

## 2003 Horseshoe Beach Lease Area, Dixie County Quality Assurance/Quality Control (QA/QC) Log

### Key to Log:

File Name: Name of excel files containing the data for that month. File names have two or three parts: 1) the two-letter site abbreviation (GJ, HB, BA, etc.), 2) the year and month (ie. -0201), and 3) the nature of the file (“-raw” contains the raw, unaltered data; “-QAQC” contains the quality controlled data set as well as all corrections; the file name that ends with the year and month is the quality controlled file containing only the corrected and finalized data—this is the file sent to the archive)

Deployments: Number of different sondes that recorded data during the month and the periods of dates/times of each deployment.

Condition of Sonde: The post-deployment condition of each sonde deployed during the month. This includes information on fouling, equipment failures and whether post-deployment checks were performed.

Removed Data: Tabulation of all data points removed from a given month. “Trimming on ends of data sets” is a record of all data points removed from either the beginning or the end of the different files in order to create a seamless monthly record (most points removed here were data not recorded in the water, but rather, were point recorded prior to deployment or following retrieval); “Removal of bad data” is a record of data deemed to be of low quality (for example, data out of range of instrument, instrument or probe failures, etc... See Word file “QAQCGuidelines.doc” for criteria used). Table columns give the parameter values deleted, the reason for the deletion (see abbreviations) and the dates and times of points deleted.

Corrected data: This is a record of all data points that were corrected. This includes corrections due to instrument drift, fouling, incorrect instrument calibration, etc. Included are probe readings in the standard pre- and post-deployment and excel formulae used to calculate corrected values. Inability to correct data due to lack of proper post-deployment check procedures or substandard sonde condition (eg. heavily fouled) may also be noted here.

Missing data: This is a record of all missing data points not due to the QA/QC process (ie. not accounted for in “Removal of bad data”). A common cause for this missing data is a lag time between the retrieval of one sonde and the deployment of the second sonde or failure of the instrument to log data at a given time.

Problems and Anomalies: This is a record of troublesome trends or data points not removed from data set, but that could prove a problem in interpretation. Examples include sudden jumps in the data when sondes are changed out (reflecting drift in retrieved sonde or a lack of standardization between the two sondes). Notes regarding reliability of data (whether or not it is or may be faulty) may also be found here. **ALWAYS read this section before interpreting data.**

### Abbreviations:

IF	=	Instrument Failure: Data logger returned values of -6999
PF	=	Probe Failure: Probe measuring individual parameter apparently malfunctioned.
ADL	=	Above Detection Limit: data logger returned a data point that is above the detection limit of the probe
BDL	=	Below Detection Limit: data logger returned a data point that is above the detection limit of the probe
SND	=	Sonde Not Deployed: evidence indicates that sonde was not in the water on-site when data was recorded
FOUL	=	Fouled: evidence indicates sonde was not functioning properly due to severe fouling
EXP	=	Exposed: Sonde was exposed to air due to low water level or some disturbance.
NMD	=	Next month's data: trimmed data belonged to next month
PMD	=	Previous month's data: trimmed data belonged to previous month

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**General Notes on Reliability of Data:**

- 1) In general, measurements of temperature and depth are very reliable unless otherwise noted in “Problems and Anomalies”.
- 2) Salinity is typically reliable, but this data can be compromised by bad calibrations and fouling. These effects are most obvious as sudden discontinuities in the trend when sondes are changed. If the discontinuity that occurs with a sonde change is more than +/- 2 ppt in magnitude, the discontinuity is noted as a faulty trend.
- 3) Measurements of dissolved oxygen are often not reliable. Typically, oxygen measurements taken soon after a sonde is deployed are reliable, but reliability decreases during the deployment period due to instrument drift and fouling. The most unreliable oxygen data is that collected near the time the sonde is retrieved. ALWAYS read “Problems and Anomalies” before interpreting dissolved oxygen! Dissolved oxygen discontinuities of +/- 25% or more coincident with sonde changes are noted as faulty if they do not fall within the actual rate of change occurring before and after the sonde change.
- 4) The reliability of turbidity measurements is much like that of oxygen. Turbidity measurements are best early and worst late in the deployment period.
- 5) The reliability of chlorophyll measurements is unknown. We do not currently know what the measurements mean in a biological context. Confirmation studies are underway.
- 6) If the word "**faulty**" appears regarding a trend or data period, the data should be considered highly unreliable. Do not use this data (if it wasn't deleted altogether) for anything but a general guideline to potential conditions. This designation is only used regarding data known to be of very poor quality.
- 7) If the phrase "**may be faulty**" appears regarding a trend or data period, the data may not be reliable. Typically, the data appears to be of reasonably good quality and probably does reflect the real trends in environmental condition, but very strict interpretation is not recommended.

**If a proper post-deployment check was not performed, reliability of all data for that deployment period must be considered suspect.**

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**JANUARY--2003**

Files: Data: HB -0301-raw, HB -0301-QAQC, HB -0306  
Sonde Back-ups: HB030122 (1/22-2/18)

Deployments: (3); 12/10-1/6, 1/6-1/22, 1/22-2/18

Condition of Sondes: 12/10-1/6 (very light fouling), 1/6-1/22 (ok), 1/22-2/18 (real-time sonde failed repeatedly, so back-up file used)

Removed Data:

Parameter(s)	Problem	Data Points
All	EXP	1/24 000-300

Corrected Data:

12/10-1/6

Oxygen Saturation:

standard 100, probe 103

Formula:  $= -((103-100)/(\$B\$1758-\$B\$461))*(B461-\$B\$461))+G461$

Conversion for [oxygen] =  $7.47-(0.104*D461)-(0.056*S461)+(0.0874*P461)$

Specific Conductivity:

standard 1.413, probe 1.902

Formula:  $= -((1.902-1.413)/(\$B\$1758-\$B\$461))*(B461-\$B\$461))+E461$

Conversion for salinity =  $(0.7649*R461)-5.7987$

Turbidity:

standard 100, probe 106.9; standard 0, probe 6.0

Formula:  $= (((((100/100.9)-1)*(K461))-(6))*((B461-\$B\$461)/(\$B\$1758-\$B\$461)))+K461$

Chlorophyll:

standard 0, probe 5.5

Formula:  $= -((5.5-0)/(\$B\$1758-\$B\$461))*(B461-\$B\$461))+L461$

1/6-1/22

Specific Conductivity:

standard 1.413, probe 1.804

Formula:  $= -((1.804-1.413)/(\$B\$1037-\$B\$271))*(B271-\$B\$271))+E271$

Salinity =  $(0.7031*R271)-2.6046$

Oxygen:

standard 100, probe 104.1

Formula:  $= -((104.1-100)/(\$B\$1037-\$B\$271))*(B271-\$B\$271))+G271$

Conversion for O2 concentration:  $= 7.75-(0.112*D271)-(0.0603*S271)+(0.0898*P271)$

Turbidity:

standard 0, probe 2.0; standard 100, probe 102.7

Formula:  $= (((((100/100.7)-1)*(K271))-(2))*((B271-\$B\$271)/(\$B\$1037-\$B\$271)))+K271$

Chlorophyll:

standard 0.0, probe 1.3

Formula:  $= -((1.3-0)/(\$B\$1037-\$B\$271))*(B271-\$B\$271))+L271$

1/22-2/18

Specific Conductivity:

standard 10, probe 9.49

Formula:  $= -((9.49-10)/(\$B\$2332-\$B\$1038))*(B1038-\$B\$1038))+E1038$

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Salinity  $= (0.6569 * R1038) - 0.6458$

Oxygen:

pre-deployment O2: 95.9

post-deployment O2: 103.7

standard 100, probe 89.6

Formula:  $= G1038 + 4.1 - ((7.83) * ((B1038 - \$B\$1038) / (\$B\$2332 - \$B\$1038)))$

Conversion for O2 concentration:  $= 8.37 - (0.117 * D1038) - (0.0669 * S1038) + (0.0886 * P1038)$

Turbidity:

standard 0, probe 5.2; standard 100, probe 99.0

Formula:  $= ((((((100/93.8) - 1) * (K1038)) - (5.2)) * ((B1038 - \$B\$1038) / (\$B\$2332 - \$B\$1038)))) + K1038$

Chlorophyll:

standard 0.0, probe 2.0

Formula:  $= -((2 - 0) / (\$B\$2332 - \$B\$1038)) * (B1038 - \$B\$1038) + L1038$

Problems and Anomalies:

All parameters except depth 1/24 000-300: The sonde was apparently exposed above the waterline during this period. These data were deemed **faulty** and were deleted.

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**FEBRUARY--2003**

Files: Data: HB -0302-raw, HB -0302-QAQC, HB -0302

Deployments: (2); 1/22-2/18, 2/18-3/17

Condition of Sondes: 1/22-2/18 (real-time sonde failed repeatedly, so back-up file used), 2/18-3/17 (almost complete instrument failure; moderate fouling)

Removed Data:

Parameter(s)	Problem	Data Points
All	IF	almost all points from 2/18-3/17

Corrected Data:

1/22-2/18

\*\*This time period was continuous with January and was corrected as for that month (see above)

2/18-3/17

Specific Conductivity:

standard, probe

Formula:  $= -((8.66-10)/(\$B\$2140-\$B\$8451))*(B845-\$B\$845))+E845$

Salinity  $= (0.6845 * R845) - 1.86247$

Oxygen:

standard 100, probe 17.1

Out of correctable range--NOT CORRECTED

Turbidity:

standard 0, probe -0.5; standard 100, probe 166.1

Formula:  $= (((((100/166.6)-1)*(K845))-(-0.5))*((B845-\$B\$845)/(\$B\$2140-\$B\$845)))+K845$

Chlorophyll:

standard 0.0, probe 0.5

Formula:  $= -((0.5-0)/(\$B\$2140-\$B\$845))*(B845-\$B\$845))+L845$

Problems and Anomalies:

Oxygen 2/18-3/17: During post-deployment check, probe read 17.1 % in 100% standard; this is below the acceptable range for correction. Notes indicate oxygen probe was heavily fouled when sonde was retrieved. The suspected fouled portion of the record (3/11 030-3/17) was deemed **faulty** and was deleted. The remaining data **may be faulty** due to drift and/or biofouling. Interpret with caution.

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**MARCH--2003**

Files: Data: HB-0303-raw, HB-0303-QAQC, HB-0303

Deployments: (3); 2/18-3/17, 3/17-3/28, 3/28-4/11

Condition of Sondes: 2/18-3/17 (almost complete instrument failure; moderate fouling), 3/17-3/28 (repeated instrument failure; heavily fouled; post-deployment check 3 days after retrieval), 3/28-4/11 (heavily fouled; post-deployment check 4 days after retrieval)

Removed Data:

Parameter(s)	Problem	Data Points
All	IF	almost all points from 2/18-3/17
Oxygen	FOUL	3/11 030-3/17 1300
All	IF	257 points during 3/17-3/28
Oxygen	PF	3/17-3/28

Corrected Data:

2/18-3/17

\*\*This time period was continuous with January and was corrected as for that month (see above)

3/17-3/28

Specific Conductivity:

standard 10, probe 5.6

Formula:  $= -((5.6-10)/(\$B\$1328-\$B\$797))* (B797-\$B\$797) + E797$

Salinity  $= (0.6706 * R797) - 1.5109$

Oxygen:

Probe failure (see below)

Turbidity:

standard 0, probe 4.2; standard 123, probe 139

Formula:  $= (((((123/134.8) - 1) * (K797)) - (4.2)) * ((B797 - \$B\$797) / (\$B\$1328 - \$B\$797))) + K797$

Chlorophyll:

standard 0.0, probe 1.8

Formula:  $= -((1.8-0)/(\$B\$1328-\$B\$797)) * (B797-\$B\$797) + L797$

3/28-4/11

Specific Conductivity:

standard 10, probe 7.96

Formula:  $= -((7.96-10)/(\$B\$1991-\$B\$1329)) * (B1329-\$B\$1329) + E1329$

Salinity  $= (0.6633 * R1329) - 1.2795$

Oxygen:

standard 100, probe 19.2

Out of correctable range--NOT CORRECTED

Turbidity:

standard 0, probe 27.5; standard 123, probe 152.9

Not Corrected (see below)

Chlorophyll:

standard 0.0, probe 0.3

Formula:  $= -((0.3-0)/(\$B\$1991-\$B\$1329)) * (B1329-\$B\$1329) + L1329$

Problems and Anomalies:

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Oxygen 2/18-3/17: During post-deployment check, probe read 17.1 % in 100% standard; this is below the acceptable range for correction. Notes indicate oxygen probe was heavily fouled when sonde was retrieved. The suspected fouled portion of the record (3/11 030-3/17 1300) was deemed **faulty** and was deleted. The remaining portion of the record was retained but **may be faulty** due to drift and/or biofouling. Interpret with caution.

Oxygen 3/17-3/28: One of the DO probe diagnostics (DO Gain) was below acceptable range prior to deployment. Numerous remedial measures failed to correct the problem; as a result, sonde had to be deployed with DO Gain problem. During deployment period the probe provided highly erratic values (sometimes varying 60% between measurements). Near end of deployment period, the DO probe was reading ~160%, but when new sonde was deployed the new sonde read ~99%. Sonde was retrieved and post-deployment check was performed 3 days later. During the post-deployment check the DO probe read 63.6% in a 100% standard. This indicates the probe was not functioning properly due to a combination of factors (DO Gain problems, fouling, and a long lag time before post-deployment check). The entire record was deemed **faulty** and was deleted.

Oxygen 3/28-4/11: During post-deployment check, probe read 19.2% in a 100% standard and was heavily fouled by barnacles. Additionally, the post-deployment check was performed 4 days following sonde retrieval. The suspected fouled portion of the record (4/4 030-4/11 1030) was deemed faulty and was deleted. The remaining portion of the record was retained but **may be faulty** due to drift and/or fouling. Interpret with caution.

Turbidity 3/28-4/11: Turbidity correct was not applied to this data. If the correction was applied, values near the middle portion of the record became very negative (<-10NTU). This suggests the problem with the probe recordings was due to fouling near the end of the record so that the correction would only really apply to a short time near the end of the deployment period. The original data were retained but **may be faulty** (especially during the last several days of the deployment period) due to fouling and/or drift.

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**APRIL--2003**

Files: Data: HB-0304-raw, HB-0304-QAQC, HB-0304

Deployments: (0);

Condition of Sondes:

Removed Data:

<b>Parameter(s)</b>	<b>Problem</b>	<b>Data Points</b>

Corrected Data:

Specific Conductivity:

standard, probe

Formula:

Salinity

Oxygen:

pre-deployment O2:

post-deployment O2:

standard 100, probe ; O2 correction =

Formula:

Conversion for O2 concentration:

Turbidity:

standard 0, probe; standard 100, probe

Formula:

Chlorophyll:

standard 0.0, probe

Formula:

Problems and Anomalies:

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**MAY--2003**

Files: Data: HB-0305-raw, HB-0305-QAQC, HB-0305

Deployments: ();

Condition of Sondes:

Removed Data:

<b>Parameter(s)</b>	<b>Problem</b>	<b>Data Points</b>

Corrected Data:

Specific Conductivity:

standard, probe

Formula:

Salinity

Oxygen:

pre-deployment O2:

post-deployment O2:

standard 100, probe ; O2 correction =

Formula:

Conversion for O2 concentration:

Turbidity:

standard 0, probe; standard 100, probe

Formula:

Chlorophyll:

standard 0.0, probe

Formula:

Problems and Anomalies:

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**JUNE--2003**

Files: Data: HB -0306-raw, HB -0306-QAQC, HB -0306

Deployments: (0);

Condition of Sondes:

Removed Data:

<b>Parameter(s)</b>	<b>Problem</b>	<b>Data Points</b>

Corrected Data:

Specific Conductivity:

standard, probe

Formula:

Salinity

Oxygen:

pre-deployment O2:

post-deployment O2:

standard 100, probe ; O2 correction =

Formula:

Conversion for O2 concentration:

Turbidity:

standard 0, probe; standard 100, probe

Formula:

Chlorophyll:

standard 0.0, probe

Formula:

Problems and Anomalies:

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**JULY-2003**

Files: Data: HB -0307-raw, HB -0307-QAQC, HB-0307

Deployments: (0);

Condition of Sondes:

Removed Data:

<b>Parameter(s)</b>	<b>Problem</b>	<b>Data Points</b>

Corrected Data:

Specific Conductivity:

standard, probe

Formula:

Salinity

Oxygen:

pre-deployment O2:

post-deployment O2:

standard 100, probe ; O2 correction =

Formula:

Conversion for O2 concentration:

Turbidity:

standard 0, probe; standard 100, probe

Formula:

Chlorophyll:

standard 0.0, probe

Formula:

Problems and Anomalies:

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**AUGUST--2003**

Files: Data: HB-0308-raw, HB-0308-QAQC, HB-0308

Deployments: (0);

Condition of Sondes:

Removed Data:

<b>Parameter(s)</b>	<b>Problem</b>	<b>Data Points</b>

Corrected Data:

Specific Conductivity:

standard, probe

Formula:

Salinity

Oxygen:

pre-deployment O2:

post-deployment O2:

standard 100, probe ; O2 correction =

Formula:

Conversion for O2 concentration:

Turbidity:

standard 0, probe; standard 100, probe

Formula:

Chlorophyll:

standard 0.0, probe

Formula:

Problems and Anomalies:

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**SEPTEMBER--2003**

Files: Data: HB-0309-raw, HB-0309-QAQC, HB-0309

Deployments: (4); 8/22-9/8, 9/8-9/16, 9/16-9/24, 9/24-10/4

Condition of Sondes: 8/22-9/8 (DO probe malfunctioning; moderate probe fouling), 9/8-9/16 (DO probe malfunctioning; very light fouling), 9/16-9/24 (very light fouling), 9/24-10/4 (DO probe malfunctioning)

Removed Data:

Parameter(s)	Problem	Data Points
Oxygen	PF	8/22-9/8
Oxygen	PF	9/8-9/16
Oxygen	PF	9/24-10/4

Corrected Data:

8/22-9/8

Specific Conductivity:

standard 12.88, probe 12.59

Formula:  $= -((12.59 - 12.88) / (\$B\$822 - \$B\$2)) * (B2 - \$B\$2) + E2$

Salinity  $= (0.6672 * R2) - 1.5208$

Oxygen:

\*\*Probe malfunction, data compromised. No correction possible

Turbidity:

standard 0, probe 7.1; standard 100, probe 145.6

Formula:  $= (((((123/138.5) - 1) * (K2)) - (7.1)) * ((B2 - \$B\$2) / (\$B\$822 - \$B\$2))) + K2$

Chlorophyll:

standard 0.0, probe 2.2

Formula:  $= -((2.2 - 0) / (\$B\$822 - \$B\$2)) * (B2 - \$B\$2) + L2$

9/8-9/16

Specific Conductivity:

standard 12.88, probe 15.7

Formula:  $= -((15.7 - 12.88) / (\$B\$1200 - \$B\$823)) * (B823 - \$B\$823) + E823$

Salinity  $= (0.699 * R823) - 2.5062$

Oxygen:

\*\*Probe malfunction, data compromised. No correction possible

Turbidity:

standard 0, probe 8.9; standard 100, probe 131.5

Formula:  $= (((((123/122.6) - 1) * (K823)) - (8.9)) * ((B823 - \$B\$823) / (\$B\$1200 - \$B\$823))) + K823$

Chlorophyll:

standard 0.0, probe 0.6

Formula:  $= -((0.6 - 0) / (\$B\$1200 - \$B\$823)) * (B823 - \$B\$823) + L823$

9/16-9/24

Specific Conductivity:

standard 12.88, probe 13.65

Formula:  $= -((13.65 - 12.88) / (\$B\$1594 - \$B\$1201)) * (B1201 - \$B\$1201) + E1201$

Salinity  $= (0.7196 * R1201) - 3.3377$

Oxygen:

pre-deployment O2: 108.24

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post-deployment O2: 99.1

Formula:  $= -((99.1 - 108.24) / (\$B\$1594 - \$B\$1201)) * (B1201 - \$B\$1201) + G1201 + (100 - 108.24)$

Conversion for O2 concentration:  $= 4.08 - (0.109 * D1201) - (0.0358 * S1201) + (0.0666 * P1201)$

Turbidity:

standard 0, probe 1.3; standard 100, probe 144.1

Formula:  $= ((((((123/142.8) - 1) * (K1201)) - (1.3)) * ((B1201 - \$B\$1201) / (\$B\$1594 - \$B\$1201)))) + K1201$

Chlorophyll:

standard 0.0, probe 0.3

Formula:  $= -((0.3 - 0) / (\$B\$1594 - \$B\$1201)) * (B1201 - \$B\$1201) + L1201$

9/24-10/4

Specific Conductivity:

standard 12.88, probe 13.37

Formula:  $= -((13.37 - 12.88) / (\$B\$2073 - \$B\$1595)) * (B1595 - \$B\$1595) + E1595$

Salinity  $= (0.6906 * R1595) - 2.1214$

Oxygen:

\*\*Probe malfunction, data compromised. No correction possible

Turbidity:

standard 0, probe 4.3; standard 100, probe 217.1

Formula:  $= ((((((123/212.8) - 1) * (K1595)) - (4.3)) * ((B1595 - \$B\$1595) / (\$B\$2073 - \$B\$1595)))) + K1595$

Chlorophyll:

standard 0.0, probe 1.8

Formula:  $= -((1.8 - 0) / (\$B\$2073 - \$B\$1595)) * (B1595 - \$B\$1595) + L1595$

Problems and Anomalies:

Oxygen: 8/22-9/8 DO charge was above acceptable range (>75) for entire deployment period. As a result, these data were **faulty** and were deleted.

Oxygen: 9/8-9/16 DO charge was above acceptable range (>75) for entire deployment period. As a result, these data were **faulty** and were deleted.

Salinity: 9/24 945 Salinity increased from 22ppt to 24.6ppt when sondes were changed. This sudden increase is **faulty**.

Oxygen: 9/24-10/4 DO charge was above acceptable range (>75) for entire deployment period. As a result, these data were **faulty** and were deleted.

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**OCTOBER--2003**

Files: Data: HB-0310-raw, HB-0310-QAQC, HB-0310

Deployments: (3); 9/24-10/4, 10/4-10/15, 10/15-11/4

Condition of Sondes: 9/24-10/4 (DO probe malfunctioning), 10/4-10/15 (DO probe malfunctioning), 10/15-11/4 (DO probe malfunctioning; moderate probe fouling)

Removed Data:

<b>Parameter(s)</b>	<b>Problem</b>	<b>Data Points</b>
Oxygen	PF	9/24-10/4
Temperature, Salinity, Oxygen	IF	10/4 1415-2114
Oxygen	PF	10/4-10/15
Oxygen	PF	10/15-11/4
Turbidity	FOUL	11/1 2346-11/4

Corrected Data:

9/24-10/4

Specific Conductivity:

standard 12.88, probe 13.37

Formula:  $= -((13.37 - 12.88) / (\$B\$2073 - \$B\$1595)) * (B1595 - \$B\$1595) + E1595$

Salinity  $= (0.6906 * R1595) - 2.1214$

Oxygen:

\*\*Probe malfunction. No correction possible

Turbidity:

standard 0, probe 4.3; standard 100, probe 217.1

Formula:  $= (((((123 / 212.8) - 1) * (K1595)) - 4.3) * ((B1595 - \$B\$1595) / (\$B\$2073 - \$B\$1595))) + K1595$

Chlorophyll:

standard 0.0, probe 1.8

Formula:  $= -((1.8 - 0) / (\$B\$2073 - \$B\$1595)) * (B1595 - \$B\$1595) + L1595$

10/4-10/15

Specific Conductivity:

standard 12.88, probe 13.7

Formula:  $= -((13.7 - 12.88) / (\$B\$1006 - \$B\$481)) * (B496 - \$B\$481) + E496$

Salinity  $= (0.7047 * R496) - 2.671$

Oxygen:

\*\*Probe malfunction. No correction possible

Turbidity:

standard 0, probe 13.8; standard 100, probe 138.3

Formula:  $= K481 - 13.8$

Chlorophyll:

standard 0.0, probe 0.2

Formula:  $= -((0.2 - 0) / (\$B\$1006 - \$B\$481)) * (B481 - \$B\$481) + L481$

10/15-11/4

Specific Conductivity:

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standard 12.88, probe 12.92

Formula:  $= -((12.92 - 12.88) / (\$B\$1967 - \$B\$1008)) * (B1008 - \$B\$1008) + E1008$

Salinity  $= (0.7118 * R1008) - 2.9151$

Oxygen:

\*\*Probe malfunction. No correction possible

Turbidity:

\*\*Not correctable (see below)

Chlorophyll:

standard 0.0, probe 0.9

Formula:  $= -((0.9 - 0) / (\$B\$1967 - \$B\$1008)) * (B1008 - \$B\$1008) + L1008$

Problems and Anomalies:

Oxygen: 9/24-10/4 DO charge was above acceptable range (>75) for entire deployment period. As a result, these data were **faulty** and were deleted.

Temperature, Salinity and Oxygen: 10/4 1415-2114 Temperature was very erratic during this period, suggesting the sonde was originally malfunctioning but corrected itself. Because of bad temperature data, salinity and oxygen measurements were miscalculated by sonde. This data was **faulty** and was deleted.

Oxygen: 10/4-10/15 DO charge was above acceptable range (>75) for almost entire deployment period. As a result, these data were **faulty** and were deleted.

Oxygen: 10/15-11/4 When collected, DO membrane was found to have small hole. DO charge was near the lower acceptable range (~25) for entire deployment period. Oxygen measurements started high and decreased over deployment period in a geometric manner, suggesting DO membrane was punctured early in deployment period. As a result, these data were deemed **faulty** and were deleted.

Turbidity 11/1 2346-10/4 Turbidity wiper was not parking correctly at end of deployment, apparently due to fouling. The fouled portion of the data record was deemed **faulty** and was deleted. The remaining portion of the original data were retained and could not be corrected. This data **may be faulty** and should be interpreted with caution.

**2003 Horseshoe Beach Lease Area, Dixie County  
Quality Assurance/Quality Control (QA/QC) Log**

**NOVEMBER--2003**

Files: Data: HB-0311-raw, HB-0311-QAQC, HB-0311

Deployments: (2); 10/15-11/4, 11/4-12/3

Condition of Sondes: 10/15-11/4 (DO probe malfunctioning; moderate probe fouling), 11/4-12/3 (DO probe malfunctioning; heavy probe fouling)

Removed Data:

Parameter(s)	Problem	Data Points
Oxygen	PF	10/15-11/4
Turbidity	FOUL	11/1 2346-11/4
Oxygen	PF	11/4-12/3
Turbidity	FOUL	11/26 1815-12/3

Corrected Data:

10/15-11/4

Specific Conductivity:

standard 12.88, probe 12.92

Formula:  $= -((12.92 - 12.88) / (\$B\$1967 - \$B\$1008)) * (B1008 - \$B\$1008) + E1008$

Salinity  $= (0.7118 * R1008) - 2.9151$

Oxygen:

\*\*Probe malfunction. No correction possible

Turbidity:

\*\*Not correctable (see below)

Chlorophyll:

standard 0.0, probe 0.9

Formula:  $= -((0.9 - 0) / (\$B\$1967 - \$B\$1008)) * (B1008 - \$B\$1008) + L1008$

11/4-12/3

Specific Conductivity:

standard 12.88, probe 12.3

Formula:  $= -((12.3 - 12.88) / (\$B\$2361 - \$B\$962)) * (B962 - \$B\$962) + D962$

Salinity  $= (0.702 * R962) - 2.5031$

Oxygen:

\*\*Probe malfunction. No correction possible

Turbidity:

standard 0, probe 2.6; standard 100, probe 129.5

Formula:  $= (((((123/126.9) - 1) * (J962)) - (2.6)) * ((B962 - \$B\$962) / (\$B\$2361 - \$B\$962))) + J962$

Chlorophyll:

standard 0.0, probe 1.4

Formula:  $= -((1.4 - 0) / (\$B\$2361 - \$B\$962)) * (B962 - \$B\$962) + K962$

Problems and Anomalies:

Oxygen: 10/15-11/4 When collected, DO membrane was found to have small hole. DO charge was near the lower acceptable range (~25) for entire deployment period. Oxygen measurements started high and decreased over deployment period in a geometric manner, suggesting DO membrane was punctured early in deployment period. As a result, these data were deemed **faulty** and were deleted.

**2003 Horseshoe Beach Lease Area, Dixie County  
Quality Assurance/Quality Control (QA/QC) Log**

Turbidity 11/1 2346-10/4 Turbidity wiper was not parking correctly at end of deployment, apparently due to fouling. The fouled portion of the data record was deemed **faulty** and was deleted. The remaining portion of the original data were retained and could not be corrected. This data **may be faulty** and should be interpreted with caution.

Oxygen: 11/4-12/3 When deployed DO probe was not functioning properly. DO charge was above upper acceptable range (~99) for entire deployment period. These data were deemed **faulty** and were deleted.

Turbidity 11/26 1815-12/3 Turbidity wiper was not parking correctly at end of deployment, apparently due to fouling. The fouled portion of the data record was deemed **faulty** and was deleted. The remaining portion of the original data were corrected based upon what appeared to be good values during post-deployment check.. This data **may be faulty** and should be interpreted with caution.

**2003 Horseshoe Beach Lease Area, Dixie County  
Quality Assurance/Quality Control (QA/QC) Log**

**DECEMBER--2003**

Files: Data: HB-0312-raw, HB-0312-QAQC, HB-0312

Deployments: (2); 11/4-12/3, 12/3-1/2

Condition of Sondes: 11/4-12/3 (DO probe malfunctioning; heavy probe fouling), 12/3-1/2 (chlorophyll wiper malfunction)

Removed Data:

Parameter(s)	Problem	Data Points
Oxygen	PF	11/4-12/3
Turbidity	FOUL	11/26 1815-12/3

Corrected Data:

11/4-12/3

Specific Conductivity:

standard 12.88, probe 12.3

Formula:  $= -((12.3 - 12.88) / (\$B\$2361 - \$B\$962)) * (B962 - \$B\$962) + D962$

Salinity  $= (0.702 * R962) - 2.5031$

Oxygen:

\*\*Probe malfunction. No correction possible

Turbidity:

standard 0, probe 2.6; standard 100, probe 129.5

Formula:  $= (((((123 / 126.9) - 1) * (K962)) - (2.6)) * ((B962 - \$B\$962) / (\$B\$2361 - \$B\$962))) + J962$

Chlorophyll:

standard 0.0, probe 1.4

Formula:  $= -((1.4 - 0) / (\$B\$2361 - \$B\$962)) * (B962 - \$B\$962) + K962$

12/3-1/2

Specific Conductivity:

standard 12.88, probe 12.86

Formula:  $= -((12.86 - 12.88) / (\$B\$2837 - \$B\$1402)) * (B1402 - \$B\$1402) + D1402$

Salinity  $= (0.7036 * R1402) - 2.5548$

Oxygen:

pre-deployment O2: 100

post-deployment O2: ??

standard 100, probe 108.5

Formula:  $= -((108.5 - 100) / (\$B\$2837 - \$B\$1402)) * (B1402 - \$B\$1402) + F1402 + (100 - 100)$

Conversion for O2 concentration:  $= 4.38 - (0.202 * C1402) - (0.0587 * S1402) + (0.0875 * P1402)$

Turbidity:

standard 0, probe 1.9; standard 123, probe 124.4

Formula:  $= (((((123 / 122.5) - 1) * (J1402)) - (1.9)) * ((B1402 - \$B\$1402) / (\$B\$2837 - \$B\$1402))) + J1402$

Chlorophyll:

standard 0.0, probe 20.4

Formula:  $= -((0 - 0) / (\$B\$1594 - \$B\$1201)) * (B1402 - \$B\$1201) + J1402$

Problems and Anomalies:

**2003 Horseshoe Beach Lease Area, Dixie County  
Quality Assurance/Quality Control (QA/QC) Log**

Oxygen: 11/4-12/3 When deployed DO probe was not functioning properly. DO charge was above upper acceptable range (~99) for entire deployment period. These data were deemed **faulty** and were deleted.

Turbidity 11/26 1815-12/3 Turbidity wiper was not parking correctly at end of deployment, apparently due to fouling. The fouled portion of the data record was deemed **faulty** and was deleted. The remaining portion of the original data were corrected based upon what appeared to be good values during post-deployment check..

This data **may be faulty** and should be interpreted with caution.

Chlorophyll 12/3-1/2: Chlorophyll wiper wasn't parking correctly during post-deployment check. if post0deployment check value were applied, many strongly negative values would result (~-20). This data was not corrected and should be interpreted with caution as it **may be faulty** due to drift or fouling.