

Halifax Harbour Water Quality Monitoring Project

Weekly Summary #71

Survey Date: 27 October 2005
Nature of Survey: Complete Survey
Report File (this document): HHWQMP_report071_051027.doc
Data File: HHWQMP_data071_051027.xls
Data Return:
 Profile: 94%
 Bacteria: 93%
 Chemical: 77%
Overall: 86%

Sample Notes:

Stations B2 and HC were not sampled due to rough conditions.

The CTD's DO sensor had stabilization problems at stations C1, C2, E3, F1 and H3. The reason is unclear. The problem appears to be a flow problem, but not the usual blockage. The problem affects the DO sensor particularly, but affects the other sensors to some degree. The data are plotted here but the records are deleted from the data file.

QA/QC samples:

Chemical Analysis		E2 - 1m	
		reference sample	QA/QC
Detectable Parameter	units		
Ammonia (as N)	mg/L	0.12	0.13
Total Suspended Solids	mg/L	9	14
Aluminum	µg/L	<100	110
Boron	µg/L	3800	3400
Lithium	µg/L	180	140
Manganese	µg/L	<20	32
Strontium	µg/L	6200	6400
Titanium	µg/L	47	44
Uranium	µg/L	3	4
Zinc	µg/L	58	51

Fecal Coliform (CFU/100ml)

Site	EE3-10m	D3-10m	C3-1m	E2-1m
Reference	7700	260	8	200
QA/QC	560	290	11	190

Regulated parameters with all samples below detection (<EQL)

Parameter	EQL(µg/L)	Parameter	EQL(µg/L)	Parameter	EQL(mg/L)
Cadmium	3	Lead	5	Oil and Grease	5
Chromium	20	Nickel	20		
Copper	20				

Detectable non regulated metals

Metal	EQL (µg/L)	Number >EQL	Mean (µg/L)	Range (µg/L)
Aluminum	100	5	130	110-170
Boron	500	14	3700	3400-3900
Lithium	20	14	160	140-180
Strontium	50	14	6450	6200-6800
Titanium	20	14	52	44-61
Uranium	1	14	3.2	3-4

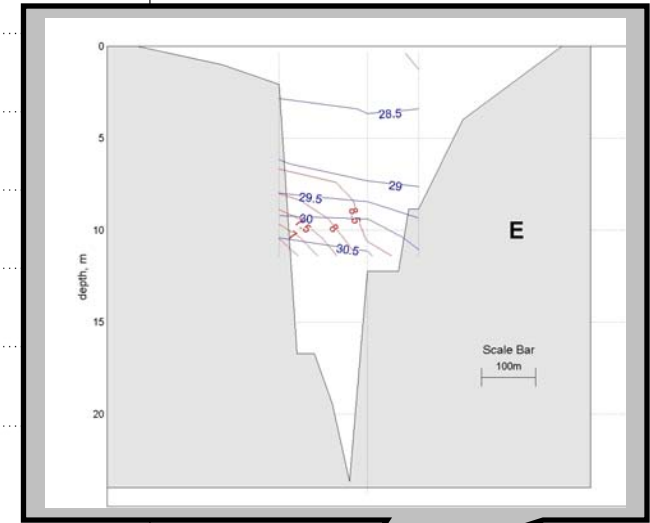
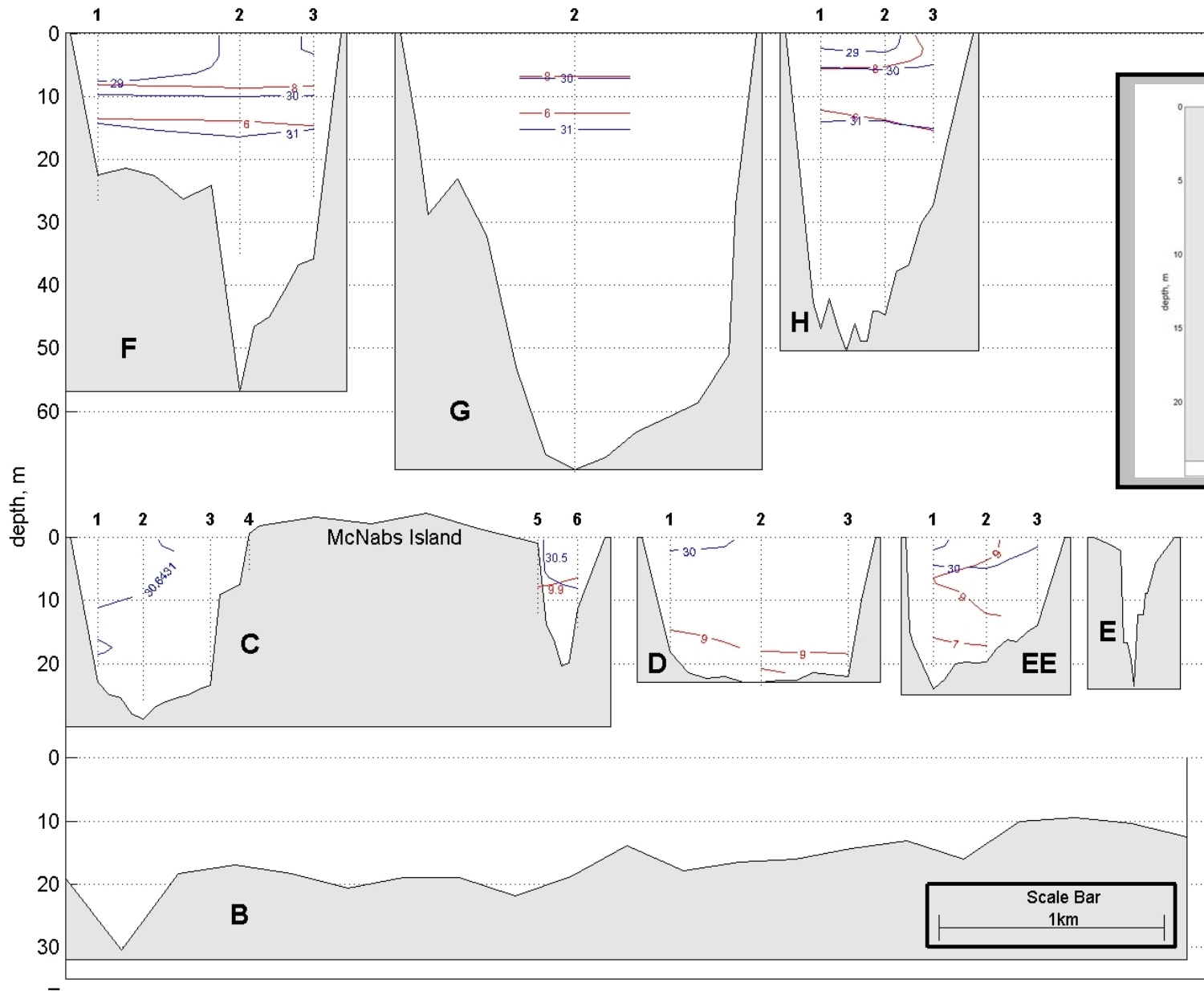
Comments:

Manganese: Two samples have detectable levels (EE2-10m, 32 µg/L; QA/QC at E2-1m, 32 µg/L). Both are below the guideline level of 100 µg/L.

Zinc: All samples, except H2-10m, have detectable levels, with a range of 51 to 99 µg/L. Two samples (D2-1m, 99 µg/L and E2-10m, 86 µg/L) are at or above the guideline level of 86 µg/L.

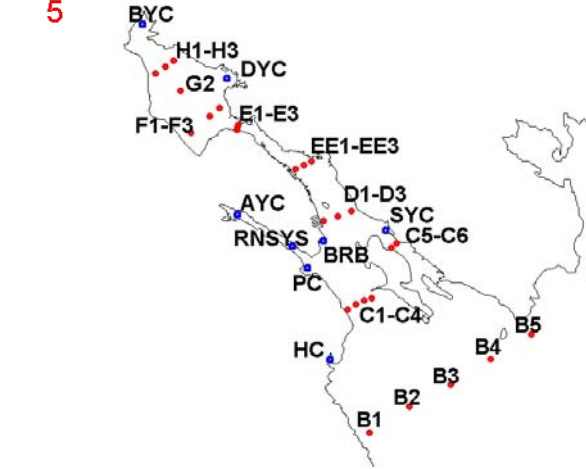
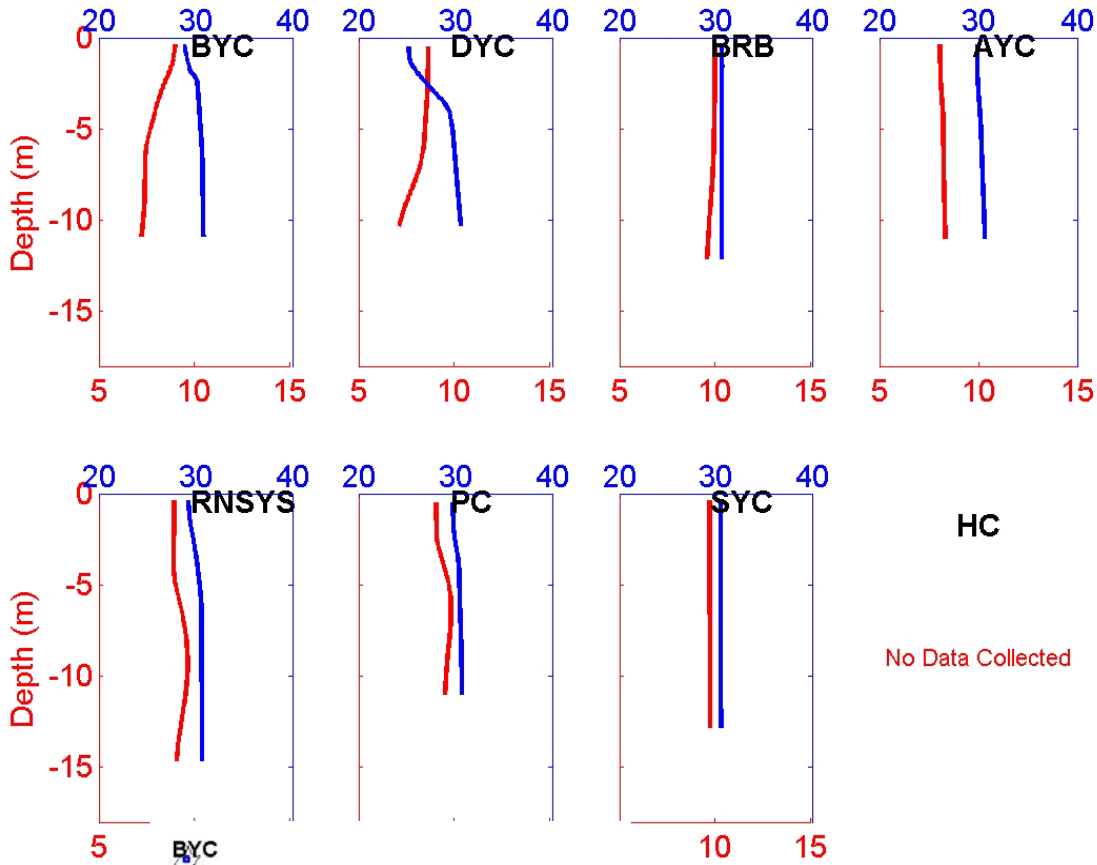
General: A large intrusion of shelf water has occurred since last week, likely as a result of the offshore passage of Hurricane Wilma on 25 Oct. A surge over tide in excess of 10 cm is observed. The potential density at 20m in the Basin is the same as the bottom of the Basin was last week (approx 1024.8 kg/m³). All Basin water below 20 m has been replaced by denser shelf water (approx 1025.1 kg/m³). In spite of continued wet weather, the influx of shelf water has radically decreased the Harbour stratification in all parameters. The bacteria levels are high everywhere inside McNabs Island, consistent with strong up-harbour transport of bottom water. Also consistent are Basin levels that are somewhat higher in the 10m sample than in the 1m sample. The surface coliform values in the Outer Harbour are not as high as might be expected, based on other flushing events. The water column here is well mixed, likely interrupting the layered circulation that transports the bacteria.

Dissolved Oxygen: Overall the Harbour DO has increased over last week, and the Basin bottom water has increased sharply. In the Basin there is a DO minimum at approximately 20 m, in water displaced from the deep Basin (potential density 1024.8 kg/m³).



Unless otherwise labeled:
- salinity contour interval is 1 PSU
- temperature contour interval is 2°C.

Yacht Clubs

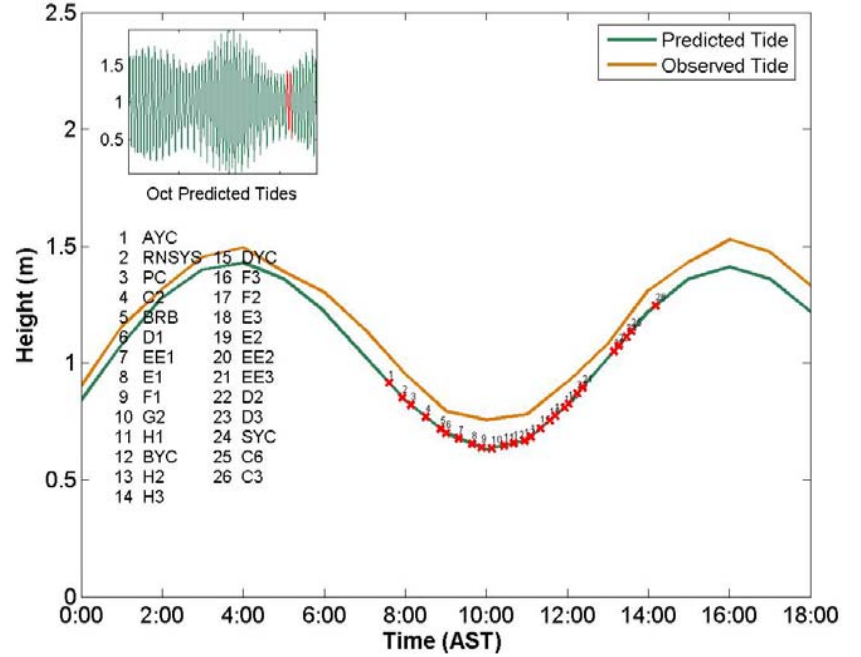


Salinity in PSU Temperature in °C

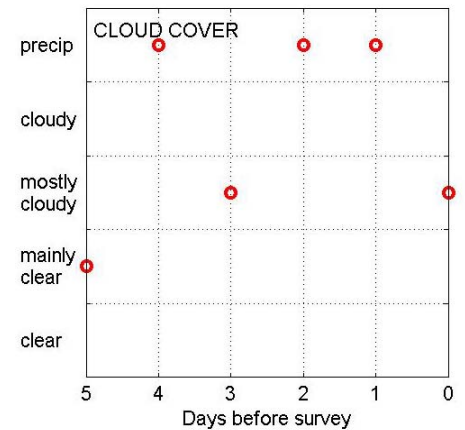
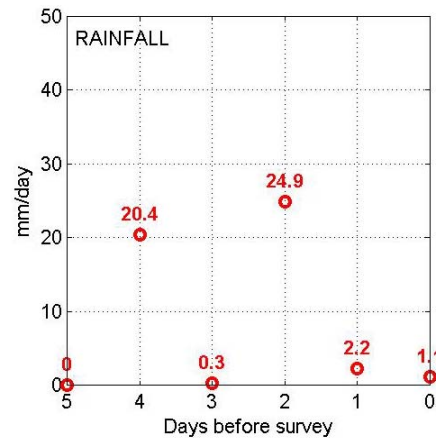
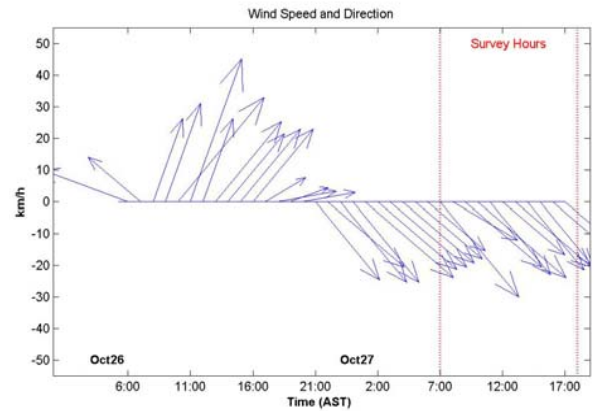
HC
No Data Collected

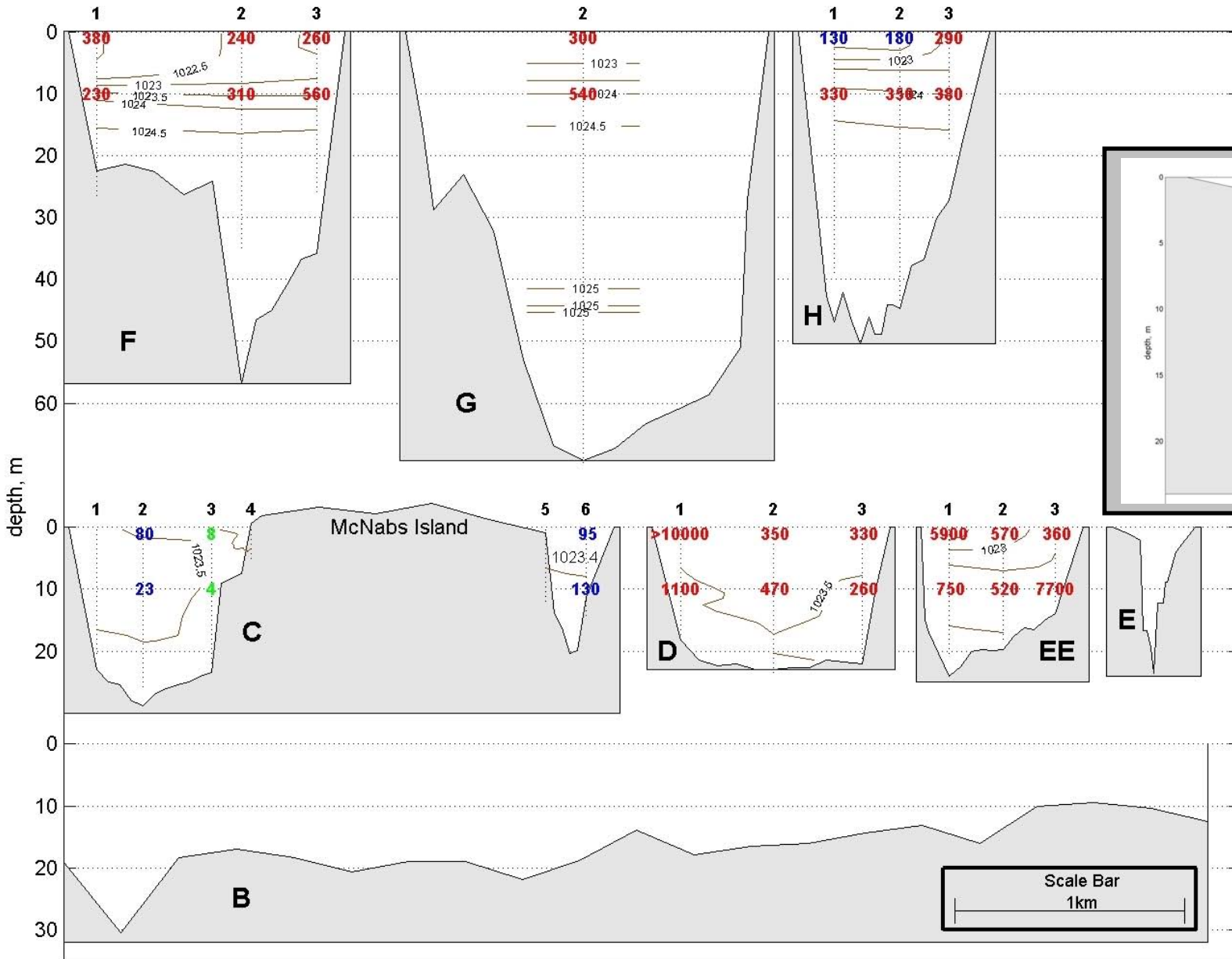
Weather data collected at the Halifax International Airport

Halifax Harbour Tides - Oct27



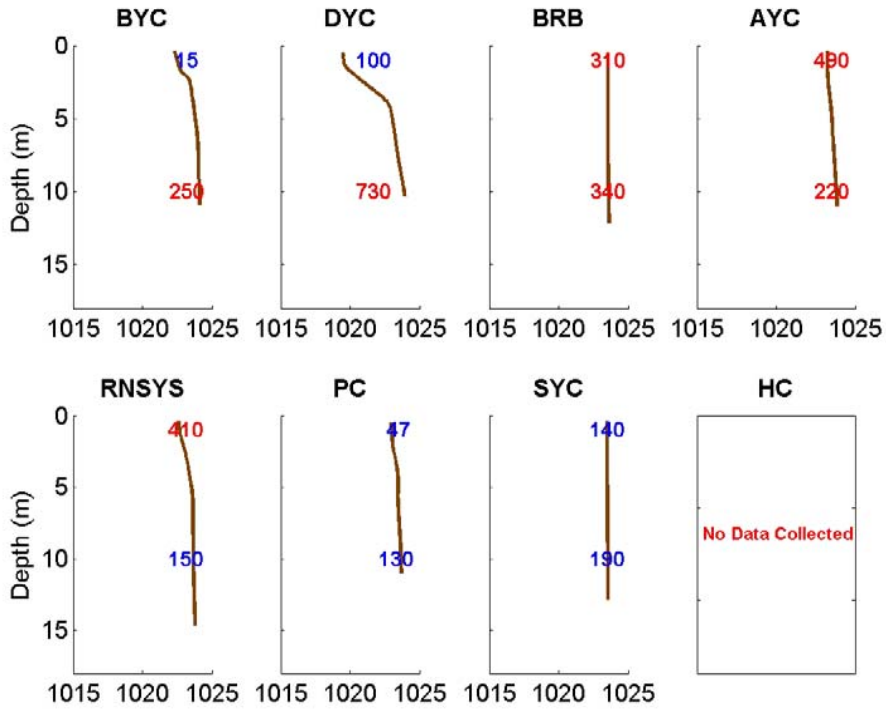
- 1 AYC
- 2 RNSYS
- 3 PC
- 4 C2
- 5 BRB
- 6 D1
- 7 EE1
- 8 E1
- 9 F1
- 10 G2
- 11 H1
- 12 BYC
- 13 H2
- 14 H3
- 15 DYC
- 16 F3
- 17 F2
- 18 E3
- 19 E2
- 20 EE2
- 21 EE3
- 22 D2
- 23 D3
- 24 SYC
- 25 C6
- 26 C3



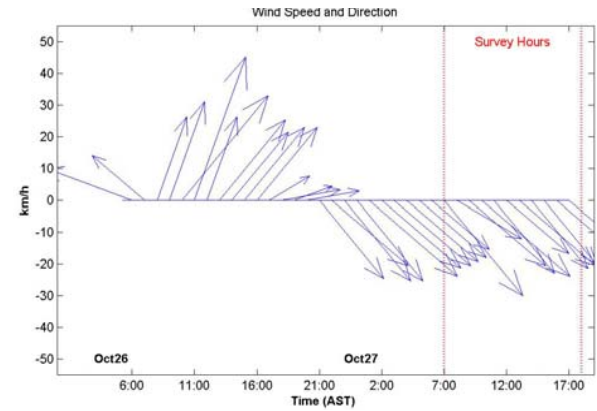
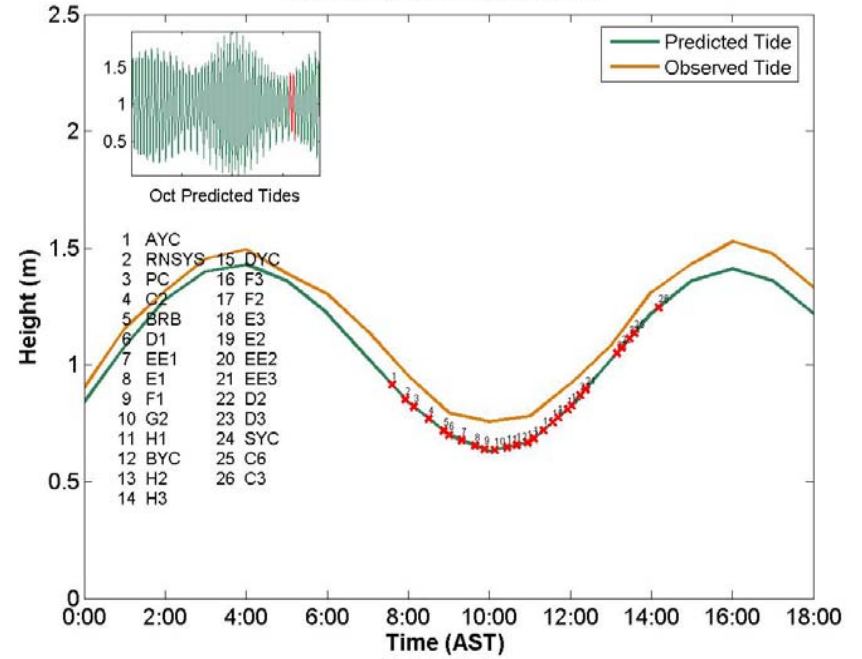


Unless otherwise labeled:
 - **density** contour interval is 0.5 kg/m³

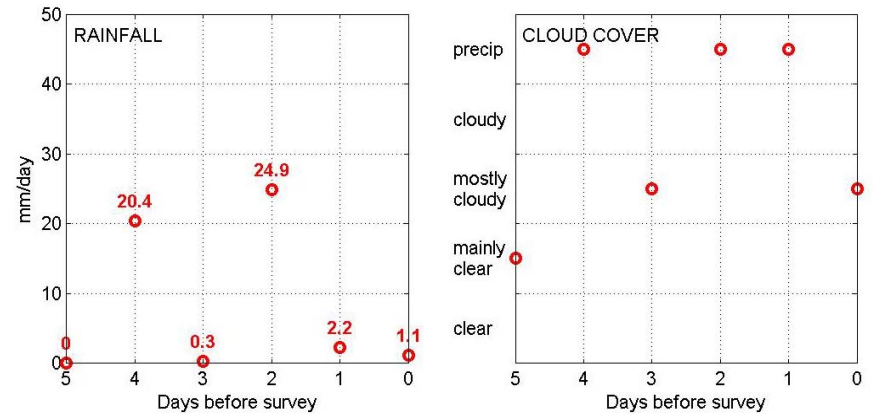
Yacht Clubs



Halifax Harbour Tides - Oct27

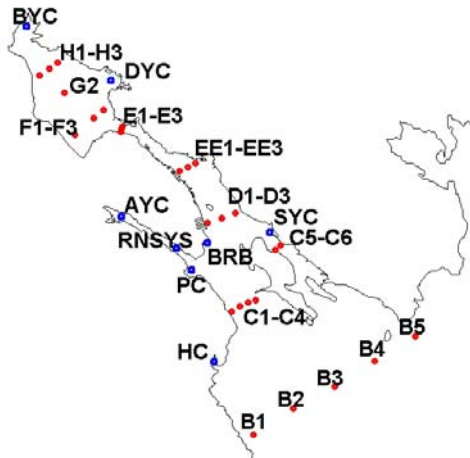


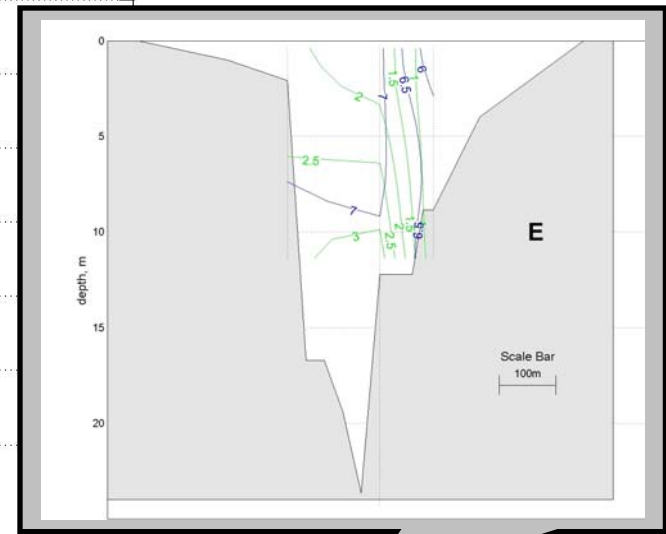
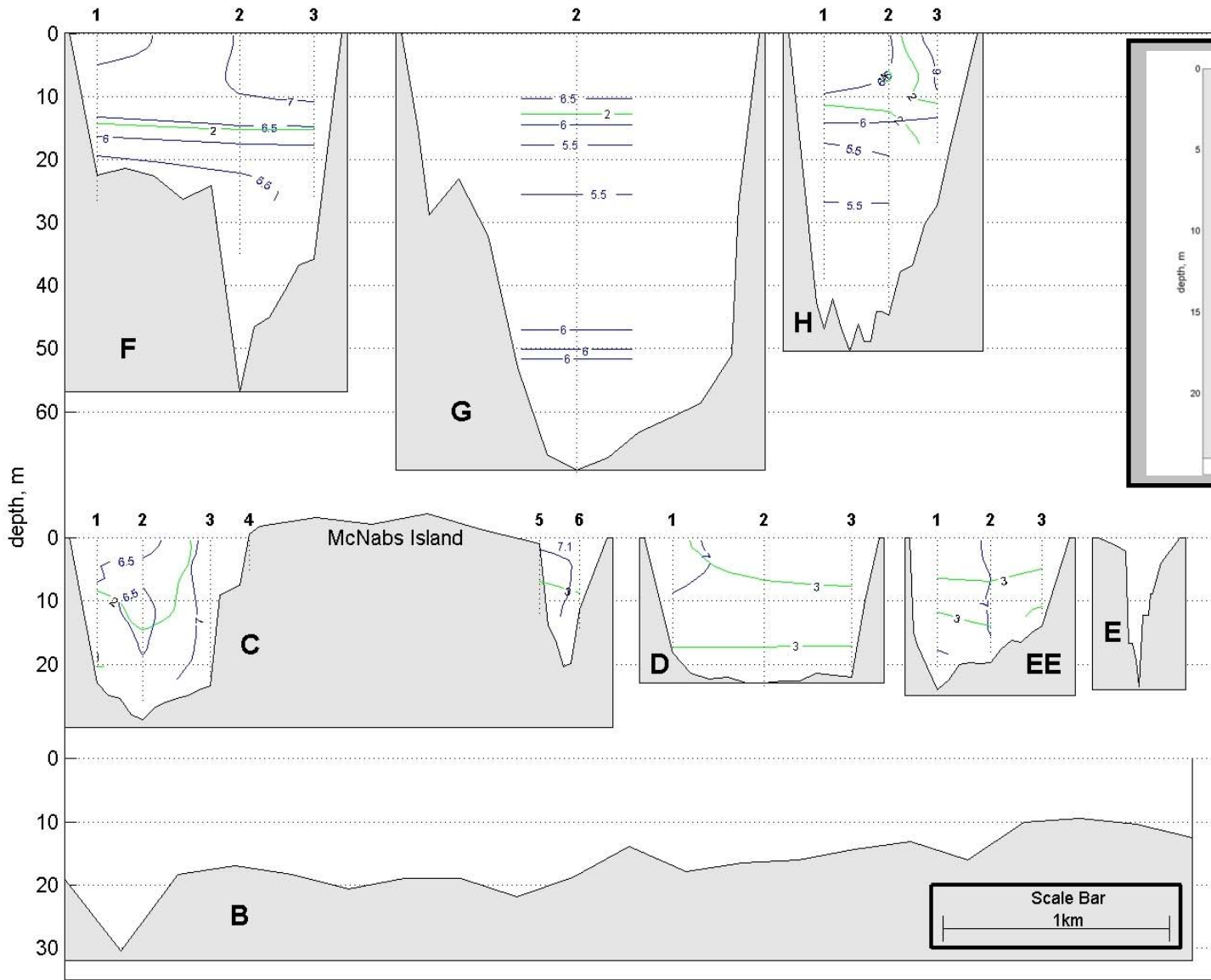
Weather data collected at the Halifax International Airport



Potential Density in kg/m³

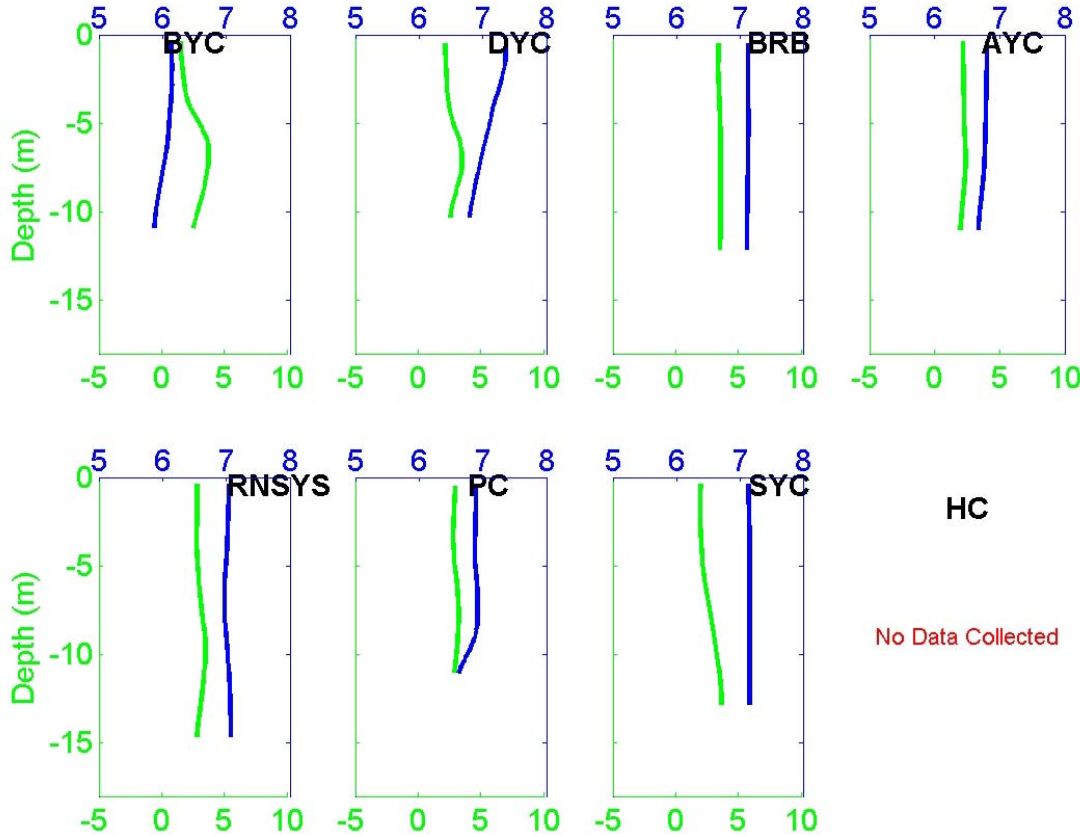
Fecal coliform: above swimming limit (200 cfu/100mL)
 above shellfish limit (14 cfu/100mL)
 below limits





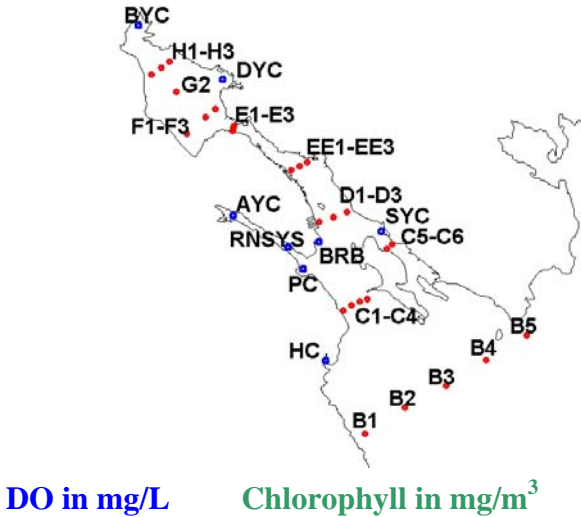
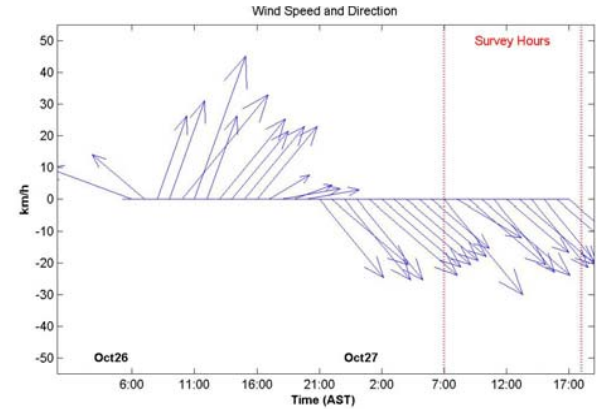
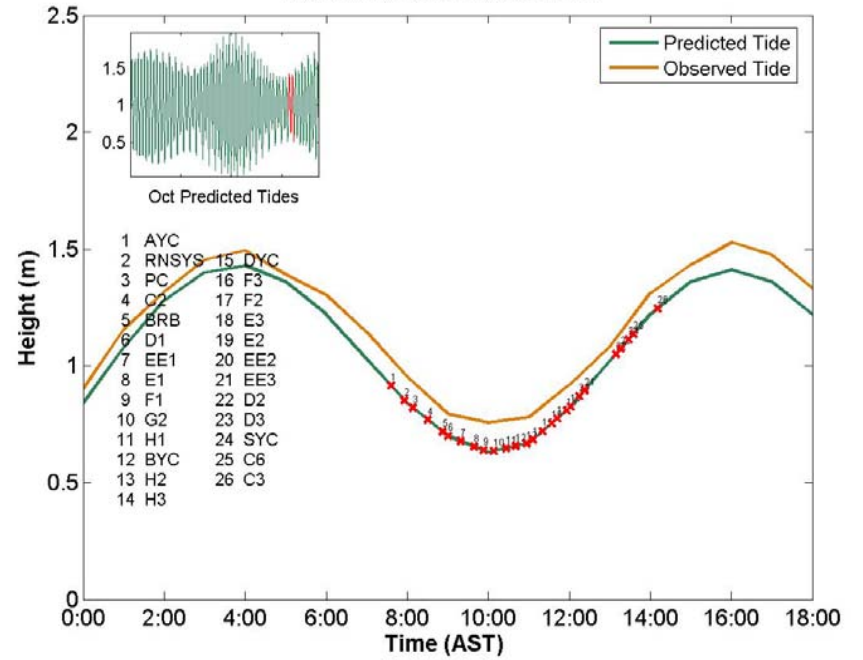
Unless otherwise labeled:
 - **dissolved oxygen** contour interval is 0.5 mg/L
 - **chlorophyll** contour interval is 2 mg/m³.

Yacht Clubs

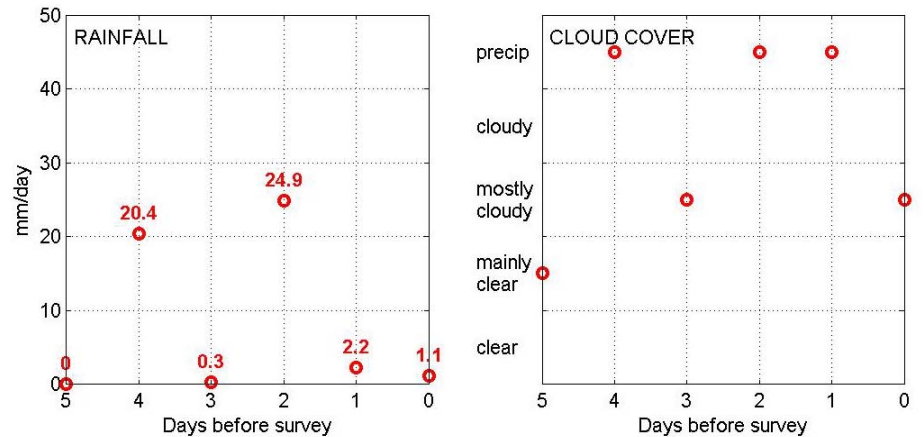


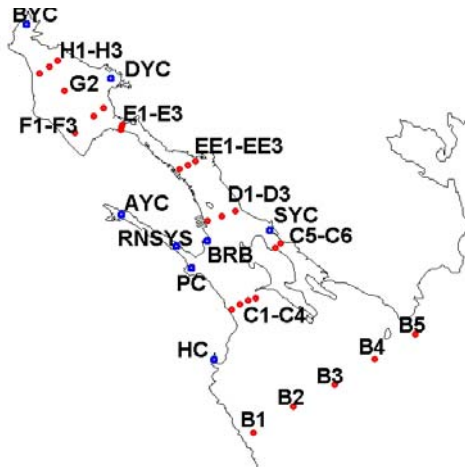
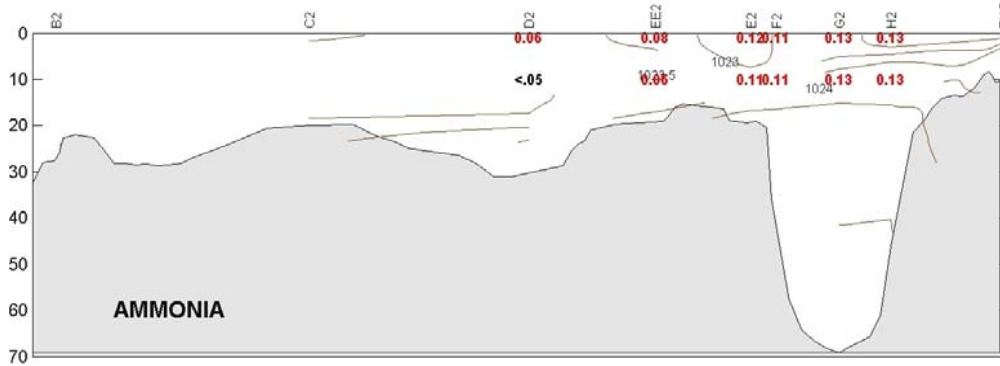
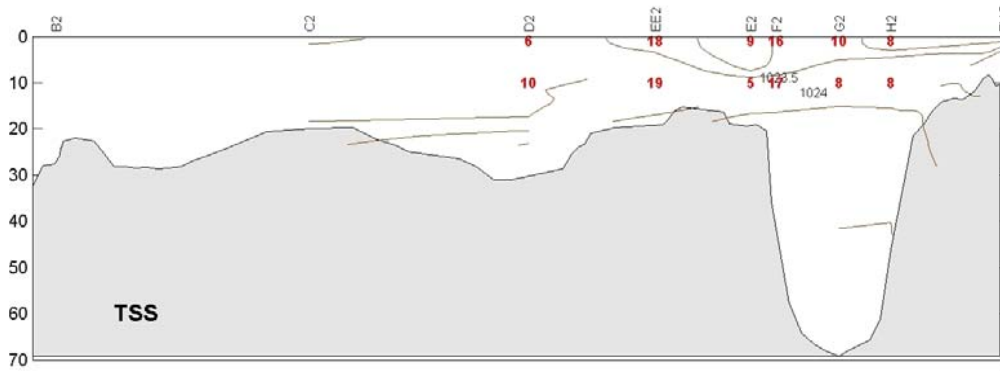
HC
No Data Collected

Halifax Harbour Tides - Oct27



Weather data collected at the Halifax International Airport





Potential Density in kg/m^3

Ammonia in mg/L

TSS in mg/L

Weather data collected at the Halifax International Airport

Halifax Harbour Tides - Oct27

