

Oklahoma Mesonet / ARS Quality Assurance Report

July 2019

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- Mesonet technicians completed scheduled rotations of 10 batteries (BATV/BVAS), 3 aspirator fans (FANS), 7 barometers (PRES), 1 rain gauge (RAIN/TIP2), 5 relative humidity sensors (RELH/TSLO), 4 pyranometers (SRAD), 4 PRT thermometers (TAIR/TA9M), 3 wind sentries (WS2M), 2 wind monitor nose cones (WSPD), and 4 current excitation modules.
- Damaged equipment at the Kenton site (KENT) resulted in some data loss.

Mesonet QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
TAIR				
RELH	Resolved	KENT	39259	Relative humidity and slow temperature report incorrect values. Replaced.
	Current	CLOU	40214	Humidity sometimes higher than expected and at same time slow temperature is less than TAIR.
WSPD				
WDIR				
PRES				
SRAD	Resolved	HUGO	39321	Solar radiation reports incorrect values. Replaced.
RAIN	Resolved	KENT	39266	Primary rain gauge measured tips when no precipitation expected. Other variables affected also. Resolved.
	Resolved	KENT	39380	Secondary gauge reports less than expected, or reports rain when no precipitation expected. Resolved.
	Resolved	KIN2	39386	Secondary gauge sometimes reports much more than

				expected. Replaced gauge.
TA9M				
WS2M	Resolved	KENT	39273	2m wind speed gust errantly spiked up to 10-20 m/s for a few observations. Replaced.
TB10	Current	LAHO	40180	10cm bare soil temperature reports incorrect values.
	Current	SLAP	39314	10cm bare sensor reports incorrect values.
TS05	Resolved	MCAL	40127	TS05 has more diurnal variation than expected. Suspect sensor too shallow. Rebury sensor. Reburied.
	Resolved	MRSB	40135	TS05 has similar diurnal variation as TS10. Suspect sensor too deep. Rebury. Reburied.
	Resolved	WAL2	40123	TS05 has similar diurnal variation as TS10. Check sensor depth and rebury if too deep. Replaced.
	Current	GOOD	39317	5cm sod sensor reports values much lower than expected.
TS10	Current	PERK	40177	10cm sod temperature reports incorrect values.
	Current	SEIL	40132	TS10 has similar diurnal variation as TS05 and peaks before neighbors. Suspect sensor too shallow. Rebury.
TS25				
TS60				
TR05				
TRB10	Current	NRMN	40138	Soil moisture data much noisier than expected after lightning strike. Suspect either damaged sensor or damaged port on CE8.
TRS10	Resolved	KENT	39262	10cm soil temperature under sod reports incorrect values. Replaced.
	Current	CLAY	39311	Sensor not heating. Final temperature same as starting

				temperature. Average soil temperature is fine.
TR25	Resolved	MRSH	40117	25-cm sensor reports incorrect values. Replaced.
	Current	SALL	40137	25-cm sensor reports incorrect values.
TR60	Resolved	ACME	40131	60-cm sensor not heating properly. Replaced.
	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 incorrect values.
	Current	PAUL	40197	Sensor not heating. Final temperature same as starting temperature.

ARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
RAIN	Current	A131	40223	Larger screen missing from rain gauge. No data problems yet.
VW05	Resolved	A256	40109	5-cm soil moisture reports near 0 for all voltage readings. Problem started during tech visit. Check wiring. Corrected wiring.
VW25	Resolved	A256	39235	25 cm soil temperature reports incorrect values. Replaced.
	Current	A256	40210	Newly installed sensor reports -7999 for all values. Check cabling connections before replacing sensor.
VW45	Resolved	A256	40114	45-cm soil moisture reports near 0 for all voltage readings. Problem started during tech visit. Check wiring. Corrected wiring.
V05T				

V25T	
V45T	

FCARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
RAIN				
VW05				
VW25	Resolved	F102	40154	25-cm sensor reports incorrect values. Replaced.
VW45	Resolved	F102	40150	45-cm sensor errantly reports values near 0. Replaced.
	Resolved	F113	40147	45-cm sensor errantly reports values near 0. Replaced.
	Current	F102	40219	Newly installed 45 cm sensor reports errant values. Check cabling connections before replacing sensor.
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