CERTIFICATION PROGRAM
Landscape Irrigation Auditor

FIELD AUDIT SUBMISSION PACKAGE

Please read carefully!

March 2015

❶ Read and follow the **candidate procedures to submit field audits**. Audit field work and calculations must be conducted and completed independently by the candidate with no outside assistance of any type. Audits must be completed within your program period.

❷ Contact an IA-certified professional in good standing to observe and verify your audit. Make sure they read and follow the **field audit verification procedures and policies** before you conduct your audit. These procedures must be followed during the audit field work and calculations.

❸ Conduct field audit. Record all audit data on IA forms – eight worksheets for rotor area and eight worksheets for spray area. Only data submitted on IA forms will be used to grade the audit. Do not submit additional materials or photographs. Fill out the candidate and site info at the top of every audit worksheet. Do not write your name on the worksheets, only your candidate ID.

- For the rotor area audit, complete a watering days irrigation schedule. Assume watering restrictions are in place that will limit irrigation to every third day.
- For the spray area audit, complete a soil moisture irrigation schedule.

❹ Complete the **audit verification form**.

❺ **FIRST TIME SUBMISSIONS:** Mail original **verification form** and **16 audit worksheets** to the Irrigation Association. Make a copy for your records. You will receive email verification when your audit is received at the IA office. If you do not receive verification of receipt within two weeks of sending the audit contact the IA office.

RESUBMISSIONS: Mail original **resubmission form** with payment information and corrected **audit worksheets** to the Irrigation Association. Make a copy for your records. You will receive email verification when your audit is received at the IA office. If you do not receive verification of receipt within two weeks of sending the audit contact the IA office.

Certification
Irrigation Association
8280 Willow Oaks Corporate Drive, Suite 400
Fairfax, VA 22031

CERTIFIED LANDSCAPE IRRIGATION AUDITOR

March 2015

AUDIT VERIFICATION FORM

CANDIDATE INFORMATION

☐ Dr. ☐ Mr. ☐ Mrs. ☐ Miss ☐ Ms.

Last Name First M.I.

Business name (if applicable):

Address

Address

City State/Province Zip/postal code

Phone

E-mail

Candidates are required to conduct field audits and complete all calculations independently with no assistance. This must be verified and attested to in writing by an IA-certified professional in good standing. Audits conducted as part of a class do not meet this requirement.

The Irrigation Association reserves the right to revoke any certification if it was obtained under conditions that did not meet the posted requirements, if any portion of the code of ethics is not upheld or if renewal/CEU procedures are not adhered to.

Rotor Audit Site Date

Spray Audit Site Date

I conducted the field work on the site(s) and date(s) identified here and completed all calculations independently without outside assistance.

Auditor Signature

Date

VERIFICATION INFORMATION

☐ Dr. ☐ Mr. ☐ Mrs. ☐ Miss ☐ Ms.

Last Name First M.I.

Address

Phone

E-mail

To verify this audit, you must be IA certified and in good standing. Verification does not attest to the accuracy of the work, just that the field work and calculations were completed independently by the candidate with no assistance.

I have witnessed that the decisions and actions involved in the submitted field work on this site were made solely by the candidate with no assistance from myself or anyone else. I am also confident that all calculations were completed by the candidate.

Signature ☐ CID ☐ CIC ☐ CLIA ☐ CGIA ☐ CLWM ☐ CAIS

Date

To submit a field audit:

1) Complete audit on IA worksheets.
2) Sign and make sure all pages are included.
3) Make a copy for your records.
4) Mail the original audit and verification form to:
   Certification
   Irrigation Association
   8280 Willow Oaks Corporate Drive, Suite 400
   Fairfax, VA 22031
5) You will be notified via e-mail when the audit is received at the IA.

Please note that it may take up to six weeks to process your audit.

CERTIFIED IRRIGATION AUDITOR

March 2015

CANDIDATE PROCEDURES TO CONDUCT AND SUBMIT FIELD AUDITS

The process to become an Irrigation Association certified auditor involves three steps.

1) Application and acceptance into the program.
2) Successful completion of the auditor exam.
3) Successful completion of independent field audits:
   - Landscape - one rotor (minimum four heads) and one spray (minimum eight heads) area.
   - Golf - one fairway (minimum of 60 audited yards of fairway and a minimum of four sprinkler heads) and one green.

Candidates are required to conduct audits and complete calculations independently with no assistance. This must be verified and attested to in writing by an IA-certified professional. Audits conducted as part of a class do not meet this requirement.

WHEN YOU ARE READY TO CONDUCT THE FIELD AUDIT

1) Check the IA website for the correct version of the audit work sheets and the audit verification form. Print a hard copy of the forms. Audits must be submitted on these worksheets.
2) Contact an IA-certified irrigation professional in good standing who will be present to verify your fieldwork. Make sure that the person verifying your audit has access to and agrees to follow the "field audit verification procedures and policies" document. Your audit must meet these conditions or it may be rejected.
3) Conduct field audit. For rotor area complete the watering days schedule assuming watering restrictions allowing watering every third day. Fill out all information completely including date(s), time(s), pressure and flow data, etc.
4) Complete the remaining forms making sure to show all values and calculations. Pay careful attention to the DU_{LQ}, precipitation rate and run time calculations. These must be calculated to within the rounding margin of error in order for the audit to be approved. Provide completed original audit and verification form to the verifier to sign off. This signature only indicates that work was performed independently by the candidate; the verifier is not responsible for the accuracy of the audit. Any outside assistance could cause the audit to be rejected.

FINDING SOMEONE TO VERIFY YOUR AUDIT

Any IA-certified professional in good standing (regardless of the certification they hold) can verify and sign off on your audit. They do not have to be certified in auditing. Check the certification directory at the IA web site to find someone near you. Send them a copy of the verification procedures so they will know what they are being asked to do. If you cannot find anyone in your area to verify your audit, contact the certification department as certification@irrigation.org before you do your fieldwork to come up with a procedure that is agreeable to all parties.

WHEN YOU ARE READY TO SUBMIT YOUR FIELD AUDIT

1) Sign and make sure all pages are included.
2) Make a copy for your records.
3) Mail the original audit and verification form to:
   Certification
   Irrigation Association
   8280 Willow Oaks Corporate Drive, Suite 400
   Fairfax, VA 22031
4) You will be notified when the audit is received at the IA
5) Results will be mailed to the address shown on the verification form.

RESULTS MAY TAKE UP TO SIX WEEKS TO COMPLETE.

The Irrigation Association reserves the right to revoke any certification if it was obtained under conditions that did not meet the posted requirements, if any portion of the code of ethics is not upheld or if renewal/CEU procedures are not adhered to.

REJECTING AUDITS

Audits may be rejected if you receive assistance or if you observe someone while they conduct their audit on the same site where you will be conducting your fieldwork.

If there is reason to believe that the audit was not conducted independently or if any information was copied or falsified, the candidate will be notified in writing and given an opportunity to respond. After investigating, the certification board will make a decision about the consequences which may include a partial or full ban of the candidate's involvement in the IA certification program. The candidate will be notified in writing of the decision.

CERTIFIED IRRIGATION AUDITOR

March 2015

FIELD AUDIT VERIFICATION PRODEDURES AND POLICIES

If a candidate in the IA auditor program contacts you to verify their field audit, you must witness that the decisions and actions involved in the submitted field work were taken solely by the candidate with no assistance from yourself or anyone else. You must also be confident that all calculations were completed by the candidate.

To verify a field audit for a candidate, you must be IA-certified and in good standing. The goal for someone verifying an audit is to help provide a good "testing environment" for the candidate. The most critical part of the field audit is to verify that the candidate has the knowledge and skills to make the judgments required to conduct a field audit. The candidate must also be able to work through the calculations required to complete the scheduling worksheet.

THE AUDITOR PROCESS

The process to become an Irrigation Association certified auditor involves three steps.

1) Application and acceptance into the program.
2) Successful completion of the auditor exam.
3) Successful completion of independent field audits:
   - Landscape - one rotor (minimum of four heads) and one Spray (minimum of eight heads) area.
   - Golf - one fairway (minimum of 60 audited yards and a minimum of four sprinkler heads) and one green.

CANDIDATES HAVE BEEN INFORMED THAT:

1) Audits (field work and calculations) must be conducted independently with no outside assistance.
2) Audits conducted as part of a class are not acceptable.
3) Audits must be submitted using IA-approved procedures and forms.
4) The original paperwork must be submitted – copies or faxes will not be accepted.

FREQUENTLY ASKED QUESTIONS

What would cause an audit to be rejected?

The following will be grounds to reject an audit:

1) More than one candidate on the audit site.
2) A candidate observing another candidate while they do their audit (whether they will be performing their audit on that site or not).
3) A candidate accepting advice or assistance from anyone.

Can two candidates work together or in a group?

No. There is no such thing as a group audit even if one person is only helping to read the catch devices. The only people allowed at the audit site are the candidate and the verifier.

What if I see someone doing something wrong?

Either in the fieldwork or calculations, if a verifier offers advice or assistance, the audit will be invalid and should not be signed off on by the verifier and submitted for grading.

Can our organization conduct field audit classes/sessions?

Providing the following field audit assistance is acceptable:

1) Auditing equipment
2) Audit site *

* A wide variety of audit sites should be made available. Using the same audit site for large numbers of candidates is roughly equivalent to giving everyone the same exam. A different site should be used for the spray and rotor zones. The intent of the field audit is for the candidate to make judgments in two different audit conditions.

The Irrigation Association reserves the right to revoke any certification if it was obtained under conditions that did not meet the posted requirements, if any portion of the code of ethics is not upheld or if renewal/CEU procedures are not adhered to.

For questions or clarification on verifying an audit contact the certification department at certification@irrigation.org or 703.536.7080.

Site Conditions Review

Rotor Worksheet # 1

Project Name		Date			
Address		Candidate ID #			
City, State		Page		of	

Controller ID/Name										
Controller station(s) #										
Area/location										
Irrigated area		ft^2		ft^2		ft^2		ft^2		ft^2
Plant material (all that apply)										
Plant condition (choose one)										
Microclimate (choose one)										
Soil category (choose one)										
Root depth		in.		in.		in.		in.		in.
Slope (choose one)										
Compaction (Y/N)										
Runtime until runoff		min		min		min		min		min
Standing water (Y/N)										
Hydrozone separation (Y/N)										

Abbreviation Key

Plant Materials
- CS= Cool season turf
- WS= Warm season turf
- T= Trees
- S= Shrubs
- N= Native plants
- GC= Ground cover

Soil Category
- C= Coarse
- MC= Moderately coarse
- M= Medium
- MF= Moderately fine
- F= Fine

Slope
- F= Flat
- SL= Slight
- Mod= Moderate
- Stp= Steep

Plant Condition
- LM= Low maintenance, stressed
- TRD= Traditional, some stress, but generally good condition
- HQ= High quality, majority are vigorously growing

Microclimate
- FS= Full sun all day
- PS= Part shade, less than 6 hours of sun per day
- SH= Full shade all day
- EX= Extreme conditions (parking lots, south-facing glass or wall)

Sprinkler System Review

Rotor Worksheet # 2

Project Name		Date			
Address		Candidate ID #			
City, State		Page		of	

Abbreviation Key: S = Spray, fixed nozzle R = Rotor, including MSMT nozzles I = Impact **X** = Needs correction ✓ = Correction

Controller ID/Name										
Controller Station #										
Sprinkler type (choose one)										
Station flow		gpm		gpm		gpm		gpm		gpm
High pressure		psi		psi		psi		psi		psi
Low pressure		psi		psi		psi		psi		psi
Action Required (Place "X" for needs correction, ✓ when completed)	X	✓	X	✓	X	✓	X	✓	X	✓
Broken pipes										
Missing/broken heads										
Missing nozzle										
psi adjustment needed										
Clogged nozzle										
Heads not turning										
Arc misalignment										
Low head drainage										
Leaking seals/fittings										
Spray deflected/blocked										
Sunken head										
Tilted heads										
Mismatched heads										
Spray/rotor separation										
Spacing uneven										
Valve malfunction										

Observations on Maintenance Frequency

Water Source and System Data

Rotor Worksheet # 3

Project Name		Date			
Address		Candidate ID #			
City, State		Page		of	

Water Source Data

Water Source (check one)							
☐	Potable	☐	Reclaimed	☐	Well	☐	Pond
☐	Other (explain)						
Backflow Device (check one)							
☐	None	☐	Reduced Pressure Assembly	☐	Double Check Valve	☐	Pressure Vacuum Breaker
☐	Atmospheric Vacuum Breaker						
Size		in.					
Other (explain)							
Pump or Pump Station (check one)							
☐	No	☐	Yes				
	Maximum flow		gpm				
	Pressure		psi				
Meter (check one)							
☐	No	☐	Yes				
	Size		in.				
	Units (check one)	☐	gallons	☐	cubic feet		
	Static pressure		psi (during scheduled irrigation window)				
	Dynamic pressure		psi (during scheduled irrigation window)				

POC Flow Data (use catalog data if non-metered sources exist)

Meter Number	Station Number	Gallons (cf)	Beginning Readings	Ending Readings	Total	Beginning Time	Ending Time	Elapsed Time

Controller Features

Rotor Worksheet # 4

Project Name		Date			
Address		Candidate ID #			
City, State		Page		of	

Manufacturer		**Central Control** (check one)			
			Yes		No
Model Number		**Weather Station** (check one)			
			Yes		No
Stations Being Used		**Smart Controller** (check one)			
			Yes		No

Station Run Time Range (min)			
Minimum		Maximum	

Number of Programs	**Start Times/Program**

Calendar Days (check one)							
	7 days		14 days		Other (explain)		

Irrigation Interval (check options available)							
	Daily		Even/Odd		Custom (explain)		

Rain delay (maximum days)	**Skip Day Period** (maximum days)

Percent Adjust Options (check applicable)									
	Global		By program		By station		By month		Seasonal

Sensors Installed (make & model)	
Rain	
Freeze	
Wind	
Temperature	
Flow	
Soil moisture	
Tipping bucket	

Notes

Controller Settings

Rotor Worksheet # 5

Project Name		Date		
Address		Candidate ID #		
City, State		Page		of

Current Controller Settings

Program	Start Times				Days On															
	1	2	3	4		S		M		T		W		T		F		S		
A						S		M		T		W		T		F		S		
B						S		M		T		W		T		F		S		
C						S		M		T		W		T		F		S		
D						S		M		T		W		T		F		S		

Program	Station	Minutes		Program	Station	Minutes		Program	Station	Minutes

Smart Controller Settings

Station	Program	PR	DU	Plant Factor	Soil Type	Slope	Soil Moisture

Test Area Map – Rotor Worksheet # 6

Project Name		Date			
Address		Candidate ID #			
City, State		Page		of	

Test Area/Station							
Test Run Time		min	Wind		mph	Pressure		psi
Meter Start			Meter Stop			Total	

**Indicate north and ALL audit area and sprinkler dimensions
O = SPRINKLER – Record the location of each sprinkler and sprinkler spacing.
X = CATCH DEVICE – Record the location of each catch device and catch amount.

Catch Can Test - Rotor Worksheet # 7

Project Name		Date		
Address		Candidate ID #		
City, State		Page		of

Test Area/Station					
Catch Device Area (A_{CD})		$in.^2$	Test Run Time (t_R)		min

Catch Device Volumes: ***All values and calculations must be completed on this page; auditing software is not acceptable for use in determining these values.***

#1		#13		#25		#37		#49		#61		#73	
#2		#14		#26		#38		#50		#62		#74	
#3		#15		#27		#39		#51		#63		#75	
#4		#16		#28		#40		#52		#64		#76	
#5		#17		#29		#41		#53		#65		#77	
#6		#18		#30		#42		#54		#66		#78	
#7		#19		#31		#43		#55		#67		#79	
#8		#20		#32		#44		#56		#68		#80	
#9		#21		#33		#45		#57		#69		#81	
#10		#22		#34		#46		#58		#70		#82	
#11		#23		#35		#47		#59		#71		#83	
#12		#24		#36		#48		#60		#72		#84	
Sub-total		**Sub-total**		**Sub-total**		**Sub-total**		**Sub-total**		**Sub-total**		**Sub-total**	

Total Catch Volume		**Total Low Quarter**	
Average Volume		**Average Low Quarter**	

Calculate Distribution Uniformity (show work)	**Calculate Net Precipitation Rate** (show work)
$DU_{LQ} = \frac{\text{avg catch in low quarter}}{\text{avg catch volume}}$ $= \frac{\quad\quad mL}{mL}$ $= \_\_\_\_\_$	$PR_{net} = \frac{3.66 \times V_{avg}}{T_r \times A_{CD}}$ $= \frac{3.66 \times (\quad\quad mL)}{(\quad\quad min) \times (\quad\quad in.^2)}$ $= \_\_\_\_\_$

Watering Days Irrigation Schedule

Rotor Worksheet # 8

Project Name		Date	
Address		Candidate ID #	
City, State		Station	

Watering Days or Interval (see instructions)					
Plant Water Requirement		**Value**		**Units**	**Source**
A.	Hydrozone type				field observation
B.	Reference period			days	
C.	Reference ET [ET_o]			in.	weather data
D.	Landscape coefficient [K_L]				$K_T \times K_d \times K_{mc}$
	1) Turf or plant factor [K_T or K_P]				charts & tables
	2) Vegetation density factor [K_d]				charts & tables
	3) Microclimate factor [K_{mc}]				charts & tables
E.	Landscape ET [ET_L]			in.	C × D
F.	Average daily ET_L			in.	E ÷ B
Sprinkler Performance		**Value**		**Units**	**Source**
G.	Precipitation rate [PR]			in./h	audit or calculation
H.	Distribution uniformity [DU_{LQ}]			decimal	audit or estimate
I.	Scheduling multiplier [SM]				table or equation
Scheduling Parameters		**Value**		**Units**	**Source**
J.	Irrigation interval			days	watering days (see instructions)
K.	Water to apply			in.	J × F
L.	Lower boundary			min	(K ÷ G) × 60 (round down)
M.	Upper boundary			min	(L × I) (round up)
N.	**Selected Run Time**			min	management decision
O.	Determine cycle starts (CHOOSE METHOD A OR B)				
	a. Observed time to runoff			min	field observation
OR	b. Site conditions			cycles	based on site conditions
	1) Soil category		Coarse = 1, Medium= 2, Fine = 3		
	2) Slope		Flat = 0, Slight = 1, Moderate = 2, Steep = 3		
	3) Compaction		No = 0, Yes = 1		
	4) Sprinkler type		Rotor = 0, Spray = 1		

Scheduling Summary	**Value**	**Units**	**Source**
Water to be applied		in.	Line K
Interval		days	Line J
Cycle starts per day			(Line N ÷ O-a or O-b (round up)
Minutes per cycle		min	Line N ÷ Cycle starts

Site Conditions Review

Spray Worksheet # 1

Project Name		Date			
Address		Candidate ID #			
City, State		Page		of	

Controller ID/Name										
Controller station(s) #										
Area/location										
Irrigated area		ft^2		ft^2		ft^2		ft^2		ft^2
Plant material (all that apply)										
Plant condition (choose one)										
Microclimate (choose one)										
Soil category (choose one)										
Root depth		in.		in.		in.		in.		in.
Slope (choose one)										
Compaction (Y/N)										
Runtime until runoff		min		min		min		min		min
Standing water (Y/N)										
Hydrozone separation (Y/N)										

Abbreviation Key

Plant Materials
- CS= Cool season turf
- WS= Warm season turf
- T= Trees
- S= Shrubs
- N= Native plants
- GC= Ground cover

Soil Category
- C= Coarse
- MC= Moderately coarse
- M= Medium
- MF= Moderately fine
- F= Fine

Slope
- F= Flat
- SL= Slight
- Mod= Moderate
- Stp= Steep

Plant Condition
- LM= Low maintenance, stressed
- TRD= Traditional, some stress, but generally good condition
- HQ= High quality, majority are vigorously growing

Microclimate
- FS= Full sun all day
- PS= Part shade, less than 6 hours of sun per day
- SH= Full shade all day
- EX= Extreme conditions (parking lots, south-facing glass or wall)

Sprinkler System Review

Spray Worksheet # 2

Project Name		Date			
Address		Candidate ID #			
City, State		Page		of	

Abbreviation Key: S = Spray, fixed nozzle R = Rotor, including MSMT nozzles I = Impact **X** = Needs correction ✓= Correction

Controller ID/Name										
Controller Station #										
Sprinkler type (choose one)										
Station flow		gpm		gpm		gpm		gpm		gpm
High pressure		psi		psi		psi		psi		psi
Low pressure		psi		psi		psi		psi		psi
Action Required (Place "X" for action needed, ✓when completed)	X	✓	X	✓	X	✓	X	✓	X	✓
Broken pipes										
Missing/broken heads										
Missing nozzle										
psi adjustment needed										
Clogged nozzle										
Heads not turning										
Arc misalignment										
Low head drainage										
Leaking seals/fittings										
Spray deflected/blocked										
Sunken head										
Tilted heads										
Mismatched heads										
Spray/rotor separation										
Spacing uneven										
Valve malfunction										

Observations on Maintenance Frequency

Water Source and System Data

Spray Worksheet # 3

Project Name		Date			
Address		Candidate ID #			
City, State		Page		of	

Water Source Data

Water Source (check one)							
☐	Potable	☐ Reclaimed		☐ Well		☐ Pond	
☐	Other (explain)						
Backflow Device (check one)							
☐	None	☐ Reduced Pressure Assembly		☐ Double Check Valve		☐ Pressure Vacuum Breaker	☐ Atmospheric Vacuum Breaker
Size			in.				
Other (explain)							
Pump or Pump Station (check one)							
☐	No	☐ Yes					
		Maximum flow		gpm			
		Pressure		psi			
Meter (check one)							
☐	No	☐ Yes					
		Size		in.			
		Units (check one)	☐ gallons	☐ cubic feet			
		Static pressure		psi (during scheduled irrigation window)			
		Dynamic pressure		psi (during scheduled irrigation window)			

POC Flow Data (use catalog data if non-metered sources exist)

Meter Number	Station Number	Gallons (cf)	Beginning Readings	Ending Readings	Total	Beginning Time	Ending Time	Elapsed Time

Controller Features

Spray Worksheet # 4

Project Name		Date	
Address		Candidate ID #	
City, State		Page	of

Manufacturer		**Central Control** (check one)	
		Yes	No
Model Number		**Weather Station** (check one)	
		Yes	No
Stations Being Used		**Smart Controller** (check one)	
		Yes	No

Station Run Time Range (min)			
Minimum		Maximum	

Number of Programs	**Start Times/Program**

Calendar Days (check one)					
	7 days	14 days		Other (explain)	

Irrigation Interval (check options available)					
	Daily	Even/Odd		Custom (explain)	

Rain delay (maximum days)	**Skip Day Period** (maximum days)

Percent Adjust Options (check applicable)									
	Global		By program		By station		By month		Seasonal

Sensors Installed (make & model)	
Rain	
Freeze	
Wind	
Temperature	
Flow	
Soil moisture	
Tipping bucket	

Notes

Controller Settings

Spray Worksheet # 5

Project Name		Date			
Address		Candidate ID #			
City, State		Page		of	

Current Controller Settings

Program	Start Times				Days On															
	1	2	3	4		S		M		T		W		T		F		S		
A						S		M		T		W		T		F		S		
B						S		M		T		W		T		F		S		
C						S		M		T		W		T		F		S		
D						S		M		T		W		T		F		S		

Program	Station	Minutes		Program	Station	Minutes		Program	Station	Minutes

Smart Controller Settings

Station	Program	PR	DU	Plant Factor	Soil Type	Slope	Soil Moisture

Test Area Map – Spray Worksheet # 6

Project Name		Date			
Address		Candidate ID #			
City, State		Page		of	

Test Area/Station								
Test Run Time		min	Wind		mph	Pressure		psi
Meter Start			Meter Stop			Total		

**Indicate north and ALL audit area and sprinkler dimensions
O = SPRINKLER – Record the location of each sprinkler and sprinkler spacing.
X = CATCH DEVICE – Record the location of each catch device and catch amount.

Catch Can Test - Spray Worksheet # 7

Project Name		Date		
Address		Candidate ID #		
City, State		Page		of

Test Area/Station					
Catch Device Area (A_{CD})		$in.^2$	Test Run Time (t_R)		min

Catch Device Volumes: ***All values and calculations must be completed on this page; auditing software is not acceptable for use in determining these values.***

#1		#13		#25		#37		#49		#61		#73	
#2		#14		#26		#38		#50		#62		#74	
#3		#15		#27		#39		#51		#63		#75	
#4		#16		#28		#40		#52		#64		#76	
#5		#17		#29		#41		#53		#65		#77	
#6		#18		#30		#42		#54		#66		#78	
#7		#19		#31		#43		#55		#67		#79	
#8		#20		#32		#44		#56		#68		#80	
#9		#21		#33		#45		#57		#69		#81	
#10		#22		#34		#46		#58		#70		#82	
#11		#23		#35		#47		#59		#71		#83	
#12		#24		#36		#48		#60		#72		#84	
Sub-total		**Sub-total**		**Sub-total**		**Sub-total**		**Sub-total**		**Sub-total**		**Sub-total**	

Total Catch Volume		**Total Low Quarter**	
Average Volume		**Average Low Quarter**	

Calculate Distribution Uniformity (show work)	**Calculate Net Precipitation Rate** (show work)
$DU_{LQ} = \frac{\text{avg catch in low quarter}}{\text{avg catch volume}}$ $= \frac{\quad\quad mL}{mL}$ $= \_\_\_\_\_$	$PR_{net} = \frac{3.66 \times V_{avg}}{T_r \times A_{CD}}$ $= \frac{3.66 \times (\quad\quad mL)}{(\quad\quad min) \times (\quad\quad in.^2)}$ $= \_\_\_\_\_$

Soil Moisture Irrigation Schedule – Spray Worksheet # 8

Project Name		Date	
Address		Candidate ID #	
City, State		Station	

Plant Water Requirement		**Value**		**Units**	**Source**
A.	Hydrozone type				field observation
B.	Reference period			days	
C.	Reference ET [ET_o]			in.	weather data
D.	Landscape coefficient [K_L]				$K_T \times K_d \times K_{mc}$
	1) Turf or plant factor [K_T or K_P]				charts & tables
	2) Vegetation density factor [K_d]				charts & tables
	3) Microclimate factor [K_{mc}]				charts & tables
E.	Landscape ET [ET_L]			in.	C × D
F.	Average daily ET_L			in.	E ÷ B
Sprinkler Performance		**Value**		**Units**	**Source**
G.	Precipitation rate [PR]			in./h	audit or calculation
H.	Distribution uniformity [DU_{LQ}]			decimal	audit or estimate
I.	Scheduling multiplier [SM]				table or equation
Soil Moisture "Bucket"		**Value**		**Units**	**Source**
J.	Soil category				field observation
K.	Available water [AW]			in./in.	charts & tables
L.	Root zone depth			in.	field measurement
M.	Plant available water [PAW]			in.	K × L
N.	Management allowable depletion [MAD]			decimal	50% for landscapes
O.	Allowable depletion [AD]			in.	M × N
Scheduling Parameters		**Value**		**Units**	**Source**
P.	Irrigation interval			days	O ÷ F (round down)
Q.	Water to apply			in.	F × P
R.	Lower boundary			min	(Q ÷ G) × 60 (round down)
S.	Upper boundary			min	(R × I) (round up)
T.	**Selected Run Time**			min	management decision
U.	Determine cycle starts (CHOOSE METHOD A OR B)				
	a. Observed time to runoff			min	field observation
OR	b. Site conditions			cycles	based on site conditions
	1) Soil category		Coarse = 1, Medium = 2, Fine = 3		
	2) Slope		Flat = 0, Slight = 1, Moderate = 2, Steep = 3		
	3) Compaction		No = 0, Yes = 1		
	4) Sprinkler type		Rotor = 0, Spray = 1		

Scheduling Summary	**Value**	**Units**	**Source**
Water to be applied		in.	Line Q
Interval		days	Line P
Cycle starts per day			(Line T ÷ U-a or U-b) (round up)
Minutes per cycle		min	Line T ÷ Cycle starts