ChecklistGuro

Irrigation System Performance Assessment (Zone-Specific) Checklist

Zone Identification and Description

Clearly define the zone being assessed, including its purpose, crop type, and overall characteristics.

Zone Name/Identifier

Write something...

Detailed Zone Description (Location, Topography, Soil Type)

Write something...

Zone Area (sq ft or hectares)

Enter a number...

Primary Crop Type

- [ ] Corn
- [ ] Soybeans
- [ ] Wheat
- [ ] Alfalfa
- [ ] Vegetables
- [ ] Fruits
- [ ] Other (Specify in Long Text)

Specify 'Other' Crop Type (If Selected Above)

Write something...

Irrigation Purpose (Select all that apply)

- [ ] Supplemental Irrigation
- [ ] Drought Protection
- [ ] Yield Enhancement
- [ ] Frost Protection
- [ ] Other (Specify in Long Text)

Specify 'Other' Irrigation Purpose (If Selected Above)

Write something...

Date of Zone Mapping/Layout (If Available)

Enter date...

Water Source Assessment

Evaluate the water source supplying the zone – well, surface water, municipal supply – and its quality/availability.

Water Source Type

- [ ] Well
- [ ] Surface Water (River/Lake)
- [ ] Municipal Supply
- [ ] Rainwater Harvesting
- [ ] Other (Specify in Long Text)

Water Source Flow Rate (GPM/LPM)

Enter a number...

Water Source Pressure (PSI/Bar)

Enter a number...

Water Quality Notes (Turbidity, Color, Odor)

Write something...

Water Source Permits/Licenses Current?

- [ ] Yes
- [ ] No
- [ ] N/A

Date of Last Water Quality Test

Enter date...

Upload Water Quality Test Results (if available)

Upload File

System Component Inspection

Inspect the physical condition and operation of all system components within the zone (pumps, valves, pipes, emitters).

Pipe Condition Score (1-5, 1=Excellent, 5=Severe Damage)

Enter a number...

Valve Operation Status (Zone Valve)

- [ ] Fully Operational
- [ ] Partially Operational
- [ ] Not Operational
- [ ] Leaking

Emitter Flow Rate (GPM) - Sample 1

Enter a number...

Emitter Flow Rate (GPM) - Sample 3

Enter a number...

Notes on Pump Condition (Visual Inspection, Unusual Noises)

Write something...

Damages/Issues Observed

- [ ] Cracks in Pipe
- [ ] Clogged Emitters
- [ ] Broken Valve
- [ ] Leaks
- [ ] None Observed

Photo of Damaged Component (If Applicable)

Upload File

Water Distribution Uniformity

Assess the evenness of water distribution across the zone; crucial for optimal crop health.

Emitter Discharge Rate (avg. in GPH)

Enter a number...

Coefficient of Uniformity (CU) - Calculated

Enter a number...

Distribution Uniformity (DU) - Calculated

Enter a number...

Visual Assessment of Wetting Patterns

- [ ] Uniform Wetting
- [ ] Dry Spots
- [ ] Over-Wetting
- [ ] Uneven Wetting Edge
- [ ] Other (Specify in LONG_TEXT)

Detailed Observations of Wetting Patterns (if 'Other' selected above)

Write something...

Method Used for Uniformity Assessment

- [ ] Catch Can Method
- [ ] Tracer Dye Method
- [ ] Visual Observation
- [ ] Other (Specify in LONG_TEXT)

Description of Method Used (if 'Other' selected above)

Write something...

Number of Catch Cans Used (if Catch Can Method)

Enter a number...

Soil Moisture Levels

Measure and evaluate soil moisture content at various points within the zone, comparing to crop requirements.

Soil Moisture Reading - Location 1 (Depth: 15cm)

Enter a number...

Soil Moisture Reading - Location 1 (Depth: 30cm)

Enter a number...

Soil Moisture Reading - Location 2 (Depth: 15cm)

Enter a number...

Soil Moisture Reading - Location 2 (Depth: 30cm)

Enter a number...

Soil Type at Location 1

- [ ] Sandy
- [ ] Loamy
- [ ] Clay
- [ ] Silty
- [ ] Other

Soil Moisture Deficit (compared to optimal range)

- [ ] No Deficit
- [ ] Minor Deficit
- [ ] Moderate Deficit
- [ ] Severe Deficit

Observations/Notes Regarding Soil Moisture Levels

Write something...

Crop Health & Response

Observe and record any visible signs of stress or disease related to water availability in the zone.

Overall Crop Health Assessment

- [ ] Excellent
- [ ] Good
- [ ] Fair
- [ ] Poor
- [ ] Very Poor

Describe any visible signs of water stress (e.g., wilting, leaf discoloration)

Write something...

Estimate percentage of crop showing signs of stress/disease (0-100)

Enter a number...

Describe any unusual growth patterns observed.

Write something...

Observed Pests/Diseases related to water stress?

- [ ] Root Rot
- [ ] Fungal Leaf Spot
- [ ] Aphids
- [ ] Spider Mites
- [ ] None Observed

Record any farmer/grower observations regarding crop performance and water needs.

Write something...

Pressure & Flow Measurements

Record pressure and flow rates at key points in the system to identify potential bottlenecks or inefficiencies.

Zone Inlet Pressure (PSI)

Enter a number...

Zone Inlet Flow Rate (GPM)

Enter a number...

Emitter Pressure (PSI) - Sample Point 1

Enter a number...

Emitter Flow Rate (GPH) - Sample Point 1

Enter a number...

Emitter Pressure (PSI) - Sample Point 2

Enter a number...

Emitter Flow Rate (GPH) - Sample Point 2

Enter a number...

Average Zone Pressure (PSI)

Enter a number...

Total Zone Flow Rate (GPM)

Enter a number...

Notes on Pressure/Flow Measurements

Write something...

Control System Evaluation (If Applicable)

Assess the functionality and accuracy of any automated controls or scheduling systems used for irrigation.

Control System Type (e.g., Timer, Controller, Sensor-Based)

- [ ] Timer-Based
- [ ] Basic Controller
- [ ] Sensor-Based (Soil Moisture)
- [ ] Sensor-Based (Weather)
- [ ] Other - Specify

Controller Firmware Version (if applicable)

Enter a number...

Description of scheduled programs (start times, durations, etc.)

Write something...

Is the schedule accurately reflecting the intended irrigation plan?

- [ ] Yes
- [ ] No
- [ ] Unsure

Number of zones controlled by this system

Enter a number...

Which sensors are integrated with the control system (check all that apply)?

- [ ] Soil Moisture Sensors
- [ ] Rain Sensor
- [ ] Wind Sensor
- [ ] Weather Station Integration
- [ ] Flow Meter
- [ ] None

Describe any observed deviations from the programmed schedule.

Write something...

Last Control System Maintenance Date

Enter date...

Recommendations & Corrective Actions

Document findings and propose actions to improve irrigation performance and water use efficiency.

Overall Summary of Recommended Actions

Write something...

Estimated Cost of Recommended Repairs/Upgrades ($)

Enter a number...

Prioritized Action Items (Select all that apply)

- [ ] Immediate Repair (within 1 week)
- [ ] Short-Term Repair (within 1 month)
- [ ] Medium-Term Improvement (3-6 months)
- [ ] Long-Term Upgrade (6+ months)
- [ ] No Action Required

Specific Details for Highest Priority Action

Write something...

Target Completion Date for Highest Priority Action

Enter date...

Responsible Party for Action

- [ ] Irrigation Technician
- [ ] Farm Manager
- [ ] Outside Contractor
- [ ] Other (Specify)

Other Notes/Comments

Write something...