96-9838 when combined shall not exceed a total diversion rate of 0.89 cfs, a total pond(s) capacity of 2.2 acre-feet, or a total pond(s) surface area of 1.1 acres.

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

Water Right No.	Source	Purpose of Use	Basis
96-9691	PEND OREILLE RIVER	Irrigation, Irrigation storage & from storage, wildlife storage, recreation storage, diversion to storage	LICENSE

Comments: 96-9691 and this permit have the same pump and intake diversion system. Condition F06 has been added to the permit describing the same POD for both rights.

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

PEND OREILLE RIVER NW¼ SE¼, Sec. 28, Twp 57N, Rge 02W, B.M. BONNER County

Method of Determination: GPS. POD is a pump in the Pend Oreille River located at -116°34.504, 48°15.507.

PLACE OF USE: AESTHETIC and AESTHETIC STORAGE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
57N	02W	28			X L2														

Method of Determination: Prior field exam performed on 8/6/2020 coupled with the beneficial use report for 96-9691 & Arcmap aerial imagery were used to accurately validate the POU.

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

☒ 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.

☒☒ Aerial Photo Attached (required for irrigation of 10+ acres).☒☒ Photo of Diversion and System Attached☒

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
PUMP IN RIVER	BALDOR	15		PURIST PUMP	

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: Applicant's water system consisted of submerged intake pipe that was buried up to the motor, then buried main line to a point it discharged into a pond; due to inadequate pipe requirements, a flow measurement was not able to be taken.

E. FLOW CALCULATIONS☒ Additional Computation Sheets Attached

Measured Method: The applicant has an old motor and pump installed in their water system. Extensive online research was conducted associated with Baldor motors, and it was found the applicant's motor has been discontinued. Current like model and HP motors ALL have a 400 gpm pump capacity. Photographs from the applicant's system install showing data plates and 15 hp pump motor were taken United Crown Pump and Drilling to collect additional information on the applicant's pumping components. Subject matter experts at United Crown assisted in matching standardized straight centrifugal pump motor operational capacity to the applicant's motor. A resulting Type "B" Rating Curve for a 15 HP pump motor configured the same as the applicants was used to derive pump performance equaling 400 gpm or 0.89 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

$$V_{I.R} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

$$V_{D.R} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$$

$$V = \text{Smaller of } V_{I.R} \text{ and } V_{D.R} =$$

2. Volume Calculations for Other Uses:

- See attached pond analysis worksheet.
- Aesthetic (direct flow) annual volume = 3 months season of use (June-August) x 2 days a month x 246.9 gpm (0.55 cfs) x 60 min per hour x 24 hours per day = 2,133,216 gal per season / 325,850 gal per acre-foot = **6.6 af**, considering department rounding standards.

G. NARRATIVE/REMARKS/COMMENTS

This permit was developed by the applicant in order to capture added aesthetic water use(s) on their property, as well as accounting for the total diversion rate of their pump's capacity beyond what existing right 96-9691 covers. A prior field exam was conducted on 8/6/2020, which validated the same diversion system and storage pond(s) used by the applicant's for this permit's developed beneficial uses. As such, adequate back file data from 96-9691, aerial imagery, and photographic evidence is on hand to perform an in-office exam toward licensing this permit. The applicant's statement of completion received 3/1/2021 identifies 9.5 acres irrigation under step 5. This is not accurate, as irrigation was not developed under this right, rather the applicant's existing right 96-9691. Step 6 does identify total rate of diversion and storage volume found on the permit, connecting the beneficial uses the applicant is assumed to be filing for proof on.

The applicant's diversion system incorporates water being diverted from the Pend Oreille River for aesthetic storage and aesthetic (direct flow) beneficial uses. A 3 inch intake pipe located at the end of the applicant's dock serves at the POD, with a submerged main line routing to a small pump house along the shore that houses a 15 HP Baldor motor driven pump. From the pump house water is pumped in a 2 inch water line up-grade to the storage pond(s) at the POU.

Extensive online research was conducted associated with Baldor motors, and it was found the applicant's motor has been discontinued. Current similar model & HP motors all designate a 400 gpm pump capacity shown on pump performance curves. Photographs from the applicant's system showing data plates and 15 hp pump motor were taken to United Crown Pump and Drilling to collect additional information regarding the applicant's pump components. Subject matter experts at United Crown assisted in matching a standardized straight centrifugal pump motor operational capacity with the applicant's motor. A resulting Type "B" Rating Curve for a 15 HP pump motor configured the same as the applicants was used to derive a pump performance equaling 400 gpm or 0.89 cfs. The applicant's diverting works is in excess of the permit approved diversion rate of 0.55 cfs.

The diversion rate of **0.55 cfs** for diversion to storage is recommended as the maximum diversion rate for licensing purposes. The diversion to storage use and aesthetic direct flow use covered on the applicant's permit is recommended for a diversion rate of **0.55 cfs** (non-additive). The overage in diversion rate is covered under existing right 96-9691, which authorizes 0.34 cfs, which when combined with this permit's recommended diversion rate of 0.55 cfs equals the pump capacity of 400 gpm or 0.89 cfs.

The applicant's pond(s) serve as the aesthetic storage and aesthetic direct flow POU, and are the same storage POU for existing right 96-9691. Arcmap aerial imagery was used to copy the POU shape from the applicant's existing right for use in licensing the permit. The pond has a surface area of 1.1 acres, a maximum depth of 5 feet, average depth of 2 feet, a pond capacity of 2.2 af, seepage loss of 8.0 af, and estimated evaporation loss of 1.5 af. The total volume required on an annual basis equals **11.7 af** for aesthetic storage use, which will be carried forward to licensing. Phone conversation held with the applicant's representative, Mr. Gerald Binder, stated the overflow discharge is opened on the pond and the pump operated once every two weeks for 24 hours from 6/1 – 8/31, in order to recirculate water in the ponds for aesthetic use. The annual volume associated with the aesthetic beneficial use equals 3 (months season of use) x 2 days a month x 246.9 gpm (0.55 cfs) x 60 min per hour x 24 hours per day = 2,133,216 gal per season / 325,850 gal per acre-foot = **6.6 af**, considering department rounding standards, which is recommended for licensing purposes. The aesthetic use is a non-consumptive use. The maximum diversion volume recommended for licensing equals 11.7 af (aesthetic storage) + 6.6 af (aesthetic) = **18.3 af**.

Condition 029 was removed from the permit during licensing review. All other conditions on the permit are carried forward to licensing. Overlap concerns: licensed right 96-9691 is for the same property, diversion system, and storage pond system as this permit. 96-9691's pond storage beneficial uses overlap this permit's POU, and condition X35 has been added to the permit stating that Rights 96-9691 and 96-9838 when combined shall not exceed a total diversion rate of 0.89 cfs, a total pond(s) capacity of 2.2 acre-feet, or a total pond(s) surface area of 1.1 acres. There are no other overlap concerns for this right.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
AESTHETIC	01/01 to 12/31	0.55 CFS	6.6 AF
AESTHETIC STORAGE	01/01 to 12/31		11.7 AF
DIVERSION TO STORAGE	01/01 to 12/31	0.55 CFS	

Totals: 0.55 CFS 18.3 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

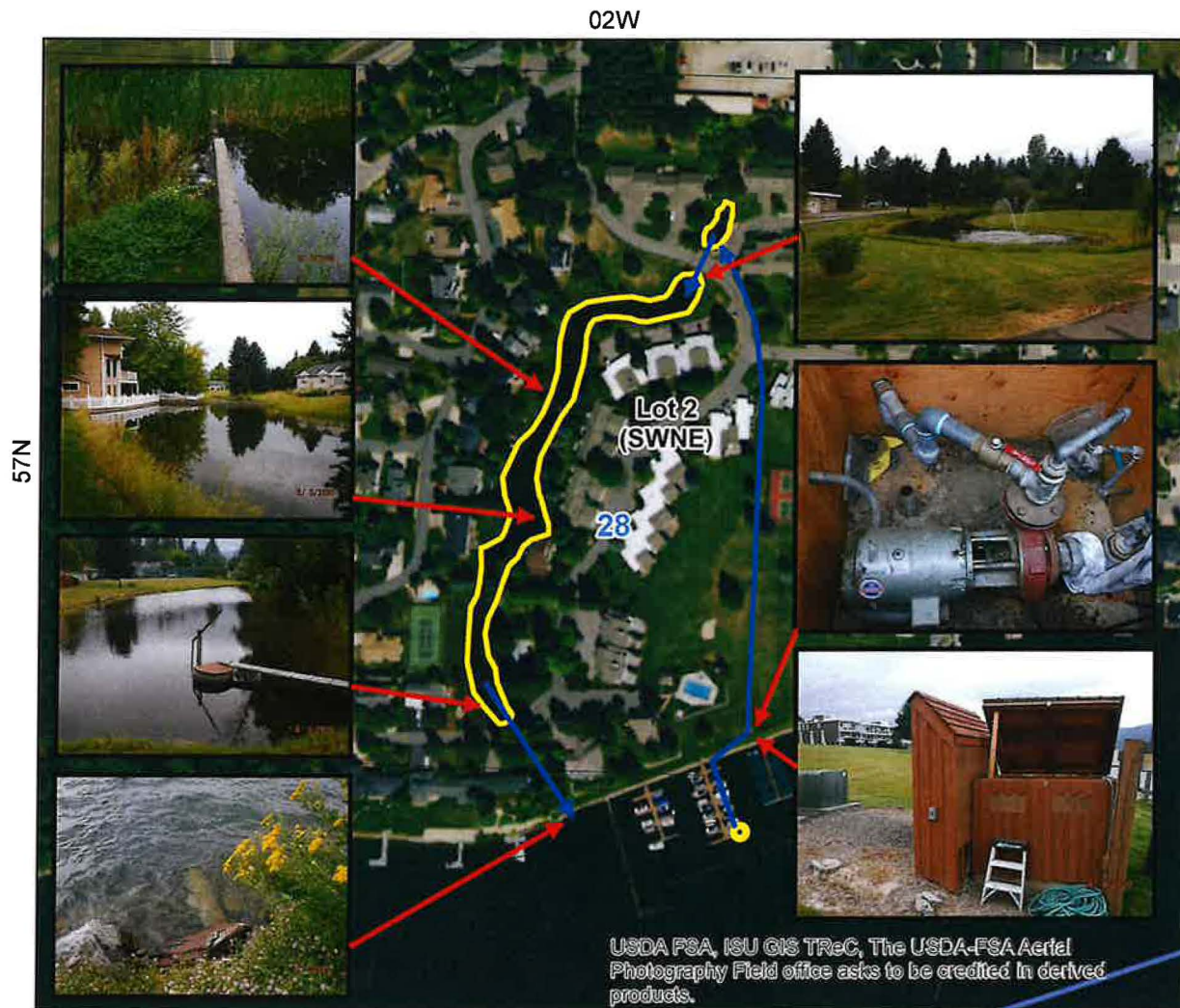
I. AUTHENTICATION Luke Bates - Water Resource Agent

Field Examiner's Name Date 7/16/2021

Reviewer Ad F... Date 7/16/2021

State of Idaho
Department of Water Resources
Attachment to Water Right License
96-9838

AESTHETIC and AESTHETIC STORAGE system diagram.



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

0 0.04 0.08 0.16 Miles



Total Storage Calculations

FILE NUMBER	96-9838
REVIEWER	Luke Bates
DATE	2/3/2021

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

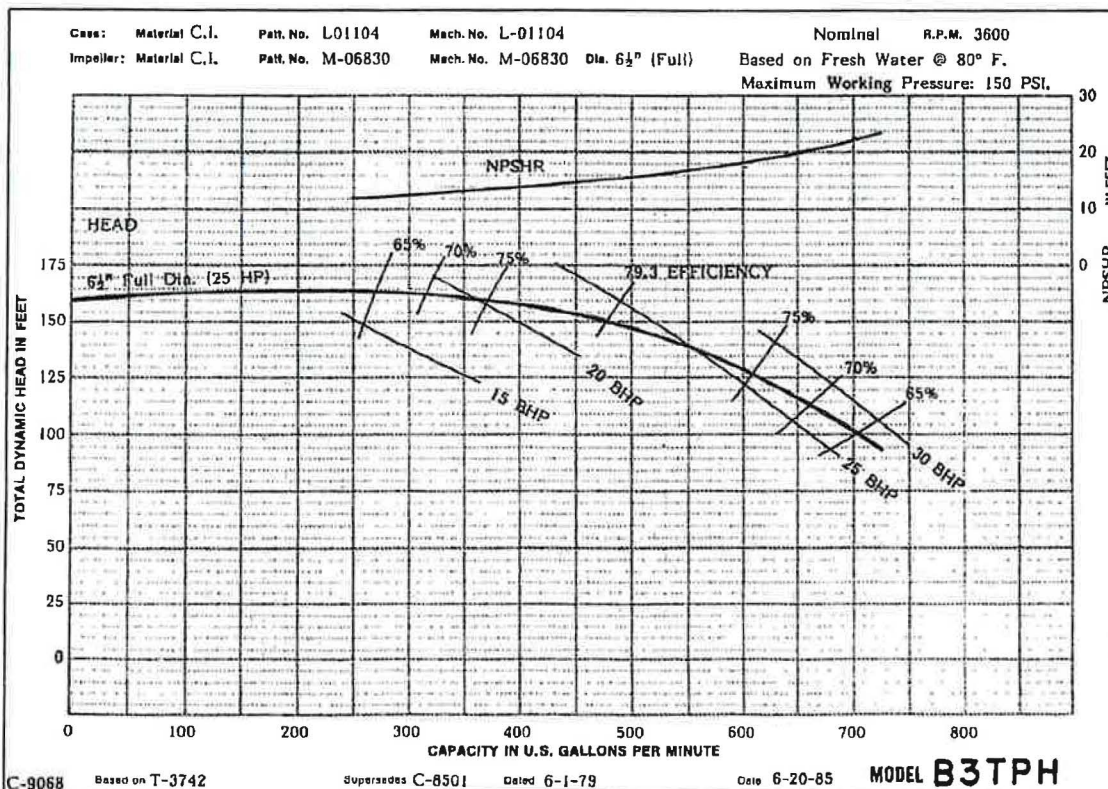
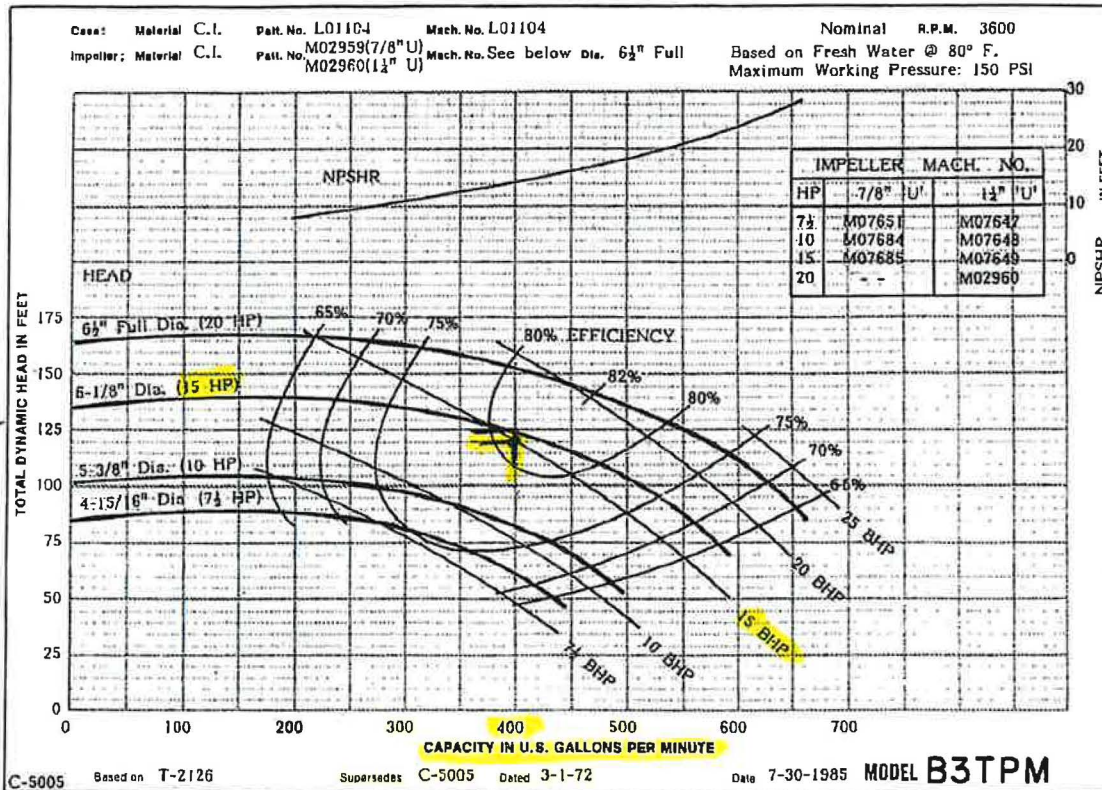
Surface Area (AC.)	1.1	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	2	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook 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)	2.2	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.
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	0	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> 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)	8.0	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	1.5	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	11.7	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.

BERKELEY PUMPS



TYPE "B" RATING CURVES MOTOR DRIVE

CURVE	4075
DATE	1-2-86
PAGE	4.02
SUPERSEDES	
All previously issued	
4075 Curves	



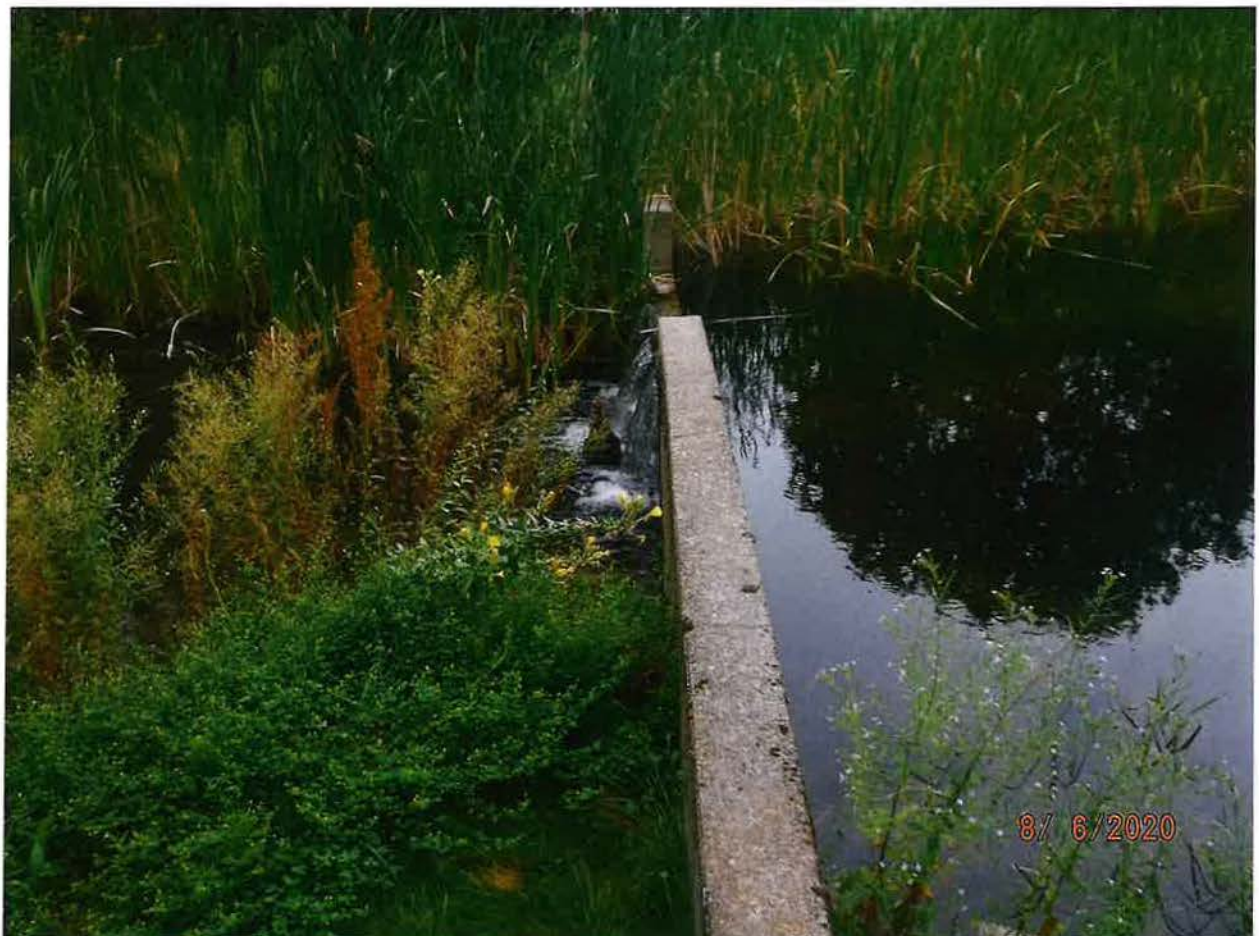


POD - 15 HP PUMP WITH PIPE IN RIVER





AESTHETIC & AESTHETIC STORAGE POU





AESTHETIC & AESTHETIC STORAGE POU





AESTHETIC & AESTHETIC STORAGE POU – DISCHARGE PIPE CONTROL SYSTEM BACK TO RIVER



AESTHETIC FLOW THROUGH PIPE – DISCHARGES BACK TO PEND OREILLE RIVER