

NATURAL RESOURCES CONSERVATION SERVICE CONSERVATION PRACTICE STANDARD

WATERING FACILITY

(No.)
CODE 614

DEFINITION

A permanent or portable device to provide an adequate amount and quality of drinking water for livestock and or wildlife.

PURPOSE

To provide access to drinking water for livestock and/or wildlife in order to:

- Meet daily water requirements
- Improve animal distribution

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all land uses where there is a need for new or improved watering facilities for livestock and/or wildlife.

CRITERIA

General Criteria Applicable To All Purposes

Consistent with Governor's Executive Order 2011-5, within sage-grouse core areas, this practice is not applicable on sage-grouse leks.

On sites within 0.6 miles of sage-grouse leks and within core areas, construction activities associated with this practice will not be conducted from March 15 to June 30.

Variations may be granted on a case by case basis with Wyoming Game and Fish concurrence.

Design watering facilities with adequate capacity and supply to meet the daily water requirements of the livestock and/or wildlife planned to use the facility. Include the storage volume necessary to provide water between periods of replenishment. Refer to the Wyoming Livestock Water and Pipeline Handbook and the National Range and Pasture Handbook for guidance on livestock

water quantity and quality requirements. For wildlife facilities, base water quantity and quality requirements on targeted species needs.

The storage capacity of the water facility shall be adequate to provide emergency storage to the watering facility during times when water cannot be delivered. This storage may be supplied by gravity flow from an external storage tank or reservoir or within the facility itself. The storage amount should be based on type of water and power supply, location and planned operation. Animal water requirements and minimum storage volumes shall meet the requirement in Table 2.1 and Table 2.5, respectively, of the Wyoming Livestock Water and Pipeline Handbook.

Locate facilities to promote even grazing distribution and reduce grazing pressure on sensitive areas.

Monitor disturbed soil areas to enable early detection and control of invasive plants.

Design the watering facility to provide adequate access to the animals planned to use the facility. Required access area shall meet the requirements as specified in Section 2.5 of the Wyoming Livestock Water and Pipeline Handbook. Escape ramps for birds and small animals shall be installed in all tanks and troughs, except that escape ramps are not required for tanks or troughs located in livestock feedlots or confined livestock feeding areas.

Include design elements to meet the specific needs of the animals that are planned to use the watering facility, both livestock and wildlife.

Protect areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns. The site shall be well drained; if not, drainage measures shall be provided. Areas adjacent to

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact your Natural Resources Conservation Service [State Office](#), or download it from the [electronic Field Office Technical Guide](#).

NRCS, WY
January 2013

the trough or tank that will be trampled by livestock shall be graveled, paved, or otherwise treated to provide firm footing and reduce erosion. Use criteria in WY-NRCS Conservation Practice Standard 561, Heavy Use Area Protection to design the protection.

When water facilities are installed adjacent to wells the water facilities shall be located down slope to ensure positive drainage away from the well and all water facilities shall be located a minimum of 8 feet from the well head.

Install permanent watering facilities on a firm, level, foundation that will not settle differentially. Examples of suitable foundation materials are bedrock, compacted gravel and stable, well compacted soils.

Buried tanks shall follow appropriate NRCS design procedures and shall withstand all earth and vehicles loads anticipated for the site.

Design and install watering facilities to prevent overturning by wind and animals.

Design watering facilities and all valves and controls to withstand or be protected from damage by livestock, wildlife, freezing and ice damage.

Where water is supplied continuously or under pressure to the watering facility, use automatic water level controls to control the flow of water to the facility and to prevent unnecessary overflows.

An overflow shall be provided for all water facilities. Overflows shall be piped to a stable or suitable point of release.

When a roof is placed over the trough to provide shade, the roof shall be designed for appropriate snow and wind loads and shall be durable to withstand anticipated livestock and wildlife activities.

Construct watering facilities from durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation. Common construction materials are reinforced concrete, steel, fiberglass, rubber tire, rubber tire bladder and plastic. Follow appropriate NRCS design procedures for the material being used or industry standards where NRCS standards do not exist.

Use the following guidelines for materials commonly used for watering facilities.

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|------------------|-------------------------------|
| Concrete | 3000 psi compressive strength |
| Galvanized Steel | 20 gauge thickness |
| Plastic | Ultraviolet resistance |
| Fiberglass | Ultraviolet resistance |

Use the criteria in NRCS Conservation Practice Standard 516, Pipeline to design piping associated with the watering facility. Include backflow prevention devices on facilities connected to wells, domestic or municipal water systems.

CONSIDERATIONS

Design fences associated with the watering facilities to allow safe access and exit for area wildlife species. To protect bats and other species that access water by skimming across the surface, fencing material should not extend across the water surface. If fencing across the water is necessary it should be made highly visible by avoiding the use of single wire fences and using fencing materials such as woven wire or by adding streamers or coverings on the fence.

For watering facilities that will be accessible to wildlife, give consideration to the effects the location of the facility will have on target and non-target species. Also consider the effect of introducing a new water source within the ecosystem in the vicinity of the facility. This should include things such as the concentration of grazing, predation, entrapment, drowning, disease transmission, hunting and expansion of the wildlife populations beyond the carrying capacity of available habitat.

Avoid locating practice in or near important fish or wildlife habitat. If unavoidable, consult NRCS or Wyoming Game and Fish biologist to design practice to minimize fragmentation impacts.

Watering facilities should be kept full during the frost-free seasons for resident wildlife and to discourage mosquito reproduction in areas with known West Nile disease incidence.

Watering facilities often collect debris and algae and should be cleaned on a regular basis. Consider increasing the pipe sizes for inlets and outlets to reduce the chances of clogging. Maintenance of a watering facility can be made easier by providing a method to completely drain the watering facility.

Steep slopes leading to watering facilities can cause erosion problems from overuse by animals as well as problems with piping and valves from excess pressure. Choose the location of watering facilities to minimize these problems from steep topography.

PLANS AND SPECIFICATIONS

Plans and specifications for watering facilities shall provide the information necessary to install the facility. As a minimum this shall include the following:

- A map or aerial photograph showing the location of the facility
- Detail drawings showing the facility, necessary appurtenances (such as foundations, pipes and valves) and stabilization of any areas disturbed by the installation of the facility
- Construction specifications describing the installation of the facility

OPERATION AND MAINTENANCE

Provide an O&M plan specific to the type of watering facility to the landowner. As a minimum include the following items in the plan:

- a monitoring schedule to ensure maintenance of adequate inflow and outflow;
- checking for leaks and repair as necessary;
- if present, the checking of the automatic water level device to insure proper operation;
- checking to ensure that adjacent areas are protected against erosion;
- if present, checking to ensure the outlet pipe is freely operating and not causing erosion problems;

- a schedule for periodic cleaning of the facility.

REFERENCES

Brigham, William and Stevenson, Craig, 1997, Wildlife Water Catchment Construction in Nevada, Technical Note 397.

National Engineering Handbook, Part 650 Engineering Field Handbook, Chapters 5, 11 & 12, USDA Natural Resources Conservation Service.

National Range and Pasture Handbook, Chapter 6, Page 6-12, Table 6-7 & 6-8, USDA-Natural Resources Conservation Service.

National Research Council, 1996 Nutrient Requirements of Domestic Animals, National Academy Press.

State of Wyoming, Governor's Executive Order 2011-5 and Attachments. Greater Sage-Grouse Core Area Protection. June 2, 2011.

Tsukamoto, George and Stiver, San Juan, 1990, Wildlife water Development, Proceedings of the Wildlife Water Development Symposium, Las Vegas, NV, USDI Bureau of Land Management.

Yoakum, J. and W.P. Dasmann. 1971. Habitat manipulation practices. Ch. 14 in Wildlife Management Techniques, Third Edition. Ed. Robert H. Giles, Jr. Pub. The Wildlife Society. 633 pp.

Wyoming Livestock Water and Pipeline Handbook