

U.S. Department Of Agriculture
Natural Resources Conservation Service
Nevada

**Operation and Maintenance Plan
Gravity Irrigation Pipeline (430)**

Landowner/Operator: _____
Project: _____
Location: _____ Sec. _____ T. _____ R. _____
NRCS Office: _____ Phone: _____

A properly operated and maintained irrigation pipeline system is an asset to your operation. This system was designed and installed as a permanent solution to irrigation delivery system deficiencies. The estimated life span of the installation is at least 25 years and can be assured and usually increased by carrying out the following recommendations.

OPERATION AND MAINTENANCE CHECKLIST

Perform these items before opening the pipeline headgate or valve at inlet.



- Check that all pre-season maintenance is complete.
- Inspect all drains to be sure that drain valves are closed.
- Inspect all mainline, lateral, and turnout valves. The first and last risers on each line, as well as any riser that is at a high point in the line, should be cracked open to allow air to be released from the system.
- Open all manual air release valves.
- Inspect all air-vac valves to see that the airway is open (stem pushed down) and the float ball and seat are in place and undamaged.
- Visually inspect all pressure relief valves to be sure they are free to operate and have not been adjusted to a higher or lower pressure setting.
- If there is a pressure reducer valve in your system, special operating procedures are necessary. See attached special operation and maintenance guide.
- Check pipeline area for settlement and erosion and fill low areas.

Flushing and filling the pipelines:



- Before starting, read and record flow meter totals.
- When the pump is turned on, not more than 60 feet of pipe per minute should be filled.
- After all air has been expelled from the pipelines, close all valves that were cracked open.

Operation during the irrigation season:

- Pipelines should be operated within the capacity and pressure ranges designed for the system. Flow to lateral lines should be increased and decreased gradually to allow adequate time for removal of air and to prevent pressure surges in the main line.
- Whenever possible, open the new turnout before closing the old one. Always close valves slowly to prevent water hammer.
- Inspect the pipeline inlet daily or more often if necessary. Remove trash or debris. Observe flow conditions in the canal and make adjustments necessary to keep the pipeline inlet submerged.
- Inspect flow meters at least monthly for proper operation.
- Check valves for noisy operation. Noise is an indication that cavitation may be occurring. Cavitation can greatly reduce the life of the valves.
- Check that air-vacuum valves are seated and not discharging water.

Pre-season maintenance:

- Inlet screens should be cleaned and trash removed from the structure. Repair screens as necessary.
- Check headgates and valves for proper operation. Grease gate stems.
- Check structures and pipeline for damage and repair as needed.
- Check pipeline area for leaks, settlement and erosion and fill low areas.

Winterizing system:

- If sediment buildup in the line is a problem, flush the pipeline.
- Close and lock the inlet structure gates and crack open all turnouts located at high points in the line and all low lying turnouts.
- Open all drains and allow the pipe to drain. Pump out all low spots in the pipeline.
- Remove flow meters and service if necessary, then store in a dry place.
- Remove pressure gauges or other accessories that may have water in them and store or fill with anti-freeze.
- Close all gates, valves and other openings where small animals or water could enter the pipeline.
- Leave drain valves, drain plugs and in line valves open during the winter.

Other _____

