

## Halifax Harbour Water Quality Monitoring Project Survey Summary #128

**Survey Date:** 24 April 2007  
**Nature of Survey:** Complete Survey  
**Report File (this document):** HHWQMP\_report128\_070424.doc  
**Data File:** HHWQMP\_data128\_070424.xls

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

### Sample Notes:

A supplementary sample was taken near the Fairview Cove Storm Overflow at 44.66511 N, 63.63075 W. Lab results:

<b>Fecal Coliform</b>	6400	<b>Cobalt</b>	<0.1	<b>Manganese</b>	3
<b>Ammonia</b>	0.12	<b>Copper</b>	0.8	<b>Nickel</b>	0.6
<b>TSS</b>	4.8	<b>Iron</b>	8	<b>Zinc</b>	2
<b>Cadmium</b>	<0.1	<b>Lead</b>	<0.1	<b>Mercury</b>	<0.01

### QA/QC samples:

Detectable Parameter	Units	EE2 - 10m	
		reference sample	QA/QC
Ammonia (as N)	mg/L	<0.05	<0.05
Total Suspended Solids	mg/L	3	3.2
Copper	ug/L	0.2	0.2
Iron	ug/L	2	4
Manganese	ug/L	<1	1

### Fecal Coliform (CFU/100ml)

Site	AYC-10m	F3-1m	C3-1m	EE2-10m
<b>Reference</b>	14	77	0	15
<b>QA/QC</b>	9	86	1	8

### Comments:

**General:** Snowmelt and rainfall in the weeks prior to the survey have resulted in high flow in the Sackville River, peaking on 19 April. The resulting input of warmer fresher water is evident in the Basin. This is particularly noticeable in the Northern

Basin, however, there has been a slight freshening of the surface layer throughout the Inner Harbour. In the Outer Harbour, the salinity and temperature remain uniform. Interestingly, the temperature here has dropped slightly (by almost 0.5°C) from the previous survey, in spite of relatively warm daytime temperatures. There is a slight freshwater feature evident in the north end of the HP section. This appears to be from the Tribune Head outfall, as there is not a strong freshwater signal in HC itself, and the feature is associated with a relatively high fecal coliform value. In general, the fecal coliform values are quite low. The highest values in the Southern Basin and Narrows are in the 1m samples, consistent with a source discharging into the surface water in the Basin, i.e. the diversion to the Fairview Cove CSO.

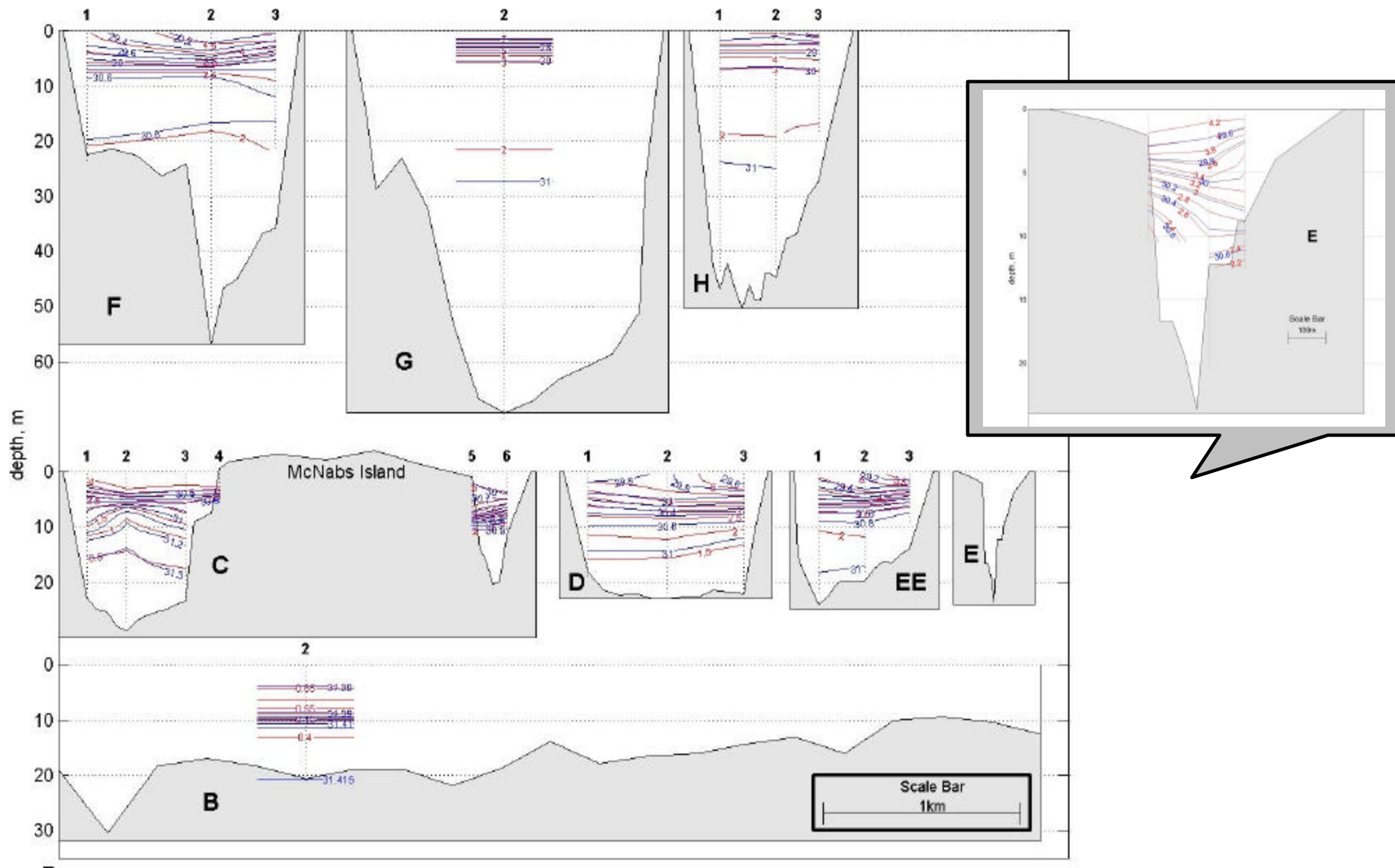
**Fluorescence:** The Spring phytoplankton bloom continues to subside. In the northern Basin, profile maximums are about 8-9 mg/m<sup>3</sup> at about 5 m. The maximum values drop to around 5 mg/m<sup>3</sup> in the Inner Harbour. In the Outer Harbour (sections C and D) the values are similar but the maximums occur near the bottom (20 m).

**Ammonia:** There are detectable levels in 8 of 14 samples with values ranging from 0.05 mg/L to 0.09 mg/L. The highest values tend to be in the 10m samples in the Basin.

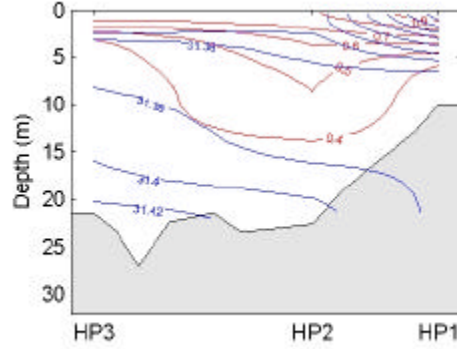
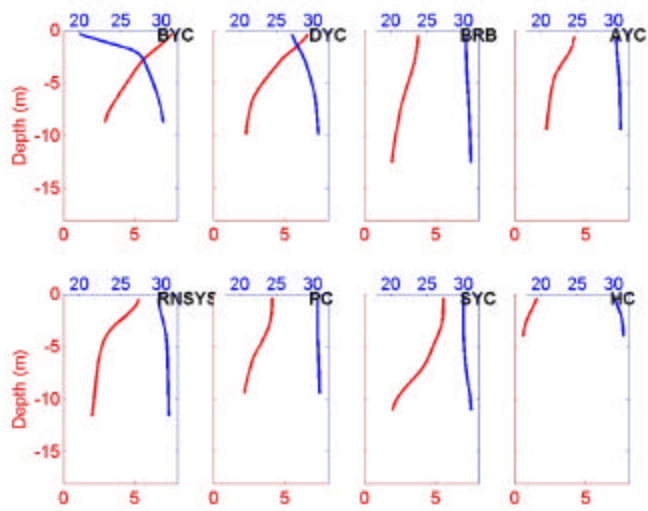
**TSS:** The TSS values are similar to last survey (1.7 – 6.7 mg/L) with highest values in the Southern Basin and Narrows.

**Dissolved Oxygen:** The dissolved oxygen (DO) data indicate that the DO levels are generally about 8.0 mg/L at the surface throughout the harbour. In the Basin the values drop somewhat with depth, but remain above 7 mg/L except at the very bottom of station G2. Elsewhere the DO is quite uniform with depth except that there is a lens of more oxygenated water evident at the bottom of sections C and D. The only values below applicable guidelines are in the bottom few metres in the centre of the Basin (site G2). The DO data is not ground-truthed and absolute values are questionable (see DO discussion in QR#1).

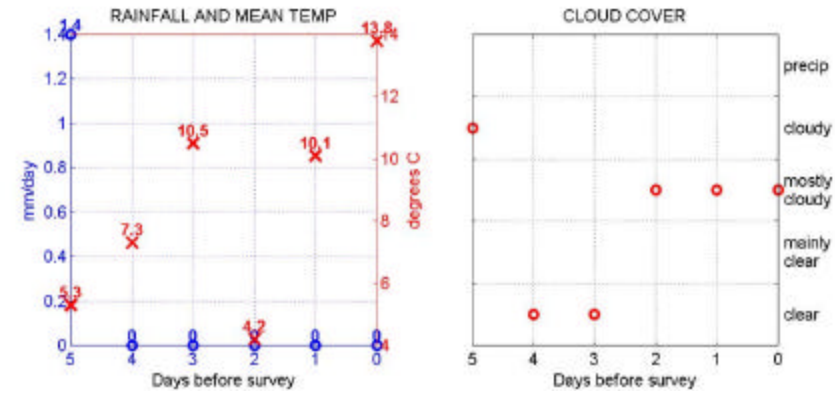
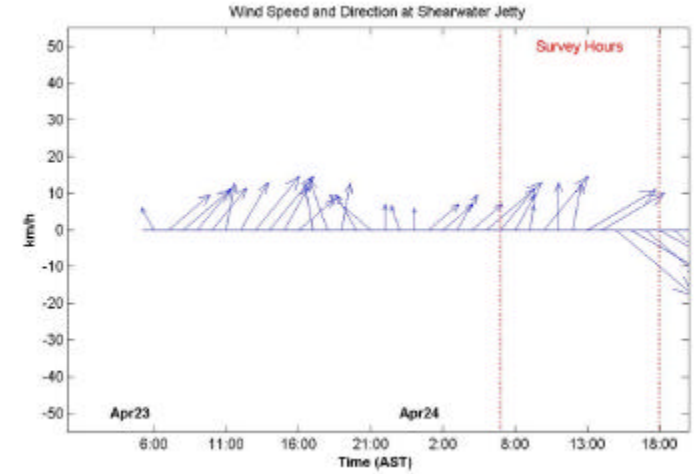
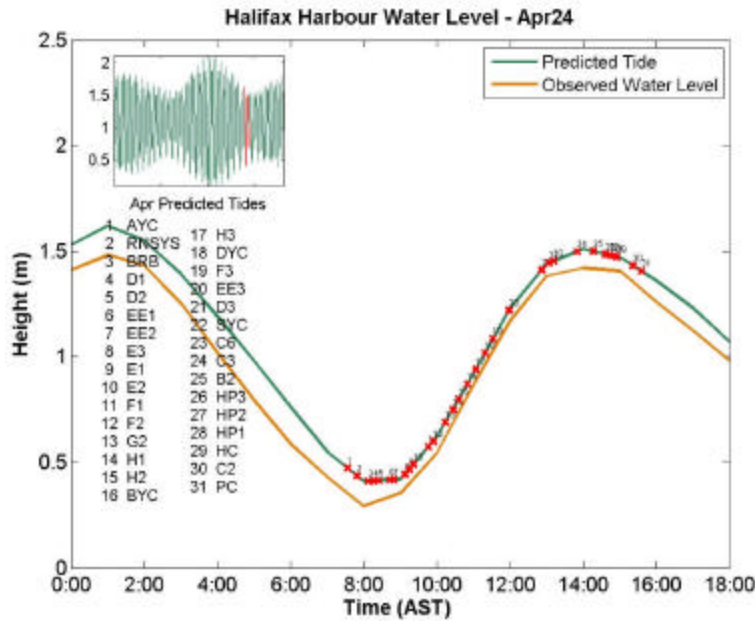
**Supplemental Sample:** This sample was taken in a large, very visible but shallow (approx. 5 cm) surface plume. Clear water was visible in the boat wake. The sample was taken near surface but below the visible plume. The results in the previous table indicated relatively high levels of fecal coliform, NH<sub>3</sub> and copper (all the highest in the survey). The remaining results are within the ranges observed elsewhere in this survey.



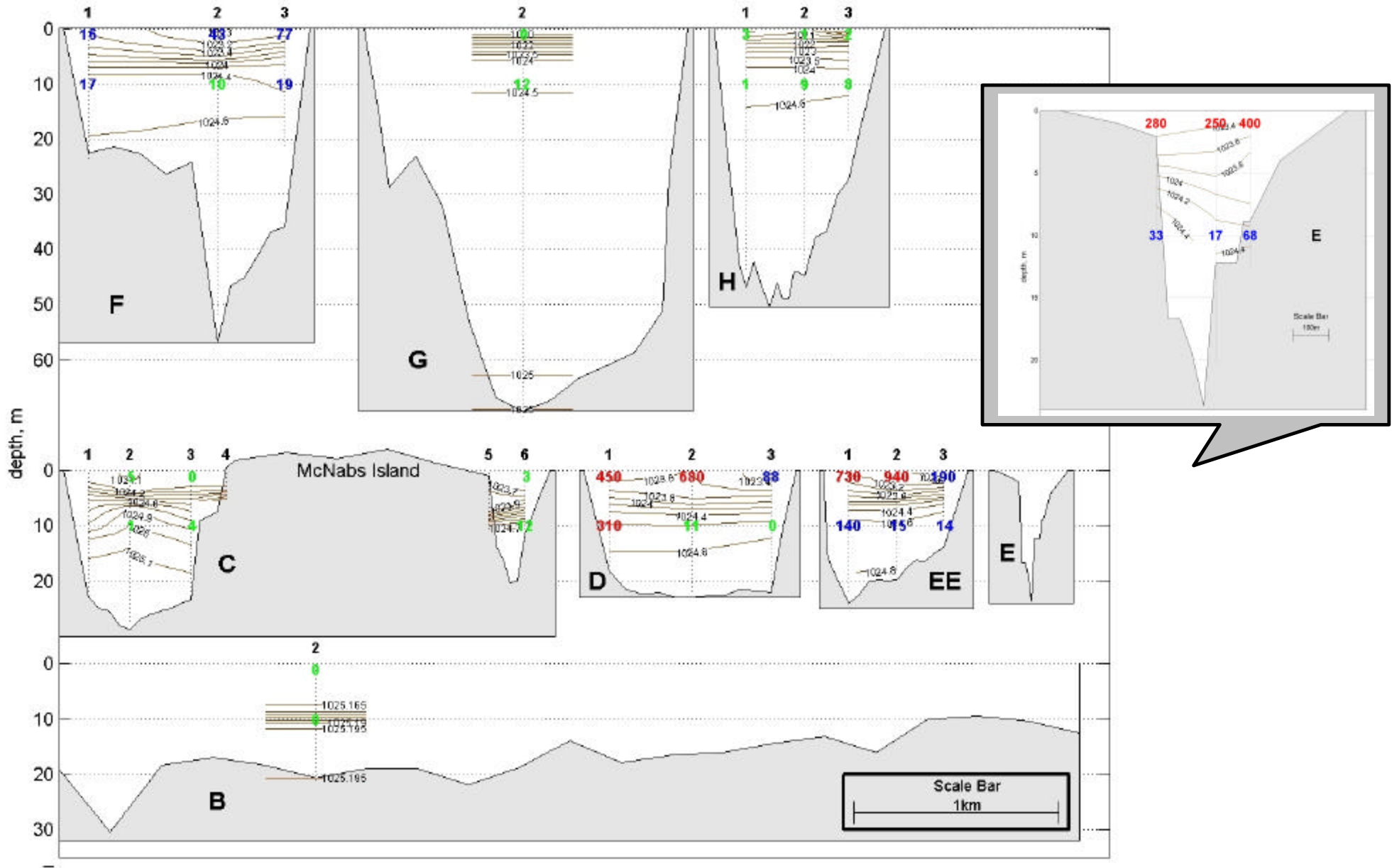
# Yacht Clubs



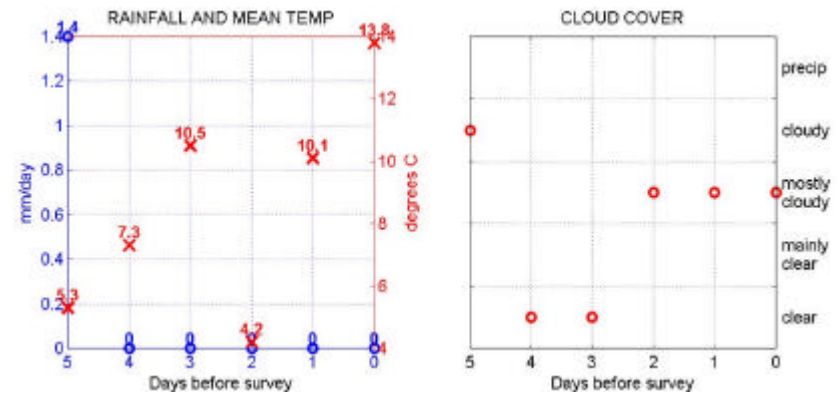
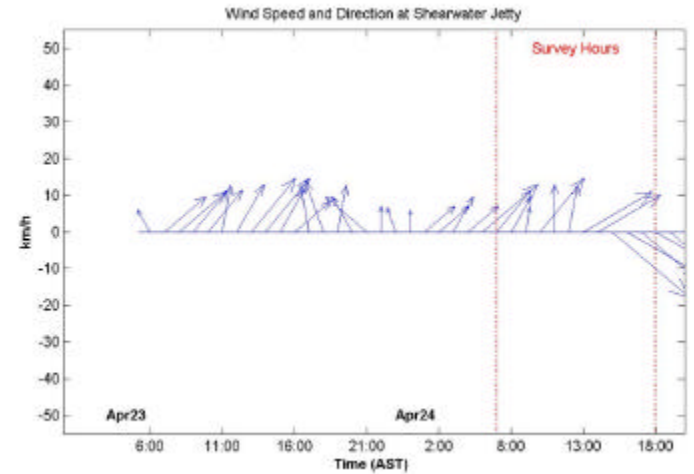
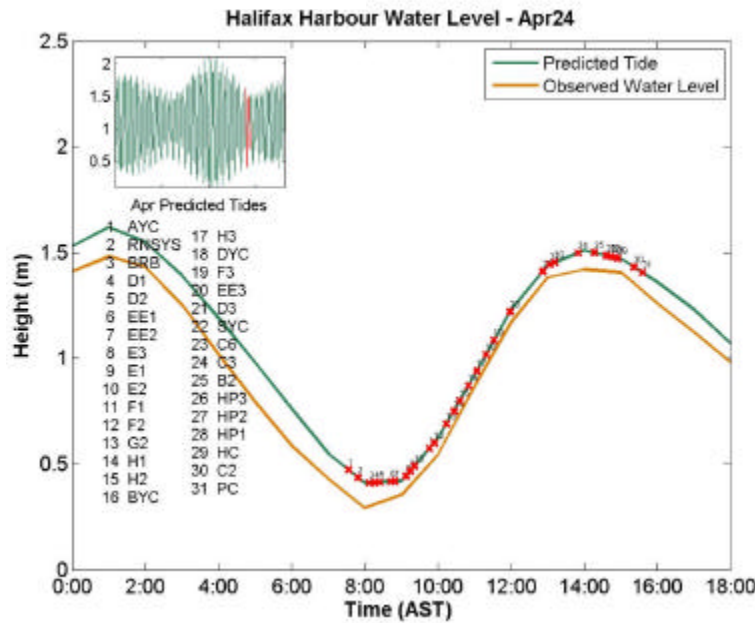
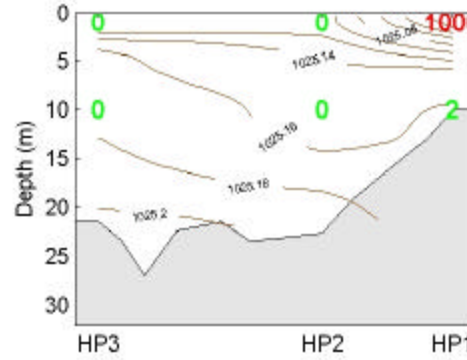
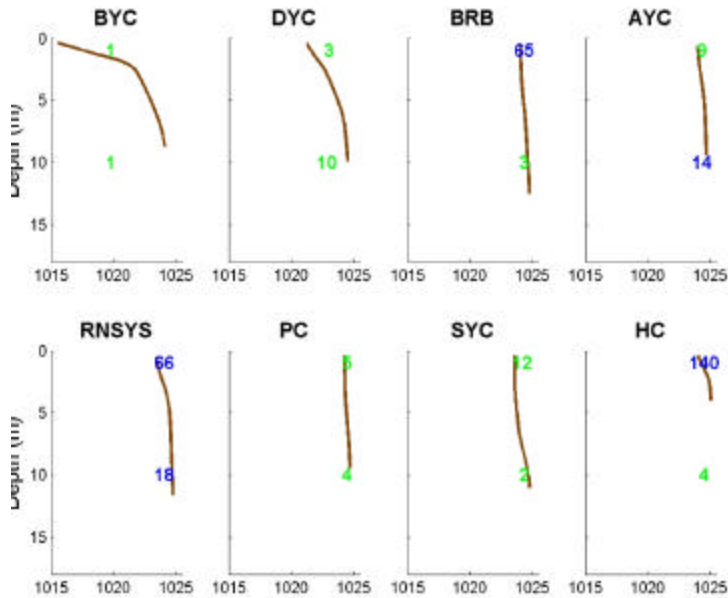
Rainfall and temperature data collected at Shearwater Autoport.  
Cloud cover data collected at Shearwater Airport



Salinity in PSU      Temperature in °C



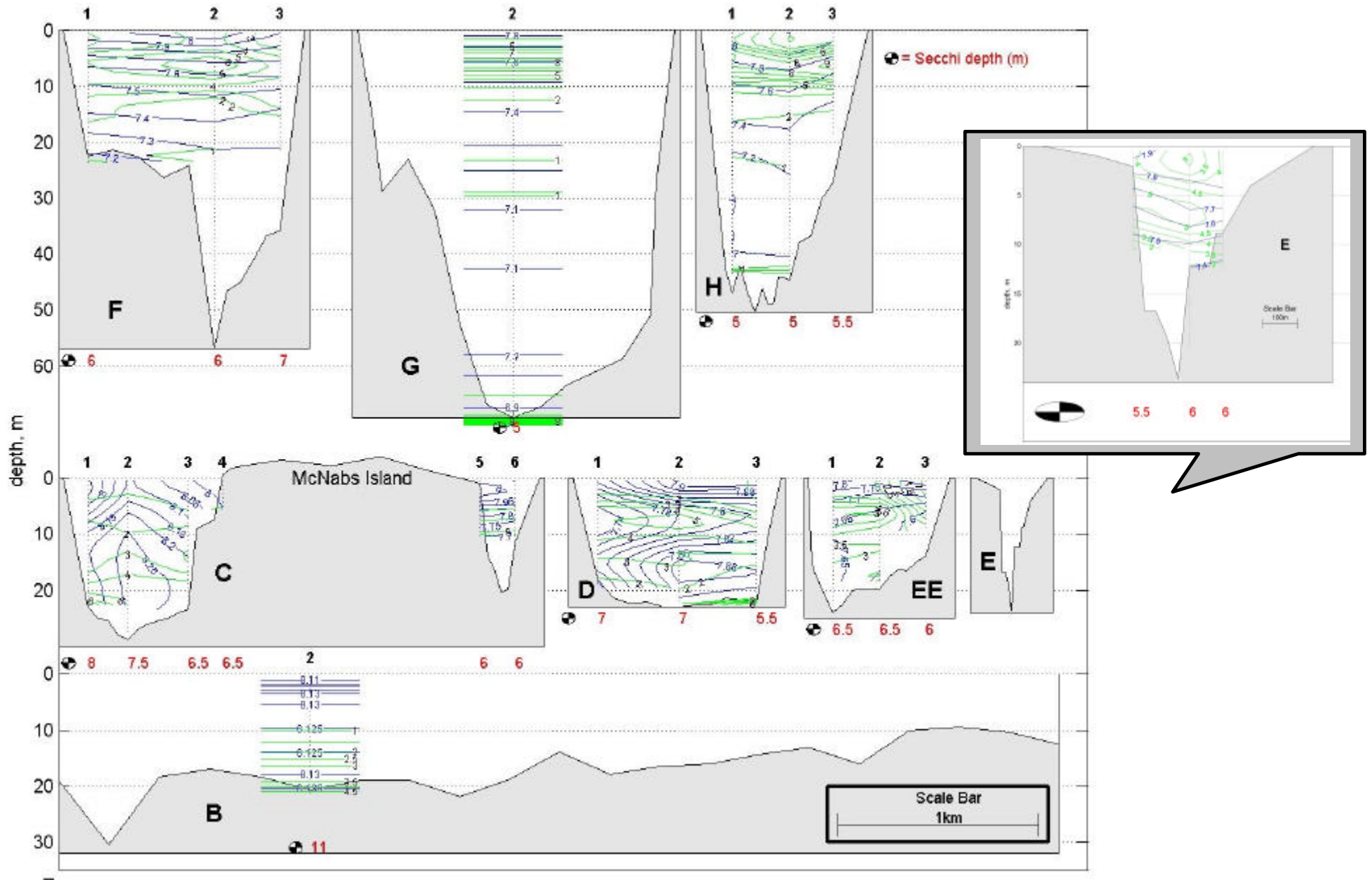
# Yacht Clubs



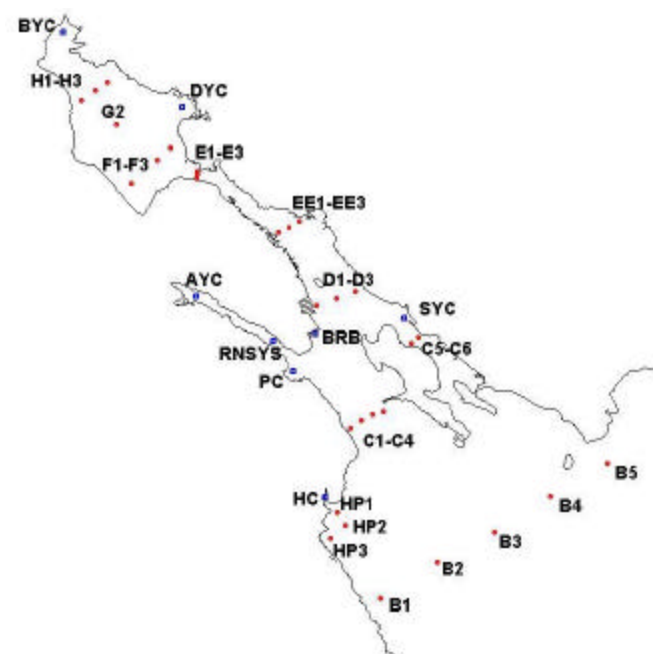
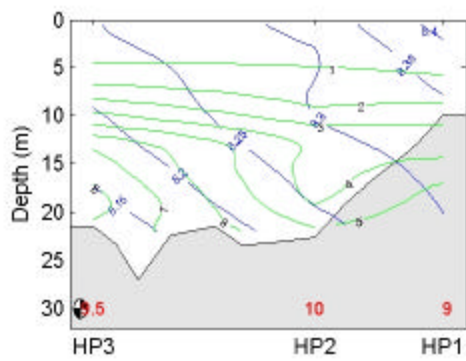
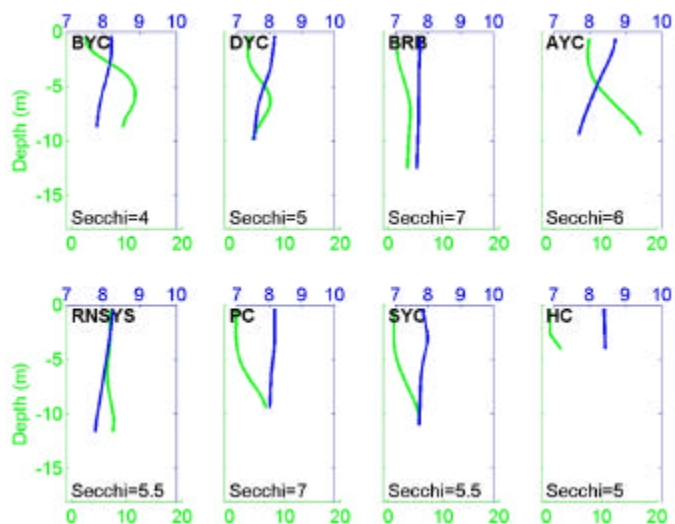
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Potential Density in  $\text{kg/m}^3$

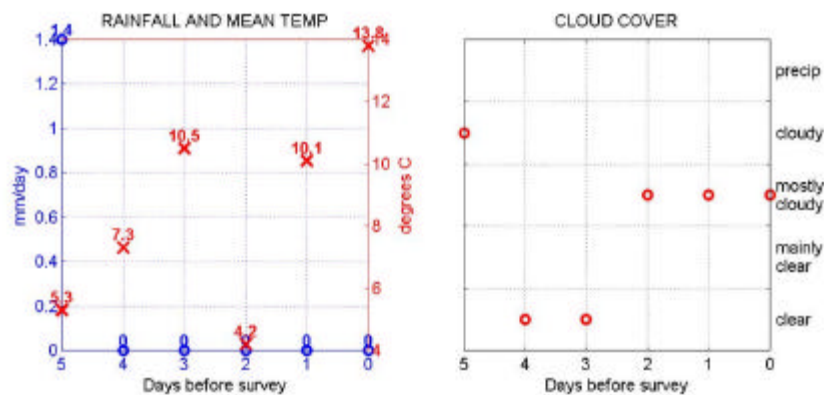
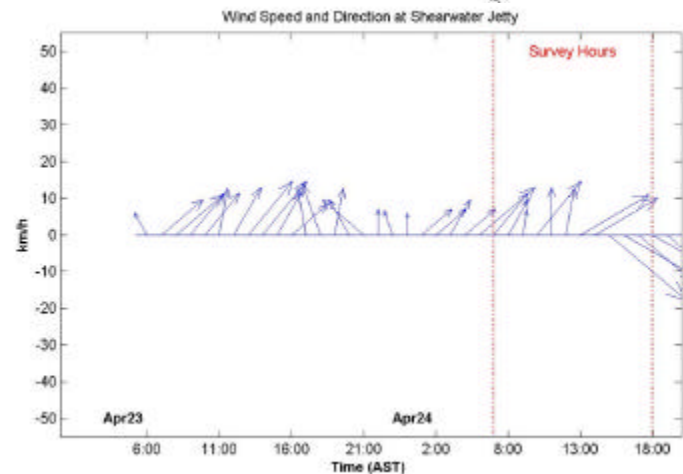
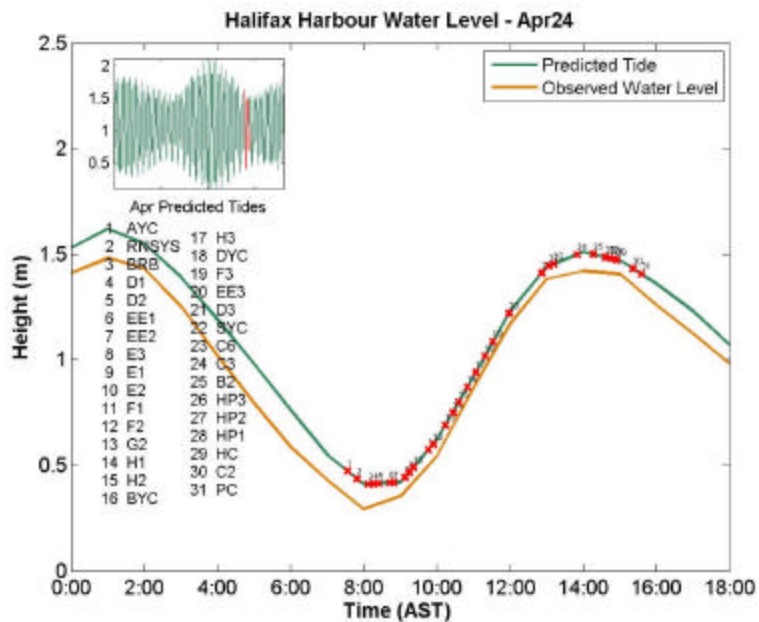
Fecal coliform: **above swimming limit (200 cfu/100mL)**  
**above shellfish limit (14 cfu/100mL)**  
below limits



# Yacht Clubs



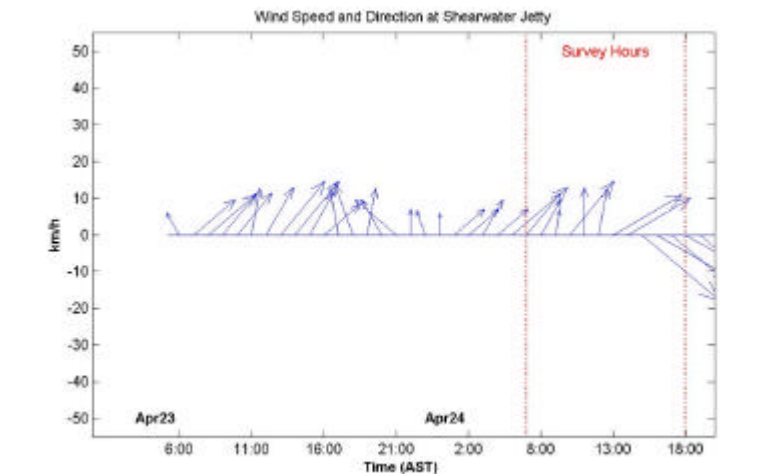
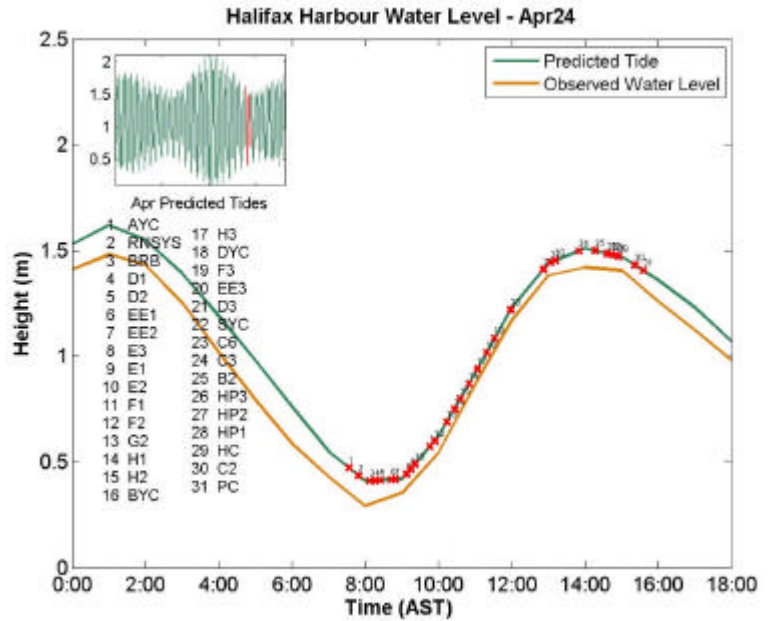
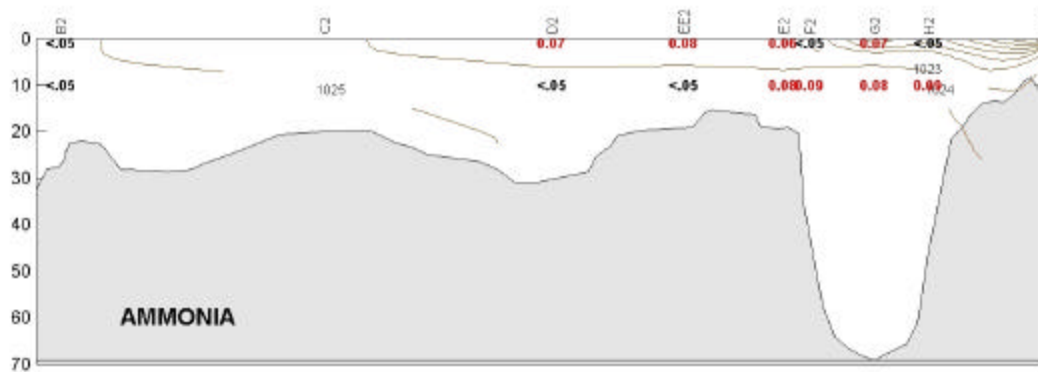
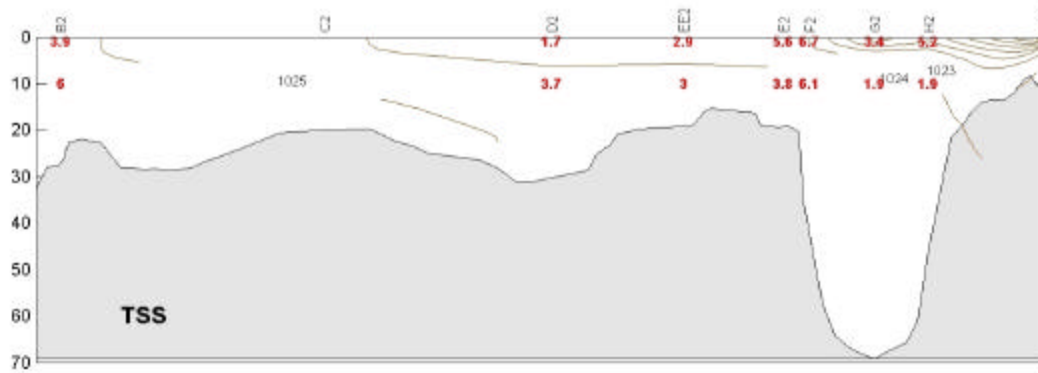
Rainfall and temperature data collected at Shearwater Autoport.  
Cloud cover data collected at Shearwater Airport



DO in mg/L

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

CHEMISTRY



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

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

Ammonia in  $\text{mg/L}$

TSS in  $\text{mg/L}$

