

MEMORANDUM

Date: September 03, 2013
To: Water Right File 78-7310
From: shemenway
Re: Field Report Narrative

This field examination narrative is composed using the 10/8/1997 field examination notes, notes in the file, and questions answered by the land manager that were delivered to IDWR on 8/26/2013 by Dennis Moyer the current owner.

The permit 78-7310 source is an Unnamed Stream (commonly known as Wills Creek). Wills Creek flows year-round, with no water being piped or pumped from the creek for domestic or irrigation use. For this reason, no domestic or irrigation use will be allowed for 78-7310. The Wills Creek open discharges into the pond at the NE side, with a gravity flow concrete spillway located on the South end of the pond, at the dam (the POD was placed at the same location as water right 78-7345, since it is the same spillway). Overflow from the spillway continues down a ditch to the Little Salmon River. The pond is for in-stream Aesthetic Storage use, with all types of wildlife (ducks, fish, frogs, geese, various birds, wood ducks, swans, deer, elk, and turkeys). The house is located up on a rise to the north, and overlooks the pond.

Irrigation of the 22.0 acres is covered by the Sater Creek source under water right 78-4011, which covers the same land that water right 78-7310 was applying for 22.0 acres irrigation and domestic external use from the Unnamed Stream (Wills Creek). The Unnamed Stream source referenced to in water right 78-7345 is Sater Creek, and is for the same source as 78-4011, since they both talk about the concrete box and 6 inch PVC piped down with gravity flow to the acres irrigated and the pond. Plus in the field examination for 78-7310, the examiner stated that the domestic external use was from Sater Creek (Unnamed Stream) with the concrete box, 6 inch PVC pipe down to the garden/yard area. Domestic internal use is from a well (no water right filed on it; drilling permit number 78-89-C-0005-000).

For licensing purposes of water right 78-7310, the following will be recommended:

Domestic external only, and Irrigation Use - NONE will be recommended. No water was diverted from the Unnamed Stream (Wills Creek) for irrigation or domestic external use. Irrigation is covered by water right 78-4011, covering the same POU designated for Domestic external use.

Aesthetic is being changed to Aesthetic Storage (an amendment is required since there is a change in nature of use). No physical measurement was taken at the time of the field examination, and since it is located at the end of the creek, there would be no physical damage caused to anyone downstream.

Using the diversion rate approved on the permit for irrigation:

Vir: 40 acres X 3.0 headgate requirement = 120.0 af

Vdr: 0.28 cfs X 1.9835 X 214 days = 118.8 af

V = 118.8 af

The pond was calculated to be 2.7 acres X 12 ft = 32.4 af + 3.5 af precipitation loss calculated = 35.9 af.

RECOMMEND:

Aesthetic Storage 35.9 af with a combined limit of 78-7310 and 78-7345 of 35.9 af.

Precipitation Loss Calculation

Date: September 3, 2013
Prepared by: Sandy Hemenway
Water Right No: 78-7310

P = Precipitation
ET= Evapotranspiration
 P_d = Precipitation deficit
 P_d = P- ET

P_d

Found at: <http://www.kimberly.uidaho.edu/ETIdaho/>

P_d = convert to AFA: $\frac{(\text{mm/yr})}{(\text{convert to feet})} \times \# \text{ acres} =$

357	/	304.8	x	3	=
(From ET Idaho)					

$P_d = 3.5 \text{ AFA}$

* Use the Precipitation Deficit for 'P' value

ET_{Idaho} 2012 -- Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho

Please send suggestions for improving this site to robison at kimberly dot uidaho dot edu Copyright 2012, University of Idaho.

Riggins Ranger Stn (NWS -- 107706)

Statistics based on thirty year normal spans 1957 to 2010 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	0.79	0.24	-0.01	0.98	1.74	2.44	3.66	3.30	1.78	0.65	0.82	1.01	357	0	357
15-Day Moving Average ^d	0.85	0.25	-0.02	0.95	1.82	2.38	3.81	3.24	1.66	0.71	0.84	0.98			
7-Day Moving Average ^e	0.82	0.26	-0.04	0.96	1.79	2.36	3.76	3.27	1.67	0.66	0.87	1.00			
3-Day Moving Average ^f	0.79	0.23	-0.01	0.99	1.74	2.39	3.69	3.29	1.73	0.65	0.83	0.99			
Standard Deviation ^k	mm/day												mm		
Monthly ^c	0.81	0.56	0.96	0.96	1.55	1.17	1.41	1.13	1.03	1.00	0.81	0.91	105	0	105
15-Day Moving Average ^d	0.88	0.73	0.92	1.10	1.67	1.69	1.19	1.18	1.44	0.95	1.14	0.93			
7-Day Moving Average ^e	1.28	1.12	1.26	1.51	2.23	2.41	1.63	1.54	1.87	1.42	1.55	1.39			
3-Day Moving Average ^f	1.75	1.56	1.87	2.28	3.06	3.23	2.58	2.10	2.47	2.07	2.23	2.07			
20% Exceedance ^l	mm/day												mm		
Monthly ^c	0.33	0.29	0.37	1.57	2.58	3.20	4.57	3.88	2.56	1.30	0.14	0.64	421	0	421
15-Day Moving Average ^d	0.22	0.65	1.26	2.41	4.00	4.75	5.07	4.60	3.32	1.90	0.35	0.13			
7-Day Moving Average ^e	0.43	1.12	1.89	3.31	4.77	5.29	5.29	4.83	3.74	2.31	0.69	0.18			
3-Day Moving	0.48	1.35	2.54	4.04	5.45	5.79	5.71	5.06	4.12	2.59	0.86	0.24			

Average ^f															
80% Exceedance^m	mm/day												mm		
Monthly ^c	1.36	0.69	-0.45	0.19	0.96	1.47	2.89	2.66	1.10	0.00	1.44	1.43	259	0	259
15-Day Moving Average ^d	2.41	1.55	-1.36	1.06	-0.49	0.07	1.89	1.15	1.05	0.87	2.54	2.23			
7-Day Moving Average ^e	3.92	3.57	-2.69	2.67	-4.19	3.32	0.46	-1.44	2.48	2.55	5.71	4.26			
3-Day Moving Average ^f	7.07	6.48	-5.46	5.47	-7.77	9.16	5.78	-4.49	6.25	6.34	8.84	8.86			
Ave Highest P_{def}	mm/day												--		
15-Day Moving Average ^g	0.10	0.35	0.82	1.86	3.06	3.84	4.51	3.97	2.62	1.44	0.19	0.04			
7-Day Moving Average ^h	0.28	0.85	1.59	2.84	4.26	4.83	5.01	4.48	3.31	1.90	0.48	0.13			
3-Day Moving Average ⁱ	0.42	1.13	2.19	3.65	4.99	5.44	5.35	4.88	3.78	2.33	0.75	0.22			
Ave Lowest P_{def}	mm/day												--		
15-Day Moving Average ^g	1.47	0.77	-0.77	0.11	0.52	1.02	2.86	2.43	0.71	0.03	1.71	1.72			
7-Day Moving Average ^h	2.66	1.84	-1.92	1.07	-1.54	1.51	1.44	1.23	0.66	1.22	2.85	2.85			
3-Day Moving Average ⁱ	4.83	3.80	-3.89	3.37	-4.96	5.19	1.93	-1.06	3.19	3.87	5.47	5.54			
Special normal distribution parameters for monthly, seasonal, and annual intervals															
Skew ^m	0.19	0.29	-0.21	0.10	-0.44	0.90	0.21	-0.23	0.80	0.08	1.08	0.30	-0.21	0.00	-0.21
Kurtosis ^o	0.62	2.64	1.10	3.37	1.28	3.10	0.62	0.67	3.26	0.54	4.62	1.05	3.05	0.00	3.05

^a Growing Season: This is usually the time from green up or planting in the spring to a killing frost or harvest in the fall. It is not applicable for entries without a growing season and will be blank.

^b Nongrowing Season: This is usually the time from a killing frost or harvest in the fall to the of green up in the spring. It is not applicable for entries without a growing season.

^c Mean of the average daily value for month

^d Mean of the fourteen 15-day period averages contained in the month

^e Mean of the twenty three 7-day period averages contained in the month

^f Mean of the twenty seven 3-day period averages contained in the month

^g Mean of the highest/lowest 15-day period average in month

^h Mean of the highest/lowest 7-day period average in month

ⁱ Mean of the highest/lowest 3-day period average in month

^j This value represents the *mean value* for the parameter for the month over the 'normal' period of record. Generally, the 'normal' period is the last thirty years with data.

^k This value represents the *standard deviation* for the parameter for the month over the 'normal' period.

^l This value represents the *value* for the parameter that has a 20% chance of being exceeded that month during any particular year. Conversely, there is an 80% chance that the parameter value will be less than the *value* shown.

^m This value represents the *value* for the parameter that has a 80% chance of being exceeded that month during any particular year. Conversely, there is an 20% chance that the parameter value will be less than the *value* shown.

ⁿ This value represents the *skewness (asymmetry) of the distribution of the parameter values* for the month (year) over the 'normal' period. A value near zero indicates that the distribution approximates a normal (Gaussian) and symmetrical distribution. A negative skew indicates that the parameter distribution has relatively few low values compared to high values. A positive skew indicates that the distribution has relatively few high values compared to the number of low values. A skew value near 1 indicates that the underlying distribution approximates a lognormal distribution.

^o This value represents the *kurtosis* of the parameter value distribution for the month (year) over the 'normal' period. Kurtosis is a measurement of the height to width ratio of the probability distribution, or the *peakedness (slenderness)*. A normal (Gaussian) distribution has a kurtosis of 3. A high kurtosis distribution has a sharper peak and longer tails, while a low kurtosis distribution has a more rounded peak and shorter tails.

This work and report were prepared by the University of Idaho Research and Extension Center at Kimberly, Idaho under contract with the Idaho Department of Water Resources. Work was supported by funding from IDWR and the Idaho Agricultural Experiment Station and Idaho Engineering Experiment Station. The authors gratefully acknowledge the long-term evapotranspiration data collection and long-standing advice provided by Dr. James L. Wright, USDA-ARS Kimberly (ret.), the more than two decades of high quality agricultural weather data collection by the U.S. Bureau of Reclamation AgriMet system, and the very long-standing, routine data collection by the hundreds of cooperative weather station volunteers across the state who, for more than one-hundred years, have faithfully observed daily air temperature and precipitation.

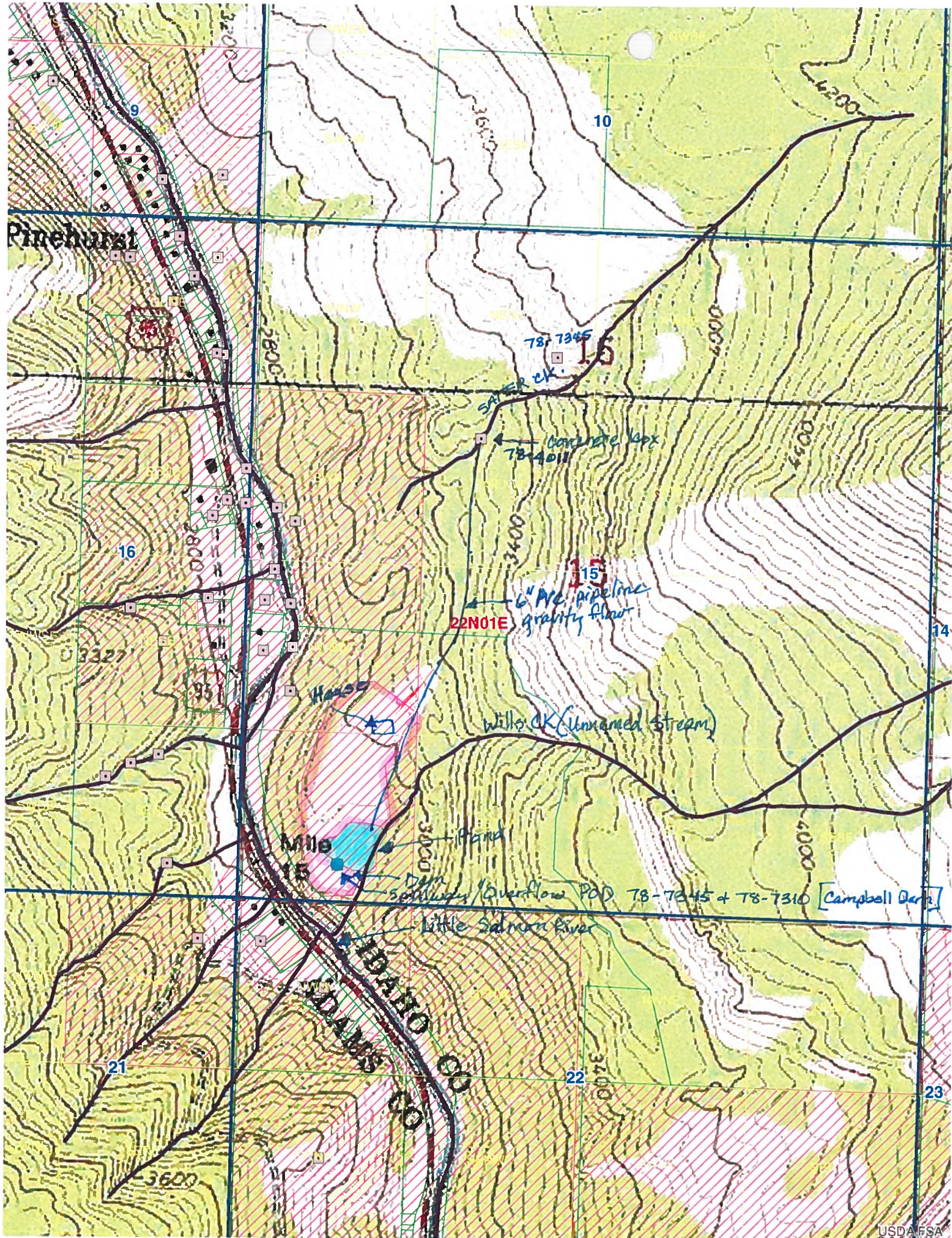
The citation for the evapotranspiration data used from this site should be: Allen, Richard G. and Clarence W. Robison, 2012. *Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho: Supplement updating the Time Series through December 2008*, Research Technical Completion Report, Kimberly Research and Extension Center, University of Idaho, Moscow, ID.

Questions regarding the data should be addressed to [Clarence W. Robison](#) or [Richard G. Allen](#), University of Idaho, Kimberly Research and Extension Center, 3793 North 3600 East, Kimberly, ID 83341. Telephone (208)-423-6610

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Dennis Moyer

From: Hemenway, Sandy [Sandy.Hemenway@idwr.idaho.gov]
Sent: Monday, August 05, 2013 11:47 AM
To: Dennis Moyer
Cc: Hemenway, Sandy; Sandy Hemenway
Subject: 78-7310 Water Right
Attachments: DOC001.pdf

Dennis,

Please have the ranch manager do the following:

- (1) Mark and label the point of diversion for the unnamed stream (on the application it was described as locally being called Wills Creek). *no diversion as Wills Cr feeds the pond directly*
- (2) Mark and label the 22.0 acres that are irrigated. *as shown on map below tree line*
- (3) Describe how the 22.0 acres are irrigated from the point of diversion (pipe type and size; if gravity flow draw where the ditches are located and show the direction of the flow; if nozzles, the size, psi, number nozzles run at one time), and any other information that would be helpful. *Sater Cr has the diversion*
- (4) If a pump is used to irrigate, please describe the location of the pump; the make/model, lift, and size discharge (mark the location of the pump, if one is used). *gravity flow to sprinklers*
- (5) Size of head gate, discharge size, if the pipe is full or partially full (how much?) *6" - 6" pipe 3/4 x 1/2 full*
- (6) Average depth of pond. *12'*
- (7) Types of wildlife. *ducks - fish - frogs - geese - song birds - wood ducks, swans, deer and elk, turkeys*
- (8) Is there any other sources that supplies water to this reservoir/pond? What is the source(s)? If so, where does it enter the pond (mark and label)? *no*
- (9) Is there an overflow for the pond, and if so where is it located? *yes cement spillway at the dam*
- (10) Is the pond lined? If not lined, what type soil? *no - clay*
- (11) Does the unnamed stream run year-round, or seasonally? Does it go dry? *no*
- (12) Is domestic use internal use only or external only, or both? *external*
- (13) If domestic external use is separate from the irrigation system, how is the lawn/garden irrigated? *lawn and garden irrigated from Sater Cr gravity flow*
- (14) Can you outline and label the domestic external use (lawn/garden area)?

Thank you so much for your time. *as shown on map*

Sandy Hemenway
Sr. Water Resource Agent
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