

# Oklahoma Mesonet/ARS Quality Assurance Report June 2021

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- Mesonet technicians completed scheduled rotations of 7 rain gauges (RAIN/TIP2), 16 batteries (BVAS/BATV), 1 aspirator fans (FANS), 5 barometers (PRES), 8 relative humidity sensors (RELH/TSLO), 8 pyranometers (SRAD), 8 PRT thermometers (TAIR/TA9M), 1 thermistor, 2 wind sentries (WS2M), 5 wind monitor nose cones (WSPD), and 5 current excitations
- Suspected problem with datalogger program at Tipton (TIPT) resulted in a few lost observations. Data from TIPT reporting as expected, though the site missed a few observations during remote troubleshooting. Logger scheduled to be replaced and returned to calibration lab for testing.
- Suspected wiring problem is causing the groundwater sensor at the Tipton site (TIPT) to report -7999 for all values. Attempted fix in early July by OWRB unsuccessful. Errant data are not displaying on our website.

## Mesonet QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
<b>TAIR</b>				
<b>RELH</b>	<b>Current</b>	<b>OKMU</b>	<b>44205</b>	<b>Errant RELH high bias during afternoon period. Symptoms in data may suggest insect nest on sensor.</b>
	<b>Current</b>	<b>VINI</b>	<b>44775</b>	<b>Unexpected steps in RELH. Suspect insect nest on sensor.</b>
<b>WSPD</b>				
<b>WDIR</b>	<b>Current</b>	<b>WEB3</b>	<b>44214</b>	<b>WDIR moved with tower. Please use transit to verify wind direction alignment.</b>
<b>PRES</b>				

<b>SRAD</b>	<b>Resolved</b>	<b>WEB3</b>	<b>44211</b>	<b>Did not confirm SRAD level during install. Please level sensor. Leveled.</b>
<b>RAIN</b>	<b>Current</b>	<b>EUFA</b>	<b>44204</b>	<b>Please replace primary gauge cable.</b>
	<b>Current</b>	<b>EUFA</b>	<b>44203</b>	<b>Secondary gauge sometimes misses tips at start of rain events. Please replace rain gauge cable.</b>
<b>TA9M</b>	<b>Resolved</b>	<b>NRMN</b>	<b>44090</b>	<b>TA9M shelter damaged by hail. Replaced TA9M shelter.</b>
	<b>Current</b>	<b>OKMU</b>	<b>44219</b>	<b>Sharp decreases in 9m air temperature during the day do not compare well to TAIR. Possible insect nest on sensor.</b>
<b>WS2M</b>				
<b>TB10</b>				
<b>TS05</b>				
<b>TS10</b>				
<b>TS25</b>				
<b>TS60</b>				
<b>TR05</b>				
<b>TRB10</b>	<b>Current</b>	<b>BRIS</b>	<b>44201</b>	<b>Suspect failed heater. Difference between starting and final temperatures is negligible. Soil temp unaffected. Please replace sensor.</b>
	<b>Current</b>	<b>WEAT</b>	<b>44333</b>	<b>Sensor reports errantly high values in both soil moisture and temperature when soil</b>

				temperature approaches 30°C. Suspect thermal short. Please replace.
TRS10	Resolved	ERIC	44053	Both starting and final temperature report -7999 or otherwise errant values. Both soil moisture and temperature affected. Sensor just 1.5 years old, please check all wiring and ports for problems before replacing sensor. REPLACED: Sensor completely disconnected and rewired. Sensor continued to report errant values. Moved to new ports on CE8 no change noticed. Sensor replaced. Newly installed sensor reports reasonable values.
	Current	ANT2	44335	Both starting and final temperature report - 7999. Both soil temp and moisture affected. Please replace.
	Current	CHER	44181	Starting and final temperature reporting errantly high values. Both soil moisture and temperature affected. Sensor installed May 2018, please check wires and cabling before replacing.
	Current	PUTN	44151	Soil temperature reports errant values for several observations then returns to normal. Check sensor wiring from ports to sensor. If nothing found, please replace.
TR25	Current	PERK	44215	Suspect failed heater. Difference between starting and final temperature is negligible. Soil temperature fine. Original sensor. Please replace.
	Current	PORT	44093	Suspect failed heater. Difference between starting and final temperature is negligible. Soil temperature fine. Please check sensor wiring for potential problems before replacing.
TR60				

## ARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
RAIN				
VW05				
VW25				
VW45				
V05T				
V25T				
V45T				

## FCARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
<b>RAIN</b>				
<b>VW05</b>	<b>Current</b>	<b>F103</b>	<b>44773</b>	<b>Raw voltages 1-3 reporting near zero, resulting in near constant soil moisture time series values. This follows period of very erratic values in April. Soil temperature appears unaffected.</b>
<b>VW25</b>	<b>Resolved</b>	<b>F214</b>	<b>44141</b>	<b>Suspect 25cm sensor wired into ports assigned to VW45. Please rewire sensor into correct ports. Sensor rewired into correct ports</b>
<b>VW45</b>	<b>Resolved</b>	<b>F214</b>	<b>44143</b>	<b>Suspect 45cm sensor wired into ports assigned to VW25. Please rewire into correct ports. Sensor rewired into correct ports.</b>
<b>V05T</b>				
<b>V25T</b>				
<b>V45T</b>				

*'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.*

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