

# Halifax Harbour Water Quality Monitoring Project

## Weekly Summary #111

**Survey Date:** 29 August 2006  
**Nature of Survey:** Complete Survey  
**Report File (this document):** HHWQMP\_report111\_060829.doc  
**Data File:** HHWQMP\_data111\_060829.xls

**Data Return:**  
 Profile: 97%  
 Bacteria: 96%  
 Chemical: 86%  
**Overall: 94%**

**Sample Notes:**

Site B2 was not sampled due to weather.

**QA/QC samples:**

Chemical Analysis		F2-10m		D2-1m		G2-10m	
		Ref sample	QA/QC	Ref sample	DUP	Ref sample	QA/QC
Ammonia (as N)	mg/L	<0.05	<0.05	n/a	n/a	n/a	n/a
Total Suspended Solids	mg/L	7.7	2	n/a	n/a	n/a	n/a
Cadmium	ug/L	n/a	n/a	<0.1	<0.1	<0.1	<0.1
Cobalt	ug/L	n/a	n/a	<0.1	<0.1	<0.1	<0.1
Copper	ug/L	n/a	n/a	0.2	0.3	0.6	0.8
Iron	ug/L	n/a	n/a	3	3	8	10
Lead	ug/L	n/a	n/a	<0.1	<0.1	<0.1	<0.1
Manganese	ug/L	n/a	n/a	<1	<1	1	2
Nickel	ug/L	n/a	n/a	<0.5	<0.5	0.6	<0.5
Zinc	ug/L	n/a	n/a	<1	<1	3	2

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

Site	D1-10m	E1-10m	SYC-10m	F2-10m
Reference	100	780	93	360
QA/QC	85	390	42	260

**Trace Metal Analysis:**

All samples showed non-detectable levels for mercury, cadmium, cobalt, and lead.

**Detectable metals**

Metal	EQL (µg/L)	Number >EQL	Mean (µg/L)	Range (µg/L)	Task Force Guideline (µg/L)
Copper	0.1	12	0.6	0.2-1.1	2.9
Iron	1	12	9	3 - 9	n/a
Manganese	1	8	1	<1 - 1	100
Nickel	0.5	1	0.6	<0.5 - 0.6	8.3
Zinc	1	11	6	1 - 32	86

**Comments:**

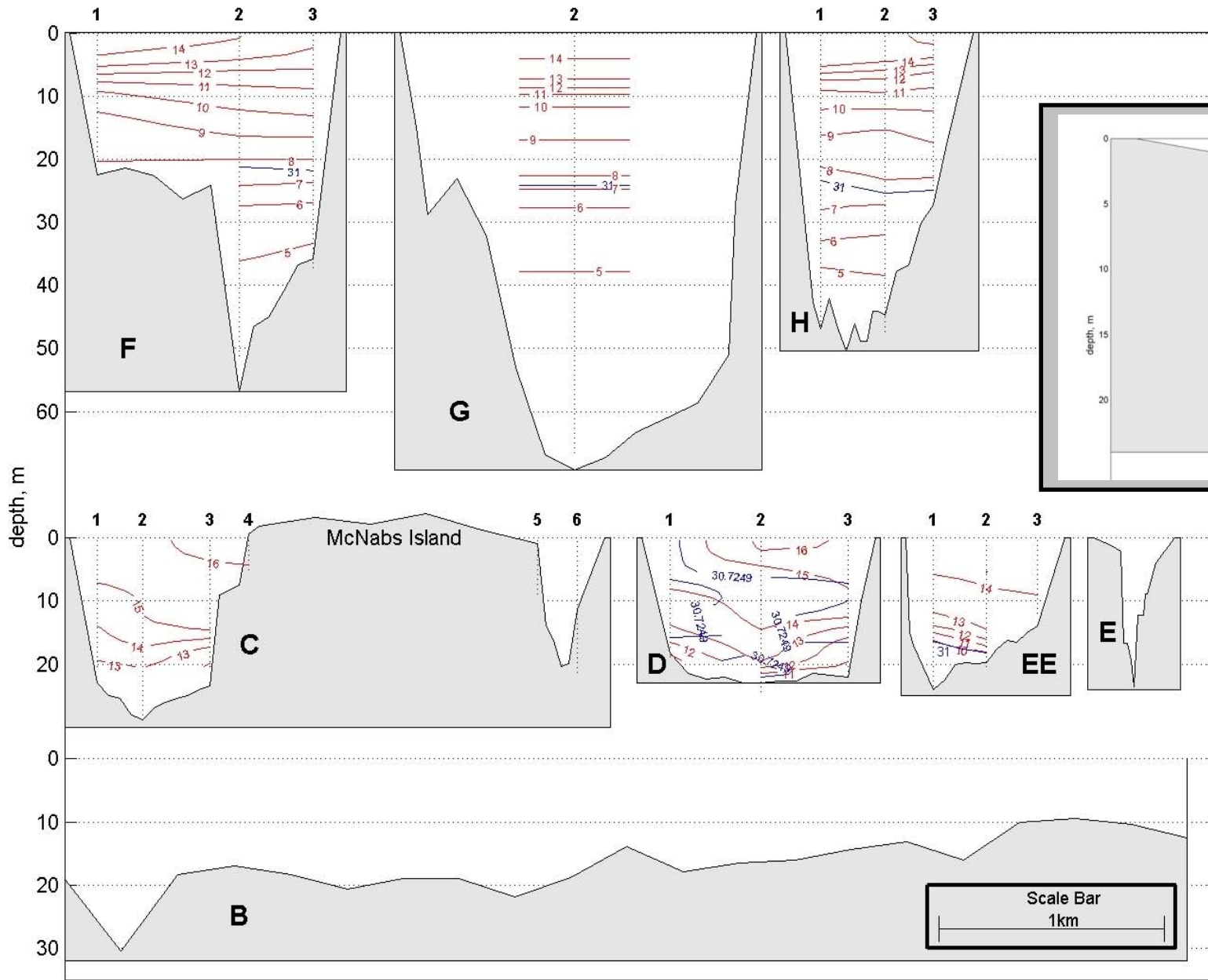
**General:** A period of dry weather has continued the trend evident in the data from two weeks ago. The salinity distribution everywhere is quite uniform, vertically and horizontally. The water has warmed a few degrees throughout the water column with a vertical gradient somewhat weaker than last week. Therefore, the overall density stratification has weakened and the water column is quite uniform in the Inner Harbour. The fecal coliform (fc) values in the Inner Harbour are relatively low and the distribution is offset up-harbour. The concentrations at 1 m in the Southern Basin and Narrows are relatively high. This is likely a result of the diversion of sewage to the Fairview Cove CSO and/or up-harbour surface transport. Again, as in the last survey, the values at F1, nearest Fairview Cove, are anomalously low.

**Fluorescence:** Fluorescence levels are lower than two weeks ago. Profile maximum values are about 10 mg/m<sup>3</sup> in the Basin and drop throughout the Inner Harbour to about 3 mg/m<sup>3</sup> at section C. This seems to correlate well with the secchi disk depths, which increase relatively monotonically from the Basin to the Outer Harbour.

**Dissolved Oxygen:** The data indicate that all water Classified SB (Basin, NW Arm and Outer Harbour around McNabs Island) has subsurface values lower than the applicable guideline (7.0 mg/L). The DO data is not ground-truthed and absolute values are questionable (see DO discussion in QR#1)

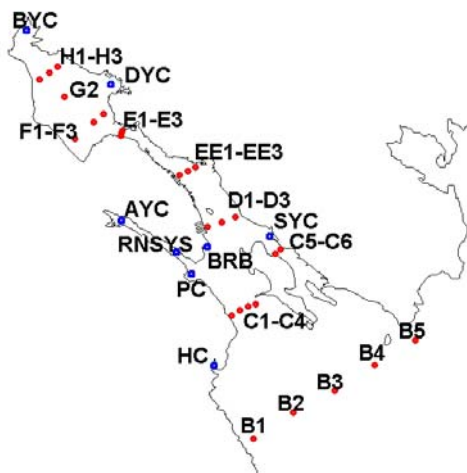
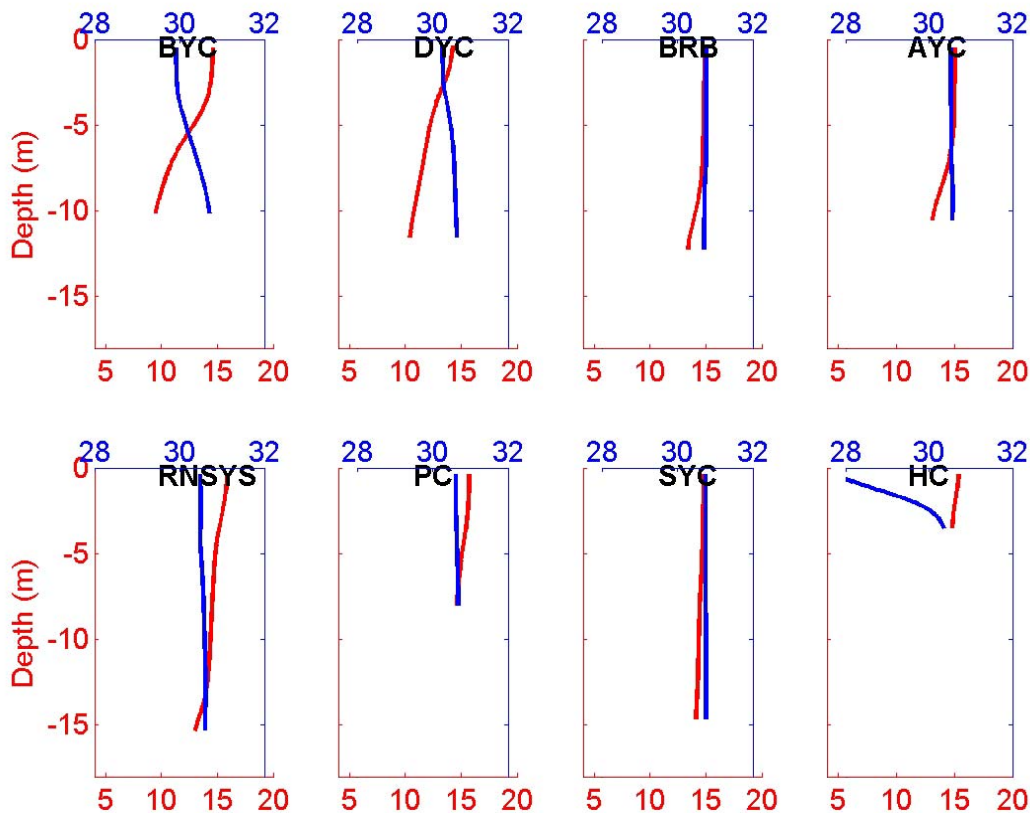
**TSS:** The TSS values vary from 3-8 mg/L, which are relatively typical. The highest values (5 to 8 mg/L) are in the Southern Basin and northern Inner Harbour. The values drop monotonically in both directions from these maxima.

**Ammonia:** There were no ammonia values above the detection limit (0.05 mg/L).



Unless otherwise labeled:  
- salinity contour interval is 1 PSU  
- temperature contour interval is 1°C.

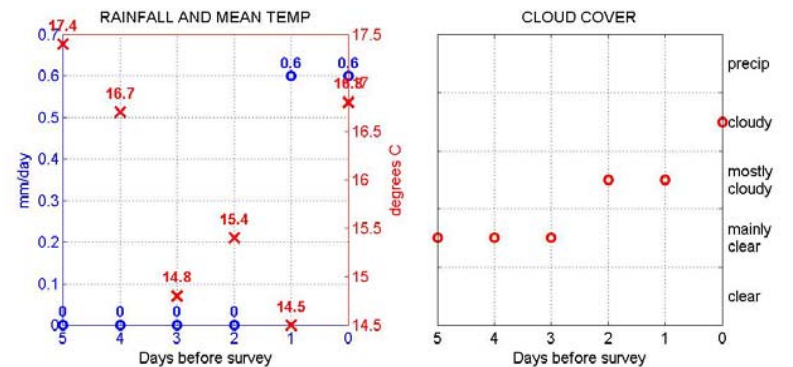
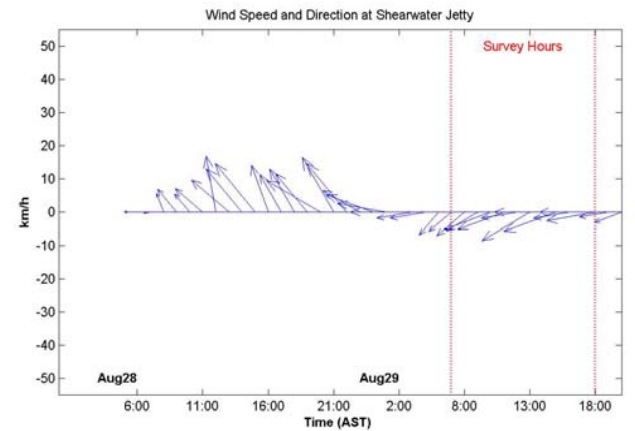
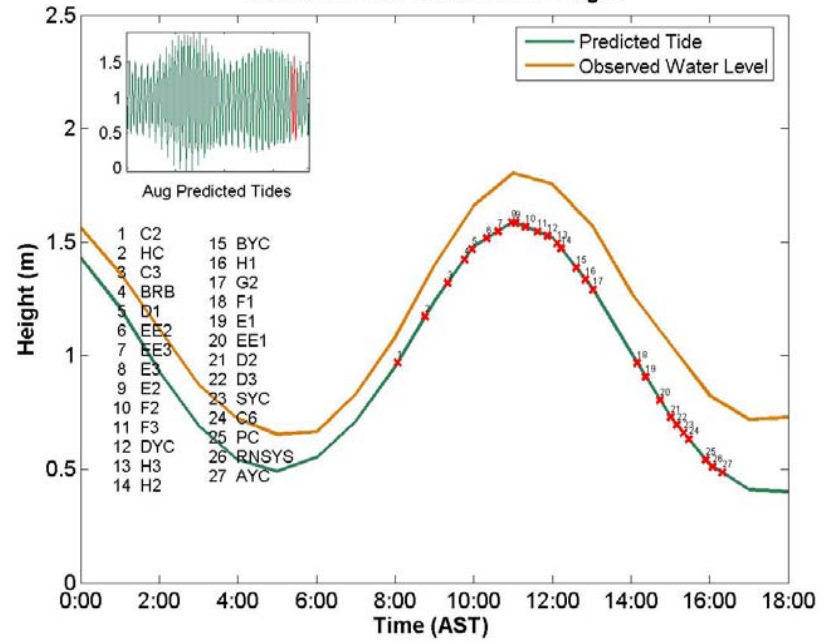
# Yacht Clubs

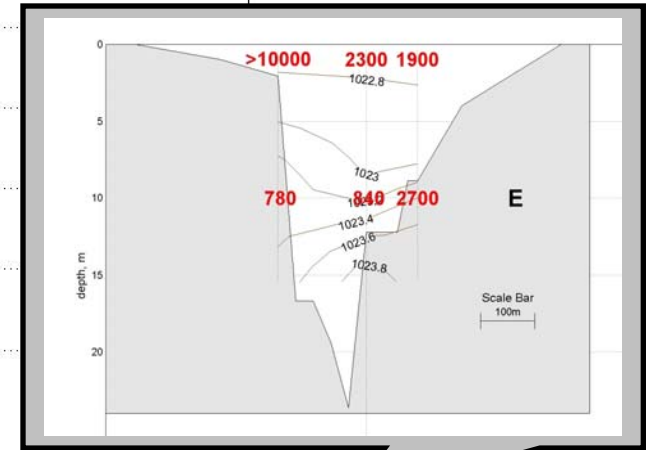
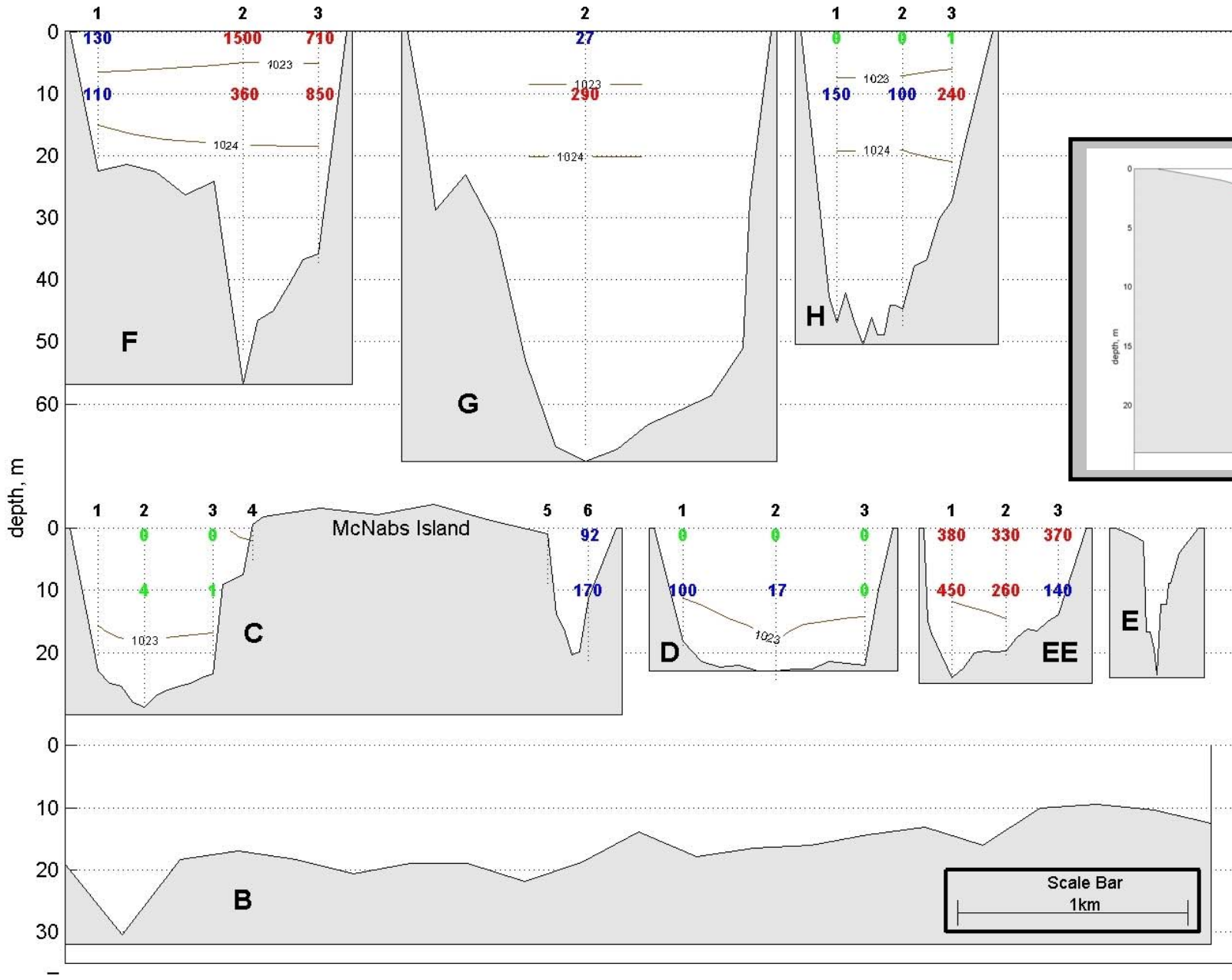


Salinity in PSU      Temperature in °C

Rainfall and temperature data collected at Shearwater Autoport.

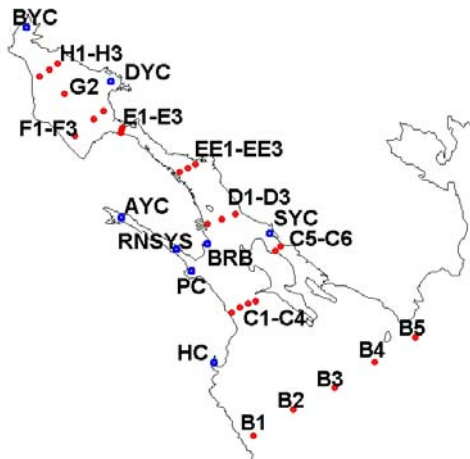
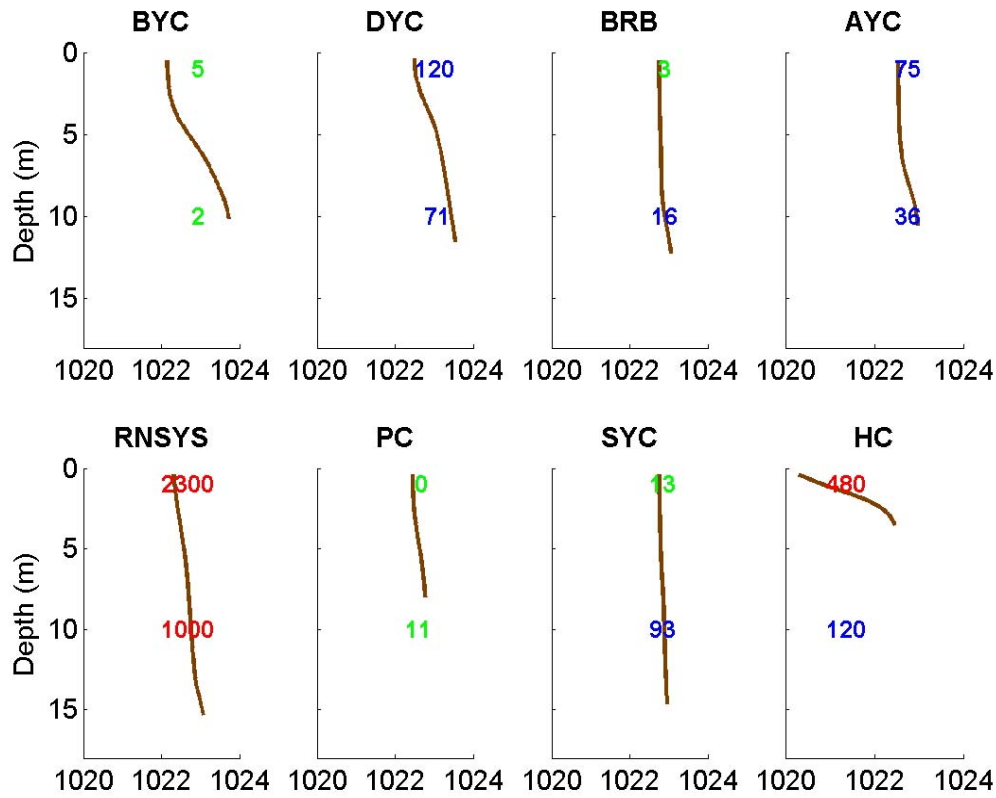
# Halifax Harbour Water Level - Aug29





Unless otherwise labeled:  
 - **density** contour interval is 1 kg/m<sup>3</sup>

# Yacht Clubs

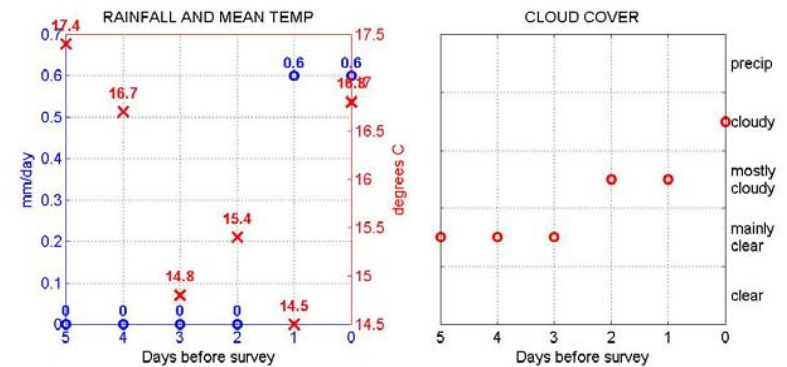
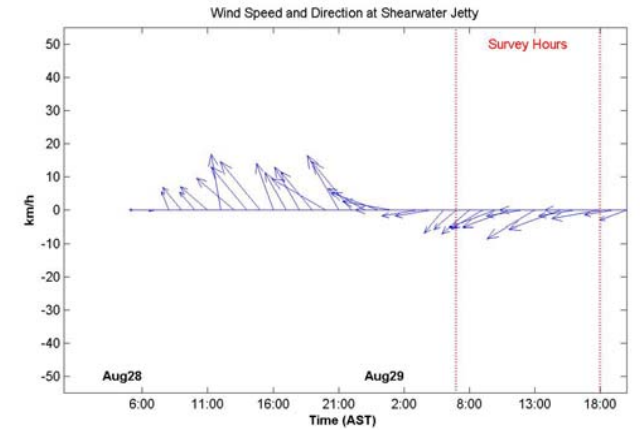
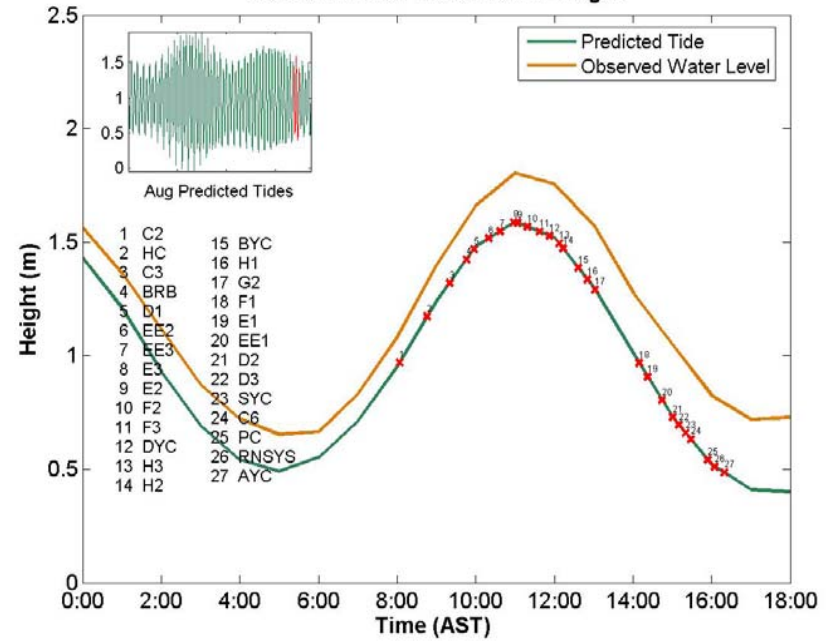


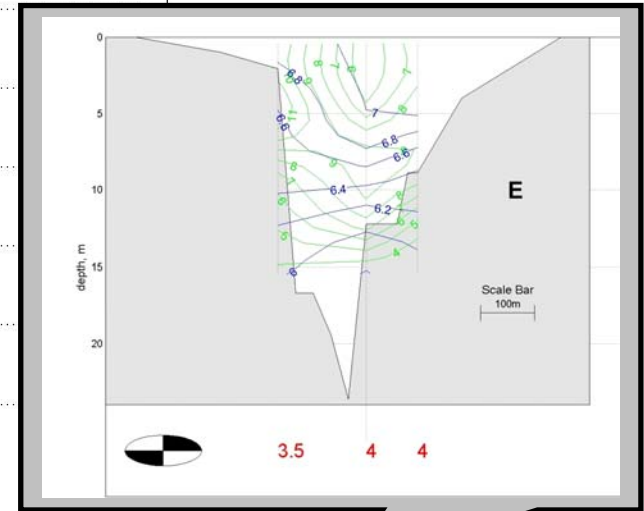
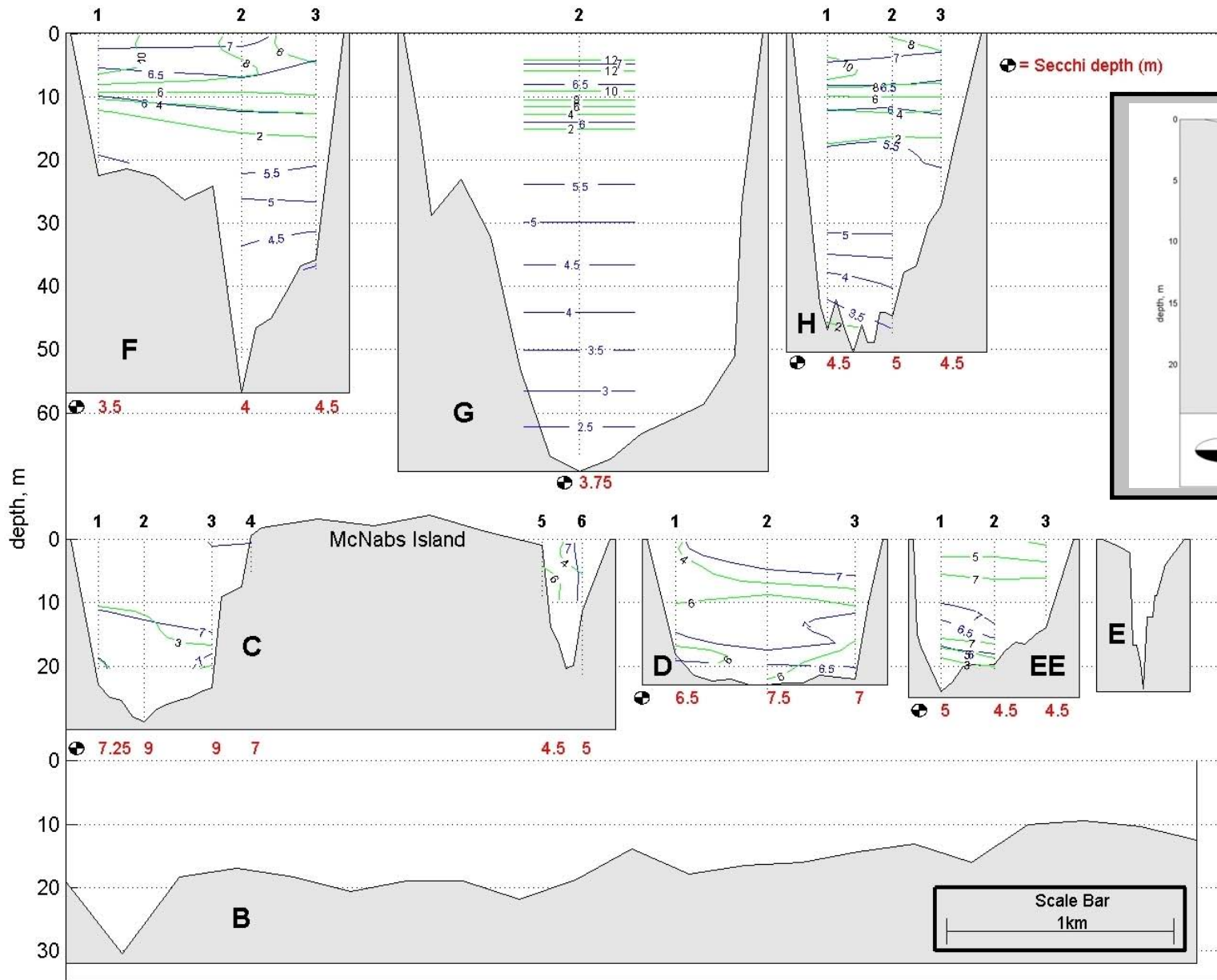
Rainfall and temperature data collected at Shearwater Autoport.

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

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

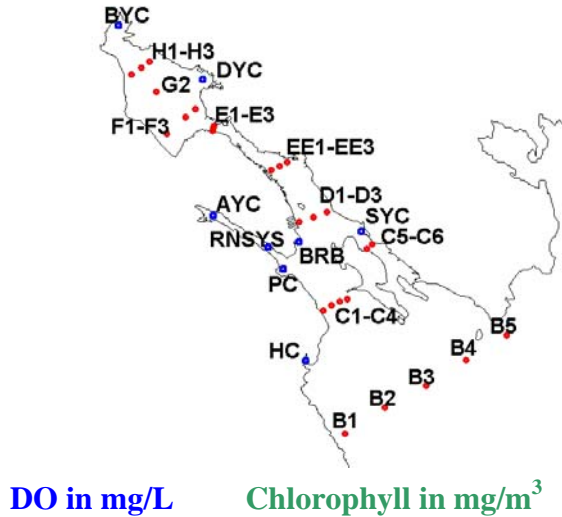
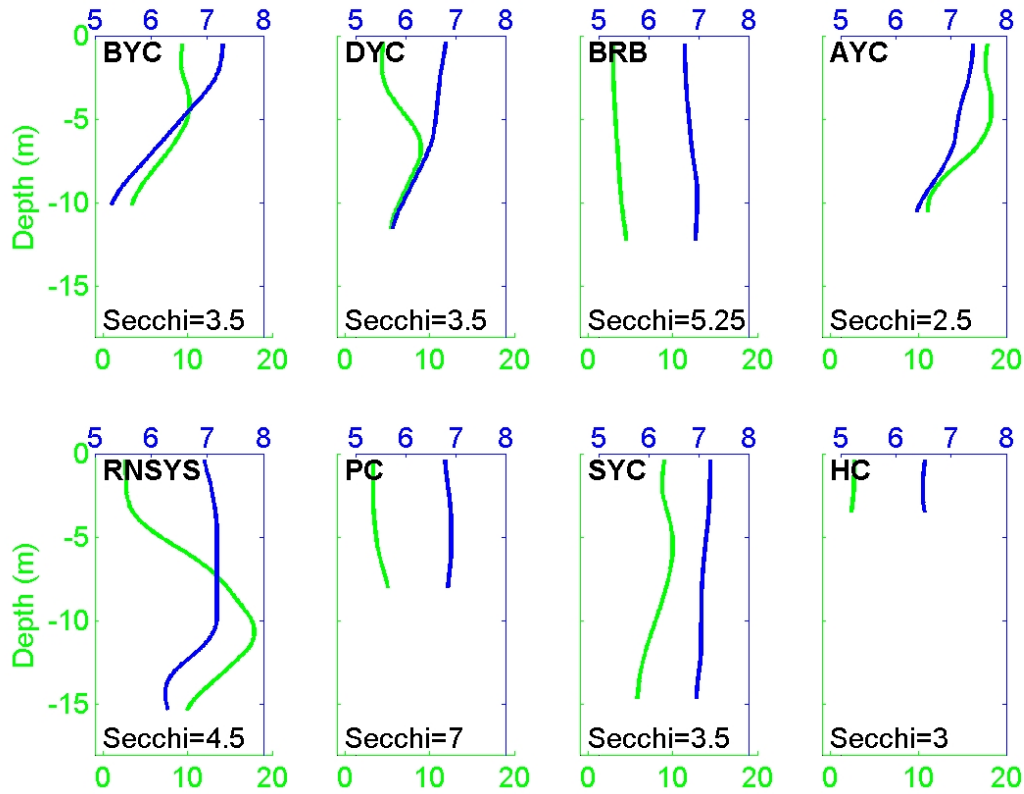
## Halifax Harbour Water Level - Aug29





Unless otherwise labeled:  
 - **dissolved oxygen** contour interval is 0.5 mg/L  
 - **chlorophyll** contour interval is 2 mg/m<sup>3</sup>.

# Yacht Clubs

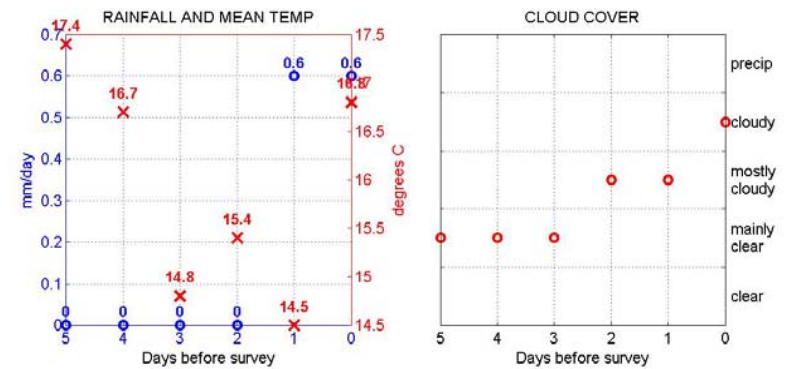
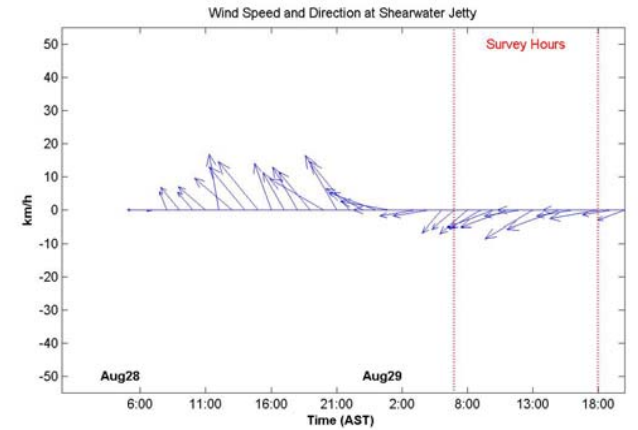
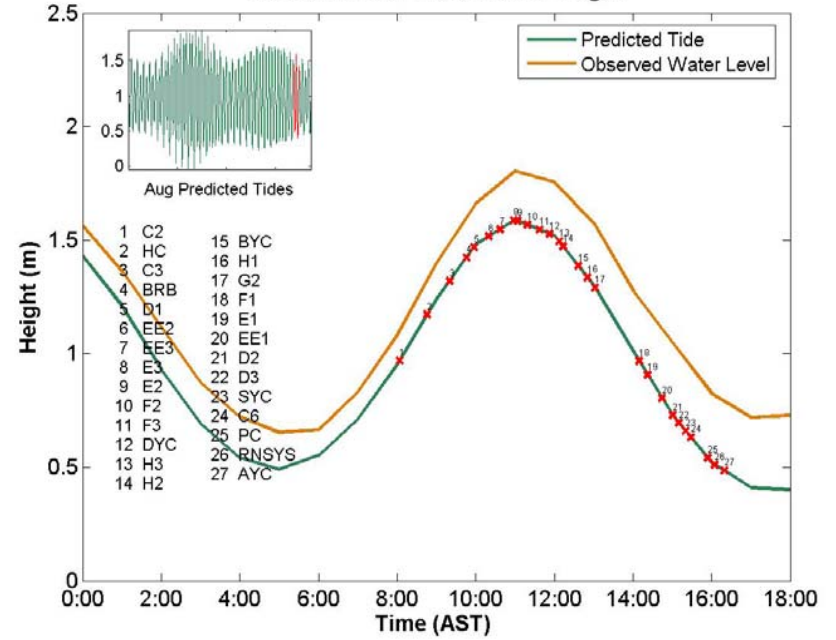


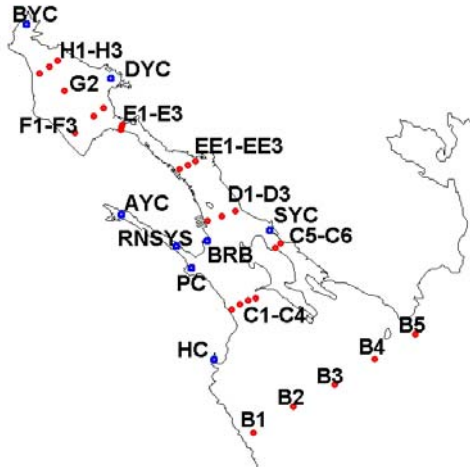
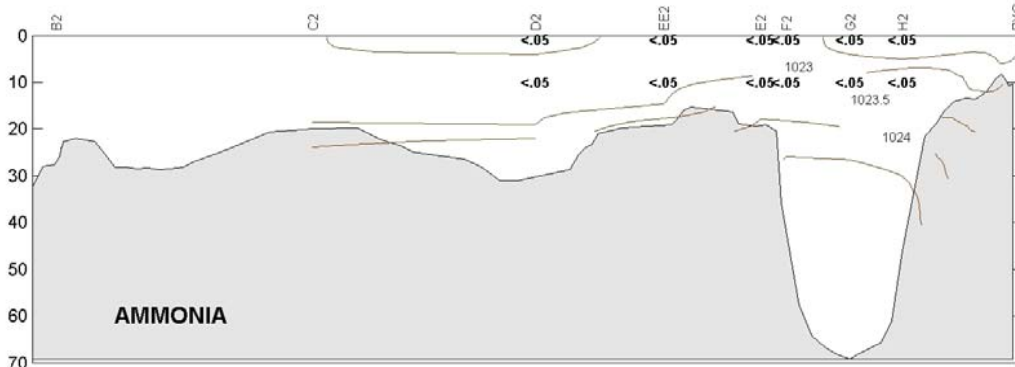
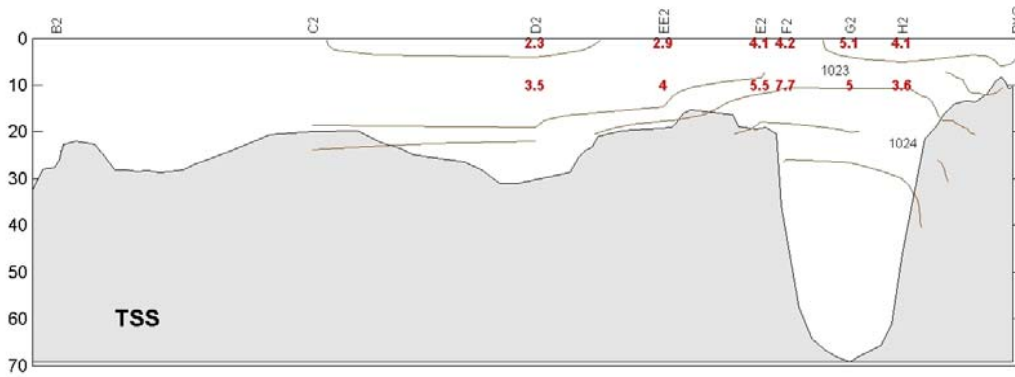
DO in mg/L

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

Rainfall and temperature data collected at Shearwater Autoport.

# Halifax Harbour Water Level - Aug29





Rainfall and temperature data collected at Shearwater Autoport.

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

Ammonia in  $\text{mg/L}$

TSS in  $\text{mg/L}$

Halifax Harbour Water Level - Aug29

