Introduction to Surface Irrigation Systems

IRRIGATION AND WATER RESOURCES ENGINEERING PROGRAM

UTAH STATE UNIVERSITY
**Surface Irrigation Methods -- Discussion 3**

**Preparation:**
Read Chapter 3 in Walker (2007) and Chapter 5 in Hargreaves and Merkley (1998)

**Discussion 1 DISCUSSION OF SURFACE IRRIGATION IN IRAQ**

1. **Needs Assessment**
   1. What is surface irrigation in Iraq like today?
   2. What methods are used?
   3. How large are the fields? Is the water supply mainly from canals?
   4. How much groundwater pumping is used?

2. **Opportunities for Improving Irrigation Efficiency and Uniformity**
   1. Is laser guided land leveling used in Iraq?
   2. What is the availability of aluminum and PVC pipe?
   3. Is there any kind of flow measurement situated in the irrigation system?

3. **Conducting a Field Reconnaissance**
   1. Does the extension service offer any services in which the efficiency and uniformity of surface irrigation is evaluated at the field level.
Presentation 3 – Surface Irrigation Systems

- Subsystems of a Surface Irrigation System
- Types of Surface Irrigation Systems
  - Basins
  - Borders
  - Furrows
- Water Supply and Management
  - Inlet Control
  - Land Leveling
  - Wastewater Recovery and Reuse
- Surface Irrigation Structures
  - Diversion Structures
  - Management Structures
  - Field Distribution Structures
Types of Surface Irrigation Systems -- Basins
Types of Surface Irrigation Systems -- Borders

(a)

(b)

(c)
Types of Surface Irrigation Systems -- Furrows
Land Leveling
Reuse
Surface Irrigation Structures – Measurement Devices
Surface Irrigation Structures – Field Distribution Devices

(a) 

(b) 

(c) 

(d) 

SECTIONAL ELEVATION

(a) 

(b) 

Open Type Outlet Box  Metal Check Dam
Surface Irrigation Structures – Field Distribution Devices
Evaluation of Surface Irrigation Systems – Infiltration
Evaluation of Surface Irrigation Systems – Flow Geometry
Evaluation of Surface Irrigation Systems – Field Inflow
Evaluation of Surface Irrigation Systems – Field Outflow
Evaluation of Surface Irrigation Systems – Advance/Recession
Evaluation of Surface Irrigation Systems – Advance/Recession

![Graph showing Advance/Recession](Printz_2_8_5)
End of Presentation 3
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