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## FlowTracker2 QC Warnings Field Guide

Warnings in **RED** should be fixed before continuing with the measurement. If these cannot be fixed, abort the measurement. Warnings in **GREEN** should be examined – if all solutions are attempted or the warning is realistic, then proceed with the measurement.

Warning	Description	Why?	What To Do?
<b>Approach Low SNR</b>	SNR is 4 to 7 dB	Clear water, very sediment-rich or poor water conditions	<ul style="list-style-type: none"><li>Repeat or move to a different location</li></ul>
<b>Beam SNRs Not Similar</b>	Difference in SNR between two beams is greater than <a href="#">SNR Threshold</a>	Beams are not seeing similar water quality. Can be caused by obstacles (plants, rocks) or malfunction in probe	<ul style="list-style-type: none"><li>Check for obstacles (plants, rocks, etc.)</li><li>Repeat or move to a different location</li><li>Perform AutoQC or Beamcheck to ensure proper probe function</li></ul>
<b>Boundary Interference</b>	Indicates quality of measurement (Poor, Fair, Good, or Best)	Poor or Fair quality usually indicates obstacles at or near measurement location	<ul style="list-style-type: none"><li>Check for obstacles</li><li>Repeat or move to a different location</li></ul>
<b>Fractional Depth &gt; 1</b>	The ratio between the measurement and total depth is greater than one.	The entered measurement depth is deeper than the water depth. This error will not appear for a standard discharge (0.2/0.6/0.8) measurement.	<ul style="list-style-type: none"><li>Check that measurement depth was entered correctly</li></ul>
<b>High % Spikes</b>	Percent of spikes exceeds <a href="#">Spike Threshold</a>	Highly variable flow, obstacles upstream or at the station, vibrations or moving the probe during data collection	<ul style="list-style-type: none"><li>Check for obstacles upstream or at station</li><li>Make sure probe isn't moving during measurement</li><li>Repeat or move to different location</li></ul>
<b>High Stn % Discharge</b>	The percent discharge at this station is larger than the <a href="#">Max Station Discharge</a>	High velocity at station, or too much spacing between stations	<ul style="list-style-type: none"><li>Add an additional station in between current and last station</li></ul>
<b>Large SNR Variation</b>	SNR varies more than expected during a measurement	Unusually high or low sediment load at station, or obstacles interfering with probe	<ul style="list-style-type: none"><li>Check for obstacles</li><li>Check for changes in sediment load (is the warning realistic?)</li></ul>
<b>Location Outside Edge</b>	Station location is outside edge location	The entered station location is outside of the edge location	<ul style="list-style-type: none"><li>Check that station location was entered correctly</li></ul>
<b>Low SNR</b>	SNR is below 4 dB	Clear water, very sediment-rich or poor water conditions	<ul style="list-style-type: none"><li>Repeat or move to a different location</li><li>Perform AutoQC or Beamcheck to ensure proper probe function</li></ul>
<b>Rod Angle &gt; QC</b>	Rod angle is greater than <a href="#">Max Wading Rod Angle</a>	Rod is not vertical during measurement	<ul style="list-style-type: none"><li>Repeat measurement, ensuring rod is vertical (pay attention to indicator during measurement)</li></ul>



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Warning	Description	Why?	What To Do?
<b>SNR Threshold Variation</b>	Difference in SNR between this station and previous station is greater than <a href="#">SNR Threshold</a>	Sudden changing of water conditions, or obstacles interfering with probe	<ul style="list-style-type: none"><li>Check for obstacles</li><li>Repeat or move to a different location</li><li>Check for sudden changes in water conditions and sediment load (is the warning realistic?)</li></ul>
<b>Standard Error &gt; QC</b>	Calculated standard error ( $\sigma_V$ ) for this station is greater than the <a href="#"><math>\sigma_V</math> Threshold</a>	The variability (standard error) in the measurement at this station is greater than previous stations	<ul style="list-style-type: none"><li>Check for obstacles</li><li>Make sure probe isn't moving during measurement</li><li>Repeat or move to a different location</li></ul>
<b>Station Order</b>	Station location out of sequential order	Stations are usually measured in sequential order	<ul style="list-style-type: none"><li>Make sure you meant to measure the station out of order, otherwise correct the station location</li></ul>
<b>Stn Spacing &gt; QC</b>	Spacing between this and previous station exceeds <a href="#">Max Depth Change %</a>	Distance between this station and last station is too large	<ul style="list-style-type: none"><li>Check that station location was entered correctly</li><li>Add an additional station in between current and last station, if necessary</li></ul>
<b>Velocity Angle &gt; QC</b>	Flow angle is greater than <a href="#">Max Velocity Angle</a>	The angle of flow at this station is not perpendicular to tag line	<ul style="list-style-type: none"><li>Check that the flow angle is not perpendicular (is this warning realistic?)</li><li>Repeat or move to a different location</li><li>DO NOT turn wading rod to align probe with flow. Proceed with measurement despite a high flow angle warning if moving to a new location is not possible</li></ul>
<b>Water Depth &gt; QC</b>	Depth at this station differs by more than <a href="#">Max Depth Change %</a> from previous station.	The entered water depth at this station is very different from the previous station	<ul style="list-style-type: none"><li>Check that water depth was entered correctly</li></ul>

Fields in BLUE represent values that can be set by the user during the measurement by going to Menu > Settings > Quality Control Settings or Discharge Settings.

**Note:** If you notice any of these warnings appearing frequently using one FlowTracker2 system at different sites, please contact Technical Support (858-546-8327 or [support@sontek.com](mailto:support@sontek.com)) as your instrument may have an issue.