

**United States Department of Agriculture
Natural Resources Conservation Service
Montana**

Operation and Maintenance Guide

For Your

Pumped Irrigation Pipeline

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 20 years and can be assured and usually increased by carrying out the following recommendations. This checklist is provided for your convenience in order to help you develop a good operation and maintenance plan.

OPERATION CHECKLIST

(See the "Montana Irrigator's Pocket Guide", Montana Department of Natural Resources and Conservation, for a checklist of pump operation and maintenance.)

Do this before turning on the pump.

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- r Check that all pre-season maintenance is complete.
- r Before starting, read and record flow meter totals.
- r Inspect all drains to be sure that drain valves are closed.
- r Inspect all mainline, lateral, and turnout valves. Open the operational turnout. 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.
- r Open all manual air release valves.
- r 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.
- r 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.

MAINTENANCE CHECKLIST

Pre-season maintenance:

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- r Check pump impellers for wear. Repair if necessary.
- r Re-pack bushings if necessary and lubricate pump.
- r Install the suction pipe on a centrifugal pump. Make sure it is well supported and has no air leaks. A vacuum gauge installed in the suction line is a good way to monitor suction problems.
- r Make sure a pressure gauge is installed at the outlet and is operable. A good fluid filled pressure gauge is a good monitoring tool.
- r Check power panel, wiring and pump enclosure to make sure mouse nests, bird nests, and other such problems are resolved.
- r Inlet screens should be cleaned and trash removed from the structure. Repair screens as necessary.
- r Check headgates and valves for proper operation. Grease gate stems.
- r Check structures and pipeline for damage and repair as needed.

Winterizing system:

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- r Drain and pull the suction line on centrifugal pumps.
- r Drain the pump and protect it from the elements. If the pump is in need of maintenance, now is a good time to get it done.
- r If sediment buildup in the line is a problem, flush the pipeline.
- r Close and lock the inlet structure gates and crack open all turnouts located at high points in the line and all low lying turnouts.
- r Open all drains and allow the pipe to drain. Pump out all low spots in the pipeline.
- r Remove flow meters and service if necessary, then store in a dry place.
- r Remove pressure gauges or other accessories that may have water in them and store or fill with anti-freeze.
- r Close all gates, valves and other openings where small animals or water could enter the pipeline.
- r Leave drain valves, drain plugs and in line valves open during the winter.
