Halifax Harbour Water Quality Monitoring Project
Weekly Summary #110

Survey Date: 15 August 2006
Nature of Survey: Complete Survey
Report File (this document): HHWQMP_report110_060815.doc
Data File: HHWQMP_data110_060815.xls

Data Return:

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

Sample Notes:

A supplemental sample was taken near Chain Rock Outfall in the NW Arm (44 37.159N, 63 34.318W)

QA/QC samples:

Chemical Analysis

		EE2-1m		
Detectable Parameter	**units**	**reference sample**	**QA/QC**	**Dup**
Ammonia (as N)	mg/L	<0.05	<0.05	n/a
Total Suspended Solids	mg/L	7	7	6

Fecal Coliform (CFU/100ml)

Site	SYC-10m	EE3-10m	DYC-1m	EE2-1m
Reference	15	3000	1	870
QA/QC	25	330	1	820

Comments:

General: The relatively strong freshwater signal evident in recent surveys has dissipated in the last two weeks, in spite of moderate rainfall (16 mm) in the previous week. The salinity distribution is now quite uniform. The effect of this is seen in the density distribution, although this is counter-balanced to some extent by the temperature stratification. The fecal coliform values are relatively high and the distribution is displaced up-harbour, with high values in the surface water in the Narrows and Southern Basin. This is likely due to the diversion of sewage flow to Fairview Cove exacerbated by a moderate up harbour wind. Interestingly, the values at F1, nearest Fairview Cove, are not particularly high, suggesting a discrete plume from Fairview cove rather than broad dispersion.

Fluorescence: Fluorescence levels are slightly higher than two weeks ago and are more uniformly distributed. Profile maximum values in the high teens exist throughout the Basin and Inner Harbour at a depth of about 5-8 m. These values drop in the Outer Harbour to about 6 mg/m^3 at section C and to around 1 mg/m^3 at site B2. This seems to correlate well with the secchi disk depths, which are 2-3.5 m most everywhere in the harbour except at section C and at B2 (10m)

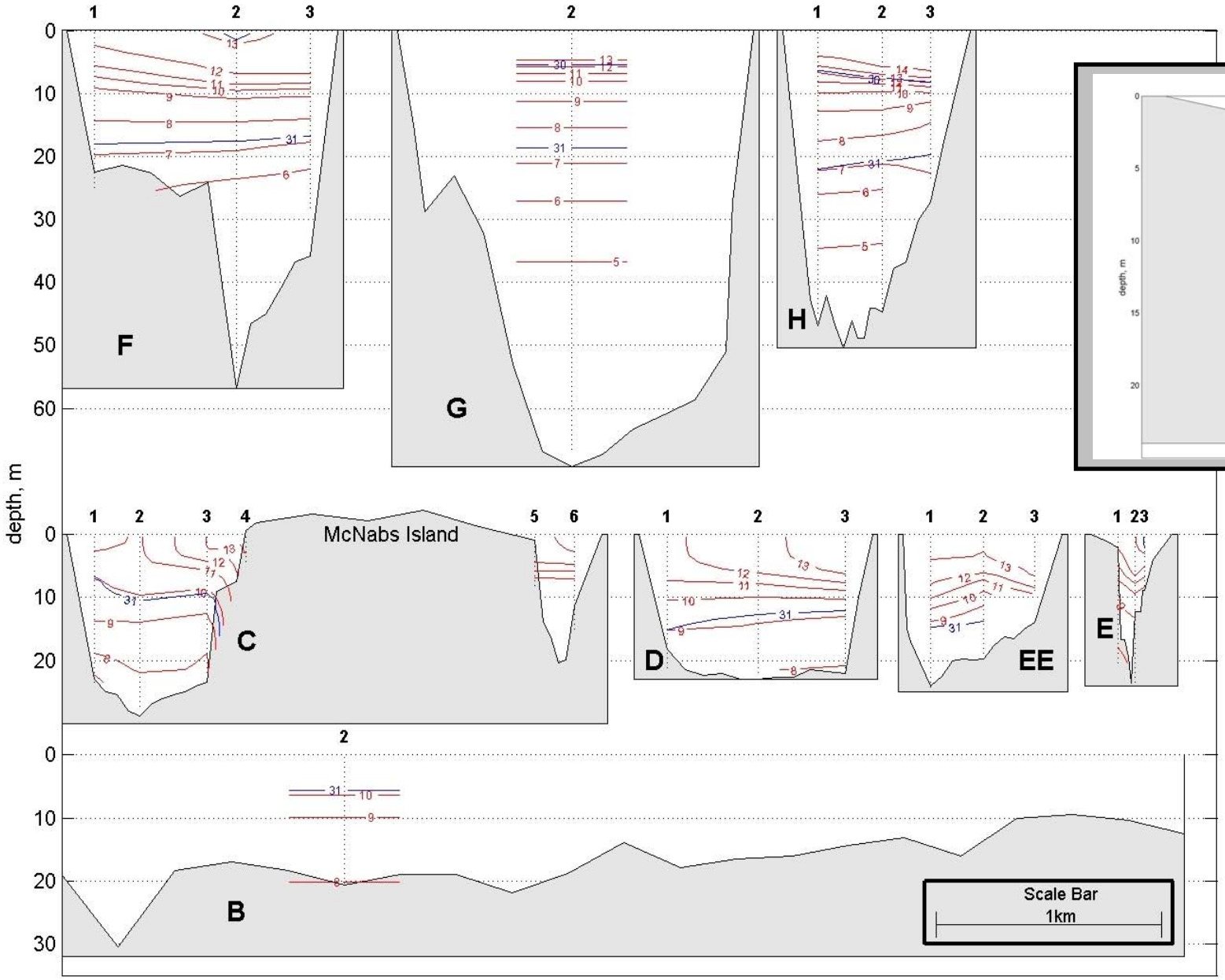
Dissolved Oxygen: The available data indicate that all water in the Basin deeper than about 8m is below the applicable class SB guideline (7.0 mg/L). The data in the Outer Harbour (B2) are quite vertically uniform at a value just below the Class SA guideline of 8 mg/L. The DO data is not ground-truthed and absolute values are questionable (see DO discussion in QR#1)

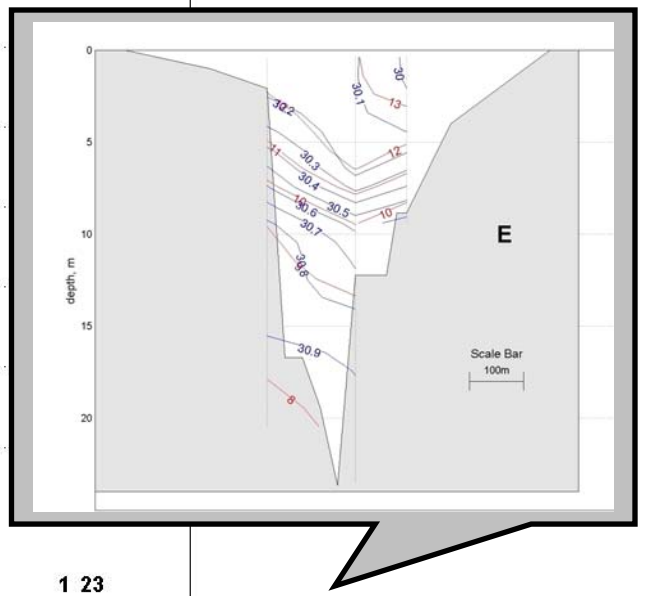
TSS: The TSS values vary from 3-8 mg/L, which are relatively typical. The highest values (7 to 8 mg/L) are in the southern Basin and northern Inner Harbour. Other than that, the values are around 4-5 mg/L.

Ammonia: There were no ammonia nitrogen values above the detection limit (0.05 mg/L) in any of the regular samples this week. The supplemental sample had a value of 0.66 mg/L, which is very high compared to previously observed values.

Analysis for Supplemental Sample:

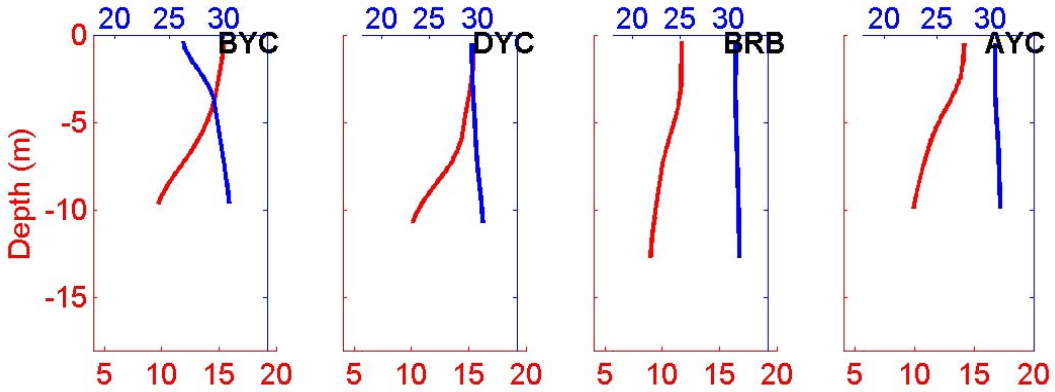
Parameter	Units	Reference	Dup
Fecal Coliform	MPN/100mL	>10,000	n/a
Carbonaceous BOD	mg/L	5	5
Ammonia (as N)	mg/L	0.66	0.63
Total Suspended Solids	mg/L	12	n/a
Total Oil and Grease	mg/L	<5	n/a

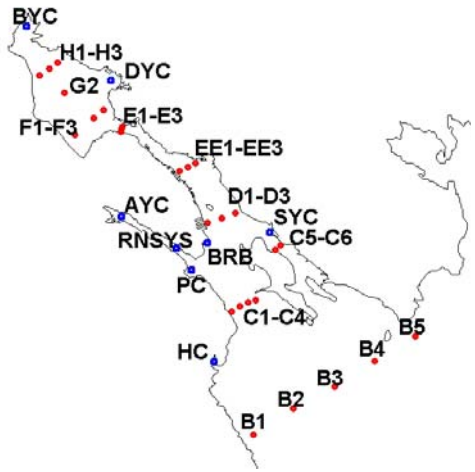




Unless otherwise labeled:
- **salinity** contour interval is 1 PSU
- **temperature** contour interval is 1ºC.

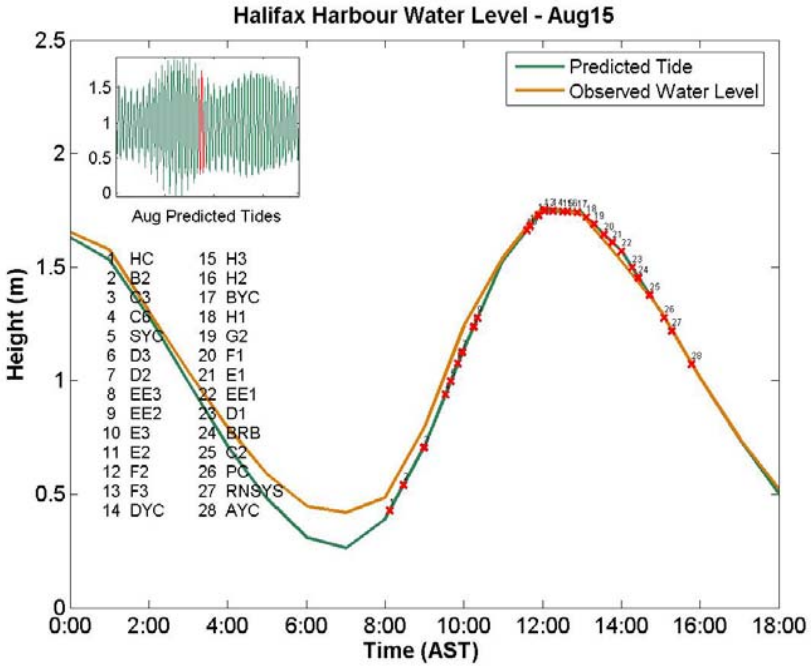
Yacht Clubs

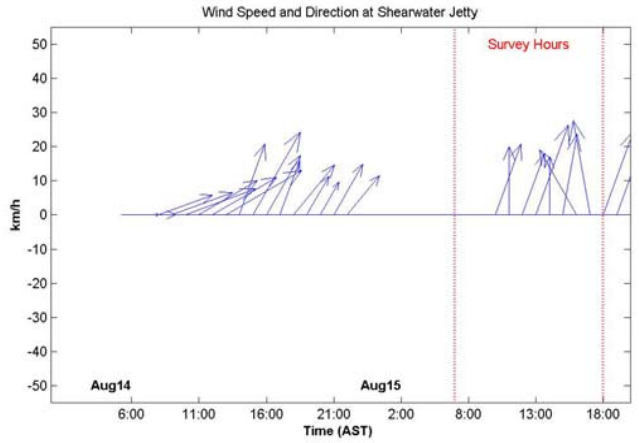


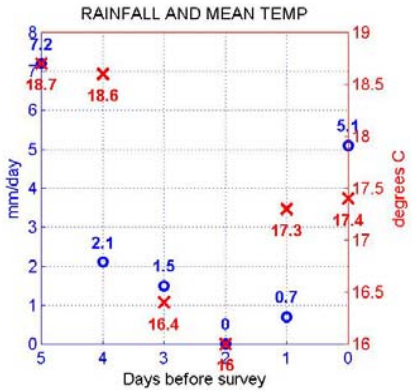


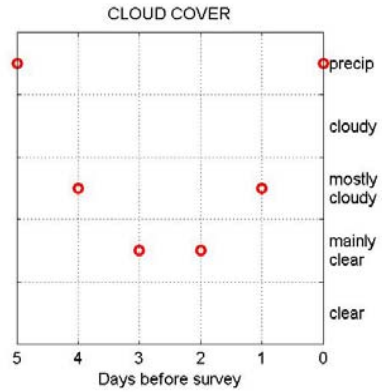
Rainfall and temperature data collected at Shearwater Autoport.

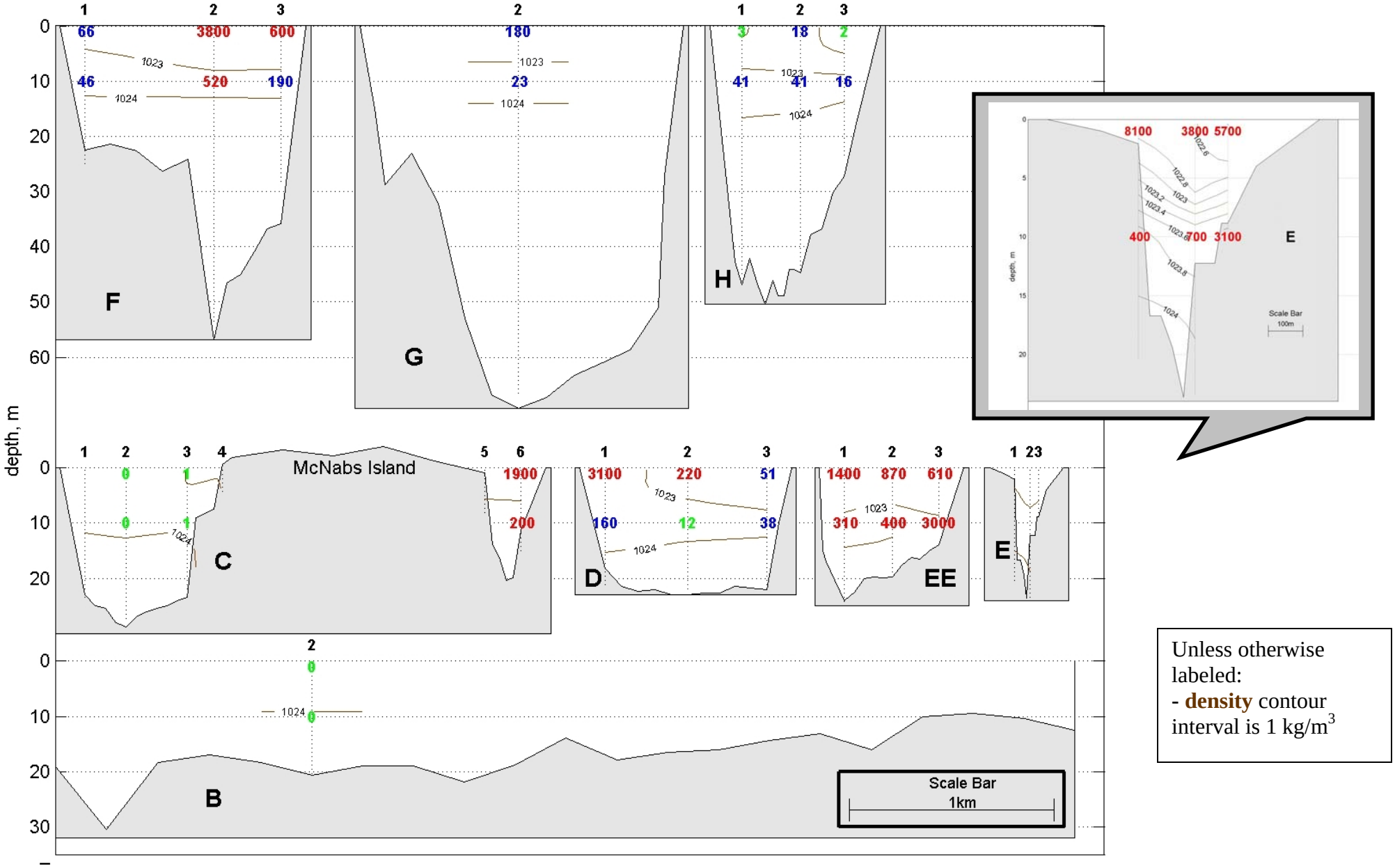
Salinity in PSU **Temperature in ^{o}C**





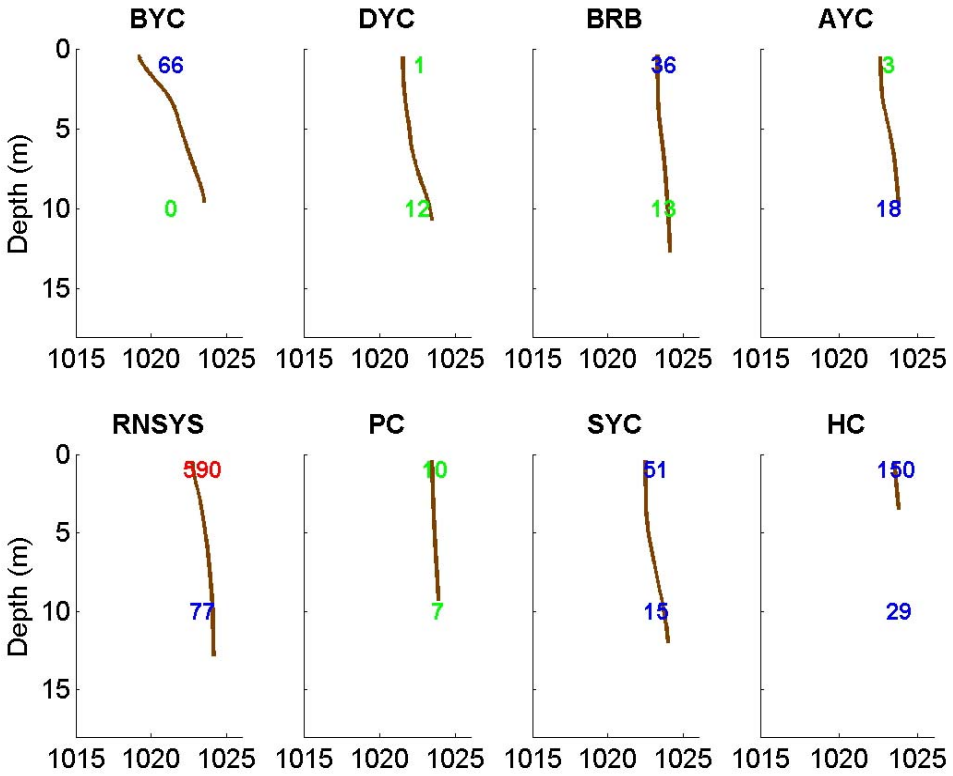


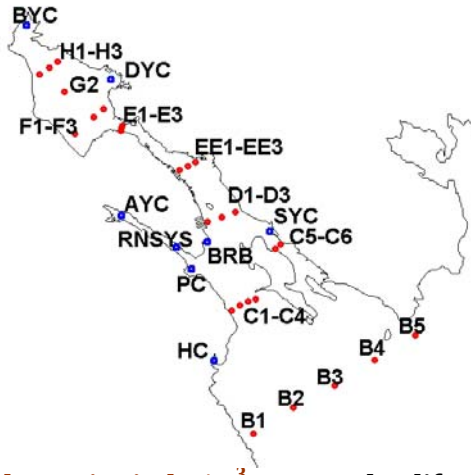




Unless otherwise labeled:
- **density** contour interval is 1 kg/m^3

Yacht Clubs

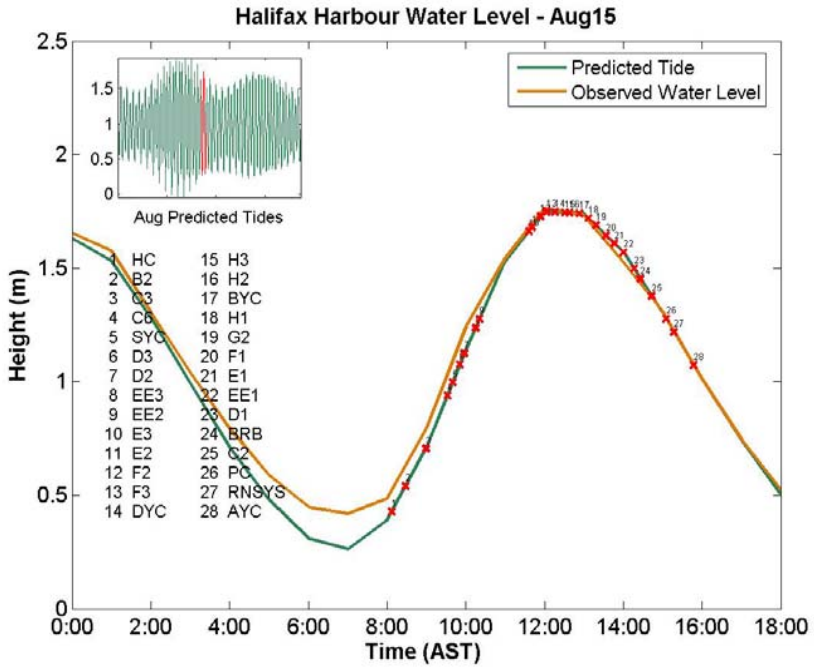


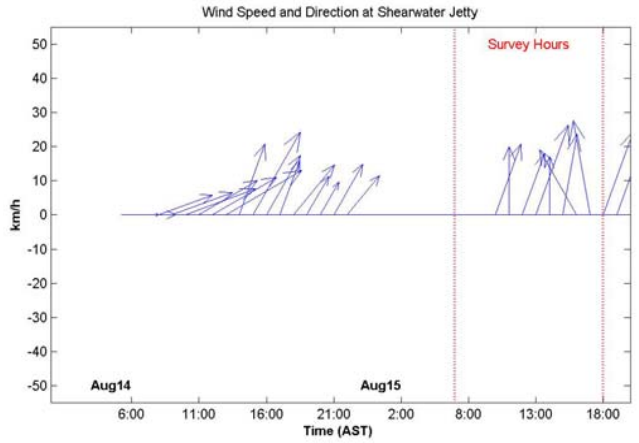


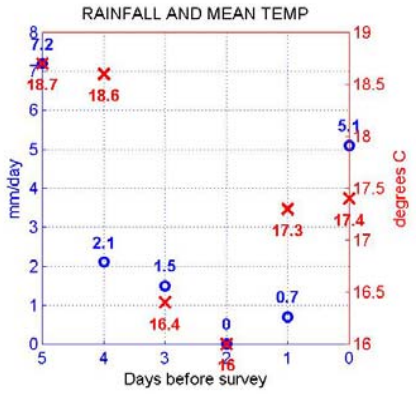
Rainfall and temperature data collected at Shearwater Autoport.

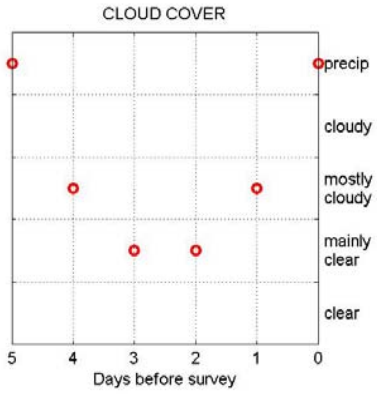
Potential Density in kg/m^3

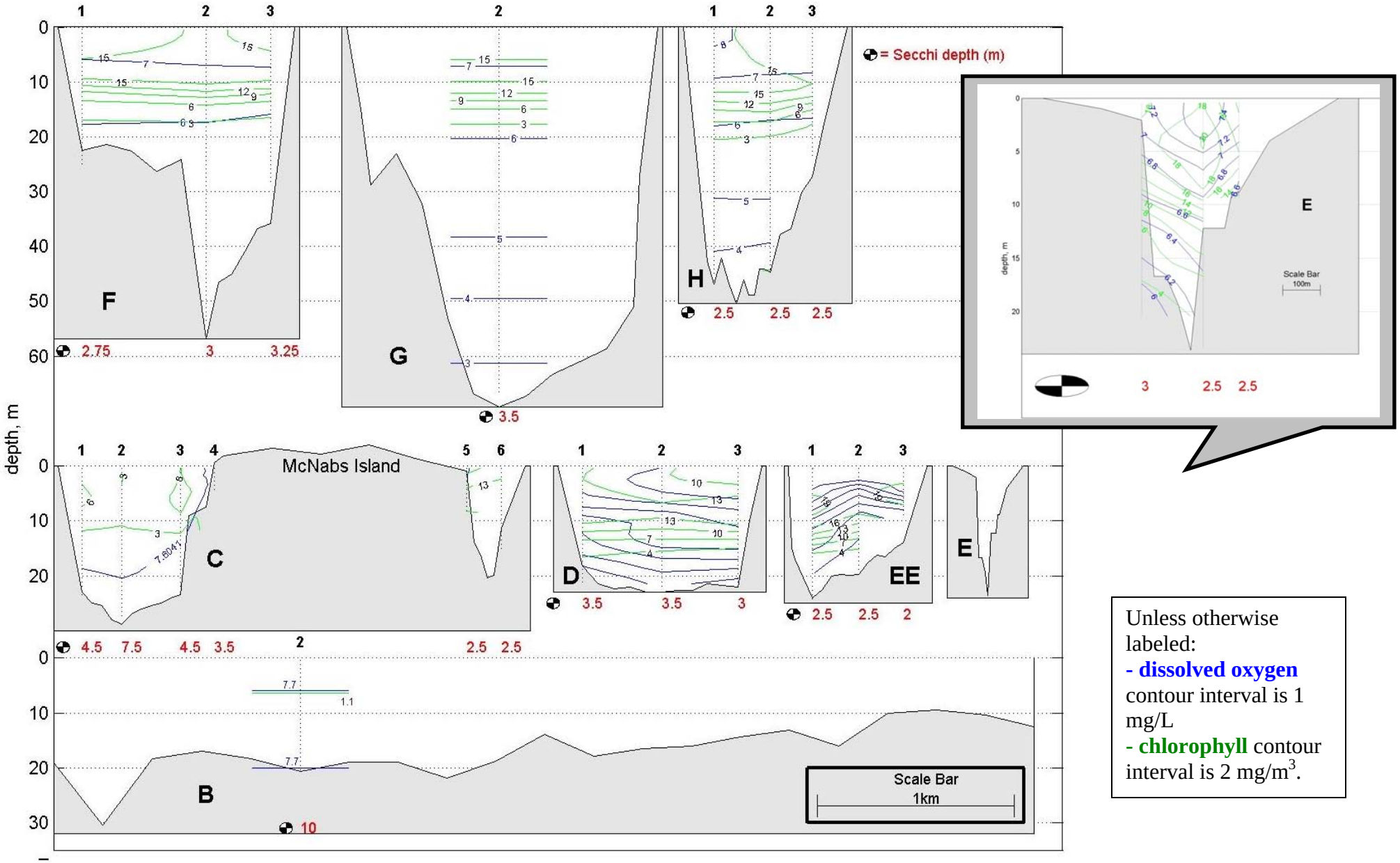
Fecal coliform: **above swimming limit (200 cfu/100mL)**
above shellfish limit (14 cfu/100mL)
below limits





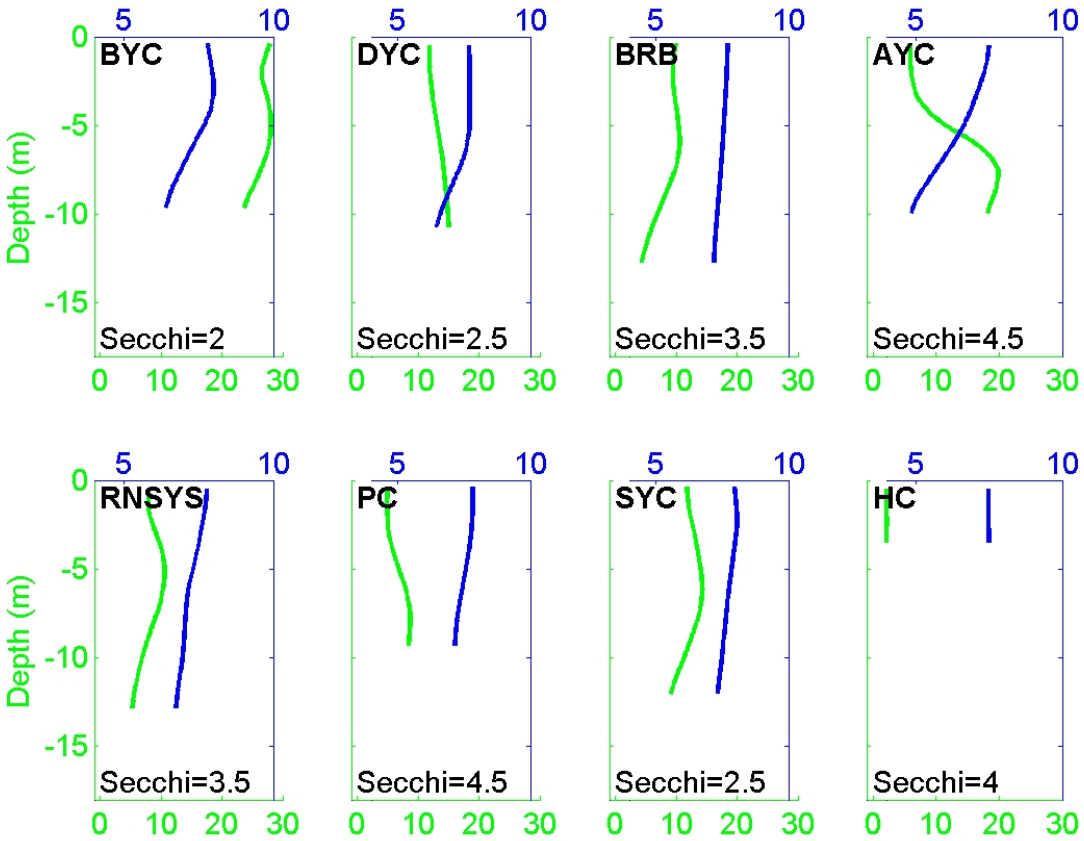


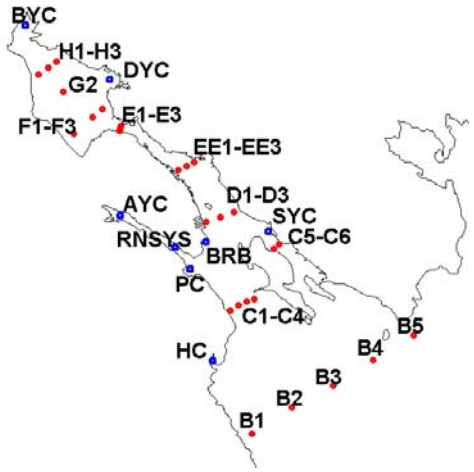




Unless otherwise labeled:
- **dissolved oxygen** contour interval is 1 mg/L
- **chlorophyll** contour interval is 2 mg/m^3.

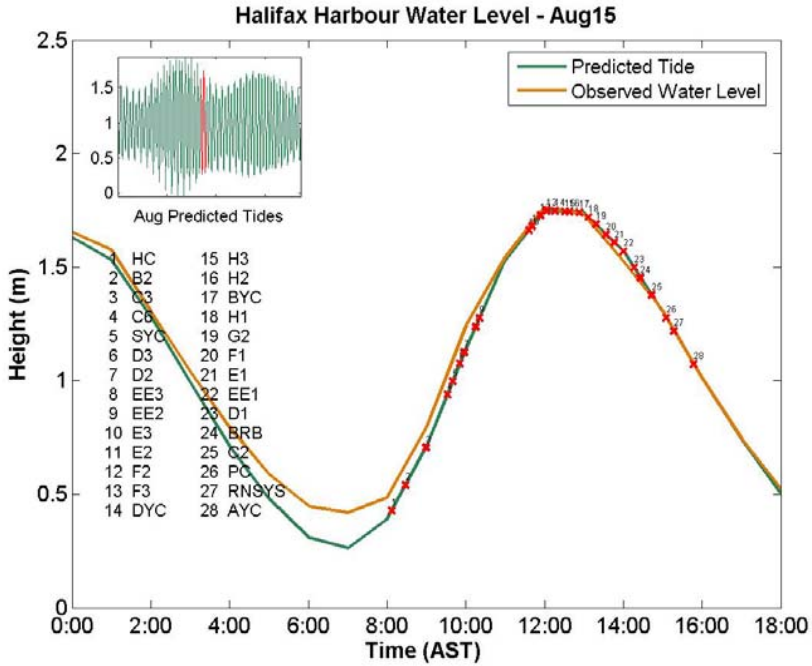
Yacht Clubs

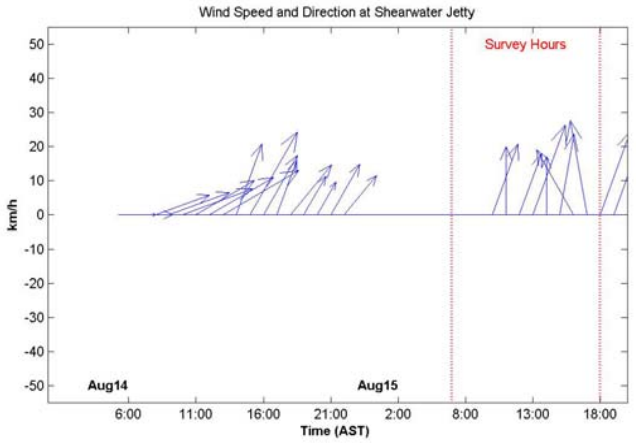


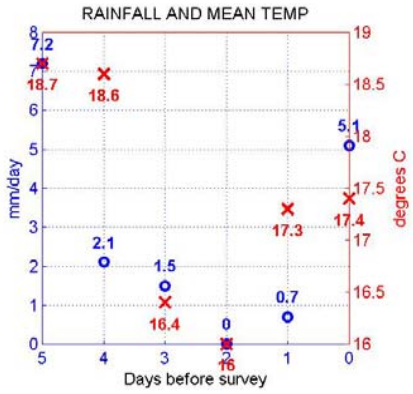


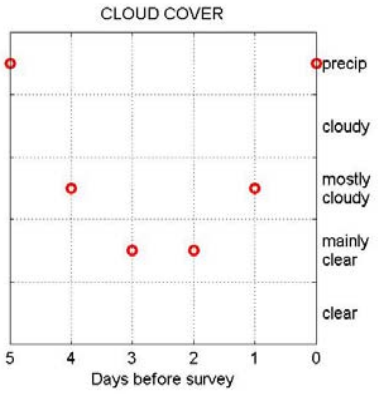
DO in mg/L **Chlorophyll in mg/m^3**

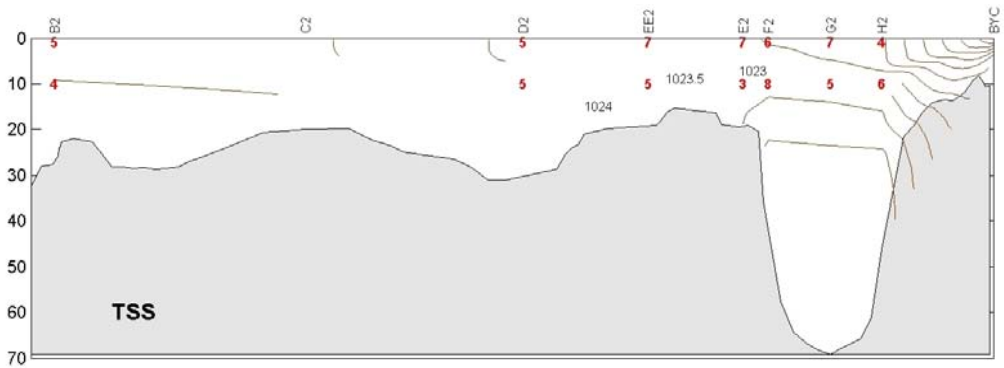
Rainfall and temperature data collected at Shearwater Autoport.

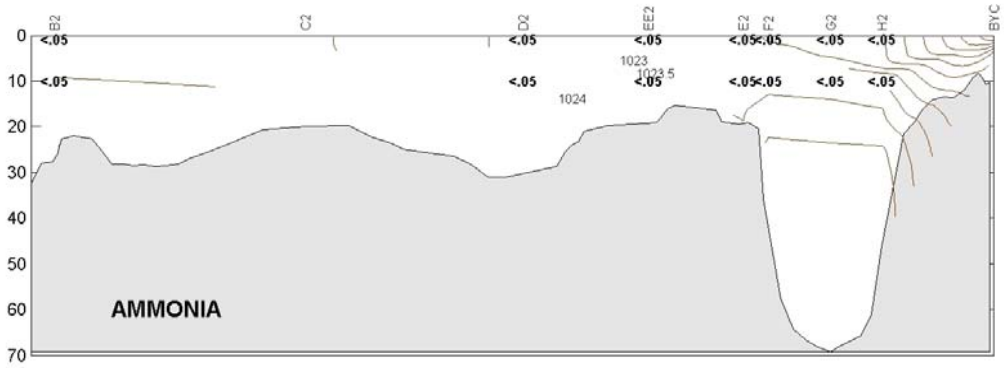


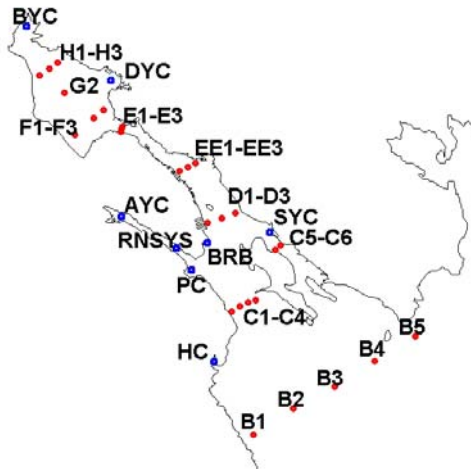












Potential Density in kg/m^3 **Ammonia in mg/L** **TSS in mg/L**

Rainfall and temperature data collected at Shearwater Autoport.