

**OKLAHOMA MESONET/ARS QUALITY ASSURANCE REPORT**  
December 2003

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A winter storm on December 12-14th brought freezing rain and snow to a large portion of Oklahoma. The freezing rain caused erroneous wind observations to be reported at 45 sites. Thousands of wind observations were manually flagged by our QA meteorologists to document the event.

The Mesonet changed its official air temperature sensor to the Thermometrics Fasttherm in late December. Although there won't be any noticeable change in our temperature data, the Fasttherm sensor responds more quickly to changes in temperatures (i.e., during cold fronts and thunderstorms). The Fasttherm also has a smaller thermal mass than our previous sensor (the Vaisala HMP35C), and therefore is not as susceptible to radiational heating during Oklahoma's hot summers. The Vaisala HMP35C sensor will continue to provide the Mesonet with relative humidity observations.

The Monthly QA analysis helped identify 10 new problems across the network, mainly with soil temperatures.

<b>Mesonet QA Report for Standard Variables</b>	
<b>TAIR</b>	Current: Resolved:
<b>RELH</b>	Current: Resolved:
<b>WDIR</b>	Current: Resolved:
<b>WSPD</b>	Current: Resolved:
<b>PRES</b>	<b>Current: #8502 BLAC Pressure stuck at 0.</b> Resolved:
<b>SRAD</b>	Current: Resolved:
<b>RAIN</b>	Current: Resolved:
<b>TA9M</b>	Current: Resolved:
<b>WS2M</b>	<b>Current: #8530 HOLL Monthly QA indicates starting threshold problem</b> Resolved:

<b>TS10</b>	<b>Current: #8528 ARDM Monthly QA indicates TS10 has 2-3° C warm bias</b> <b>Current: #8526 DURA Monthly QA indicates problem with either TS05 or TS10 – no flux is indicated between two depths</b> <b>Resolved: #8372 ALTU Replaced bad sensor</b>
<b>TB10</b>	<b>Current: #8523 WOOD Monthly QA indicates a 5 °C cool bias</b> <b>Resolved:</b>
<b>TS05</b>	<b>Current: #8527 DURA Monthly QA indicates problem with either TS05 or TS10 – no flux is indicated between two depths</b> <b>Resolved:</b>
<b>TB05</b>	<b>Current: #8529 NOWA Monthly QA indicates 3° C cool bias</b> <b>Resolved:</b>
<b>TS30</b>	<b>Current: #8456 BIXB TS30 data erratic</b> <b>Current: #8463 PERK TS30 reporting temps down to -100° C</b> <b>Current: #8524 BURB Monthly QA indicates 3-5° C warm bias</b> <b>Current: #8525 VANO Monthly QA indicates 5° C cool bias</b> <b>Resolved:</b>
<b>TR05</b>	<b>Current: #8424 SEIL 5cm soil moisture observations are erratic</b> <b>Current: #8437 OKEM 5cm soil moisture spiking and dipping</b> <b>Resolved: #8425 COOK Repaired CE6</b>
<b>TR25</b>	<b>Current:</b> <b>Resolved:</b>
<b>TR60</b>	<b>Current:</b> <b>Resolved:</b>
<b>TR75</b>	<b>Current:</b> <b>Resolved:</b>

<b>ARS QA Report</b>	
<b>TAIR</b>	<b>Current:</b> <b>Resolved:</b>
<b>RELH</b>	<b>Current:</b> <b>Resolved:</b>
<b>SRAD</b>	<b>Current: #8520 A160 Mesocomp and Monthly QA indicates 10% high bias</b> <b>Resolved:</b>
<b>RAIN</b>	<b>Current:</b> <b>Resolved: #8438 A163 Removed spider web from gauge that prevented bucket from tipping</b>

<b>TS05</b>	Current: <b>Resolved: #8253 A163 Replaced damaged sensor</b>
<b>TS10</b>	Current: Resolved:
<b>TS15</b>	<b>Current: #8518 A161 Monthly QA indicates 2° C warm bias</b> Resolved:
<b>TS30</b>	<b>Current: #8462 A166 TS30 reporting -88° C</b> Resolved:

“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>
TAIR	Air temperature measured at 1.5 meters
RELH	Relative humidity measured at 1.5 meters
WDIR	Wind direction measured at 10 meters
WSPD	Wind speed measured at 10 meters
PRES	Pressure
SRAD	Incident solar radiation
RAIN	Rainfall
TA9M	Air temperature measured at 9 meters
WS2M	Wind speed measured at 2 meters
TS10	Soil temperature measured at 10 cm under native sod
TB10	Soil temperature measured at 10 cm under bare soil
TS05	Soil temperature measured at 5 cm under native sod
TB05	Soil temperature measured at 5 cm under bare soil
TS15	Soil temperature measured at 15 cm under native sod
TS30	Soil temperature measured at 30 cm under native sod
TR05	Soil moisture: Calibrated DeltaT measured at 5 cm under native sod
TR25	Soil moisture: Calibrated DeltaT measured at 25 cm under native sod
TR60	Soil moisture: Calibrated DeltaT measured at 60 cm under native sod
TR75	Soil moisture: Calibrated DeltaT measured at 75 cm under native sod