



**CONSERVATION ENHANCEMENT ACTIVITY**

**E449C**

**CONSERVATION STEWARDSHIP PROGRAM**

Advanced Automated IWM – Year 2-5, soil moisture monitoring

**Conservation Practice 449: Irrigation Water Management**

**APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Pasture**

**RESOURCE CONCERN: Water**

**PRACTICE LIFE SPAN: 1 year**

**Enhancement Description**

Advanced automated irrigation water management using soil moisture or water level monitoring (installed as per IWM plan) with data loggers.

**Criteria**

Irrigation water management plan is followed and includes, as per NRCS Conservation Standard Practice Irrigation Water Management (Code 449):

- An irrigation system layout map showing the main pipeline(s), irrigated area, soil moisture locations and depths (if used), and soils. If water level sensors are used, show locations and number of sensors used.
- Methods used to measure or determine the flow rate or volume of the irrigation applications.
- Measurement records showing the amount of water used to irrigate as it comes onto the farm and goes to each field.
- Documentation of the scientific method used for scheduling the timing and amount of irrigation applications.
- Irrigation water management plan explains:

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- How irrigation system meets crop needs, while maximizing irrigation water efficiency.
  - Seasonal or annual planned water application volumes by crop.
  - Management allowable depletion (MAD) and depth of the managed crop root zone or water level for each crop and stage of growth.
  - Evaluation of irrigation system distribution uniformity and necessary changes to insure uniform irrigation.
  - Information on how to recognize irrigation induced erosion and how to mitigate it.
  - How data from the sensor locations and depths will be considered to make field-wide irrigation decisions.
  - Water application scheduling based on soil moisture or water level monitoring and or evapotranspiration monitoring from the weather station
- Recordkeeping documents for the irrigator to use during operation and management.



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### Documentation and Implementation Requirements

#### **Participant will:**

- Prior to implementation, acquire an irrigation water management plan meeting NRCS Conservation Practice Standard Irrigation Water Management (449) requirements.
- During implementation, record irrigation data such as location, date, duration, and flow rate of all irrigation operations, rainfall, evapotranspiration, and soil moisture or water level data.
- After implementation, make the follow items available for review by NRCS to verify implementation of the enhancement:
  - Irrigation water management plan and records kept
  - Changes made to address distribution uniformity deficiencies

#### **NRCS will:**

- Prior to implementation, provide and explain NRCS Conservation Practice Standard Irrigation Water Management (CPS 449) as it relates to implementing this enhancement
- As needed, provide additional technical assistance to the participant as requested.
- After implementation, verify implementation of the irrigation water management plan, by reviewing participant records kept during enhancement implementation.

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**Design Approvals & Acknowledgements:**

Design Approval	Date	Job Approval Authority
Designed by:		
Approved by:		

**Client's Acknowledgement Statement:**

The client acknowledges:

- I have received a copy of the specification and understand the contents and requirements.
- It is my responsibility to obtain all necessary permits and/or rights and to comply with all ordinances and laws pertaining to the application of this practice.
- I will not begin installation of this practice until I have received appropriate approval to do so. I understand NRCS also has Federal and state laws to comply with that may take some time to address (e.g. cultural resources).

Client's Signature	Date

**Certification Documentation:**

	Field Evaluation: Post-treatment inventory, measurements, notes, as-built, and supporting documentation (document completion in conservation plan), as required.
	Map(s): Including field numbers, fields treated, and units treated (may document on conservation plan map), as required.
	Photos or other supporting documentation (e.g., seed tags, soil tests, receipts, invoices, spray records, fertilizer records, etc.)
Brief Description of Work Accomplished (types of equipment used, date of application, extents and quantities installed, etc.)	

**Certification Statement:**

The employee certifies the implementation of this conservation practice:

- Meets the purpose, general criteria, and any required additional criteria as documented in the conservation practice standard and/or enhancement sheet.
- Meets the specifications contained herein and is complete.
- Conforms to my existing Job Approval Authority controlling factors and levels.

Name	Date	Job Approval Authority

<b>Field Level Certification</b> – For multiple applications of this design.				
Land Unit/ Contract Item Number	Date	Unit(s)	Amount Installed	Certifier