

MEMORANDUM

Date: September 15, 2008
To: Water Right File 29-7703
From: medl
Re: license review

I understand that the permit holder Mr. DeVere Tovey is deceased. His daughters Raida Jensen (residing in Caldwell, Idaho) and Joyce Terry (residing in Idaho Falls, Idaho) have been working with Nate Arave (IDWR Eastern Region) and the water master for Basin 29 to provide the remaining information needed for licensing this right.

According to Bannock County taxlot information both the POU and the POD are owned by Tovey family trusts.

I copied the POD shape from the permit layer into the license layer.
I created the POU shape based on aerial photography and the field exam report.

This permit required measuring devices be installed and maintained at the point of diversion and the at the discharge point. In his June 6, 2000 report, the field examiner recommended that the requirement for a measuring device be removed from this water right. However there was no evidence in the water right file that a request for waiver of the measuring device requirement has ever been submitted to or approved by the watermaster. The lack of a written waiver request or response had stalled the licensing process for this right.

Thanks to Nate Arave and a simple recommendation form provided by IDWRs Eastern Region, a record of the watermasters recommendation has been made available for this water right. On 8/29/2008, Steve Hebdon, the watermaster for Basin 29, waived the requirement for measuring devices on these ponds. I received his signed recommendation on 9/5/2008 and have deleted the condition requiring measuring devices from the license.

Although the permit was issued for Recreation as the nature of use, the actual water development has been for Recreation Storage. The description of the proposed project on the application form indicates that Recreation Storage was the intended use from the beginning so, I am changing the nature of use to Recreation Storage from Recreation without requiring an amendment.

This permit was approved for 3 af of storage. The field examiner recommended 2 afa but did not account for evaporation and seepage losses in his recommendation. I believe that the ponds are topped off with additional water when the levels drop. I didnt have enough information to account for the losses due to seepage but I was able to make a calculation for evaporation.

I used an ETIdaho Annual Evapotranspiration Time Series. I chose data from the Open water-shallow systems class which was generated from Preston 3NE (CoOp station #107346). I averaged the available annual precipitation deficit data and converted it to ft per year. Then I multiplied that deficit by the estimated surface area of the ponds which was provided in the field exam. The calculation becomes: $1.26 \text{ ft/year} * 22500 \text{ square ft} = 28350 \text{ cubic ft year}$ or 0.65 ac-ft per year lost to evaporation. As a result, an additional 0.65 af is added to the annual volume for this license. Please refer to the attached spreadsheet.

potranspiration Time Series

Station Name: Preston 3 NE Type of Station: NWS NOAA Station Identifier: 107346
 Latitude: 42° 8' North Longitude: 111° 50' West Elevation (ft): 4820
 Daily values computed on May 10 2007 04:14 Annual series generated on May 17 2007 02:51:01 pm

Managed land covers (crops) are assumed to be irrigated unless otherwise specified. All units are in millimeters unless otherwise indicated.

Alfalfa reference ET (ET_r) computed by the ASCE standardized Penman-Monteith method using solar radiation and dewpoint estimated from air temperature and wind speed from long term regional stations.

Actual ET includes soil surface evaporation (from precipitation and irrigation) as well as reductions in evapotranspiration caused by soil water shortage. It is often below Potential ET for rainfed crops. (ET_a = K_s*ET_b + K_e*ET_r)

Potential ET represents the total estimated evaporation that would occur without soil moisture stress. It includes soil surface evaporation from recorded precipitation and simulated irrigation. (ET_p = ET_b + K_e*ET_r)

Precipitation deficit (irrigation water requirement) is the difference between ET_p and the amount of Pr_z. It represents evapotranspiration amount beyond Pr_z if that water were made available at the right time. (Pdf = ET_p - Pr_z)

Precipitation residing in root zone is the amount of gross precipitation that infiltrates (less surface runoff) and remains in the root zone for evaporation and transpiration (less deep percolation). (Pr_z = P - Runoff - DPerc)

Effective precipitation for transpiration is the amount of Pr_z for use in supplying transpiration by the crop or land use cover. It does not include infiltrated precipitation that is evaporated from the soil evaporation layer.

-NA- indicates that data was missing preventing computation of reference evapotranspiration. For monthly series, it indicates that air temperature data was missing for the entire month. For annual series it indicates that 15 (6) days or more were missing

Open water - shallow systems (ponds, streams)

Precipitation
 Effective
 Estimated

Year	Valid Days	Reference ET (mm)	Recorded Precipitation (mm)	Actual ET (mm)	Potential ET (mm)	Precipitation deficit (mm)	Precipitation residing in root zone (mm)	Effective precipitation on for transpiration (mm)	Estimated growing season period (days)
1965	365	1288	401	773	773	372	401	390	365
1966	334	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	226	365
1967	365	1300	378	780	780	402	378	372	365
1968	366	1312	380	787	787	408	379	373	366
1969	365	1440	322	864	864	542	322	319	365
1970	365	1325	436	795	795	359	436	432	365
1971	335	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	436	365
1972	335	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	246	366
1973	276	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	216	365
1974	120	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	102	365
1975	0	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	0	365
1976	0	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	0	366
1977	0	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	0	365
1978	0	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	0	365
1979	0	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	0	365
1980	124	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	132	366
1981	334	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	502	365
1982	334	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	479	365
1983	365	1213	651	728	728	77	651	630	365
1984	366	1214	463	728	728	266	463	454	366
1985	365	1337	354	802	802	448	354	344	365
1986	334	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	400	365
1987	334	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	358	365
1988	152	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	53	366
1989	306	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	262	365
1990	335	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	311	365
1991	337	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	436	365
1992	366	1437	327	862	862	536	327	313	366
1993	365	1272	548	763	763	215	548	544	365
1994	365	1484	363	891	891	528	363	356	365
1995	365	1380	534	828	828	294	534	523	365
1996	366	1407	492	844	844	352	492	490	366
1997	243	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	336	365
1998	151	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	145	365
1999	334	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	354	365
2000	275	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	286	366
2001	243	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	184	365
2002	365	1330	335	798	798	463	335	327	365
2003	365	1370	338	822	822	484	338	326	365
2004	366	-NA-	-NA-	-NA-	-NA-	-NA-	-NA-	467	366

	N Pond	S Pond	Total
length ft	150	100	
width ft	70	120	
area ft^2	10500	12000	22500
area acres			0.52
deficit volume ft^3	28350	=1.26*22500	
deficit acre-ft	0.65		

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

Execution time (sec): 0

5746 sum of available data (mm)
 15 years with data
 383.0667 average deficit per year (mm)
 1.26ft mm per converted to ft per year

Place of Use overlap for 29-7703

Type	WR #	Owner	Source	TRS	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total
Permit	29 7703	DE VERE TOVEY,	UNNAMED STREAM	09S37E17														X			0
Right	29 197	FIRST NATIONAL BANK OF OGDEN,	WEST BOB SMITH CR	09S37E17				X										X			0
Right	29 7323	DE VERE TOVEY,	GROUND WATER	09S37E17														X			0
Right	29 201	JOHN T GITTINS,	WEST BOB SMITH CR	09S37E17															9		9
Right	29 13398	CUTLER DITCH,	PORTNEUF RIVER	09S37E17															3.1		3.1
Right	29 13400	CUTLER DITCH,	PORTNEUF RIVER	09S37E17															3.1		3.1
Right	29 7703	DE VERE TOVEY,	UNNAMED STREAM	09S37E17													X				0
TRight	29 13398	CUTLER DITCH,	PORTNEUF RIVER	09S37E17															3.1		3.1
TRight	29 13400	CUTLER DITCH,	PORTNEUF RIVER	09S37E17															3.1		3.1