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Attorneys for IDWR

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT
OF THE STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

In Re SRBA	)	Sub-case Nos.: 34-10807, 34-10717
	)	
Case No. 39576	)	IDWR'S BRIEF RE:
	)	ELEMENTS OF SMALL DOMESTIC
_____	)	AND STOCKWATER RIGHTS

DESCRIPTIVE SUMMARY

This document is IDWR's brief regarding the elements of small domestic and stockwater rights submitted pursuant to the order of the special master setting a hearing and briefing schedule on the Standard Form 5 submitted in these subcases.

INTRODUCTORY INFORMATION

This section offers information that IDWR believes will provide useful background for the answers to the special master's specific questions that are provided in a later section. The section generally discusses the distinction between the three measures of the quantity of a water right - diversion rate, annual diversion volume, and annual consumptive use volume - and the manner in which IDWR has recommended these quantities in the director's reports, particularly with respect to small domestic and stockwater rights.

1. Diversion Rate vs. Diversion Volume

The difference between diversion rate and diversion volume is perhaps best conceptualized by the images of a faucet and a bucket. Assume that you turned your garden faucet halfway on, let it run for one minute, and filled one ten-gallon bucket with water. The diversion rate, or the measure of the flow of water from the faucet, is ten gallons per minute. The diversion volume is the amount of water in the bucket, which is ten gallons. If you wanted twenty gallons of water, you would have two options. You could double the diversion rate, by turning the faucet up full blast, and produce the twenty gallons in the same time of one minute. Or, you could keep the same diversion rate, by leaving the faucet turned halfway up, and double the time you leave the faucet running, producing the twenty gallons in two minutes.

IDWR, as well as the corresponding agencies from other states, use the terms "cubic feet per second" (CFS) and/or "acre feet per year" (AFY) to quantify water rights. CFS represents diversion rate, also known as "instantaneous diversion rate." AFY represents annual diversion volume, sometimes simply referred to as "diversion volume" or just "volume."

Both CFS and AFY are measurements of the amount of water diverted. They are similar in the sense that both are a unit of volume (cubic foot and acre foot) per unit of time (second and year). Since both are based on a unit of volume, they could both be considered volume measurements; since both are based on a unit of time, they could both be considered measurements of a rate of flow. There are differences in these measures, however, that are

significant for both the quantification of water rights and the distribution of water pursuant to those water rights.

Historically, water rights have been quantified in terms of diversion rate (CFS) because, historically, water right development occurred primarily from streams, and water right administration occurred primarily to resolve conflicts over the distribution of water from streams. Since the flow of water in the stream will likely change the next month, week, or day, the flow of water must be divided among the water users based on what is available "at that instant." Although a second is not "instantaneous" for some purposes, it is a sufficiently short period of time to be considered instantaneous for purposes of distribution of water from a public source.

Historically, most water rights have not been quantified in terms of annual diversion volume, because historically, quantification by diversion rate has been sufficient to resolve most conflicts over the distribution of water. Since measurement of annual diversion volume requires measurement over a substantial period of time, effective measurement can generally be accomplished only with the use of continuous recording meters, which require significant financial investment. (There are, however, some methods to estimate annual diversion volume instead of measuring it.) As long as quantification by diversion rate was sufficient to resolve conflicts over the distribution of water, there was no incentive for the investment in the cost and effort required to quantify water rights and distribute water by annual diversion volume.

Annual diversion volume can nonetheless be an important measurement, for several reasons. First, water supply in Idaho is dependent on an annual cycle, in which winter

precipitation provides a large share of both surface water flows and ground water recharge. Water demand is also dependent on an annual cycle, since irrigation is the largest consumptive use of water resources.

The need for quantification of water rights by annual diversion volume occurred initially with the development of surface water storage. Generally, surface water storage development sought to address the divergence between the annual water supply cycle and the annual water demand cycle. Since water supply was highest in the spring, but demand was highest in mid to late summer, surface water storage allowed the excess spring flows to be held for use later in the year. Quantification by diversion volume is needed for storage rights, since the amount of water stored is a volume, like the bucket in the illustration above. Quantification by annual diversion volume is needed since storage of water and its subsequent use is based on an annual cycle.

Ground water development has furthered the need to quantify water rights by annual diversion volume. Since ground water exhibits some of the properties of both surface streams (flow) and reservoirs (storage/volume), the modern trend throughout the western states is to quantify ground water rights by both diversion rate (CFS) and annual diversion volume (AFY). In addition, increasing competition for water and increases in the technology available to measure or estimate diversion volume has created greater incentive for the quantification and administration of water rights in terms of annual diversion volume.

Diversion rates can be "converted" to diversion volumes by using simple formulas. For example, one CFS of water will produce about 1.984 acre feet of water in 24 hours. Generally, however, the recommended diversion volume for a water right is less than the full

volume that can be produced by the recommended diversion rate, because most systems are not operated at full capacity all of the time.

For example, a lawn sprinkler system is generally designed with a diversion rate sufficient to irrigate the entire lawn in a few hours. If such a system were operated 24 hours a day every day, it would produce a volume far greater than required to adequately water the lawn. As another example, household plumbing is designed with a diversion rate sufficiently high that showers, washing machines, sinks, etc. can be used at the same time with reasonable water pressure. Domestic uses, however, do not require the full diversion volume that the domestic diversion rate can produce, because people do not run all their showers, washing machines, sinks, etc. for 24 hours every day.

Representative numbers can be used to further illustrate these examples. A typical domestic well is designed to produce a diversion rate of about 18 gallons per minute, or 0.04 CFS. Continuous diversion would produce 25,920 gallons per day, or 28.97 AF per year. But the average diversion volume required for a typical single-family domestic use, including lawn and garden, is about 1100 gallons per day, or 1.2 AFY.

2. Quantification of Diversion Rate

Idaho Code 42-1411(2) provides for the director's report to include a determination of the quantity of water used in CFS (diversion rate), or the quantity of water stored in AFY (annual diversion volume), for each claim to a water right appropriated under state law. Therefore, IDWR's recommendation of each right includes a diversion rate in CFS for each purpose of use as well as a total diversion rate, except for certain types of storage, which are quantified only by annual diversion volume in AFY.

Water rights are limited to the amount of water beneficially used. Idaho Code §42-104, §42-1402. Generally, the diversion rate for a water right is determined by either measuring the actual diversion rate, or by applying standards as to the diversion rate required for a particular type of use, or some combination of both.

For example, a standard diversion rate of 0.02 CFS per acre for irrigation has been set by statute. Idaho Code §§42-202, 42-220. IDWR will recommend this amount if the diversion system is capable of diverting this amount. Where more than 0.02 CFS per acre is claimed, IDWR will examine conveyance losses between the point of diversion and place of use, the method of irrigation, and field conditions to determine if a greater amount is actually used and reasonably necessary due to those conditions.

IDWR also has guidelines for diversion rates for domestic and stockwater uses. The typical diversion rate for a single-family domestic use is 0.04 CFS, which includes irrigation of up to one-half acre of land. This is a typical diversion rate for a single-family domestic use because it is generally sufficient to meet the instantaneous demand of typical residential plumbing systems. A copy of the guidelines for multiple-unit dwellings is attached. These guidelines include up to one-half acre of irrigation per water right; irrigation in excess of one-half acre is recommended in the director's report as a separate purpose of use for irrigation. A copy of the typical diversion rates for various types of stock is also attached, which are based on the daily volume requirements for different types of stock. These guidelines are simply that - guidelines. They represent typical diversion rates for these types of uses; higher diversion rates are common and reasonable for small domestic and stockwater systems. Generally, with respect to small domestic and stockwater claims, IDWR

will recommend the diversion rate claimed where it is consistent with the claimed uses and/or common delivery systems for the claimed uses.

3. Quantification of Diversion Volume

As noted above, water rights are limited to the amount of water beneficially used. Generally, the diversion volume for a water right is determined by either measuring the actual diversion volume, or by applying standards as to the diversion volume required for a particular type of use, or some combination of both. As noted above, however, measurement of diversion volume is more difficult than measurement of diversion rate. Generally, there are few water rights (other than storage rights) for which historic diversion volume measurement data is available.

For example, IDWR has developed standards for annual diversion volume for irrigation for the various regions throughout the state based on climatic and other data, which are expressed in AFY per acre. To determine the annual diversion volume for a water right or a portion of a water right used for irrigation, the total number of irrigated acres is multiplied by the standard. Where a diversion rate of more than 0.02 CFS per acre is recommended (due to conveyance losses, method of irrigation, or field conditions), IDWR increases the per acre diversion volume proportionately.

As noted above, the adjudication statute requires the quantification of rights to store water in terms of diversion volume; the adjudication statute does not otherwise specifically require the quantification of diversion volume of water rights appropriated under state law. Idaho Code §42-1411(2) does authorize the director to determine "such other matters as are necessary to define the water right." Pursuant to this provision, IDWR's recommendations

of water rights appropriated under state law include diversion volumes for certain types of water rights. Diversion volume is generally stated for rights to ground water. An exception is that diversion volume is generally not stated for domestic and stockwater rights unless the right is based on a license or decree that previously determined the diversion volume of the right. Diversion volume is generally not stated for rights to water from surface sources, unless a) the use is for storage, b) diversion volume was previously determined by a decree, license, or order approving an application for change in use, or c) a diversion volume limit is necessary to prevent injury from an accomplished transfer.

IDWR generally does not include diversion volumes on domestic and stockwater rights because the determination of diversion volume for these rights is not reasonably necessary for the distribution of water in accordance with water rights. Since the individual and cumulative impact of such water rights is minimal in comparison to the total water supply, the limited resources available for the regulation of water rights is appropriately spent on the water rights that place substantial demands on the public waters of the state and that give rise to disputes among water users. In addition, quantification of the actual diversion volume for such rights would be time-consuming and costly. For example, although 1.2 AFY is typical for a single-family domestic use, the actual annual diversion volume will vary depending on such minute factors as the number and type of household plumbing fixtures, the number of people in the house, and the usual activities of the occupants. The cost and effort required to determine this element for the multitude of domestic and stockwater claims is unwarranted.

IDWR does, however, include a further description of non-irrigation uses in the director's report. For domestic rights, this includes the number of dwellings; for stockwater rights, it includes the type of stock and number of head. This further description is provided pursuant to Idaho Code §42-1411(2)(f), which provides for IDWR to include the purpose(s) of use of a water right, and 42-1411(2)(j), which further allows IDWR to include such further matters as are necessary to define the water right. The further description of non-irrigation uses defines the water right by describing the purpose of use with sufficient specificity to prevent future enlargements in use. This is particularly true with respect to water rights for which no diversion volume is specified.

For example, as noted above, the standard rate of diversion for a single family dwelling is 0.04 CFS, and the annual diversion volume typically required for a single family dwelling is 1.2 AFY, but continuous diversion of 0.04 CFS would produce an annual diversion volume of 28.97 AFY. If a water right were recommended for one single-family dwelling, with a diversion rate of 0.04 CFS, and no diversion volume, the water right owner could provide water to another home from the same system without increasing the rate of diversion. However, adding the second home would cause the annual diversion volume to approximately double. Specifying that the right is for one home will prevent expansions in use that would increase the annual diversion volume beyond the original appropriation.

Specifying the number of dwellings or the number and type of stock is a more convenient means to limit the diversion volume of domestic and stockwater uses, both for purposes of adjudication of water rights and distribution of water. It is much easier to

determine the number of dwellings and the number and type of stock than to try to measure or estimate diversion volume for these uses.

To avoid the appearance that a stated diversion rate without a stated diversion volume entitles the water right owner to the full volume the diversion rate can produce, IDWR included general provisions in the director's reports which provide that the annual diversion volume of a right for domestic and/or stockwater purposes is limited to the volume actually diverted and beneficially used.

The general provisions also limit domestic and stockwater uses meeting the definitions in §42-111 to the volumes stated in the statute. It should be noted, however, that the diversion volume limits in section 42-111 are a cap on the size of water rights that meet the definition; they do not define the actual diversion volume of rights within the statutory definition of domestic. To illustrate, a typical single family dwelling uses an average of 1100 gallons of water per day, for a total annual diversion volume of 1.2 AFY. The statute sets an outside limit of 13,000 gallons a day, which is equal to a total annual diversion volume of 14.6 AFY, or more than 12 times the typical diversion volume needed -- and therefore beneficially used -- for a single family dwelling. This is an additional reason why the director's reports include a general provision expressly limiting domestic and/or stockwater rights to the actual diversion volume.

4. Effect of Idaho Code §42-111 on Recommendation of Water Right Claims

Section 42-111 defines domestic uses for certain purposes, and limits the definition to small domestic water rights. For example, a smaller fee is required for applications for permits for small domestic rights pursuant to Idaho Code §42-221, a permit is not required

for new appropriations of ground water for small domestic uses pursuant to Idaho Code §42-227, etc. It also defines small domestic rights for purposes of the adjudication statute, which allows small domestic rights to be excluded from the adjudication in an order commencing the adjudication, and which provides a smaller claim filing fee for small domestic rights.

Section 42-111 does not define "domestic" for all purposes; particularly, it does not define "domestic" for purposes of the director's recommendation of the purpose of use of water rights. Rights used for purposes commonly referred to as domestic can include both small uses that meet the definition of the statute or larger uses, such as some multiple-unit dwellings, that do not. Therefore, the director's report recommends water rights used for purposes commonly referred to as domestic with a purpose of use of "domestic", whether or not they meet the statutory definition. That is why the director's report includes a general provision that defines domestic for purposes of the report, and why the report includes three definitions: a water right recommended with a purpose of use as domestic could be a small domestic use meeting the paragraph (a) definition in the statute, a small domestic use meeting the paragraph (b) definition, or a large domestic use outside the meaning of 42-111.

One problem IDWR has wrestled with is how to determine whether a particular claim is within the statutory definition of domestic, when §42-111 provides a daily diversion volume, but the adjudication statute requires both the claim and the report to state a diversion rate in CFS. Idaho Code §§42-1409(2)(c), 42-1411(2)(c). Continuous diversion at a rate of 0.02 CFS will produce 13,000 gallons in 24 hours. But, as noted above, domestic diversion systems are designed to produce the volume of water needed in a reasonable period of time, with the result that a reasonable domestic use may have a higher diversion rate without

exceeding the statutory daily diversion volume. IDWR has addressed this problem by looking to standards for the design of small diversion systems.

Generally, small water systems are designed with a maximum rate of flow which can produce the daily volume requirements in a two hour period. The diversion rate that would produce 13,000 gallons in a two-hour period is 0.24 CFS. Therefore, a diversion rate of up to 0.24 cfs can be within the definition of a "de minimus" right pursuant to Idaho Code §42-111(a).

Sample calculation:

$$\frac{13,000 \text{ gallons}}{2 \text{ hrs} \times 60 \text{ min/hr} \times 450 \text{ gpm/cfs}} = 0.24 \text{ cfs}$$

As noted above, a daily diversion volume of 13,000 gallons can be converted to a diversion rate of 0.02 CFS, if you assume 24-hour continuous diversion. This is an inappropriate assumption, given the fact that small domestic and stockwater systems generally are not designed and operated that way. The inappropriateness of this assumption is further demonstrated by the definition of domestic use found in paragraph (b) of §42-111.

Pursuant to §42-111, a use can qualify as domestic by meeting either the paragraph (a) definition or the paragraph (b) definition. Under paragraph (b), any type of use can qualify as domestic if the total use does not exceed a diversion rate of 0.04 CFS (four-hundredths) and a daily diversion volume of 2500 gallons. This section clearly acknowledges that such systems are not designed for continuous diversion of the amount necessary to produce 2500 gallons, since the continuous diversion rate that will produce 2500 gallons is

less than .004 CFS (four thousandths). Stated another way, the statutory maximum diversion rate of 0.04 CFS will produce about 26,000 gallons in 24 hours.

As noted above, section 42-111 defines domestic use only for certain purposes; with respect to the adjudication statute, it defines domestic use for purposes of identifying claims for which a smaller filing fee is due, or which may be excluded from the adjudication by the order commencing the adjudication. For these purposes, it was necessary for IDWR to develop a readily applicable conversion formula. A readily applicable formula requires some assumption as to the period of diversion. As shown above, assuming continuous 24-hour diversion is not reasonable, and is clearly not contemplated by the statute. A two-hour diversion period is reasonable, since this is how small water systems are typically designed.

5. Consumptive Use

Consumptive use is defined by statute as "the amount of water that does not remain in the water system after use or is not returned to the water system through return flows or seepage, whether or not treatment for purposes of maintaining water quality is required before the water may be returned to the water system." Idaho Code §42-1401A(2). That section further provides that for irrigation rights, consumptive use "shall be based upon the most water consumptive crop that can be grown in the area during the period of the year when water is used for irrigation."

The manner in which annual volume of consumptive use is calculated varies depending on the nature of the use. The annual volume of consumptive use always consists of a portion of the total diversion volume for a right, but the size of that portion can vary from an amount too small to quantify (generally referred to as non-consumptive uses) to at or

near 100% of the diversion volume (generally referred to as fully consumptive uses). For some types of uses, standards have been developed; for others a case-by-case determination is necessary. And in most cases, consumptive use cannot be measured, but can only be estimated.

For example, consumptive use could be measured for some industrial processes where water is diverted from, used, and returned to the stream in a closed system. By installing and maintaining meters at both the point of diversion and the point of return, the volume of water removed from the system and the volume returned to the system could be measured; the difference would be the consumptive use. If the use were for a canning facility that added water to the product, the consumptive use would be unique to that process. For irrigation uses, on the other hand, the primary component of consumptive use is evapotranspiration by the growing crops. IDWR has developed standards for annual consumptive use volume for the various regions throughout the state based on climatic and other data, which are expressed in AFY. To determine the annual volume of consumptive use for a water right or a portion of a water right used for irrigation, the total number of irrigated acres is multiplied by the standard.

Idaho Code §42-1411 provides for IDWR to include a recommendation as to the annual volume of consumptive use for each claim to a water right appropriated under state law. It does not require that annual volume be quantified in AF. For domestic and stockwater rights, an annual volume in AF is not stated in the individual water right. Instead, the director's reports contain a general provision which provides that where

consumptive use is not stated for a water right or a portion of a water right, the consumptive use is so small that it is deemed to be "de minimis".

Black's Law Dictionary defines the de minimus doctrine as, "The law does not care for, or take notice of, very small or trifling matters. The law does not concern itself about trifles." "De minimis" is an accurate quantification of consumptive use of domestic and stockwater rights because, although it technically is greater than zero, it is so small that it is for all practical purposes non-consumptive. "De minimis" is a sufficient quantification of the annual volume of consumptive use for domestic and stockwater rights for the following reasons.

a) Idaho Code §42-1411 requires a recommendation as to annual volume of consumptive use, but does not require that it be stated in AF.

b) The Idaho Supreme Court has held that a decree confirming an appropriation of the entire flow of a source, without stating a diversion rate in CFS, was a sufficient quantification of the water right, since quantification in CFS was necessary only to settle the rights of various appropriators with rights to water from the same source. *Village of Peck v. Denison*, 92 Idaho 747, 750, 450 P.2d 310 (1969); cf. *Avondale Irrigation Dist. v. North Idaho Properties, Inc.*, 99 Idaho 30, 41 n. 9, 577 P.2d 9 (1978). Thus, the court has held that a numeric quantification is not required where it serves no practical purpose.

c) The primary purpose of the adjudication is to determine water rights so that water can be properly distributed in accordance with water rights. Annual volume of consumptive use is not a measure of the amount of water diverted, and is therefore not necessary for distribution of water from public water sources.

d) Consumptive use is included as a rebuttable presumption in a decree only for the purpose of changes in use pursuant to section 42-222, Idaho Code. This provision recognizes that generally, consumptive use can at best be estimated, and in future transfer proceedings, improvements in technology may allow a more accurate determination.

e) Consumptive use is related to the concept of injury in that, generally, a change in use that causes a significant increase in the annual volume of consumptive use will result in injury to another water right, and changes in use are permissible only where they do not result in injury to other water rights. The injury, however, must be "real" and "substantial". *Beecher v. Cassia Creek Irrig. Co.*, 66 Idaho 1, 8, 154 P.2d 507 (1954). In most instances, the consumptive use of domestic and stockwater right will be insignificant; instances where the consumptive use may be significant can more appropriately be determined on a case-by-case basis at the time of the transfer proceeding.

f) Calculating consumptive use for the tens of thousands of claims including every conceivable variety of domestic and stockwater rights in the SRBA would be very time-consuming and costly. This effort is unwarranted given the limited impact of such rights and the limited purpose for which consumptive use is to be determined.

SPECIFIC ANSWERS

Question 1

To adequately and accurately describe the quantity of a domestic and/or stockwater right, the report and decree of the water right should include the diversion rate in CFS and language that limits annual diversion volume to actual diversion volume (as stated in the director's report). In addition, non-irrigation uses should be described by stating the number

of dwellings and the number and type of stock, although this information might more appropriately be listed under the purpose of use element. Inclusion of general language (as stated in the director's report) that limits rights subject to Idaho Code §42-111 to the diversion volumes set forth in the statute is also appropriate.

Question 2

Continuous diversion of 0.02 cfs will produce 13,000 gallons of water in 24 hours. Generally, however, small water systems are designed with a maximum rate of flow which can produce the daily volume requirements in a two hour period. Continuous diversion of 0.24 cfs will produce 13,000 gallons in a two-hour period.

Question 3

Description of diversion rate in CFS alone does not adequately quantify annual diversion volume of a small domestic and stockwater right, nor does it limit the time during which water can be diverted. To adequately and accurately describe the quantity of a small domestic and stockwater right, the report and decree should also include language that limits annual diversion volume to actual diversion volume (as stated in the general provisions of the director's report). In addition, non-irrigation uses should be described by stating the number of dwellings and the number and type of stock, although this information might more appropriately be listed under the purpose of use element. Inclusion of general language (as stated in the director's report) that limits rights subject to Idaho Code §42-111 to the diversion volumes set forth in the statute is also appropriate.

Question 4

The diversion rate for right no. 34-10807 is 0.19 CFS, and for right no. 34-10717 is 0.23 CFS. It is expressed in cubic feet per second. 0.19 CFS was recommended for right no. 34-10807 because this was the amount claimed and it is consistent with IDWR guidelines for the use claimed. 0.23 CFS was recommended for stockwater for right no. 34-10717 because this was the amount claimed and it is consistent with IDWR guidelines for the use claimed. 0.01 CFS of the 0.23 CFS is also recommended for domestic use. 0.01 CFS was recommended because the use for domestic purposes consists only of drawing water by bucket from the source. The water right is quantified by diversion rate in CFS because the adjudication statute provides that rights for purposes other than storage be quantified in CFS, which is a measure of diversion rate. Description of diversion rate in CFS is appropriate to accurately and adequately describe a domestic and/or stockwater right.

Question 5

An annual diversion volume in AF is not stated for these rights. Annual diversion volume is limited by the language in the general provisions limiting annual diversion volume to actual volume, and by the further description of non-irrigation uses. Annual diversion volume in AF is not necessary to adequately and accurately describe a domestic and/or stockwater right; the language in the general provisions and the further description of non-irrigation uses is appropriate to adequately and accurately describe a small domestic and/or stock water right.

Question 6

The term "instantaneous diversion rate" is generally used interchangeably with the term "diversion rate." Description of diversion rate in CFS is appropriate to accurately and adequately describe a domestic and/or stockwater right.

Question 7

The definition of consumptive use is set forth at Idaho Code §42-1401A(2). This element is calculated differently for different types of water rights. Generally, consumptive use should be reported and decreed in acre-feet per year. For domestic and stockwater rights, consumptive use should be reported and decreed as "de minimis." The element of consumptive use is related to the concept of injury in that a significant increase in consumptive use from a change in use will generally result in injury to other water rights.

Question 8

Generally, diversion quantities and annual volume of consumptive use are not sufficiently related that consumptive use volume in AFY can be determined from diversion quantity alone.

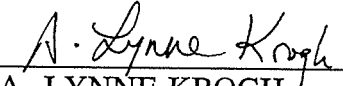
Question 9

The report and decree should further describe non-irrigation uses for small domestic and stockwater rights by number of households and number and type of stock. It would seem that this information would most appropriately be included under purpose of use, since it further describes the uses made of the water.

Question 10

When the term "de minimis" is used to describe the annual volume of consumptive use it means that the amount is not significant. IDWR applies this quantification to a class of uses, which class is defined by the purpose of use. IDWR does not identify the class by setting a maximum consumptive use volume in AFY, because determining whether a given use is within the class would require a determination of consumptive use volume in AFY for each water right. This would defeat the purpose, which is to identify classes of claims for which the numeric determination is unwarranted.

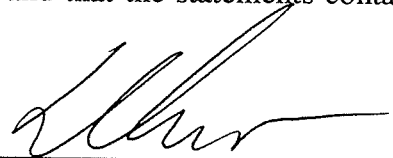
DATED this 13th day of March, 1995.


A. LYNNE KROGH
Deputy Attorney General

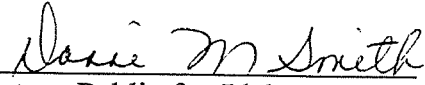
State of Idaho)
) ss.
County of ADA)

David B. Shaw, being first duly sworn, upon oath, deposes and says:

That I am the Adjudication Bureau Chief for IDWR, and that I have read the foregoing memorandum, know its contents, and that the statements contained therein are true to the best of my knowledge and belief.


DAVID B. SHAW
Adjudication Bureau Chief

Subscribed and sworn to before me this 13th day of March, 1994.


Notary Public for Idaho
Residing at: BOISE IDAHO
My commission expires: 12/5/2000

Certificate of Mailing

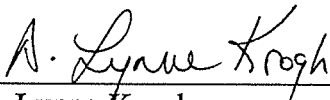
I certify that on the 13th day of March, 1995, I mailed copies of the foregoing document, including all attachments, with sufficient first-class postage, to the following:

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A. Lynne Krogh

APPENDIX IV

TYPICAL AMOUNTS OF WATER FOR TYPICAL USES OF WATER

DOMESTIC

The following table shows diversion rates based on number of households served. The figure for one household includes domestic stockwater and irrigation of up to 1/2 acre of land. The figures for multiple households do not, and any water for irrigation or stock watering in connection therewith should be claimed in addition to the domestic use. The following table was prepared based upon the graph set forth at the end of this appendix.

Households Served	C.F.S.
1	0.04
2	0.06
3	0.08
4	0.10
5-6	0.11
7	0.12
8	0.13
9	0.14
10	0.15
15	0.18
20	0.20
30	0.25
40	0.30
50	0.33

IRRIGATION

0.02 c.f.s. per acre (See Idaho Code § 42-202.)

APPENDIX IV (cont.)

STOCK WATERING

The following table shows use in gallons per day.

Type	Gallons per day per animal*
Cattle (other than dairy)	12
Dairy cattle	35
Horse	12
Mule	12
Hog	4
Goat	2
Sheep	2
Chickens (per 100)	5-10
Turkeys (per 100)	10-18

The following table shows the diversion rate for cattle (other than dairy) and dairy cattle.

No. of Head	C.F.S. Cattle	C.F.S. Dairy Cattle
0 - 25	0.02	0.02
26 - 50	0.02	0.04
51 - 100	0.03	0.07
101 - 200	0.05	0.13
201 - 300	0.07	0.20
301 - 400	0.09	0.26
401 - 500	0.12	0.33
501 - 600	0.14	0.39
601 - 700	0.16	0.46
701 - 800	0.19	0.52
801 - 900	0.20	0.58
901 - 1000	0.23	0.65

APPENDIX IV (cont.)

OTHER USES	Gallons per day*
Camps:	
Construction, semipermanent (per worker)	50
Day, with no meals served (per camper)	15
Luxury (per camper)	100-150
Resorts, day and night, with limited plumbing (per camper)	50
Tourist with central bath and toilet facilities (per person)	35
Picnic grounds:	
With bathhouses, showers and flush toilets (per person)	20
With toilet facilities only	10
Parks:	
Overnight with flush toilets (per camper)	25
Trailers with individual bath units, no sewer connection (per trailer)	25
Trailers with individual bath units, connected to sewer (per person)	50
Highway rest area (per person)	5
Hotel - with private bath (two persons per room)	60
without private bath (per person)	50
Motel - with bath and kitchenette (per bed space)	50
with bath (per bed space)	40
Boardinghouse (per resident)	50
- additional use for nonresident boarders (per person)	10
Roominghouse (per resident)	60
Restaurants:	
With toilet facilities (per patron)	7-10
Without toilet facilities (per patron)	2 1/2-3
With bar/lounge (additional quantity per patron)	2
Schools:	
Boarding (per student)	75-100
Day with cafeteria, gym and showers (per student)	25
Day with cafeteria, without gym and showers (per student)	20
Day without cafeteria, gym or showers (per student)	15
Hospitals (per bed)	250-400
Other Institutions (per person)	75-125
Airports (per passenger)	3-5
Churches (per person)	5
Laundries, self-service (per customer)	50
Service stations (per vehicle)	10
Stores (per restroom)	400
Swimming pools (per swimmer)	10
Theatres - drive in (per car space)	5
- movie (per seat)	5

APPENDIX IV (cont.)

*CONVERSION OF GALLONS PER DAY TO C.F.S.

Generally, small water systems are designed with a maximum rate of flow which can produce the full peak daily requirement in two hour times. To convert gallons used per day to c.f.s. use the formula in the following example:

1,000 head of cattle, at 12 gallons per day per head,
use 12,000 gallons per day.

The rate of diversion necessary to produce 12,000
gallons in a 2 hour period is:

$$\frac{12,000 \text{ gallons}}{2 \text{ hrs} \times 60 \text{ min/hr} \times 450 \text{ gpm/cfs}} = 0.23 \text{ cfs}$$

APPENDIX IV

MAXIMUM INSTANTANEOUS WATER REQUIREMENTS FOR DOMESTIC USE

