

## Halifax Harbour Water Quality Monitoring Project Survey Summary #133

**Survey Date:** 04 July 2007  
**Nature of Survey:** Complete Survey  
**Report File (this document):** HHWQMP\_report133\_070704.doc  
**Data File:** HHWQMP\_data133\_070704.xls

### Data Return:

Profile: 100%  
 Bacteria: 100%  
 Chemical: 100%  
**Overall: 100%**

**Sample Notes:** n/a

### QA/QC samples:

#### Chemical Analysis

Detectable Parameter	Units	G2 - 10m	
		reference sample	QA/QC
Ammonia (as N)	mg/L	0.05	0.06
Total Suspended Solids	mg/L	7	2.5
Copper	ug/L	0.6	0.5
Iron	ug/L	7	13
Manganese	ug/L	1	4
Zinc	ug/L	2	2

#### Fecal Coliform (CFU/100ml)

Site	EE1-10m	D3-1m	EE3-10m	G2-10m
Reference	130	3	600	12
QA/QC	79	9	10	1

### Comments:

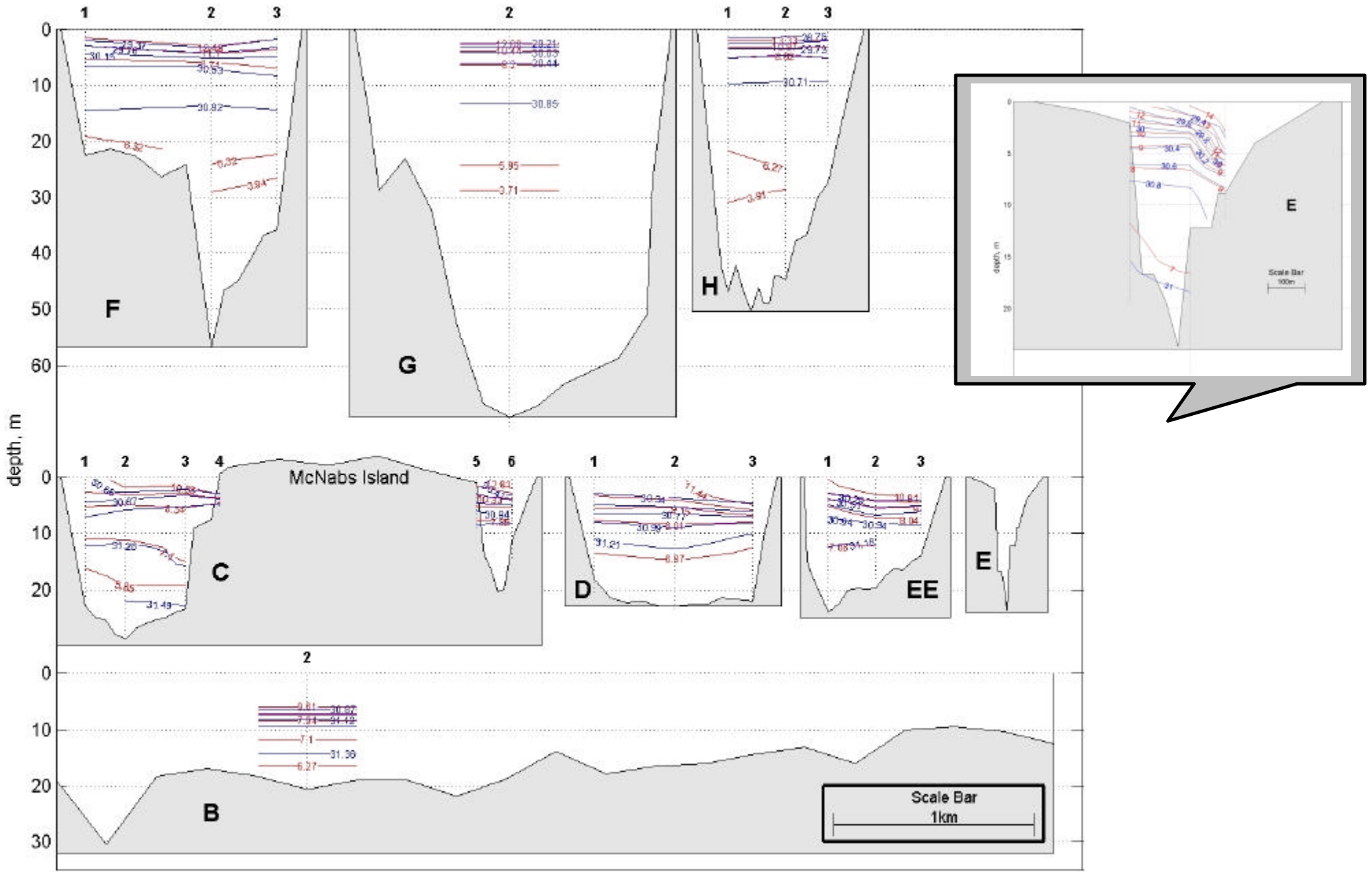
**General:** There has been no appreciable precipitation in the previous five days and river levels are near annual minimum values (Sackville River 0.6 m). The harbour is generally more saline than during the previous survey. There is a distinct surface layer about 5-10 m deep in the Basin that extends into the Inner Harbour. The fecal coliform levels are universally low, with a typical distribution. The highest values are in the Inner Harbour, generally in the 1 m samples. The high surface value at E1 may be due to direct influence from the continued sewage diversion to the Fairview Cove CSO. There does not seem to be any enhanced flushing and the only obvious factors that could account for the low bacteria numbers are the relatively warm water and clear skies which both enhance bacterial decay.

**Fluorescence:** There is a relatively intense phytoplankton bloom occurring, centered in the Northern end of Basin. Here the profile maximums are about 35 mg/m<sup>3</sup> at a depth of about 10m. This seems to be hugging the eastern shoreline, perhaps in response to the wind. The values drop to about 10 mg/m<sup>3</sup> in the narrows and further to "background" values of 1-2 mg/m<sup>3</sup> in the Outer Harbour.

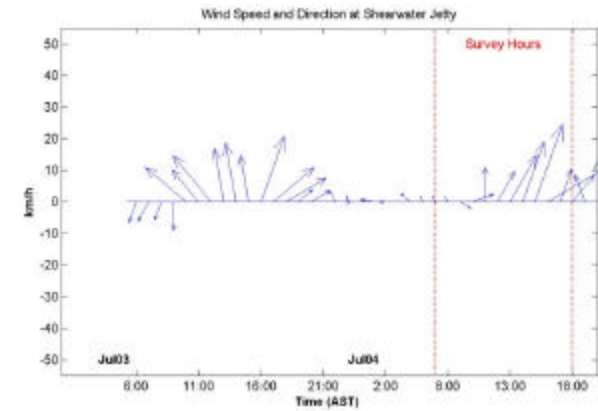
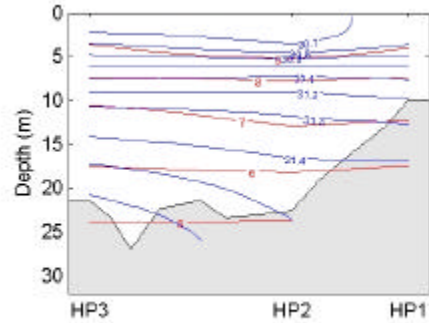
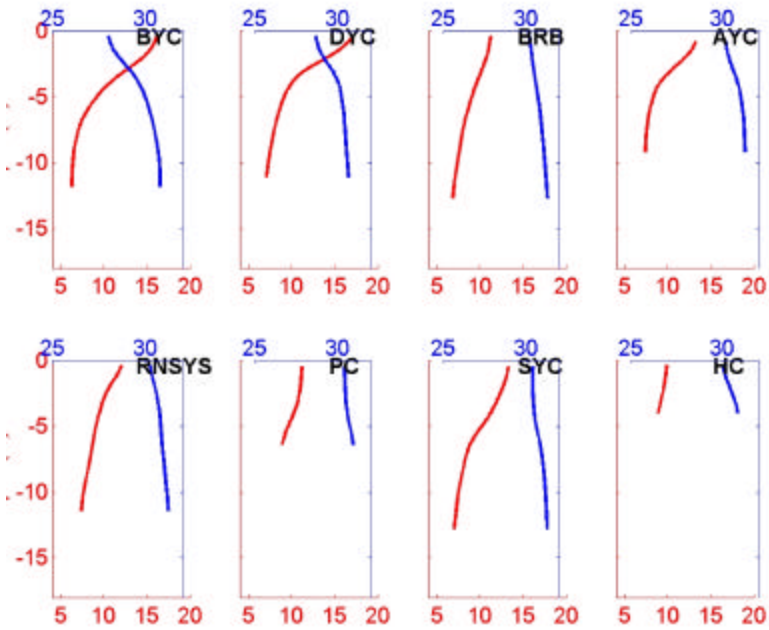
**Ammonia:** The ammonia nitrogen levels have dropped significantly to values below or just above the detection limit (0.05 mg/L)

**TSS:** There are some two high TSS values (7.7 at EE2-1m and 7 mg/L at G2-10m). There appears to be no clear pattern except that the values drop from EE out, and are lowest in the Outer Harbour.

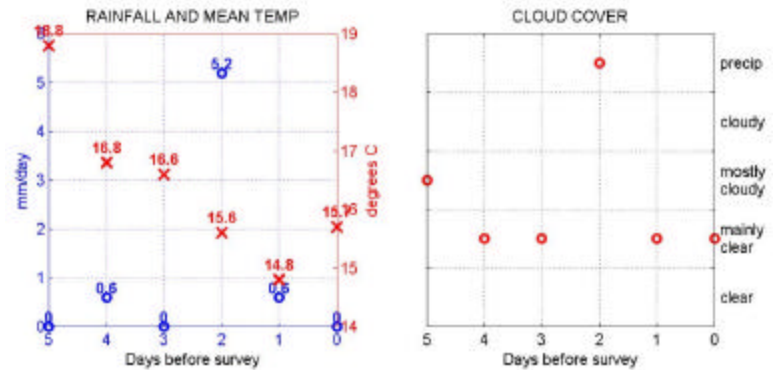
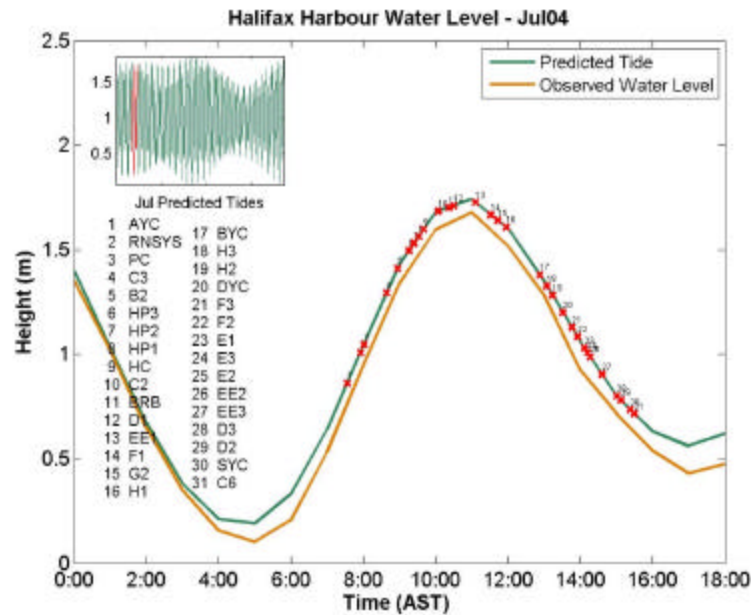
**Dissolved Oxygen:** The dissolved oxygen (DO) data indicate that the levels have increased somewhat since last survey. The exception is in the bottom of the Basin, where levels have continued to drop to about 5.1mg/L. The surface values decrease going out of the Harbour, from about 8.0 mg/L at the surface in the Basin to just over 7 mg/L in the Outer Harbour. This is above the use specific guidelines everywhere but below about 10 m in the Basin and in the Outer Harbour where the class SA guideline is 8.0 mg/L. The DO data is not ground-truthed and absolute values are questionable (see DO discussion in QR#1).



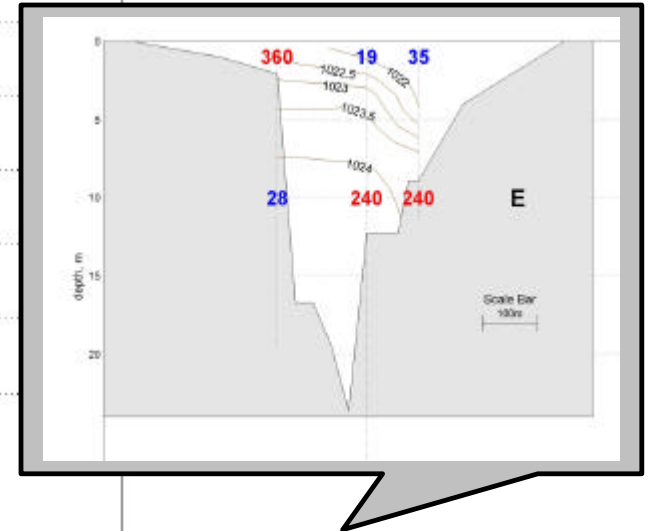
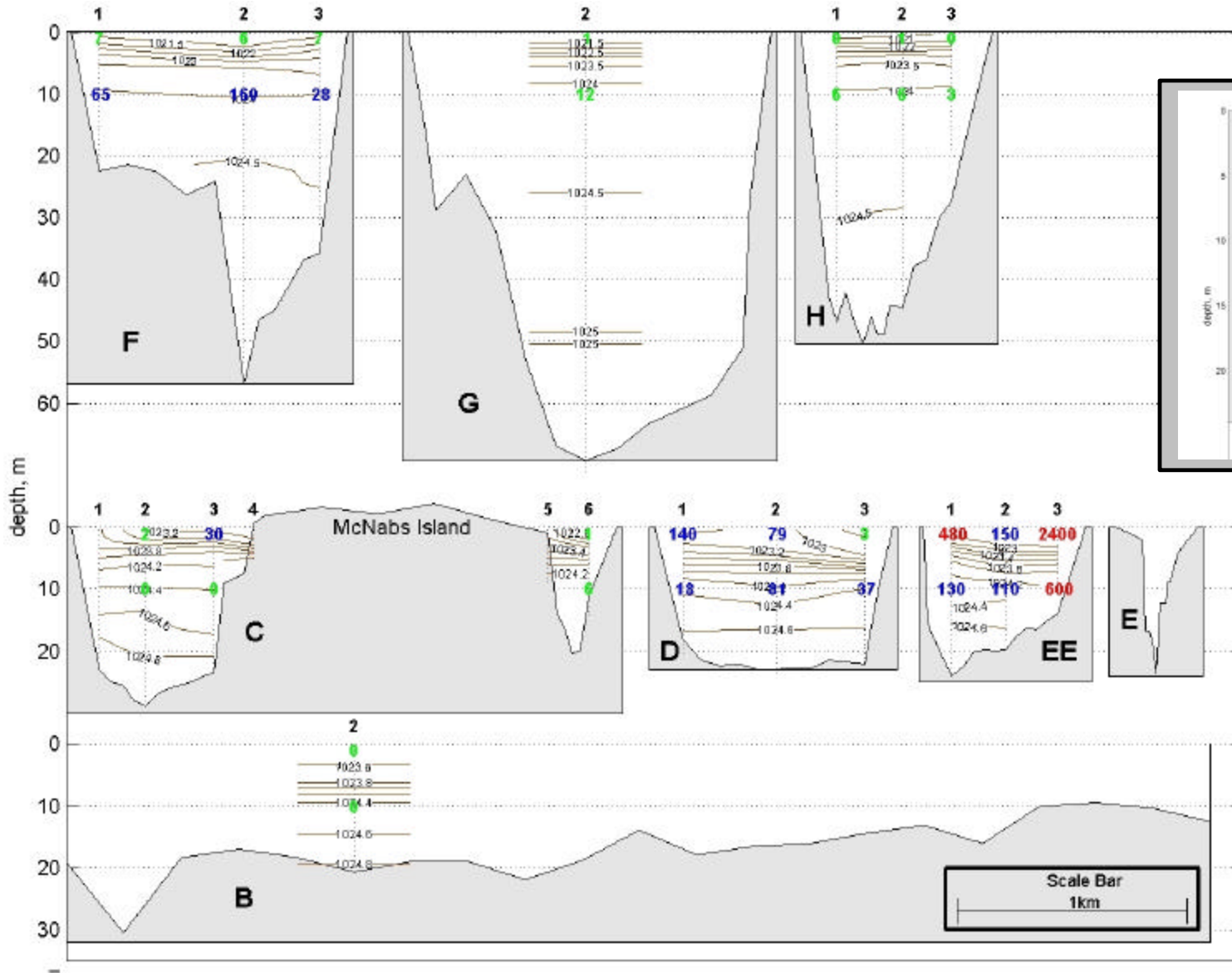
# Yacht Clubs



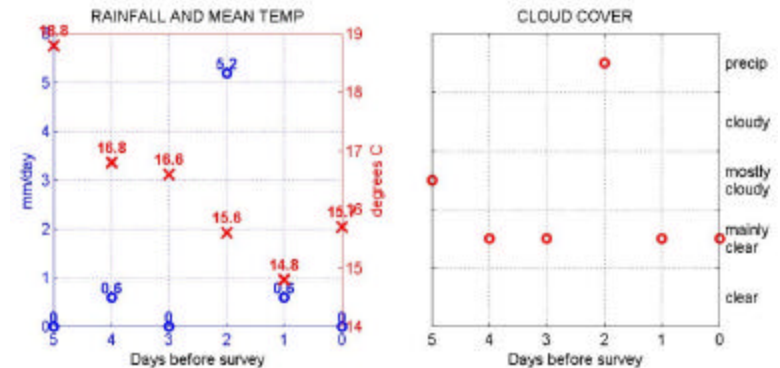
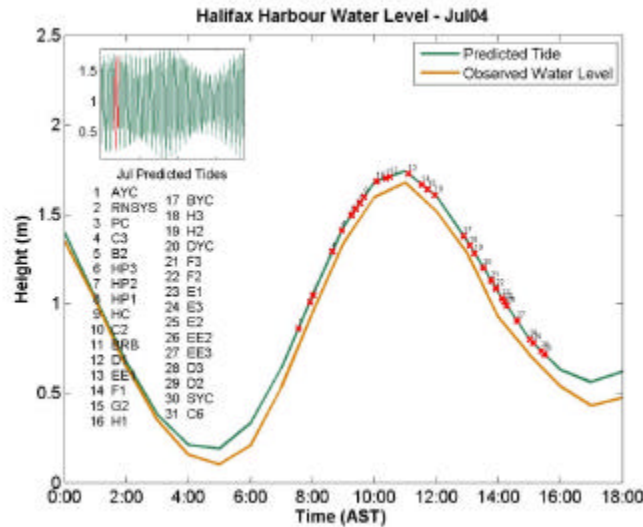
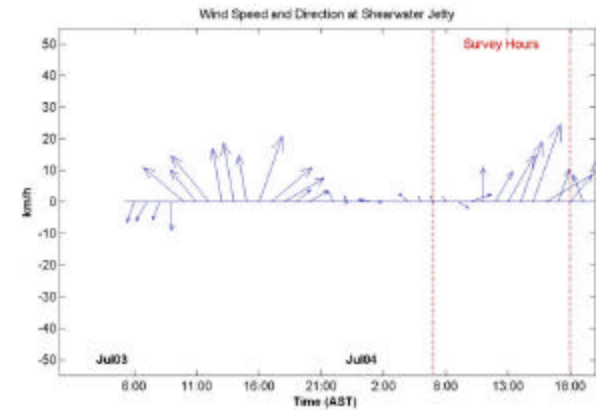
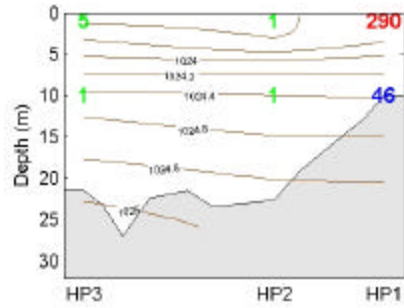
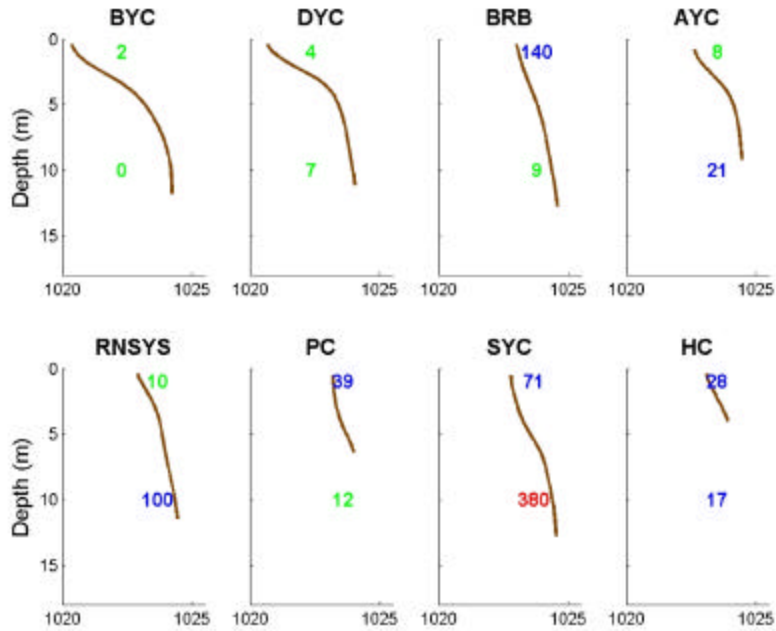
Rainfall and temperature data collected at Shearwater Autoport.  
Cloud cover data collected at Shearwater Airport



Salinity in PSU      Temperature in °C



# Yacht Clubs

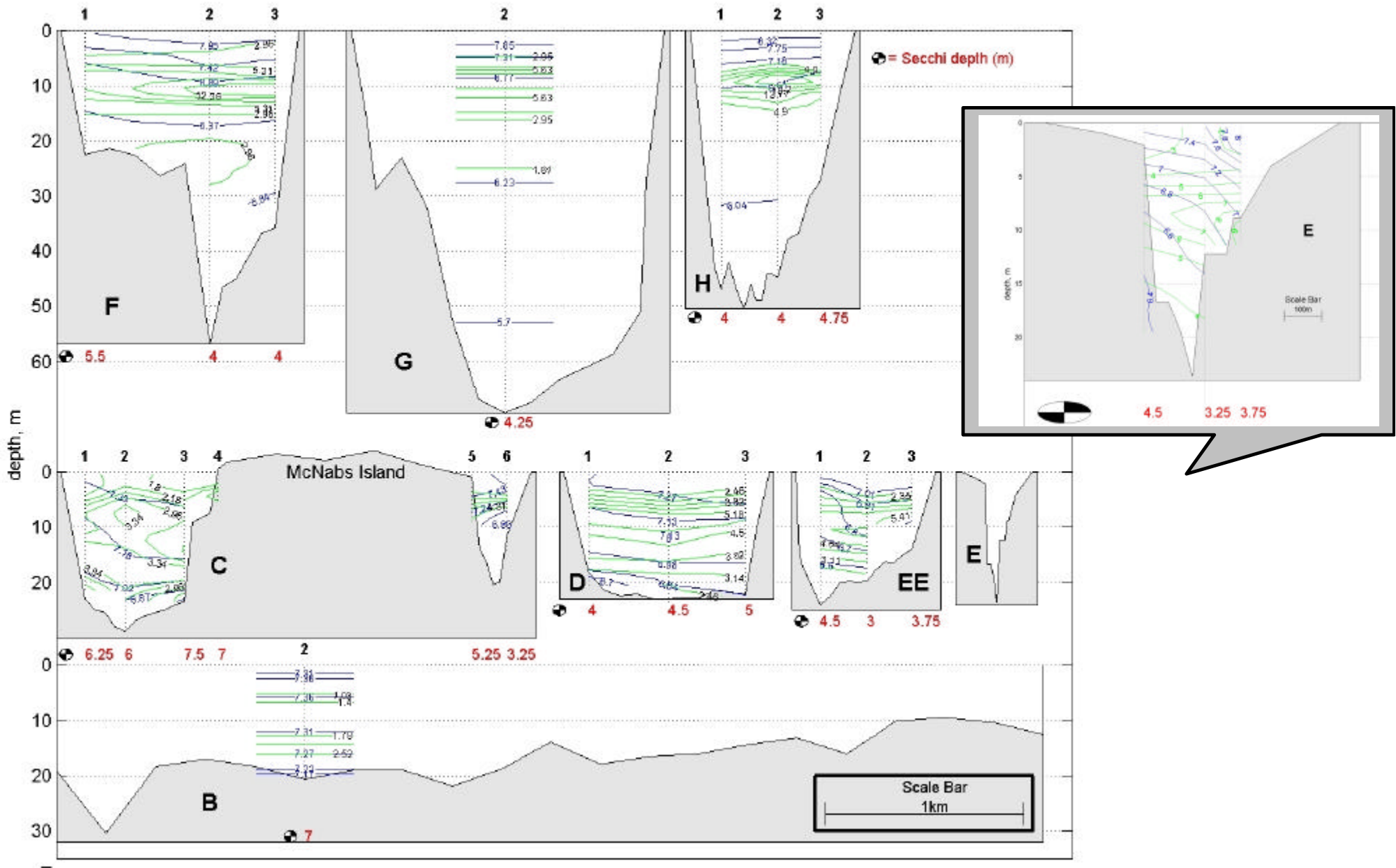


Rainfall and temperature data collected at Shearwater Autoport.

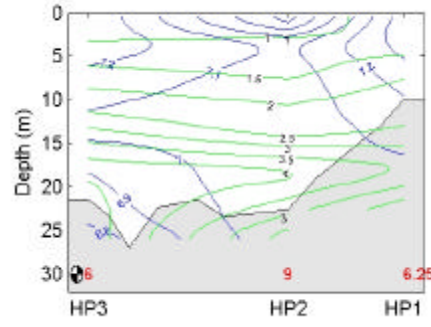
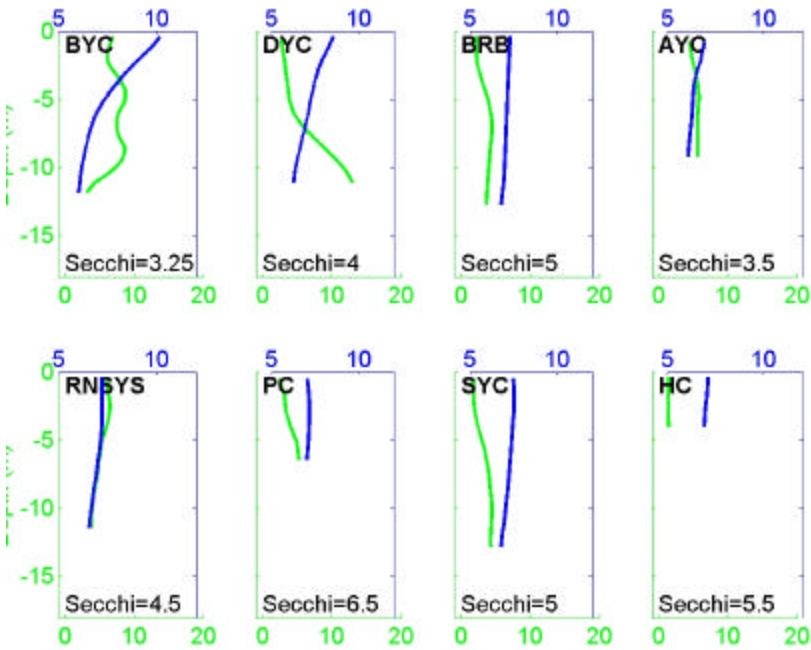
Cloud cover data collected at Shearwater Airport

Potential Density in  $\text{kg/m}^3$

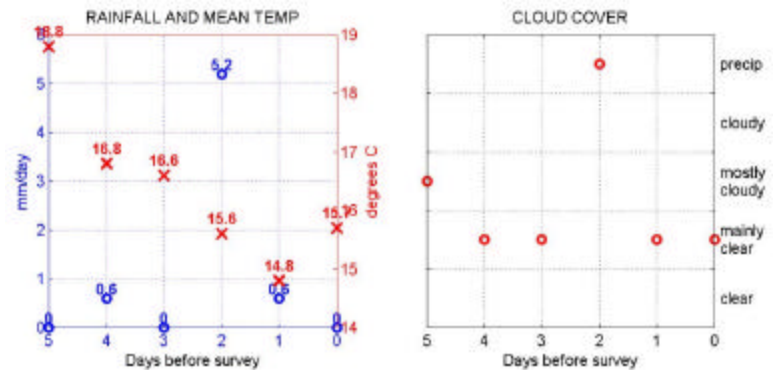
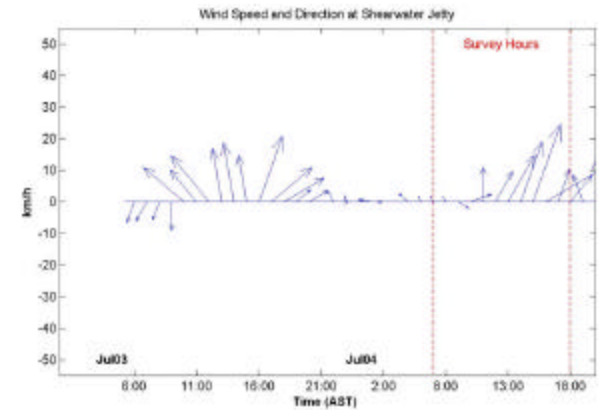
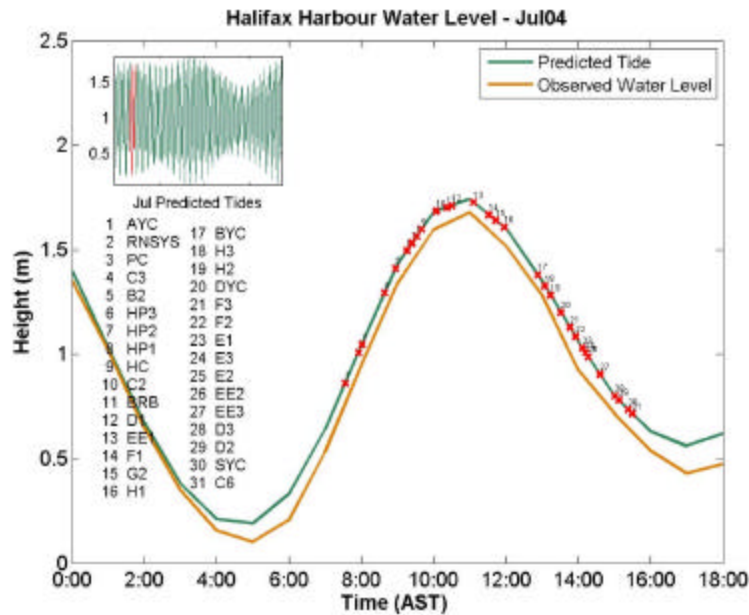
Fecal coliform: above swimming limit (200 cfu/100mL)  
 above shellfish limit (14 cfu/100mL)  
 below limits



# Yacht Clubs

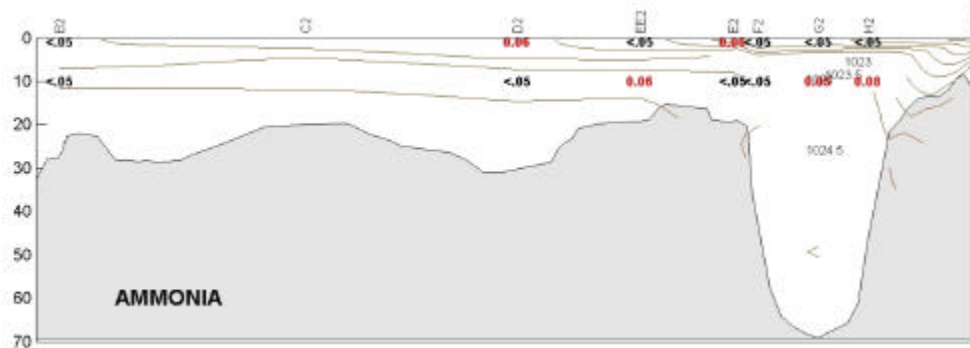
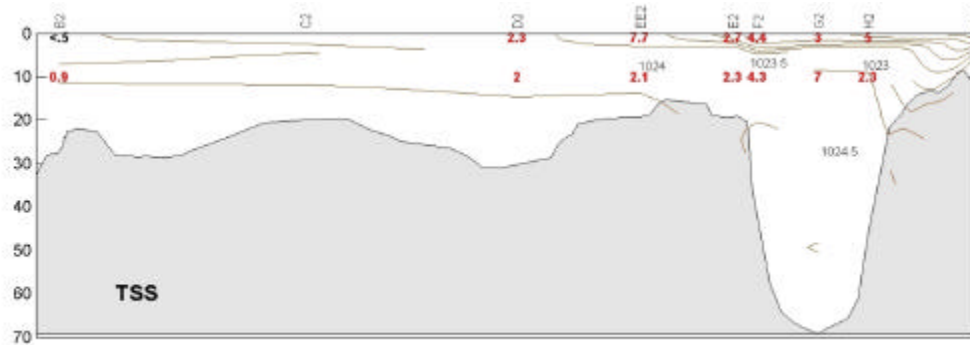


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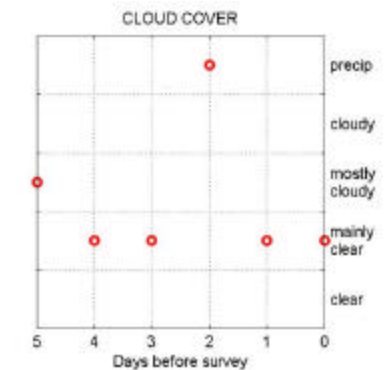
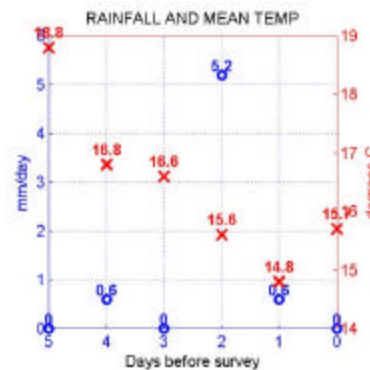
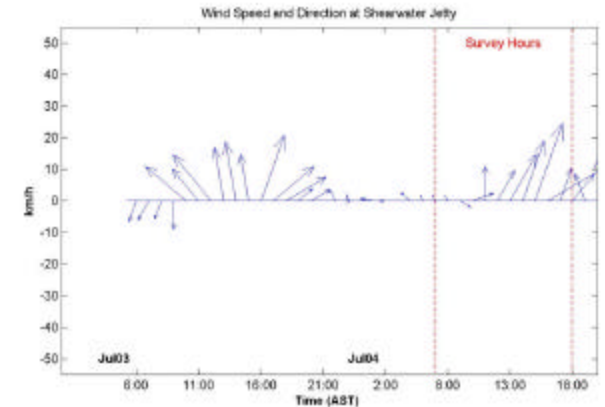
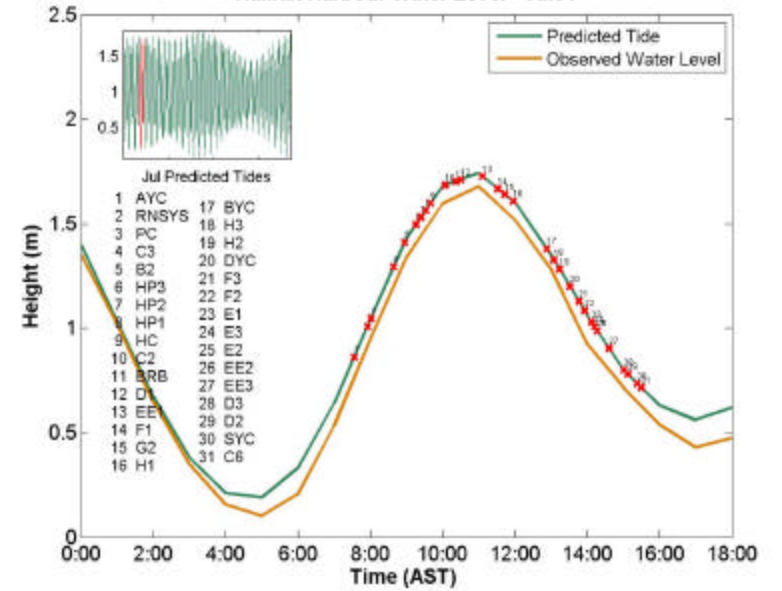
DO in mg/L

Chlorophyll in mg/m<sup>3</sup>



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

Halifax Harbour Water Level - Jul04

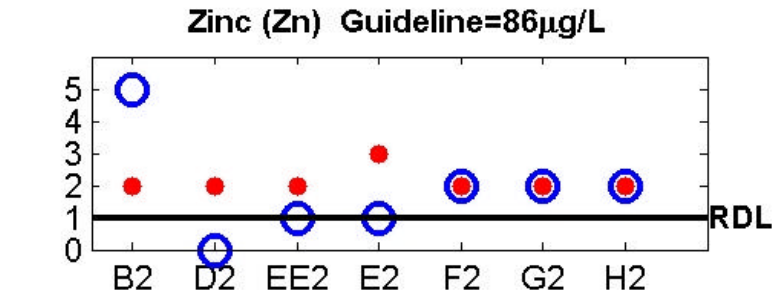
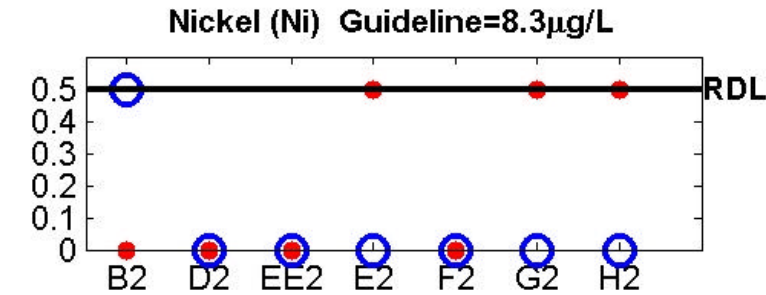
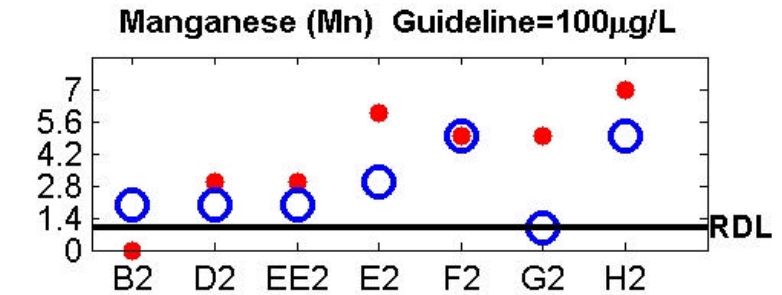
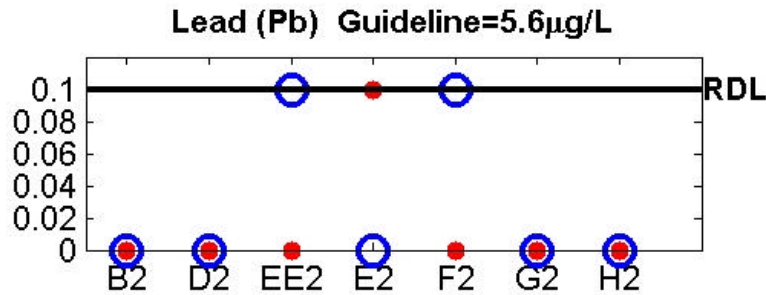
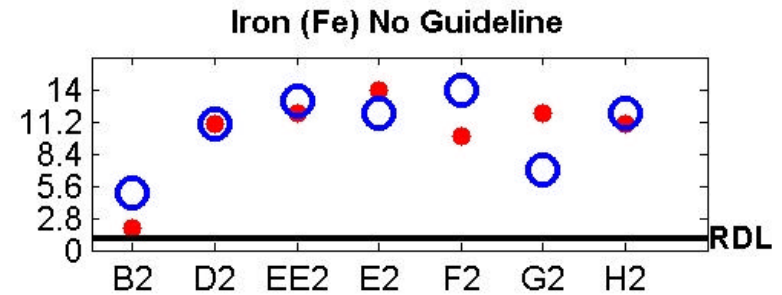
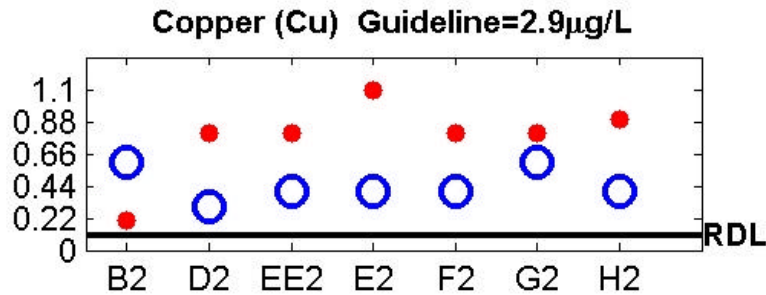
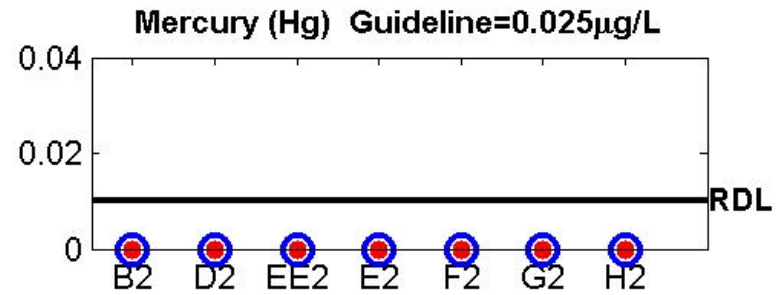
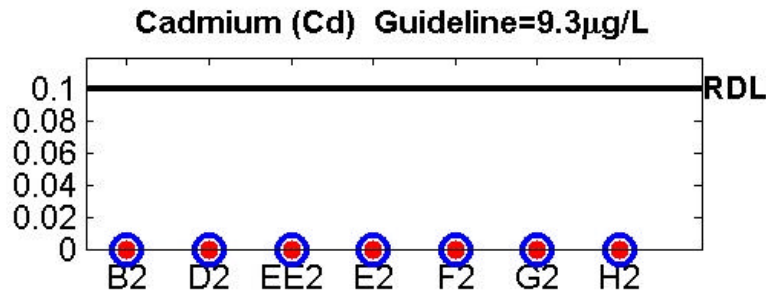


Potential Density in kg/m<sup>3</sup>

Ammonia in mg/L

TSS in mg/L





**LEGEND**

- = Ten Metre Sample
- = One Metre Sample
- RDL = Reportable Detection Limit