

Memorandum

Date: August 24, 2011

To: File 67-7937

From: Craig L. Saxton

RE: Licensing Review 67-7937

Volume Calculations:

- Field examiner calculated pond capacity of 1.3 AF.
- Evaporation losses calculated as 0.1 AF using information from ET Idaho (attached):
- October 1, 2003 letter from Corp of Engineers states the pond was built about 7 years ago (1996) and describes that land use prior to the pond as irrigated pasturelands for horses and cattle.

We know the pond is close to the water table due to its location in relation to the Weiser River, however there is no indication in the file that the pond fills naturally by seepage. The exact soil type is unknown. Using the seepage calculation formulas from the spreadsheet in application processing memo 67, and assuming a soil type factor of 0.30 (where 0 is a lined pond or naturally filled and 0.5 is clay soil), I calculated the seepage requirement of 15.8 AFA, enough to justify licensing the full permitted diversion rate.

Storage volume = 1.3 AF
Evaporation losses = 0.1 AF
Seepage losses = 13.6 AF
Total Volume = 15 AFA

Overlap Review:

Partial Decree 67-14890, from a spring, authorizes irrigation storage of 1.3 AF for year round use. The capacity of the pond is 1.3 AF so a condition was added to limit use of this right and 67-14890 to storage of 1.3 AF

67-79B and 67-14889 authorize diversion from the Weiser River for irrigation purposes and do not include storage components in association with that irrigation use. The field examiner measured the diversion rate at the outflow of the pond to be 0.33 cfs. I do not see a reason to limit the diversion rate of 67-7937 with 67-79B and 67-14889 as there is no indication that the other rights from the Weiser River flow through the pond before used for irrigation purposes. 0.33 cfs is only the limit for the water diverted under 67-7937. No diversion rate overlap conditions with rights 67-79B and 67-14889.

Condition #7:

Condition #7 on permit 67-7937 states:

"Use of water under this right shall be non-consumptive."

The non-consumptive condition conflicts with the nature of storage use and that it is not necessary now because the moratorium imposed in 1992 was amended, lifting the moratorium in this area on January 6, 1993, before the permit was issued.

Conditions # 7 on the permit will be dropped at licensing.

Flow-through:

This right is permitted for filling and maintaining the level of the 1.3 AF pond. However, as far as I can see, there is no water right that allows for the continual flow through described in the file. The permit holder will need to file a new application for permit for "recreation" to continually divert water to flow through the pond year round.

FILE NUMBER: 67-7937
REVIEWER: Craig L. Saxton
DATE: 8/18/2011

MAXIMUM DAILY WATER USE FOR DOMESTIC PURPOSES

INPUTS

NOTES/SUGGESTED VALUES

RESULTS

POND

SURFACE AREA (SQFT) -----

SEEPAGE RATE (FT/DAY) -----

SUGGESTED VALUES FOR DIFFERENT SOIL TYPES: CONVERT TO GPD ----- 14137 GPD

0 = NATURALLY FILLED FROM GW, OR LINED

0.5 = CLAY SOILS

1.5 = LOAMS

3.0 = GRAVELS

TOTAL Seepage Loss (AFA) -----

FORMULAS

FORMULA: $SA * SEEPAGE LOSS = POND SEEPAGE (CUFT/D)$

CONVERSION: 1 CUFT $\approx$ 7.48 G

NOTE: ASSUMES CONTINUOUS REPLACEMENT RATE

TOTAL = FILL RATE + EVAP + SEEPAGE + FLOW THROUGH

Date: August 18, 2011
 Prepared by: Craig L. Saxton
 Water Right No: 67-7937

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: (mm/yr) / (convert to feet) * # acres

P_d = 0.1 AFA 126 304.8 0.2

* Use the Precipitation Deficit for 'P' value

Month	mm/day	Day's per month	mm/Month
Jan		31	0
Feb		28	0
March		31	0
April		30	0
May		31	0
June		30	0
July		31	0
August		31	0
September		30	0
October		31	0
November		30	0
December		31	0

Year round	126
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(From ET Idaho)

ET_{Idaho} 2009: Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho

Please send suggestions for improving this site to robison@kimberly.uidaho.edu Copyright 2010, University of Idaho.

Council (NWS --102187)

Statistics based on thirty

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	mm/day												mm		
Monthly ^c	-2.54	-2.05	-0.43	1.15	1.94	2.55	4.01	3.23	1.72	-0.16	-2.46	-2.91	126	0	126
15-Day Moving Average ^d	-2.73	-2.30	-0.53	1.17	2.10	2.40	4.08	3.18	1.48	-0.15	-2.59	-2.95			
7-Day Moving Average ^e	-2.57	-2.22	-0.51	1.16	2.02	2.45	4.06	3.22	1.59	-0.25	-2.59	-2.93			
3-Day Moving Average ^f	-2.53	-2.11	-0.45	1.17	1.96	2.52	4.02	3.23	1.66	-0.18	-2.50	-2.92			
Standard Deviation	mm/day												mm		
Monthly	3.17	1.42	1.45	1.59	1.51	1.25	0.57	1.02	1.15	2.41	1.83	2.58	170	0	170
15-Day Moving Average	3.21	2.28	1.67	1.88	1.66	1.78	0.51	1.21	1.70	2.23	2.47	2.60			
7-Day Moving Average	3.88	3.32	2.19	2.34	2.16	2.45	0.77	1.57	2.21	3.17	3.34	3.54			
3-Day Moving Average	4.85	4.46	3.03	3.15	3.07	3.28	1.23	1.98	2.80	4.09	4.50	4.87			
20% Exceedance	mm/day												mm		
Monthly	-0.87	-0.40	0.52	2.24	2.61	3.51	4.35	3.63	2.45	1.27	-1.13	-1.30	257	0	257
15-Day Moving Average	0.25	0.62	1.47	3.20	4.08	4.63	4.65	4.18	3.38	2.05	0.40	0.12			
7-Day Moving Average	0.47	1.00	2.35	3.88	4.84	5.05	4.91	4.43	3.66	2.63	1.02	0.38			
3-Day Moving Average	0.55	1.15	2.78	4.42	5.31	5.48	5.25	4.59	3.85	2.98	1.36	0.51			

80% Exceedance	mm/day												mm		
Monthly	-3.83	-3.18	-1.50	-0.44	0.57	1.34	3.53	2.73	0.68	-1.66	-3.99	-4.62	-68	0	-68
15-Day Moving Average	-6.04	-6.21	-2.74	-1.28	-0.15	0.48	2.96	1.61	1.08	-3.76	-6.38	-8.04			
7-Day Moving Average	11.31	10.63	-5.47	-4.19	-3.42	3.66	1.66	-0.55	4.50	-7.69	-9.13	10.93			
3-Day Moving Average	17.43	17.75	11.39	10.04	-8.70	9.66	0.93	-5.75	8.51	15.15	16.64	18.54			
Ave Highest P_{def}	mm/day												--		
15-Day Moving Average ^g	0.09	0.26	0.91	2.38	3.16	3.82	4.44	3.83	2.60	1.48	0.17	0.06			
7-Day Moving Average ^h	0.28	0.71	1.75	3.36	4.20	4.72	4.72	4.23	3.35	2.24	0.67	0.25			
3-Day Moving Average ⁱ	0.45	1.06	2.35	3.96	4.91	5.18	5.02	4.45	3.67	2.62	1.05	0.41			
Ave Lowest P_{def}	mm/day												--		
15-Day Moving Average ^g	-4.51	-3.81	-1.73	0.13	0.68	1.14	3.61	2.43	0.54	-1.69	-4.33	-4.94			
7-Day Moving Average ^h	-7.28	-6.89	-3.67	-1.65	-1.57	0.87	2.81	1.07	1.15	-4.64	-7.05	-7.91			
3-Day Moving Average ⁱ	12.40	12.27	-7.59	-5.11	-5.63	4.53	1.12	-1.07	4.06	-8.99	12.41	13.36			
Special normal distribution parameters for monthly, seasonal, and annual intervals													--		
Skew	-0.61	0.28	-0.14	-1.00	-0.23	0.58	0.15	-0.56	0.93	-0.20	-0.99	-0.29	-0.26	0.00	-0.26
Kurtosis	1.65	2.14	0.71	3.60	0.66	2.66	0.51	1.49	3.47	0.64	4.19	0.67	2.98	0.00	2.98

^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

Idaho Department of Water Resources Receipt

Receipt ID C072111

Payment Amount \$75.00 Date Received 12/29/2003 11:48:35 AM Region State Status
Payment Type Check Check Number 3989

Payer HAWKINS NANCY E

Comment EXAMINATION FEE AND PENALTY FEE WATER RIGHT 67-7937
\$50.00 EXAM FEE \$25.00 LATE FEE

Fee Detail

Amount	Description	Fund	FD	PCA	SO
\$75.00	LIC EXAM FEE	0229	21	56104	1155


Signature Line (Dept. Representative)

Comment Report

67-7937

1. kwalker 1/2/2004 Exam Fee & Lic Review

Comment: The original exam fee submitted was for only 0.20 cfs or 20 af of water. Examiner determined system could divert 0.33 cfs - requested and received additional exam fee so we can license for larger amount. Recommend license be issued as determined by field examiner.

Measuring device requirement was removed by order in October of 1995.

2. ZIMMERMA 1/6/1994 DIVERSION DESCRIPTION

Comment: Gravity diversion through pipe to pond, water to return to river through pipe. Active reservoir capacity 15 AF; total reservoir capacity 15 AF.