

TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Range No. 26

Bozeman, Montana
April 27, 1979

Re: Livestock Water

By: Joe Zacek, Range Conservationist, SCS

The correct location of stockwater can be used to provide distribution of grazing from areas of over use to areas of little or no grazing use. Adequate clean and dependable water supplies are essential for livestock health and good grazing management. Stockwater, other than from running streams and natural ponds and lakes, is supplied by farm ponds, spring developments, and wells. In some locations, pipelines are used to transport pumped or gravity water to tanks at strategic locations. Water may be hauled to tanks in a short-term situation.

Some things to consider when planning a stockwater development are:

1. What condition is the range in? Does it need more grazing or less?
2. Will the increase in production justify the cost of additional water development?
3. How will the stockwater development fit into the management system?
4. Can livestock get to the water easily? Avoid, if possible, developing stockwater along boundary fences where strange bulls may tear the fence down by fighting through it.
5. What kind of development fits the situation best?

A "rule of thumb" guide for spacing livestock water facilities is:

<u>Type of Terrain</u>	<u>Travel Distance (feed to water)</u>
Rough	1/4 to 1/2 mile
Rolling	3/8 to 3/4 mile
Level	3/4 to 1 mile

The general stock water requirements per day are:

Cows	10 to 16* gallons
Sheep and goats	1/2 to 2 gallons
Horses	10 to 12 gallons
Elk	2 to 3 gallons
Deer	1/2 to 1 gallon
Antelope	1/2 to 1 gallon

* Cows with calves.

The following tables are useful in planning stockwater developments.

Utilization of Range in Relation to Distance from Stockwater

TABLE I

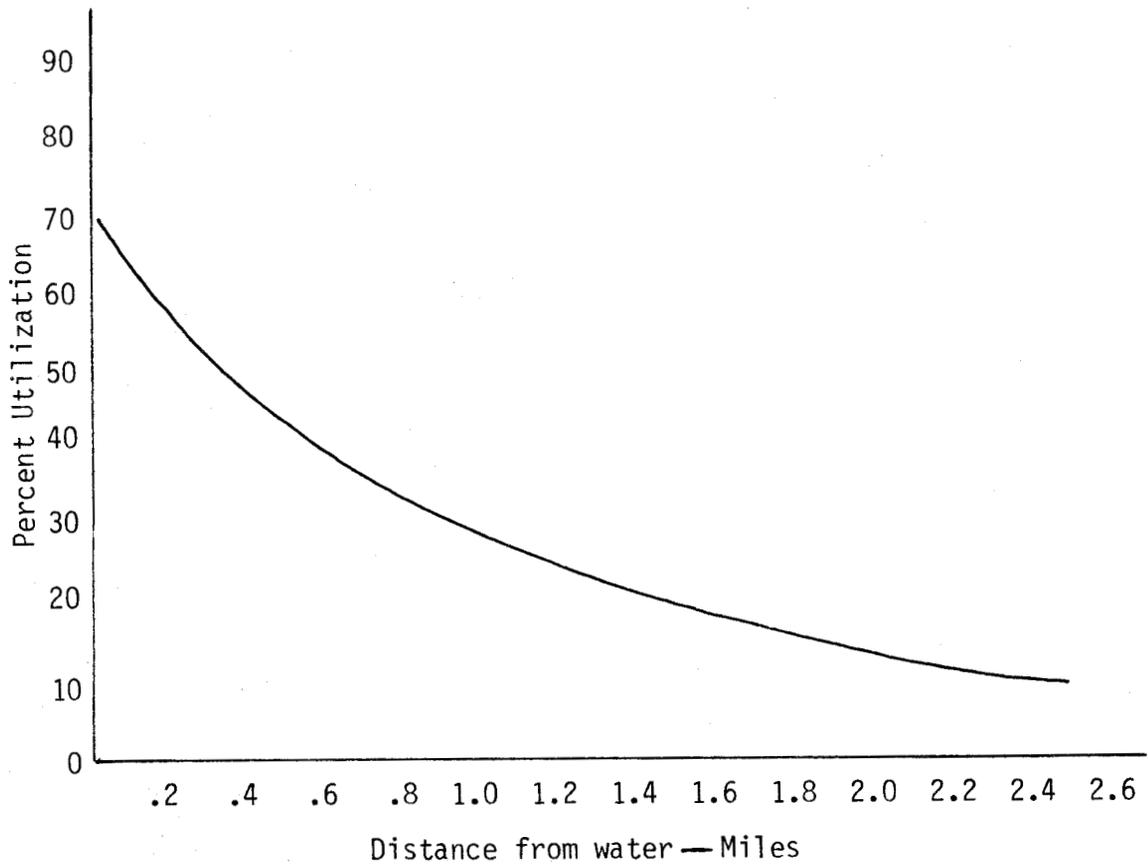


TABLE II. DAILY WATER REQUIREMENTS

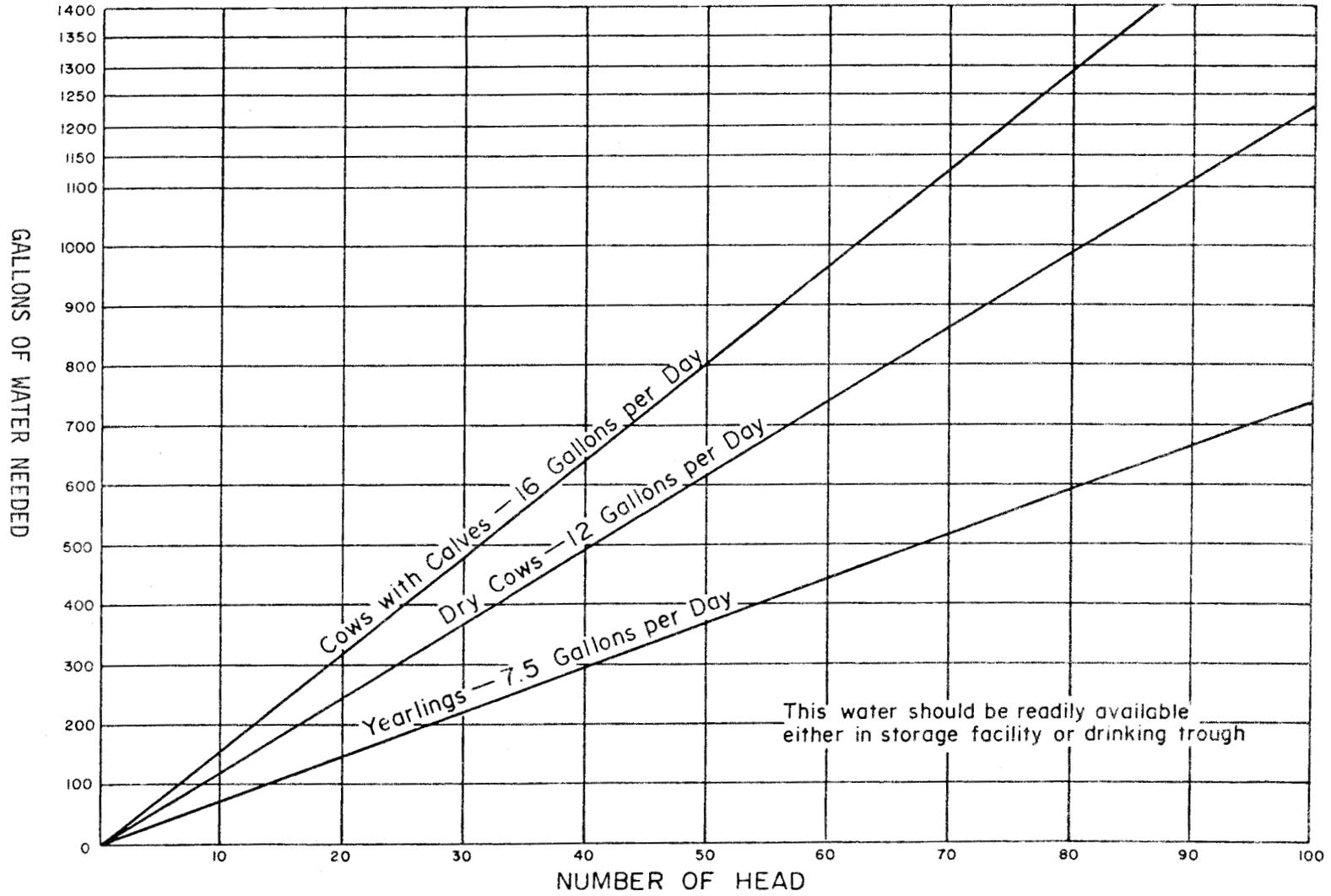
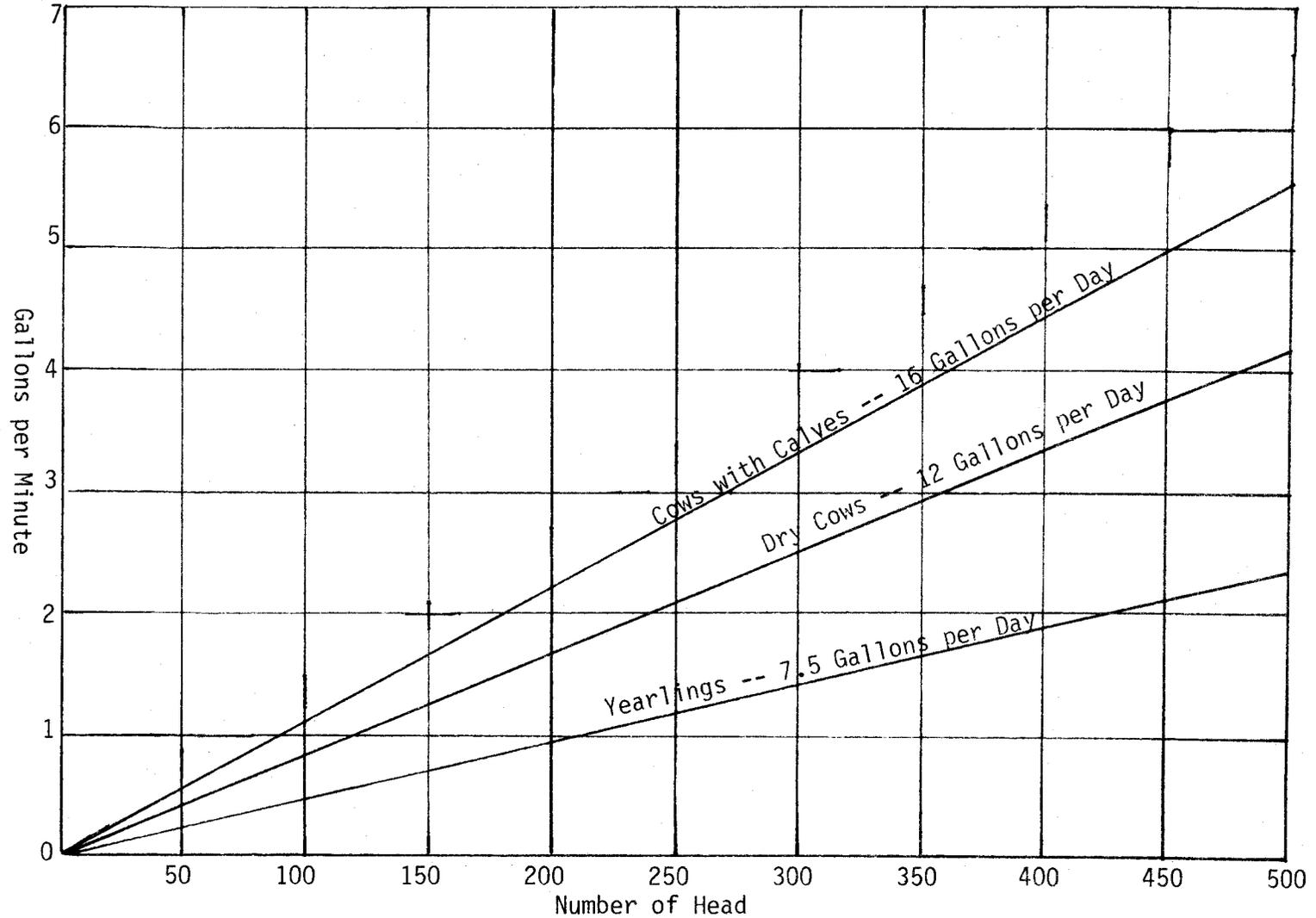


TABLE III. Maximum Number of Cattle That Can Be Watered From Water Sources Yielding One to Seven Gallons Per Minute. Adequate Water Storage Must Be Provided To Accumulate Water For Well or The Desired Number of Head.
Spring Flow



The following items should also be considered when planning livestock watering facilities.

1. When the source is other than a pond or a stream, a seven-day reserve supply should be provided unless the facility is inspected on a daily basis. This means that you should have in the trough or the trough and storage facility combined, water equal to seven (days) times the number of head, times the number of gallons consumed per day (example: 7 days x 74 cows x 16 gallons (lactating cows) per day = 8,288 gallons).
2. Storage facilities (tanks and troughs) at watering locations should be of adequate size to provide enough water in a two-hour period for all animals grazing a given pasture.
3. Where drinking troughs are small (troughs holding enough water for 25 percent or less of the total number that water at the facility), the supply line from storage facility to drinking trough should be able to fill the trough at the rate of about three gallons per minute times the number of cows which can drink at the trough at one time. For example: 10 cows drinking at one time multiplied by 3 gallons per minute equals an inflow rate of 30 gallons per minute.
4. Water storage within spring developments is not advisable. It is best to pipe to off-site storage. The pipe from spring to storage should exceed the capacity at which the spring is producing. Water held in the spring box seeps out. Where it is attempted to hold large amounts of water in the spring box, the spring may be lost due to back pressure.
5. All troughs should have at least a 1½-inch drain plug to facilitate clearing.
6. Cover float valves on drinking troughs to protect from animals and vandalism.
7. Guard rails on wide troughs may be needed to keep livestock out. This will also keep smaller animals from being pushed into the troughs.
8. A ramp on the inside of the troughs will improve its use for small animals such as game birds, rabbits, etc. The ramp may be made by stacking rocks against the inside wall of the trough, or it may be made of plank, steel, or concrete.


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ACTING: State Conservationist

File: Reference Material — RANGE