

## **Ferry Maintenance Report**

**Vessel: Queen of Alberni**

Date: May 2, 2014

Arrival: 12:45PM sailing to Tsawassen. We signed in at terminal supervisor at Duke Point.

Reporter: Akash Sastri/Chris Sundstrom      Staff: Chris Sundstrom, Akash Sastri

Visiting Scientists: Maycira Costa, Stephen Phillips

### **Reason for Visit**

Regular instrument servicing, correlation testing

### **Observations**

1. There was a slight sign of moisture or leaks In the Instrument Box. This was traced to a slightly loose hose on the BBFL2 which was replaced and tightened.
2. The AADI optode had moderate debris or sediment within the housing.
3. The BBFL2 had a partial layer of sediment in the housing and fouling on the sensing surface. Fouling was noticed on the "bottom" surface of the horizontal housing.
4. The Seabird 45 CT sensor had sediment and fouling within the sensor.
5. The sea chest showed no signs of leaks.
6. The inline filter (sea strainer) was checked and was found to contain significant levels of biofouling and some levels of sediment, although the strainer was no-where near clogging.

### **Actions Taken**

1. Opened both boxes and observed function. Both were working well, minor leaks not preventing function.
2. Powered down and disassembled instruments in lower assembly.

3. Cleaned and checked over instruments in Engineering room. The flat songe stick proved effective in cleaning the BBFL2 and Optode housings. The bottle brush proved effective at cleaning the Seabird CT sensor.
4. Ran pre- and post- calibration with standard solutions and with Orange test stick and white substitute test stick for CDOM fluorescence and Chl fluorescence.
5. Re-assembled the instruments in the lower box. Replaced all hoses with new material.
6. Checked over Sea chest and valves, no leaks apparent.
7. Checked and cleaned the sea strainer.
8. Turned ON the system.
9. No leaks in instrument housing and checked flow output at sea strainer. Flow was good. Visually confirmed flow direction at the BBFL2 and confirmed the volume filled with water and began draining correctly. Applied new identification labels to both of the main boxes.
10. Signed out at Engineering room.
11. Proceeded to topside. Applied labels to all housings and discussed sensor mounting locations with Maycira Costa.

#### **Future Actions**

1. Contact Engineering on Q of A for potential assistance in removal of interfering antenna on 2<sup>nd</sup> bridge (which seems to be non-functional). No action to date.
2. Check BBFL2 for further small leaks.
3. Prepare replacement housing for BBFL2 with Helicoil adaptation and jacking points.

#### **Discussion of Test Procedures and Results**

The test procedures used are documented in the supplemental report, which also provides preliminary analysis of the data and its consequences.

#### **PICTURES**



Figure 1: Leakage dripped down onto top of CT sensor. Note fouling in hoses.



Figure 2: Leakage dripped down onto Optode sensor



Figure 3: Fouling within the CT sensor



Figure 4: Fouling within the Optode sensor



Figure 5: Fouling within the BBFL2 sensor

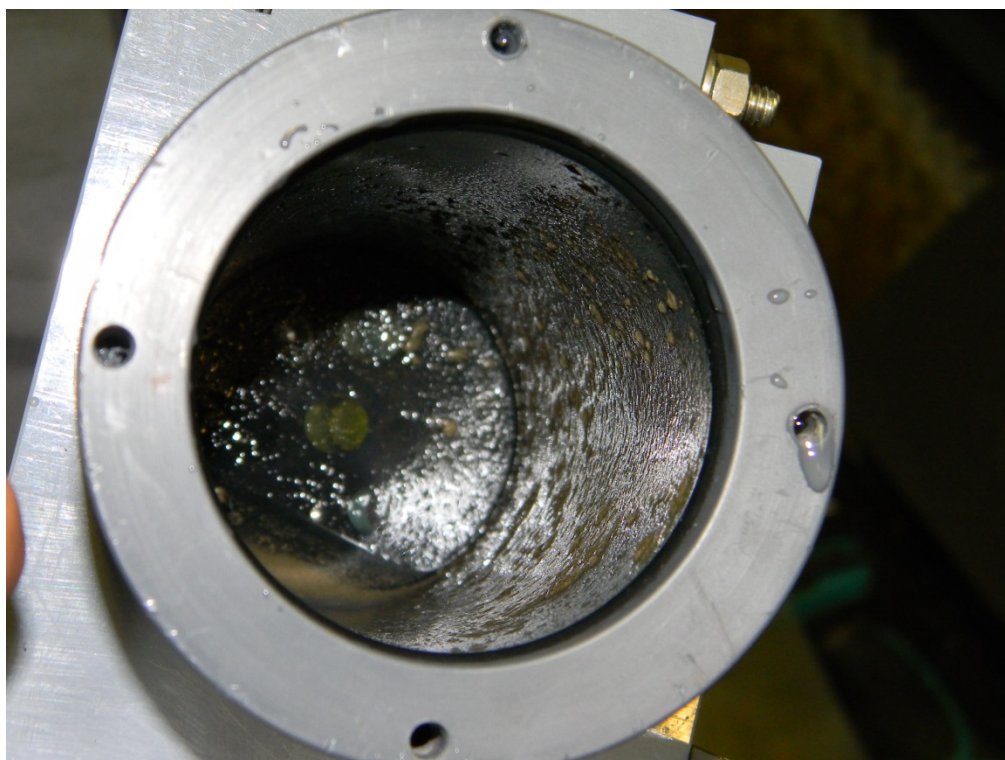


Figure 6: Fouling within the BBFL2 sensor



Figure 7: Fouling within the Seabird CT sensor



Figure 8: Position of ORANGE test stick in test fixture



Figure 9: Position of BLUE stick in test fixture



Figure 10: Akash Sastri running tests of Chlorophyll and CDOM



Figure 11: Cleaning instruments in the Engineering Mess Room



Figure 12: Suspended sediment buildup within the Sea Strainer

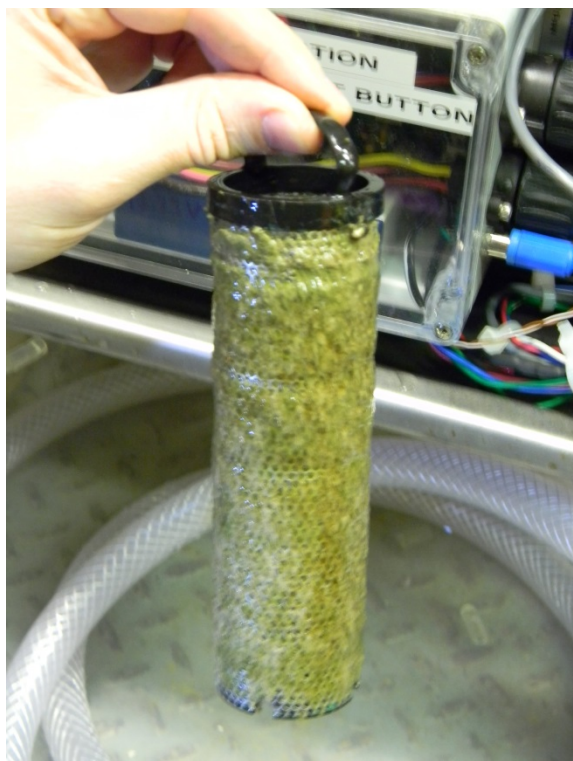


Figure 13: Biofouling buildup on the Sea Strainer filter



Figure 14: Instrument box post-cleaning



Figure 15: Stephen and Akash post-cleaning



Figure 16: Computer Box with new label



Figure 17: Instrument Box with new label



Figure 18: Topside computer boxes with new labels

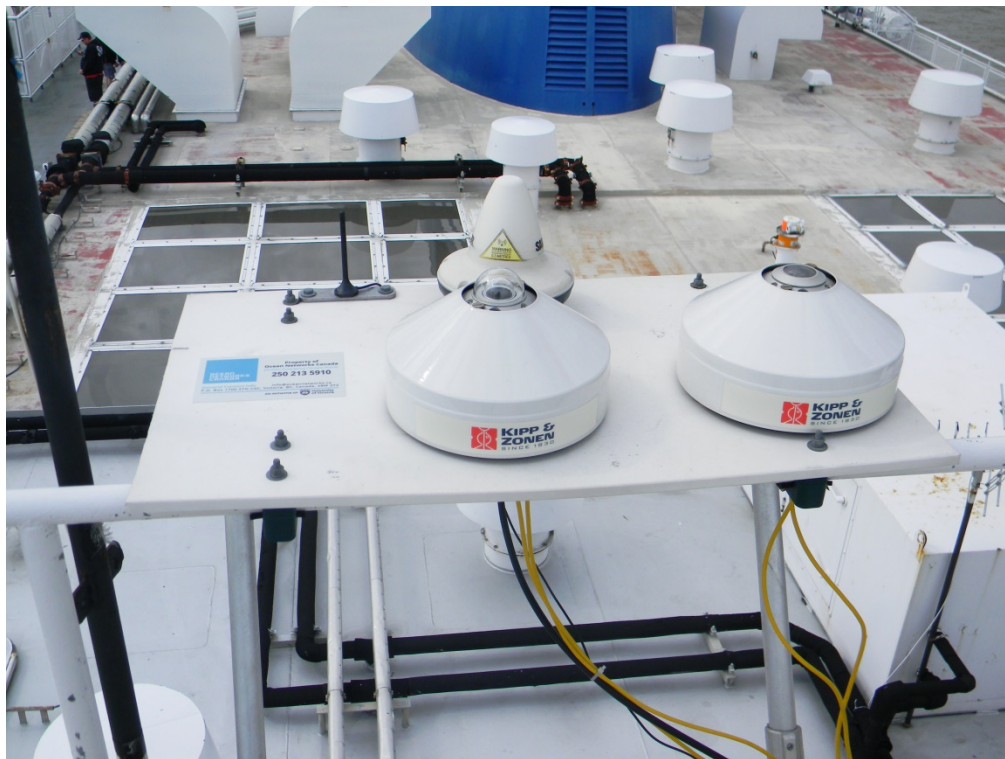


Figure 19: Instrument table with new label



Figure 20: MET Sensors with new label

