

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 45-14516

Exam Date: 04/02/2021

1. Current Owner:
NORMA ANDERSEN 488 RIVERSIDE DR BURLEY ID 83318-5419 AND/OR
ALAN H ANDERSEN 488 RIVERSIDE DR BURLEY ID 83318-5419
2. Accompanied by: Alan Andersen
Phone No: (208) 221-7969
Address: 488 Riverside Dr, Burley ID 83318-5419
Relationship to permit Holder: Permit Holder

3. SOURCE:
DUCK CREEK

Tributary
SNAKE RIVER

Method of Determination: On-site inspection and aerial imagery

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
45-7697	Ground Water	Irrigation	License

Comments: Water Right 45-7697 is owned by Springdale Homeowners Association INC. The POU shape overlaps but the system is not developed for irrigation in the Duck Creek drainage. Right 43-7697 provides ground water irrigation for developed home lots within the subdivision.

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

Water Right No.	Source	Purpose of Use	Basis
N/A			

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

DUCK CREEK L1 (NE¼ NW¼), Sec. 31, Twp 10S, Rge 24E, B.M. CASSIA County

DUCK CREEK L1 (NE¼ NW¼, Sec. 31, Twp 10S, Rge 24E, B.M. CASSIA County

Method of Determination: On-site inspection

PLACE OF USE: IRRIGATION

[illegible]

Total Acres: 0.1

PLACE OF USE: AESTHETIC

[illegible]

PLACE OF USE: 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	
10S	24E	31					X L1												

Method of Determination: On-site Inspection

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

4.

Diversion	Motor Make	Hp	Motor Serial No.	Pump Make	Model & Discharge Size
Irrigation/Water Feature Pump	Little Giant	2.0	20A 142812249M	Little Giant	LSPH-200-C

D. FLOW MEASUREMENTS:

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
N/A						

2. Measurements: per IDAPA 37.03.02 Beneficial Use Examination Rules, measurement is not required for flow rates below 0.24 cfs and for irrigation up to five acres.

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method: N/A

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.1 \text{ acres} \times 4.0 \text{ I.R.} = 0.4 \text{ afa}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.04 \text{ cfs} \times 246 \text{ days} \times 1.9835 = 19.52 \text{ afa}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 0.4 \text{ af}$$

2. Volume Calculations for Other Uses:

Aesthetic Storage: Surface area of pond is 0.011 acres; pond has a flat bottom and high water marks on pond are at 2.5 feet above pond bottom, so: $0.011 \text{ acre} \times 2.5' = 0.028 \text{ acre feet}$. Evaporative losses (precipitation deficit) from a small pond in the Burley area are reported at the University of Idaho ETIdaho website as approximately 2.42 afa, so: $0.011 \times 2.42 \text{ afa} = 0.027 \text{ af}$.

$0.028 \text{ af} + 0.027 \text{ afa} = 0.055 \text{ af}$. Due to IDWR software limitations, this will be licensed as **0.1 acre feet**.

Aesthetic: Aesthetic component is a 45' waterfall and it was not in operation at the time of the field exam. Mr. Andersen estimated that the waterfall is in operation up to 100 hours per year: $(0.12 \text{ cfs} \times 26,930 \text{ gallons per hour} \times 100 \text{ hours}) / 325,850 \text{ gallons} = 0.99 \text{ acre feet}$

G. NARRATIVE/REMARKS/COMMENTS

On the afternoon of 4/2/2021, I met with Mr. Andersen at his small piece of property down along Duck Creek just upstream of where Duck Creek flows into the Snake River. He developed a pond with a surface area of approximately 0.011 acres. From the high water mark on the rocks lining the edge of the pond to the pond bottom measures 2.5' in depth. He has developed approximately 0.10 acres of lawn area on the east side of the creek that is turf grass on the level ground adjacent to the creek and then ornamental grasses on the hillside above the creek. He has also developed a water fall that is approximately 45' in length that is supplied water from Duck Creek using a 2 Hp non-submersible pump that is also used to irrigate the lawn area. The water is pumped from the creek upstream of the pond and delivered through a buried 2" waterline to the top of the waterfall and then flows down into the pond. Mr. Andersen said he occasionally operates the water feature, and it is typically used for outdoor family gatherings on summer holidays and summer weekends. He estimated his yearly use of the waterfall to be right around 100 hours per year. Based on my conversation with Mr. Andersen, it was apparent that he is a fairly detailed oriented individual as he mentioned he was careful to develop the water use in accordance with the permitted rates and volume. Mr. Andersen had originally anticipated utilizing separate pumps for irrigation and the waterfall, so there were three points of diversion listed on the application for permit and subsequent permit. But, since he developed the system utilizing one pump, I have dropped the third point of diversion from the license. There is an ESPA return flow monitoring station approximately 50' downstream of the pond. Measurements are taken in 15 minute increments and can be viewed in those increments or by the daily average. As reported above, the average flow rate that day was 1.68 cfs. See Aqua Info on the IDWR website for more information.

Recommend licensing flow rates and storage volume as permitted and licensing a volume of 0.4 acre feet annually for irrigation use and 0.99 acre feet annually for aesthetic use.

Have conditions of permit approval been met? ☒ 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>
IRRIGATION	03/15 to 11/15	0.04 CFS	0.4 AF
AESTHETIC	01/01 to 12/31	0.12 CFS	0.99 AF <i>1.0 AF</i>
AESTHETIC STORAGE	01/01 to 12/31		0.1 AF

Totals:

0.16 CFS

1.5 AF P.S.

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

I. AUTHENTICATION

Bill Mills - Water Resource Agent, Senior

Field Examiner's Name

Date

Reviewer

Date

4-12-2021

4/12/2021



Figure 1: the pond, waterfall and lawn area looking east from west side of creek
Note: there is a neighbor's pump under the structure on bottom right of picture



Figure 2: waterfall



Figure 3: 2Hp pump for irrigation and waterfall



Figure 4: 2" line diverting water from Duck Creek to pump

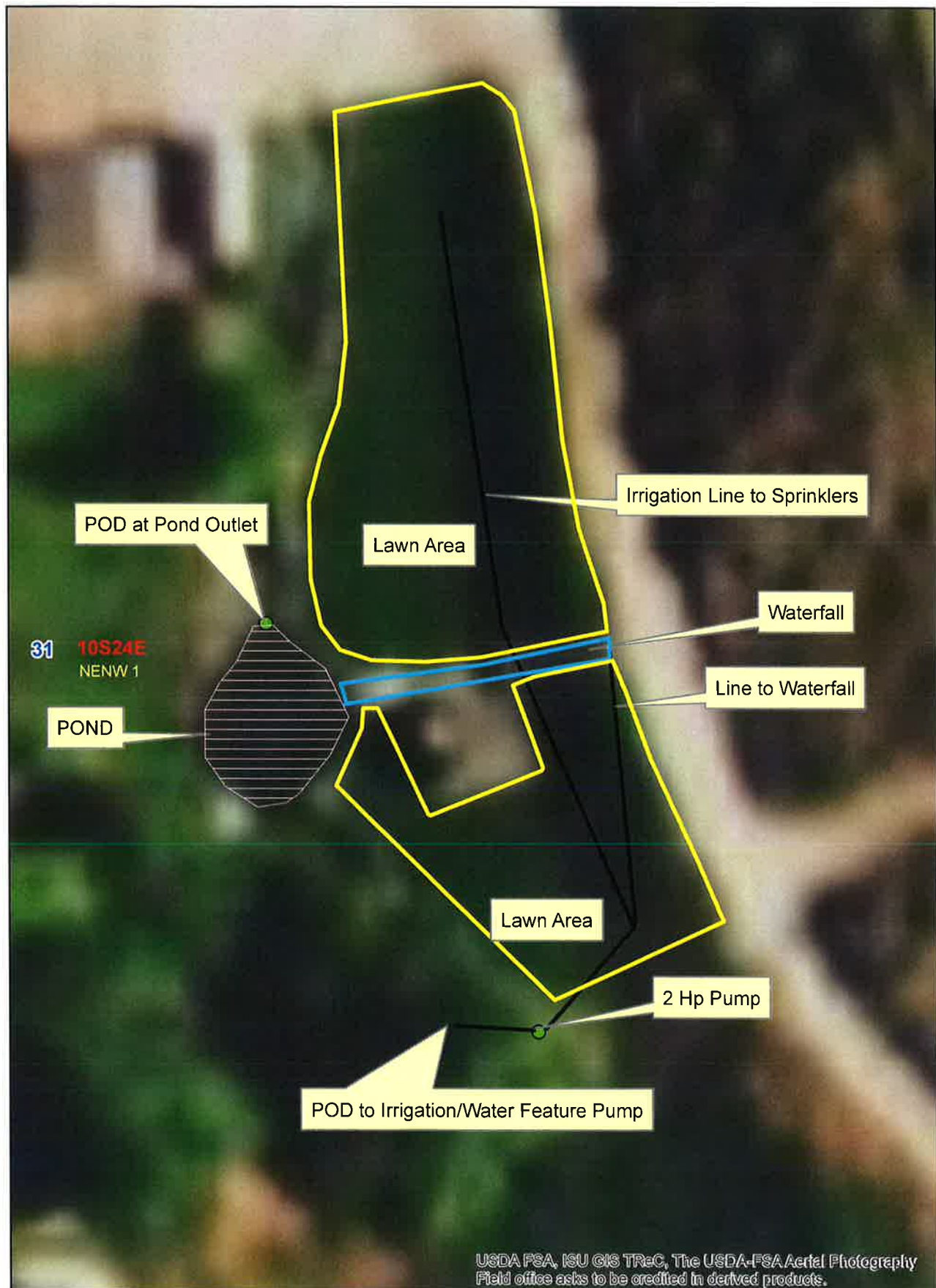


Figure 5: looking north across south portion of lawn



Figure 6: looking north across north portion of lawn

SYSTEM DIAGRAM





University of Idaho

Kimberly Research
and Extension Center

[Water Resources Program](#)

ETIdaho 2017

Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho

Please send suggestions for
improving this site to robison at
uidaho dot edu

2021-04-12 11:37

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Idaho.*

Burley FAA AP (NWS -- USW00024133)

Statistics based on thirty year normal spans 1985 to 2016 years

For a different land cover or crop click on the above link.

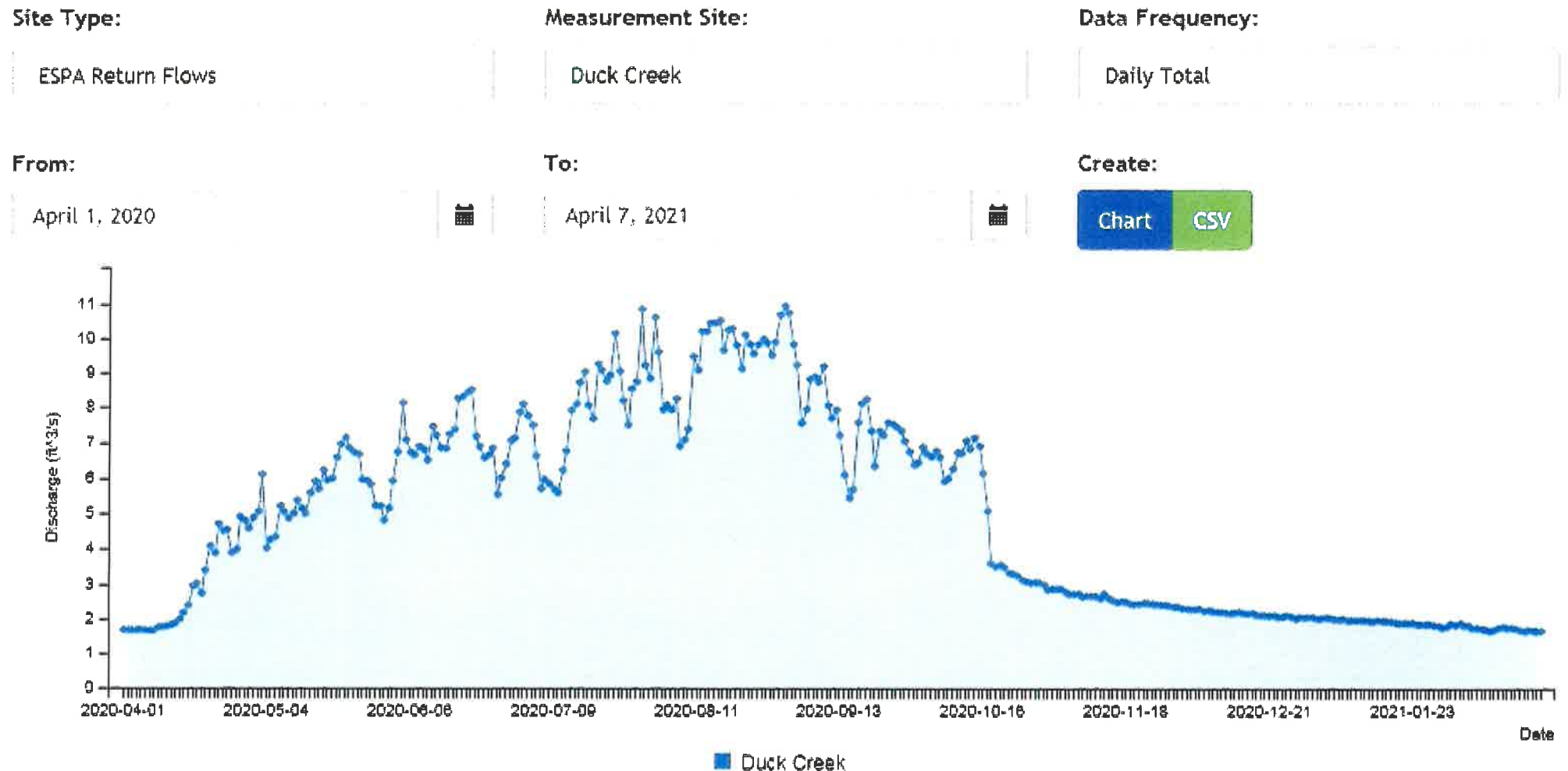
You can highlight this table and copy via the clipboard to a Microsoft Excel or OpenOffice spreadsheet to plot or otherwise work with this data.

Open water - shallow systems (ponds/streams) Precipitation Deficit (Click here for a graph)															
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Growing Season ^a	Non Growing Season ^b	Annual
Mean ^j	mm/day												mm		
Monthly ^c	-0.19	0.43	1.27	2.29	2.65	3.99	4.58	4.11	2.96	1.87	0.42	-0.21	738	0	738
15-Day Moving Average ^d	-0.30	0.34	1.28	2.37	2.66	4.01	4.58	4.09	2.89	1.95	0.42	-0.14			
7-Day Moving Average ^e	-0.25	0.38	1.28	2.31	2.65	3.97	4.57	4.09	2.93	1.92	0.43	-0.19			
3-Day Moving Average ^f	-0.20	0.42	1.27	2.31	2.65	3.96	4.58	4.11	2.95	1.87	0.44	-0.22			

2.42
AF

Field Exam 45-14516

Attachment #1



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