



## Water Quality Sampling by Drone Progress Reports

### **April 24<sup>th</sup>, 2017:**

Received the new Dissolved Oxygen sensor (Sper Scientific Dissolved Oxygen Pen, Model # 850045). Installed the electrolyte in the probe head, calibrated it and tested it on various types of water (tap, R.O., fish pond). The results seem reasonable, so I am assuming the meter works correctly.

Flew a water sampling missions 1328 and 1713 to the "Otter Island" site, and tested the D.O. First test: 9.2 mg/L, second test: 10.6 mg/L.

Also, had the fortuitous misfortune of hanging the rig in a guy wire when I returned from a mission and found that the bobber at the top of the rig released the sample rig, while the outrigger clip remained intact. Possibly this is acting as a more sensitive "outrigger clip", and the actual outrigger clip may not be necessary? More to study on that later.

### **April 25<sup>th</sup>, 2017:**

Flew a morning mission at 0750. D.O. reads 10.5 mg/L, water temp at 64.5 – a degree or two higher water temp than expected. Could be that the Sper D.O. meter reads higher temps than my previous meter. Will check that out later. Also, the two last samples are in accord (10.6 and 10.5), but the first test at 9.2 may be an outlier, or may be because the tester was not yet 100% ready. This will become clear as we do more tests.

Second D.O. reading at 1130 showed 10.8, in line with the last two. The D.O. meter's temp reading was 1°F higher than more previous thermometer's.

### **May 3, 2017**

I've simplified (I hope!) the drone sampling rig, such that it no longer needs the most expensive part – the outrigger clip. I've substituted a "breakaway ring" made of 16 ga. steel tie wire. The updated white paper has a page about making the rings and how to use them. This takes the total cost of a rig down to about \$7!

See: <http://www.verderiverinstitute.org/WaterSampling/Water%20Sampling%20by%20Drone041317-1.pdf>

### **May 8, 2017**

The Water Sampling Locations are listed on this spreadsheet:

[http://www.verderiverinstitute.org/WaterSampling/Verde Sampling Locations.xlsx](http://www.verderiverinstitute.org/WaterSampling/Verde%20Sampling%20Locations.xlsx)