Ocean Networks Canada

Ferry Maintenance Report – Queen of Alberni

Date: April 10, 2015

Arrival: 12:45AM 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), Denis Hedji (ONC Science)

Reason for Visit

Poor sea water circulation in Seakeeper system which was affecting Oceanographic Data

Observations

1. In the Instrument Box, there were signs of moisture, likely due to overpressure leaks.
2. The Sea Chest was dry with no evidence of leaks.
3. The Sea Strainer was mildly dirty with no debris.

Actions Taken

1. Opened both boxes and observed function. Pump was in the leak-detected mode although pump control GUI stated it was on. Reset pump control box. Pump started to work. Observed the seawater flow. The flow was very poor.
2. Powered down system.
3. Removed and disassembled the Sea Chest, pulling out the intake tube. Closed the intake and discharge valves.
4. Visually inspected the intake tube. No biofouling growth or blockage apparent.
5. Called the ship's Engineer for permission to inspect the intake valve water flow. In the presence of a ship's engineer, opened the valve and observed a steady high rate flow of seawater. Closed the valve.
6. Dissassembled the intake/discharge tubing.
7. When disconnecting the discharge, back pressure within the tube shot a cork of crushed mussel shells out. The mussels formed a V shaped plug at the discharge inlet. Cleaned and inspected the discharge valve (closed) with long screw driver. No debris was apparent.
8. Opened the discharge valve to check if further debris was present. None was apparent and a steady flow of seawater was shooting out. Closed the valve.
9. Replaced all braided tubing to with fiber-reinforced TYGON tubing so that flow and blockages will be visible in the future.
10. Rebuilt the Seachest, and tightened fittings/bolts/screws

11. Powered up Seakeeper. System flow seemed much better than on arrival. Flow in both the intake and discharge lines was clearly visible through the transparent tube walls.
12. Observed the Sea chest, valves and instrument housing, with no leaks apparent
13. Signed out at Engineering room.

Future Actions

1. Bring more Desiccant bags
2. Bring more Paper towel
3. Bring AAA batteries for headlamp
4. 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:

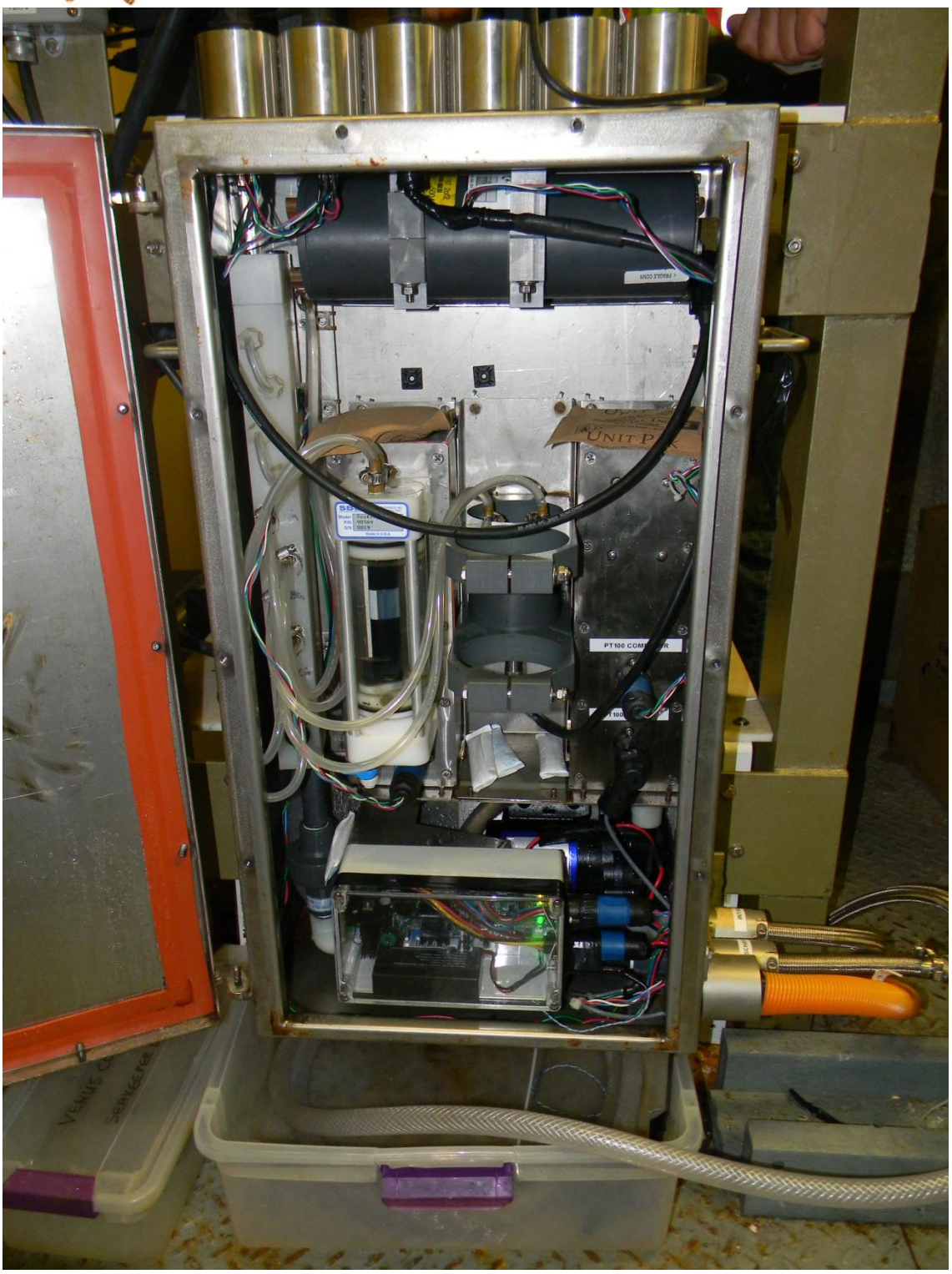

Figure 1: System upon arrival

Figure 2: Water leaked into the lower box, likely due to overpressure

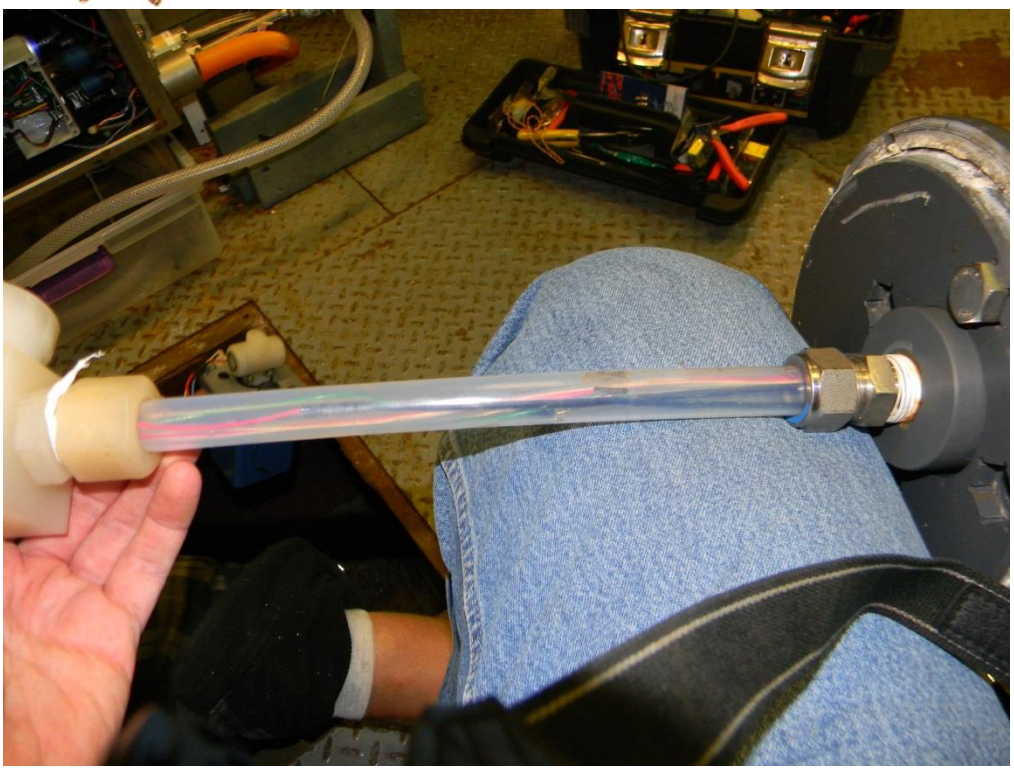

Figure 3: Intake tube state

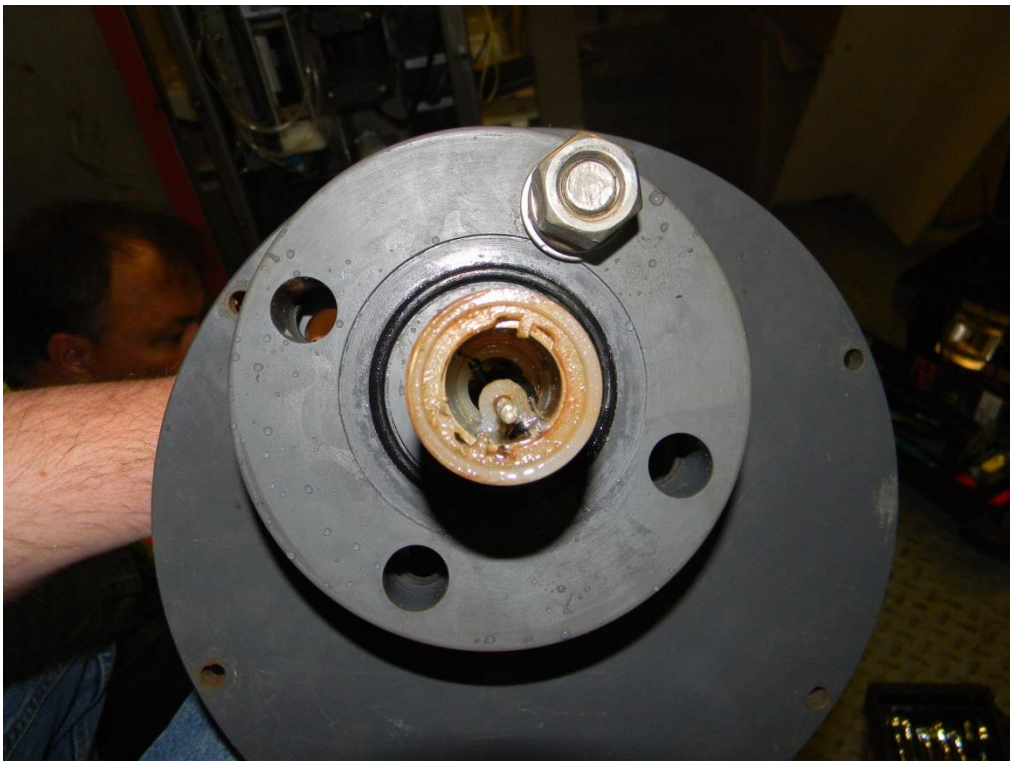

Figure 4: Intake tube seawater end

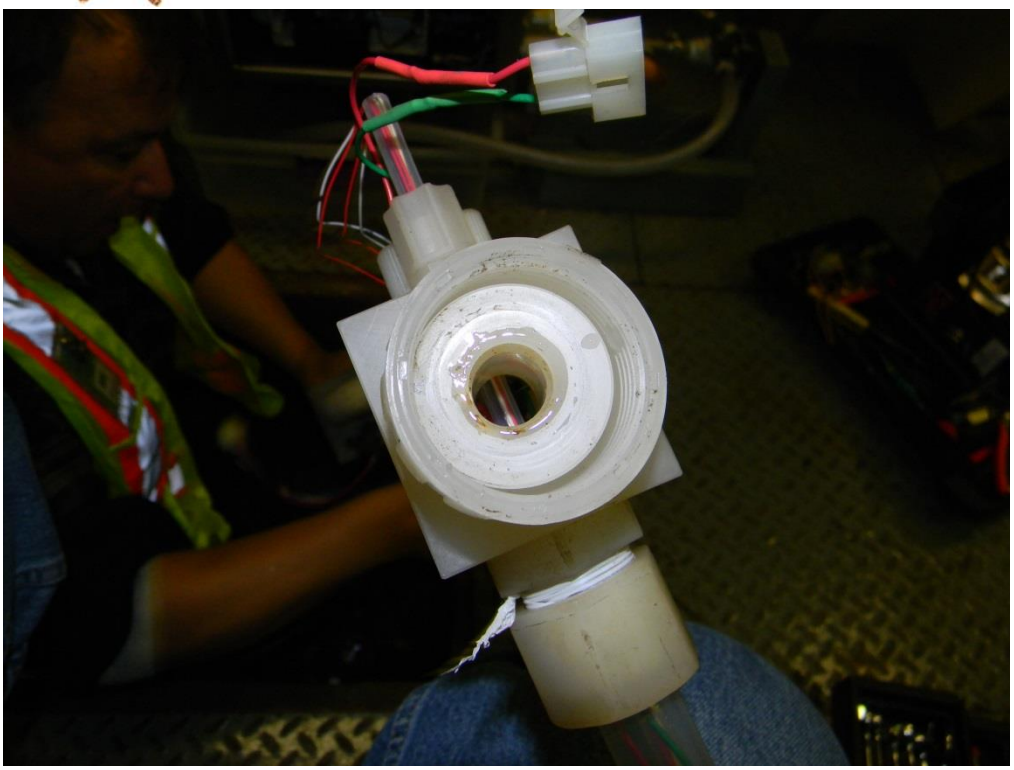

Figure 5: Intake tube ball valve end

Figure 6: Cork of mussels ejected from the discharge tube

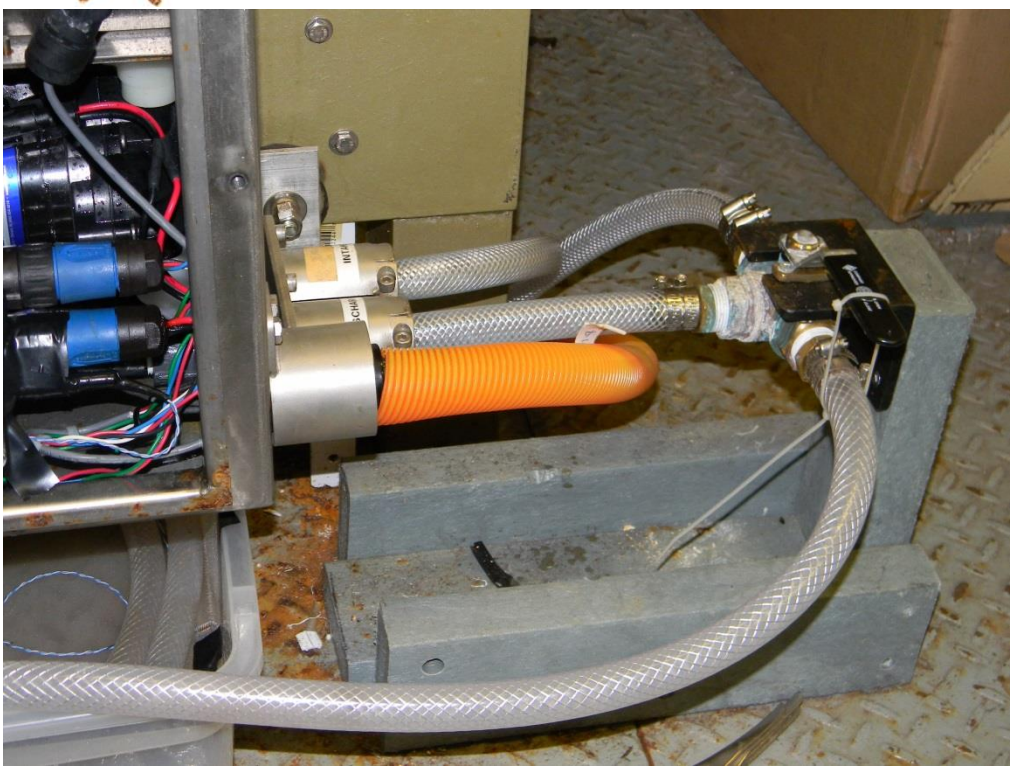

Figure 7: New fiber-reinforced TYGON tubing at the Instrument Box

Figure 8: New tubing at the Sea Strainer

Figure 9: New tubing at the Sea Chest

Figure 10: Checking for leaks after installation