

MEMORANDUM

Date: July 20, 2010
To: Water Right File 75-7677
From: cpadilla
Re: LICENSE MEMO

Volume

The volume is based on the following:

The table Water for Livestock Out of Stream Diversion located in the field examiners notebook reflects a volume of 5.4 afa for range cattle. Since the season is only 153 days I get 2.3 af ($5.4/365 \times 153$).

The attached sheet, Table 4, shows that sheep can consume up to 3 gallons/day and Table 7 averages ~13 gallons/day for horses. Based on this information the volumes calculate as follows:

$3 \text{ g/day} \times 60 \text{ sheep} \times 153 \text{ days} = (27540 \text{ gallons/year})/325850 \text{ af} = 0.1 \text{ afa}$
 $13 \text{ g/day} \times 18 \text{ horses} \times 153 \text{ days} = (35802 \text{ gallons/year})/325850 \text{ af} = 0.1 \text{ afa}$

$2.3 + 0.2 = 2.5 \text{ afa for stockwater}$

The wildlife volume is recommended as being equal to the stockwater and not additive per department's approach on quantifying wildlife use.

Place of Use Overlap

There are no overlapping rights for the PD or POU

	(°F)	gallons per head per day						
January	36	3.5	5.0	6.0	5.5	7.0	8.5	9.5
February	40	4.0	5.5	6.5	6.0	7.5	9.0	10.0
March	50	4.5	6.0	7.0	6.5	8.0	9.5	10.5
April	64	5.5	7.0	8.5	8.0	9.5	11.0	12.5
May	73	6.0	8.0	9.5	9.0	11.0	13.0	14.5
June	78	6.5	8.5	10.0	9.5	12.0	14.0	16.0
July	90	9.5	13.0	15.0	14.5	17.5	20.5	23.0
August	88	9.0	12.0	14.0	14.0	17.0	20.0	22.5
September	78	6.5	8.5	10.0	9.5	12.0	14.0	16.0
October	68	5.5	7.5	9.0	8.5	10.0	12.0	14.0
November	52	4.5	6.0	7.0	6.5	8.0	10.0	10.5
December	38	4.0	5.0	6.0	6.0	7.0	8.5	9.5

Adapted from GPE-1400, Water Requirements for Beef Cattle.

Table 3. Water consumption estimates for beef cattle based on thermal environment and dry matter intake.

Thermal Environment	Water Requirements
>95°F	8 to 15 pounds of water per pound of DM intake
77 to 95°F	4 to 10 pounds of water per pound of DM intake
59 to 77°F	3 to 5 pounds of water per pound of DM intake (young and lactating animals require 10 to 50% more water.)
29 to 59°F	2 to 4 pounds of water per pound of DM intake
Less than 29°F	2 to 3 pounds water per pound of DM intake (increases of 50 to 100% occur with a rise in ambient temperature following a period of very cold temperatures, e.g. a rise from -5° to 30°F.)

Adapted from Effect of Environment on Nutrient Requirements of Domestic Animals, 1981, NRC.

Table 4. Daily water requirements of sheep.

Class of Animal	Gallons/Day
Rams	2
Dry Ewes	2
Ewes with Lambs	3
5-20 pound Lambs	0.1 to 0.3

Table 7. Water requirements of various classes of horses.

Class	Estimated Water Consumption
	(gal/day)
Maintenance, 1100 lbs, thermoneutral environment	6-8 gallons
Maintenance, 1100 lbs, warm environment	8-15 gallons
Lactating Mare, 1100 lbs	10-15 gallons
Working Horse, 1100 lbs, moderate work	10-12 gallons
Working Horse, 1100 lbs, moderate work, warm environment	12-18 gallons
Weanling, 650 lbs, thermoneutral environment	6-8 gallons

Adapted from Lawrence (1998).