OPERATION AND MAINTENANCE PLAN
IRRIGATION WATER MANAGEMENT
CODE 449

Landowner/Operator _____

Job Location _____ GPS _____

Prepared By _____ Date _____

OPERATION AND MAINTENANCE ITEMS

A properly operated, maintained, and managed sprinkle irrigation system is an asset to your farm. Your system was designed and installed to apply irrigation water to meet the needs of the crop without causing erosion, runoff, and losses to deep percolation. The estimated life span of your system is 15 years. The life of the system can be assured and usually increased by developing and carrying out a good operation and maintenance program.

Pollution hazards to ground and surface water can be minimized when good irrigation water management practices are followed. Losses of irrigation water to deep percolation and runoff should be minimized. Deep percolation and runoff from irrigation can carry nutrients and pesticides into ground and surface water. Avoiding spills from agriculture chemicals, fuels, and lubricants, will also minimize potential pollution hazards to ground and surface water.

Leaching for salinity control may be required if electrical conductivity of the irrigation water or soil water exceeds plant tolerance for your yield and quality objectives. If this condition exists on your field(s), a salinity management plan should be developed.

Make sure that all measuring devices, valves, sprinkler heads, surface pipeline, and other mechanical parts of the system are checked periodically and worn or damaged parts are replaced as needed. Always replace a worn or improperly functioning nozzle with a new nozzle of the same design size and type. Sprinkler heads operate efficiently and provide uniform application when they are plumb, in good operating condition, and operate at planned pressure. Maintain all pumps, piping, valves, electrical, and mechanical equipment in accordance with manufacturer recommendations. Check and clean screens and filters as necessary to prevent unnecessary hydraulic friction loss and to maintain water flow necessary for efficient pump operation.

Protect pumping plant and all associated electrical and mechanical controls from damage by livestock, rodents, insects, heat, water, lightning, sudden power failure, and sudden water source loss. Provide and maintain good surface drainage to prevent water pounding around pump and electrical equipment. Assure all electrical/gas fittings are secure and safe. Always replace worn or excessively weathered electric cables and wires and gas tubing and fittings when first noticed. Check periodically for undesirable stray currents and leaks. Display appropriate bilingual operating instructions and warning signs as necessary. During non-seasonal use, drain pipelines and valves, and secure and protect all movable equipment (i.e., wheel lines).

Irrigation scheduling is a critical part of an irrigation water management system. Scheduling is based on a soil-water balance or crop-water balance for one or more points in a field. By measuring existing and estimating future soil-water content or monitoring crop water-water stress level, irrigation water may be applied before damaging crop stress occurs. Scheduling irrigation involves forecasting of crop water use rates to anticipate future water needs.

Several scheduling techniques and levels of sophistication can be applied to track the amount of soil water in the crop root zone and crop water use. The Natural Resources Conservation Service (NRCS) can assist in the selection of an irrigation scheduling program.

If you need help developing specific components of an operation and maintenance plan, contact your local NRCS office for assistance.