Sevenson Environmental Services, Inc.

JACOBS

**US ARMY CORPS OF ENGINEERS**
**NEW ENGLAND DISTRICT**

Total Environmental Restoration Contract
USACE Contract Number: DACW33-03-D-0006
Task Order No. 0001

# 2006 DREDGE SEASON DATA SUBMITTAL
# NEW BEDFORD HARBOR
# REMEDIAL ACTION

New Bedford Harbor Superfund Site
New Bedford, MA

January 2007

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ACE-J23-35BG0108-M17-0001

SDMS DocID 507239

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**Table 2-1**
**Wastewater Treatment Plant Discharge Goals**
**New Bedford Harbor Superfund Site - 2006 Season**

| Analysis | Surface Water Discharge Treatment Goal (µg/L) [1] |
|---|---|
| PCB Aroclor [2] | 0.065 |
| Metals | |
| Cd [3] | 9.3 |
| Cr [4] | 50 |
| Cu [5] | 5.6 |
| Pb [6] | 8.5 |

**Notes:**
1) µg/L = micrograms per liter
2) Per Polychlorinated biphenyl (PCB) Aroclor
3) Cd = Cadmium
4) Cr = Chromium
5) Cu = Copper
6) Pb = Lead

# ATTACHMENT A

# Dredge Planning and Progress Figures

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# ATTACHMENT B

# Summary of 2006 Activities

**Attachment B**
**Summary of 2006 Activities**
**New Bedford Harbor Superfund Project**

| Date | Activity | Summary |
|---|---|---|
| **Revise/Submit Planning Documents** | | |
| Draft April 2004, Final July 2004, Addendum No. 1 May 2005 Addendum No. 2 April 2006 | *Execution Plan 2004, 2004 New Bedford Harbor Remedial Action,* New Bedford Harbor Superfund Site, New Bedford, MA. *Draft Addendum No. 1 to Execution Plan 2004, 2005 New Bedford Harbor Remedial Action*. *Draft Addendum No. 2 to Execution Plan 2004, 2005 New Bedford Harbor Remedial Action* | Submittal of *Addendum No. 2 to the Execution Plan* outlining the remediation of the New Bedford Superfund Site to be accomplished for the 2006 field season. |
| Draft April 2004, Final September 2004 | Site Specific Safety & Health Plan | The following documents were not revised in 2006. |
| Draft May 2004, Final September 2004 | Emergency Response Contingency Plan | |
| Draft May 2004, Final September 2004, Revised September 2005 | Construction Quality Control Plan | |
| Draft May 2004, Final August 2004, Revised August 2005, Revised December 2005 | Field Sampling Plan | |
| Draft June 2004, Final September 2004, Revised May 2005 | Quality Assurance Program Plan | |
| Draft July 2004, Final November 2004, Revised August 2005 | Regulatory Compliance Plan | |
| Draft May 2004, Final September 2004, Revised August 2005 | Transportation & Temporary Storage Plan | |
| Draft May 2004, Final August 2004, Revised August 2005 | Environmental Protection Plan | |

**Attachment B**
**Summary of 2006 Activities**
**New Bedford Harbor Superfund Project**

| Date | Activity | Summary |
|---|---|---|
| **Submittal of Initial Task Order/Subsequent Modifications** | | |
| | Modification 12 | **Tasks under Mod. 12 include the following:** *Execution Plan, After Action Report*, Remedy Analysis, Bulkhead Monitoring, Asbestos Survey at Aerovox, and General Site Operations and Maintenance (O&M). |
| | Modification 13 | **Tasks under Mod. 13 were for the following:** All of the activities associated with the 2006 CAD cell investigation including preparation, boring installation, and reporting. |
| | Modification 14 | **Tasks under Mod. 14 were for the following:** The O&M activities for the second half of the 2006 season. |
| | Modification 15 | **Tasks under Mod. 15 were for the following:** The mobilization, demobilization, and transportation and disposal costs associated with the first 20 days of dredging in 2006. |
| | Modification 16 | **Tasks under Mod. 16 were for the following:** This task is associated with the incentive fee for Project 02. |
| | Modification 17 | **Tasks under Mod. 17 were for the following:** The tasks associated with an additional 20 days of processing and the associated transportation and disposal of dredged material. |
| | Modification 18 | **Tasks under Mod. 18 were for the following:** This task is associated with the transportation and disposal of Toxic Substances Control Act (TSCA) material generated during the 2004, 2005, and 2006 dredge seasons. This material was stored at the Area C Debris Disposal Area (DDA). |
| | Modification 19 | **Tasks under Mod. 19 were for the following:** For an additional 5 days of dredging. |
| | Modification 20 | **Tasks under Mod. 20 were for the following:** Reporting of 2006 season, planning, and technical support for 2007 and for the 2007 O&M season. |

**Attachment B**
**Summary of 2006 Activities**
**New Bedford Harbor Superfund Project**

| Date | Activity | Summary |
|---|---|---|
| **Mobilization Activities** | | |
| July/August 2006 | Mobilization of Equipment and Personnel Associated with 2006 Dredging Activities | The 2006 remobilization activites included the installation of sheet piles in Dredge Areas A, B, C, and D, mobilizing the dredges and associated dredge pipelines, staging the combined booster pump/ferric injection system at Manomet Street, and the staging of a second booster pump station at Aerovox. At Area D, the major activities were the rebuilding of the conveyor belts at the filter presses and the replacement of granular activated carbon in four lag vessels. The remainder of the mobilization activities incurred general maintanance and repair activitites necessary to initiate dredging. |
| August 2006 | Booster Pump(s) and Ferric System Setup | Combination of booster pump and ferric sulfate injection system at Manomet Street and the associated booster pump station at Aerovox. Preparatory meeting (7/25/06), Initial Inspection (7/31/06), and Follow-up Inspection & Quality Control Report (QCR #23 - Automated Ferric Injection System). |
| August 2006 | Service Test Pipelines and Preparation Shakedown; Dredge Systems, Area C and D | **Dredge and slurry pipelines**. Preparatory meeting (8/8/06), Initial Inspection (8/15/06) and Follow-up Inspection & Quality Control Reports (QCR #18 - 10-inch Pipe Pressure Test and QCR #19 - Scale Inspections 2006, and QCR #20 - Pipeline Service Test). |
| August 2006 | Transportation & Disposal | Preparatory meeting (8/1/06), Initial Inspection (8/23/06). |
| **Dredging and Associated Activities** | | |
| 8/16/2006 | Initiated dredging activities in Dredge Area A (primarily Dredge Management Unit-1 [DMU-1] and Dredge Area C (primarily DMU-2) | This included the start-up activities for the following support operations: **Sampling** (preparatory meeting [8/11/06] and initial inspection [8/17/06]). |
| 8/16/2006 | Initiate loading of Rail Cars with Filter Cake at Area D | The waste management process (including rail) was initiated with the 8/1/06 preparatory meeting and the subsequent 8/23/06 initial inspection. Folllow-up Inspection & Quality Control Report (QCR#22 - Railcar Loading). |

**Attachment B**
**Summary of 2006 Activities**
**New Bedford Harbor Superfund Project**

| Date | Activity | Summary |
|---|---|---|
| **Dredging and Associated Activities (continued)** | | |
| 9/11 through 9/15/06 | Trucks were also loaded with Filter Cake at Area D during this period to supplement the rail cars. | Trucks were used in addition to rail cars because of increased filter cake production and slower than anticipated turn around time for the rail cars to return from the disposal facility. |
| 9/21 through 9/26/06 | During dredging activities in Dredge Area A (adjacent to the Aerovox shoreline), volatile organic compounds (VOCs) were detected in the breathing zone in the Desanding Plant at Area C. Therefore, operations at Area C desanding plant were conducted in Level B (supplied air). | The workers in the desanding plant were placed on supplied air (Level B) during this period. Based upon the levels of VOCs detected in the desanding plant, the decision was made to discontinue dredging activities in the high VOC area. Following testing of the air within the Desanding Building at Area C, the required personnel protection equipment (PPE) was downgraded from Level B (supplied air) to Level D based upon the levels of VOCs detected in the desanding plant. |
| 9/26/2005 | Debris removal activities were completed in the 2006 Dredge Footprint. | On September 26, 2006, debris removal activities in the active dredge areas were completed for the 2006 season. In addition, at the direction of the EPA and NAE, debris removal activities were conducted on the eastern boundary of proposed Confined Disposal Facility (CDF) A, along the eastern boundary of Dredge Area B. |
| 10/11 through 10/13/06 | Sand and coarse materials were transported offsite from the Area C DDA stockpiles. | During this period, H & S, the subcontracted transportation and disposal subcontractor, removed approximately 914 tons of sand and coarse material from the existing Area C stockpiles. |
| 10/13/2006 | Completed the first 40 days of Dredging | This is for the dredging activitites completed under Mods 15 and 17, which both included 20 days of dredging. |
| 10/18/2006 | Completed the 2006 Dredge Season | These final days of dredging were completed under Mod 19. |

**Attachment B**
**Summary of 2006 Activities**
**New Bedford Harbor Superfund Project**

| Date | Activity | Summary |
|---|---|---|
| 10/16 through 10/31 | Additional sand and coarse materials were transported offsite from the Area C DDA stockpiles | During this period, H & S removed approximately 2,595 tons of additional sand and coarse material from the existing Area C stockpiles. This activity was conducted under Mod. 19. |
| **Air Monitoring Activities** | | |
| Not Conducted in 2006 | Pre-Dredge Background Sampling | In 2006, pre-dredge sampling activities were not conducted. |
| 8/30-31/2006 | 1st Round of Monthly Air Sampling | During this sampling round and the two subsequent 2006 sampling rounds, one (1) duplicate and one (1) field blank were also collected and submitted for analysis. In addition, the samples during each of the three rounds were collected with polyurethane foam (PUF) samples with glass fiber pre-filter using a BGI, PQ-1, Low-Vol sampler. Air samples were collected from six (6) sampling locations. Preparatory Meeting (8/30/06), Initial Inspection 8/30/06, and the follow-up Inspection Quality & Control Report (QCR #26 - Air Sampling Audit). |
| 10/4-5/2006 | 2nd Round of Monthly Air Sampling | Air samples were collected from six (6) sampling locations. |
| 11/17-18/2006 | Post Dredge Round of Air Sampling | Air samples were collected from five (5) sampling locations. |
| | | |

**Attachment B**
**Summary of 2006 Activities**
**New Bedford Harbor Superfund Project**

| Date | Activity | Summary |
|---|---|---|
| **Bathymetric Survey** | | |
| 6/6 and 6/9/2006 | Pre-Dredge Survey in Dredge Areas A, B, C, and D | Survey conducted by Apex. Preparatory Meeting (8/11/06), Initial Inspection (8/26/06). Follow-up Inspection & Quality Control Report (QCR #27 - Final Bathymetric Survey Data). |
| 8/26/2006 | Bathymetric Survey in Dredge Areas A, C, and D | Survey conducted by Apex. |
| 9/9/2006 | Bathymetric Survey in Dredge Area A | Survey conducted by Apex. |
| 9/16/2006 | Bathymetric Survey in Dredge Areas A and C | Survey conducted by Apex. |
| 9/23/2006 | Bathymetric Survey in Dredge Areas A and C | Survey conducted by Apex. |
| 10/7/2006 | Bathymetric Survey in Dredge Area A and the survey of Dredge Area C was cut short due to tides | Survey conducted by Apex. |
| 10/26/2006 | First Final Bathymetric Survey in Complete 2006 Dredge Area | Survey conducted by Apex. The survey data from this survey was not used due to the poor data quality, which was attributed to the high winds that were experienced during this survey. |
| 11/7/2006 | Second Final Bathymetric Survey in Complete 2006 Dredge Area | Survey conducted by Apex. |
| | | |
| **Winterization Activities** | | |
| 10/19/06 - 11/1/06 | Winterization | Winterization activities were completed for the following operations: Dredge Areas A, B, C, and D; combined ferric sulfide treatment system/booster pump station at Manomet Street; pump station at Aerovox, docks at Area C; remove debris scows at Area C; remove dredges at Area D; DDA storage; desanding building (Area C); pipeline from dredge area to Area C: and dewatering plant (Area D). Preparatory Meeting (10/17/06), Initial Inspection (10/27/06), Follow-up Inspection Quality & Contro Report (QCR #25 - 2006 Winterization). |

# ATTACHMENT C

# VOC Related Information

**Table C-1**
**Summa Canister Results for Selected VOCs**
**New Bedford Harbor Superfund Site - 2006 Season**

| Location/Sampling Date | VOC Constituent | Concentration (ppbv) | Converted Concentration (ppmv) | 8 Hour TLV (ppm) | 12 Hour TLV (ppm) | Percent of Individual TLV | Percent of TLV for Sample |
|---|---|---|---|---|---|---|---|
| Area C Desanding Plant First Sample (9/22/06) | PCE | 25 | 0.025 | 25 | 16.67 | 0.15 | |
| | TCE | 1900 | 1.9 | 50 | 33.33 | 5.7 | |
| | cis 1,2-DCE | 660 | 0.66 | 200 | 133.33 | 0.5 | |
| | Vinyl Chloride | 310 | 0.31 | 1 | 0.67 | 46.5 | |
| | | | | | | | 52.85 |
| Area C Desanding Plant Second Sample (9/26/06) | PCE | 1.6 | 0.0016 | 25 | 16.67 | 0.01 | |
| | TCE | 35 | 0.035 | 50 | 33.33 | 0.11 | |
| | cis 1,2-DCE | 200 | 0.2 | 200 | 133.33 | 0.15 | |
| | Vinyl Chloride | 69 | 0.69 | 1 | 0.67 | 10.35 | |
| | | | | | | | 10.61 |
| Area D Filter Presses Sample (9/26/06) | PCE | 1.2 | 0.0012 | 25 | 16.67 | 0.01 | |
| | TCE | 34 | 0.034 | 50 | 33.33 | 0.1 | |
| | cis 1,2-DCE | 270 | 0.27 | 200 | 133.33 | 0.2 | |
| | Vinyl Chloride | 38 | 0.038 | 1 | 0.67 | 5.7 | |
| | | | | | | | 6.01 |
| Area D WWTP Sample (9/26/06) | PCE | 2.2 | 0.0022 | 25 | 16.67 | 0.01 | |
| | TCE | 43 | 0.043 | 50 | 33.33 | 0.13 | |
| | cis 1,2-DCE | 150 | 0.15 | 200 | 133.33 | 0.11 | |
| | Vinyl Chloride | 20 | 0.02 | 1 | 0.67 | 3 | |
| | | | | | | | 3.25 |

Notes:
The analytical results for the four major VOCs detected are presented in this table. The other VOCs detected are available upon request
cis-1,2-DCE = cis 1,2-dichloroethylene
pbv = parts per billion volume
PCE = Tetrachloroethene
ppm = parts per million
ppmv = parts per million volume
TCE = trichloroethene
TLV = threshold limit value
VOC = volatile organic compounds

## Table C-2
## VOC and PCB Results for Area C and D GAC Effluent
## New Bedford Harbor Superfund Site - 2006 Season

| Sampling Date | Sampling Location | Analyte [1] | Concentration (ppmv) |
|---|---|---|---|
| 10/18/06 | Area C Desanding Plant GAC Filter Effluent | PCE | ND |
| | | TCE | ND |
| | | cis 1,2-DCE | 0.46 |
| | | Vinyl Chloride | 0.016 |
| | | PCBs | ND |
| | | | |
| 10/18/06 | Area D Mix Tank GAC Filter Effluent | PCE | ND |
| | | TCE | 30 |
| | | cis 1,2-DCE | 33 |
| | | Vinyl Chloride | ND |

Notes:

1) At Area C, both volatile organic compound (VOCs) and polychlorinated biphenyls (PCBs) were analyzed for. Only VOC samples were collected and submitted for analysis from Area D. The VOCs samples were collected using low flow Summa canisters, which were run for 8 hours and 1/2 hours at Area C and D, respectively. The PCBs were collected using low flow sampling (EPA TO-10A Methodology) over a duration of 2 hours.

cis-1,2-DCE = cis 1,2-dichloroethylene
GAC = granulated activated carbon
ND = Not detected
PCE = Tetrachloroethene
ppmv = parts per million volume
TCE = trichloroethene

# ATTACHMENT D

# Sample Analytical Summary Tables

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# ATTACHMENT E

# Transportation and Disposal Reports

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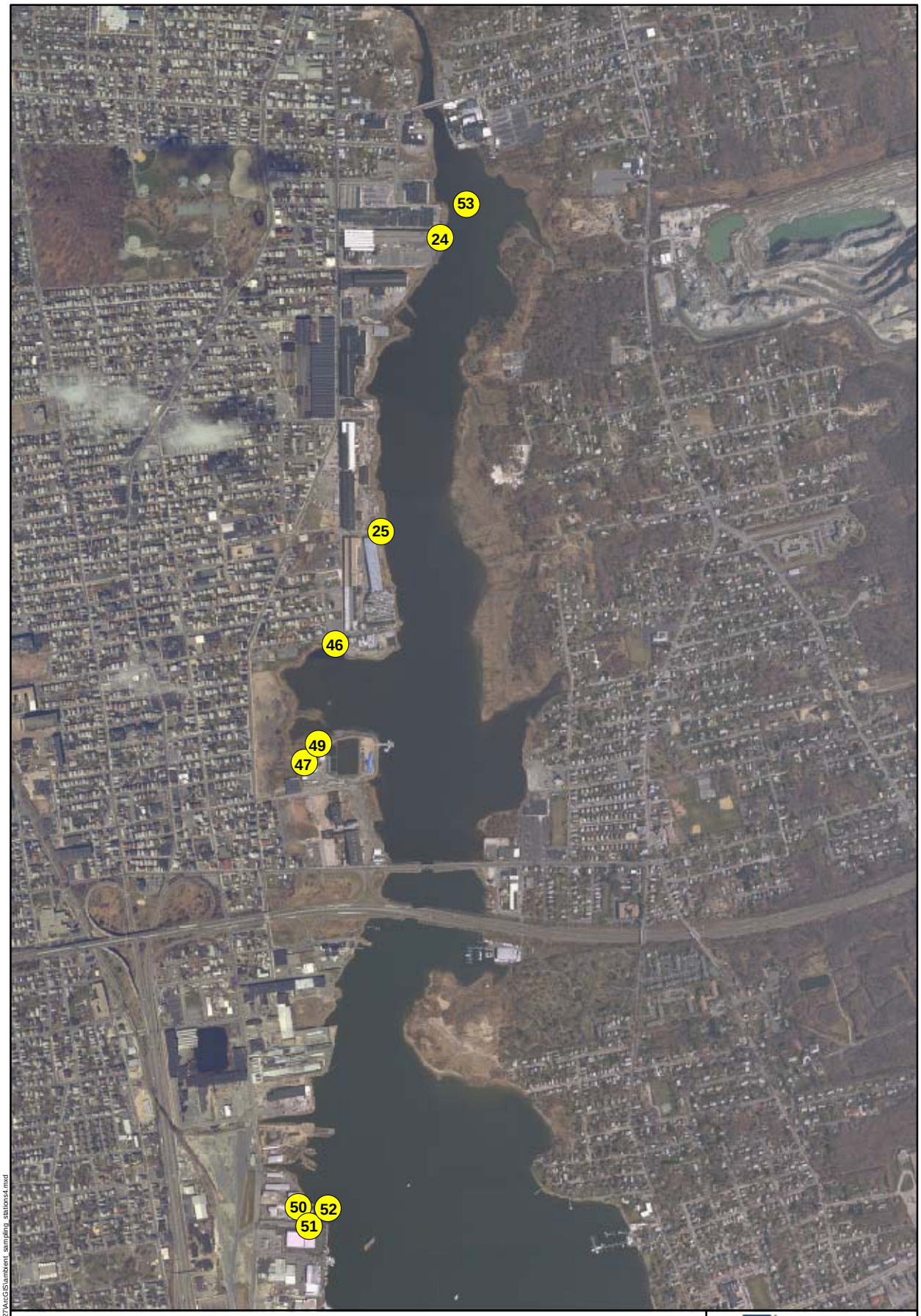
# ATTACHMENT F

# Ambient Air Monitoring Information




Legend

Aerial Photography MASSGIS 2005

**Ambient Air Sampling Locations**

Sample Station

0 750 1,500 Feet

1:18,000

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2006 Ambient Air Sampling Station Locations

New Bedford Harbor Superfund Site

NAME: crobers DATE: 1/27/2007

Figure F-1

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**Table F-1**
**Ambient Monitoring**
**Program - Total Detectable PCBs (Homologues) in Air**
**New Bedford Harbor Superfund Site - 2005 and 2006 Season**

| Sampling [1] Period | Aerovox [2] (Station 24) | Aerovox west upwind (Station 55) | Cliftex (Station 25) | Nstar (Station 42) | Coffin Ave (Station 46) | Area C downwind (Station 47) | Area C [3] crosswind (Station 48) | Area C downwind (Station 49) | Area D downwind (Station 50) | Area D downwind (Station 51) | Area D downwind (Station 52) | Dredge (Station 53) | Achusnet Park (Station 56) | Duplicate (Blank) | ng/M$^3$ sample | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 Events | | | | | | | | | | | | | | | | |
| 8.10 to 8.11 Round 1 | 216 | 42.1 | 103 | 25.9 | 37.2 | NS [4] | NS | 29.3 | NS | NS | 21.3 | NS | 49.9 | 44.1 | 0.32 | Duplicate sample Aerovox West |
| 9.14 to 9.15 Round 2 | 1,490 | 37.6 | 58.2 | 22.5 | 99.8 | NS | 14.9 | 83.6 | 0.52 | NS | NS | 1,280 | 102 | NS | 0.26 | No Duplicate Sample |
| 9.22 to 9.23 Round 3 | 178 | 2.64 | 35.2 | 83.3 | 115 | NS | 19.1 | 97 | 0.26 | NS | NS | 780 | 23.9 | 18.8 | 0.54 | Duplicate sample Station 48, Area C |
| 9.28 to 9.29 Round 4 | 383 | 87 | 104 | 5.28 | 124 | NS | 17.3 | 44.2 | 24.2 | NS | NS | 391 | 77.9 | QA[7] | 1.16 | Duplicate sample to Corps Lab |
| 10.5 to 10.6 Round 5 | 1,822 | 222 | 251 | 119 | 130 | NS | 60.1 | 114 | 81.7 | NS | NS | 6,315 | 180 | 1,708 | 0.96 | Duplicate sample Aerovox Station 24 |
| 10.27 to 10.28 Round 6 | 15.4 | 3.97 | NS [5] | 32.3 | 2.06 | NS | 4.61 | 12.3 | 0.01 | NS | NS | 505 | 2.73 | QA[7] | 0.42 | Duplicate sample sent to Corps lab |
| 11.17 to 11.18 Round 7 | 15.9 | 0.12 | 0.12 | 63.6 | 0.14 | NS | 0.139 | 3.71 | NS[6] | NS | NS | 913 | 3.76 | 14.9 | 1.73 | Duplicate sample Aerovox Station 24 |
| 12.28 to 12.29 Round 8 | 83.2 | 10.8 | 10.9 | 21.4 | 65.1 | 7.42 | NS | NS | NS | 2.18 | NS | NS | 13.5 | QA[7] | 0.33 | Duplicate sample sent to Corps lab |
| 2006 Events | | | | | | | | | | | | | | | | |
| 8.30 to 8.31 Round 1 2006 | 1,629 | NS | 176 | NS | 70.4 | 39.2 | NS | NS | NS | 67.3 | NS | 2,336 | NS | 1,387 | 1.57 | Duplicate sample Aerovox Station 24 |
| 10.4 to 10.6 Round 2 2006 | 2,357 | NS | 451 [8] | NS | 108 | NS | NS | 157 | NS | NS | 197 | 13,430 | NS | QA[7] | 6.65 | Duplicate sample sent to Corps lab |
| 11.18 to 11.19 Round 3 2006 | 41.1 | NS | 0.14 | NS | 4.05 | NS | NS | 81.4 | 2.6 | NS | NS | NS | NS | 0.25 | 0.74 | Duplicate sample Aerovox Station 24 |

Notes:
(1) Sampled and analyzed using EPA TO-10A Methodology.
(2) All results reported for 24 hour time-weighted average in nanograms per cubic meter of air (ng/m$^3$).
(3) Station 48 was a cross wind location for the 2004 and 2005 season and is no longer sampled.
(4) NS = Not Sampled.
(5) Sample tube for 25 Cliftex was broken during transport.
(6) Sample tube for 50 Area D was broken during analysis preparation.
(7) Duplicate sent to USACE laboratory.
(8) During the first day of sampling, the duplicate sample was to be collected at Station 25. However, one of the two sampling pumps failed at Station 25, and these samples were not submitted for analysis. Therefore, the sample and associated duplicate sample were collected on the following day from Station 25 and submitted for analysis.

**Table F-2**
**Ambient PCB Sample Station Locations**
**New Bedford Harbor Superfund Site - 2006 Season**

| Station Number | Location | City/Town | Northing | Easting |
|---|---|---|---|---|
| 21 | New Bedford Welding | New Bedford | 2696913.00000 | 814013.00000 |
| 24 (1) | Aerovox NE corner | New Bedford | 2706941.00000 | 815574.00000 |
| 24D (1) | Aerovox duplicate | New Bedford | 2706932.00000 | 815574.00000 |
| 25 (1) | Cliftex, Manomet Street | New Bedford | 2703854.00000 | 814907.00000 |
| 27 | Francis St (Porter) | Fairhaven | 2703925.00000 | 816405.00000 |
| 30 | Fiber Leather | New Bedford | 2705861.00000 | 815029.00000 |
| 30D | Fiber Leather duplicate | New Bedford | 2705864.00000 | 815034.00000 |
| 40 | Wood St (Titleist) | Acushnet | 2705820.00000 | 814933.00000 |
| 41 | NSTAR substation | Acushnet | 2705524.00000 | 816074.00000 |
| 42 | NSTAR North | Fairhaven | 2706236.00000 | 816524.00000 |
| 43 | Bus Terminal Lot | Fairhaven | 2701377.00000 | 816482.00000 |
| 44 | Taber St (Pumping Station) | Fairhaven | 2698035.00000 | 816277.00000 |
| 45 | Cozy Cove Marina | Fairhaven | 2684279.00000 | 817739.00000 |
| 46 (1) | Coffin Ave | New Bedford | 2703796.00000 | 814947.00000 |
| 47 (1) | Area C Downwind | New Bedford | 2701361.00000 | 814129.00000 |
| 48 (1) | Area C Crosswind | New Bedford | 2701462.00000 | 814128.00000 |
| 49 (1) | Area C Upwind | New Bedford | 2701564.00000 | 814279.00000 |
| 50 (1) | Area D Downwind | New Bedford | 2696198.00000 | 814012.00000 |
| 51 (1) | Area D Crosswind | New Bedford | 2696500.00000 | 812858.00000 |
| 52 (1) | Area D Upwind | New Bedford | 2695390.00000 | 814397.00000 |
| 53 (1) | DMU2 Dredge | Varies | 2706636.00000 | 815839.00000 |
| 54 | DMU2 DW on barge | Varies | 2706333.00000 | 815917.00000 |
| 55 | Aerovox West (R7 receptor) | New Bedford | 2706728.00000 | 814540.00000 |
| 56 | Acushnet Park | New Bedford | 2708962.00000 | 815519.00000 |

Note:
1) Location sampled in 2006. The remainder of the locations were either sampled since remediation was initiated in 2004 or during previous air sampling activities.

**Table F-3**
**Meteorological Data/Tide Data Summary**
**New Bedford Harbor Superfund Site - 2006 Season**

| Date | Avg. Wind (mph) | Direction | Min Temp ($^oF$) | Max Temp ($^oF$) | Min Humidity % | Max Humidity % | Barometer (inch) | Avg. Radiation (watts /$m^3$) | Max Radiation (watts /$m^3$) | Tide Min (ft msl) | Tide Max (ft msl) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aug 30, 31 | 7.38 | NNE | 57.8 | 72.5 | 45.9 | 96.5 | 30 | 278 | 813 | 0.60 | 3.70 |
| Oct 4, 5, 6 | 10.64 | NNE and SSW | 46.4 | 72.4 | 57 | 99.7 | 30.1 | 183 | 756 | -0.70 | 5.20 |
| Nov 18, 19 | 6.78 | N | 42 | 52.5 | 51.2 | 93 | 29.86 | 124 | 487 | 0.10 | 4.30 |

Notes:
avg. = average
$^oF$ = Fahrenheit
ft msl = feet mean sea level
max = maximum
min = minimum
mph = miles per hour
watts/$m^3$ = watts per meter cubed

# ATTACHMENT F

# Air Sampling Status Reports (PETS Curves)

# Air Sampling Status Report

New Bedford Harbor Superfund Site

**Station #:** 24 Aerovox
Exposure Budget Slope (EBS) = 344 nanograms per cubic meter per day (ng/m$^3$-day)

**Collection Date:** 11/30/2006

**Construction Activity:** The 2006 dredging activities were initiated on August 16, 2006 and demobilization activities were completed on November 1, 2006.

This report summarizes sample results for the above referenced location and date. The samples were collected on polyurethane foam (PUF)/XAD sample media with a glass fiber pre-filter using a BGI, PQ-1 Low-Vol sampler. The samples were analyzed using high-resolution mass spectrometry (HRGCMS) for total PCB homologue groups. Results are evaluated relative to the Exposure Budget Tracking Process described in the Development of PCB Air Action Levels for the Protection of the Public, New Bedford Superfund Site, August 2001. Cumulative data for this reporting period are included on pages 3 and 4.

**Summary of This Sampling Period:**

The results from the Baseline Ambient Air Sampling program were used to assign background concentrations for each air sampling location. For Station 24 Aerovox, the quarterly average ambient air PCB concentrations for the June 1999 through May 2000 baseline sampling were used as background concentrations. These background concentrations were used for the inactive field times from 11/12/02 through 9/8/04, for the period from 12/4/04 through 8/10/05, and from 12/28/05 through 8/15/06 to close the recent inactive field season. In addition, to better simulate the 2006 dredging season, the ambient air concentrations from the August 31, 2006 sampling event were used to project concentrations detected at Station 24 Aerovox on August 16, 2006 (the start of dredging activities). This better simulates the ambient air PCB concentrations present at Station 24 Aerovox during the active dredging season. For the first month of the 2004 and 2005 seasons, the sampling was conducted on a weekly basis.

However, since monthly sampling was conducted in 2006, and the first 2006 sampling event was conducted two weeks after the start of dredging, this new variation of the PETs curve was used. Also, the background concentrations were projected to be at background levels at Station 24 Aerovox on October 19, 2006, which is the day after the 2006 dredging activities were completed. These changes in the background concentrations and associated active dredging concentrations better match the actual 2006 dredging activities. Low triggers were identified, which will be evaluated for potential necessary response.

| | | |
|---|---|---|
| | | |
| | | |
| **Monitoring Station** | | 24 Aerovox |
| **Exposure Budget Slope** | [ng/m$^3$-day] | 344 |
| **Work Start Date** | [mm/dd/yyyy] | 11/12/2002 |
| **Projected Work End Date (Per EPA)** | [mm/dd/yyyy] | 11/10/2028 |
| | | |
| **Occupational Limit Used as Ceiling** | [ng/m$^3$] | 500,000 |
| | | |
| **TEL for Worker in Public** | [ng/m$^3$] | 50,000 |
| **NTEL for Worker in Public** | [ng/m$^3$] | 1,789 |
| **Minimum of TEL/NTEL** | [ng/m$^3$] | 1,789 |
| | | |
| **Baseline Average Concentration** | [ng/m$^3$] | 75 |
| | | |
| | | |
| Notes: | | |
| TEL - Threshold Effects Exposure Limit | | |
| NTEL - Non-Threshold Effects Exposure Limits | | |
| The EPA periodically assesses this Projected Work End Date, which is subject to change. | | |

# Sample Results, Calculated Budget and Exposure Values
# 24 Aerovox Location

| (A) Event | (B) Sampling Date | (C) Days Since Previous Sampling Event | (D) Work Effort Elapsed Time | (E) Estimated Work Effort Remaning | (F) PCB Concentration Result | (G) Average of Most Recent Two Concentration Results | (H) Weighted Average of Concentration Results | (I) Exposure Budget for the Period | (J) Cumulative Exposure Budget for Work Effort to Date | (K) Measured Exposure During the Period | (L) Calculated Cumulative Exposure for Work Effort to Date | (M) Exposure Budget Expended During the Period | (N) Cumulative Exposure Expended for Work Effort to Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [#] | [month/day/year] | [days] | Runnig Sum of Column (C) to Date [days] | [days] | [ng/m$^3$] | [ng/m$^3$] | Column (L)/Column (D) [ng/m$^3$] | EBS[1] * Column (C) [ng/m$^3$-days] | Sum of Column (I) [ng/m$^3$-days] | Column (G)* Column (C) [ng/m$^3$-days] | Sum of Column (K) [ng/m$^3$-days] | Column (K) /Column (I) [%] | Column (L) /Column (J) [%] |
| 1 | 11/12/2002 | 0 | 0 | 9495 | 67 | 67.00 | 67.00 | NC | NC | NC | NC | NC | NC |
| 2 | 11/30/2002 | 18 | 18 | 9477 | 67 | 67.00 | 67.00 | 6192 | 6192 | 1206.0 | 1,206.0 | 19.5% | 19.5% |
| 3 | 12/1/2002 | 1 | 19 | 9476 | 32 | 49.50 | 66.08 | 344 | 6536 | 49.5 | 1,255.5 | 14.4% | 19.2% |
| 4 | 2/28/2003 | 89 | 108 | 9387 | 32 | 32.00 | 38.00 | 30616 | 37152 | 2848.0 | 4,103.5 | 9.3% | 11.0% |
| 5 | 5/31/2003 | 92 | 200 | 9295 | 76 | 54.00 | 45.36 | 31648 | 68800 | 4968.0 | 9,071.5 | 15.7% | 13.2% |
| 6 | 8/31/2003 | 92 | 292 | 9203 | 130 | 103.00 | 63.52 | 31648 | 100448 | 9476.0 | 18,547.5 | 29.9% | 18.5% |
| 7 | 11/30/2003 | 91 | 383 | 9112 | 67 | 98.50 | 71.83 | 31304 | 131752 | 8963.5 | 27,511.0 | 28.6% | 20.9% |
| 8 | 2/28/2004 | 90 | 473 | 9022 | 32 | 49.50 | 67.58 | 30960 | 162712 | 4455.0 | 31,966.0 | 14.4% | 19.6% |
| 9 | 5/31/2004 | 93 | 566 | 8929 | 76 | 54.00 | 65.35 | 31992 | 194704 | 5022.0 | 36,988.0 | 15.7% | 19.0% |
| 10 | 8/31/2004 | 92 | 658 | 8837 | 130 | 103.00 | 70.61 | 31648 | 226352 | 9476.0 | 46,464.0 | 29.9% | 20.5% |
| 11 | 9/8/2004 | 8 | 666 | 8829 | 67 | 98.50 | 70.95 | 2752 | 229104 | 788.0 | 47,252.0 | 28.6% | 20.6% |
| 12 | 9/9/2004 | 1 | 667 | 8828 | 1024 | 545.50 | 71.66 | 344 | 229448 | 545.5 | 47,797.5 | 158.6% | 20.8% |
| 13 | 9/14/2004 | 5 | 672 | 8823 | 1449 | 1236.50 | 80.33 | 1720 | 231168 | 6182.5 | 53,980.0 | 359.4% | 23.4% |
| 14 | 9/23/2004 | 9 | 681 | 8814 | 588 | 1018.50 | 92.73 | 3096 | 234264 | 9166.5 | 63,146.5 | 296.1% | 27.0% |
| 15 | 9/27/2004 | 4 | 685 | 8810 | 9557 | 5072.50 | 121.81 | 1376 | 235640 | 20290.0 | 83,436.5 | 1474.6% | 35.4% |
| 16 | 10/19/2004 | 22 | 707 | 8788 | 559 | 5058.00 | 275.41 | 7568 | 243208 | 111276.0 | 194,712.5 | 1470.3% | 80.1% |
| 17 | 11/5/2004 | 17 | 724 | 8771 | 578 | 568.50 | 282.29 | 5848 | 249056 | 9664.5 | 204,377.0 | 165.3% | 82.1% |
| 18 | 12/3/2004 | 28 | 752 | 8743 | 30 | 304.00 | 283.10 | 9632 | 258688 | 8512.0 | 212,889.0 | 88.4% | 82.3% |
| 19 | 2/28/2005 | 87 | 839 | 8656 | 32 | 31.00 | 256.96 | 29928 | 288616 | 2697.0 | 215,586.0 | 9.0% | 74.7% |
| 20 | 5/31/2005 | 92 | 931 | 8564 | 76 | 54.00 | 236.90 | 31648 | 320264 | 4968.0 | 220,554.0 | 15.7% | 68.9% |
| 21 | 8/10/2005 | 71 | 1002 | 8493 | 130 | 103.00 | 227.41 | 24424 | 344688 | 7313.0 | 227,867.0 | 29.9% | 66.1% |
| 22 | 8/11/2005 | 1 | 1003 | 8492 | 216 | 173.00 | 227.36 | 344 | 345032 | 173.0 | 228,040.0 | 50.3% | 66.1% |
| 23 | 9/15/2005 | 35 | 1038 | 8457 | 1490 | 853.00 | 248.45 | 12040 | 357072 | 29855.0 | 257,895.0 | 248.0% | 72.2% |
| 24 | 9/23/2005 | 8 | 1046 | 8449 | 178 | 834.00 | 252.93 | 2752 | 359824 | 6672.0 | 264,567.0 | 242.4% | 73.5% |
| 25 | 9/29/2005 | 6 | 1052 | 8443 | 383 | 280.50 | 253.09 | 2064 | 361888 | 1683.0 | 266,250.0 | 81.5% | 73.6% |
| 26 | 10/6/2005 | 7 | 1059 | 8436 | 1822 | 1102.50 | 258.70 | 2408 | 364296 | 7717.5 | 273,967.5 | 320.5% | 75.2% |
| 27 | 10/28/2005 | 22 | 1081 | 8414 | 15.4 | 918.70 | 272.14 | 7568 | 371864 | 20211.4 | 294,178.9 | 267.1% | 79.1% |
| 28 | 11/18/2005 | 21 | 1102 | 8393 | 15.9 | 15.65 | 267.25 | 7224 | 379088 | 328.7 | 294,507.6 | 4.5% | 77.7% |
| 29 | 12/29/2005 | 41 | 1143 | 8352 | 83.2 | 49.55 | 259.44 | 14104 | 393192 | 2031.6 | 296,539.1 | 14.4% | 75.4% |
| 30 | 2/28/2006 | 61 | 1204 | 8291 | 32 | 57.60 | 249.21 | 20984 | 414176 | 3513.6 | 300,052.7 | 16.7% | 72.4% |
| 31 | 5/31/2006 | 92 | 1296 | 8199 | 76 | 54.00 | 235.36 | 31648 | 445824 | 4968.0 | 305,020.7 | 15.7% | 68.4% |
| 32 | 8/16/2006 | 77 | 1373 | 8122 | 1629 | 852.50 | 269.97 | 26488 | 472312 | 65642.5 | 370,663.2 | 247.8% | 78.5% |
| 33 | 8/31/2006 | 15 | 1388 | 8107 | 1629 | 1629.00 | 284.65 | 5160 | 477472 | 24435.0 | 395,098.2 | 473.5% | 82.7% |
| 34 | 10/5/2006 | 35 | 1423 | 8072 | 2357 | 1993.00 | 326.67 | 12040 | 489512 | 69755.0 | 464,853.2 | 579.4% | 95.0% |
| 35 | 10/19/2006 | 14 | 1437 | 8058 | 41.1 | 1199.05 | 335.17 | 4816 | 494328 | 16786.7 | 481,639.9 | 348.6% | 97.4% |
| 36 | 11/19/2006 | 31 | 1468 | 8027 | 41.1 | 41.10 | 328.96 | 10664 | 504992 | 1274.1 | 482,914.0 | 11.9% | 95.6% |
| 37 | 11/30/2006 | 11 | 1479 | 8016 | 67 | 54.05 | 326.92 | 3784 | 508776 | 594.6 | 483,508.6 | 15.7% | 95.0% |

**Notes:**

[1]EBS: Exposure Budget Slope= ng/m$^3$-day (nanograms per cubic meter per day)

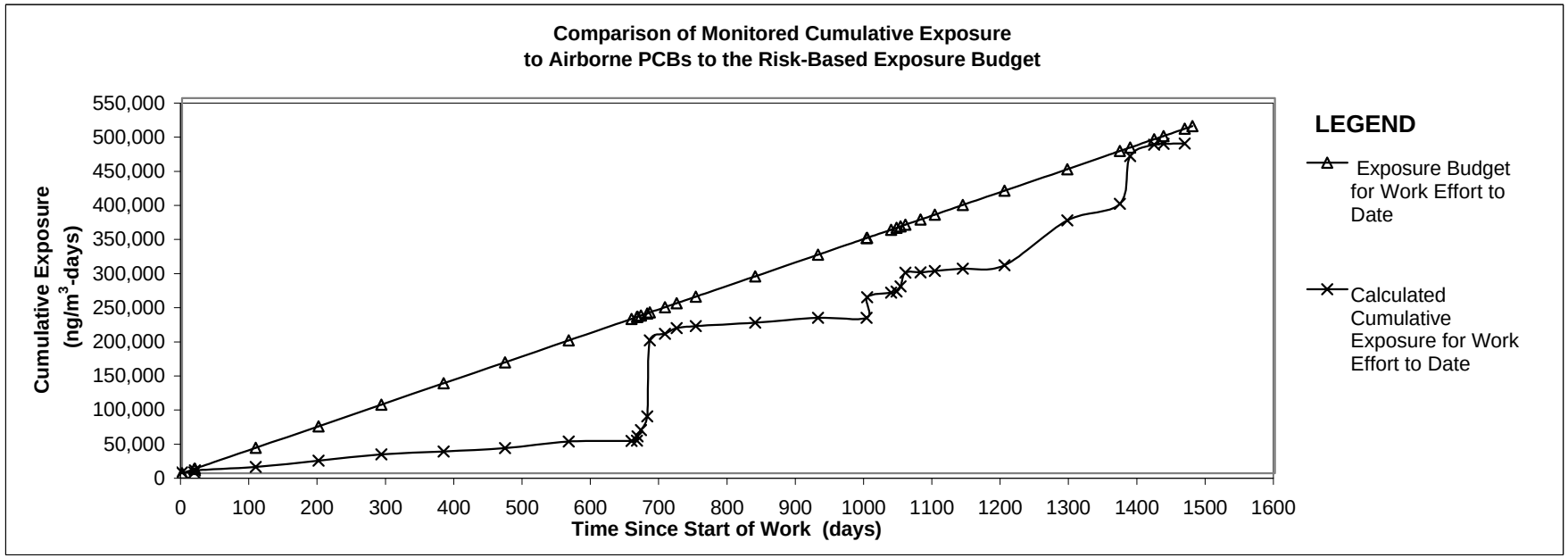
NC = Not Calculated

Shading represents actual sampling data. All other numbers represent projected PCB concentrations for that period.

# Air Sampling Status Report

| | |
|---|---|
| **Sample Station :** | 24 Aerovox |
| **Collection Date:** | 11/30/2006 |
| **Measured PCB Concentration (ng/m$^3$):** | 67 |
| **Exposure Budget Expended During This Period:** | 15.7% |
| **Cumulative Exposure Budget Expended to Date:** | 95.0% |
| **Response Level:** | LOW |
| **Response:** | Evaluate the Cause and Significance of the Triggering Conditions |

**Triggers:**




Notes:

a) 2004 dredge season, including pre- and post-dredging sampling events, were from 667 to 752 days since start of work (September 9 through December 3, 2004).
b) 2005 dredge season, including pre-and post-dredging sampling events, were from 1003 to 1143 days since start of work (August 11 through December 29, 2005).
c) 2006 dredge season, which did not include a pre-dredge sampling event, was from 1388 to 1468 days since start of work (August 16 through October 18, 2006).

# Air Sampling Status Report

New Bedford Harbor Superfund Site

**Station #:** 25 Cliftex
Exposure Budget Slope (EBS) = 202 nanograms per cubic meter per day (ng/m$^3$-day)

**Collection Date:** 11/30/2006

**Construction Activity:** The 2006 dredging activities were initiated on August 16, 2006 and demobilization activities were completed on November 1, 2006.

This report summarizes sample results for the above referenced location and date. The samples were collected on polyurethane foam (PUF)/XAD sample media with a glass fiber pre-filter using a BGI, PQ-1 Low-Vol sampler. The samples were analyzed using high-resolution mass spectrometry (HRGCMS) for total PCB homologue groups. Results are evaluated relative to the Exposure Budget Tracking Process described in the Development of PCB Air Action Levels for the Protection of the Public, New Bedford Superfund Site, August 2001. Cumulative data for this reporting period are included on pages 3 and 4.

**Summary of This Sampling Period:**

The results from the Baseline Ambient Air Sampling program were used to assign background concentrations for each air sampling location. For Station 25 Cliftex, the quarterly average ambient air PCB concentrations were used as a background concentration, which represent the quarterly baseline averages for the period of June 1999 through May 2000. These background concentrations were used for the inactive field times from 11/12/02 through 9/8/04, for the period from 12/4/04 through 8/10/05, and from 12/28/05 through 8/15/06 to close the recent inactive field season. In addition, to better simulate the 2006 dredging season, the ambient air concentrations from the August 31, 2006 sampling event were used to project concentrations detected at Station 25 Cliftex on August 16, 2006 (the start of dredging activities). This better simulates the ambient air PCB concentrations at Station 25 Cliftex during the active dredging season. For the first month of the 2004 and 2005 seasons, the sampling was conducted on a weekly basis.

However, since monthly sampling was conducted in 2006, and the first 2006 sampling event was conducted two weeks after the start of dredging, this new variation of the PETs curve was used. Also, the background concentrations were projected to be at background levels at Station 25 Cliftex on October 19, 2006, which is the day after the 2006 dredging activities were completed. These changes in the background concentrations and associated active dredging concentrations better match the actual 2006 dredging activities. No triggers were identifed, therefore, no action is required.

| | | |
|---|---|---|
| | | |
| | | |
| **Monitoring Station** | | 25 Cliftex |
| **Exposure Budget Slope** | [ng/m$^3$-day] | 202 |
| **Work Start Date** | [mm/dd/yyyy] | 11/12/2002 |
| **Projected Work End Date (Per EPA)** | [mm/dd/yyyy] | 11/10/2028 |
| | | |
| **Occupational Limit Used as Ceiling** | [ng/m$^3$] | 500,000 |
| | | |
| **TEL for Worker in Public** | [ng/m$^3$] | 50,000 |
| **NTEL for Worker in Public** | [ng/m$^3$] | 1,789 |
| **Minimum of TEL/NTEL** | [ng/m$^3$] | 1,789 |
| | | |
| **Baseline Average Concentration** | [ng/m$^3$] | 23 |
| | | |
| Notes: | | |
| TEL - Threshold Effects Exposure Limit | | |
| NTEL - Non-Threshold Effects Exposure Limit | | |
| The EPA periodically assesses this Projected Work End Date, which is subject to change. | | |

# Sample Results, Calculated Budget and Exposure Values
# 25 Cliftex Location

| (A) Event | (B) Sampling Date | (C) Days Since Previous Sampling Event | (D) Work Effort Elapsed Time | (E) Estimated Work Effort Remaning | (F) PCB Concentration Result | (G) Average of Most Recent Two Concentration Results | (H) Weighted Average of Concentration Results | (I) Exposure Budget for the Period | (J) Cumulative Exposure Budget for Work Effort to Date | (K) Measured Exposure During the Period | (L) Calculated Cumulative Exposure for Work Effort to Date | (M) Exposure Budget Expended During the Period | (N) Cumulative Exposure Expended for Work Effort to Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [#] | [month/day/year] | [days] | Runnig Sum of Column (C) to Date [days] | [days] | [ng/m$^3$] | [ng/m$^3$] | Column (L)/Column (D) [ng/m$^3$] | EBS[1] * Column (C) [ng/m$^3$-days] | Sum of Column (I) [ng/m$^3$-days] | Column (G)* Column (C) [ng/m$^3$-days] | Sum of Column (K) [ng/m$^3$-days] | Column (K) /Column (I) [%] | Column (L) /Column (J) [%] |
| 1 | 11/12/2002 | 0 | 0 | 9495 | 22 | 22.00 | 22.00 | NC | NC | NC | NC | NC | NC |
| 2 | 11/30/2002 | 18 | 18 | 9477 | 22 | 22.00 | 22.00 | 3636 | 3636 | 396.0 | 396.0 | 10.9% | 10.9% |
| 3 | 12/1/2002 | 1 | 19 | 9476 | 3.2 | 12.60 | 21.51 | 202 | 3838 | 12.6 | 408.6 | 6.2% | 10.6% |
| 4 | 2/28/2003 | 89 | 108 | 9387 | 3.2 | 3.20 | 6.42 | 17978 | 21816 | 284.8 | 693.4 | 1.6% | 3.2% |
| 5 | 5/31/2003 | 92 | 200 | 9295 | 35 | 19.10 | 12.25 | 18584 | 40400 | 1757.2 | 2,450.6 | 9.5% | 6.1% |
| 6 | 8/31/2003 | 92 | 292 | 9203 | 46 | 40.50 | 21.15 | 18584 | 58984 | 3726.0 | 6,176.6 | 20.0% | 10.5% |
| 7 | 11/30/2003 | 91 | 383 | 9112 | 22 | 34.00 | 24.21 | 18382 | 77366 | 3094.0 | 9,270.6 | 16.8% | 12.0% |
| 8 | 2/28/2004 | 90 | 473 | 9022 | 3.2 | 12.60 | 22.00 | 18180 | 95546 | 1134.0 | 10,404.6 | 6.2% | 10.9% |
| 9 | 5/31/2004 | 93 | 566 | 8929 | 35 | 19.10 | 21.52 | 18786 | 114332 | 1776.3 | 12,180.9 | 9.5% | 10.7% |
| 10 | 8/31/2004 | 92 | 658 | 8837 | 46 | 40.50 | 24.17 | 18584 | 132916 | 3726.0 | 15,906.9 | 20.0% | 12.0% |
| 11 | 9/8/2004 | 8 | 666 | 8829 | 22 | 34.00 | 24.29 | 1616 | 134532 | 272.0 | 16,178.9 | 16.8% | 12.0% |
| 12 | 9/9/2004 | 1 | 667 | 8828 | 167 | 94.50 | 24.40 | 202 | 134734 | 94.5 | 16,273.4 | 46.8% | 12.1% |
| 13 | 9/14/2004 | 5 | 672 | 8823 | 229 | 198.00 | 25.69 | 1010 | 135744 | 990.0 | 17,263.4 | 98.0% | 12.7% |
| 14 | 9/23/2004 | 9 | 681 | 8814 | 97 | 163.00 | 27.50 | 1818 | 137562 | 1467.0 | 18,730.4 | 80.7% | 13.6% |
| 15 | 9/28/2004 | 5 | 686 | 8809 | 423 | 260.00 | 29.20 | 1010 | 138572 | 1300.0 | 20,030.4 | 128.7% | 14.5% |
| 16 | 10/19/2004 | 21 | 707 | 8788 | 259 | 341.00 | 38.46 | 4242 | 142814 | 7161.0 | 27,191.4 | 168.8% | 19.0% |
| 17 | 11/15/2004 | 27 | 734 | 8761 | 61 | 160.00 | 42.93 | 5454 | 148268 | 4320.0 | 31,511.4 | 79.2% | 21.3% |
| 18 | 12/3/2004 | 18 | 752 | 8743 | 27 | 44.00 | 42.96 | 3636 | 151904 | 792.0 | 32,303.4 | 21.8% | 21.3% |
| 19 | 2/28/2005 | 87 | 839 | 8656 | 3.2 | 15.10 | 40.07 | 17574 | 169478 | 1313.7 | 33,617.1 | 7.5% | 19.8% |
| 20 | 5/31/2005 | 92 | 931 | 8564 | 35 | 19.10 | 38.00 | 18584 | 188062 | 1757.2 | 35,374.3 | 9.5% | 18.8% |
| 21 | 8/10/2005 | 71 | 1002 | 8493 | 46 | 40.50 | 38.17 | 14342 | 202404 | 2875.5 | 38,249.8 | 20.0% | 18.9% |
| 22 | 8/11/2005 | 1 | 1003 | 8492 | 103 | 74.50 | 38.21 | 202 | 202606 | 74.5 | 38,324.3 | 36.9% | 18.9% |
| 23 | 9/15/2005 | 35 | 1038 | 8457 | 58.2 | 80.60 | 39.64 | 7070 | 209676 | 2821.0 | 41,145.3 | 39.9% | 19.6% |
| 24 | 9/23/2005 | 8 | 1046 | 8449 | 35.2 | 46.70 | 39.69 | 1616 | 211292 | 373.6 | 41,518.9 | 23.1% | 19.7% |
| 25 | 9/29/2005 | 6 | 1052 | 8443 | 104 | 69.60 | 39.86 | 1212 | 212504 | 417.6 | 41,936.5 | 34.5% | 19.7% |
| 26 | 10/6/2005 | 7 | 1059 | 8436 | 251 | 177.50 | 40.77 | 1414 | 213918 | 1242.5 | 43,179.0 | 87.9% | 20.2% |
| 27 | 11/18/2005 | 43 | 1102 | 8393 | 0.12 | 125.56 | 44.08 | 8686 | 222604 | 5399.1 | 48,578.1 | 62.2% | 21.8% |
| 28 | 12/29/2005 | 41 | 1143 | 8352 | 10.9 | 5.51 | 42.70 | 8282 | 230886 | 225.9 | 48,804.0 | 2.7% | 21.1% |
| 29 | 2/28/2006 | 61 | 1204 | 8291 | 3.2 | 7.05 | 40.89 | 12322 | 243208 | 430.1 | 49,234.0 | 3.5% | 20.2% |
| 30 | 5/31/2006 | 92 | 1296 | 8199 | 35 | 19.10 | 39.35 | 18584 | 261792 | 1757.2 | 50,991.2 | 9.5% | 19.5% |
| 31 | 8/16/2006 | 77 | 1373 | 8122 | 176 | 105.50 | 43.06 | 15554 | 277346 | 8123.5 | 59,114.7 | 52.2% | 21.3% |
| 32 | 8/31/2006 | 15 | 1388 | 8107 | 176 | 176.00 | 44.49 | 3030 | 280376 | 2640.0 | 61,754.7 | 87.1% | 22.0% |
| 33 | 10/5/2006 | 35 | 1423 | 8072 | 451 | 313.50 | 51.11 | 7070 | 287446 | 10972.5 | 72,727.2 | 155.2% | 25.3% |
| 34 | 10/19/2006 | 14 | 1437 | 8058 | 0.14 | 225.57 | 52.81 | 2828 | 290274 | 3158.0 | 75,885.2 | 111.7% | 26.1% |
| 35 | 11/19/2006 | 31 | 1468 | 8027 | 0.14 | 0.14 | 51.70 | 6262 | 296536 | 4.3 | 75,889.6 | 0.1% | 25.6% |
| 36 | 11/30/2006 | 11 | 1479 | 8016 | 22 | 11.07 | 51.39 | 2222 | 298758 | 121.8 | 76,011.3 | 5.5% | 25.4% |

**Notes:**

[1]EBS: Exposure Budget Slope= ng/m$^3$-day (nanograms per cubic meter per day)

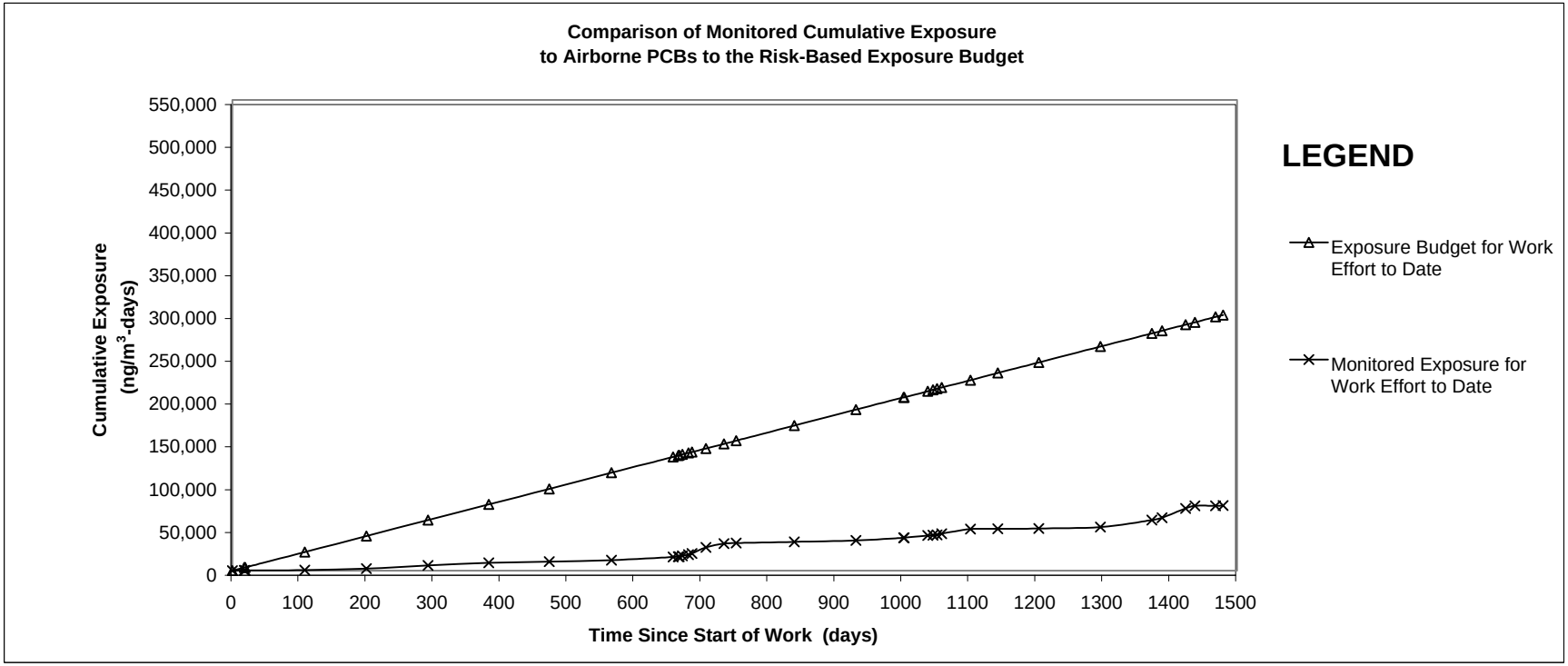
NC = Not Calculated

Shading represents actual sampling data. All other numbers represent projected PCB concentrations for that period.

# Air Sampling Status Report

| | |
|---|---|
| **Sample Station :** | 25 Cliftex |
| **Collection Date:** | 11/30/2006 |
| **Measured PCB Concentration (ng/m$^3$):** | 22 |
| **Exposure Budget Expended During This Period:** | 5.5% |
| **Cumulative Exposure Budget Expended to Date:** | 25.4% |
| **Response Level:** | No Triggers Identified |
| **Response:** | No Response Necessary |

**Triggers:**




Notes:
a) 2004 dredge season, including pre- and post-dredging sampling events, were from 667 to 752 days since start of work (September 9 through December 3, 2004).
b) 2005 dredge season, including pre- and post-dredging sampling events, were from 1003 to 1143 days since start of work (August 11 through December 29, 2005).
c) 2006 dredge season, which did not include a pre-dredge sampling event, was from 1388 to 1468 days since start of work (August 16 through October 18, 2006).

# Air Sampling Status Report

New Bedford Harbor Superfund Site

**Station #:** 46 Coffin Ave

Exposure Budget Slope (EBS) = 202 nanograms per cubic meter per day (ng/$m^3$-day)

**Collection Date:** 11/30/2006

**Construction Activity:** The 2006 dredging activities were initiated on August 16, 2005 and demobilization activities were completed on November 1, 2006.

This report summarizes sample results for the above referenced location and date. The samples were collected on polyurethane foam (PUF)/XAD sample media with a glass fiber pre-filter using a BGI, PQ-1 Low-Vol sampler. The samples were analyzed using high-resolution mass spectrometry (HRGCMS) for total PCB homologue groups. Results are evaluated relative to the Exposure Budget Tracking Process described in the Development of PCB Air Action Levels for the Protection of the Public, New Bedford Superfund Site, August 2001. Cumulative data for this reporting period are included on pages 3 and 4.

**Summary of This Sampling Period:**

The results from the Baseline Ambient Air Sampling program were used to assign background concentrations for each air sampling location. For Station 46 Coffin Ave., the quarterly ambient air PCB concentrations were used for background concentrations. These values represent the quarterly baseline averages from Stations 21 and 25 - Cliftex, for the period of June 1999 through May 2000. These background concentrations were used for the inactive field times from 11/12/02 through 9/8/04, for the period from 12/4/04 through 8/10/05, and from 12/28/05 through 8/15/06 to close the inactive field season. In addition, to better simulate the 2006 dredging season, the ambient air concentrations from the August 31, 2006 sampling event were used to project concentrations detected at Station 46 Coffin Ave on August 16, 2006 (the start of dredging activities). This better simulates the ambient air PCB concentrations at Station 46 Coffin Ave during the active dredging season. For the first month of the 2004 and 2005 seasons, the sampling was conducted on a weekly basis.

However, since monthly sampling was conducted in 2006, and the first 2006 sampling event was conducted two weeks after the start of dredging, this new variation of the PETs curve was used. Also, the background concentrations were projected to be at background levels at Station 46 Coffin Ave on October 19, 2006, which is the day after the 2006 dredging activities were completed. These changes in the background concentrations and associated active dredging concentrations better match the actual 2006 dredging activities. No triggers were identified, therefore, no action is required.

| | | |
|---|---|---|
| | | |
| | | |
| **Monitoring Station** | | 46 Coffin Ave |
| **Exposure Budget Slope** | [ng/m$^3$-day] | 202 |
| **Work Start Date** | [mm/dd/yyyy] | 11/12/2002 |
| **Projected Work End Date (Per EPA)** | [mm/dd/yyyy] | 11/10/2028 |
| | | |
| **Occupational Limit Used as Ceiling** | [ng/m$^3$] | 500,000 |
| | | |
| **TEL for Worker in Public** | [ng/m$^3$] | 50,000 |
| **NTEL for Worker in Public** | [ng/m$^3$] | 1,789 |
| **Minimum of TEL/NTEL** | [ng/m$^3$] | 1,789 |
| | | |
| **Baseline Average Concentration** | [ng/m$^3$] | 26.1 |
| | | |
| | | |
| Notes: | | |
| TEL - Threshold Effects Exposure Limit | | |
| NTEL - Non-Threshold Effects Exposure Limit | | |
| The EPA periodically assesses this Projected Work End Date, which is subject to change. | | |

# Sample Results, Calculated Budget and Exposure Values
# 46 Coffin Avenue

| (A) Event | (B) Sampling Date | (C) Days Since Previous Sampling Event | (D) Work Effort Elapsed Time | (E) Estimated Work Effort Remaning | (F) PCB Concentration Result | (G) Average of Most Recent Two Concentration Results | (H) Weighted Average of Concentration Results | (I) Exposure Budget for the Period | (J) Cumulative Exposure Budget for Work Effort to Date | (K) Measured Exposure During the Period | (L) Calculated Cumulative Exposure for Work Effort to Date | (M) Exposure Budget Expended During the Period | (N) Cumulative Exposure Expended for Work Effort to Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [#] | [month/day/year] | [days] | Runnig Sum of Column (C) to Date [days] | [days] | [ng/m$^3$] | [ng/m$^3$] | Column (L)/Column (D) [ng/m$^3$] | EBS[1] * Column (C) [ng/m$^3$-days] | Sum of Column (I) [ng/m$^3$-days] | Column (G)* Column (C) [ng/m$^3$-days] | Sum of Column (K) [ng/m$^3$-days] | Column (K) /Column (I) [%] | Column (L) /Column (J) [%] |
| 1 | 11/12/2002 | 0 | 0 | 9495 | 22 | 22.00 | 22.00 | NC | NC | NC | NC | NC | NC |
| 2 | 11/30/2002 | 18 | 18 | 9477 | 22 | 22.00 | 22.00 | 3636 | 3636 | 396.0 | 396.0 | 10.9% | 10.9% |
| 3 | 12/1/2002 | 1 | 19 | 9476 | 3.2 | 12.60 | 21.51 | 202 | 3838 | 12.6 | 408.6 | 6.2% | 10.6% |
| 4 | 2/28/2003 | 89 | 108 | 9387 | 3.2 | 3.20 | 6.42 | 17978 | 21816 | 284.8 | 693.4 | 1.6% | 3.2% |
| 5 | 5/31/2003 | 92 | 200 | 9295 | 35 | 19.10 | 12.25 | 18584 | 40400 | 1757.2 | 2,450.6 | 9.5% | 6.1% |
| 6 | 8/31/2003 | 92 | 292 | 9203 | 46 | 40.50 | 21.15 | 18584 | 58984 | 3726.0 | 6,176.6 | 20.0% | 10.5% |
| 7 | 11/30/2003 | 91 | 383 | 9112 | 22 | 34.00 | 24.21 | 18382 | 77366 | 3094.0 | 9,270.6 | 16.8% | 12.0% |
| 8 | 2/28/2004 | 90 | 473 | 9022 | 3.2 | 12.60 | 22.00 | 18180 | 95546 | 1134.0 | 10,404.6 | 6.2% | 10.9% |
| 9 | 5/31/2004 | 93 | 566 | 8929 | 35 | 19.10 | 21.52 | 18786 | 114332 | 1776.3 | 12,180.9 | 9.5% | 10.7% |
| 10 | 8/31/2004 | 92 | 658 | 8837 | 46 | 40.50 | 24.17 | 18584 | 132916 | 3726.0 | 15,906.9 | 20.0% | 12.0% |
| 11 | 9/8/2004 | 8 | 666 | 8829 | 22 | 34.00 | 24.29 | 1616 | 134532 | 272.0 | 16,178.9 | 16.8% | 12.0% |
| 12 | 9/9/2004 | 1 | 667 | 8828 | 145 | 83.50 | 24.38 | 202 | 134734 | 83.5 | 16,262.4 | 41.3% | 12.1% |
| 13 | 9/14/2004 | 5 | 672 | 8823 | 48 | 96.50 | 24.92 | 1010 | 135744 | 482.5 | 16,744.9 | 47.8% | 12.3% |
| 14 | 9/23/2004 | 9 | 681 | 8814 | 5 | 26.50 | 24.94 | 1818 | 137562 | 238.5 | 16,983.4 | 13.1% | 12.3% |
| 15 | 9/28/2004 | 5 | 686 | 8809 | 342 | 173.50 | 26.02 | 1010 | 138572 | 867.5 | 17,850.9 | 85.9% | 12.9% |
| 16 | 10/19/2004 | 21 | 707 | 8788 | 36 | 189.00 | 30.86 | 4242 | 142814 | 3969.0 | 21,819.9 | 93.6% | 15.3% |
| 17 | 11/5/2004 | 17 | 724 | 8771 | 80 | 58.00 | 31.50 | 3434 | 146248 | 986.0 | 22,805.9 | 28.7% | 15.6% |
| 18 | 12/3/2004 | 28 | 752 | 8743 | 15 | 47.50 | 32.10 | 5656 | 151904 | 1330.0 | 24,135.9 | 23.5% | 15.9% |
| 19 | 2/28/2005 | 87 | 839 | 8656 | 3.2 | 9.10 | 29.71 | 17574 | 169478 | 791.7 | 24,927.6 | 4.5% | 14.7% |
| 20 | 5/31/2005 | 92 | 931 | 8564 | 35 | 19.10 | 28.66 | 18584 | 188062 | 1757.2 | 26,684.8 | 9.5% | 14.2% |
| 21 | 8/10/2005 | 71 | 1002 | 8493 | 46 | 40.50 | 29.50 | 14342 | 202404 | 2875.5 | 29,560.3 | 20.0% | 14.6% |
| 22 | 8/11/2005 | 1 | 1003 | 8492 | 37.2 | 41.60 | 29.51 | 202 | 202606 | 41.6 | 29,601.9 | 20.6% | 14.6% |
| 23 | 9/15/2005 | 35 | 1038 | 8457 | 99.8 | 68.50 | 30.83 | 7070 | 209676 | 2397.5 | 31,999.4 | 33.9% | 15.3% |
| 24 | 9/23/2005 | 8 | 1046 | 8449 | 115 | 107.40 | 31.41 | 1616 | 211292 | 859.2 | 32,858.6 | 53.2% | 15.6% |
| 25 | 9/29/2005 | 6 | 1052 | 8443 | 124 | 119.50 | 31.92 | 1212 | 212504 | 717.0 | 33,575.6 | 59.2% | 15.8% |
| 26 | 10/6/2005 | 7 | 1059 | 8436 | 130 | 127.00 | 32.54 | 1414 | 213918 | 889.0 | 34,464.6 | 62.9% | 16.1% |
| 27 | 10/28/2005 | 22 | 1081 | 8414 | 2.06 | 66.03 | 33.23 | 4444 | 218362 | 1452.7 | 35,917.3 | 32.7% | 16.4% |
| 28 | 11/18/2005 | 21 | 1102 | 8393 | 0.14 | 1.10 | 32.61 | 4242 | 222604 | 23.1 | 35,940.4 | 0.5% | 16.1% |
| 29 | 12/29/2005 | 41 | 1143 | 8352 | 65.1 | 32.62 | 32.61 | 8282 | 230886 | 1337.4 | 37,277.8 | 16.1% | 16.1% |
| 30 | 2/28/2006 | 61 | 1204 | 8291 | 3.2 | 34.15 | 32.69 | 12322 | 243208 | 2083.2 | 39,360.9 | 16.9% | 16.2% |
| 31 | 5/31/2006 | 92 | 1296 | 8199 | 35 | 19.10 | 31.73 | 18584 | 261792 | 1757.2 | 41,118.1 | 9.5% | 15.7% |
| 32 | 8/16/2006 | 77 | 1373 | 8122 | 70.4 | 52.70 | 32.90 | 15554 | 277346 | 4057.9 | 45,176.0 | 26.1% | 16.3% |
| 33 | 8/31/2006 | 15 | 1388 | 8107 | 70.4 | 70.40 | 33.31 | 3030 | 280376 | 1056.0 | 46,232.0 | 34.9% | 16.5% |
| 34 | 10/5/2006 | 35 | 1423 | 8072 | 106 | 88.20 | 34.66 | 7070 | 287446 | 3087.0 | 49,319.0 | 43.7% | 17.2% |
| 35 | 10/19/2006 | 14 | 1437 | 8058 | 4.05 | 55.03 | 34.86 | 2828 | 290274 | 770.4 | 50,089.4 | 27.2% | 17.3% |
| 36 | 11/19/2006 | 31 | 1468 | 8027 | 4.05 | 4.05 | 34.21 | 6262 | 296536 | 125.6 | 50,214.9 | 2.0% | 16.9% |
| 37 | 11/30/2006 | 11 | 1479 | 8016 | 22 | 13.03 | 34.05 | 2222 | 298758 | 143.3 | 50,358.2 | 6.4% | 16.9% |

**Notes:**

[1]EBS: Exposure Budget Slope= ng/m$^3$-day (nanograms per cubic meter per day)

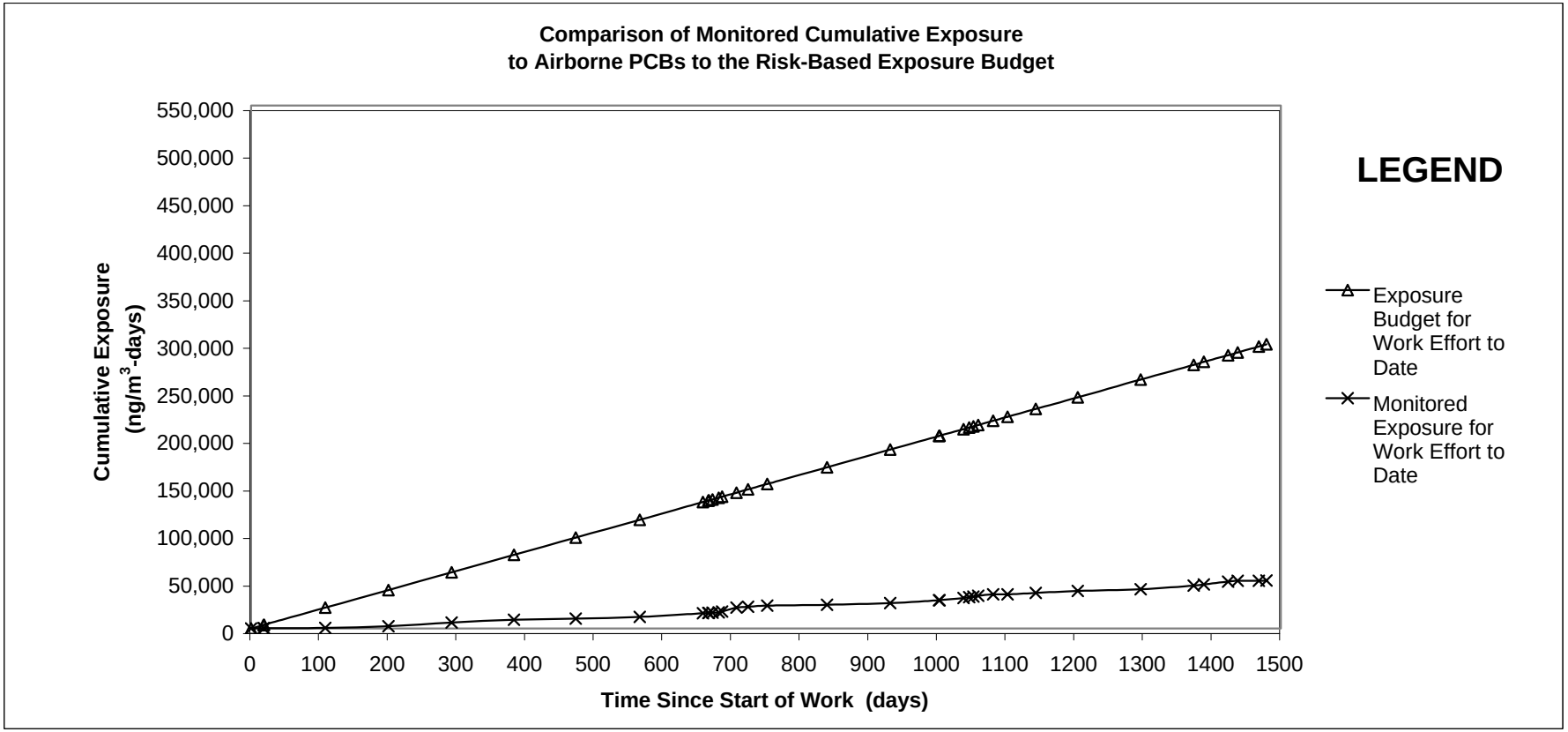
NC = Not Calculated

Shading represents actual sampling data. All other numbers represent projected PCB concentrations for that period.

# Air Sampling Status Report

| | |
|---|---|
| **Sample Station :** | 46 Coffin Ave |
| **Collection Date:** | 11/30/2006 |
| **Measured PCB Concentration (ng/m$^3$):** | 22 |
| **Exposure Budget Expended During This Period:** | 6.4% |
| **Cumulative Exposure Budget Expended to Date:** | 16.9% |
| **Response Level:** | No Triggers Identified |
| **Response:** | No Response Necessary |

**Triggers:**




Notes:

a) 2004 dredge season, including pre- and post-dredging sampling events, were from 667 to 752 days since start of work (September 9 through December 3, 2004).
b) 2005 dredge season, including pre- and post-dredging sampling events, were from 1003 to 1143 days since start of work (August 11 through December 29, 2005.
c) 2006 dredge season, which did not include a pre-dredge sampling event, was from 1388 to 1468 days since start of work (August 16 through October 18, 2006).

# Air Sampling Status Report

New Bedford Harbor Superfund Site

**Station #:** 49 Area C Downwind
Exposure Budget Slope (EBS) = 202 nanograms per cubic meter per day (ng/m$^3$-day)

**Collection Date:** 11/30/2006

**Construction Activity:** The 2006 dredging activities were initiated on August 16, 2006 and demobilization activities were completed on November 1, 2006.

This report summarizes sample results for the above referenced location and date. The samples were collected on polyurethane foam (PUF)/XAD sample media with a glass fiber pre-filter using a BGI, PQ-1 Low-Vol sampler. The samples were analyzed using high-resolution mass spectrometry (HRGCMS) for total PCB homologue groups. Results are evaluated relative to the Exposure Budget Tracking Process described in the Development of PCB Air Action Levels for the Protection of the Public, New Bedford Superfund Site, August 2001. Cumulative data for this reporting period are included on pages 3 and 4.

The results from the Baseline Ambient Air Sampling program were used to assign background concentrations for each air sampling location. For Station 49 Area C Downwind, the quarterly average ambient air PCB concentrations were used for background. These represent the average quarterly baseline averages from Station 26 - Sawyer Street, for the period of June 1999 through May 2000. These background concentrations were used for the inactive field times from 11/12/02 through 9/8/04, for the period from 12/4/04 through 8/10/05, and from 12/28/05 through 8/15/06 to close the recent inactive field season. For the December 2005 sampling event, based on wind direction for that day, the results from Station 47 were used to represent Area C downgradient air PCB concentrations. For the August 2006 sampling event, based on wind direction for that day, Station 47 sampling results were used to represent Area C downgradient PCB concentrations. In addition, to better simulate the 2006 dredging season, the ambient air concentrations from the August 31, 2006 sampling event were used to project concentrations detected at Station 49 on August 16, 2006 (the start of dredging activities).

For the first month of the 2004 and 2005 seasons, the sampling was conducted on a weekly basis. This better simulates the ambient air PCB concentrations at Station 49 during the active dredging season. For the first month of the 2004 and 2005 seasons, the sampling was conducted on a weekly basis. However, since monthly sampling was conducted in 2006, and the first 2006 sampling event was conducted two weeks after the start of dredging, this new variation of the PETs curve was used. Also, the background concentrations were projected to be at background levels at Station 49 Area C on October 19, 2006, which is the day after the 2006 dredging activities were completed. These changes in the background concentrations and associated active dredging concentrations better match the actual 2006 dredging activities. No triggers were identified, therefore, no action is required.

| | | |
|---|---|---|
| | | |
| | | |
| **Monitoring Station** | | 49 Area C Downwind |
| **Exposure Budget Slope** | [ng/m$^3$-day] | 202 |
| **Work Start Date** | [mm/dd/yyyy] | 11/12/2002 |
| **Projected Work End Date (Per EPA)** | [mm/dd/yyyy] | 11/10/2028 |
| | | |
| **Occupational Limit Used as Ceiling** | [ng/m$^3$] | 500,000 |
| | | |
| **TEL for Worker in Public** | [ng/m$^3$] | 50,000 |
| **NTEL for Worker in Public** | [ng/m$^3$] | 1,789 |
| **Minimum of TEL/NTEL** | [ng/m$^3$] | 1,789 |
| | | |
| **Baseline Average Concentration** | [ng/m$^3$] | 56 |
| | | |
| | | |
| Notes: | | |
| TEL - Threshold Effects Exposure Limit | | |
| NTEL - Non-Threshold Effects Exposure Limit | | |
| The EPA periodically assesses this Projected Work End Date, which is subject to change. | | |

# Sample Results, Calculated Budget and Exposure Values
## 49 Area C Downwind

| (A) Event | (B) Sampling Date | (C) Days Since Previous Sampling Event | (D) Work Effort Elapsed Time | (E) Estimated Work Effort Remaning | (F) PCB Concentration Result | (G) Average of Most Recent Two Concentration Results | (H) Weighted Average of Concentration Results | (I) Exposure Budget for the Period | (J) Cumulative Exposure Budget for Work Effort to Date | (K) Measured Exposure During the Period | (L) Calculated Cumulative Exposure for Work Effort to Date | (M) Exposure Budget Expended During the Period | (N) Cumulative Exposure Expended for Work Effort to Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [#] | [month/day/year] | [days] | Runnig Sum of Column (C) to Date [days] | [days] | [ng/m$^3$] | [ng/m$^3$] | Column (L)/Column (D) [ng/m$^3$] | EBS[1] * Column (C) [ng/m$^3$-days] | Sum of Column (I) [ng/m$^3$-days] | Column (G)* Column (C) [ng/m$^3$-days] | Sum of Column (K) [ng/m$^3$-days] | Column (K) /Column (I) [%] | Column (L) /Column (J) [%] |
| 1 | 11/12/2002 | 0 | 0 | 9495 | 43 | 43.00 | 43.00 | NC | NC | NC | NC | NC | NC |
| 2 | 11/30/2002 | 18 | 18 | 9477 | 43 | 43.00 | 43.00 | 3636 | 3636 | 774.0 | 774.0 | 21.3% | 21.3% |
| 3 | 12/1/2002 | 1 | 19 | 9476 | 89 | 66.00 | 44.21 | 202 | 3838 | 66.0 | 840.0 | 32.7% | 21.9% |
| 4 | 2/28/2003 | 89 | 108 | 9387 | 89 | 89.00 | 81.12 | 17978 | 21816 | 7921.0 | 8,761.0 | 44.1% | 40.2% |
| 5 | 5/31/2003 | 92 | 200 | 9295 | 61 | 75.00 | 78.31 | 18584 | 40400 | 6900.0 | 15,661.0 | 37.1% | 38.8% |
| 6 | 8/31/2003 | 92 | 292 | 9203 | 33 | 47.00 | 68.44 | 18584 | 58984 | 4324.0 | 19,985.0 | 23.3% | 33.9% |
| 7 | 11/30/2003 | 91 | 383 | 9112 | 43 | 38.00 | 61.21 | 18382 | 77366 | 3458.0 | 23,443.0 | 18.8% | 30.3% |
| 8 | 2/28/2004 | 90 | 473 | 9022 | 89 | 66.00 | 62.12 | 18180 | 95546 | 5940.0 | 29,383.0 | 32.7% | 30.8% |
| 9 | 5/31/2004 | 93 | 566 | 8929 | 61 | 75.00 | 64.24 | 18786 | 114332 | 6975.0 | 36,358.0 | 37.1% | 31.8% |
| 10 | 8/31/2004 | 92 | 658 | 8837 | 33 | 47.00 | 61.83 | 18584 | 132916 | 4324.0 | 40,682.0 | 23.3% | 30.6% |
| 11 | 9/8/2004 | 8 | 666 | 8829 | 43 | 38.00 | 61.54 | 1616 | 134532 | 304.0 | 40,986.0 | 18.8% | 30.5% |
| 12 | 9/9/2004 | 1 | 667 | 8828 | 56 | 49.50 | 61.52 | 202 | 134734 | 49.5 | 41,035.5 | 24.5% | 30.5% |
| 13 | 9/14/2004 | 5 | 672 | 8823 | 86 | 71.00 | 61.59 | 1010 | 135744 | 355.0 | 41,390.5 | 35.1% | 30.5% |
| 14 | 9/23/2004 | 9 | 681 | 8814 | 17 | 51.50 | 61.46 | 1818 | 137562 | 463.5 | 41,854.0 | 25.5% | 30.4% |
| 15 | 9/28/2004 | 5 | 686 | 8809 | 207 | 112.00 | 61.83 | 1010 | 138572 | 560.0 | 42,414.0 | 55.4% | 30.6% |
| 16 | 10/19/2004 | 21 | 707 | 8788 | 66 | 136.50 | 64.05 | 4242 | 142814 | 2866.5 | 45,280.5 | 67.6% | 31.7% |
| 17 | 11/5/2004 | 17 | 724 | 8771 | 28 | 47.00 | 63.65 | 3434 | 146248 | 799.0 | 46,079.5 | 23.3% | 31.5% |
| 18 | 12/3/2004 | 28 | 752 | 8743 | 26 | 27.00 | 62.28 | 5656 | 151904 | 756.0 | 46,835.5 | 13.4% | 30.8% |
| 19 | 2/28/2005 | 87 | 839 | 8656 | 89 | 57.50 | 61.79 | 17574 | 169478 | 5002.5 | 51,838.0 | 28.5% | 30.6% |
| 20 | 5/31/2005 | 92 | 931 | 8564 | 61 | 75.00 | 63.09 | 18584 | 188062 | 6900.0 | 58,738.0 | 37.1% | 31.2% |
| 21 | 8/10/2005 | 71 | 1002 | 8493 | 33 | 47.00 | 61.95 | 14342 | 202404 | 3337.0 | 62,075.0 | 23.3% | 30.7% |
| 22 | 8/11/2005 | 1 | 1003 | 8492 | 29.3 | 31.15 | 61.92 | 202 | 202606 | 31.2 | 62,106.2 | 15.4% | 30.7% |
| 23 | 9/15/2005 | 35 | 1038 | 8457 | 83.6 | 56.45 | 61.74 | 7070 | 209676 | 1975.8 | 64,081.9 | 27.9% | 30.6% |
| 24 | 9/23/2005 | 8 | 1046 | 8449 | 97 | 90.30 | 61.95 | 1616 | 211292 | 722.4 | 64,804.3 | 44.7% | 30.7% |
| 25 | 9/29/2005 | 6 | 1052 | 8443 | 44.2 | 70.60 | 62.00 | 1212 | 212504 | 423.6 | 65,227.9 | 35.0% | 30.7% |
| 26 | 10/6/2005 | 7 | 1059 | 8436 | 114 | 79.10 | 62.12 | 1414 | 213918 | 553.7 | 65,781.6 | 39.2% | 30.8% |
| 27 | 10/28/2005 | 22 | 1081 | 8414 | 12.3 | 63.15 | 62.14 | 4444 | 218362 | 1389.3 | 67,170.9 | 31.3% | 30.8% |
| 28 | 11/18/2005 | 21 | 1102 | 8393 | 3.71 | 8.01 | 61.11 | 4242 | 222604 | 168.1 | 67,339.0 | 4.0% | 30.3% |
| 29 | 12/29/2005 | 41 | 1143 | 8352 | 7.42 | 5.57 | 59.11 | 8282 | 230886 | 228.2 | 67,567.2 | 2.8% | 29.3% |
| 30 | 2/28/2006 | 61 | 1204 | 8291 | 89 | 48.21 | 58.56 | 12322 | 243208 | 2940.8 | 70,508.0 | 23.9% | 29.0% |
| 31 | 5/31/2006 | 92 | 1296 | 8199 | 61 | 75.00 | 59.73 | 18584 | 261792 | 6900.0 | 77,408.0 | 37.1% | 29.6% |
| 32 | 8/16/2006 | 77 | 1373 | 8122 | 39.2 | 50.10 | 59.19 | 15554 | 277346 | 3857.7 | 81,265.7 | 24.8% | 29.3% |
| 33 | 8/31/2006 | 15 | 1388 | 8107 | 39.2 | 39.20 | 58.97 | 3030 | 280376 | 588.0 | 81,853.7 | 19.4% | 29.2% |
| 34 | 10/5/2006 | 35 | 1423 | 8072 | 157 | 98.10 | 59.93 | 7070 | 287446 | 3433.5 | 85,287.2 | 48.6% | 29.7% |
| 35 | 10/19/2006 | 14 | 1437 | 8058 | 81.4 | 119.20 | 60.51 | 2828 | 290274 | 1668.8 | 86,956.0 | 59.0% | 30.0% |
| 36 | 11/19/2006 | 31 | 1468 | 8027 | 81.4 | 81.40 | 60.95 | 6262 | 296536 | 2523.4 | 89,479.4 | 40.3% | 30.2% |
| 37 | 11/30/2006 | 11 | 1479 | 8016 | 43 | 62.20 | 60.96 | 2222 | 298758 | 684.2 | 90,163.6 | 30.8% | 30.2% |

**Notes:**

[1]EBS: Exposure Budget Slope= ng/m$^3$-day (nanograms per cubic meter per day)

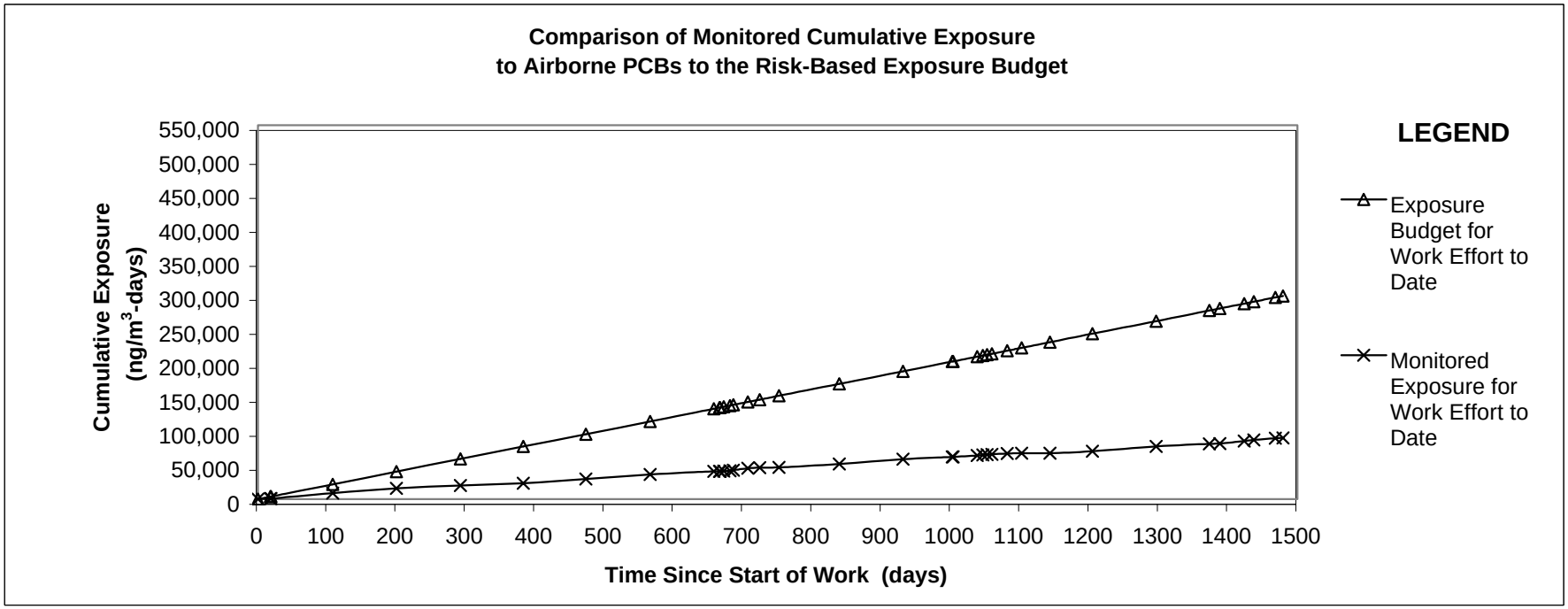
NC = Not Calculated

Shading represents actual sampling data. All other numbers represent projected PCB concentrations for that period.

# Air Sampling Status Report

| | |
|---|---|
| **Sample Station :** | 49 Area C Downwind |
| **Collection Date:** | 11/30/2006 |
| **Measured PCB Concentration (ng/m$^3$):** | 43 |
| **Exposure Budget Expended During This Period:** | 30.8% |
| **Cumulative Exposure Budget Expended to Date:** | 30.2% |
| **Response Level:** | No Triggers Identified |
| **Response:** | No Response Necessary |

**Triggers:**




Notes:

a) 2004 dredge season, including pre- and post-dredging sampling events, were from 667 to 752 days since start of work (September 9 through December 3, 2004).
b) 2005 dredge season, including pre- and post-dredging sampling events, were from 1003 to 1143 days since start of work (August 11 through December 29, 2005).
c) 2006 dredge season, which did not include a pre-dredge sampling event, was from 1388 to 1468 days since start of work (August 16 through October 18, 2006).

# Air Sampling Status Report

New Bedford Harbor Superfund Site

**Station #:** 50 Area D Downwind
Exposure Budget Slope (EBS) = 344 nanograms per cubic meter per day (ng/m$^3$-day)

**Collection Date:** 11/30/2006

**Construction Activity:** The October 28, 2005 sample was broken during analysis. The 2006 dredging activities were initiated on August 16, 2006 and the demobilization activities were completed on November 1, 2006.

This report summarizes sample results for the above referenced location and date. The samples were collected on polyurethane foam (PUF)/XAD sample media with a glass fiber pre-filter using a BGI, PQ-1 Low-Vol sampler. The samples were analyzed using high-resolution mass spectrometry (HRGCMS) for total PCB homologue groups. Results are evaluated relative to the Exposure Budget Tracking Process described in the Development of PCB Air Action Levels for the Protection of the Public, New Bedford Superfund Site, August 2001. Cumulative data for this reporting period are included on pages 3 and 4.

**Summary of This Sampling Period:**

The results from the Baseline Ambient Air Sampling program were used to assign background concentrations for each air sampling location. However, for the August 2005 background sampling event, based on wind direction for that day, the results from Station 52 were used to represent Area D downgradient air PCB concentrations. For Station 50 Area D, the average quarterly air PCB concentrations were used as background concentrations, which represent the average quarterly from Station 21 - New Bedford Welding, for the period of June 1999 through May 2000. These background concentrations were used for the inactive field times from 11/12/02 through 9/8/04, for the period from 12/4/04 through 8/10/05, and from 12/28/05 through 8/15/06 to close the recent inactive field season. For the December 2005 post-dredging sampling event, based on wind direction for the day, the results from Station 51 were used to represent Area D downgradient air PCB concentrations. For the August 2006, and October 2006 sampling events, based on the wind direction for those days, Station 51 and Station 52 sampling events were used to represent Area D downgradient air PCB concentrations, respectively for those days.

In addition, to better simulate the 2006 dredging season, the ambient air concentrations from the August 31, 2006 sampling event were used to project concentrations detected at Station 50 on August 16, 2006 (the start of dredging activities). For the first month of the 2004 and 2005 seasons, the sampling was conducted on a weekly basis. This better simulates the ambient air PCB concentrations at Station 50 during the active dredging season. For the first month of the 2004 and 2005 seasons, the sampling was conducted on a weekly basis. However, since monthly sampling was conducted in 2006, and the first 2006 sampling event was conducted two weeks after the start of dredging, this new variation of the PETs curve was used. Also, the background concentrations were projected to be at background levels at Station 50 Area D on October 19, 2006, which is the day after the 2006 dredging activities were completed. These changes in the background concentrations and associated active dredging concentrations better match the actual 2006 dredging activities. No triggers were identified, therefore, no action is necessary.

| | | |
|---|---|---|
| | | |
| | | |
| **Monitoring Station** | | 50 Area D Downwind |
| **Exposure Budget Slope** | [ng/m$^3$-day] | 344 |
| **Work Start Date** | [mm/dd/yyyy] | 11/12/2002 |
| **Projected Work End Date (Per EPA)** | [mm/dd/yyyy] | 11/10/2028 |
| | | |
| **Occupational Limit Used as Ceiling** | [ng/m$^3$] | 500,000 |
| | | |
| **TEL for Worker in Public** | [ng/m$^3$] | 50,000 |
| **NTEL for Worker in Public** | [ng/m$^3$] | 1,789 |
| **Minimum of TEL/NTEL** | [ng/m$^3$] | 1,789 |
| | | |
| **Baseline Average Concentration** | [ng/m$^3$] | 16.7 |
| | | |
| | | |
| Notes: | | |
| TEL - Threshold Effects Exposure Limit | | |
| NTEL - Non-Threshold Effects Exposure Limit | | |
| The EPA periodically assesses this Projected Work End Date, which is subject to change. | | |

# Sample Results, Calculated Budget and Exposure Values
# 50 Area D Downwind

| (A) Event | (B) Sampling Date | (C) Days Since Previous Sampling Event | (D) Work Effort Elapsed Time | (E) Estimated Work Effort Remaning | (F) PCB Concentration Result | (G) Average of Most Recent Two Concentration Results | (H) Weighted Average of Concentration Results | (I) Exposure Budget for the Period | (J) Cumulative Exposure Budget for Work Effort to Date | (K) Measured Exposure During the Period | (L) Calculated Cumulative Exposure for Work Effort to Date | (M) Exposure Budget Expended During the Period | (N) Cumulative Exposure Expended for Work Effort to Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [#] | [month/day/year] | [days] | Runnig Sum of Column (C) to Date [days] | [days] | [ng/m$^3$] | [ng/m$^3$] | Column (L)/Column (D) [ng/m$^3$] | EBS[1] * Column (C) [ng/m$^3$-days] | Sum of Column (I) [ng/m$^3$-days] | Column (G)* Column (C) [ng/m$^3$-days] | Sum of Column (K) [ng/m$^3$-days] | Column (K) /Column (I) [%] | Column (L) /Column (J) [%] |
| 1 | 11/12/2002 | 0 | 0 | 9495 | 5.9 | 5.90 | 5.90 | NC | NC | NC | NC | NC | NC |
| 2 | 11/30/2002 | 18 | 18 | 9477 | 5.9 | 5.90 | 5.90 | 6192 | 6192 | 106.2 | 106.2 | 1.7% | 1.7% |
| 3 | 12/1/2002 | 1 | 19 | 9476 | 3.4 | 4.65 | 5.83 | 344 | 6536 | 4.7 | 110.9 | 1.4% | 1.7% |
| 4 | 2/28/2003 | 89 | 108 | 9387 | 3.4 | 3.40 | 3.83 | 30616 | 37152 | 302.6 | 413.5 | 1.0% | 1.1% |
| 5 | 5/31/2003 | 92 | 200 | 9295 | 6.8 | 5.10 | 4.41 | 31648 | 68800 | 469.2 | 882.7 | 1.5% | 1.3% |
| 6 | 8/31/2003 | 92 | 292 | 9203 | 12 | 9.40 | 5.98 | 31648 | 100448 | 864.8 | 1,747.5 | 2.7% | 1.7% |
| 7 | 11/30/2003 | 91 | 383 | 9112 | 5.9 | 8.95 | 6.69 | 31304 | 131752 | 814.5 | 2,561.9 | 2.6% | 1.9% |
| 8 | 2/28/2004 | 90 | 473 | 9022 | 3.4 | 4.65 | 6.30 | 30960 | 162712 | 418.5 | 2,980.4 | 1.4% | 1.8% |
| 9 | 5/31/2004 | 93 | 566 | 8929 | 6.8 | 5.10 | 6.10 | 31992 | 194704 | 474.3 | 3,454.7 | 1.5% | 1.8% |
| 10 | 8/31/2004 | 92 | 658 | 8837 | 12 | 9.40 | 6.56 | 31648 | 226352 | 864.8 | 4,319.5 | 2.7% | 1.9% |
| 11 | 9/8/2004 | 8 | 666 | 8829 | 5.9 | 8.95 | 6.59 | 2752 | 229104 | 71.6 | 4,391.1 | 2.6% | 1.9% |
| 12 | 9/9/2004 | 1 | 667 | 8828 | 20 | 12.95 | 6.60 | 344 | 229448 | 13.0 | 4,404.1 | 3.8% | 1.9% |
| 13 | 9/14/2004 | 5 | 672 | 8823 | 38 | 29.00 | 6.77 | 1720 | 231168 | 145.0 | 4,549.1 | 8.4% | 2.0% |
| 14 | 9/23/2004 | 9 | 681 | 8814 | 6 | 22.00 | 6.97 | 3096 | 234264 | 198.0 | 4,747.1 | 6.4% | 2.0% |
| 15 | 9/28/2004 | 5 | 686 | 8809 | 80 | 43.00 | 7.23 | 1720 | 235984 | 215.0 | 4,962.1 | 12.5% | 2.1% |
| 16 | 10/19/2004 | 21 | 707 | 8788 | 17 | 48.50 | 8.46 | 7224 | 243208 | 1018.5 | 5,980.6 | 14.1% | 2.5% |
| 17 | 12/3/2004 | 45 | 752 | 8743 | 22 | 19.50 | 9.12 | 15480 | 258688 | 877.5 | 6,858.1 | 5.7% | 2.7% |
| 18 | 2/28/2005 | 87 | 839 | 8656 | 3.4 | 12.70 | 9.49 | 29928 | 288616 | 1104.9 | 7,963.0 | 3.7% | 2.8% |
| 19 | 5/31/2005 | 92 | 931 | 8564 | 6.8 | 5.10 | 9.06 | 31648 | 320264 | 469.2 | 8,432.2 | 1.5% | 2.6% |
| 20 | 8/10/2005 | 71 | 1002 | 8493 | 12 | 9.40 | 9.08 | 24424 | 344688 | 667.4 | 9,099.6 | 2.7% | 2.6% |
| 21 | 8/11/2005 | 1 | 1003 | 8492 | 21.3 | 16.65 | 9.09 | 344 | 345032 | 16.7 | 9,116.2 | 4.8% | 2.6% |
| 22 | 9/15/2005 | 35 | 1038 | 8457 | 0.52 | 10.91 | 9.15 | 12040 | 357072 | 381.9 | 9,498.1 | 3.2% | 2.7% |
| 23 | 9/23/2005 | 8 | 1046 | 8449 | 0.26 | 0.39 | 9.08 | 2752 | 359824 | 3.1 | 9,501.2 | 0.1% | 2.6% |
| 24 | 9/29/2005 | 6 | 1052 | 8443 | 24.2 | 12.23 | 9.10 | 2064 | 361888 | 73.4 | 9,574.6 | 3.6% | 2.6% |
| 25 | 10/6/2005 | 7 | 1059 | 8436 | 81.7 | 52.95 | 9.39 | 2408 | 364296 | 370.7 | 9,945.2 | 15.4% | 2.7% |
| 26 | 10/28/2005 | 22 | 1081 | 8414 | 0.01 | 40.86 | 10.03 | 7568 | 371864 | 898.8 | 10,844.0 | 11.9% | 2.9% |
| 27 | 12/29/2005 | 62 | 1143 | 8352 | 2.18 | 1.10 | 9.55 | 21328 | 393192 | 67.9 | 10,911.9 | 0.3% | 2.8% |
| 28 | 2/28/2006 | 61 | 1204 | 8291 | 3.4 | 2.79 | 9.20 | 20984 | 414176 | 170.2 | 11,082.1 | 0.8% | 2.7% |
| 29 | 5/31/2006 | 92 | 1296 | 8199 | 6.8 | 5.10 | 8.91 | 31648 | 445824 | 469.2 | 11,551.3 | 1.5% | 2.6% |
| 30 | 8/16/2006 | 77 | 1373 | 8122 | 12 | 9.40 | 8.94 | 26488 | 472312 | 723.8 | 12,275.1 | 2.7% | 2.6% |
| 31 | 8/31/2006 | 15 | 1388 | 8107 | 67.3 | 39.65 | 9.27 | 5160 | 477472 | 594.8 | 12,869.8 | 11.5% | 2.7% |
| 32 | 10/5/2006 | 35 | 1423 | 8072 | 197 | 132.15 | 12.29 | 12040 | 489512 | 4625.3 | 17,495.1 | 38.4% | 3.6% |
| 33 | 10/19/2006 | 14 | 1437 | 8058 | 2.6 | 99.80 | 13.15 | 4816 | 494328 | 1397.2 | 18,892.3 | 29.0% | 3.8% |
| 34 | 11/19/2006 | 31 | 1468 | 8027 | 2.6 | 2.60 | 12.92 | 10664 | 504992 | 80.6 | 18,972.9 | 0.8% | 3.8% |
| 35 | 11/30/2006 | 11 | 1479 | 8016 | 5.9 | 4.25 | 12.86 | 3784 | 508776 | 46.8 | 19,019.6 | 1.2% | 3.7% |

**Notes:**

[1]EBS: Exposure Budget Slope= ng/m$^3$-day (nanograms per cubic meter per day)

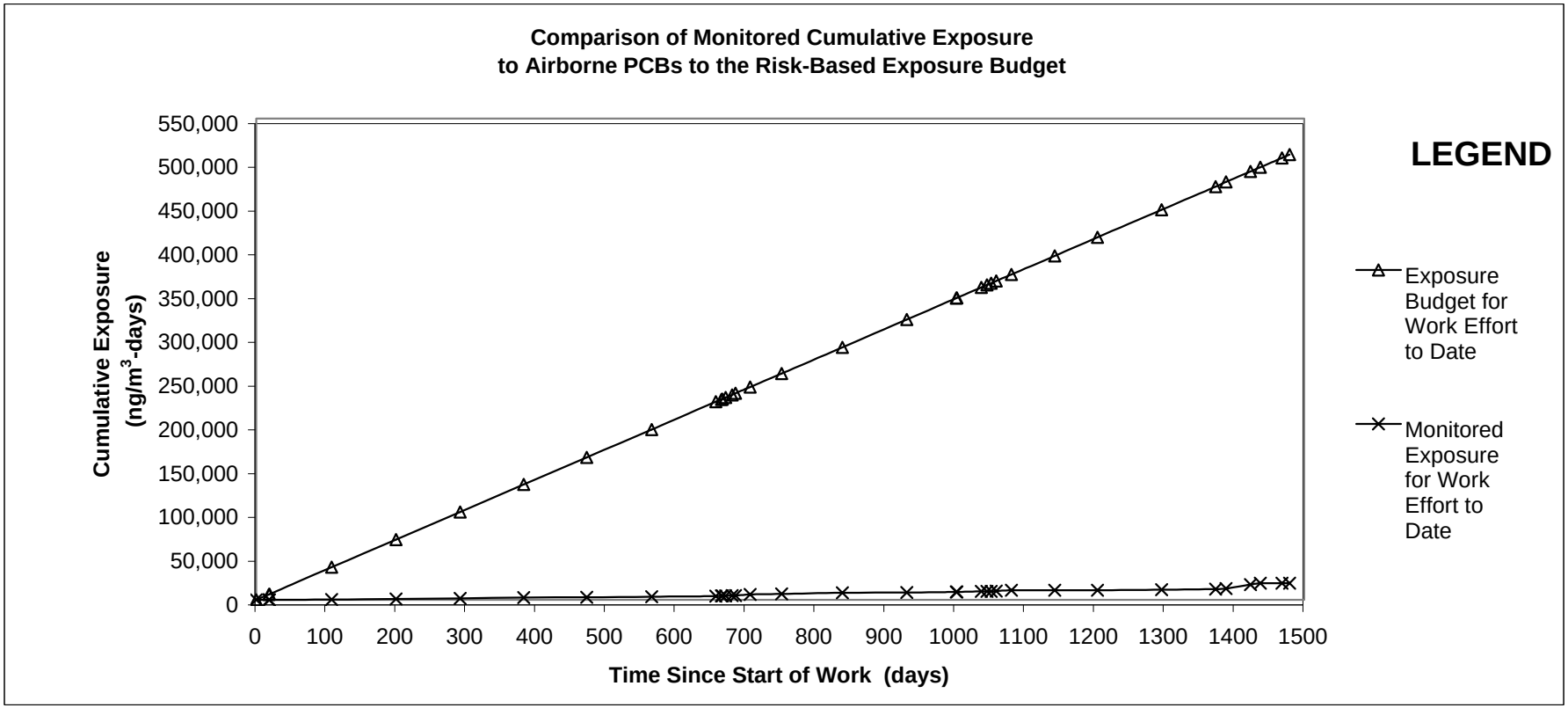
NC = Not Calculated

Shading represents actual sampling data. All other numbers represent projected PCB concentrations for that period.

# Air Sampling Status Report

| | |
|---|---|
| **Sample Station :** | 50 Area D Downwind |
| **Collection Date:** | 11/30/2006 |
| **Measured PCB Concentration (ng/m$^3$):** | 5.9 |
| **Exposure Budget Expended During This Period:** | 1.2% |
| **Cumulative Exposure Budget Expended to Date:** | 3.7% |
| **Response Level:** | No Triggers Identified |
| **Response:** | No Response Necessary |

**Triggers:**




Notes:

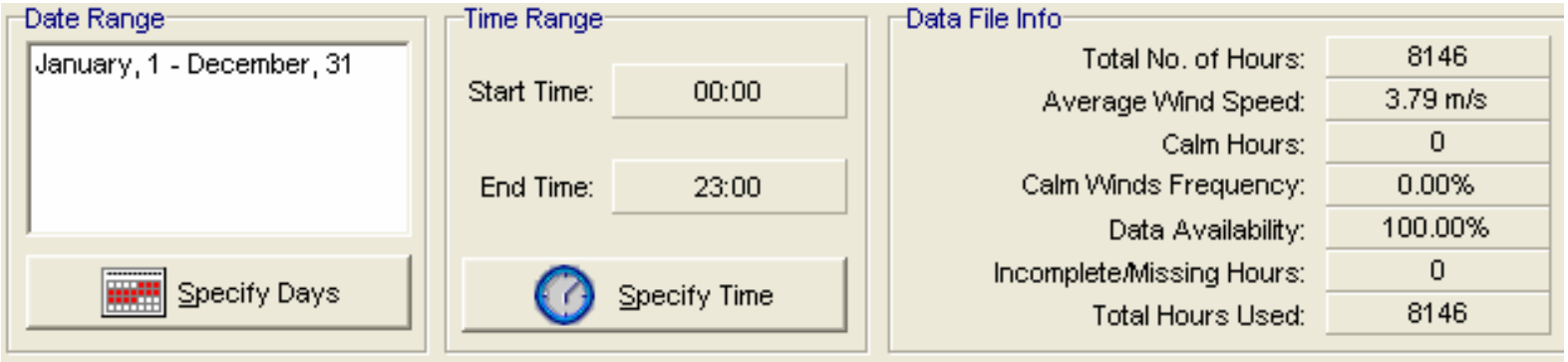
a) 2004 dredge season, including pre- and post-dredging sampling events, were from 667 to 752 days since start of work (September 9 through December 3, 2004).
b) 2005 dredge season, including pre- and post-dredging sampling events, were from 1003 to 1143 days since start of work (August 11 through December 29, 2005).
c) 2006 dredge season, which did not include a pre-dredge sampling event, was from 1388 to 1468 days since start of work (August 16 through October 18, 2006).

# ATTACHMENT F

# 2006 New Bedford Harbor On-Site Climatic Data Survey

# (January 1 – December 31, 2006, Hourly Data)

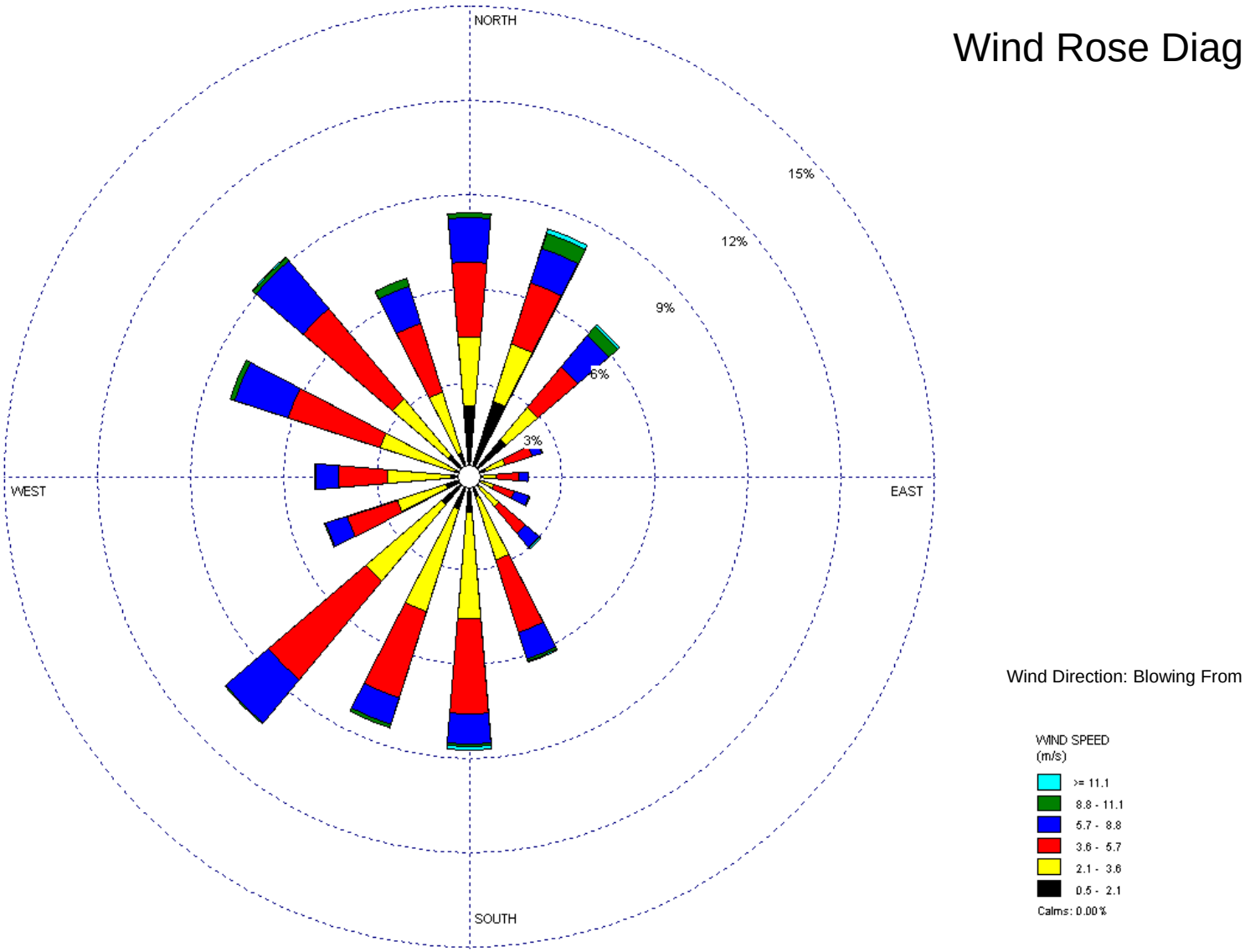
# 2006 New Bedford Harbor On-Site Climatic Data Summary
# (January 1 – December 31, 2006 Hourly Data)




1 m/s (meter per second) = 2.237 mile per hour

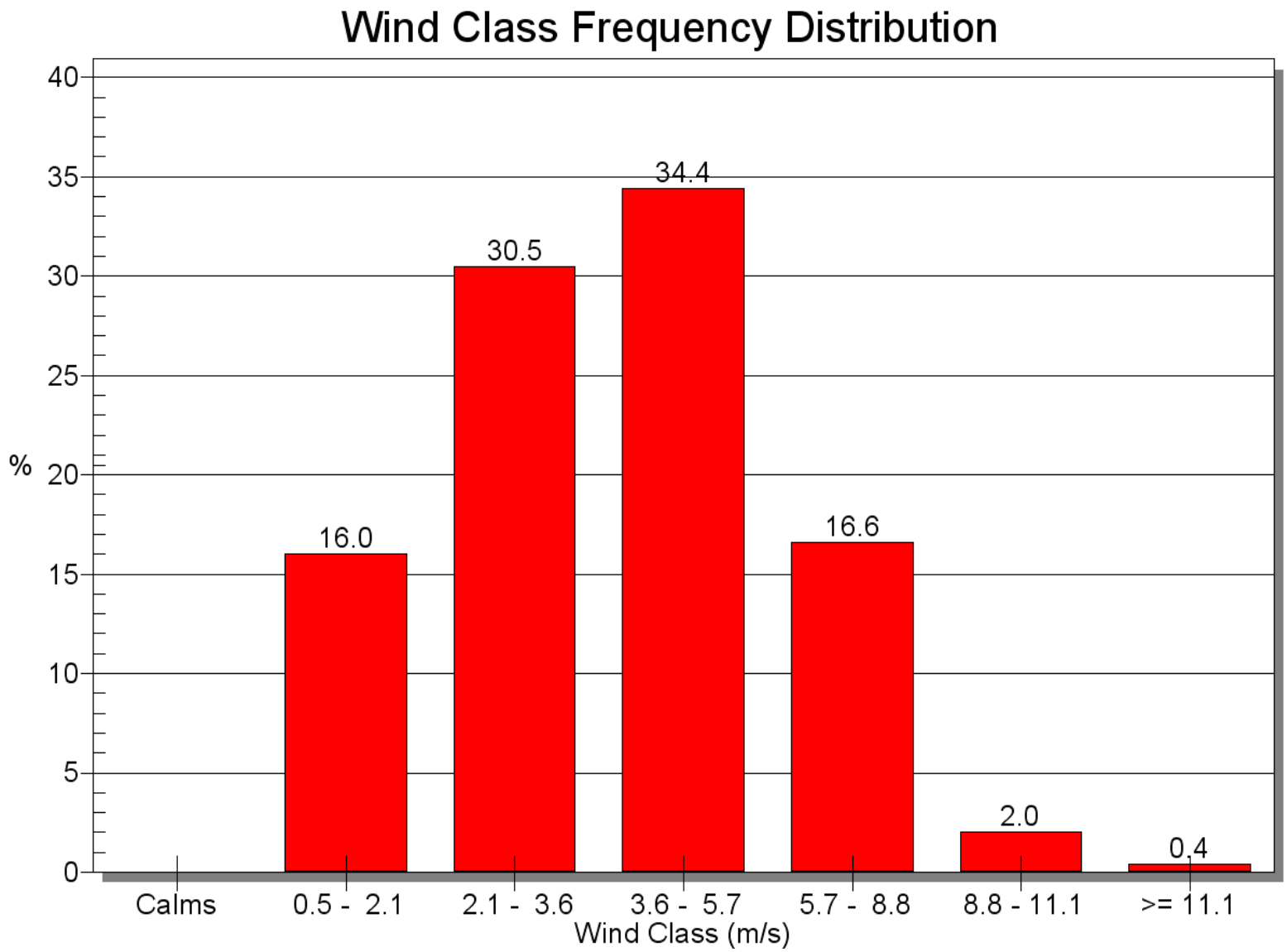
(January 1 – December 31, 2006 Hourly Data)

# Wind Rose Diagram



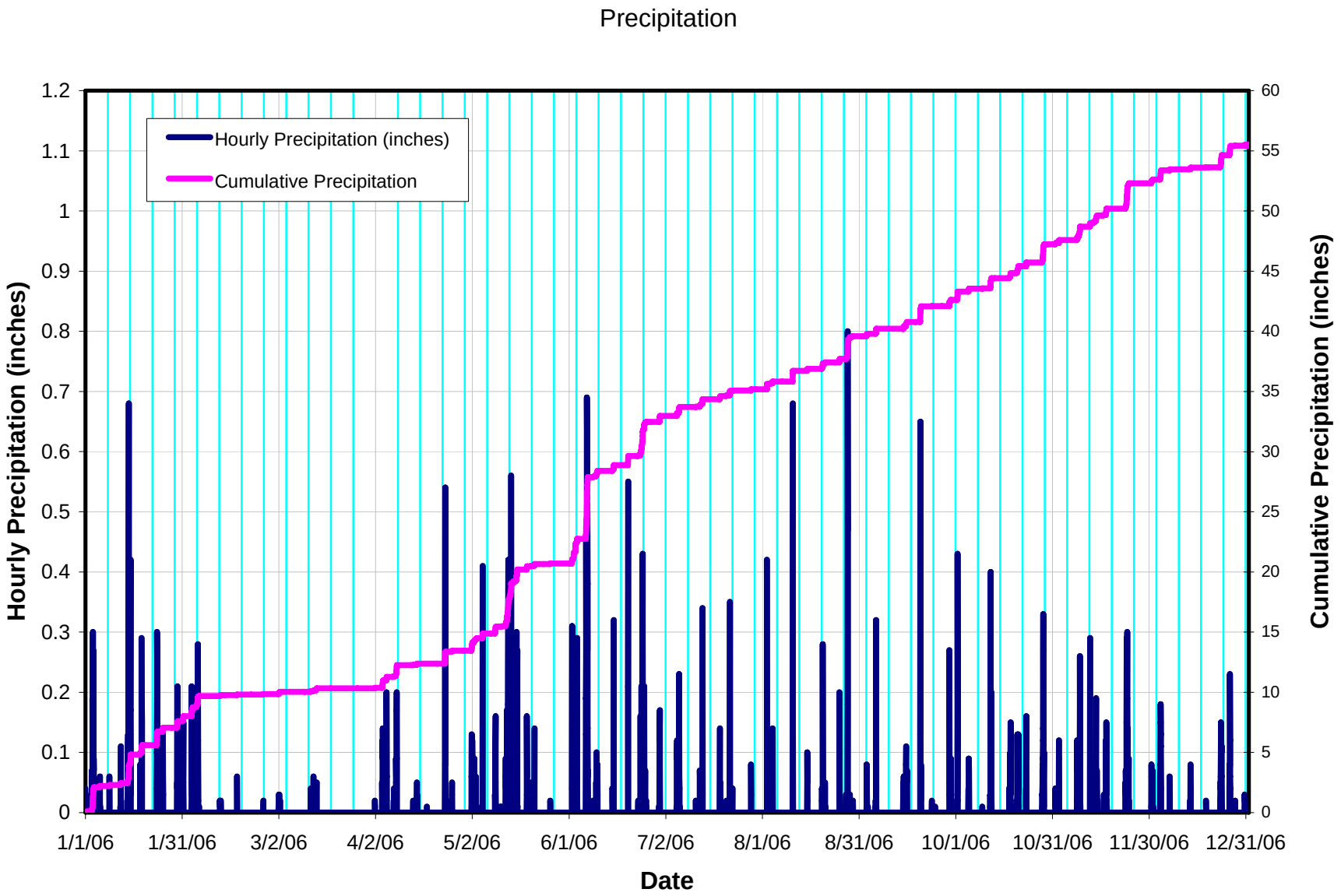

1 m/s (meter per second) = 2.237 miles per hour

(January 1 – December 31, 2006 Hourly Data)



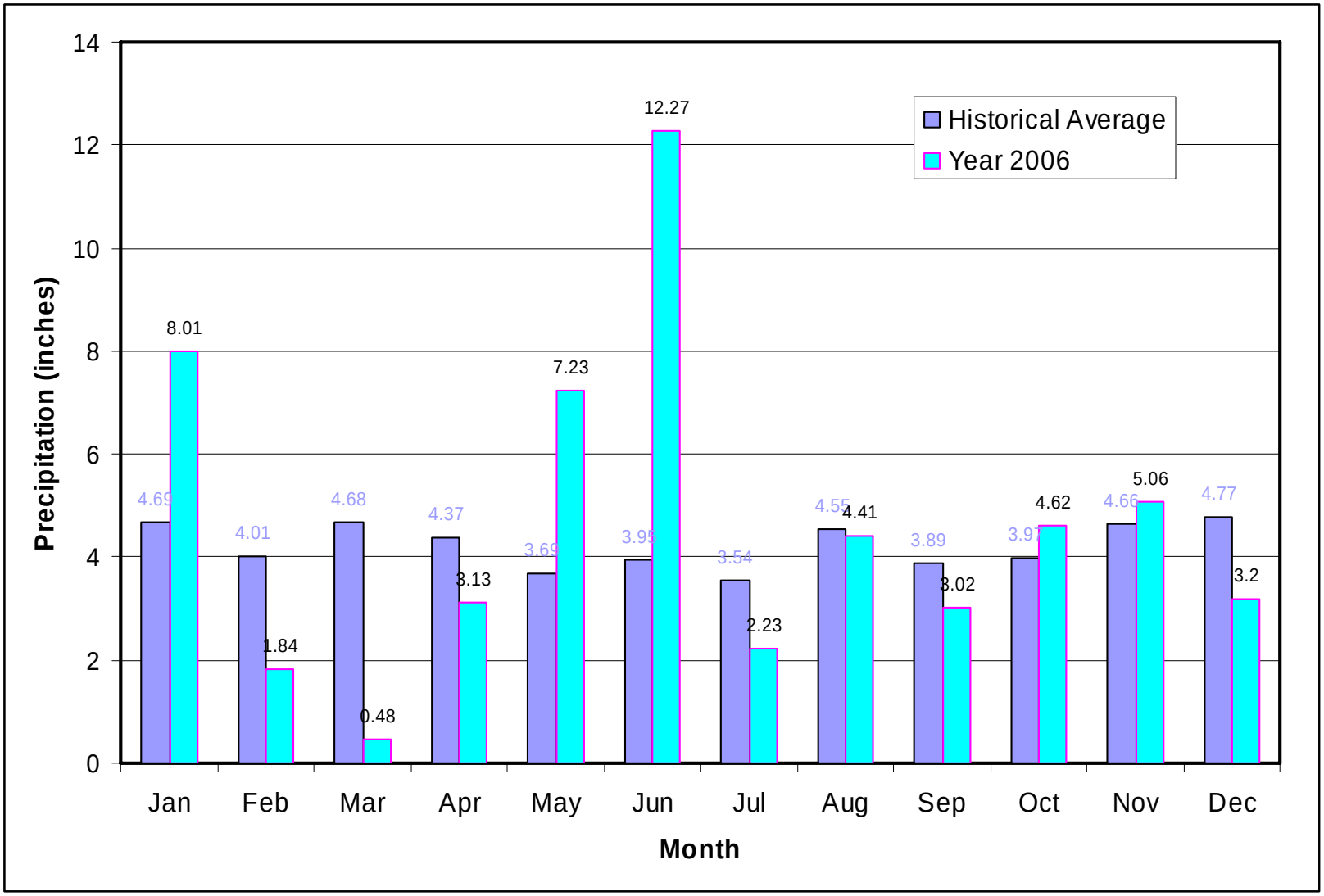

1 m/s (meter per second) = 2.237 miles per hour

# (January 1 – December 31, 2006 Hourly Data)



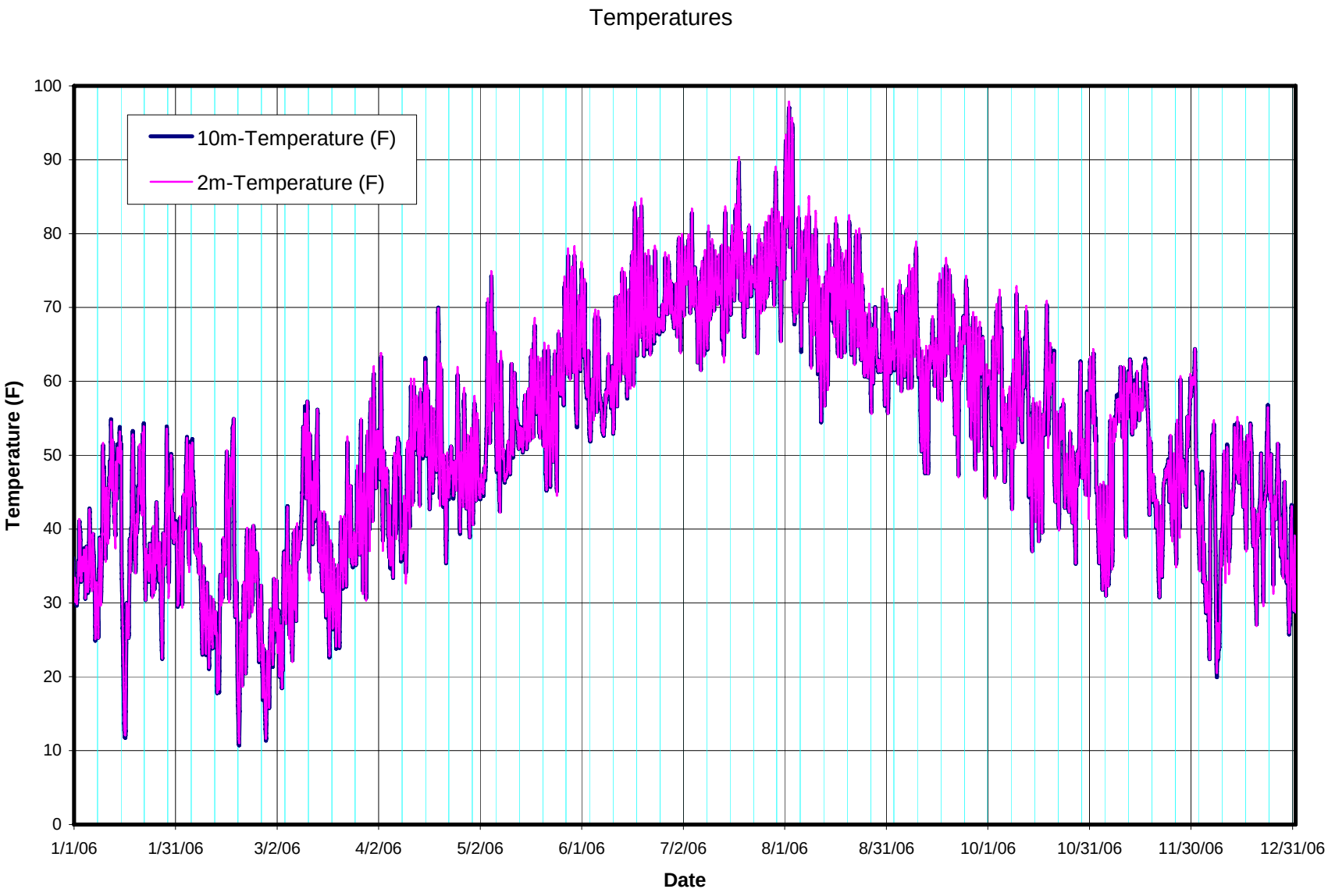

2006 was a slightly wetter year at NBH. The yearly precipitation (55.50 inches) is higher than the historical average (50.77 inches).

(January 1 – December 31, 2006 Hourly Data)



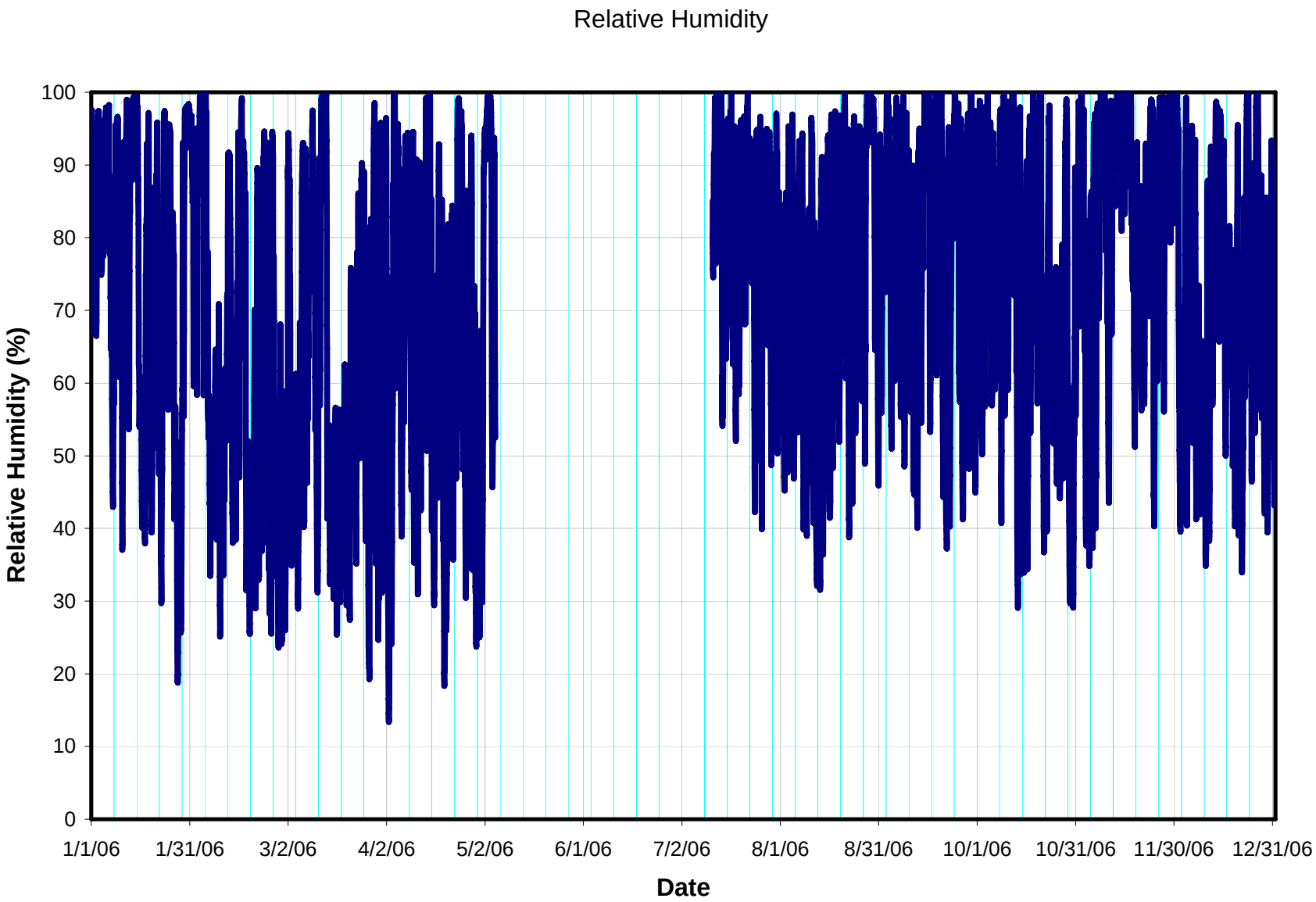

2006 was dryer in Feb-April and wetter in May-June. Precipitation was about normal for the dredging season (Aug-Nov).

# (January 1 – December 31, 2006 Hourly Data)



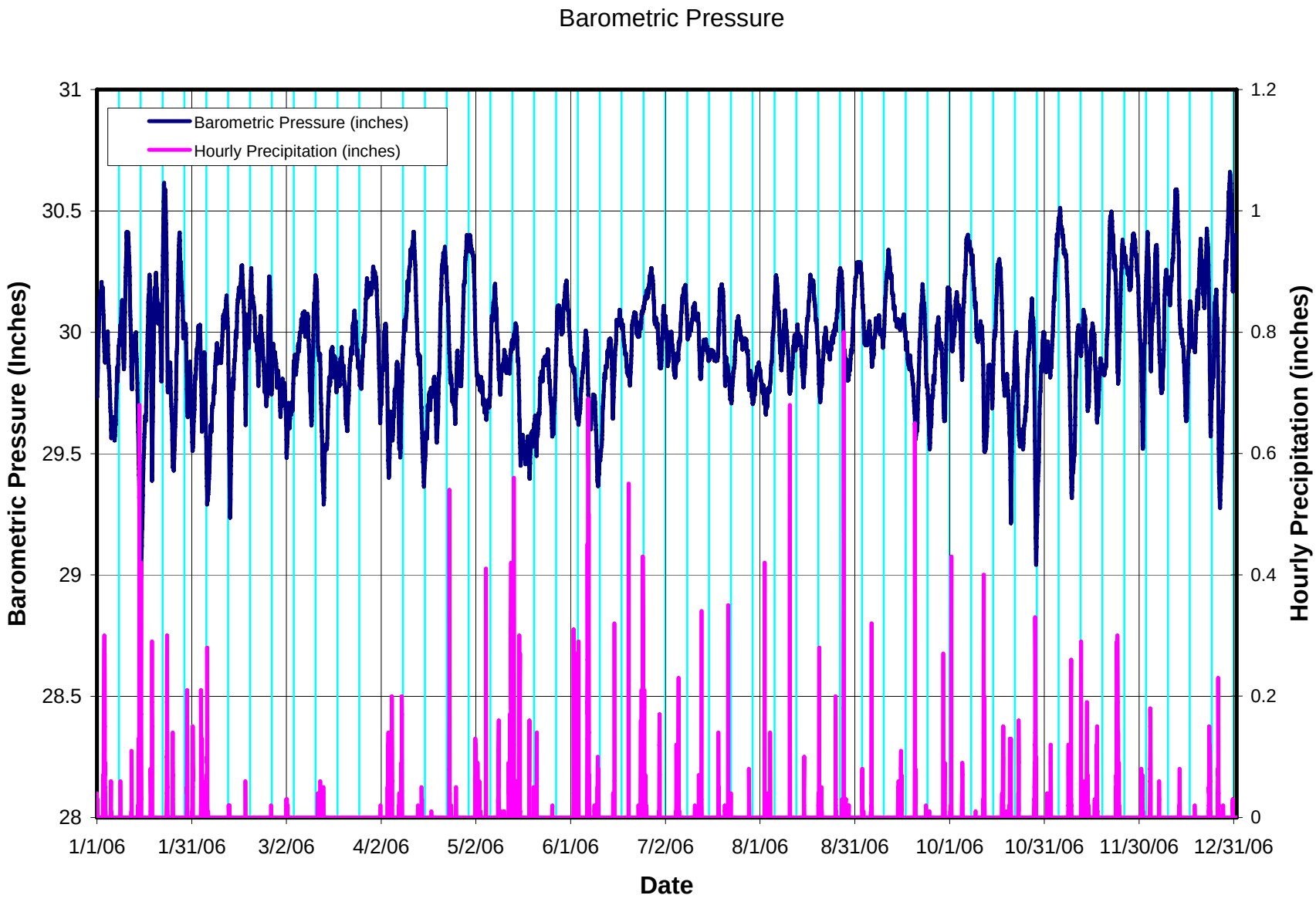

Temperatures recorded at 10m and 2m had a mean difference of 0.097 $^{o}$F ($T\text{-}_{2m} – T\text{-}_{10m}$). The largest difference is 5.6 $^{o}$F.

# (January 1 – December 31, 2006 Hourly Data)



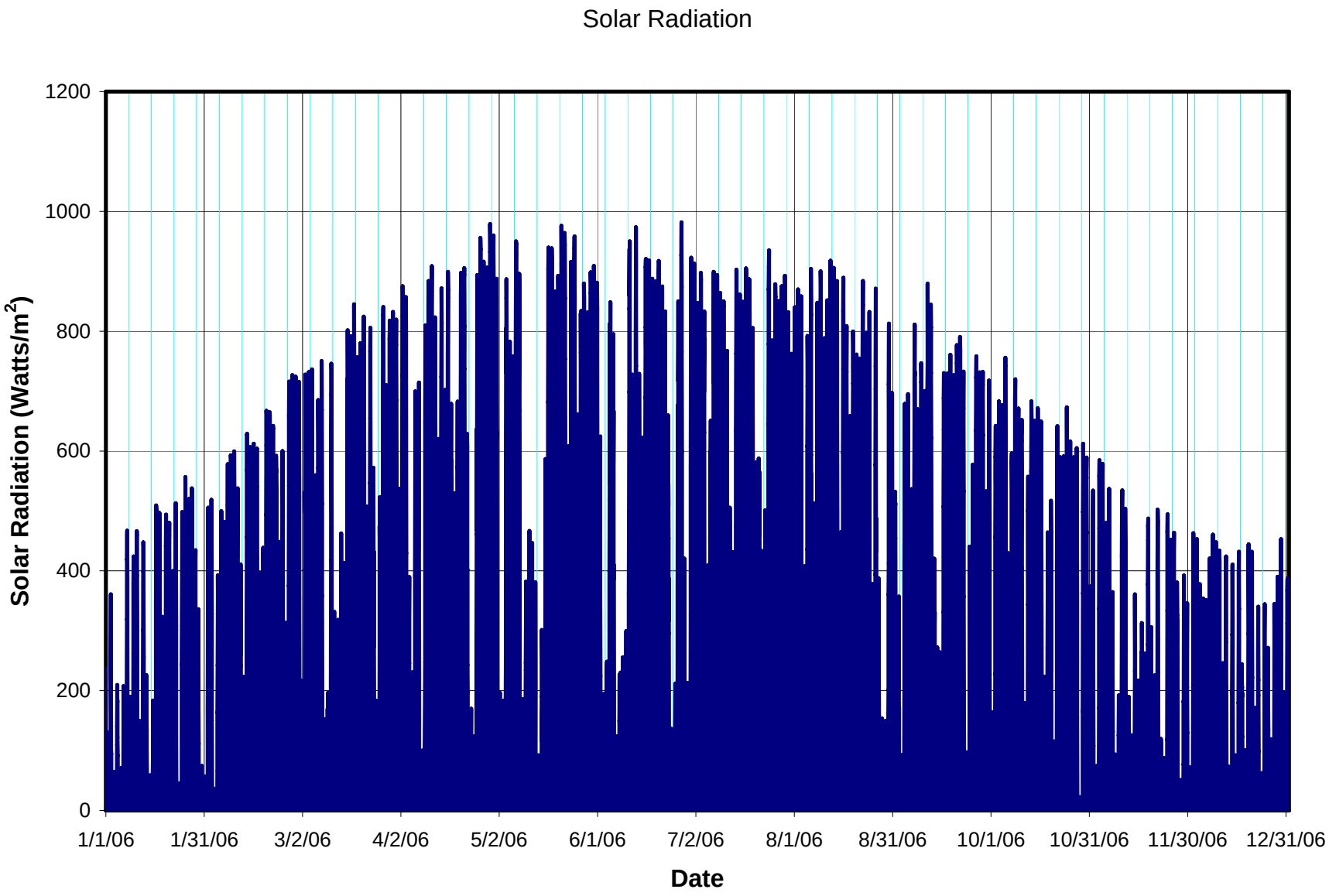

Relative humidity data was not recorded between 5/5 to 7/11/2006 when the recording instrument was repaired offsite.

# (January 1 – December 31, 2006 Hourly Data)




Each precipitation event resulted in a lower barometric pressure reading.

# (January 1 – December 31, 2006 Hourly Data)



# 2006 New Bedford Harbor On-Site Climatic Data Summary
# For the Sampling Periods

First Monthly Sampling Round -
(7am August 30 – 4pm August 31, 2006)

Second Monthly Sampling Round -
(7am October 4 – 5pm October 6, 2006)

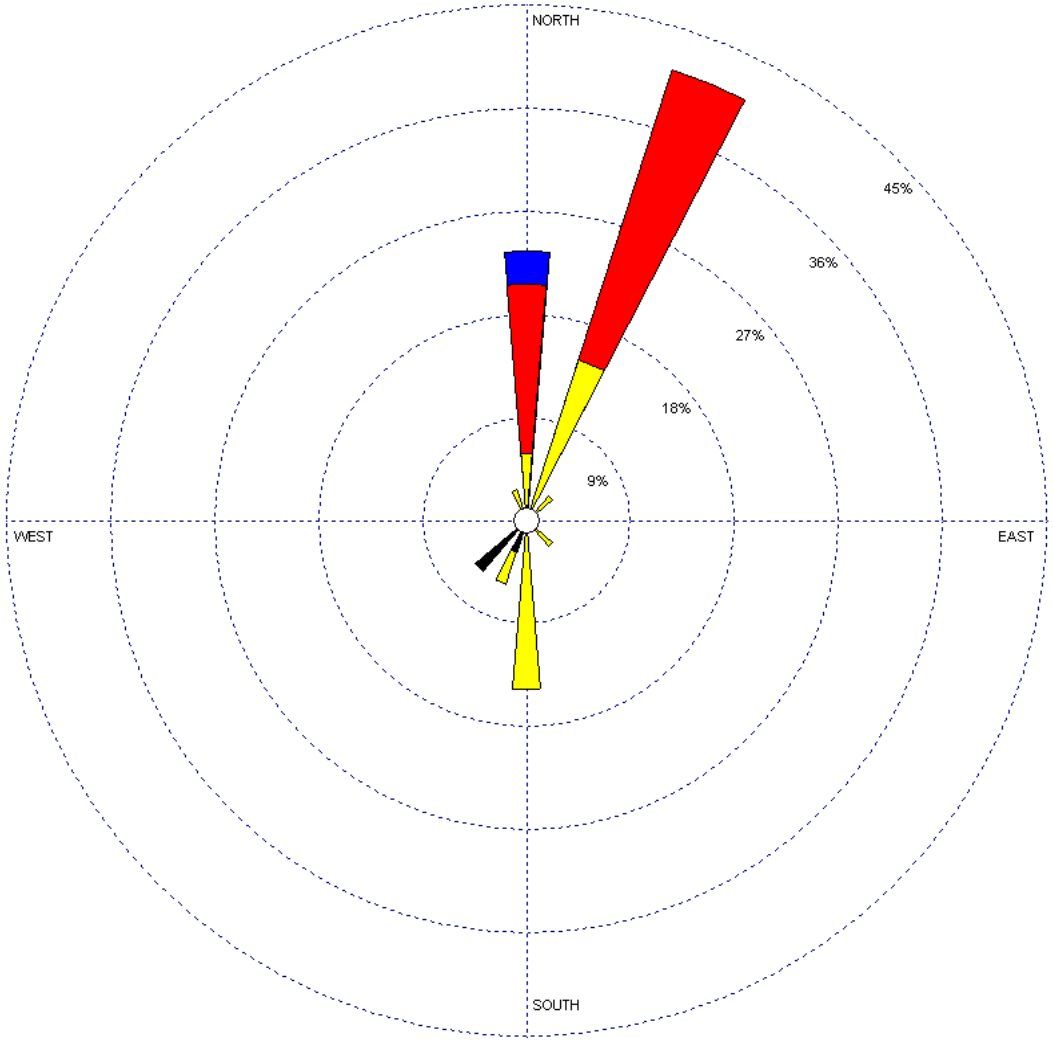
Post Dredging/Demobilization Sampling Round -
(7am November 18 – 1pm November 19, 2006)

# First Monthly Sampling Round
# (7am August 30 – 4pm August 31, 2006 Hourly Data)

| Day-Time | Wind Speed (mph) | Wind Direction (degree) | 10m-Temperature (F) | 2m-Temperature (F) | Delta-T (F) | Relative Humidity (%) | Barometric Pressure (inches) | Solar Radiation (Watts/m2) | Hourly Precipitation (inches) | Tidal Elevation (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 8/30/06 7:00 AM | 6.73 | 14.63 | 61.48 | 61.43 | 0.05 | 96.50 | 29.87 | 12.08 | 0 | |
| 8/30/06 8:00 AM | 6.98 | 6.58 | 62.05 | 62.14 | -0.10 | 93.66 | 29.88 | 78.05 | 0 | |
| 8/30/06 9:00 AM | 8.26 | 16.68 | 62.91 | 63.21 | -0.30 | 90.12 | 29.89 | 142.59 | 0 | |
| 8/30/06 10:00 AM | 8.58 | 13.47 | 63.71 | 64.14 | -0.43 | 86.75 | 29.90 | 201.43 | 0 | |
| 8/30/06 11:00 AM | 8.71 | 30.92 | 64.94 | 65.66 | -0.72 | 80.19 | 29.92 | 360.50 | 0 | |
| 8/30/06 12:00 PM | 6.23 | 25.13 | 66.25 | 67.13 | -0.89 | 75.46 | 29.93 | 412.92 | 0 | |
| 8/30/06 1:00 PM | 4.82 | 53.00 | 68.48 | 69.85 | -1.37 | 66.26 | 29.93 | 712.18 | 0 | 3.7 |
| 8/30/06 2:00 PM | 5.42 | 123.90 | 70.29 | 71.77 | -1.48 | 64.54 | 29.93 | 812.91 | 0 | |
| 8/30/06 3:00 PM | 6.53 | 177.10 | 70.96 | 72.51 | -1.55 | 67.56 | 29.92 | 700.88 | 0 | |
| 8/30/06 4:00 PM | 6.82 | 182.40 | 71.47 | 72.53 | -1.07 | 65.79 | 29.92 | 552.82 | 0 | |
| 8/30/06 5:00 PM | 6.65 | 178.30 | 71.16 | 71.96 | -0.81 | 67.35 | 29.92 | 418.23 | 0 | |
| 8/30/06 6:00 PM | 6.90 | 177.30 | 70.57 | 71.04 | -0.47 | 68.85 | 29.92 | 240.39 | 0 | |
| 8/30/06 7:00 PM | 5.23 | 173.40 | 69.85 | 69.85 | -0.01 | 70.86 | 29.92 | 89.60 | 0 | 0.9 |
| 8/30/06 8:00 PM | 4.26 | 193.90 | 68.43 | 68.01 | 0.41 | 79.49 | 29.93 | -0.63 | 0 | |
| 8/30/06 9:00 PM | 2.80 | 202.80 | 66.19 | 65.91 | 0.28 | 87.76 | 29.95 | -2.91 | 0 | |
| 8/30/06 10:00 PM | 2.65 | 243.80 | 65.12 | 64.85 | 0.27 | 91.04 | 29.96 | -2.80 | 0 | |
| 8/30/06 11:00 PM | 1.98 | 230.30 | 64.76 | 64.39 | 0.37 | 91.12 | 29.97 | -1.83 | 0 | |
| 8/31/06 12:00 AM | 4.59 | 330.40 | 63.81 | 63.72 | 0.09 | 93.12 | 29.99 | -1.64 | 0 | |
| 8/31/06 1:00 AM | 9.61 | 0.31 | 64.49 | 64.35 | 0.14 | 79.56 | 30.00 | -2.66 | 0 | |
| 8/31/06 2:00 AM | 13.31 | 5.17 | 63.28 | 63.20 | 0.07 | 71.41 | 30.00 | -2.80 | 0 | 3 |
| 8/31/06 3:00 AM | 10.87 | 4.64 | 61.46 | 61.40 | 0.06 | 74.46 | 30.02 | -2.80 | 0 | |
| 8/31/06 4:00 AM | 10.37 | 4.00 | 60.07 | 60.03 | 0.05 | 76.63 | 30.04 | -2.80 | 0 | |
| 8/31/06 5:00 AM | 7.96 | 359.30 | 58.86 | 58.80 | 0.06 | 78.42 | 30.05 | -2.81 | 0 | |
| 8/31/06 6:00 AM | 6.69 | 354.60 | 57.47 | 57.40 | 0.07 | 82.24 | 30.07 | -2.30 | 0 | |
| 8/31/06 7:00 AM | 6.25 | 358.40 | 56.70 | 56.75 | -0.05 | 80.13 | 30.09 | 49.90 | 0 | 0.6 |
| 8/31/06 8:00 AM | 8.84 | 5.27 | 57.53 | 57.89 | -0.36 | 75.54 | 30.10 | 172.76 | 0 | |
| 8/31/06 9:00 AM | 9.11 | 6.85 | 59.20 | 59.83 | -0.63 | 71.98 | 30.11 | 303.49 | 0 | |
| 8/31/06 10:00 AM | 10.66 | 20.49 | 61.83 | 62.80 | -0.97 | 66.03 | 30.12 | 525.79 | 0 | |
| 8/31/06 11:00 AM | 10.52 | 24.08 | 64.13 | 65.17 | -1.03 | 57.88 | 30.13 | 573.88 | 0 | |
| 8/31/06 12:00 PM | 11.47 | 27.48 | 65.63 | 66.74 | -1.11 | 51.12 | 30.14 | 650.57 | 0 | |
| 8/31/06 1:00 PM | 10.03 | 22.63 | 66.84 | 68.09 | -1.25 | 49.32 | 30.14 | 697.12 | 0 | |
| 8/31/06 2:00 PM | 8.25 | 19.30 | 67.22 | 68.51 | -1.29 | 47.43 | 30.15 | 695.12 | 0 | 3.7 |
| 8/31/06 3:00 PM | 6.78 | 28.51 | 68.34 | 69.56 | -1.22 | 46.13 | 30.15 | 631.11 | 0 | |
| 8/31/06 4:00 PM | 5.90 | 31.10 | 69.93 | 70.79 | -0.86 | 45.88 | 30.15 | 456.31 | 0 | |
| | | | | | | | | | | |
| **Maximum** | **13.31** | | **71.47** | **72.53** | **0.41** | **96.50** | **30.15** | **812.91** | **0.00** | **3.70** |
| **Minimum** | **1.98** | | **56.70** | **56.75** | **-1.55** | **45.88** | **29.87** | **-2.91** | **0.00** | **0.60** |
| **Average** | **7.38** | | **64.86** | **65.34** | **-0.47** | **73.25** | **30.00** | **278.37** | **0.00** | **2.38** |

# First Monthly Sampling Round
# (7am August 30 – 4pm August 31, 2006 Hourly Data)

## Wind Rose Diagram




Wind Direction: Blowing From

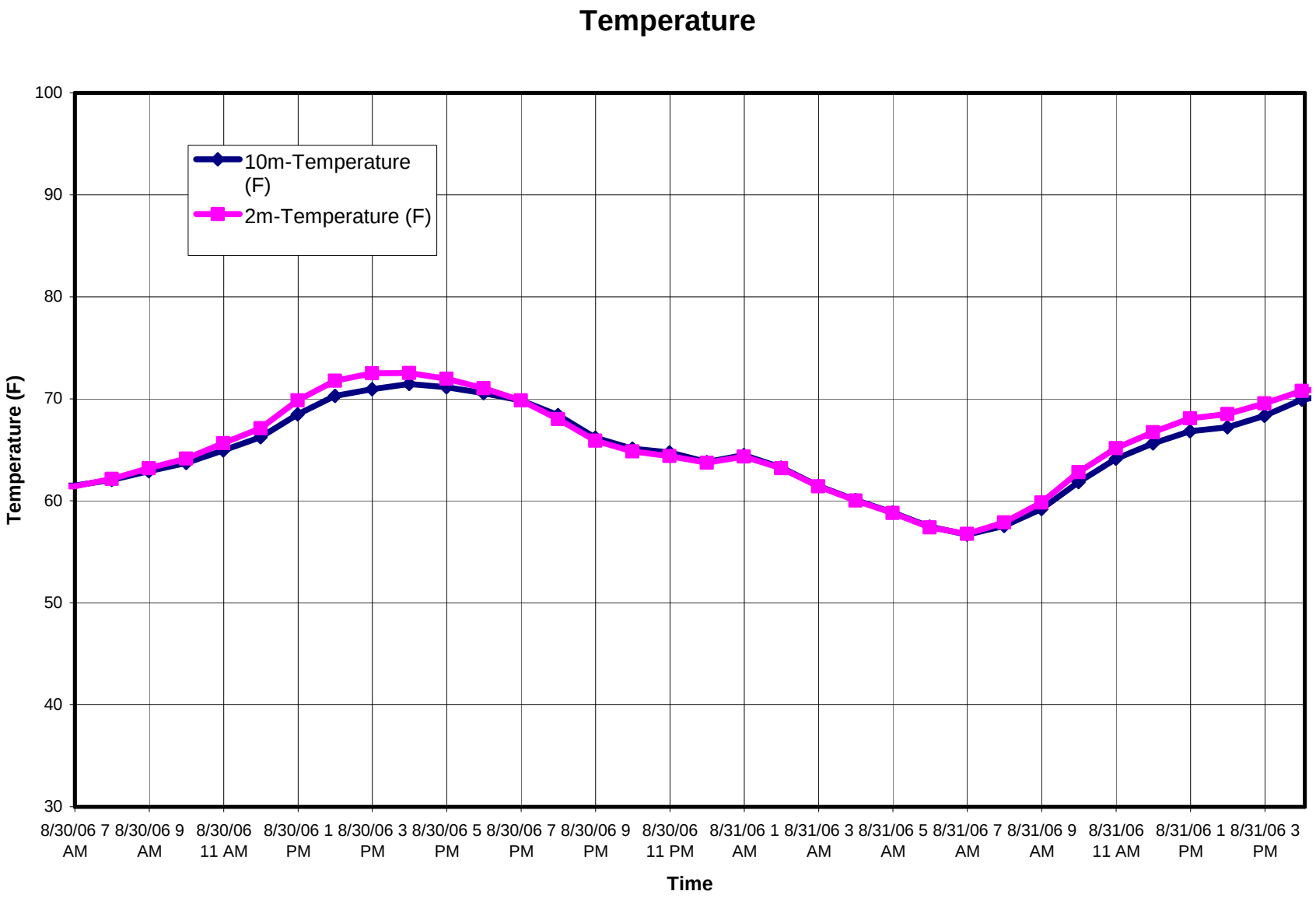
WIND SPEED
(m/s)

- >= 11.1
- 8.8 - 11.1
- 5.7 - 8.8
- 3.6 - 5.7
- 2.1 - 3.6
- 0.5 - 2.1

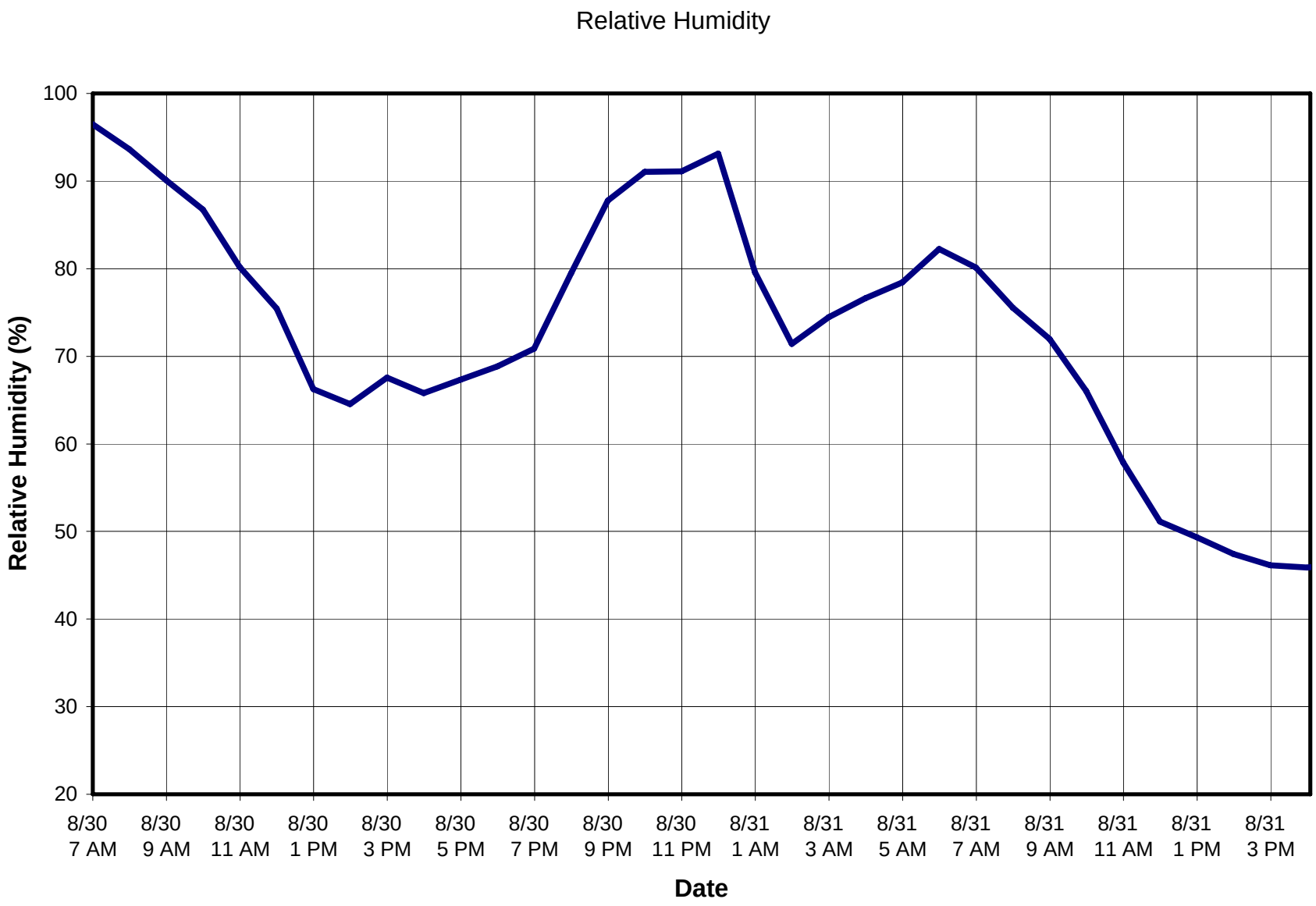
Calms: 0.00%

1 m/s (meter per second) = 2.237 miles per hour

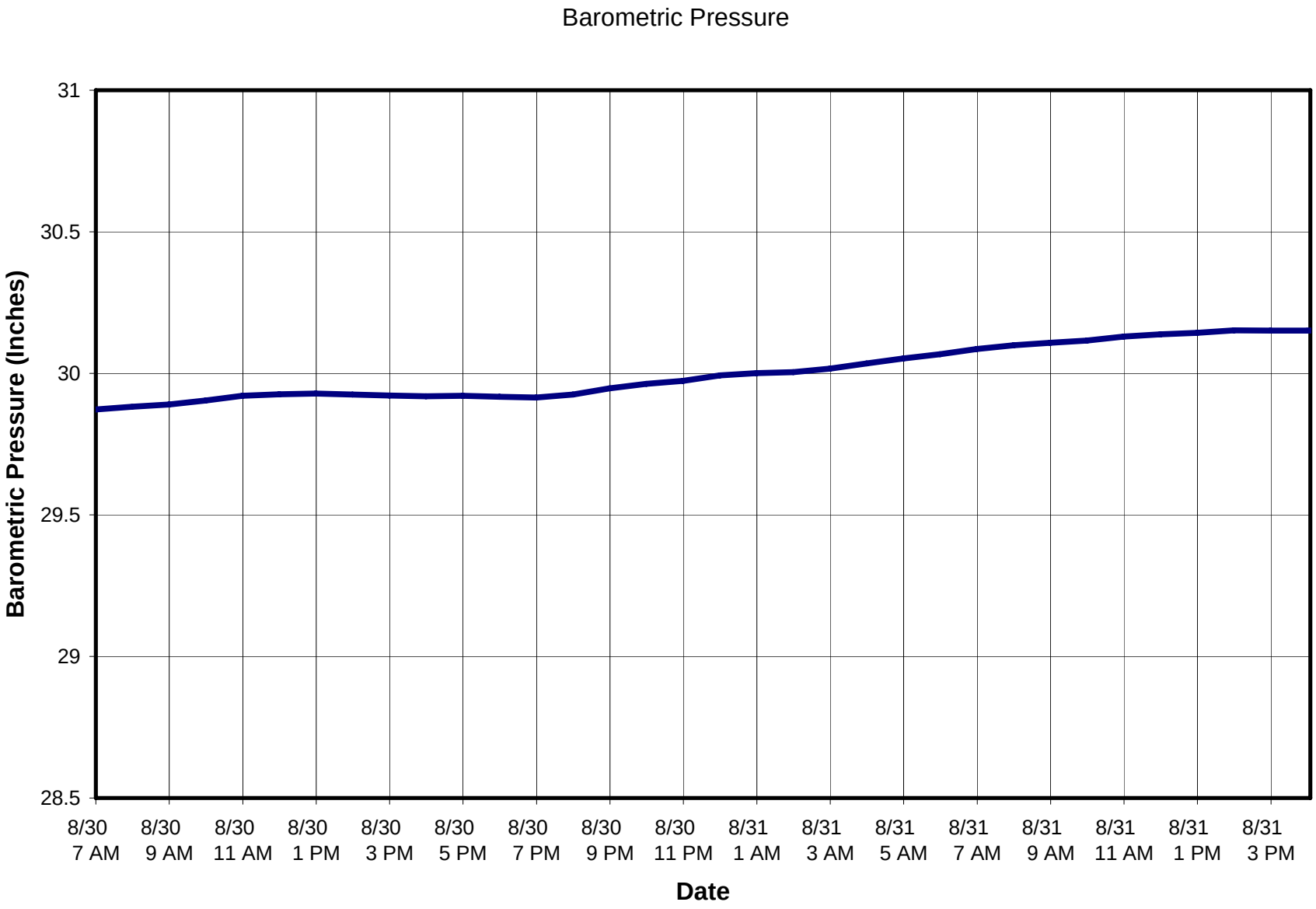
# First Monthly Sampling Round
# (7am August 30 – 4pm August 31, 2006 Hourly Data)



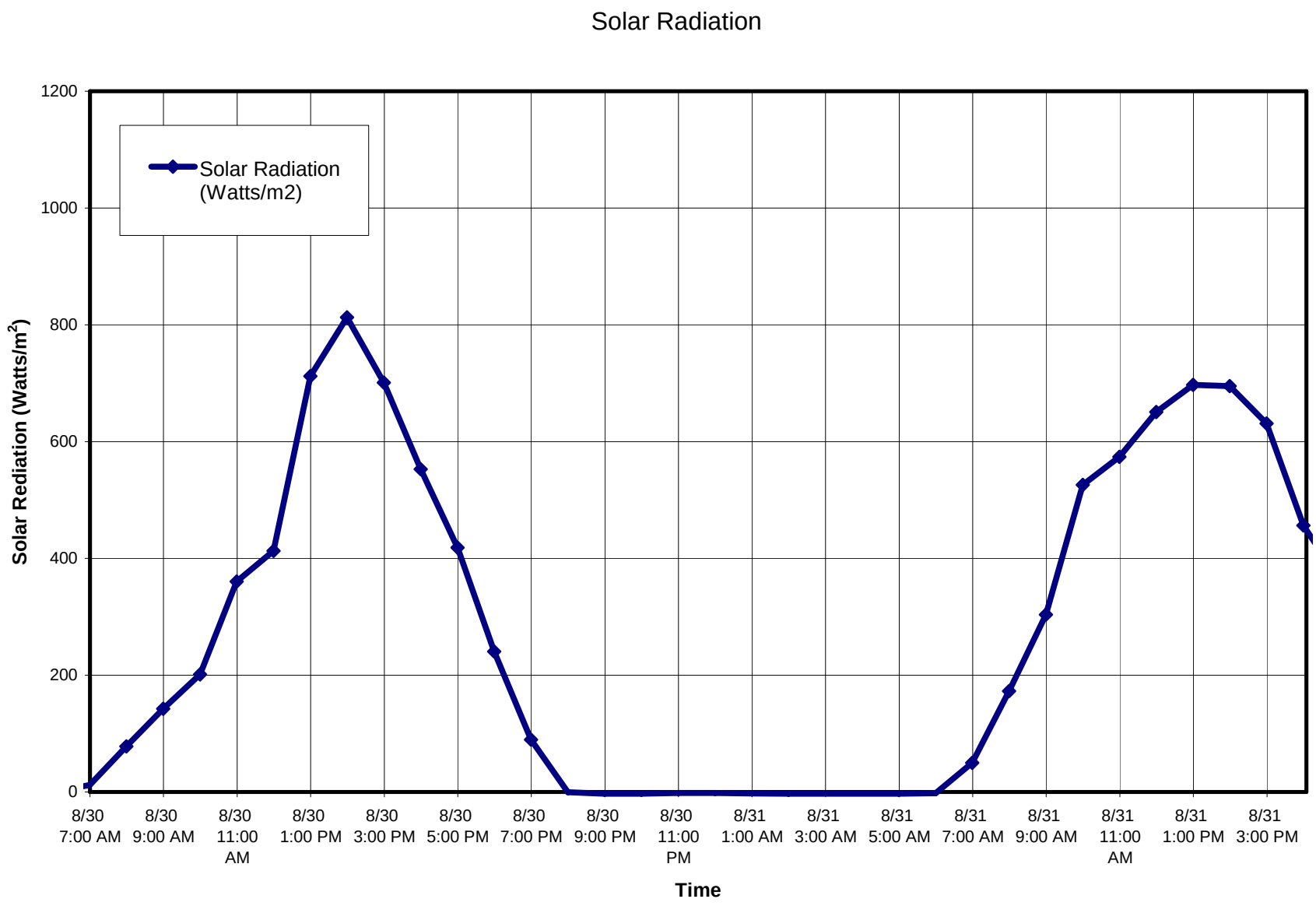
# First Monthly Sampling Round
# (7am August 30 – 4pm August 31, 2006 Hourly Data)



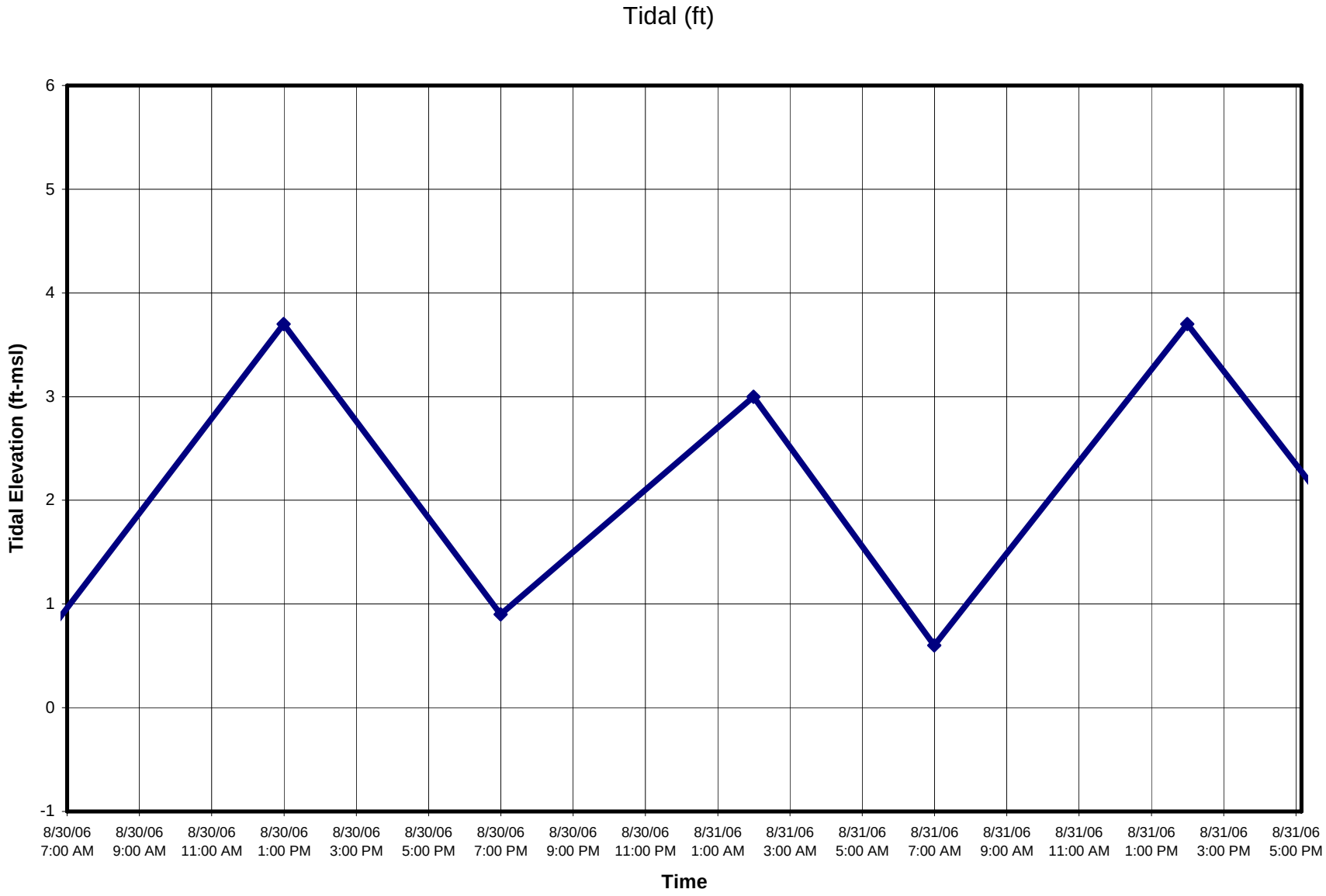
# First Monthly Sampling Round
# (7am August 30 – 4pm August 31, 2006 Hourly Data)



# First Monthly Sampling Round
# (7am August 30 – 4pm August 31, 2006 Hourly Data)



# First Monthly Sampling Round
# (7am August 30 – 4pm August 31, 2006 Hourly Data)



# Second Monthly Sampling Round
# (7am October 4 – 5pm October 6, 2006 Hourly Data)

| Day-Time | Wind Speed (mph) | Wind Direction (degree) | 10m-Temperature (F) | 2m-Temperature (F) | Delta-T (F) | Relative Humidity (%) | Barometric Pressure (inches) | Solar Radiation (Watts/m2) | Hourly Precipitation (inches) | Tidal Elevation (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 10/4/06 7:00 AM | 2.43 | 247.00 | 61.49 | 61.09 | 0.39 | 99.75 | 30.08 | 3.07 | 0 | |
| 10/4/06 8:00 AM | 3.02 | 186.10 | 61.99 | 61.61 | 0.38 | 99.66 | 30.09 | 86.92 | 0 | |
| 10/4/06 9:00 AM | 4.43 | 198.60 | 62.80 | 62.70 | 0.10 | 97.59 | 30.09 | 111.80 | 0 | |
| 10/4/06 10:00 AM | 5.28 | 203.40 | 64.68 | 64.80 | -0.12 | 93.14 | 30.09 | 140.64 | 0 | |
| 10/4/06 11:00 AM | 6.32 | 226.90 | 67.21 | 67.74 | -0.53 | 83.87 | 30.07 | 315.29 | 0 | |
| 10/4/06 12:00 PM | 8.66 | 215.20 | 69.69 | 70.63 | -0.95 | 73.45 | 30.05 | 623.71 | 0 | -0.1 |
| 10/4/06 1:00 PM | 9.50 | 205.00 | 71.33 | 72.40 | -1.07 | 69.25 | 30.03 | 676.35 | 0 | |
| 10/4/06 2:00 PM | 10.74 | 210.40 | 70.34 | 71.18 | -0.84 | 72.12 | 30.01 | 522.63 | 0 | |
| 10/4/06 3:00 PM | 12.05 | 207.10 | 69.64 | 70.41 | -0.77 | 75.67 | 29.98 | 461.53 | 0 | |
| 10/4/06 4:00 PM | 11.90 | 220.50 | 69.51 | 70.12 | -0.61 | 77.68 | 29.97 | 395.23 | 0 | |
| 10/4/06 5:00 PM | 10.55 | 213.60 | 68.98 | 69.40 | -0.42 | 79.54 | 29.95 | 231.47 | 0 | |
| 10/4/06 6:00 PM | 11.46 | 215.30 | 67.47 | 67.64 | -0.17 | 85.42 | 29.94 | 81.19 | 0 | |
| 10/4/06 7:00 PM | 13.89 | 219.90 | 66.72 | 66.75 | -0.03 | 89.41 | 29.92 | 1.23 | 0 | 4.6 |
| 10/4/06 8:00 PM | 13.08 | 230.00 | 66.94 | 66.98 | -0.04 | 88.42 | 29.91 | -0.01 | 0 | |
| 10/4/06 9:00 PM | 11.50 | 227.50 | 66.61 | 66.56 | 0.04 | 90.17 | 29.90 | -1.54 | 0 | |
| 10/4/06 10:00 PM | 9.91 | 225.40 | 66.50 | 66.45 | 0.05 | 91.66 | 29.88 | -0.55 | 0 | |
| 10/4/06 11:00 PM | 9.98 | 224.70 | 66.93 | 66.85 | 0.08 | 90.58 | 29.86 | -2.15 | 0 | |
| 10/5/06 12:00 AM | 10.22 | 220.40 | 66.81 | 66.75 | 0.07 | 90.46 | 29.84 | -0.65 | 0 | |
| 10/5/06 1:00 AM | 10.79 | 223.40 | 67.10 | 66.99 | 0.11 | 91.16 | 29.82 | -0.53 | 0.04 | -0.3 |
| 10/5/06 2:00 AM | 10.87 | 232.50 | 67.13 | 66.88 | 0.25 | 93.43 | 29.80 | 0.60 | 0 | |
| 10/5/06 3:00 AM | 9.68 | 254.00 | 67.23 | 66.98 | 0.25 | 94.46 | 29.81 | 0.00 | 0.05 | |
| 10/5/06 4:00 AM | 7.34 | 268.10 | 66.71 | 66.43 | 0.28 | 95.88 | 29.82 | 0.00 | 0.09 | |
| 10/5/06 5:00 AM | 12.38 | 351.60 | 61.64 | 61.58 | 0.06 | 93.36 | 29.85 | 0.32 | 0.07 | |
| 10/5/06 6:00 AM | 14.33 | 353.40 | 58.05 | 58.11 | -0.06 | 88.09 | 29.90 | 2.26 | 0 | |
| 10/5/06 7:00 AM | 14.43 | 350.90 | 55.37 | 55.52 | -0.15 | 84.28 | 29.96 | 2.39 | 0 | 4.8 |
| 10/5/06 8:00 AM | 14.73 | 358.30 | 53.75 | 53.95 | -0.21 | 81.74 | 30.01 | 17.45 | 0 | |
| 10/5/06 9:00 AM | 13.91 | 1.91 | 53.53 | 53.98 | -0.44 | 75.64 | 30.05 | 195.18 | 0 | |
| 10/5/06 10:00 AM | 18.25 | 17.36 | 54.96 | 55.72 | -0.76 | 65.42 | 30.08 | 440.62 | 0 | |
| 10/5/06 11:00 AM | 18.49 | 22.48 | 55.30 | 55.98 | -0.68 | 64.45 | 30.10 | 358.30 | 0 | |
| 10/5/06 12:00 PM | 16.65 | 26.06 | 56.48 | 57.61 | -1.12 | 60.35 | 30.11 | 755.73 | 0 | |
| 10/5/06 1:00 PM | 16.51 | 32.57 | 56.75 | 57.97 | -1.22 | 59.27 | 30.12 | 742.59 | 0 | -0.5 |
| 10/5/06 2:00 PM | 14.53 | 33.00 | 57.27 | 58.38 | -1.12 | 58.31 | 30.13 | 587.77 | 0 | |
| 10/5/06 3:00 PM | 14.47 | 45.78 | 57.79 | 58.94 | -1.14 | 56.92 | 30.12 | 580.97 | 0 | |
| 10/5/06 4:00 PM | 13.53 | 49.80 | 57.85 | 58.79 | -0.95 | 58.40 | 30.12 | 463.23 | 0 | |

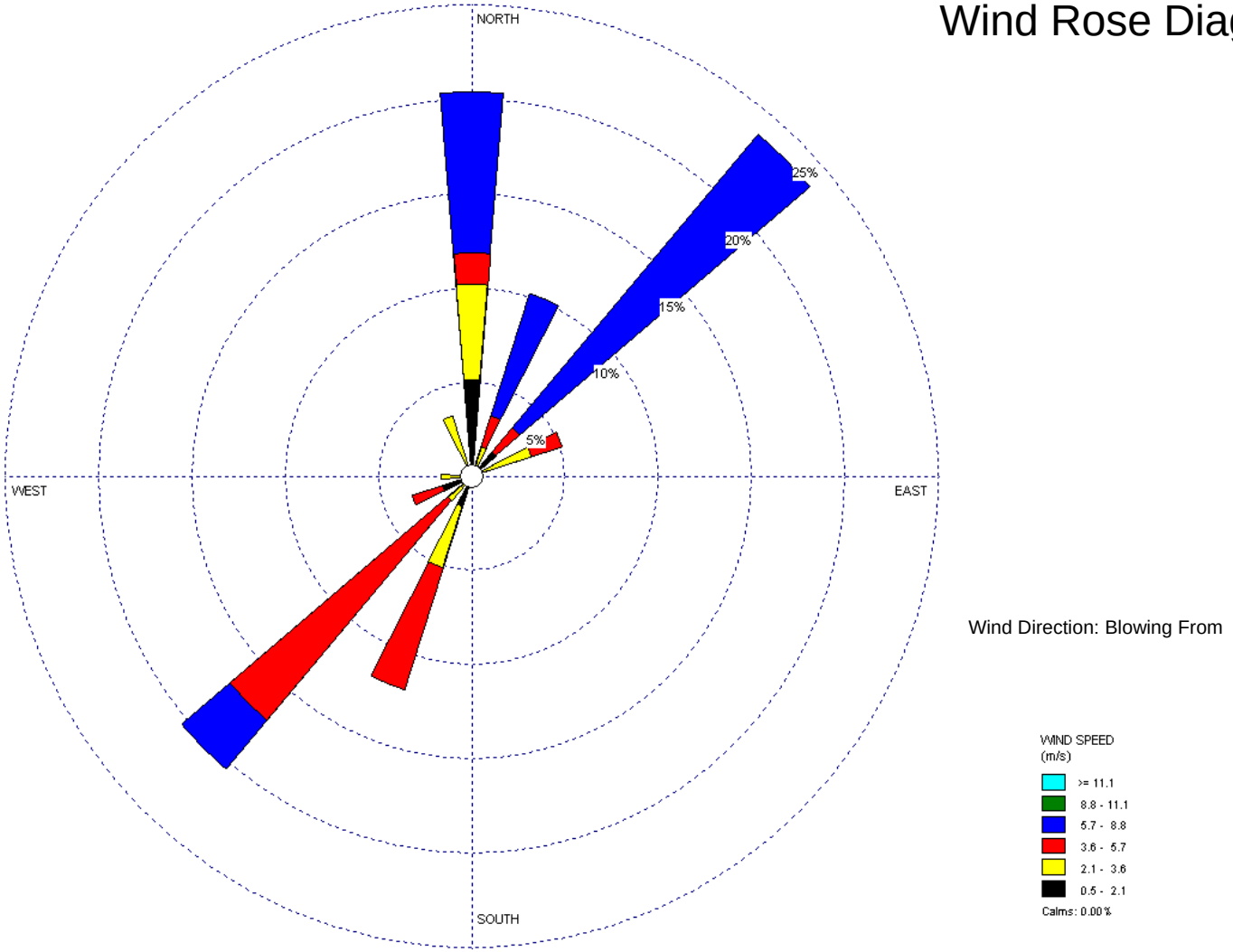
Continued on Next Page

# Second Monthly Sampling Round
# (7am October 4 – 5pm October 6, 2006 Hourly Data)

| Day-Time | Wind Speed (mph) | Wind Direction (degree) | 10m-Temperature (F) | 2m-Temperature (F) | Delta-T (F) | Relative Humidity (%) | Barometric Pressure (inches) | Solar Radiation (Watts/m2) | Hourly Precipitation (inches) | Tidal Elevation (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 10/5/06 5:00 PM | 12.63 | 48.24 | 57.44 | 58.13 | -0.69 | 61.29 | 30.14 | 293.61 | 0 | |
| 10/5/06 6:00 PM | 11.15 | 55.94 | 56.04 | 56.45 | -0.41 | 63.49 | 30.15 | 99.56 | 0 | |
| 10/5/06 7:00 PM | 5.56 | 60.92 | 54.00 | 54.08 | -0.07 | 73.89 | 30.18 | -0.48 | 0 | |
| 10/5/06 8:00 PM | 4.28 | 55.98 | 52.66 | 52.65 | 0.01 | 78.03 | 30.20 | -3.00 | 0 | 4.8 |
| 10/5/06 9:00 PM | 2.95 | 41.13 | 51.49 | 51.36 | 0.13 | 81.60 | 30.20 | -2.95 | 0 | |
| 10/5/06 10:00 PM | 3.50 | 5.44 | 50.58 | 50.32 | 0.26 | 86.82 | 30.22 | -2.98 | 0 | |
| 10/5/06 11:00 PM | 2.47 | 350.90 | 49.19 | 48.90 | 0.29 | 89.97 | 30.23 | -3.05 | 0 | |
| 10/6/06 12:00 AM | 3.35 | 357.20 | 48.05 | 47.85 | 0.20 | 89.98 | 30.24 | -2.85 | 0 | |
| 10/6/06 1:00 AM | 4.45 | 9.55 | 46.47 | 46.36 | 0.12 | 94.37 | 30.24 | -3.02 | 0 | |
| 10/6/06 2:00 AM | 5.96 | 3.49 | 46.37 | 46.37 | 0.00 | 89.62 | 30.24 | -3.26 | 0 | -0.6 |
| 10/6/06 3:00 AM | 5.91 | 3.61 | 46.62 | 46.60 | 0.02 | 86.69 | 30.24 | -2.67 | 0 | |
| 10/6/06 4:00 AM | 4.69 | 338.70 | 47.49 | 47.55 | -0.06 | 83.04 | 30.25 | -0.90 | 0 | |
| 10/6/06 5:00 AM | 6.60 | 357.00 | 47.33 | 47.43 | -0.10 | 86.39 | 30.28 | -1.24 | 0 | |
| 10/6/06 6:00 AM | 6.37 | 342.90 | 47.26 | 47.35 | -0.09 | 89.71 | 30.30 | -1.10 | 0 | |
| 10/6/06 7:00 AM | 7.60 | 8.11 | 48.40 | 48.53 | -0.14 | 88.96 | 30.31 | 1.23 | 0 | |
| 10/6/06 8:00 AM | 7.81 | 25.50 | 50.57 | 50.83 | -0.26 | 80.72 | 30.33 | 90.65 | 0 | 5.2 |
| 10/6/06 9:00 AM | 11.06 | 38.24 | 53.16 | 53.69 | -0.53 | 68.25 | 30.35 | 225.06 | 0 | |
| 10/6/06 10:00 AM | 15.35 | 44.82 | 55.14 | 55.95 | -0.81 | 59.76 | 30.37 | 429.40 | 0 | |
| 10/6/06 11:00 AM | 17.95 | 45.42 | 56.00 | 56.72 | -0.72 | 60.00 | 30.38 | 399.59 | 0 | |
| 10/6/06 12:00 PM | 18.85 | 50.38 | 56.18 | 56.95 | -0.77 | 59.11 | 30.39 | 389.80 | 0 | |
| 10/6/06 1:00 PM | 17.52 | 47.68 | 56.21 | 56.97 | -0.76 | 59.91 | 30.39 | 399.05 | 0 | |
| 10/6/06 2:00 PM | 18.13 | 44.08 | 55.94 | 56.63 | -0.69 | 61.82 | 30.38 | 293.09 | 0 | -0.7 |
| 10/6/06 3:00 PM | 17.45 | 47.40 | 55.30 | 55.84 | -0.54 | 64.88 | 30.36 | 160.22 | 0 | |
| 10/6/06 4:00 PM | 15.84 | 44.16 | 54.83 | 55.34 | -0.51 | 68.32 | 30.37 | 160.20 | 0 | |
| 10/6/06 5:00 PM | 14.61 | 42.63 | 54.44 | 54.86 | -0.42 | 69.95 | 30.39 | 92.79 | 0 | |
| | | | | | | | | | | |
| **Maximum** | **18.85** | | **71.33** | **72.40** | **0.39** | **99.75** | **30.39** | **755.73** | **0.09** | **5.20** |
| **Minimum** | **2.43** | | **46.37** | **46.36** | **-1.22** | **56.92** | **29.80** | **-3.26** | **0.00** | **-0.70** |
| **Average** | **10.64** | | **58.47** | **58.77** | **-0.30** | **79.08** | **30.11** | **183.05** | **0.00** | **1.91** |

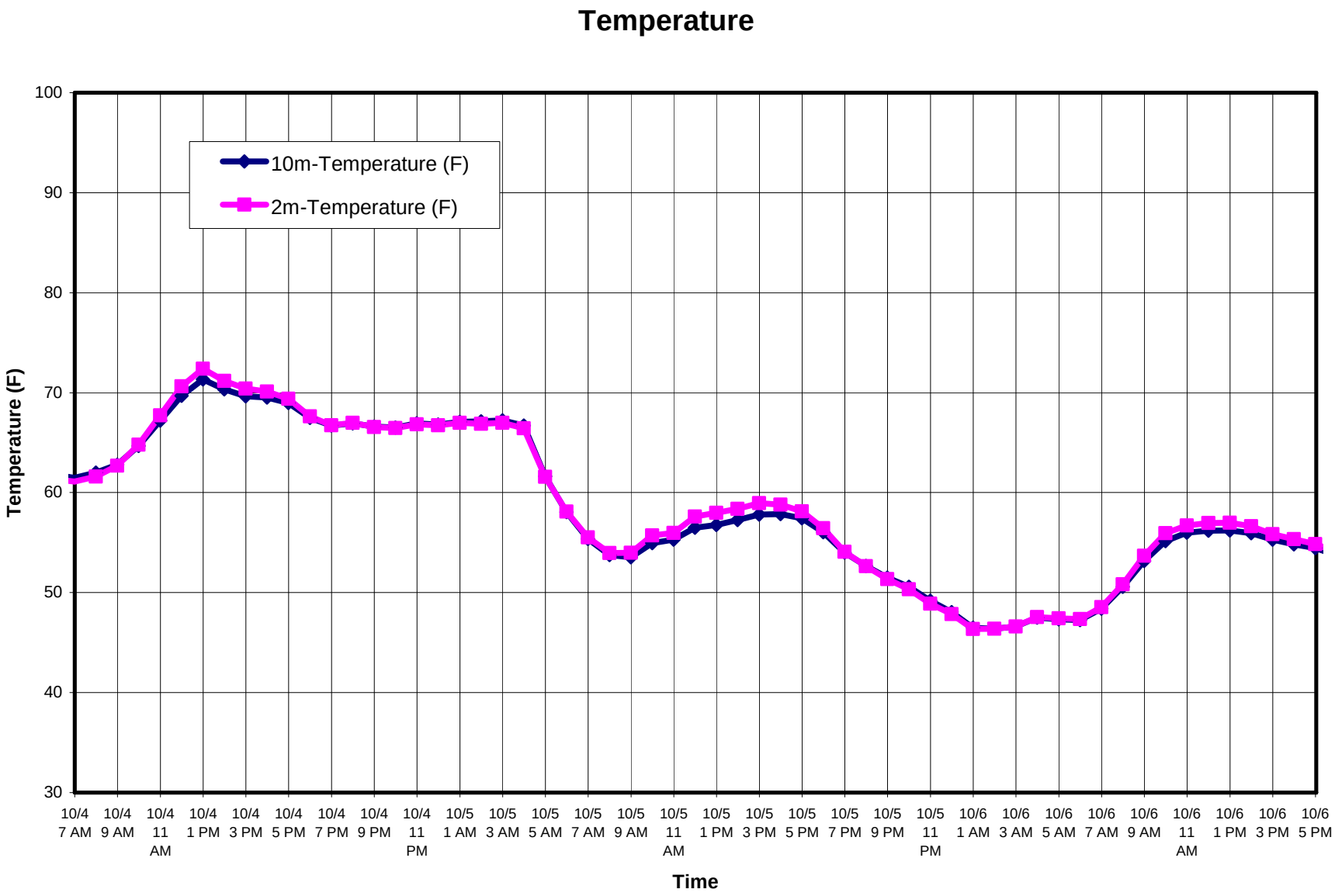
# Second Monthly Sampling Round
# (7am October 4 – 5pm October 6, 2006 Hourly Data)

## Wind Rose Diagram

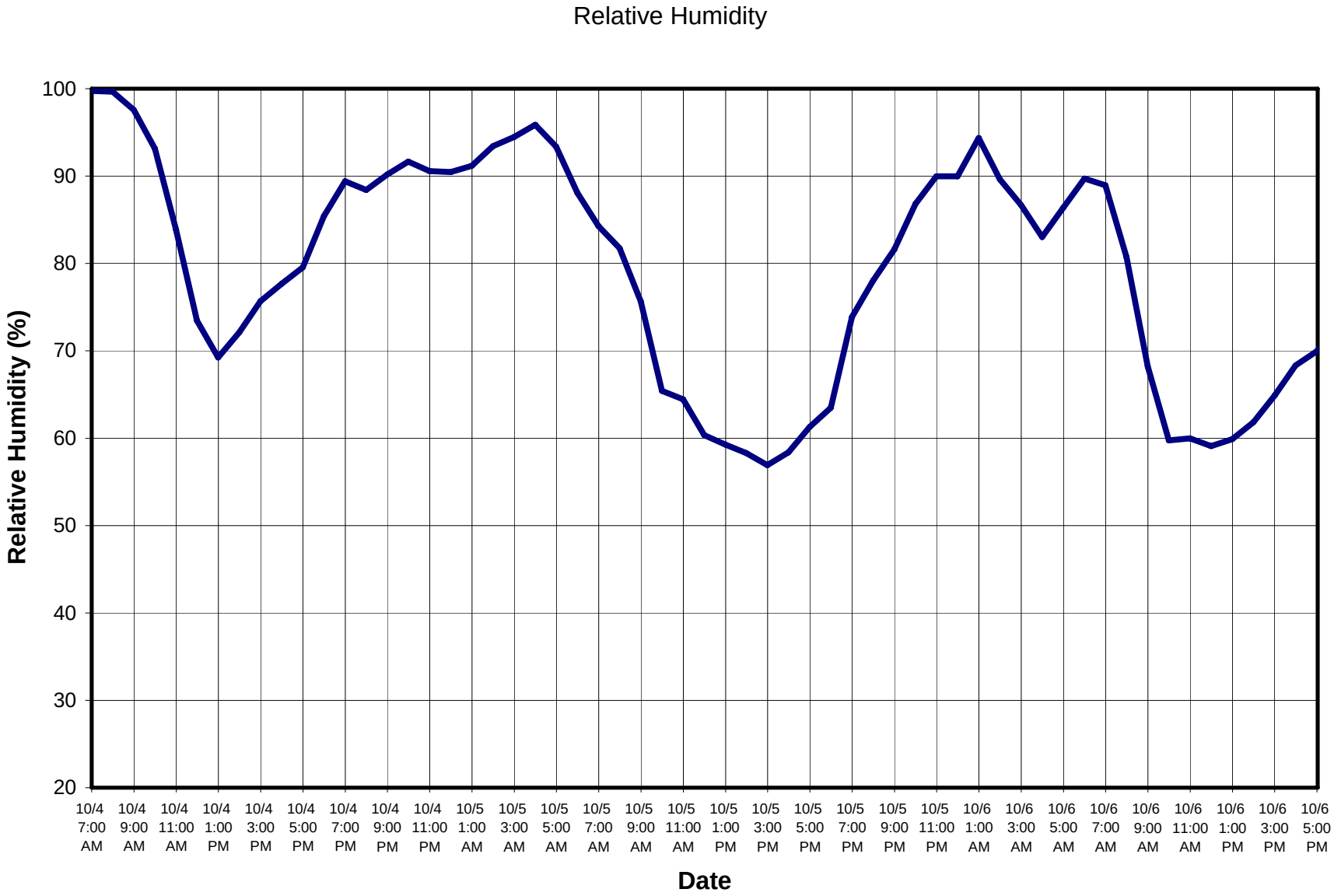



1 m/s (meter per second) = 2.237 miles per hour

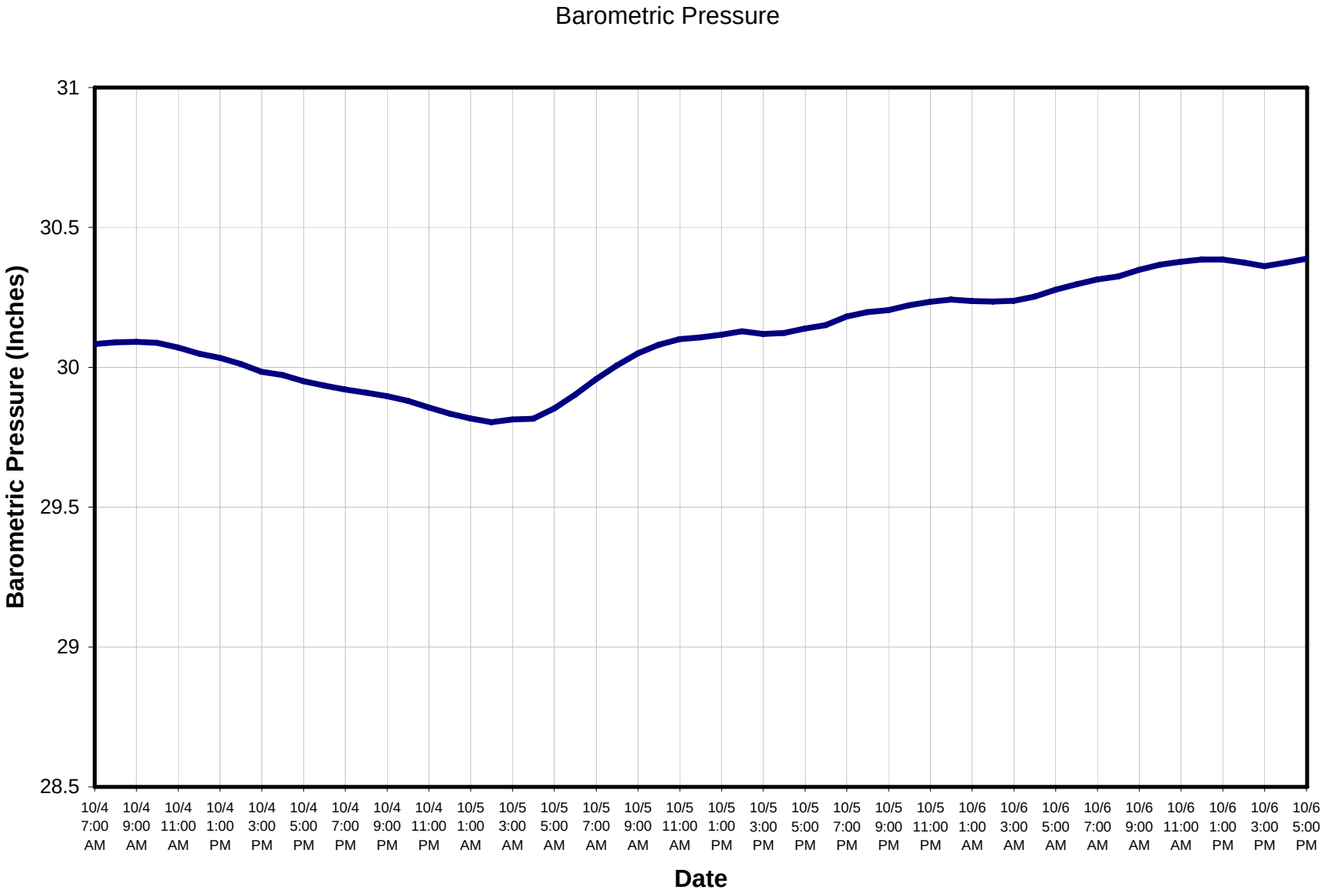
# Second Monthly Sampling Round
# (7am October 4 – 5pm October 6, 2006 Hourly Data)



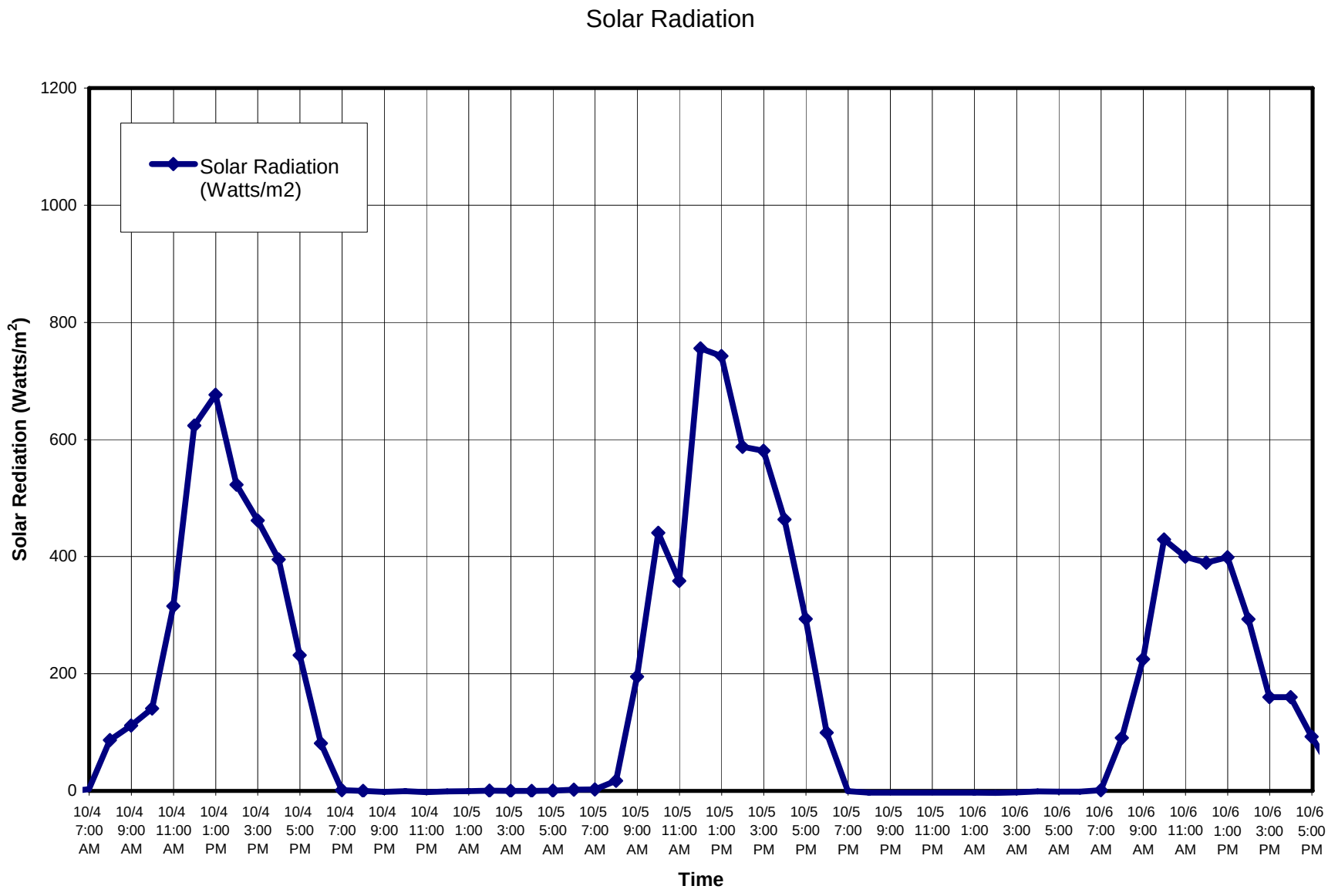
# Second Monthly Sampling Round
# (7am October 4 – 5pm October 6, 2006 Hourly Data)



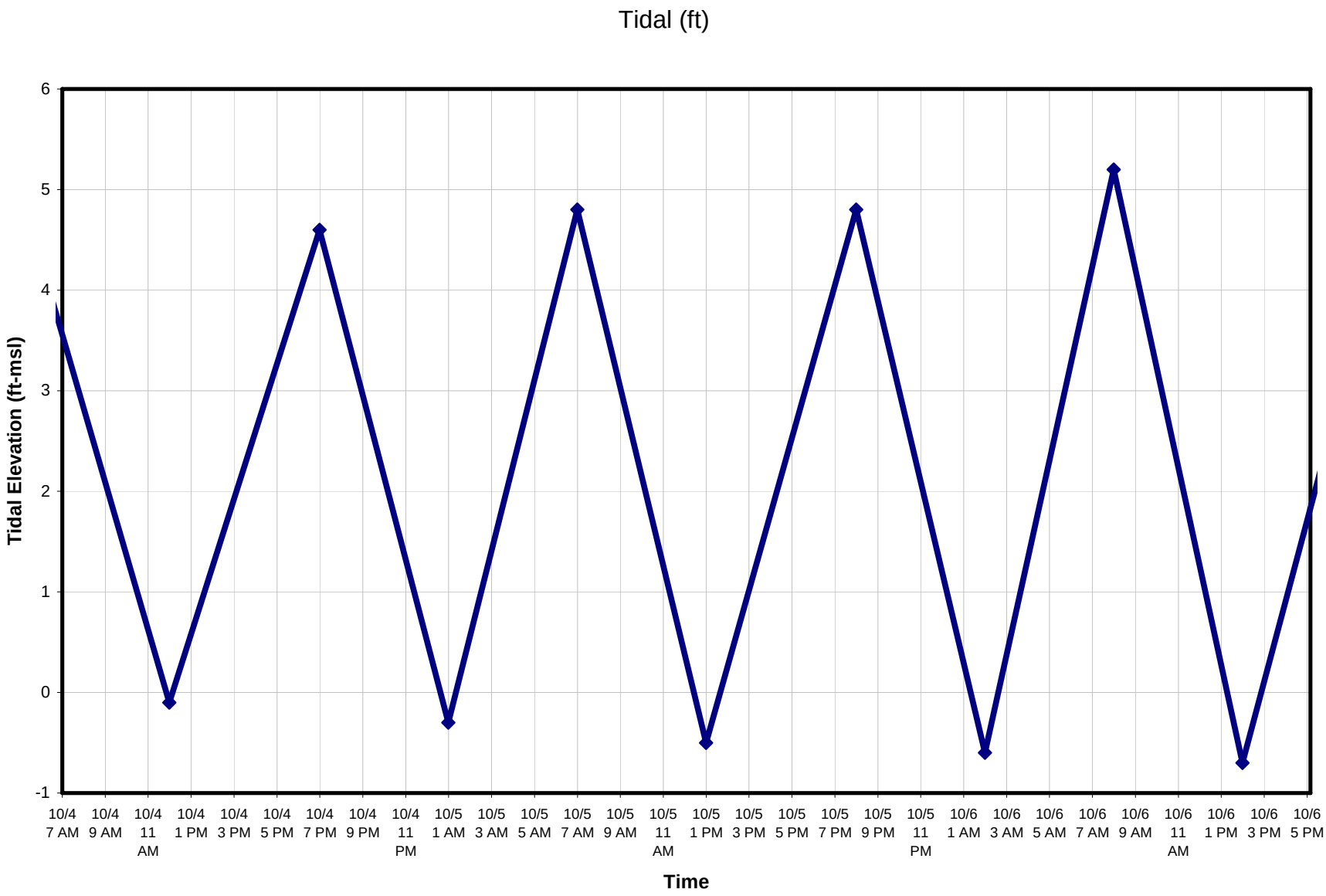
# Second Monthly Sampling Round
# (7am October 4 – 5pm October 6, 2006 Hourly Data)



# Second Monthly Sampling Round
# (7am October 4 – 5pm October 6, 2006 Hourly Data)



# Second Monthly Sampling Round
# (7am October 4 – 5pm October 6, 2006 Hourly Data)

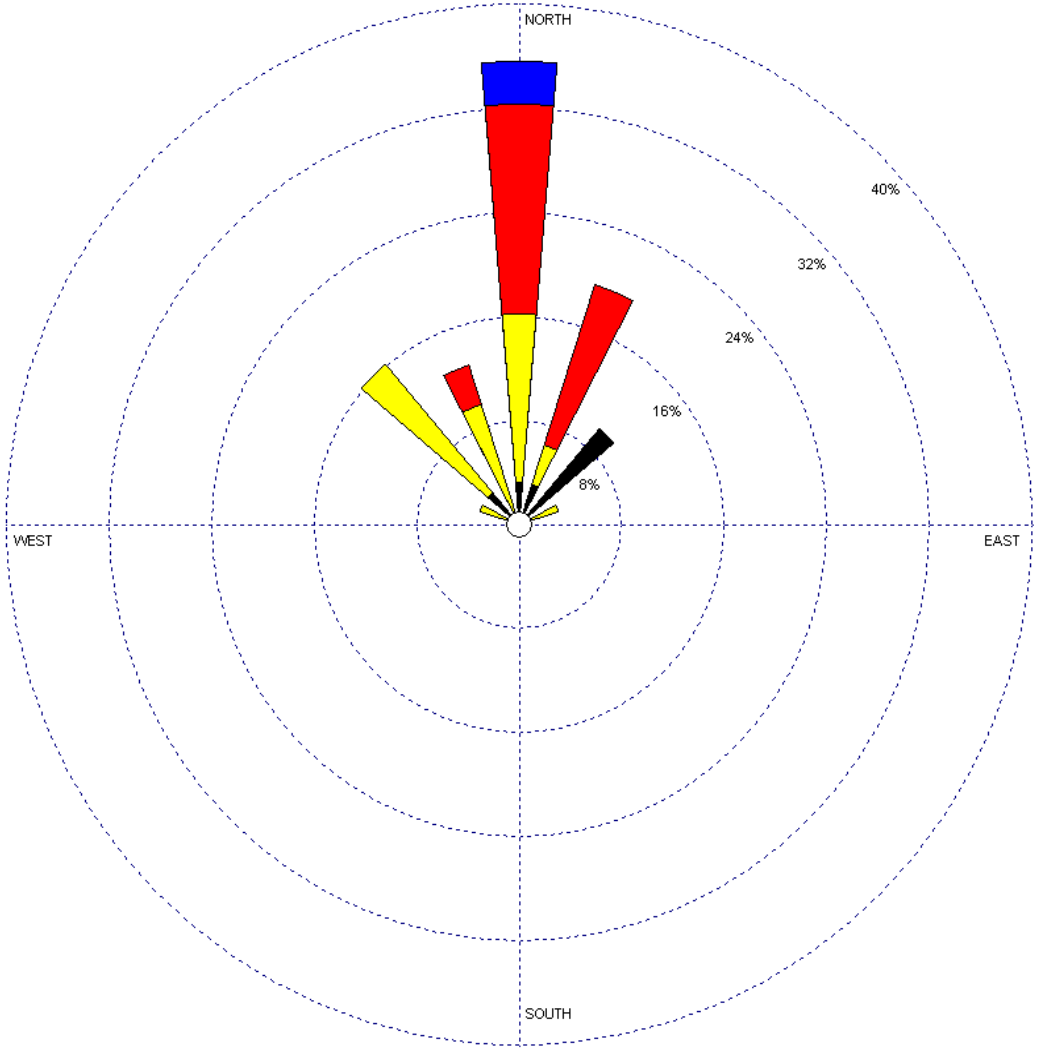


# Post Dredging/Demobilization Sampling Round
# (7am November 18 – 1pm November 19, 2006 Hourly Data)

| Day-Time | Wind Speed (mph) | Wind Direction (degree) | 10m-Temperature (F) | 2m-Temperature (F) | Delta-T (F) | Relative Humidity (%) | Barometric Pressure (inches) | Solar Radiation (Watts/m2) | Hourly Precipitation (inches) | Tidal Elevation (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 11/18/06 7:00 AM | 4.17 | 315.30 | 42.89 | 42.92 | -0.03 | 81.23 | 29.86 | -2.98 | 0 | |
| 11/18/06 8:00 AM | 3.77 | 314.50 | 41.91 | 41.96 | -0.06 | 83.46 | 29.87 | 6.30 | 0 | |
| 11/18/06 9:00 AM | 6.22 | 307.30 | 42.68 | 43.01 | -0.33 | 74.81 | 29.89 | 114.35 | 0 | |
| 11/18/06 10:00 AM | 7.75 | 329.30 | 45.54 | 45.98 | -0.44 | 64.55 | 29.89 | 276.98 | 0 | |
| 11/18/06 11:00 AM | 8.92 | 348.00 | 47.65 | 48.12 | -0.47 | 59.25 | 29.89 | 377.16 | 0 | |
| 11/18/06 12:00 PM | 6.26 | 1.51 | 48.55 | 49.13 | -0.58 | 57.69 | 29.89 | 450.85 | 0 | 0.3 |
| 11/18/06 1:00 PM | 4.05 | 349.40 | 49.74 | 50.42 | -0.68 | 54.35 | 29.87 | 475.01 | 0 | |
| 11/18/06 2:00 PM | 4.36 | 295.60 | 51.03 | 51.79 | -0.76 | 51.45 | 29.85 | 487.39 | 0 | |
| 11/18/06 3:00 PM | 5.83 | 320.80 | 51.64 | 52.25 | -0.61 | 51.84 | 29.84 | 386.32 | 0 | |
| 11/18/06 4:00 PM | 5.59 | 304.80 | 51.85 | 52.40 | -0.55 | 51.22 | 29.83 | 267.80 | 0 | |
| 11/18/06 5:00 PM | 6.38 | 351.40 | 51.65 | 51.92 | -0.28 | 54.89 | 29.84 | 75.89 | 0 | |
| 11/18/06 6:00 PM | 5.43 | 18.25 | 50.71 | 50.92 | -0.21 | 60.72 | 29.85 | 1.44 | 0 | |
| 11/18/06 7:00 PM | 5.95 | 56.49 | 48.02 | 48.33 | -0.30 | 72.96 | 29.86 | -0.96 | 0 | 3.6 |
| 11/18/06 8:00 PM | 2.55 | 63.94 | 47.50 | 47.66 | -0.16 | 73.85 | 29.86 | -0.72 | 0 | |
| 11/18/06 9:00 PM | 3.23 | 33.11 | 47.35 | 47.49 | -0.15 | 75.57 | 29.87 | -0.24 | 0 | |
| 11/18/06 10:00 PM | 2.07 | 32.99 | 47.10 | 47.22 | -0.12 | 77.97 | 29.87 | -0.52 | 0 | |
| 11/18/06 11:00 PM | 1.26 | 50.59 | 47.07 | 47.12 | -0.05 | 79.57 | 29.87 | -0.48 | 0 | |
| 11/19/06 12:00 AM | 4.57 | 351.20 | 46.56 | 46.71 | -0.15 | 80.89 | 29.86 | -0.43 | 0 | 0.1 |
| 11/19/06 1:00 AM | 3.63 | 347.00 | 45.94 | 46.11 | -0.17 | 82.15 | 29.86 | -0.75 | 0 | |
| 11/19/06 2:00 AM | 5.51 | 341.00 | 45.37 | 45.55 | -0.18 | 83.97 | 29.85 | -0.30 | 0 | |
| 11/19/06 3:00 AM | 7.20 | 351.40 | 44.87 | 45.06 | -0.19 | 81.39 | 29.84 | -0.34 | 0 | |
| 11/19/06 4:00 AM | 6.86 | 2.83 | 44.56 | 44.74 | -0.18 | 80.00 | 29.84 | -0.42 | 0 | |
| 11/19/06 5:00 AM | 10.71 | 11.39 | 43.98 | 44.16 | -0.18 | 88.04 | 29.83 | -1.17 | 0 | |
| 11/19/06 6:00 AM | 9.02 | 355.40 | 43.68 | 43.83 | -0.15 | 87.98 | 29.83 | -0.57 | 0 | |
| 11/19/06 7:00 AM | 10.50 | 3.48 | 43.66 | 43.81 | -0.15 | 90.26 | 29.83 | -0.22 | 0 | 4.3 |
| 11/19/06 8:00 AM | 14.09 | 13.10 | 44.23 | 44.39 | -0.16 | 93.03 | 29.84 | 1.70 | 0 | |
| 11/19/06 9:00 AM | 11.46 | 13.51 | 44.02 | 44.22 | -0.20 | 93.12 | 29.85 | 36.87 | 0 | |
| 11/19/06 10:00 AM | 9.99 | 6.77 | 43.76 | 44.04 | -0.28 | 89.13 | 29.86 | 107.85 | 0 | |
| 11/19/06 11:00 AM | 11.81 | 10.20 | 44.39 | 44.94 | -0.55 | 83.53 | 29.86 | 298.94 | 0 | |
| 11/19/06 12:00 PM | 11.06 | 13.89 | 46.12 | 46.80 | -0.68 | 76.39 | 29.86 | 305.76 | 0 | |
| 11/19/06 1:00 PM | 9.87 | 9.64 | 46.75 | 47.26 | -0.51 | 73.87 | 29.85 | 161.41 | 0 | 0.2 |
| **Maximum** | **14.09** | | **51.85** | **52.40** | **-0.03** | **93.12** | **29.89** | **487.39** | **0.00** | **4.30** |
| **Minimum** | **1.26** | | **41.91** | **41.96** | **-0.76** | **51.22** | **29.83** | **-2.98** | **0.00** | **0.10** |
| **Average** | **6.78** | | **46.48** | **46.78** | **-0.31** | **74.49** | **29.86** | **123.29** | **0.00** | **1.70** |

# Post Dredging/Demobilization Sampling Round
# (7am November 18 – 1pm November 19, 2006 Hourly Data)

## Wind Rose Diagram




Wind Direction: Blowing From

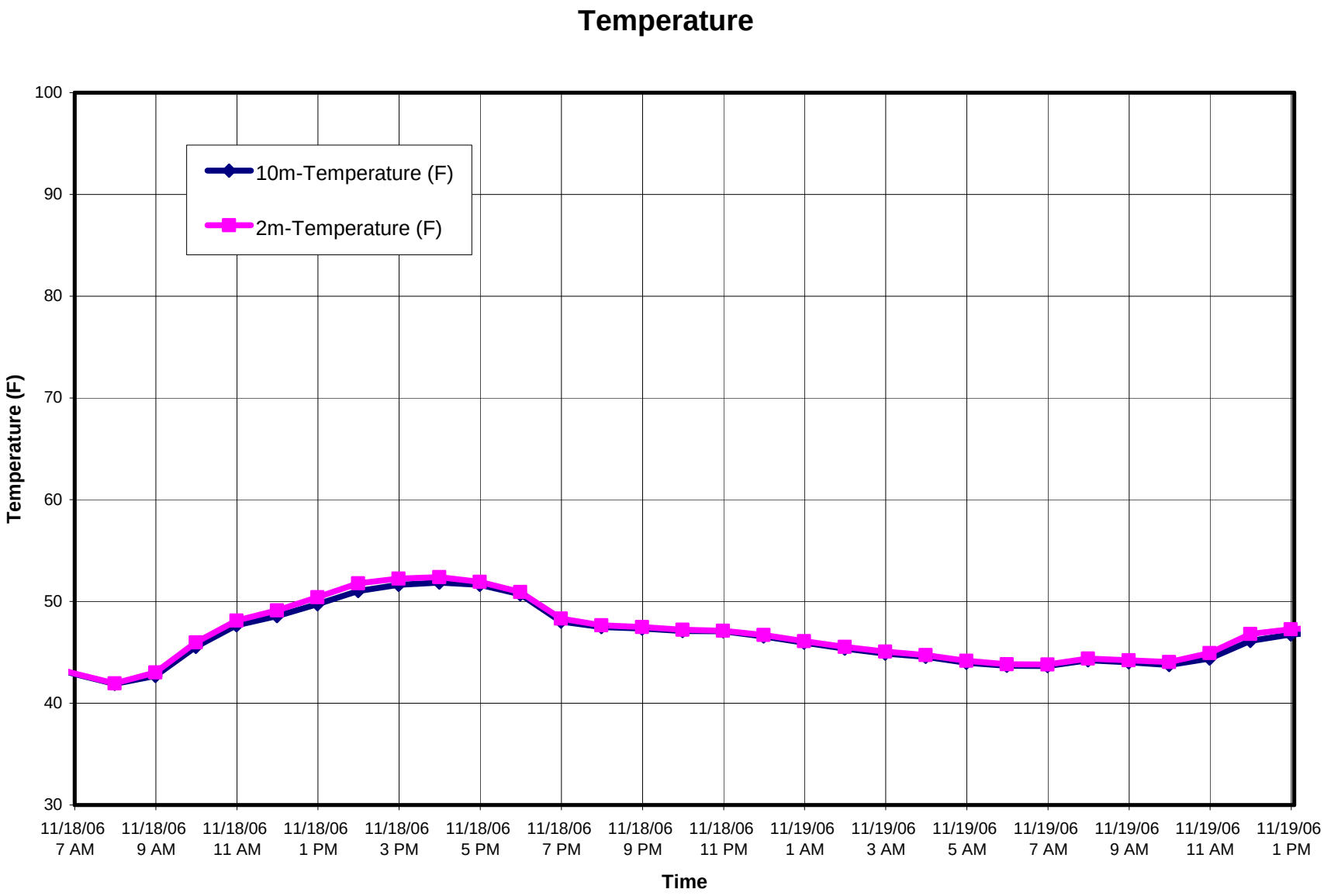
WIND SPEED
(m/s)

- >= 11.1
- 8.8 - 11.1
- 5.7 - 8.8
- 3.6 - 5.7
- 2.1 - 3.6
- 0.5 - 2.1

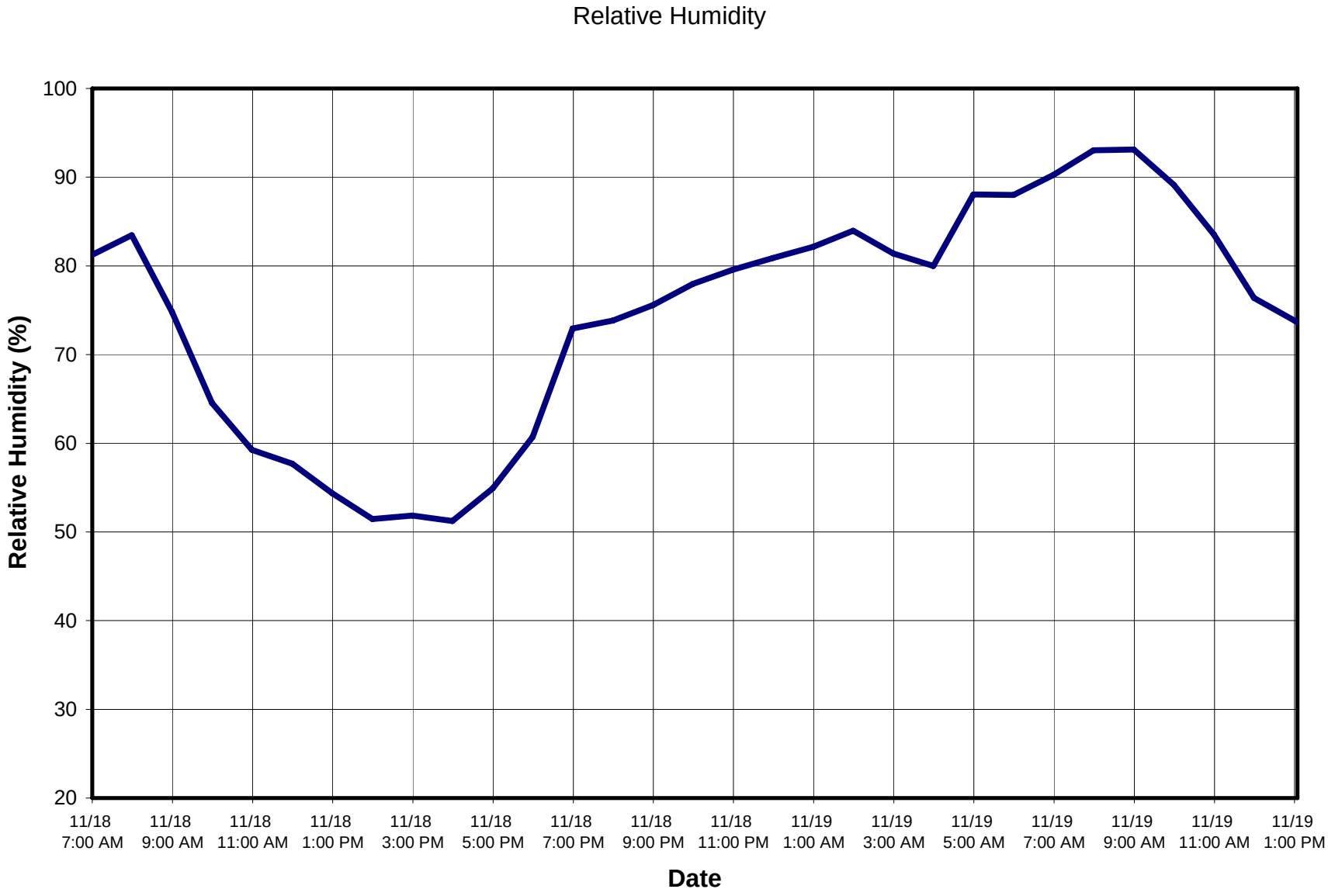
Calms: 0.00 %

1 m/s (meter per second) = 2.237 miles per hour

# Post Dredging/Demobilization Sampling Round
# (7am November 18 – 1pm November 19, 2006 Hourly Data)

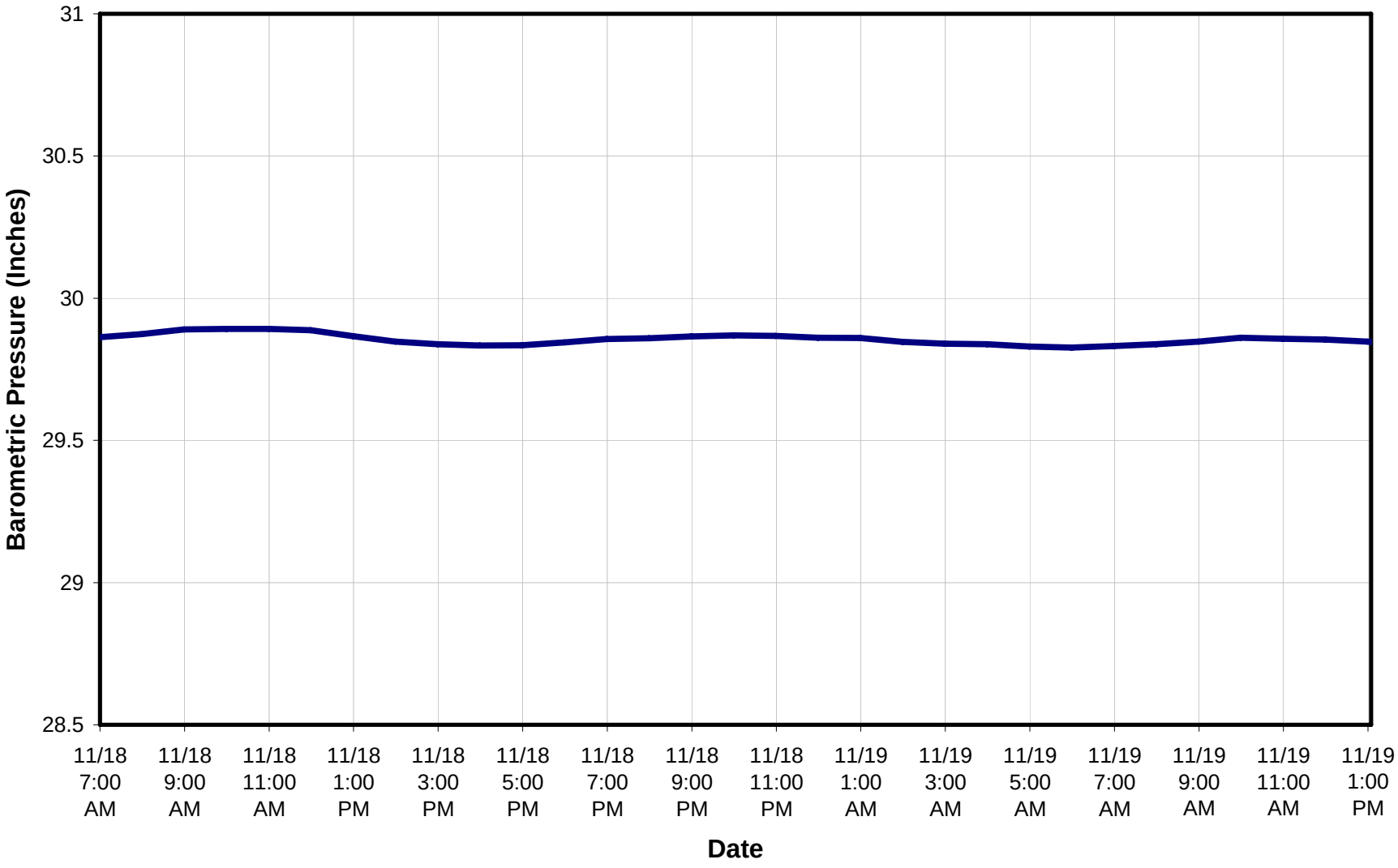


# Post Dredging/Demobilization Sampling Round
# (7am November 18 – 1pm November 19, 2006 Hourly Data)

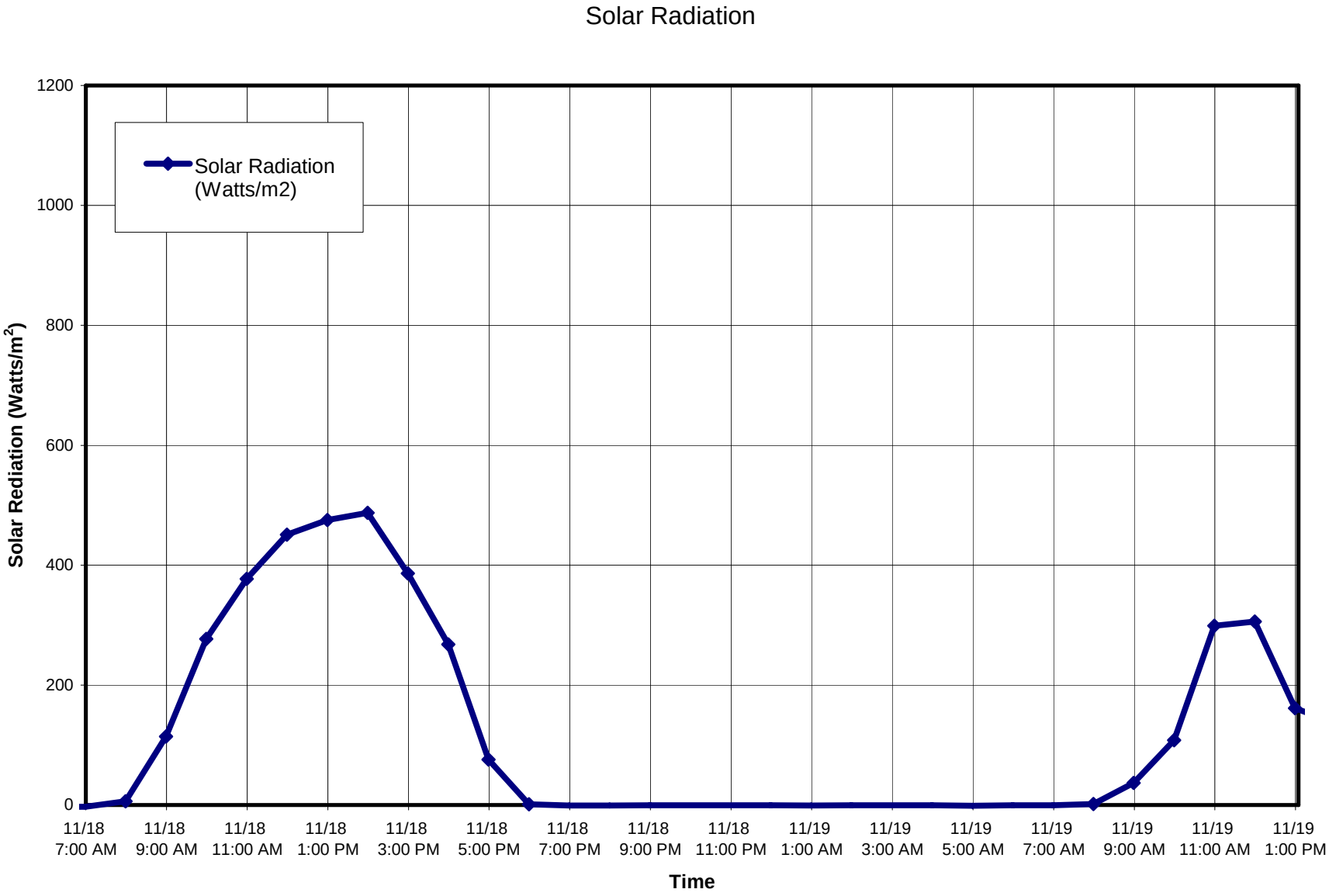


# Post Dredging/Demobilization Sampling Round
# (7am November 18 – 1pm November 19, 2006 Hourly Data)

Barometric Pressure

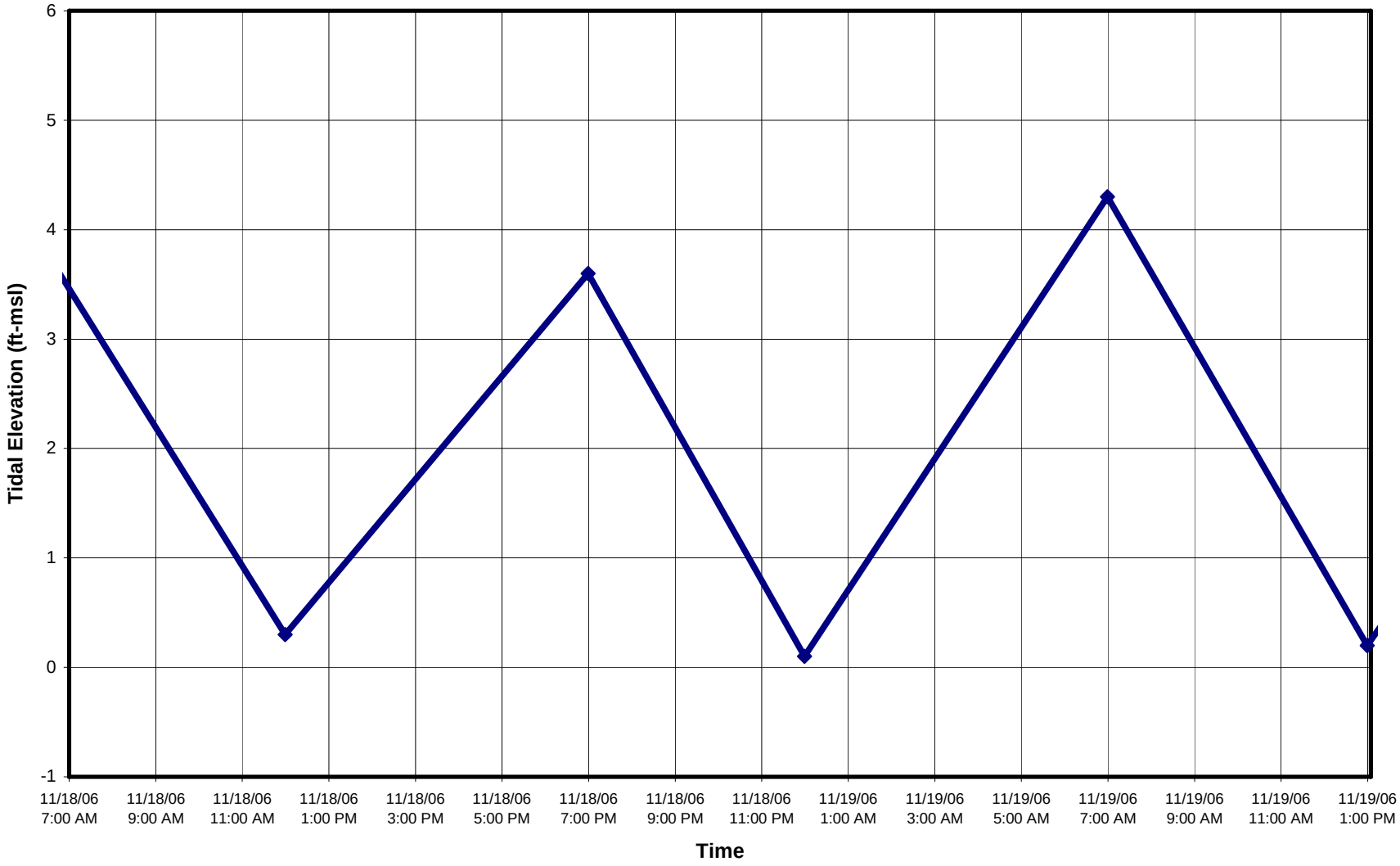


# Post Dredging/Demobilization Sampling Round
# (7am November 18 – 1pm November 19, 2006 Hourly Data)



# Post Dredging/Demobilization Sampling Round
# (7am November 18 – 1pm November 19, 2006 Hourly Data)

Tidal (ft)



# ATTACHMENT G

# Jacobs Solid and Water Balance and PCB Mass Removal Calculations

CBI

CBI

CBI

CBI

CBI

CBI

CBI

# ATTACHMENT H

# Sevenson Operational Monitoring Data

CBI

CBI