

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

WATERING FACILITY

(No.)
CODE 614

DEFINITION

A device (tank, trough, or other watertight container) for providing animal access to water.

PURPOSE

To provide watering facilities for livestock and/or wildlife at selected locations in order to:

- protect and enhance vegetative cover through proper distribution of grazing;
- provide erosion control through better grassland management; or
- Protect streams, ponds and water supplies from contamination by providing alternative access to water.

CONDITIONS WHERE PRACTICE APPLIES

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

CRITERIA

General Criteria Applicable To All Purposes

A trough or tank shall have adequate capacity to meet the water requirements of the livestock and/or wildlife. This will include the storage volume necessary to carry over between periods of replenishment. Animal water requirements can be obtained from Table 1 or NRCS National Engineering Handbook, Part 650-Engineering Field Handbook, Table 11-1.

Where water supplies are dependable and livestock are checked daily, troughs with little water storage capacity may be used. Troughs or tanks must provide the daily water requirement of the livestock and provide access to the entire herd within a short period of time.

Table 1 – Minimum Animal Water Requirements ^{1/}

Kind of Livestock	Daily Requirement gal per head per day
Beef cattle	15
Horse	15
Dairy Cattle drinking only	
Lactating	25
Non-lactating	15
Sheep and Goats	2
Swine	4

^{1/} These requirements vary with climatic conditions, kinds of feed, size of animals, and other factors and may be increased as necessary.

The site shall be well drained; if not, drainage measures shall be provided. Areas adjacent to the trough or tank that will be trampled by livestock shall be graveled, paved, or otherwise treated to provide firm footing and reduce erosion. Design of the protective surface around the trough shall be in accordance with NRCS Conservation Practice Standard, Heavy Use Area Protection, Code 561.

Automatic water level control and/or overflow facilities shall be provided as appropriate. Shields or covers to prevent damage shall protect valves or pipes by livestock. Overflow 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 wind load and shall be durable to withstand anticipated livestock and wildlife activities.

All materials shall have a life expectancy that meets or exceeds the planned useful life of the installation. Common construction materials are reinforced concrete, steel, fiberglass, plastic and

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resource Conservation Service.

wood. All designs shall meet the industry standards for the material being used. Generally applicable design requirements and procedures can be found in the documents referenced at the end of this standard.

Concrete structures shall be constructed from a concrete mix producing a minimum compressive strength of 3,000 psi at 28 days. Galvanized steel tanks shall have a minimum thickness of 20 gauge. Plastic and fiberglass structures shall be made of ultraviolet resistant materials or shall have a durable coating to protect the structure from deterioration due to sunlight.

CONSIDERATIONS

This practice may adversely affect cultural resources and must comply with NRCS General Manual (GM) 420, Part 401.

Topography should be evaluated to minimize trail erosion and flooding erosion from tank overflow.

Watering facilities should be accessible to small animals. Escape ramps for birds and small animals should be installed.

Adequate protection for livestock during the winter should be considered.

PLANS AND SPECIFICATIONS

Plans and specifications for installing troughs and tanks shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. If the trough and/or tank is a component of a system that includes additional conservation practices, the information necessary to construct these additional practices will also be conveyed on the plans.

Development of plans will be guided by the National Engineering Handbook (NEH), Part 650, Engineering Field Handbook, Chapter 5, and shall be in accordance with National Engineering Manual, Parts 541 and 542.

OPERATION AND MAINTENANCE

An O&M plan specific to the type of installed trough or tank shall be provided to the landowner. The plan shall include, but not be limited to, the following provisions:

- check for debris, algae, sludge or other materials in the trough which may restrict the inflow or outflow system;
- check for leaks and repair immediately if any leaks are found;
- check the automatic water level device to insure proper operation;
- check to ensure that adjacent areas are well protected against erosion;
- check to ensure the outlet pipe is freely operating and not causing erosion problems; and

Algae and iron sludge accumulation should be addressed in areas with water quality that is known to cause problems. Chemicals such as copper sulfate and chlorine can be recommended as needed, as long as local rules and regulations are followed.

REFERENCES

- National Engineering Handbook (NEH), Part 650, Engineering Field Handbook
National Engineering Manual
- Manual of Steel Construction, American Institute of Steel Construction
- Timber, National Design Specification for Wood, American Forest and Paper Association
- Concrete, ACI 318, American Concrete Institute
- Masonry, Building Code Requirement for Masonry Structures, ACI 530, American Concrete Institute
- NRCS Conservation Practice Standard
Heavy Use Area Protection, Code 561