

TUSHAR ALLOTMENT COLLABORATION

Ten Mile Water developments

By: Douglas Sorensen, Rangeland Management Specialist

The present Ten Mile cattle allotment was historically a sheep allotment until the 1961 grazing season. On September 9, 1960 the Forest Service and Martel Anderson entered into a cooperative agreement in which the Forest Service would construct several fences (5 miles total) and five water developments; the permittee would be allowed to convert from sheep use to cattle and also would assume full maintenance responsibility for the listed improvements. In addition, a portion of the allotment on the Beaver County side would be closed to grazing and 1000 acres of re-seeding accomplished in the Upper and Lower City Creek pastures.

As with the fences on the Ten Mile allotment, the Forest and permittee agreed to construct 5 water developments as part of the conversion from sheep to cattle. Obviously these developments have been in place almost 50 years and are now in need of either major maintenance or replacement. Any new construction should use the best materials and design to insure longevity from the investment. The following priority listing may be modified depending on need, availability of volunteer labor or other conditions.

Water developments are required on the allotment to provide storage and insure adequate quantities of water are available for livestock. Additionally, water developments provide an improved watering site that can sustain the impacts of providing water for a large numbers of cattle. Allowing cattle to water directly at the spring source causes excessive resource damage. Springs are also developed in order to pipe the water to another watering location to improve distribution. There was a critical need for all of these developments when they were first installed. And they were installed at a large expense of both money and labor. In approximately 1976 all structural range improvements were assigned to those permittees using the various developments.

Most water developments on the District are in need of work ranging from major repair to total rebuilding. At this point we should be looking at a new construction standard that will insure long term durability for newly constructed developments. Some of the problems with the old developments are failure to adequately protect the spring source; poor placement or not using or maintaining an adequate float valve; inadequate winterizing (pipeline draining) and subsequent freezing; inadequate or plugged overflow piping and unstable or poorly compacted trough site and subsequent trough settling.

Spring Source Protection

Each spring source needs improved protection. The new standard should be an adequately sized enclosure that will effectively prevent livestock from entering the water source. As a minimum, the enclosure should be at least 40 ft X 40 ft. The

actual spring site will help determine the minimum enclosure size. The Enclosure should take in the entire source area. In some cases, such as Cougar Spring, the excluded area may be one acre or more in size.

The enclosure also must be built with extremely durable materials capable of withstanding the extra pressure exerted by livestock at these types of sites. It is recommended the enclosures be constructed of at least a post-pole fence with 3 poles high and posts no more than 10 feet apart. Optionally, use a log-worm fence which is at least 48" to 60" high. Avoid using barb-wire or net-wire since this type fence will not stand up to the increased pressure from livestock.

The spring source itself should be developed or re-built with new materials that are dependable and will withstand the elements. The collection pipe should be embedded in clean gravel with the perforated pipe covered in a geo-fabric or filter cloth that will allow water to easily pass through but will filter out silts and clays. The collection box should be galvanized steel, concrete or, preferably, high-density polyethylene (HDPE). The collection box should have a shut-off valve and air vent installed at the pipeline outlet for winterizing. To conserve water at the spring source, the trough must have a reliable and durable float valve.

The pipeline from the collection box to the trough must be at least 1 ¼" polyethylene, and preferred 160 psi. The pipe should be buried at least 12" deep with adequate markers to help identify the line location. Install a marker post at every road and trail crossing.

Today there are several new products available that may improve how water troughs are installed and will insure a longer period of use. It seems the key to long-term usability is first insuring the trough is placed on well drained, well-armored material such as coarse (¾" minus) gravel that is contained in a stable matrix such as GeoWeb[®], GeoBlock[®] or EnviroGrid[®], or use pre-cast concrete bases such as "hog-slats" used at the Circle 4 hog farm. The addition of a stable base like the hog-slats or Geo-grid will adequately armor the site and prevent the chronic mud hole and pedestaling problem. It may even be beneficial to install a 4" perforated pipe under the geo-grid to help drain the trough site and further reduce wet soil conditions.

Livestock also obtain a significant volume of water from both City Creek and Ten Mile Creek. Currently Ten Mile creek has degraded segments directly related to livestock use. Any water development should assist in providing water away from these live water sources.

Priority #1. Bumble Bee Spring 03-3529. This development has deteriorated to the point nothing is left except a clogged culvert in the road. Initially, the spring source must be protected with an adequate enclosure and the culvert cleaned

out or replaced. The spring may be developed with a suitable collection box and outlet pipeline to a new trough a suitable distance away north and east from the spring and road.

Priority #2. Cougar Spring Development, pipeline and trough, 039910, 039911, 033413, 033414 & 3414A. Cougar Spring was developed in the late 1960's and additional work done in 1973. Generally, the spring is still in good shape but needs maintenance, such as installing new box covers, filters and replacing fill around the concrete boxes. It was also discussed to re-work the short span of fence that prevents livestock from gaining access to the spring itself. A new trough needs to be installed a short distance from the spring enclosure that will allow cattle to water in both pastures. This will encourage livestock to water at a higher location away from the existing pond and trough.

Priority #3. Order Spring, 033465. Order spring originates in a small aspen stand. The original 1973 development included a small spring box and pipeline that fed a trough a short distance away. When constructed, both the spring and trough had a log-worm enclosure built around them. This improvement needs extensive work to make it fully functional. The spring box must be repaired and an adequate filter device installed; the pipeline must be evaluated for effectiveness and may need replacing; the trough must be re-located away from the aspen stand to a more suitable area. The pipeline may need to be extended up to a quarter mile away.

Priority #4. Price Spring 033447. Price Spring, like Order, originates in a small aspen stand. The original 1977 development was improved by the permittee several years ago, but additional work should be done. For this development the spring enclosure should be enlarged with a good log-worm fence and the trough should be re-located away from the aspen stand.

Priority #5. Ten Mile pasture, Green Ridge, Ten Mile bench, Anderson, North fork Ten Mile. Little information is known about the Ten Mile pasture developments. Several of these were installed in the early 1970's and it must be assumed the condition has deteriorated. The permittee will need to be consulted during the AMP development to set priorities for these water developments.