

Oklahoma Mesonet / ARS Quality Assurance Report

September 2019

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- Mesonet technicians completed scheduled rotations of 4 rain gauges (RAIN, TIP2), 3 batteries, 6 aspirator fans, 2 barometers (PRES), 9 relative humidity sensors (RELH/TSLO), 4 pyranometers (SRAD), 3 PRT thermometers (TAIR/TA9M), 3 wind sentries (WS2M), 3 wind monitor nose cones (WSPD), and 6 current excitation modules.
- An auxiliary power issue at the Jay site (JAYX) resulted in the aspirator fan being down. This caused TAIR data to be flagged for the duration of the issue.
- Faulty power system at the Buffalo site (BUFF) caused the logger to sometimes miss observation periods. Voltage regulator replaced.
- The CDM at the Talala site (TALA) failed, resulting in some missing data from the site. Equipment replaced.

Mesonet QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
TAIR	Resolved	MEDI	40335	Air temperature sometimes reports values much less than expected for a couple hours, then returns to normal. Rewired sensor.
RELH	Resolved	MARE	40317	Temporary errant increases in humidity on sunny days. Larger increases also have small decrease in TSLO. Removed wasp nest from sensor.
WSPD				
WDIR				
PRES				
SRAD	Resolved	FORA	40408	SRAD significantly less than neighbors on clear days. Rain events on 9 21 and 9 22 did not resolve problem. Resolved.
RAIN	Resolved	CENT	40292	Primary rain gauge does not record precip when storms move over

				site. Resolved.
	Current	ADAX	40456	Confirm serial number of rain gauge cover and base.
	Current	RING	40453	Confirm serial number for cover and base of rain gauge.
	Current	ARD2	40411	Secondary gauge sometimes records less rain than expected. If no clog found, check cables connections for damage.
TA9M				
WS2M				
TB10	Current	LAHO	40180	10cm bare soil temperature reports errant values.
	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.
	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 report errant values.
TS60				
TR05	Resolved	ADAX	40312	5cm soil moisture very slow to moisten after extended periods of dryness. Replace sensor. Replaced.
TRB10	Current	NEWP	40270	10cm bare soil moisture stopped heating.
TRS10	Resolved	ALTU	40228	10cm sod temperature has much more diurnal variation than 5cm sod and 10cm bare. Responds to variations in cloud cover. Replaced.
	Current	CLAY	39311	Sensor not heating.
TR25	Current	PUTN	40309	Small errant spikes in 25cm soil moisture during precip or dew. Original sensor, please replace.
	Current	SALL	40137	25-cm sensor reports errant values.

TR60	Resolved	PAUL	40197	Sensor not heating. Problem resolved automatically.
	Current	ANT2	40200	Sensor not heating.
	Current	BUFF	40327	60 cm starting and final temperatures oscillate between 10-50 deg C throughout the day. Soil moisture final temperature is always less than starting temperature. Please check sensor wiring.
	Current	FTCB	40205	Sensor not heating.
	Current	OKCE	40206	Sensor reports errant values.

ARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
RAIN				
VW05	Current	A154	40357	5cm soil sensor reports values near zero for voltages 1-3. Completely unwire rewire sensor to see if it resolves problem.
VW25	Current	A124	40361	25cm soil sensor reports values near zero for voltages 1-3. Completely unwire rewire sensor to see if it resolves problem.
	Current	A133	40363	25cm soil sensor reports erratic values for voltages 1-3. Completely unwire rewire sensor to see if it resolves problem.
VW45	Current	A262	40279	Errantly low 45cm soil moisture. Voltages 1-3 report values near zero. Soil temperature voltage is fine. Completely unwire rewire sensor.
V05T				
V25T				
V45T				

FCARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
RAIN				
VW05	Current	F113	40353	5cm soil sensor reports values near zero for voltages 1-3. Completely unwire rewire sensor to see if it resolves problem.
VW25	Current	F105	40282	25cm soil moisture is errantly high. Completely unwire rewire sensor to see if it resolves problem.
	Current	F106	40274	25cm soil sensor reports values near zero for all voltages. Completely unwire rewire sensor to see if it resolves problem.
VW45				
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