Ocean Networks Canada

Ferry Maintenance Report – Queen of Alberni

Date: June 19, 2015

Arrival: 7:45AM sailing to Tsawwassen. We signed in at terminal supervisor at Duke Point.

Reporter: Chris Sundstrom (Servicing), Akash Sastri (Science Analysis)

Attending Personnel: Chris Sundstrom (ONC Operations), Aidan Neill (UVIC), Akash Sastri (ONC Science), Ferdous Nawar (UBC), Karina George (UBC)

Reason for Visit

Regular servicing visit. Science sampling by graduate students.

Observations

1. In the Instrument Box there were no signs of moisture at all.
2. The Sea Chest was dry with no evidence of leaks.
3. The Sea Strainer was dirty with one small crab inhabiting the region where the strained material resides.

Actions Taken

1. Opened both boxes and observed function. The pump seemed to be operating normally and all flow seemed nominal.
2. Powered down system.
3. Removed the instruments for normal cleaning procedures.
4. All instruments showed sediment deposition and biofilm growth at expected seasonal levels.
5. Tubing was inspected; the small tubing was caked with sediment (but still flowing) and was replaced as per procedure.
6. Sea chest was inspected. No signs of leaks.
7. Sea Strainer was inspected and cleaned. Sediment and biofilm buildup were present, as was one small crab..
8. Instruments were re-installed into the system.
9. System restarted successfully.
10. UBC Student and UVIC Student conduct science sampling during return voyage and use external sampling tap to take water samples. Flow is more than adequate.
11. Signed out at engineering room.

Future Actions

1. Replace small tubing supply
2. Bring Sponges for soaking up leaks

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:

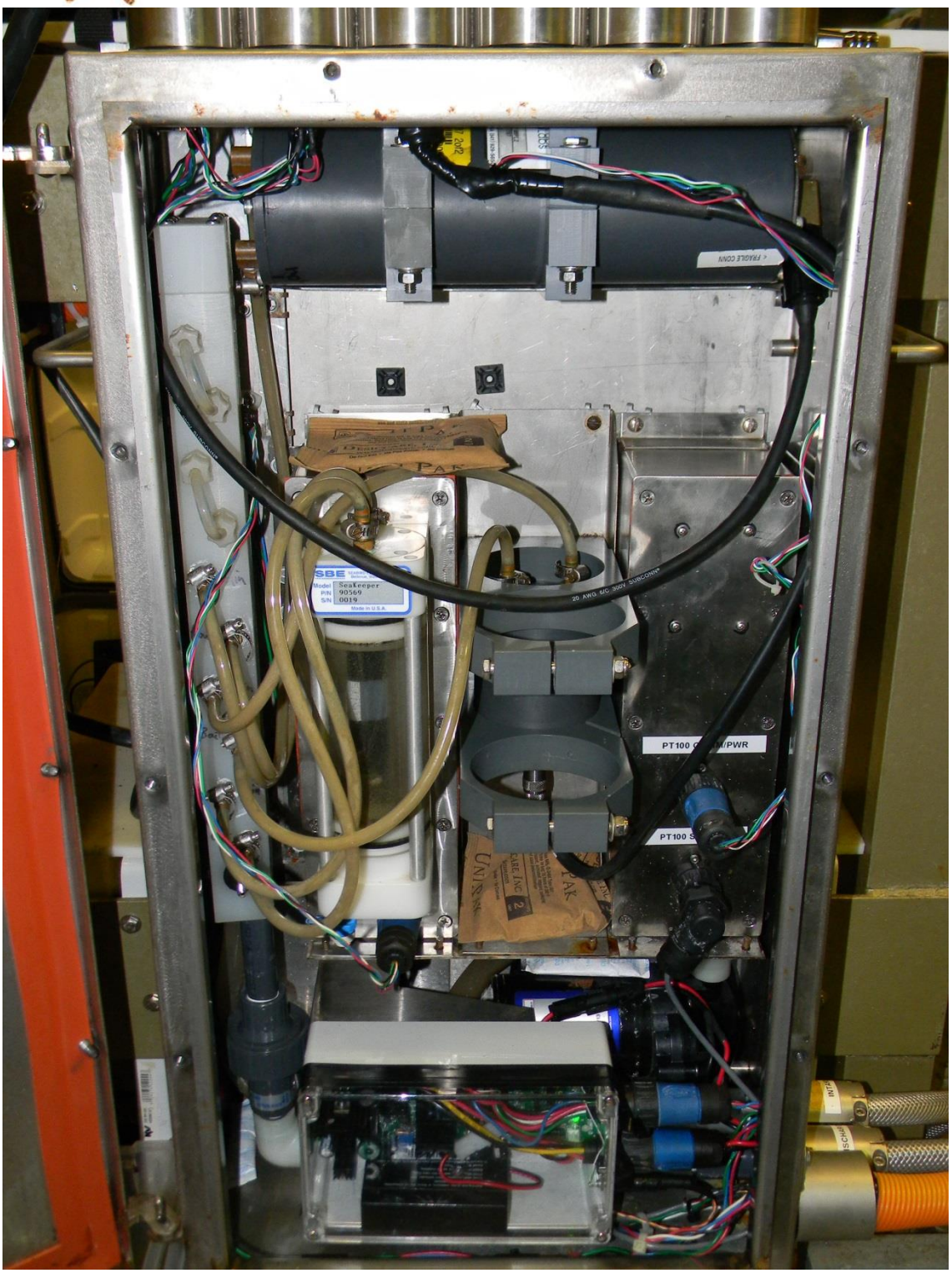

Figure 1: System upon arrival

Figure 2: CT Unit

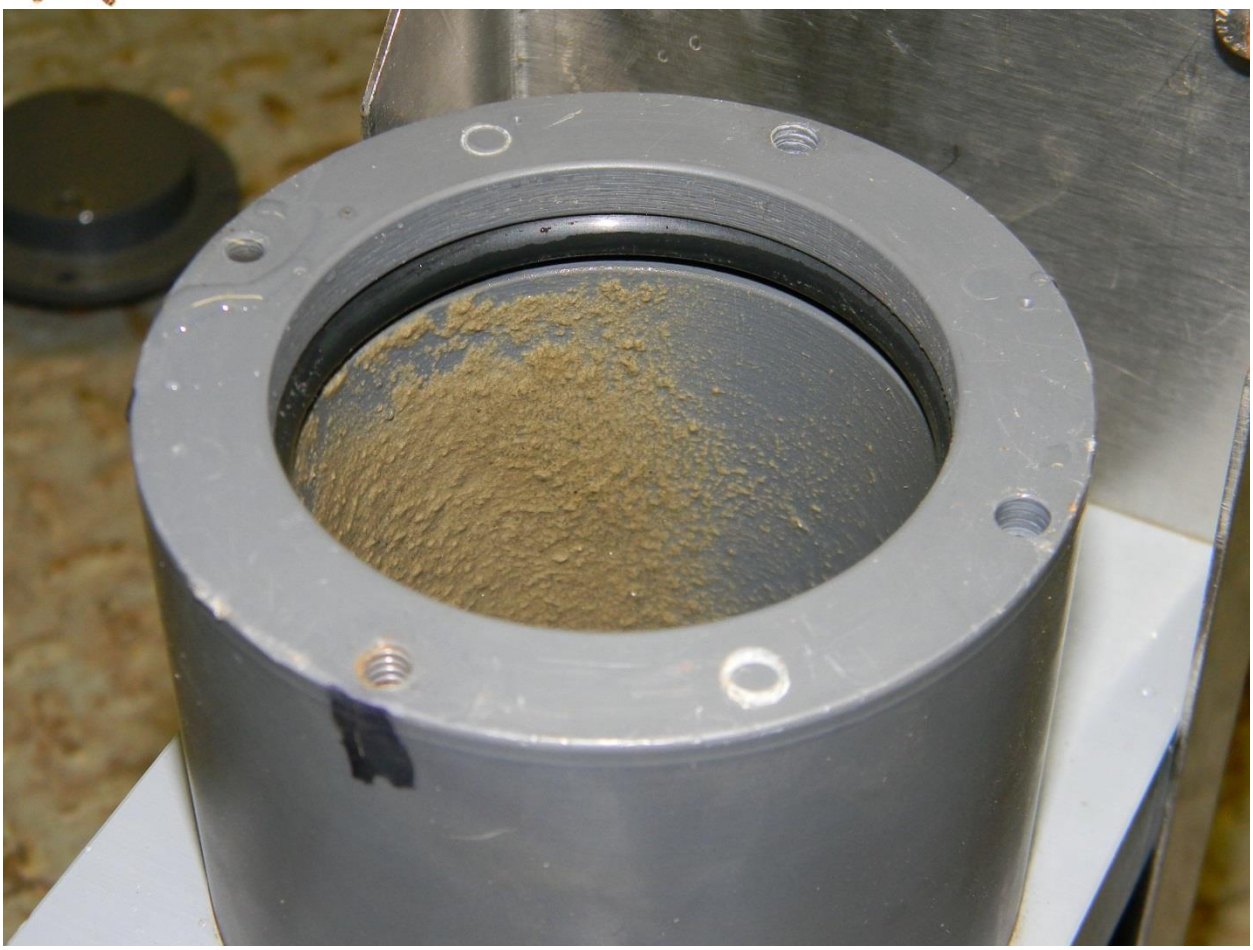

Figure 3: BBFL2 Sediment Film

Figure 4: Optode

Figure 5: Sea Strainer

Figure 6: Crab from Sea Strainer

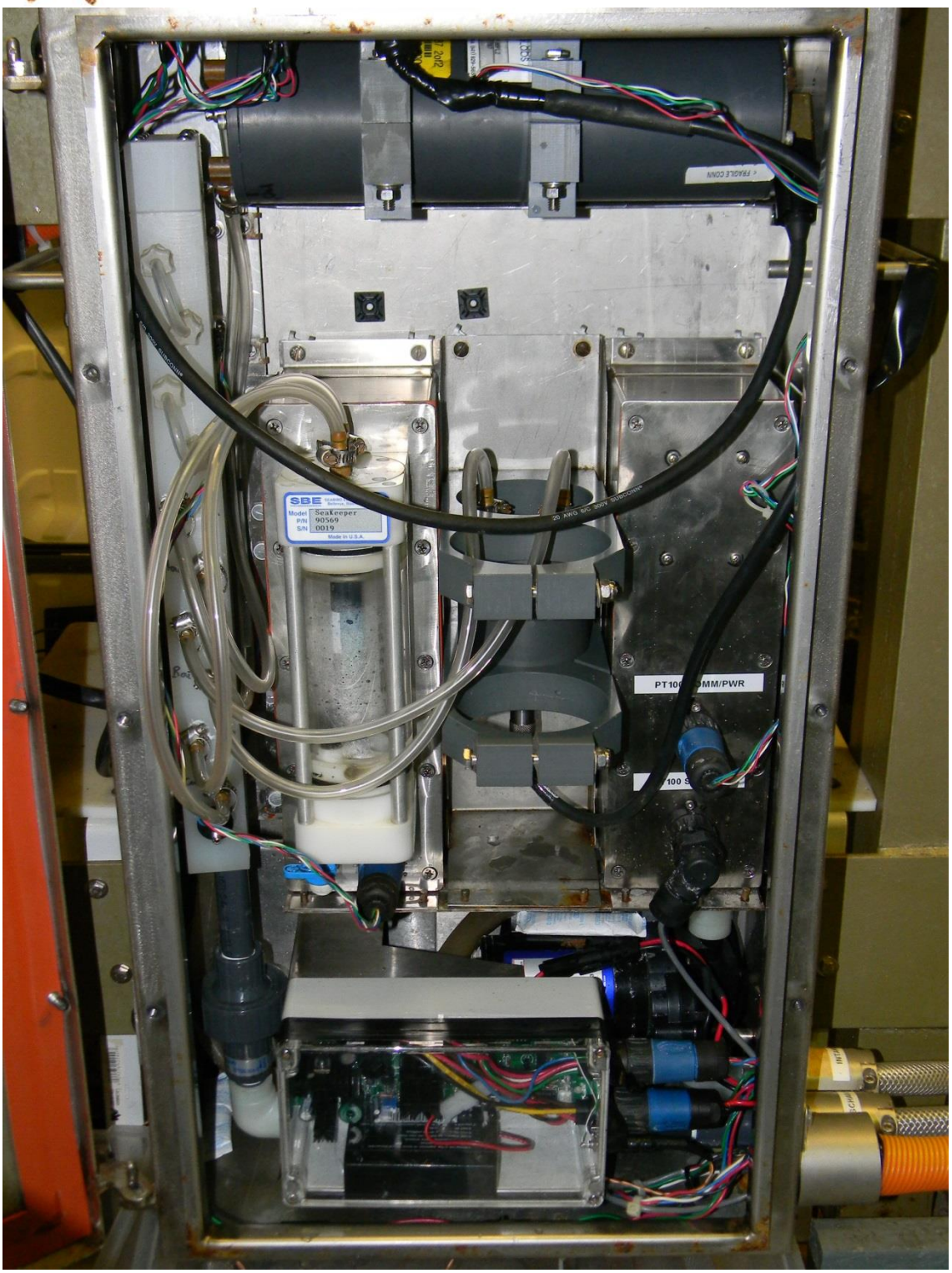

Figure 7: System upon completion

Figure 8: Personnel on site

Table 1. June 19, 2015. Mean (±standard error) values of pre- and post-cleaning fluorescence for solutions specific to CDOM and Chlorophyll fluorescence. '□ fluor' values for Diet Coke (Chl) and Sprite Zero (CDOM) have been used for several of the past maintenance trips to assess the degree of signal decay between cleanings. The pre-cleaning fluorescence values standard solutions were all greater than post- values. The relatively high % difference values suggest significant bio-fouling of the BBFL2 lenses since the last maintenance trip on May 27, 2015.

CDOM/Chl Fluorescence	Method	Pre- (mean± SEM)	Post- (mean± SEM)	Δ fluor (%)
CDOM	Sprite Zero	29.83 ±0.05	37.30 ±0.012	0.20
Chl	Diet Coke	4.61±0.011	6.37±0.0014	0.27

Table 2. Oxygen saturation/zero oxygen values for the optode currently deployed aboard the Queen of Alberni (#418; 2-point lab calibration on December 19, 2014). Mean and standard errors of the means were calculated on values recorded when instrument output stabilized following immersion of the optode into either oxygen saturated (bubbled) or zero oxygen (sodium thiosulfate addition to the saturated solution) water.

	June 19, 2015 (mean± SEM)
100% solution	99.785±0.013
0% solution	1.49±0.0001