5. Identifying Errors

Some readings indicate that there is a problem with the sensor. Sensors that read extremely high (volumetric water content over 100%) or very low (negative reading) are can be caused by sensors that are broken or that are not plugged into the node tightly.

Sensor readings can also indicate irrigation issues. A rapid increase in volumetric water content for all sensors can mean that a solenoid valve is stuck open or that irrigation is not shutting off properly. An overall decreasing trend may indicate that irrigation is not working properly. An excessively high or low sensor reading may also mean that the sensor placement is not good. The sensor may not have been inserted properly, may be too high or low in the container, or may have been removed from the container.

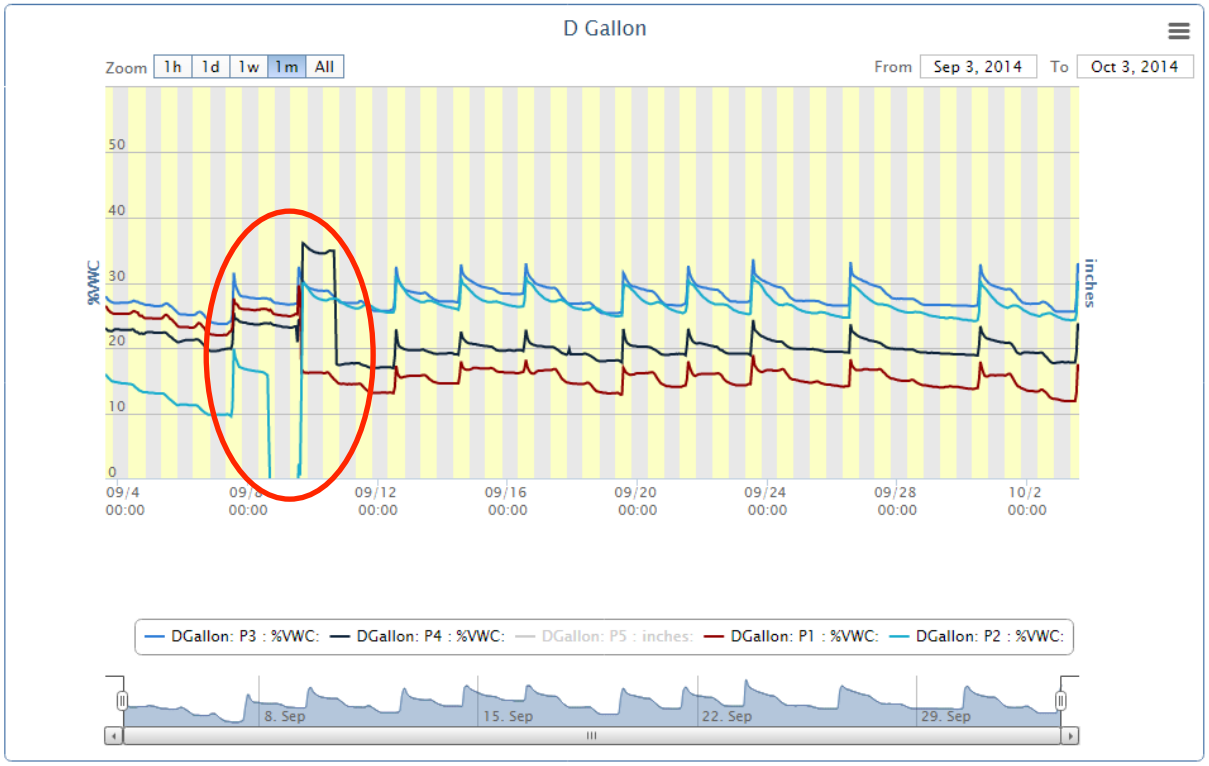

Figure 9. The sensor represented by the green line drops off and then begins reading normal again. The drop in readings was due to the sensor accidentally being removed from a pot and then re-inserted after it was recognized that the sensor was out of range.

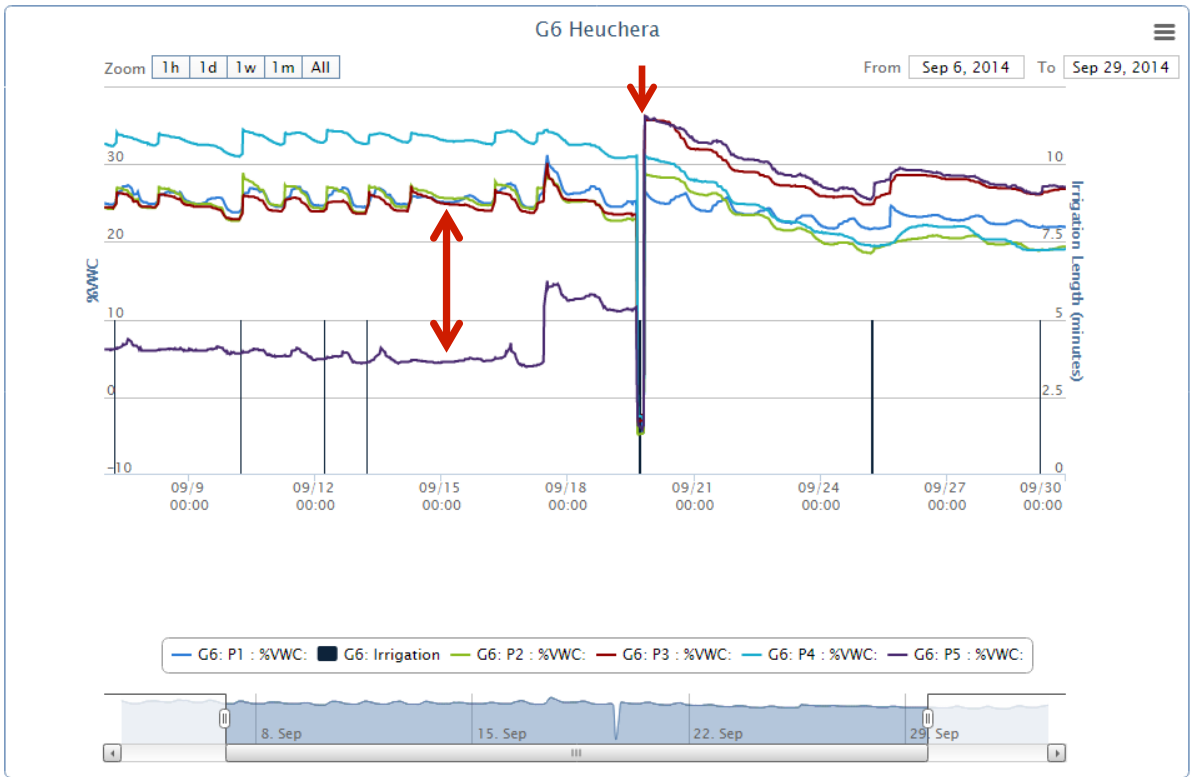

Figure 10. The sensor represented by the purple line is reading much lower than the other sensors. After the sensor is re-inserted into the pot the sensor begins reading within the same range as the rest of the sensors. The initial low readings may have been caused by poor contact between the sensor and substrate. That commonly happens if someone accidentally bumps into the sensor, moving it. That can create air gaps around the sensor that result in artificially low readings.