

Oklahoma Mesonet / ARS Quality Assurance Report

August 2019

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- Mesonet technicians completed scheduled rotations of 7 batteries (BATV/BVAS), 6 rain gauges (RAIN/TIP2), 1 aspirator fan (FANS), 2 barometers (PRES), 5 relative humidity sensors (RELH/TSLO), 2 pyranometers (SRAD), 3 PRT thermometers (TAIR/TA9M), 4 wind sentries (WS2M), and 2 wind monitor nose cones (WSPD).
- A lightning strike at the Wynona site (WYNO) on August 8 caused loss of data.
- Ants took up residence inside equipment at the Buffalo site (BUFF), resulting in some data loss.

Mesonet QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
TAIR				
RELH				
	Resolved	CLOU	40214	Humidity sometimes experiences a high bias while TSLO reports values lower than TAIR. Replaced. Mud dauber nest on sensor.
	Current	MARE	40317	Temporary errant increases in humidity on sunny days. Larger increases also have small decrease in TSLO.
WSPD				
WDIR				
PRES				
SRAD				
RAIN				
	Current	CENT	40292	Primary rain gauge does not record precipitation when storms move over site.
TA9M				

WS2M				
TB10				
	Current	LAHO	40180	10cm bare soil temperature reports errant values during warmest part of day. Suspect heat-related electrical short.
	Current	SLAP	39314	10cm bare sensor reports errant values.
TS05				
	Current	GOOD	39317	5cm sod sensor reports values much lower than expected.
TS10				
	Current	PERK	40177	10cm sod temperature reports errant values during warmest part of day. Suspect heat-related electrical short.
	Current	SEIL	40132	TS10 has similar diurnal variation as TS05 and peaks before neighbors. Suspect sensor too shallow. Rebury.
TS25				
	Current	DURA	40266	25cm soil temperature and moisture reports errant values.
TS60				
TR05				
	Current	ADAX	40312	5cm soil moisture very slow to moisten after extended periods of dryness. Replace sensor.
TRB10				
	Current	NRMN	40138	Soil moisture data much noisier than expected after lightning strike. Replaced sensor.
	Current	NEWP	40270	10cm bare soil moisture stopped heating. Final temperature same as starting temperature.
TRS10				
	Current	ALTU	40228	10cm sod temperature has much more diurnal variation than 5cm sod and 10cm bare. Responds to variations in cloud cover.
	Current	CLAY	39311	Sensor not heating. Final temperature same as starting temperature.
TR25				
	Current	PUTN	40309	Small errant spikes in 25cm soil moisture. Replace sensor.

	Current	SALL	40137	25-cm sensor reports errant values.
TR60				
	Resolved	PAUL	40197	Sensor not heating. Final temperature same as starting temperature. Returned to normal.
	Current	ANT2	40200	Sensor not heating. Final temperature same as starting temperature.
	Current	FTCB	40205	Sensor not heating. Final temperature same as starting temperature.
	Current	OKCE	40206	Sensor reports errant values.

ARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
RAIN	Resolved	A131	40223	Larger screen missing from rain gauge. No data problems as of today. Screen installed.
VW05	Resolved	A235	40276	Soil moisture reports errantly high values. Rewire sensor before replacing. Replaced after rewire did not correct problem.
VW25	Resolved	A256	40210	Newly installed sensor reports bad values. Replaced.
VW45	Current	A262	40279	Errantly low 45cm soil moisture. Rewire sensor.
V05T				
V25T				
V45T				

FCARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
RAIN				
VW05				
VW25	Current	F105	40282	25cm soil moisture is errantly high. Rewire sensor.
	Current	F106	40274	25cm soil sensor reports values near zero for all voltages. Rewire sensor.
VW45	Resolved	F102	40219	Newly installed 45 cm sensor reports errant values. Check cables/connections. Rewired. Resolved.
V05T				
V25T				
V45T				

'Current' tickets are the unresolved tickets as of the last day of the month OR those tickets added based on the Monthly QA analysis.

'Resolved' tickets are the sensor problems that were fixed during the entire month.

Variable	Description
TAIR	Air temperature at 1.5 meters
RELH	Relative humidity at 1.5 meters
WDIR	Wind direction at 10 meters
WSPD	Wind speed at 10 meters
PRES	Air pressure
SRAD	Incident solar radiation
RAIN	Rainfall
TA9M	Air temperature at 9 meters
WS2M	Wind speed at 2 meters
TB10	Soil temperature at 10 cm under bare soil
TS05	Soil temperature at 5 cm under native sod
TS10	Soil temperature at 10 cm under native sod
TS25	Soil temperature at 25 cm under native sod
TS60	Soil temperature at 60 cm under native sod
TR05	Soil moisture: Calibrated DeltaT at 5 cm under native sod
TRB10	Soil moisture: Calibrated DeltaT at 10 cm under bare soil
TRS10	Soil moisture: Calibrated DeltaT at 10 cm under native sod
TR25	Soil moisture: Calibrated DeltaT at 25 cm under native sod
TR60	Soil moisture: Calibrated DeltaT at 60 cm under native sod
VW05	Soil moisture: Volumetric water content at 5 cm under native sod
VW25	Soil moisture: Volumetric water content at 25 cm under native sod
VW45	Soil moisture: Volumetric water content at 45 cm under native sod
V05T	Soil temperature at 5 cm under native sod
V25T	Soil temperature at 25 cm under native sod
V45T	Soil temperature at 45 cm under native sod