

Halifax Harbour Water Quality Monitoring Project Survey Summary #175

Survey Date: 21 January 2009
Nature of Survey: Complete Survey
Report File (this document): HHWQMP_report175_090121.xls
Data File: HHWQMP_data175_090121.xls

Data Return:
 Chemical: 57%
 Bacteria: 56%
 Profile: 56%
Overall: 56%

Sample Notes:

This is an abbreviated survey undertaken in response to the failure of the Halifax STP. Only the Inner Harbour, Southern Basin and NW Arm were sampled

The CTD profile at D3 did not pass quality control and has been deleted from the data file.

The AYC sample was relocated to 44 38.14 5N, 63 36.502 W, due to ice.

The QA/QC fecal coliform sample at PC-10 was not collected due to oversight.

The D3-10 sample was collected but the bottle was broken therefore no value was reported from the lab.

To match the collected reference data the presented DO values should be scaled by a factor of 1.6 (see comparison in data file).

QA/QC samples:

Chemical Analysis		E2-1m	
Detectable Parameter	Units	Reference Sample	QA/QC
Ammonia (as N)	mg/L	0.09	0.08
Total Suspended Solids	mg/L	1	4
Copper	ug/L	0.5	0.4
Iron	ug/L	13	14
Manganese	ug/L	4	4
Zinc	ug/L	2	1

Fecal Coliform (MPN/100ml)

Site	E2-1m
Reference	170
QA/QC	210

Comments:

General: There has been moderate precipitation a few days before the survey. This was probably snow or snow turning to rain, based on mean air temperatures. Based on the limited CTD data, the surface water is somewhat fresher and the temperature overall slightly lower than in the previous week. The temperature distribution remains relatively uniform. The result is slightly stronger density stratification than the very uniform conditions previously existing. The effect of the failure of the Halifax STP failure is now evident in the fecal coliform distributions with elevated (greater than swimming levels) throughout the limited survey area. The concentrations are highest in the Inner Harbour on the Halifax side, but extend both up (Southern Basin) and down Harbour. There are quite high levels out to Section C (the furthest down Harbour section on this survey) likely caused by the relatively strong down Harbour winds on the day of the survey.

Fluorescence: The fluorescence data in the limited area surveyed indicates minimal phytoplankton activity with values all < 3.0 mg/m³ (mostly <2.0 mg/L) or about annual minimum levels.

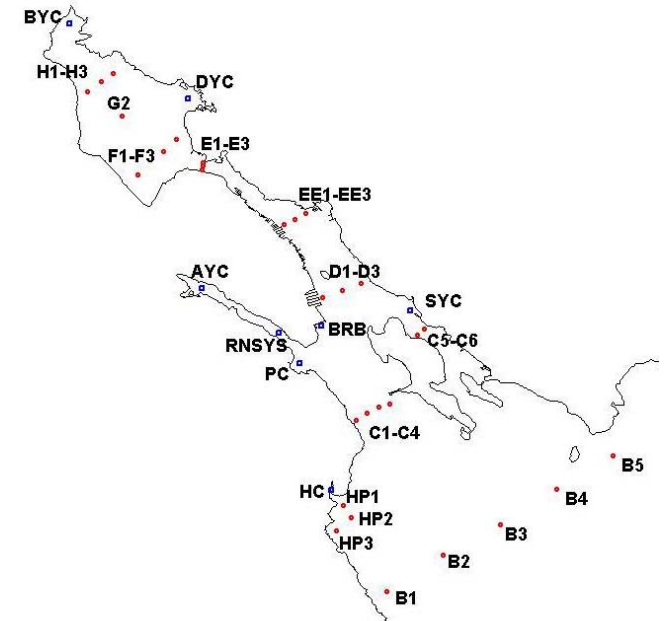
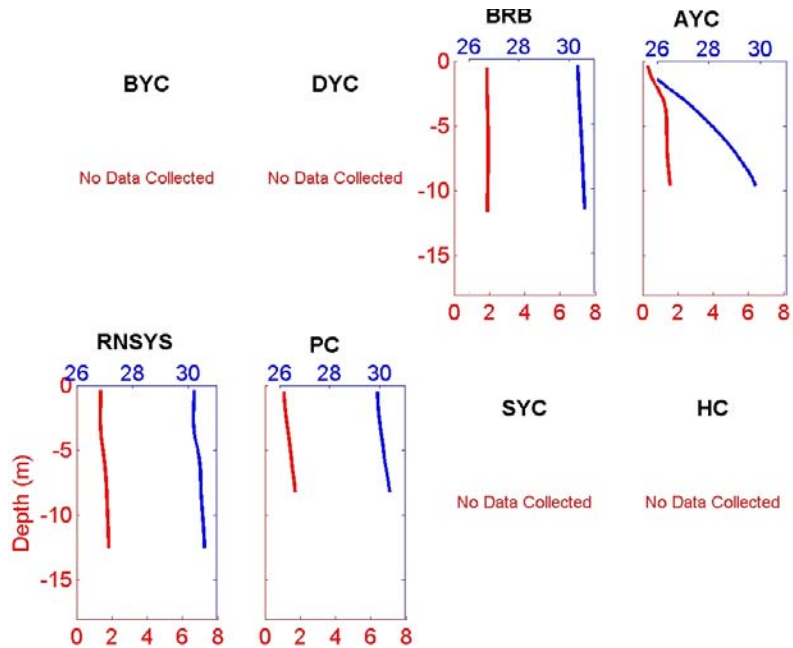
TSS: The TSS levels are low with all concentrations 3 mg/L or less and a mean of 2.0 mg/L.

Ammonia: The ammonia levels are moderate, with detectable concentration in all samples and a mean value of about 0.08 mg/L. The concentrations are relatively uniform between 0.06 and 0.1 mg/L.

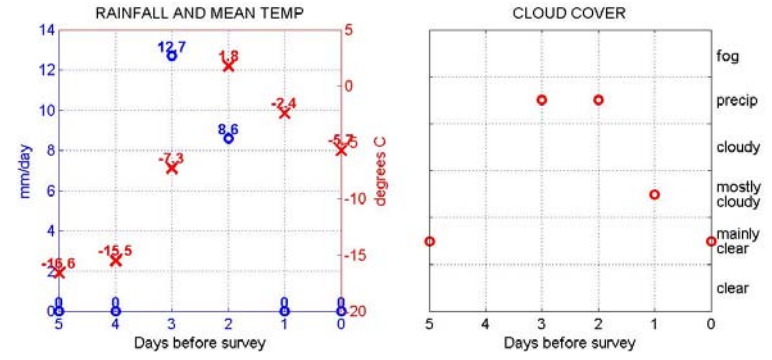
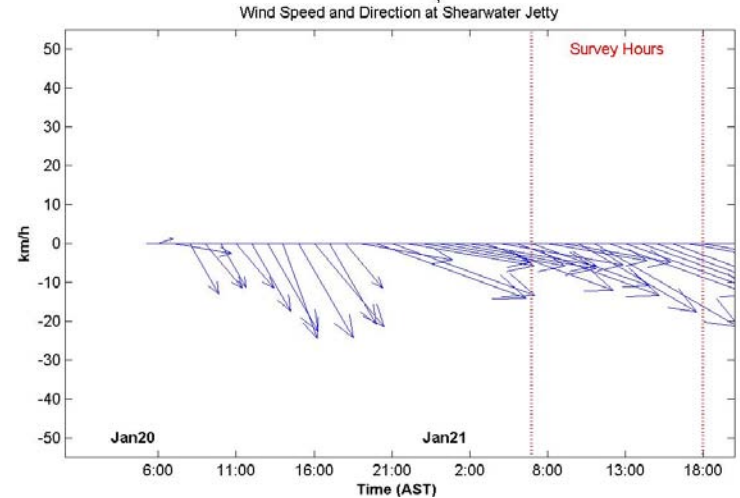
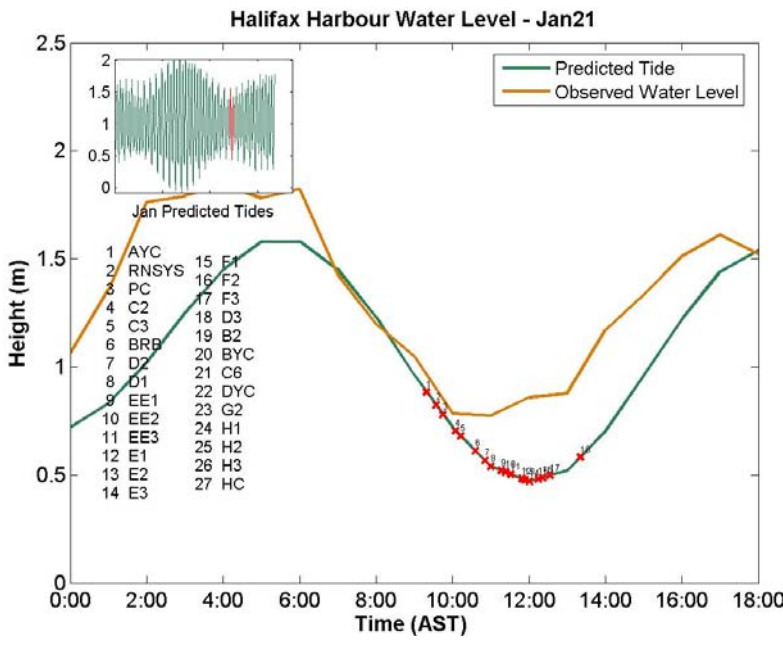
Metals: There are no guideline exceedences. Copper concentrations are the closest to guideline exceedence with several sample concentrations of about 15 - 20% of the 2.9 ug/L guideline.

Dissolved Oxygen: The dissolved oxygen data, scaled appropriately by a factor of 1.6, indicates that the surface DO levels, in the regions measured, are quite uniform at about 11.0 mg/L. South of the Narrows the levels increase slightly with depth. The BBPMP data indicate that the DO at the bottom of Bedford Basin continues to drop and is now less than 3.5 mg/L.

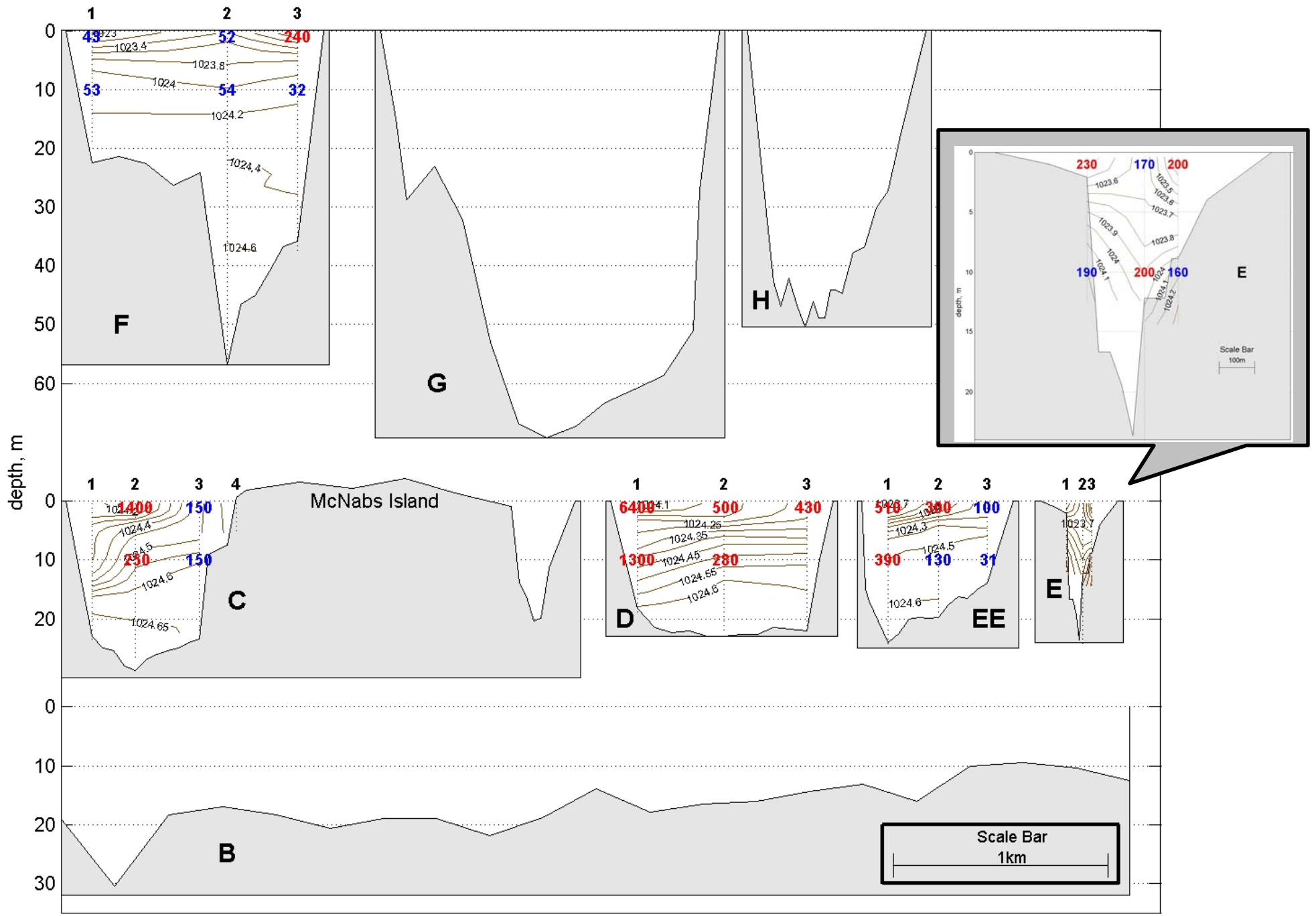
Yacht Clubs



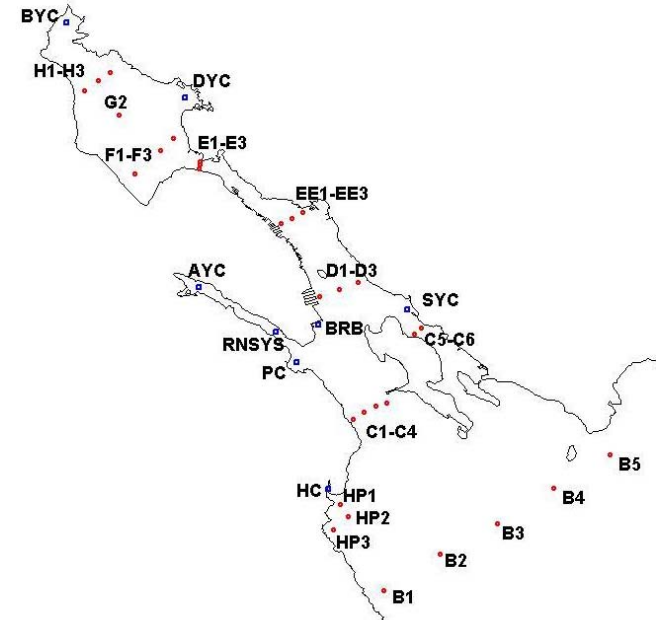
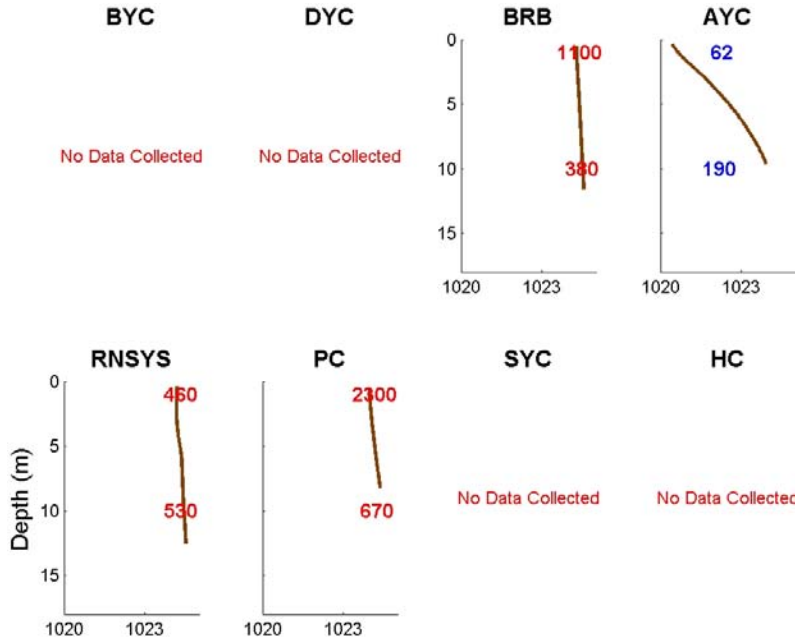
Rainfall and temperature data collected at Shearwater Autoport.
Cloud cover data collected at Shearwater Airport



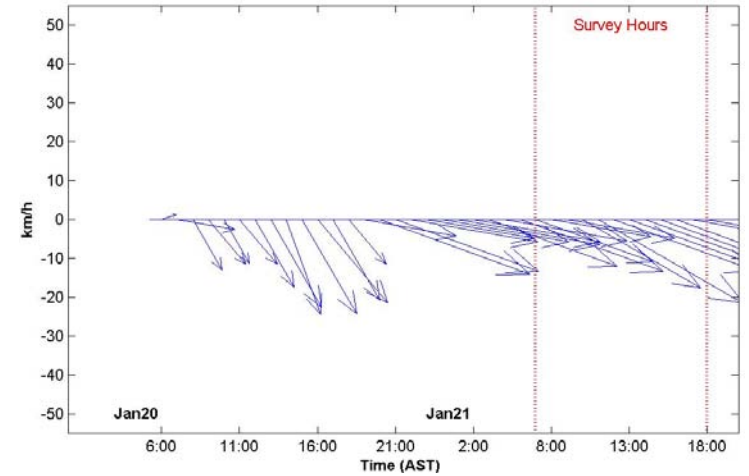
Salinity in PSU Temperature in °C



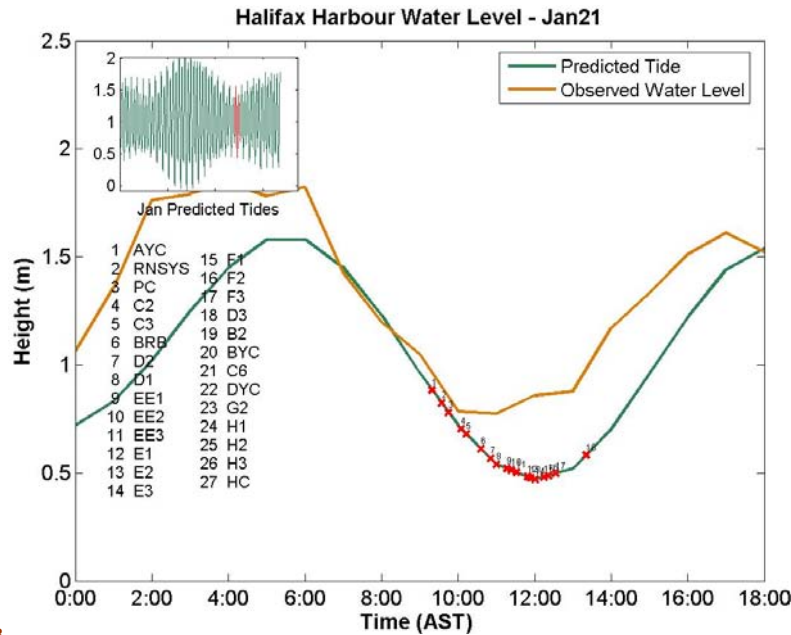
Yacht Clubs



Wind Speed and Direction at Shearwater Jetty

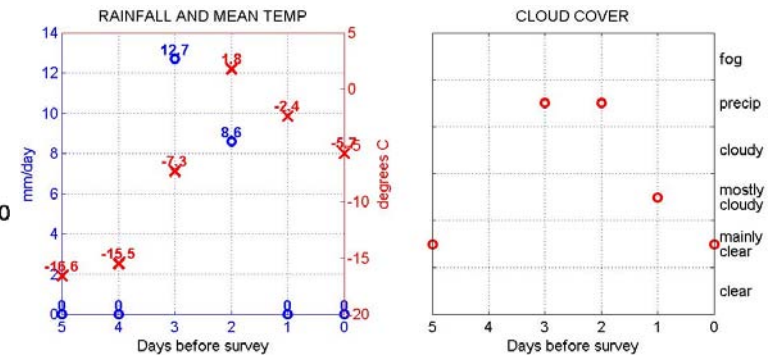


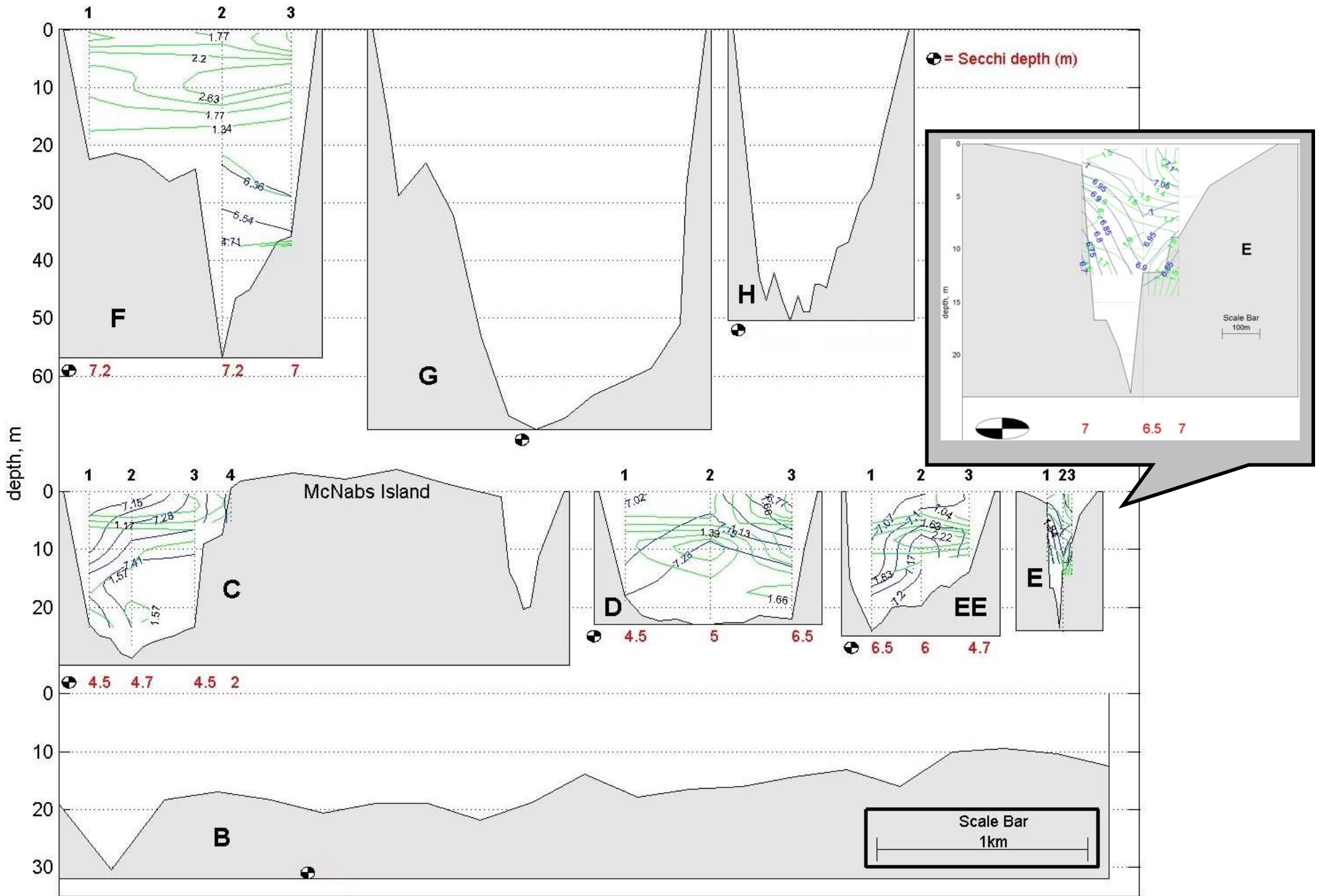
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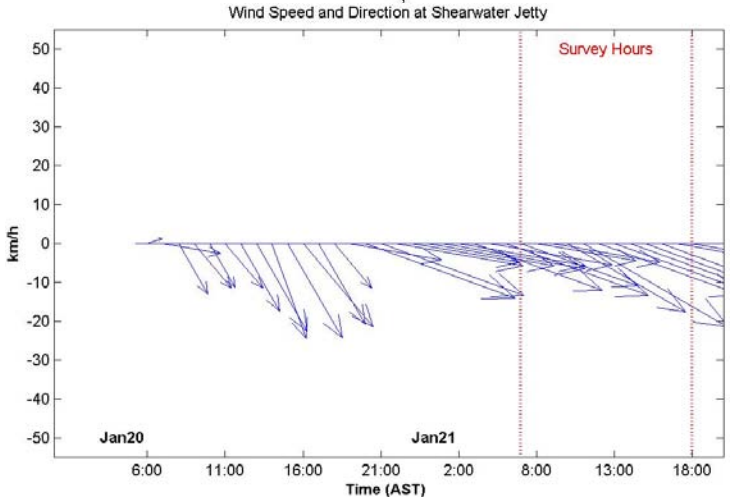
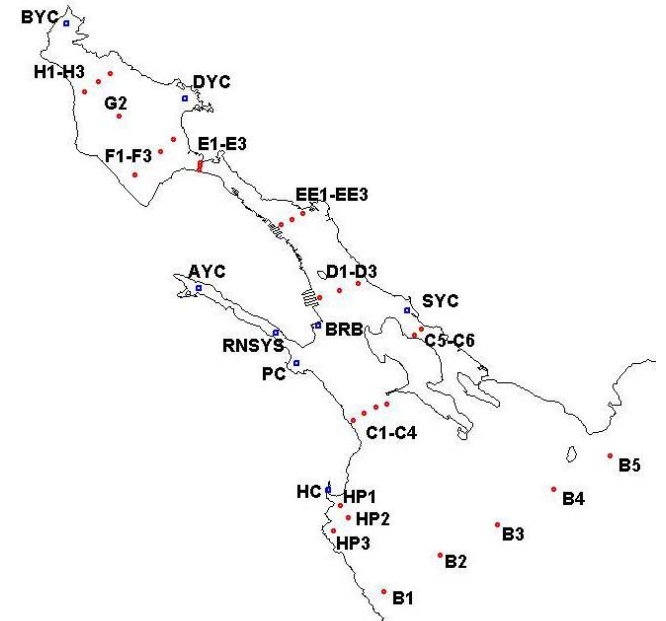
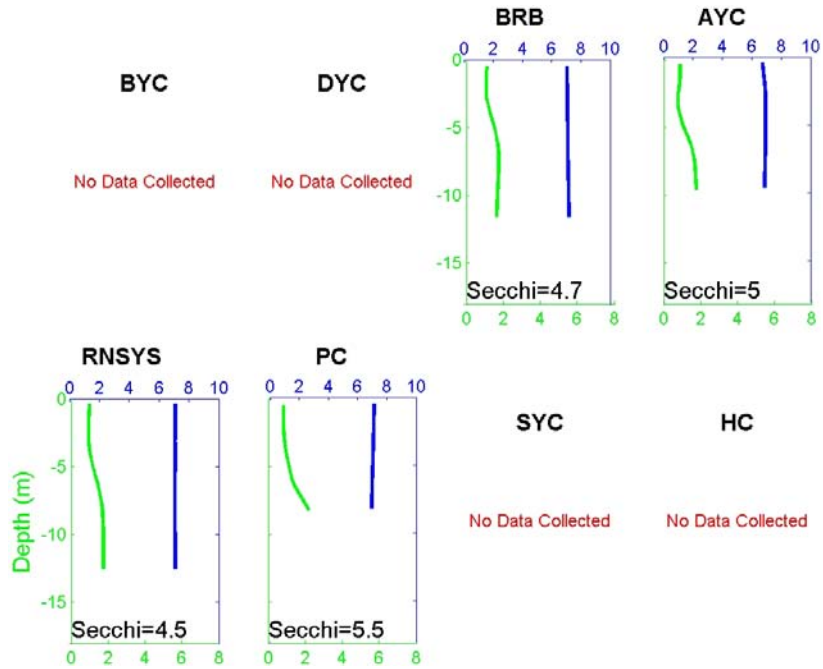
Potential Density in kg/m^3

Fecal coliform: **above swimming limit (200 cfu/100mL)**
above shellfish limit (14 cfu/100mL)
below limits

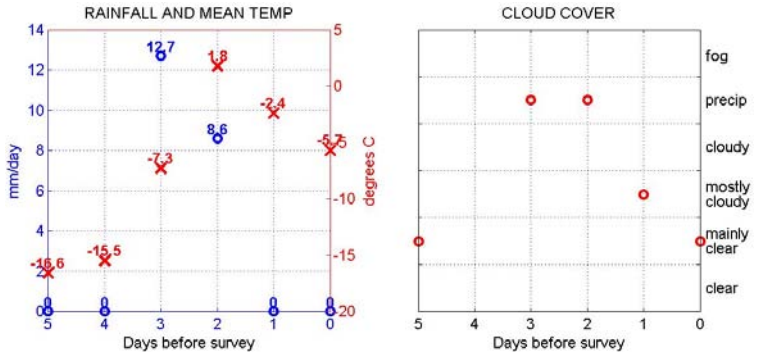
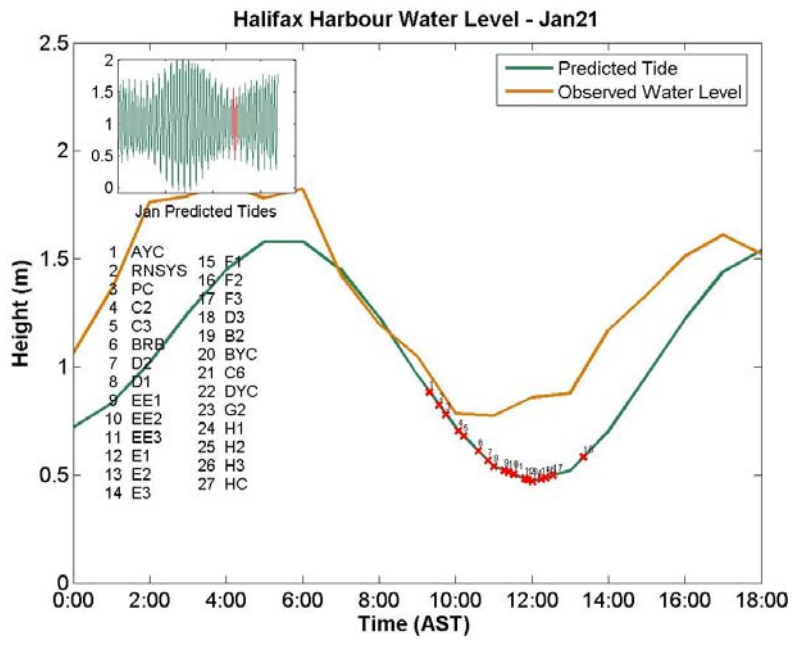




Yacht Clubs

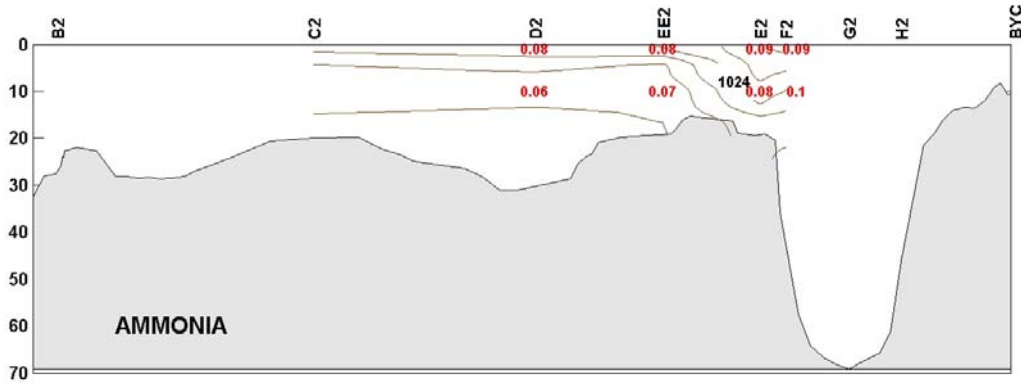
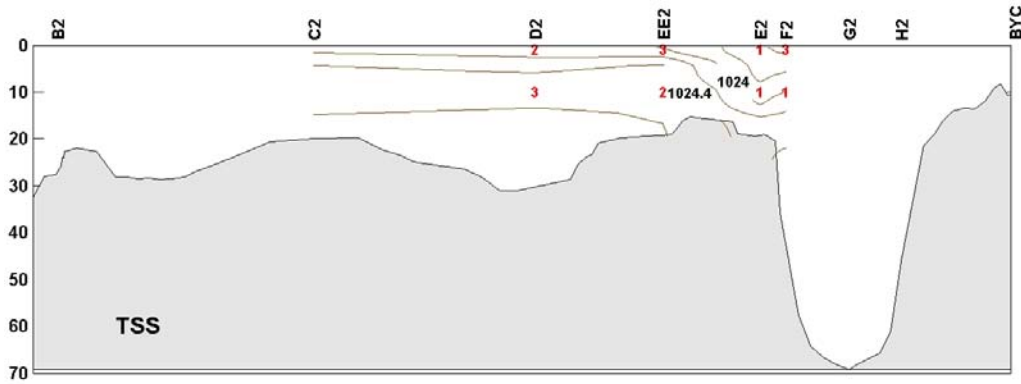


Rainfall and temperature data collected at Shearwater Autoport.
Cloud cover data collected at Shearwater Airport



DO in mg/L Chlorophyll in mg/m³

CHEMISTRY



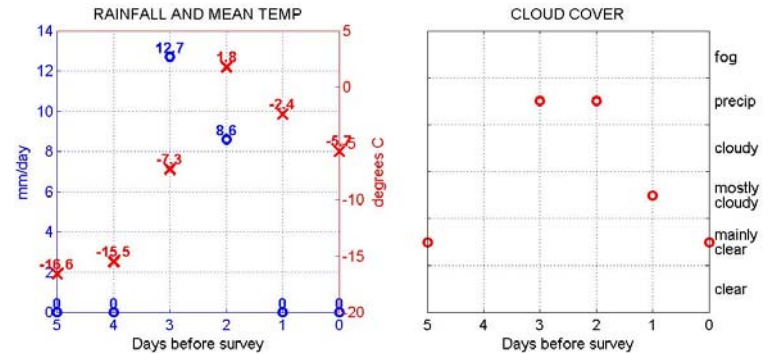
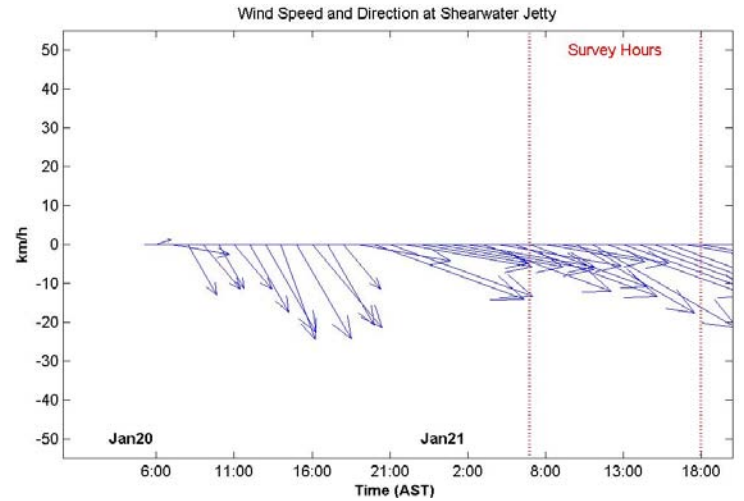
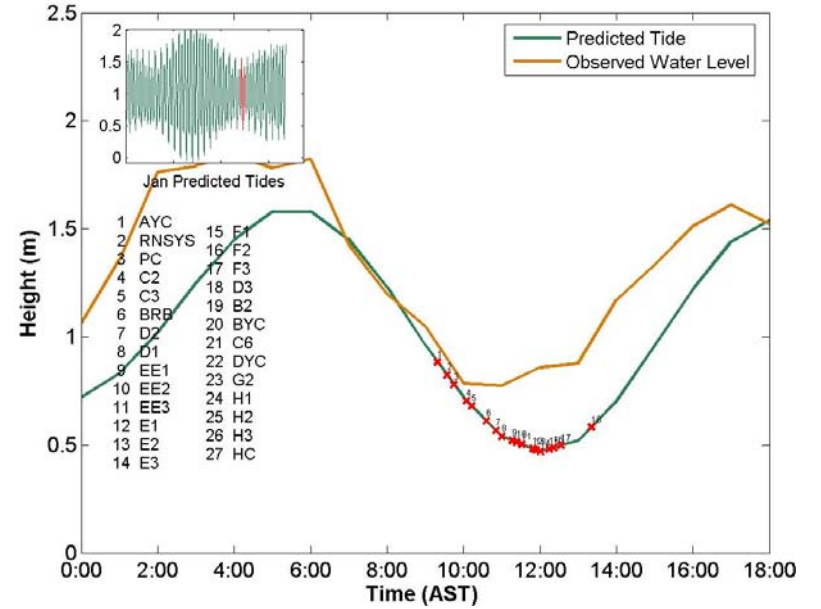
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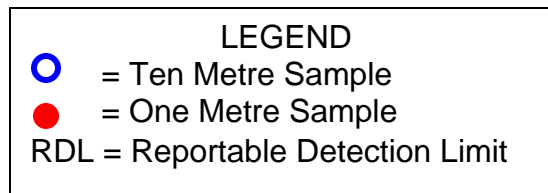
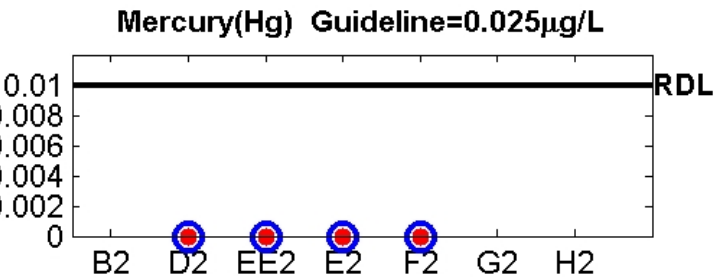
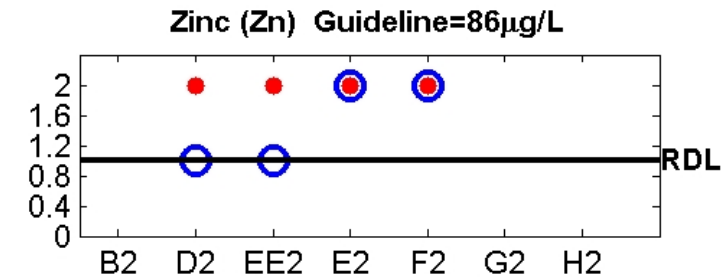
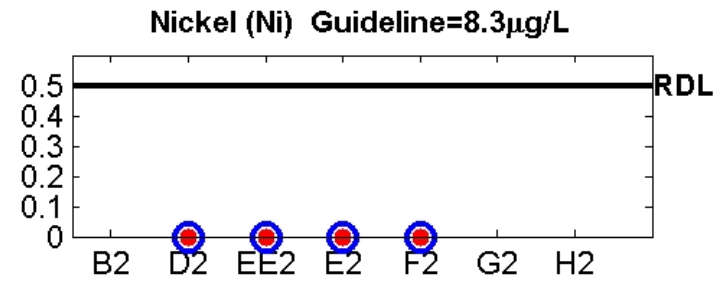
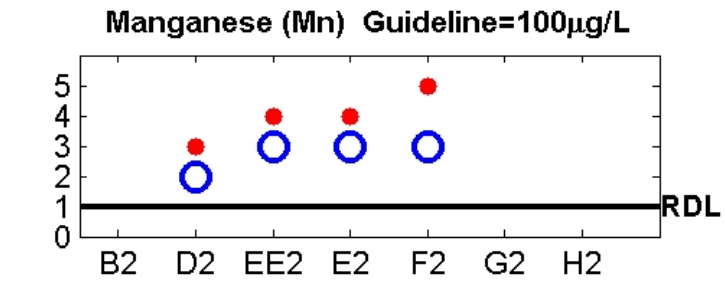
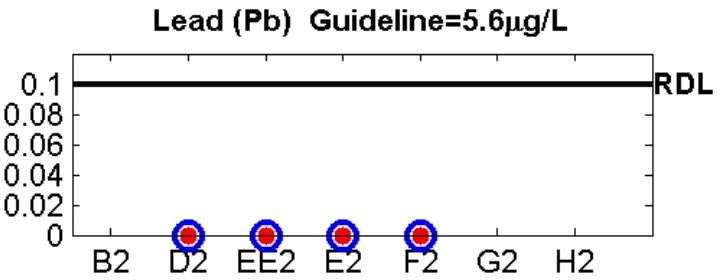
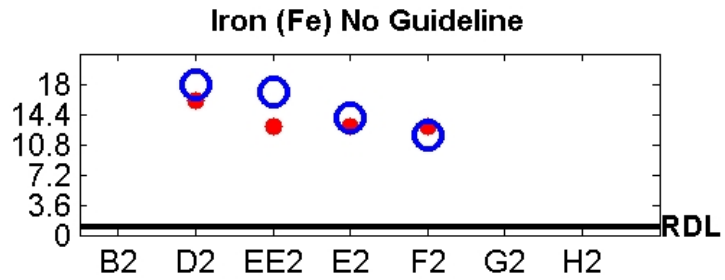
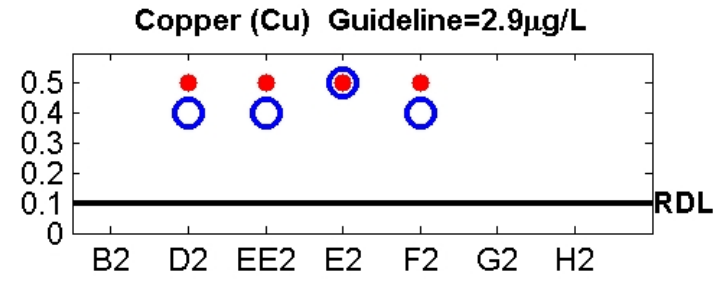
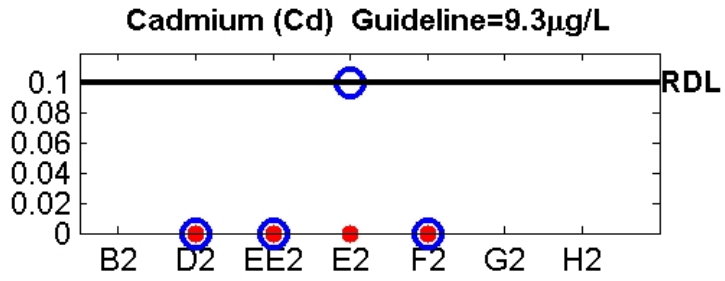
Ammonia in mg/L

TSS in mg/L

Halifax Harbour Water Level - Jan21



12.7, 1.8, 8.6, -2.4, -7.3, -15.5, -15.6, -2.5, -15.5, -20, 5, 0, 1, 2, 3, 4, 5



HRM Water Quality Monitoring

Fecal Coliform Summary – January 21, 2009

