

# Oklahoma Mesonet/ARS Quality Assurance Report January 2022

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- Mesonet technicians completed scheduled rotations of 2 batteries (BATV/BVAS), 1 relative humidity sensor (RELH/TSLO), 3 PRT thermometers (TAIR/TA9M), 1 wind monitor nose cones (WSPD), and 1 current excitation module.

## Mesonet QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
TAIR	Resolved	HUGO	45538	Sensor reports values near -400F for several hours, roughly aligning with sunrise-sunset, before returning to normal. Rewiring sensors has been shown to resolve this issue in the past. If a more apparent cause cannot be determined, please rewire reseal sensor connections, then check for realistic values. Rewired all connections, re-seated foam cover for CDM.
RELH				
WSPD	Resolved	ADAX	45534	Starting threshold problem can be traced back to sensor rotation on October 26. Frequency and intensity of starting threshold issues dramatically increased mid-December in the absence of winter precip. WSPD sensor rotation appears unbalanced. Replaced.
WDIR				
PRES	Current	EUFA	45574	Please replace external barometer tubing.

<b>SRAD</b>				
<b>RAIN</b>	<b>Current</b>	<b>CLAY</b>	<b>45547</b>	<b>Sensor often stops recording tips during on-going rain events. Please replace gauge cables and ensure expected drip test results.</b>
	<b>Current</b>	<b>CLAY</b>	<b>45548</b>	<b>Please replace secondary rain gauge cables for consistency.</b>
	<b>Current</b>	<b>FAIR</b>	<b>45571</b>	<b>Gauge records 0 tips while TIP2 records markedly more during recent snow melt events. Unexpected tip also recorded mid-December during wind gusts near 60mph.</b>
<b>TA9M</b>				
<b>WS2M</b>	<b>Resolved</b>	<b>WAL2</b>	<b>45545</b>	<b>Shows symptoms of a potential starting threshold problem. Starting mid-December, sensor commonly reports 0 m/s while WSPD reports near 5 m/s. Cups on sensor appear to spin unbalanced. Nothing heard from bearings. Replaced.</b>
<b>TB10</b>				
<b>TS05</b>				
<b>TS10</b>				
<b>TS25</b>	<b>Current</b>	<b>MANG</b>	<b>45573</b>	<b>25cm sensor reports -7999 for starting, final, and average soil temperature.</b>
<b>TS60</b>				
<b>TR05</b>				

<b>TRB10</b>				
<b>TRS10</b>	<b>Resolved</b>	<b>ELRE</b>	<b>45544</b>	<b>Began reporting exceedingly noisy data last summer that has worsened over time. Please replace sensor. Replaced.</b>
<b>TR25</b>	<b>Resolved</b>	<b>WIST</b>	<b>45543</b>	<b>Originally reporting erratic, spiky values during rainfall, data have become overall quite noisy. Please replace sensor. Replaced.</b>
	<b>Current</b>	<b>PERK</b>	<b>45540</b>	<b>Failed heater, starting and final temperature are the same. Please replace.</b>
<b>TR60</b>				

## ARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
<b>RAIN</b>				
<b>VW05</b>	<b>Current</b>	<b>A262</b>	<b>45581</b>	<b>Raw voltages 1-3 unexpectedly stepped-up mid-January and have not returned to normal. Please replace sensor.</b>
<b>VW25</b>	<b>Current</b>	<b>A152</b>	<b>45580</b>	<b>Raw voltages 1-3 report near 0. Please replace sensor.</b>
<b>VW45</b>				
<b>V05T</b>				
<b>V25T</b>				
<b>V45T</b>				

## FCARS QA Report for Standard Variables

Variable	Status	Site	Ticket	Remarks
RAIN	Current	F103	45447	2021 double mass analysis shows site consistently reported more than neighbors. Year total was 20 percent higher than all FCARS neighbors and WEAT. Suspect cover high bias. Replace entire gauge for scheduled rotation. ROTATION Equipment at Site: RAINGAUGE, MK8207
	Resolved	F111	45109	Rain gauge measures tips slowly and tips continue for an extended period after precipitation ends. Suspect gauge is clogged. Unclogged. 35 tips after cleaning.
VW05				
VW25				
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.*

<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>