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FINAL FEASIBILITY STUDY FOR SITE 11A BUILDING 3033 FORMER VEHICLE REPAIR FACILITY AND WASTE OIL TANK JEB LITTLE CREEK VA

06/01/2011

CH2M HILL

Final

Feasibility Study
Site 11a - Building 3033 Former Vehicle Repair Facility and Waste Oil Tank

Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

NAVFAC
Naval Facilities Engineering Command
NAVFAC ATLANTIC

Prepared for

Department of the Navy
Naval Facilities Engineering Command
Mid-Atlantic Division

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Contract Task Order 0125

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Under the

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Contract N62470-02-D-3052

Prepared by

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Virginia Beach, Virginia

Executive Summary

This report presents the Feasibility Study (FS) for Site 11a, Building 3033 Former Vehicle Repair Facility and Waste Oil Tank, at Joint Expeditionary Base (JEB) Little Creek, Virginia Beach, Virginia. This FS was prepared under the U.S. Navy, Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic, Comprehensive Long-Term Environmental Action Navy Contract No. N62470-02-D-3052, Contract Task Order 0125, for submittal to NAVFAC, the United States Environmental Protection Agency, and the Virginia Department of Environmental Quality.

Potential unacceptable human health risks have been identified at Site 11a from exposure to chlorinated volatile organic compounds in shallow groundwater. This FS identifies remedial action objectives (RAOs) to protect human health and the environment, identifies applicable or relevant and appropriate requirements (ARARs) and to-be-considered information, and develops and evaluates remedial alternatives to prevent unacceptable risk from exposure to contaminants at Site 11a. Remedial alternatives were developed following the initial screening process. The following four remedial alternatives were retained for detailed evaluation and comparative analysis:

- Alternative 1: No Action
- Alternative 2: Enhanced Reductive Dechlorination (ERD)
- Alternative 3: In Situ Chemical Oxidation and ERD
- Alternative 4: Air Sparging/Soil Vapor Extraction (AS/SVE)

This FS provides a detailed analysis of each alternative against the National Oil and Hazardous Substance Pollution Contingency Plan (NCP) criteria followed by the comparative analysis of the remedial alternatives against one another.

Alternative 1 does not meet the statutory requirements of the NCP and is not a viable remedial action for this site. The following discussion, therefore, applies only to Alternatives 2 through 4.

All alternatives are protective of human health and the environment. Monitoring will be conducted and land use controls will be maintained to ensure adequate protection of human health and the environment by controlling exposure to shallow groundwater and groundwater emissions until the RAOs are met. All alternatives are also expected to comply with ARARs.

Each of the alternatives is expected to achieve long-term effectiveness and permanence once RAOs are met. Alternatives 2 and 3 are expected to be more effective than Alternative 4 because these rely on injection of reagents to condition the aquifer for continued degradation following termination of injection activities and therefore reduce the risk of rebound of contaminant concentrations. However, the AS/SVE system could easily be reinitiated if rebound occurred.

The alternatives are each expected to reduce toxicity, mobility, and volume. Each has treatment components, which is the statutory preference.

The short-term effectiveness associated with Alternatives 2 and 3 are similar with regard to impacts to the community, as both treatments rely on direct injection technology for implementation. Alternative 4 has a slightly higher risk of impacting the community, as the technology will rely on an ex situ component to treat soil vapors. Alternatives 2 and 3 have a slightly higher risk to construction workers during implementation than Alternative 4 due to the handling and potential exposure to reagents, with Alternative 3 posing a higher risk due to use of oxidizing chemicals. Additionally, Alternative 3 has a slightly higher risk of creating environmental impacts than Alternatives 2 and 4 because it has the potential to temporarily mobilize naturally occurring metals. Alternatives 2, 3, and 4 are expected to achieve RAOs within a similar timeframe. As a result of the sustainability evaluation performed, Alternative 2 has slightly higher resource consumption than Alternative 3, since the reagent used (emulsified vegetable oil) is a naturally derived material. Alternative 4 has higher energy consumption, green house gas emissions, and resource consumption than Alternatives 2 and 3 because it requires on-going electrical energy input throughout its effective life to power the AS/SVE equipment. Additionally, Alternative 4 requires permanent installation of equipment, which increases its resource consumption. Therefore, Alternative 2 received the highest ranking, and Alternatives 3 and 4 received equivalent rankings for this criterion.

The alternatives can each be implemented using standard and widely available technologies. Alternative 4 is less implementable because the technology is more difficult to construct and requires increased operation and maintenance of the treatment system. Additionally, because of the shallow water table, successful implementation of this alternative would require the system be operated under a low vacuum pressure to minimize water recovery, potentially resulting in additional maintenance. Consequently, the SVE wells would achieve a smaller radius of influence with some short circuiting to the surface, reducing the effectiveness of the treatment system.

The estimated present value cost for Alternative 2 ($3 million) is less than the estimated present value costs for Alternatives 3 ($3.4 million) and 4 ($3.6 million); therefore, Alternative 2 received a higher ranking than Alternatives 3 and 4.

Overall, the total scores for the three active remedial alternatives (Alternatives 2, 3, and 4) are relatively similar. Each of these alternatives would be reasonably expected to be effective at the site and achieve the RAOs. Of these alternatives, Alternative 2 has the highest score and is the lowest cost alternative.

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Acronyms and Abbreviations

ARAR	applicable or relevant and appropriate requirement
AS	air sparging
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHP	catalyzed hydrogen peroxide
CLEAN	Comprehensive Long-Term Environmental Action Navy
COC	chemical of concern
DCE	dichloroethene
EO	Executive Order
ERD	enhanced reductive dechlorination
ERP	Environmental Restoration Program
FS	Feasibility Study
g	gram
g/kg	gram per kilogram
GAC	granular activated carbon
gpm	gallon per minute
HHRA	Human Health Risk Assessment
IR	Installation Restoration
ISCO	in situ chemical oxidation
JEB	Joint Expeditionary Base
kg	kilogram
$KMnO_4$	potassium permanganate
LTM	long-term monitoring
LUC	land use control
MCL	maximum contaminant level
µg/L	microgram per liter
MnO_2	manganese dioxide
MnO_4	permanganate
NAB	Naval Amphibious Base
$NaMnO_4$	sodium permanganate
NAVFAC	Naval Facilities Engineering Command
NCP	National Oil and Hazardous Substance Pollution Contingency Plan
NOD	natural oxidant demand
O&M	operations and maintenance

PCE	tetrachloroethene
PCP	pentachlorophenol
PRG	preliminary remediation goal
psi	pound per square inch
PVC	polyvinyl chloride
RAO	remedial action objective
RI	Remedial Investigation
ROD	Record of Decision
ROI	radius of influence
SARA	Superfund Amendments and Reauthorization Act
scfm	standard cubic foot per minute
SVE	soil vapor extraction
SWMU	solid waste management unit
TBC	to-be-considered
TCE	trichloroethene
USEPA	United States Environmental Protection Agency
VC	vinyl chloride
VOC	volatile organic compound

SECTION 1

Introduction and Background

This report presents the Feasibility Study (FS) for Site 11a, Building 3033 Former Vehicle Repair Facility and Waste Oil Tank, at Joint Expeditionary Base (JEB) Little Creek, Virginia Beach, Virginia. This FS was prepared by CH2M HILL under the Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic, Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract No. N62470-02-D-3052, Contract Task Order 0125, for submittal to NAVFAC, the United States Environmental Protection Agency (USEPA), and the Virginia Department of Environmental Quality. The FS was prepared in accordance with the process outlined in the Navy's Environmental Restoration Program (ERP), which is consistent with the National Oil and Hazardous Substance Pollution Contingency Plan (NCP) and Section 120 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA).

Previous investigations identified potential human health risk associated with chlorinated volatile organic compounds (VOCs) in shallow groundwater (i.e., Columbia aquifer) at Site 11a. Exposure to groundwater may pose unacceptable risks and hazards to construction workers from inhalation of volatile vapors from chlorinated VOCs in the groundwater in an open excavation and to future residents from potable use of shallow groundwater. There are no unacceptable risks from indoor air under existing site conditions; however, due to detections of VOCs in subslab vapor and the potential for concentrations of VOCs in shallow groundwater to temporarily increase during implementation of a remedial action, future degradation of existing building conditions or changes in land use may increase the potential for unacceptable risks. There are no unacceptable human health risks associated with soil and no unacceptable ecological risks at Site 11a. The nature and extent of contamination and the findings of human health and ecological risk assessments are documented in the Site 11a Remedial Investigation (RI) report (CH2M HILL, 2010a); the Site 11a Data Gap Investigation Results Technical Memorandum (CH2M HILL, 2010b); and the Site 11a RI Addendum Report (CH2M HILL, 2011).

In response to these findings, this FS was conducted to develop and evaluate remedial alternatives to prevent unacceptable risk from exposure to shallow groundwater at Site 11a by construction workers from inhalation of vapors in an open excavation and by future residents as a result of potable use. This FS identifies remedial action objectives (RAOs) to protect human health and the environment and identifies applicable or relevant and appropriate requirements (ARARs).

1.1 JEB Little Creek Description and History

On October 1, 2009, Hampton Roads' first Department of Defense Joint Base was established. This new installation comprises the former Naval Amphibious Base (NAB) Little Creek and Army post of Fort Story; the new name is JEB Little Creek-Fort Story. With the forming of this new command, the Navy assumes responsibility for management of both

properties and will now merge meetings regarding the ongoing ERPs. However, separate records will be maintained to ensure the integrity of ongoing efforts at both properties. When required for public notices and distributions, the former bases will be identified as JEB Little Creek-Fort Story. For ERP documents, the bases will be referred to separately as JEB Little Creek and JEB Fort Story.

JEB Little Creek is primarily an industrial and training facility located in the northwest corner of Virginia Beach, Virginia. The western boundary of JEB Little Creek borders the City of Norfolk, Virginia (**Figure 1-1**). The 2,215-acre base is low lying and relatively flat with several freshwater lakes (Chubb Lake, Lake Bradford, Little Creek Reservoir/Lake Smith, and Lake Whitehurst) located on or adjacent to the base. JEB Little Creek centers around four saltwater bodies: Little Creek Harbor, Little Creek Cove, Desert Cove, and Little Creek Channel, which connects the coves and harbor with the Chesapeake Bay.

In addition to industrial land use, JEB Little Creek and the surrounding areas are also used for recreational, commercial, and residential purposes. Specifically, the southeast corner of the base has been developed for residential use. Land development surrounding the base is residential, commercial, and industrial. Little Creek Reservoir/Lake Smith, located upgradient of the base, serves as a secondary drinking water supply for parts of the City of Norfolk.

JEB Little Creek grew out of four bases constructed during World War II: the Amphibious Training Base, the Naval Frontier Base, and Camps Bradford and Shelton. It consisted of three annexes named for the former owners of the property: Shelton on the east, Bradford in the center, and Whitehurst to the west. A Secretary of the Navy letter in July 1945 disestablished the separate bases and established the former NAB Little Creek on August 10, 1945. In 1946, the former NAB Little Creek was designated a permanent base. The base's mission was the training of landing craft personnel for operational assignments.

JEB Little Creek has expanded in both area and the complexity of its mission over the past 50 years. Base personnel provide logistic facilities and support services to 27 home-ported ships and more than 80 tenant commands. The combination of operational support and training facilities is geared predominantly to meet the amphibious warfare–training requirements of the United States Armed Forces. Operations that have occurred at JEB Little Creek include vehicle and boat maintenance, boat painting and sandblasting, construction and repair of buildings and piers, mixing and application of pesticides, electroplating of musical instruments, laundry and dry cleaning, medical and dental treatment, and the generation of steam for heat.

1.2 Site 11a Description and History

Site 11a is centrally located in the industrial area of JEB Little Creek (**Figure 1-1**). The current southern portion of the site boundary adjoins the northern portion of the boundary for Installation Restoration (IR) Site 11. Site 11a was identified in 1998 when VOCs were detected in groundwater from a Site 11 upgradient monitoring well (LS11-MW16D) during the Site 11 Supplemental RI (CH2M HILL, 2004). Groundwater samples were collected in 1999 in the Site 11a vicinity as part of Site 11 investigations to identify a potential upgradient source of VOCs. Consequently, the trichloroethene (TCE) groundwater contamination

upgradient of Site 11 became identified in the Federal Facility Agreement as Site 11a, an Appendix A Site, in 2001 and was proposed for investigation under CERCLA.

Surface features at Site 11a consist of Buildings 3606 and 3606A, their surrounding asphalt parking areas, and an open mown grass field (**Figure 1-2**). Building 3606 is a five-story barracks building used as single residence lodging for active duty personnel. Building 3606A is a one-story building used primarily for administrative and recreational activities associated with the barracks. The open field south of Building 3606 is used primarily as a recreational area for building occupants.

Two former buildings, Buildings 3033 and 3034, were located at the site (**Figure 1-2**). Former Building 3033, used as a twelve-bay vehicle repair facility, was located immediately south of the current barracks building. Historical records indicate the presence of an underground waste oil tank associated with the vehicle repair activities. The tank was identified as Solid Waste Management Unit (SWMU) 60 in the SWMU/IR Summary report (NAB Little Creek, 2000). Contents of the tank were not documented, and there is no record of solvent disposal in the tank. The tank was reportedly excavated and removed in 1988 under the Underground Storage Tank Program; however, documentation of tank closure is not available. Prior to JEB Little Creek's placement on the National Priorities List in 1999, SWMU 60 was closed under CERCLA with no further action following a desktop audit (NAB Little Creek, 2000). SWMU 60 was documented in the Federal Facilities Agreement as closed with no further CERCLA action (DON, 2003). Former Building 3034, used as a garden supply center, was located in the grass-covered field. No releases associated with the building have been documented.

Flora at the site consists of landscaping shrubs/bushes, grass, and several large trees located along the northern and southern sides of Building 3606. The topography at Site 11a is flat, ranging from 8.3 to 9.5 feet above mean sea level, with no natural drainage features evident. The majority of precipitation is expected to run off into the neighboring storm sewer system that eventually drains into Little Creek Cove. Precipitation that does not drain to the storm sewer system would be expected to infiltrate to the groundwater, evaporate, or transpire. A storm sewer system passes through Site 11a. There are no surface water bodies on or near the site, and therefore there is no sediment associated with the site.

Shallow groundwater at Site 11a is generally encountered from 5 to 10 feet below ground surface (bgs). As discussed in the Site 11a Data Gap Investigation Results Technical Memorandum (CH2M HILL, 2010b) provided in **Appendix A**, groundwater elevation data collected over time suggest groundwater gradient underlying Site 11a is relatively flat and varies by less than 1 foot across the site. Slight variations in the overall groundwater flow direction have been observed and may be attributable to seasonal variation of groundwater elevations and the location of utilities beneath the site. However, based upon the current shape of the groundwater plume, it can be concluded that the predominant direction of groundwater flow is to the southwest. The subsurface geology at Site 11a consists of primarily medium- and fine-grained sands of the Columbia aquifer underlain by the high plasticity clay of the Yorktown confining unit. The Columbia aquifer extends to a depth of between 20 to 30 feet bgs. Grain-sized data collected within the Columbia aquifer at the site indicate the soils are predominantly fine- to medium-grained sands with a general coarsening downward.

1.3 Results of Environmental Investigations

Several investigations have been conducted at Site 11a, including the following:

- August 2001 Groundwater Investigation
- May through June 2002 Supplemental Investigation (CH2M HILL, 2003a)
- October 2003 Membrane Interface Probe and Direct Push Technology Investigation (CH2M HILL, 2003b)
- February 2004 Monitoring Well Installation and Groundwater Sampling
- January through November 2005 Treatability Study (CH2M HILL, 2006)
- September through October 2007 RI (CH2M HILL, 2010a)
- September 2009 through April 2010 Data Gap Investigation (CH2M HILL, 2010b)
- November 2009 through March 2010 Vapor Intrusion Investigation (CH2M HILL, 2011)

The scope of these investigations included collection and evaluation of shallow groundwater, surface soil, subsurface soil, subslab vapor, indoor air, and outdoor air samples. No potential human health or ecological risks were identified from exposure to surface and subsurface soil, and no potential human health risks were identified from exposure to indoor air; therefore, these media are not discussed in this FS. Potential human health risks were identified from exposure to chlorinated VOCs in shallow groundwater. The results of the shallow groundwater investigations and risk assessment are presented in the RI report (CH2M HILL, 2010a), the Site 11a Data Gap Investigation Technical Memorandum (CH2M HILL, 2010b) (**Appendix A**), and the RI Addendum Report (CH2M HILL, 2011) (**Appendix B**) and summarized in the following subsections.

1.3.1 Nature and Extent of Contamination

The chemicals of concern (COCs) identified in shallow groundwater at Site 11a are the chlorinated VOCs tetrachloroethene (PCE) and TCE. The COC concentrations in the site monitoring wells over time are provided in **Table 1-1**. The total COC plume trends south-southwest following the primary direction of groundwater flow from the source area near the footprint of the former Building 3033 and the suspected location of the former underground waste oil tank (**Figure 1-3**). Analytical results for grab groundwater samples collected just north and south of Building 3606 indicate VOCs are present beneath the building, suggesting groundwater may also be dispersing out from the source area, in addition to migrating with the groundwater in the predominant groundwater flow direction, due to the low groundwater gradient. The plume was delineated using the 2007 (RI) analytical data from the monitoring wells and the grab groundwater samples, as well as the grab groundwater samples collected north of Building 3606 during pre-RI field investigations. TCE is the most horizontally extensive COC, while PCE is concentrated to the source area and the area just south of the source. Based on the results of the grab groundwater samples, the southern portion of the total COC plume at Site 11a appears to be comingled with a separate VOC plume at Site 11. Therefore, the true extent of the southern boundary of the Site 11a total COC groundwater plume cannot be clearly defined.

1.3.2 Fate and Transport of Contamination

The primary mechanism for constituent transport at Site 11a is migration of dissolved VOCs in groundwater by advection. Secondary, less prominent fate and transport mechanisms for the COCs are dispersion from the source area due to the low groundwater gradient and potential volatilization from groundwater to soil gas and then to the atmosphere. Some biodegradation of PCE to TCE may be occurring. Transformation of TCE to cis-1,2-dichloroethene (DCE) and vinyl chloride (VC) does not appear to be occurring to a significant degree at the site. A conceptual site model is provided on **Figure 1-4**.

1.3.3 Human Health Risk Assessment

A screening level HHRA was conducted to evaluate the potential human health risks associated with current and future resident and industrial worker exposure to groundwater emissions to indoor air (**Appendix B**). No potentially unacceptable current or future risks were identified from exposure to indoor air under existing site conditions. Due to detections of VOCs in subslab vapor and the potential for concentrations of VOCs in shallow groundwater to temporarily increase during implementation of a remedial action, degradation of existing building conditions or changes in land use may increase the potential for unacceptable risks from exposure to indoor air.

A baseline HHRA was conducted to evaluate the potential human health risks associated with current receptors (adult residents) and hypothetical future receptors (industrial workers, trespassers/visitors, construction workers, adult residents, child residents, lifetime residents) and multiple exposure scenarios (ingestion, dermal contact, inhalation [showering], inhalation [groundwater emissions from excavation]) if no remedial action is implemented for shallow groundwater. A summary of the reasonable maximum exposure risks is provided in **Table 1-2**. The table identifies the scenarios in which the non-carcinogenic hazard exceeds the target hazard index of 1.0 and the carcinogenic risk exceeds the target risk range of 10^{-6} to 10^{-4}. The potential unacceptable risks and hazards to the construction worker are primarily associated with inhalation of TCE and PCE vapors from the groundwater in an open excavation. The potential unacceptable risks and hazards to the future resident are primarily associated with ingestion of and/or dermal contact with PCE, TCE, PCP, and manganese.

Although potential risks associated with PCP in shallow groundwater were identified in the RI, it was detected one time in 2007 while not detected during subsequent sampling. Additionally, there is no documented use of PCP associated with Site 11a activities. Therefore, the one-time detection of PCP does not define a plume nor is it considered to be related to a CERCLA release from Site 11a (**Appendix A**). Additionally, the HHRA indicated a potential hazard associated with manganese. However, based on the concentrations detected in the groundwater, the potential intake of manganese is less than the recommended daily allowance. Furthermore, the manganese concentrations detected at Site 11a are less than the 95 percent background upper tolerance limit concentration for manganese. Therefore, PCP and manganese are not considered COCs for Site 11a.

TABLE 1-1
Monitoring Well Groundwater COC Results
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Station ID	LS11-MW15D								LS11-MW16D							
Sample ID	LS11-MW15D-99C	LS11-MW15D-03A	LS11-MW15D-17-04A	LS11-MW15D-05A	LS11-MW15D-R01-05B	LS11-MW15D-R02-05B	LS11-MW15D-R03-05D	LS11-MW15D-07C	LS11-MW16D-99C	LS11-MW16D-02B	LS11-MW16D-22-04A	LS11-MW16D-05A	LS11-MW16D-R01-05B	LS11-MW16D-R02-05B	LS11-MW16D-R03-05D	LS11-MW16D-07C
Sample Date	07/01/99	01/03/03	02/23/04	01/31/05	04/04/05	06/13/05	11/07/05	10/09/07	07/01/99	06/07/02	02/23/04	01/31/05	04/04/05	06/14/05	11/07/05	10/10/07
Volatile Organic Compounds (UG_L)																
Tetrachloroethene	1 U	0.5 U	10 U	10 U	10 U	10 U	0.5 U	0.12 J	10 U	1 U	2.2 J	10 U	10 U	10 U	0.11 J	0.39 B
Trichloroethene	1 U	0.5 U	10 U	10 U	10 U	10 U	0.5 U	0.5 U	100	83	61	100	89	140	190	140

Notes:
Represents detections
U - Analyte not detected
J - Reported value is estimated
B - Anlayte not detected above the associated blank

TABLE 1-1
Monitoring Well Groundwater COC Results
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Station ID	LS11-MW20D								LS11-MW21D							
Sample ID	LS11-MW20D-02B	LS11-MW20D-18-04A	LS11-MW20D-23-04A	LS11-MW20D-05A	LS11-MW20D-R01-05B	LS11-MW20D-R02-05B	LS11-MW20D-R03-05D	LS11-MW20D-07C	LS11-MW21D-02B	LS11-MW21D-21-04A	LS11-MW21D-26-04A	LS11-MW21D-05A	LS11-MW21D-R01-05B	LS11-MW21D-R02-05B	LS11-MW21D-R03-05D	LS11-MW21D-07C
Sample Date	06/07/02	02/23/04	02/23/04	02/01/05	04/04/05	06/14/05	11/07/05	10/12/07	06/07/02	02/23/04	02/23/04	02/01/05	04/04/05	06/14/05	11/07/05	10/12/07
Volatile Organic Compounds (UG_L)																
Tetrachloroethene	0.54 B	10 U	10 U	10 U	10 U	10 U	0.5 U	0.5 U	44	10 U	10 U	10 U	10 U	10 U	0.5 U	0.5 U
Trichloroethene	1 U	10 U	10 U	10 U	10 U	10 U	0.5 U	0.5 U	110	2 J	2.1 J	1 J	1 J	1 J	1.5 B	1.9

Notes:
Represents detections
U - Analyte not detected
J - Reported value is estimated
B - Anlayte not detected above the associated blank

TABLE 1-1
Monitoring Well Groundwater COC Results
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Station ID	LS11-MW22D								LS11-MW31D									
Sample ID	LS11-MW22D-02B	LS11-MW22D-20-04A	LS11-MW22D-25-04A	LS11-MW22D-05A	LS11-MW22D-R01-05B	LS11-MW22D-R02-05B	LS11-MW22D-R03-05D	LS11-MW22D-07C	LS11-MW31D-7-04A	LS11-MW31D-12-04A	LS11-MW31D-17-04A	LS11-MW31D-22-04A	LS11-MW31D-27-04A	LS11-MW31D-05A	LS11-MW31D-R01-05B	LS11-MW31D-R02-05B	LS11-MW31D-R03-05D	LS11-MW31D-07C
Sample Date	06/07/02	02/23/04	02/23/04	02/01/05	04/05/05	06/14/05	11/08/05	10/11/07	02/23/04	02/23/04	02/23/04	02/23/04	02/23/04	02/01/05	04/05/05	06/14/05	11/08/05	10/10/07
Volatile Organic Compounds (UG_L)																		
Tetrachloroethene	0.94 B	10 U	10 U	10 U	4 J	10 U	13 U	0.45 J	6.4 J	6.5 J	6 J	5.9 J	5.7 J	12	3 J	8 J	2.5	6.8
Trichloroethene	53	200	200	290	420	370	370	260	94	94	94	96	98	150	14	25	65	110

Notes:
Represents detections
U - Analyte not detected
J - Reported value is estimated
B - Anlayte not detected above the associated blank

TABLE 1-1
Monitoring Well Groundwater COC Results
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Station ID	LS11-MW32D									
Sample ID	LS11-MW32D-6-04A	LS11-MW32D-11-04A	LS11-MW32D-16-04A	LS11-MW32D-21-04A	LS11-MW32D-26-04A	LS11-MW32D-05A	LS11-MW32D-R01-05B	LS11-MW32D-R02-05B	LS11-MW32D-R03-05D	LS11-MW32D-07C
Sample Date	02/23/04	02/23/04	02/23/04	02/23/04	02/23/04	02/01/05	04/05/05	06/14/05	11/08/05	10/10/07
Volatile Organic Compounds (UG_L)										
Tetrachloroethene	410	420	400	360	270	1,100	1,800	1,100	110	430 J
Trichloroethene	86	86	84	85	83	84	94	120	190	150

Notes:
Represents detections
U - Analyte not detected
J - Reported value is estimated
B - Anlayte not detected above the associated blank

TABLE 1-1
Monitoring Well Groundwater COC Results
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Station ID	LS11-MW33D								
Sample ID	LS11-MW33D-07-04A	LS11-MW33D-12-04A	LS11-MW33D-17-04A	LS11-MW33D-22-04A	LS11-MW33D-05A	LS11-MW33D-R01-05B	LS11-MW33D-R02-05B	LS11-MW33D-R03-05D	LS11-MW33D-07C
Sample Date	02/23/04	02/23/04	02/23/04	02/23/04	01/31/05	04/05/05	06/14/05	11/07/05	10/10/07
Volatile Organic Compounds (UG_L)									
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.5 U	0.2 B
Trichloroethene	11	15	16	17	7 J	6 J	6 J	5.9 J	10

Notes:
Represents detections
U - Analyte not detected
J - Reported value is estimated
B - Anlayte not detected above the associated blank

TABLE 1-1
Monitoring Well Groundwater COC Results
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Station ID	LS11-MW34D										LS11-MW35D				
Sample ID	LS11-MW34D-6-04A	LS11-MW34D-11-04A	LS11-MW34D-16-04A	LS11-MW34D-21-04A	LS11-MW34D-26-04A	LS11-MW34D-05A	LS11-MW34D-R01-05B	LS11-MW34D-R02-05B	LS11-MW34D-R03-05D	LS11-MW34D-07C	LS11-MW35D-05A	LS11-MW35D-R01-05B	LS11-MW35D-R02-05B	LS11-MW35D-R03-05D	LS11-MW35D-07C
Sample Date	02/23/04	02/23/04	02/23/04	02/23/04	02/23/04	02/01/05	04/05/05	06/14/05	11/08/05	10/11/07	01/31/05	04/04/05	06/13/05	11/07/05	10/12/07
Volatile Organic Compounds (UG_L)															
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U	5 J	10 U	0.83 J	5.1	10 U	10 U	10 U	0.5 U	0.21 J
Trichloroethene	28	29	32	34	44	120	49	160	31	210	7 J	5 J	4 J	0.78 B	2.3

Notes:
Represents detections
U - Analyte not detected
J - Reported value is estimated
B - Anlayte not detected above the associated blank

TABLE 1-1
Monitoring Well Groundwater COC Results
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Station ID	LS11A-MW36D	LS11A-MW37D	LS11A-MW38D	LS11A-MW39D	LS11A-MW40D
Sample ID	LS11A-MW36D-07C	LS11A-MW37D-07C	LS11A-MW38D-07C	LS11A-MW39D-07C	LS11A-MW40D-07C
Sample Date	10/09/07	10/09/07	10/08/07	10/08/07	10/09/07
Volatile Organic Compounds (UG_L)					
Tetrachloroethene	160	0.13 J	50 U	0.46 J	2.8
Trichloroethene	61	0.5 U	730	16 B	0.21 B

Notes:
Represents detections
U - Analyte not detected
J - Reported value is estimated
B - Anlayte not detected above the associated blank

TABLE 1-2

Summary of Reasonable Maximum Exposure Carcinogenic Risks and Hazard Indices

Site 11a Feasibility Study Report

Joint Expeditionary Base Little Creek

Virginia Beach, Virginia

Receptor	Media	Exposure Route	Carcinogenic Risk	Chemicals with Carcinogenic Risks >10^{-4}	Hazard Index	Chemicals with Hazard Index >1
Current Resident Adult	Surface Soil	Ingestion	8.7E-07		9.9E-02	
		Dermal Contact	1.5E-07		1.4E-02	
		Inhalation	NA		NA	
		Total	1.0E-06		1.1E-01	
	All Media	Total	1.0E-06		1.1E-01	
Future Resident Adult	Soil*	Ingestion	NA		1.1E-01	
		Dermal Contact	NA		1.2E-02	
		Inhalation	NA		2.0E-04	
		Total	NA		1.2E-01	
	Groundwater	Ingestion	NA		2.9E+00	
		Dermal Contact	NA		1.0E+00	
		Inhalation	NA		1.1E-01	
		Total	NA		4.0E+00	Tetrachloroethene (1.5)
	All Media	Total	NA		4.1E+00	
Future Resident Child	Soil*	Ingestion	NA		1.0E+00	
		Dermal Contact	NA		8.1E-02	
		Inhalation	NA		7.0E-04	
		Total	NA		1.1E+00	
	Groundwater	Ingestion	NA		6.8E+00	Tetrachloroethene (2.1), Trichloroethene (2.0)
		Dermal Contact	NA		2.3E+00	Tetrachlorethene (1.2)
		Inhalation	NA		NA	
		Total	NA		9.1E+00	Tetrachloroethene (3.3), Trichloroethene (2.4), Manganese (1.2)
	All Media	Total	NA		1.0E+01	
Future Resident Child/Adult	Soil*	Ingestion	8.4E-06		NA	
		Dermal Contact	1.1E-06		NA	
		Inhalation	1.4E-07		NA	
		Total	9.7E-06		NA	
	Groundwater	Ingestion	2.8E-03	Tetrachloroethene (2.6E-03)	NA	
		Dermal Contact	1.7E-03	Tetrachloroethene (1.5E-03), Pentachlorophenol (1.3E-04)	NA	
		Inhalation[1]	5.6E-05		NA	
		Total	4.5E-03	Tetrachloroethene (4.2E-03), Pentachlorophenol (1.4E-04)	NA	
	All Media	Total	4.5E-03		NA	

TABLE 1-2

Summary of Reasonable Maximum Exposure Carcinogenic Risks and Hazard Indices

Site 11a Feasibility Study Report

Joint Expeditionary Base Little Creek

Virginia Beach, Virginia

Receptor	Media	Exposure Route	Carcinogenic Risk	Chemicals with Carcinogenic Risks >10^{-4}	Hazard Index	Chemicals with Hazard Index >1
Future Construction Worker Adult	Soil*	Ingestion	3.6E-07		3.3E-01	
		Dermal Contact	3.1E-08		2.1E-02	
		Inhalation	3.2E-09		1.4E-04	
		Total	4.0E-07		3.5E-01	
	Groundwater	Ingestion	NA		NA	
		Dermal Contact	4.6E-05		1.1E+00	
		Inhalation	1.5E-04	Tetrachloroethene (1.2E-04)	7.0E+00	Tetrachloroethene (5.1), Trichloroethene (1.6)
		Total	2.0E-04	Tetrachloroethene (1.6E-04)	8.1E+00	Tetrachloroethene (5.6), Trichloroethene (1.8)
	All Media	Total	2.0E-04		8.5E+00	
Future Industrial Worker Adult	Soil*	Ingestion	1.9E-06		6.9E-02	
		Dermal Contact	5.1E-07		1.5E-02	
		Inhalation	8.1E-08		1.4E-04	
		Total	2.5E-06		8.3E-02	
	All Media	Total	2.5E-06		8.3E-02	
Future Trespasser/Visitor Adult	Soil*	Ingestion	3.8E-07		1.6E-02	
		Dermal Contact	6.2E-08		1.8E-03	
		Inhalation	1.0E-09		1.8E-06	
		Total	4.4E-07		1.8E-02	
	All Media	Total	4.4E-07		1.8E-02	
Future Trespasser/Visitor Adolescent	Soil*	Ingestion	1.9E-07		2.2E-02	
		Dermal Contact	1.3E-07		1.0E-02	
		Inhalation	5.2E-10		2.5E-06	
		Total	3.2E-07		3.2E-02	
	All Media	Total	3.2E-07		3.2E-02	

Notes:

NA - Not applicable

Soil* = combined surface and subsurface soil.

[1]Inhalation calculated for adult only.

\\APHRODITE\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\SITE11A\FS\FIGURE 1-1 - SITE LOCATION MAP.MXD CBOWMAN 8/24/2009 16:28:04

Legend

- Site 11a Area of Investigation
- Installation Boundary

N
W E
S

0 1,000 2,000 4,000 Feet

Figure 1-1
JEB Little Creek and Site 11a Location
Site 11a Feasibility Study Report
JEB Little Creek
Virginia Beach, Virginia

CH2MHILL

\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\345721_SITE11A_FS\FIGURE 1-2 - SITE 11A LOCATION AND VICINITY_11X17.MXD CBOWMAN 12/14/2010 08:58:12

Legend

- Site 11a Area of Investigation
- Site 11 Area of Investigation
- Demolished Building
- Approximate Location of Former Underground Waste Oil Tank
- Water Line
- Wastewater Line
- Storm Sewer Line
- Natural Gas Line
- Heat Cool Line
- Electrical Cable Line

N
W E
S

0 40 80
Feet

Figure 1-2
Site 11a Location and Vicinity
Site 11a Feasibility Study Report
JEB Little Creek
Virginia Beach, Virginia

CH2MHILL

\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\345721_SITE11A_FS\FIGURE 1-3 - SHALLOW GROUNDWATER COPC PLUME.MXD CBOWMAN 2/1/2011 11:57:44

Legend

- Monitoring Well Location
- Grab Groundwater Location (collected in four foot intervals from 8 ft bgs to bottom of aquifer)
- Grab Groundwater Location (collected at top four feet of aquifer)
- Approximate Location of Former Underground Waste Oil Tank
- Demolished Building
- Area of Investigation

COC Concentrations (µg/L)

- 5-100
- 100-500
- 500+

N
W E
S

0 40 80
Feet

Note:
ND - Non detect
All sample IDs begin with base and site indentification "LS11" or "LS11A"
Value shown below sample location ID indicates total COC concentration in µg/L

Figure 1-3
Extent of COC Plume in Columbia Aquifer
Site 11a Feasibility Study Report
JEB Little Creek
Virginia Beach, Virginia

CH2MHILL

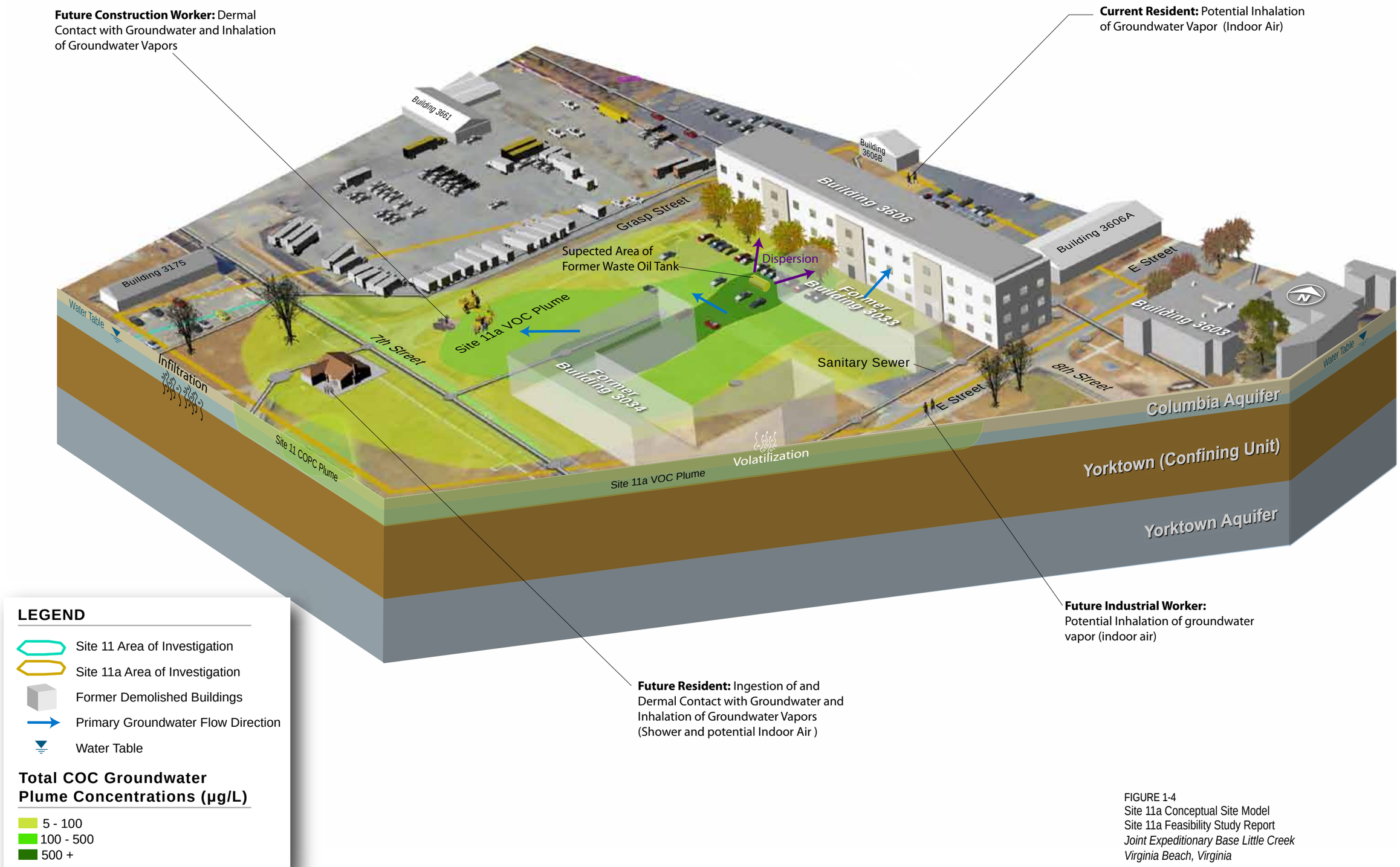

FIGURE 1-4
Site 11a Conceptual Site Model
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

SECTION 2

Remedial Action Objectives and Applicable or Relevant and Appropriate Requirements

This section discusses the NCP and CERCLA objectives and identifies the Site 11a RAOs and ARARs for the remedial actions considered in this FS.

2.1 NCP and CERCLA Objectives

The NCP requires that the selected remedy meet the following:

- Each remedial action selected shall be protective of human health and the environment [40 Code of Federal Regulations (CFR) 300.430 (f)(ii)(A)].
- Onsite remedial actions that are selected must attain those ARARs that are identified at the time of the Record of Decision (ROD) signature [40 CFR 300.430 (f)(ii)(B)].
- Each remedial action selected shall be cost-effective, provided that it first satisfies the threshold criteria set forth in §300.430(f)(1)(i)(A). A remedy shall be cost-effective if its costs are proportional to its overall effectiveness.
- Each remedial action shall use permanent solutions and alternative treatment technologies or resource-recovery technologies to the maximum extent practicable [40 CFR 300.430 (f)(ii)(E)].

The statutory scope of CERCLA was amended by SARA to include the following general objectives for remedial action at all CERCLA sites:

- Remedial actions "shall attain a degree of cleanup of hazardous substances, pollutants, and contaminants released into the environment and of control of further releases at a minimum which assures protection of human health and the environment" [Section 121(d)(1)].
- Remedial actions in which treatment that "permanently and significantly reduces the volume, toxicity, or mobility of the hazardous substances, pollutants, and contaminants is a principal element are to be preferred" [Section 121(b)(1)]. If the treatment or recovery technologies selected are not a permanent solution, an explanation must be published [Section 121 (b)(1)(G)].
- The least-favored remedial actions are those that include "offsite transport and disposal of hazardous substances or contaminated materials without treatment" where practicable treatment technologies are available [Section 121(b)(1)].
- The selected remedy must comply with or attain the level of any standard, requirement, criteria, or limitation under federal environmental law or any promulgated standard, requirement, criteria, or limitation under a state environmental or facility siting law that

is more stringent than any federal standard, requirement, criteria, or limitation [Section 121(d)(2)(A)].

2.2 Remedial Action Objectives

RAOs consist of medium-specific goals for protecting human health and the environment. The only media of concern being addressed by this FS is shallow groundwater based on potential risk to human health.

The RAOs for the protection of human health and the environment for Site 11a groundwater are as follows:

- Reduce concentrations of COCs in the source area and the downgradient plume to cleanup levels (maximum contaminant levels [MCLs]) through treatment to the maximum extent practicable within a reasonable amount of time
- Prevent exposure to Site 11a groundwater and groundwater emissions until concentrations of COCs have been reduced to levels that allow for unlimited use and unrestricted exposure

Development of Risk-Based Preliminary Remediation Goals

Preliminary remediation goals (PRGs) were developed for constituents with concentrations contributing to unacceptable risks and hazards from exposure to shallow groundwater at Site 11a. The potential for unacceptable risks from future exposure to indoor air as a result of changes in building conditions or land-use will be mitigated through the reduction of groundwater COC concentrations; therefore, no PRGs were established for this media. Based on the RI report (CH2M HILL, 2010a) and RI Addendum (CH2M HILL, 2010b), COCs were identified as those constituents with carcinogenic risks exceeding 10^{-4}, or a hazard index exceeding 1. Based on the risk drivers identified by the baseline HHRA, the COCs for Site 11a are PCE and TCE. To achieve RAOs for unlimited use and unrestricted exposure, PRGs are established as the MCLs. Therefore, the PRGs for the Site 11a COCs are as follows:

- PCE: 5 micrograms per liter (µg/L)
- TCE: 5 µg/L

Although not identified as site-specific COCs requiring PRGs, the degradation of PCE and TCE may result in temporary increases to the concentrations of daughter products cis-1,2-DCE and vinyl chloride. Even if the site-specific COC concentrations reach cleanup levels (MCLs), Site 11a cannot reach unlimited use and unrestricted exposure until cis-1,2-DCE and vinyl chloride are below the MCL. As a result, these constituents will be monitored during remedy implementation to ensure concentrations remain below their respective MCLs. The daughter product MCLs are as follows:

- cis-1,2-DCE: 70 µg/L
- Vinyl chloride: 2 µg/L

2.3 Applicable or Relevant and Appropriate Requirements

As required by CERCLA Section 121, remedial actions carried out under Section 104 or secured under Section 106 must attain the levels of standards of control for hazardous

substances, pollutants, or contaminants specified by the ARARs of federal and state environmental laws and state facility-siting laws, unless waivers are obtained. According to USEPA guidance, remedial actions should also be based on non-promulgated to-be-considered (TBC) criteria or guidelines if the ARARs do not address a particular situation.

ARARs are identified by the USEPA as either being applicable to a situation or relevant and appropriate to it.

"Applicable" requirements are standards and other environmental protection requirements of federal or state law dealing with a hazardous substance, pollutant, contaminant, action being taken, location, or other circumstance at a CERCLA site.

"Relevant and appropriate" requirements are standards and environmental protection criteria of federal or state law that, although not "applicable" to a hazardous substance, pollutant, contaminant, action being taken, location, or other circumstance, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. A requirement that is relevant and appropriate must be met as if it were applicable. TBC criteria are non-promulgated advisories or guidance issued by federal or state government that are not legally binding and do not have the status of potential ARARs. TBCs are evaluated along with ARARs and may be implemented by the USEPA when ARARs are not fully protective of human health and the environment.

Onsite CERCLA response actions must meet substantive requirements, but not administrative requirements. Substantive requirements are those dealing directly with actions or with conditions in the environment. Administrative requirements implement the substantive requirements by prescribing procedures, such as fees, permitting, and inspection, that make substantive requirements effective. This distinction applies to onsite actions only; offsite response actions are subject to all applicable standards and regulations, including administrative requirements, such as permits.

Three classifications of requirements are defined by the USEPA in the ARAR determination process: chemical-specific, location-specific, and action-specific. These classifications are described below. The remedial action alternatives developed in this FS were analyzed for compliance with the potential federal and state ARARs, which are provided in **Appendix C**.

Chemical-specific ARARs are health or risk management-based numbers or methodologies that result in the establishment of numerical values for a given medium that would meet the NCP "threshold criterion" of overall protection of human health and the environment. These requirements generally set protective cleanup concentrations for the COCs in the designated media, or set safe concentrations of discharge for response activity. Federal and Commonwealth of Virginia chemical-specific regulations that have been reviewed are summarized in **Appendix C**.

Location-specific ARARs restrict response activities and media concentrations based on the characteristics of the surrounding environments. Location-specific ARARs may include restrictions on response actions within wetlands or floodplains, near locations of known endangered species, or on protected waterways. Federal and Commonwealth of Virginia location-specific regulations that have been reviewed are summarized in **Appendix C**.

Action-specific ARARs are usually technology- or activity-based requirements or limitations on actions taken with respect to hazardous substances. Federal and Commonwealth of Virginia action-specific ARARs that may affect the development and conceptual arrangement of response alternatives are summarized in **Appendix C**.

SECTION 3

Development of Remedial Alternatives

This section describes the screening of remedial technologies potentially applicable for Site 11a and the development of specific remedial alternatives, based on the remedial technologies that are identified as most suitable for the site.

In developing remedial alternatives, a variety of general response actions are typically combined to create remedies that are protective of human health and the environment. General response actions are broad responses, remedies, or technologies developed to meet site-specific RAOs and address COCs, migration pathways, and exposure routes. The following general response actions have been identified for the remediation of Site 11a:

- No Action: The No Action response is included in accordance with the NCP to serve as a baseline for evaluation of the remedial actions.
- In Situ Treatments: These response actions are in situ methods of reducing the toxicity, mobility, or volume of COCs in groundwater. Treatment technologies include chemical, biological, and physical processes.
- Monitoring: This response action includes a groundwater sampling program to assess the behavior of COCs over time, natural processes attenuating the contaminants, and performance of active remediation.
- Land Use Controls (LUCs): These include activities, such as implementation of land and building use, deed, or access restrictions to prevent exposure to groundwater and groundwater emissions.

3.1 Screening of Remedial Technologies

Remediation of COCs in groundwater at Site 11a is required to address potential unacceptable risks associated with potential inhalation of vapors from the shallow groundwater in an open excavation by construction workers and potable use of shallow groundwater by future residents.

Eleven groundwater remediation technologies were initially screened and evaluated to identify remedial alternatives for Site11a. The technologies screened included institutional controls, long-term monitoring (LTM), in situ treatment (i.e. in situ chemical oxidation [ISCO], enhanced reductive dechlorination [ERD], air sparge/soil vapor extraction [AS/SVE], and pump and treat), and thermal treatment. The screening process incorporated the Navy's preference to select a remedy that would minimize impacts on current land use, meet proposed RAOs, and minimize timeframes that treatment technology would have to be operated and maintained. Also considered was the recent USEPA initiative for consideration of sustainable environmental practices in remediation, which favors remedies with lower carbon footprints. Technologies were divided into process options and screened out for a variety of reasons depending on effectiveness, implementability, relative costs, and consistency with the established RAOs. **Table 3-1** summarizes the screening process.

Technologies retained for further consideration included those with the potential to most effectively reduce contaminant concentrations with minimal impacts to land use, have high implementability, and/or are cost effective given the chemical concentrations observed at the site. The following five technologies were retained:

- No Action
- ISCO
- ERD
- AS/SVE
- LUCs
- LTM

Six technologies (pump and treat, permeable reactive barrier, chemical reduction, aerobic biodegradation, soil flushing, and thermal treatment) were not retained for further consideration as a result low implementability, impacts to the surrounding community, high cost relative to the COC concentrations at the site, and/or lack of proven effectiveness.

3.2 Description of Remedial Alternatives

The following four remedial alternatives were developed from the technologies retained following the screening process presented in **Table 3-1**:

Alternative 1: No Action
Alternative 2: ERD
Alternative 3: ISCO and ERD
Alternative 4: AS/SVE

With the exception of Alternative 1 (No Action), each of the remedial alternatives includes long-term monitoring and implementation of LUCs to prevent unacceptable risk exposure. Monitoring and LUCs would be maintained until the RAOs are achieved, with 5-year statutory reviews to ensure protection of human health and the environment.

3.2.1 Alternative 1: No Action

Alternative 1 is the No Action alternative as required by the NCP. Under this scenario, no remedial actions would be implemented at Site 11a and contaminants would remain in the shallow groundwater. There are no costs associated with this alternative. Alternative 1 serves as the baseline against which the other alternatives are compared.

3.2.2 Alternative 2: Enhanced Reductive Dechlorination

Biological reductive dechlorination is a naturally occurring, microbially mediated, anaerobic process in which chlorine atoms on a parent VOC molecule are sequentially replaced with hydrogen. In the reductive dechlorination process, electrons are transferred from an electron donor source to the VOC compound, which functions as the electron acceptor. Therefore, an external electron donor source is required for the reaction to occur. Potential electron donor sources include biodegradable organic co-contaminants, native organic matter, or substrates intentionally added to the subsurface. Deeply anaerobic (reducing) conditions are required for reductive dechlorination of many VOCs, and competing electron acceptors, such as dissolved oxygen, nitrate, nitrite, manganese(IV), ferrous iron, and sulfate, must be depleted.

The COCs at Site 11a are PCE and TCE. The principal anaerobic biodegradation pathway for PCE and TCE is:

PCE → TCE → cis-1,2-DCE → VC → ethene→ ethane

The transformation rate for each step varies, but tends to become slower with progress along the breakdown sequence, which may result in accumulation of cis-1,2-DCE and VC. Further breakdown from cis-1,2-DCE and VC to ethene varies and is based on site-specific conditions.

ERD of chlorinated VOCs can be implemented through biostimulation and/or bioaugmentation. Biostimulation involves adding a suitable substrate (soluble or insoluble) to the subsurface. The introduced substrate serves multiple purposes, such as depletion of competing electron acceptors, creating strongly reducing conditions, and producing an electron donor source for reductive dechlorination. The substrate may also include nutrients, such as B12, which are used by the dechlorinating bacteria. Bioaugmentation involves the introduction of a microbial culture to the subsurface. The selected microbial culture would be capable of reductively dechlorinating PCE, TCE, and their associated daughter products, thereby preventing the accumulation of cis-1,2-DCE or VC. Bioaugmentation is not necessary if a suitable population of the appropriate dechlorinating microbes is present.

Insoluble substrates, including vegetable oil, Hydrogen Release Compound, a commercial product known as EHC, and chitin, can persist for years in the subsurface. Vegetable oil is injected as an emulsified liquid. The use of emulsified vegetable oil is a good example of attempting to lower the viscosity of the substrate to improve the ease and effectiveness of distributing the substrate in the subsurface. Linoleic and other long-chain fatty acids in the vegetable oil slowly solubilize in water over time and are broken down by native microorganisms to lower molecular weight fatty acids, such as pyruvate and propionate. Ultimately, the oil degrades to form acetic acid and hydrogen. The hydrogen and dissolved organic carbon from the acetic acid are then available to support reductive dechlorination of chlorinated solvents. The benefit of the long-lasting donors is that operation and maintenance (O&M) is minimized. Because insoluble substrates have a longer residence time, these substrates may be dispensed via temporary or permanent injection wells depending on the projected frequency of injections and the potential for changing the injection well scheme for future injections.

Soluble substrates include benzoate, lactate, acetate, propionate, butyrate, methanol, ethanol, sucrose, molasses, and hydrogen. These substrates are water soluble, degrade rapidly, and are transported by groundwater flow. Since these substrates degrade rapidly, more frequent injections are typically required than for insoluble substrates and therefore are generally dispensed via permanent injection wells.

ERD Injection

For the purpose of this conceptual design and cost estimate, the use of AquaBupH, a slow-release substrate, is assumed, although another substrate may later be selected. AquaBupH is a patented, engineered, food-grade, emulsified soybean oil mixed with lactate, trace nutrients, and a slow-release pH buffer. Shallow groundwater within the contaminant plume is slightly acidic, with an average pH of 5.53. Generally, pH values between 6 and 8

provide the best conditions for this reductive dechlorination. AquaBupH™ would be injected into the subsurface using direct push methods in a barrier row configuration to minimize disruption of the current land use. Injection via direct push methods allows for flexibility in the design configuration for future injections. The substrate would naturally advect through the subsurface to provide adequate coverage.

For this FS and the associated cost estimate, ERD injections are proposed in the source area (total COC concentrations > 500 µg/L) to reduce the maximum concentrations observed within the dissolved plume. It was assumed that AquaBupH would be injected at 30 direct push injection points along seven lines, or barrier rows, aligned perpendicular to groundwater flow. Each line would consist of three to six injection points set at 20-foot centers (**Figure 3-1**). The conceptual design layout as presented in **Figure 3-1** may require modification as a result of existing utilities at the site. The lines would be placed 25 feet apart, allowing for one pore volume of groundwater to advect, or flush, between the injection lines per year, further distributing the substrate in the subsurface. The injection layout could be modified in the future based on the achievable site radius of influence (ROI). Approximately 39,000 gallons of AquaBupH (approximately 1,300 gallons of diluted solution per well) would be injected at a depth of approximately 18 to 28 feet bgs where greater than 90 percent of the contaminant mass is located. An average injection rate of 3 gpm was assumed, based on ranges of injection rates from other remediation sites at JEB Little Creek. Injection was assumed to occur in four locations simultaneously.

ERD barrier lines are also included in this conceptual design to facilitate plume stabilization and treat contaminants migrating downgradient (**Figure 3-1**). Due to the variation in the direction of groundwater flow, two downgradient barriers were assumed: one to the west and one to the south of the dissolved plume. It was assumed that each barrier row would consist of 10 direct push injection points, spaced on 20-foot centers. Approximately 26,000 gallons total of AquaBupH (approximately 1,300 gallons per injection point) would be injected in the downgradient barriers. Dissolved-phase contamination is observed at shallower intervals (approximately 8 to 18 feet bgs) at the leading edge of the plume; however, COCs present in groundwater shallower than 14 ft bgs are isolated. As a result, substrate will be injected at a depth of approximately 14 and 24 feet bgs within the downgradient barrier lines.

The AquaBupH volume estimates are based on a maximum oil retention by the aquifer material of 0.002 kilogram (kg) of emulsified vegetable oil per kg of soil and an injection contact efficiency of 75 percent. To avoid surfacing of the ERD substrate, the average injection rate is assumed to be approximately 3 gallons per minute (gpm) at each DPT injection location. This assumption is based on previous implementation at another site in Virginia with similar hydrogeological characteristics. AquaBupH could be diluted before injection to minimize impact on the hydraulic conductivity of the subsurface materials.

AquaBupH is estimated to remain effective in an aquifer for up to 2 years. It is assumed that one additional injection would be required after the initial application to facilitate degradation in the source area and along the downgradient barrier line prior to transitioning to LTM. Using the observational approach, the dosage of the second application would be adjusted based on actual field observations during performance monitoring. For cost purposes, the same dosing requirements are used for both ERD applications. The actual number of ERD injections required (more or less than two) would

be determined based on actual performance. More design criteria assumptions related to the implementation of ERD in this alternative are specified in the cost estimate (**Appendix D**).

Monitoring Well Construction

As shown on **Figure 3-1**, two new monitoring wells are proposed to monitor the performance of the ERD processes to the south of the barrier lines. It is assumed that monitoring wells would be constructed of 2-inch inside diameter Schedule 40 polyvinyl chloride (PVC) screen and riser with 15-foot-long well screens. The total depth of the monitoring wells would be to the top of the Yorktown confining unit, approximately 28 feet bgs (screen interval from approximately 13 to 28 ft bgs).

Performance Monitoring and Long-term Monitoring

Performance monitoring would be conducted within the ERD injection area to evaluate treatment effectiveness, determine if additional injections are required, collect optimization data for any future injections, and assess the potential for vapor intrusion. For this FS, it is assumed that 2 new monitoring wells and 15 existing wells would be included in the performance monitoring plan.

The monitoring assumptions, including frequency, duration, and analyte list, are provided in the cost estimate (**Appendix D**). A baseline monitoring event would be conducted prior to injection. For the purposes of this FS, it is assumed that active treatment would continue for 4 years. Each year ERD injections are performed (Year 1 and Year 3); performance monitoring would be conducted quarterly following the injection and semiannually the second year after injection. If COC concentrations continue to exceed PRGs after active treatment ceases, then LTM would be conducted semiannually Year 5 through Year 10 and annually after Year 10 to monitor the continued attenuation of contaminants. Attenuation is a combination of physical (dilution, volatilization, and adsorption), biological (aerobic and anaerobic biodegradation), and chemical (abiotic transformation) processes that reduce the toxicity, mobility, and volume, mass, or concentration of contaminants. Based on site-specific data, physical processes are likely to have the greatest influence on plume control. For the purpose of this FS, COCs were estimated to degrade to below MCLs by Year 30.

As previously stated, there are currently no risks from the migration of groundwater vapors into indoor air at Site 11a. For the purposes of this FS, it is assumed that building conditions will not deteriorate over time and COC groundwater concentrations will ultimately decrease over time with treatment. However, ERD may temporarily increase the concentrations of TCE degradation products in groundwater. To ensure that the potential for vapor intrusion does not increase while COC concentrations remain above PRGs, building conditions will be evaluated during quarterly LTM inspections to ensure new vapor intrusion pathways (i.e. foundation cracks) have not been generated and groundwater concentrations will be evaluated to identify increases in COC and daughter product concentrations that require additional vapor intrusion monitoring (e.g. soil gas and indoor air). Additionally, LUCs will be implemented to ensure the current residential and industrial building uses are maintained.

3.2.3 Alternative 3: In Situ Chemical Oxidation and Enhanced Reductive Dechlorination

ISCO is an aggressive technology used for the rapid treatment of a variety of organic contaminants in groundwater. It is based on the delivery of a chemical oxidant into contaminated media to oxidize chlorinated VOCs to innocuous compounds (carbon dioxide, chloride ions, and hydrogen ions). Oxidants can include permanganate (MnO_4), persulfate, catalyzed hydrogen peroxide (CHP), percarbonate, and a variety of proprietary products. The most common oxidants applied in this process for the COCs at Site 11a are persulfate (as sodium persulfate), MnO_4, and CHP.

Persulfate oxidizes chlorinated VOCs through sulfate radicals formed during activation of persulfate. The most common activators are iron, hydrogen peroxide, high pH, and heat. The activator that is best suited for a particular application is determined by site-specific conditions. The permanganate ion (MnO_4^-) is an oxidant that is commonly used to oxidize the types of chlorinated VOCs at Site 11a.

For the purpose of this conceptual design and cost estimate, it is assumed that sodium permanganate ($NaMnO_4$) would be the chemical oxidant used at Site 11a. $NaMnO_4$ was selected over potassium permanganate ($KMnO_4$) because it is more soluble and thus easier to prepare the reagent solution. The use of MnO_4 was assumed based on the following:

- It has been more widely used and studied.
- It is more stable and will persist longer in the environment, giving more time to react with contaminants (given the low groundwater velocity observed at the site, MnO_4 should continue to react within the vicinity it was injected and not encounter significant dilution).
- It does not require activation and is less sensitive to the particular groundwater chemistry of the site.

The stoichiometric reactions of $NaMnO_4$ with the chlorinated ethenes are summarized in the following calculations:

PCE

$$4NaMnO_4 + 3C_2Cl_4 + 4H_2O \rightarrow 6CO_2 + 4MnO_2(s) + 4Na^+ + 12Cl^- + 8H^+$$

TCE

$$2NaMnO_4 + C_2HCl_3 \rightarrow 2CO_2 + 2MnO_2(s) + 3Cl^- + H^+ + 2Na^+$$

However, these stoichiometric calculations do not include the oxidant reactions with the aquifer matrix, which generally far exceed the stoichiometric mass required to oxidize the COCs. Therefore, sufficient MnO_4 is injected to overcome natural oxidant demand (NOD) of the soil so that sufficient residual MnO_4 will remain to react with the COCs. During the RI, soil samples were collected at varying depths from three different locations for NOD analysis using $KMnO_4$. Based on the results, the oxidant demand of the Columbia aquifer ranges from approximately 0.225 gram per kilogram (g/kg) to 1.56 g/kg; this is a low to moderate demand. The oxidant demand of the Yorktown confining unit ranges from approximately 1.18 g/kg to greater than 9.375 g/kg; this indicates a highly variable NOD, ranging from moderate to high oxidant demand. A low NOD is favorable because less

oxidant is required to overcome the NOD, and more of the added reagent is used for to treatment of the COCs, lowering the cost.

Manganese is an abundant element in the earth's crust, and manganese dioxide (MnO_2) is naturally present in soil. Therefore, introduction of $KMnO_4$ or $NaMnO_4$ to soil or groundwater could raise the concentrations of manganese and potentially other trace metals in the MnO_4 reagent above the respective drinking water standards. These increases typically last for relatively short periods of time, and concentrations have typically been observed to return to background concentrations within the performance monitoring period. Additionally, the oxidizing conditions created by the MnO_4 may increase the solubility of certain forms of metals, such as hexavalent chromium. However, should any of these metals become significantly elevated, mobility of these metals is generally limited, and their concentrations tend to return to acceptable levels once the MnO_4 is depleted.

Permanganate Injection

For this FS, it is assumed that ISCO would be implemented within the source area to reduce the maximum concentrations observed within the dissolved-phase plume (**Figure 3-2**). The conceptual design layout as presented in **Figure 3-2** may require modification as a result of existing utilities at the site. A $NaMnO_4$ solution would be injected into 34 direct push injection points at 18-foot centers in a grid pattern, with a series of offset rows perpendicular to the groundwater flow. This injection point spacing includes overlap, based on an assumed ROI of 10 feet. The injection layout would be modified in the future based on the achievable site ROI in the field. For cost estimating purposes, it was assumed the $NaMnO_4$ solution would be injected at the bottom of the aquifer, between 18 and 28 feet bgs where greater than 90 percent of the contaminant mass is located, using a bottom-to-top injection approach. Injection would occur through specially designed injection screens with variable 1- to 5-foot intervals. Low pressures (less than 20 pounds per square inch [psi]) would be targeted. However, if a very fine-grained layer was encountered, hydrofracturing with higher pressures might be needed initially, until lower maintenance pressure could be used to deliver the targeted volume of $NaMnO_4$ for the interval. An average injection rate of 3 gpm was assumed, based on ranges of injection rates from other remediation sites at the Little Creek facility. Injection was assumed to occur in four locations simultaneously. Although some permanent injection locations may be incorporated into the final design, this approach assumes direct push injections at new locations.

Approximately 61,000 gallons of a 3 percent by weight $NaMnO_4$ solution (approximately 1,800 gallons per injection point) would be injected into the subsurface. This volume is based on a NOD of 1.5 grams (g) of permanganate per kilogram of soil, and a maximum VOC concentration of 1.53 milligrams per liter (for PCE and TCE). Assuming an effective porosity of 0.22, the volume of groundwater within the treatment area is 290,000 gallons, and a total of 39,000 pounds of $NaMnO_4$ would be required. The $NaMnO_4$ would be delivered to the site as a 40 percent by weight solution in totes and diluted with water before being injected.

Based on the concentrations observed in the source area, two injection rounds of $NaMnO_4$ approximately 1 year apart are assumed to be sufficient to facilitate contaminant degradation prior to transitioning to LTM. Using the observational approach, the dosage of the second application would be adjusted based on actual field observations during

performance monitoring. For cost purposes, the same dosing requirements are used for both ISCO applications. The actual number of ISCO injections required (more or less than two) would be determined based on actual performance. More specific design criteria assumptions related to the implementation of ISCO in this alternative are specified in the cost estimate (**Appendix D**).

ERD Injection and Monitoring Well Construction

Similar to Alternative 2, ERD injection would be conducted along the downgradient (leading edge) of the plume via direct push injection, and two new permanent downgradient monitoring wells would be installed. Details for these activities are provided in Section 3.2.2.

Performance Monitoring and Long-Term Monitoring

Performance monitoring would be conducted within the ISCO injection area to evaluate treatment effectiveness, determine if additional injections are required, collect optimization data for any future injections, and assess the potential for vapor intrusion. For this FS, it is assumed that 2 new monitoring wells and 15 existing wells would be included in the performance monitoring plan.

The monitoring assumptions, including frequency, duration, and analyte list, are provided in the cost estimate (**Appendix D**). A baseline monitoring event would be conducted prior to injection. For the purposes of this FS, it is assumed that active treatment would continue for 4 years. Each year ISCO injections (Year 1 and Year 2) and ERD injections (Year 1 and Year 3) are performed; performance monitoring would be conducted quarterly following the injection (Years 1, 2, and 3) and semiannually during Year 4. If COC concentrations continue to exceed PRGs after active treatment ceases, then LTM would be conducted semiannually Year 5 through Year 10 and annually after Year 10 to monitor the continued attenuation of contaminants. For the purpose of this FS, COCs were estimated to degrade to below MCLs by Year 30.

As previously stated, there are currently no risks from the migration of groundwater vapors into indoor air at Site 11a. For the purposes of this FS, it is assumed that building conditions will not deteriorate over time and COC groundwater concentrations will ultimately decrease over time with treatment. However, ISCO may temporarily increase the concentrations of chlorinated VOCs in groundwater due to desorption or dissolution from the aquifer matrix and ERD may temporarily increase the concentrations of TCE degradation products in groundwater. To ensure that the potential for vapor intrusion does not increase while active treatment is being conducted, building conditions will be evaluated during quarterly LTM inspections to ensure new vapor intrusion pathways (i.e. foundation cracks) have not been generated and groundwater concentrations will be evaluated to identify increases in COC and daughter product concentrations that require additional vapor intrusion monitoring. Additionally, LUCs will be implemented to ensure the current residential and industrial building uses are maintained.

3.2.4 Alternative 4: Air Sparging and Soil Vapor Extraction

Air Sparge is an in situ remedial technology in which air is injected into the saturated zone at a minimum depth of 10 to 15 feet below the water table. Either vertical or horizontal sparge wells can be used. A vertical well must be located directly in the contaminant plume,

and its placement is limited by surface obstructions and natural features, such as buildings, lakes, and rivers. Horizontal wells can be installed either parallel or perpendicular to groundwater flow at a depth below the contaminant plume. In both cases, injected air traverses horizontally and vertically in channels through the soil column, the path of which is strongly influenced by heterogeneity of the aquifer matrix. Air Sparge can be used to induce mass transfer (volatilization) of chlorinated VOCs from groundwater and/or aerobic biological degradation. Typically, chlorinated solvents are most rapidly removed via mass transfer; therefore, SVE is employed to capture vapors in areas where human exposure to the volatilized contaminants presents a risk. The reductive degradation products DCE and VC are more readily oxidized than the associated parent compounds. However, these compounds were either not detected or only observed at low concentrations in groundwater at Site 11a.

SVE is a common and proven in situ remedial technology used to withdraw contaminant vapors from the vadose zone in soil. SVE is most effective for contaminants that have a tendency to volatilize readily, as indicated by relatively high vapor pressure and Henry's Law constant. SVE systems typically include a vacuum blower to induce the flow of air and capture all vapors generated by the AS system. Extracted vapor can then be treated, as necessary, before being released to the atmosphere. Vapor treatment options include vapor-phase granular activated carbon (GAC) and destruction technologies, such as thermal and catalytic oxidizers.

Pilot Study

For this FS, it is assumed a pilot study would be conducted to finalize the design parameters. Two AS wells would be installed in the source area to approximately 28 feet bgs. An SVE system would use a single horizontal well to extract soil vapors and off-gas generated by the AS system. The AS and SVE wells would be connected to a mobile, trailer-mounted AS compressor and vacuum blower equipped with monitoring ports, gauges, and an off-gas treatment system. Pilot study monitoring would include wellhead pressure and dissolved oxygen measurements using in-well transducers in the monitoring well network, pre-injection and post-injection pilot study groundwater samples from the pilot study area, and sampling of the SVE influent and effluent. The data collected during the pilot study would be used to calculate an observed ROI and refine the AS/SVE design.

Full-Scale Operation

For the purpose of this conceptual design and cost estimate, the full-scale design of an AS/SVE system would include treatment within the source area and along the downgradient edges of the plume. Similar to the other alternatives, source treatment would address the maximum chlorinated VOC concentrations at the site, while the downgradient sparge lines would address potential future migration of contaminants.

Within the source area, 16 vertical AS wells and 7 horizontal SVE wells would be installed (**Figure 3-3**). For this FS, an AS ROI of 15 feet is assumed based on site characteristics. Air Sparge wells would be arranged along six barrier lines aligned perpendicular to groundwater flow. The injection layout can be modified in the future based on the ROI observed during the pilot study. Due to shallow groundwater conditions (groundwater observed less than 5 feet bgs), horizontal SVE wells would be used to minimize groundwater recovery during system operations. Based on the COC concentrations

observed in the source area, it is assumed that the system would remain operational for a period of up to 4 years.

Due to the variation in direction of groundwater flow, two downgradient sparge lines were assumed: one to the west and one to the south of the dissolved plume. Twelve vertical AS wells and six horizontal SVE wells would be installed (**Figure 3-3**). Due to the low concentrations observed in the leading edge of the plume and the slow groundwater flow velocity, it is assumed that the system would remain operational for a period of up to 4 years.

Air Sparge wells would be constructed of 2-inch-diameter schedule 40 PVC and finished with 2 feet of 0.020-inch-diameter slotted well screen. The wells would be constructed to the top of the Yorktown confining unit, located approximately 28 feet bgs. The horizontal SVE wells would be constructed of 2-inch-diameter schedule 40 PVC pipe connected to a 30-foot section of 0.020-inch slotted well screen. The horizontal SVE wells would be installed in a 2-foot-deep trench, backfilled with approximately 1 foot of clean sand or pea gravel and capped with a 10-mil plastic liner and 1 foot of crushed stone base or clay. The surface would be completed to match the grade of the existing ground surface. Seven vapor monitoring points would also be installed to approximately 25 feet bgs.

The distribution piping to the AS and SVE wells would be installed below grade to the treatment system where the air compressor, controls, and other and associated equipment would be located (**Figure 3-3**). Air Sparge pipe would be constructed of 1-inch-diameter high-density polyethylene and connected to a distribution manifold in the treatment system that includes pressure, temperature, and flow gauges for each line. Air Sparge wells would be manifolded in banks of five to six wells connected to a single solenoid valve to allow pulsed operation of the system. Air would be delivered to the AS wells using a rotary-screw air compressor capable of injecting up to 10 standard cubic feet per minute (scfm) per injection well for a single bank of wells (total of 60 scfm) at 120 psi pressure. The SVE system would use a regenerative blower capable of recovering up to 330 scfm (1 scfm per foot of well screen) at 40 inches of water column. The SVE blower would be equipped with a moisture separator and transfer pump to address groundwater that may be recovered during AS/SVE operations. Recovered groundwater from the moisture separator would pass through liquid-phase GAC and be contained for transport offsite for disposal. Vapor-phase GAC would be used to treat off-gas from the SVE operations. Used GAC would be disposed of as non-hazardous waste at a regeneration facility.

Monitoring Well Construction

As shown on **Figure 3-3**, it is assumed two new monitoring wells would be installed to monitor the performance of the AS/SVE processes to the south of the barrier lines. The new monitoring wells would be constructed of 2-inch inside diameter Schedule 40 PVC screen and riser with 15-foot-long well screens. The monitoring wells would be constructed to the top of the Yorktown confining unit, approximately 28 feet bgs.

Performance Monitoring and Long-Term Monitoring

Performance monitoring within the AS/SVE treatment area would be conducted to monitor the effectiveness of the technology and continually optimize its operation. System startup would be conducted over a 2-week period. Soil gas and wellhead pressures would be

monitored as an indicator of the ROI. Following startup, groundwater and soil vapor monitoring would be conducted. For this FS, it is assumed that 7 new soil vapor monitoring points, 2 new monitoring wells, and 15 existing monitoring wells would be included in the performance monitoring plan.

The monitoring assumptions, including frequency, duration, and analyte list, are provided in the cost estimate (**Appendix D**). A baseline monitoring event would be conducted prior to system startup. For the purposes of this FS, it is assumed that active treatment would continue for 4 years. Performance monitoring would be conducted quarterly during the active treatment period (Year 1 through Year 4). If COC concentrations continue to exceed PRGs after active treatment ceases, then LTM would be conducted semiannually Year 5 through Year 10 and then annually after Year 10 to monitor the natural attenuation of contaminants and assess the need for additional active treatment. For the purpose of this FS, it is assumed re-starting of the AS/SVE system would not be required and COCs were estimated to degrade to below MCLs by Year 30.

As previously stated, there are currently no risks from the migration of groundwater vapors into indoor air at Site 11a. For the purposes of this FS, it is assumed that building conditions will not deteriorate over time and COC groundwater concentrations will ultimately decrease over time with treatment. Although the AS system may generate additional contaminant vapors, it is anticipated the SVE wells will capture the additional contaminant vapors. However, to ensure that the potential for vapor intrusion does not increase while active treatment is being conducted, building conditions will be evaluated during quarterly LTM inspections to ensure new vapor intrusion pathways (i.e. foundation cracks) have not been generated and soil vapor concentrations will be evaluated to identify increases in COC and daughter product concentrations that require additional vapor intrusion monitoring. Additionally, LUCs will be implemented to ensure the current residential and industrial building uses are maintained.

Operation and Maintenance

O&M monitoring of the system would also be required. For this FS, O&M parameters would include air flow and pressure readings for the SVE and AS systems, system runtime, wellhead pressures, wellhead VOC concentrations, and air sample collection. For this FS, system O&M would be conducted for 4 years, while the AS/SVE system is operational.

TABLE 3-1
Screening of Remedial Technologies
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Corrective Actions	Remedial Technology	Process Option	Description	Effectiveness	Implementability	Relative Cost	Evaluation Result
Institutional Controls	Access and Use Restrictions	Land Use Controls (LUCs)	Restricted property use	*Source Area and Downgradient Plume:* Moderate to High Effective for mitigating human exposure to groundwater COCs. LUCs prevent exposure to groundwater chemicals of concern (COCs). However, LUCs do not directly treat or remediate COCs. Effectiveness depends on degree to which LUCs are enforced.	*Source Area and Downgradient Plume:* High Readily implementable at the site No site conditions are present that would hinder implementability.	Capital Cost - Low Operations and Maintenance (O&M) Cost - Low	Retained for use only in conjunction with other technologies that provide treatment of COCs.
Long Term Monitoring	Natural Attenuation	Monitoring	Degradation of COCs under natural conditions and monitoring of this degradation. The in situ processes responsible for degradation include biodegradation; dispersion; dilution; sorption; volatilization; and chemical or biological stabilization, transformation, or destruction of contaminants.	*Source Area*: Low to Moderate Effective for dissolved COCs. Effectiveness depends on site conditions. Not effective in quickly achieving significant source area mass reduction or for treating light non-aqueous phase liquid. *Downgradient Plume:* Moderate to High Effective for dissolved COCs. Effectiveness depends on site conditions.	*Source Area and Downgradient Plume:* High Readily implementable at the site No site conditions are present that would hinder implementability	Capital Cost - Low O&M Cost - Low	*Source Area:* Retained as an ancillary technology that could be implemented as a polishing step after treatment by a more active treatment measure. *Downgradient Plume: Retained* because of moderate to high potential effectiveness, high implementability, and low cost.
Hydraulic Containment	Groundwater Recovery, treatment and disposal (pump and treat)	Vertical Recovery Wells, above ground treatment, and disposal	Installation of vertical recovery wells and extraction of contaminated groundwater to achieve hydraulic containment of the plume. The recovered groundwater needs to be treated onsite or temporarily stored onsite for disposal at an appropriate facility.	*Source Area:* Low to Moderate Effective only for containment of dissolved COCs. Not effective for removing non-aqueous phase liquid (NAPL) or sorbed contamination, if present. *Downgradient Plume:* Moderate Effective only for containment of dissolved COCs.	*Source Area and Downgradient Plume:* Moderate Implementable at the site. The presence of underground utilities at the site will affect system implementation and layout. On-site treatment of extracted groundwater or storage of groundwater for off-site disposal decreases implementability.	Capital Cost - High O&M Cost - High	Not retained for further evaluation due to low to moderate effectiveness relative to high costs.
	Permeable Reactive barrier (PRB)*	PRB with a suitable reactive media (such as zero-valent iron [ZVI])	Installation of a PRB to prevent migration of contaminants to adjacent areas.	*Downgradient Plume:* High Effective in controlling plume migration and treating volatile organic compounds (VOCs) in-situ.	*Downgradient Plume:* Low Installation requires a continuous trench to a depth of approximately 30 ft below land surface. This would require relocation of existing underground utilities at the site.	Capital Cost - High O&M Cost - Low	Not retained for further evaluation due to high costs and low implementability.
In situ treatment	Chemical	Oxidation	Injection of chemical oxidants, typically in liquid form, to achieve in-situ chemical oxidation of COCs. Typical oxidants for site COCs include ozone, hydrogen peroxide, potassium and sodium permanganate, and sodium persulfate.	*Source Area and Downgradient Plume:* Moderate to High Effective for treating dissolved COCs. Effectiveness depends on site conditions, geologic setting, oxidant, and delivery method.	*Source Area and Downgradient Plume:* Moderate Implementable at the site. The presence of underground utilities at the site would affect system implementation and layout.	Capital Cost - Low to Medium O&M Cost - Low to Medium. May require multiple applications.	Retained for further evaluation because of moderate to high potential effectiveness, moderate implementability and low to medium cost.

TABLE 3-1
Screening of Remedial Technologies
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Corrective Actions	Remedial Technology	Process Option	Description	Effectiveness	Implementability	Relative Cost	Evaluation Result
	Chemical	Reduction	Injection of chemical oxidants, typically in solid form, to achieve in-situ chemical reduction of COCs. Typical reductants for site COCs are zero valent iron and EHC (combination or zero valent iron and slow release substrate).	*Source Area and Downgradient Plume:* Moderate to High Effective for treating dissolved COCs. Effectiveness depends on site conditions, geologic setting, reductant, and delivery method.	*Source Area and Downgradient Plume:* Low to Moderate Implementable at the site. The presence of underground utilities at the site would affect system implementation and layout. Additionally, injection of chemical reductants in solid form requires pneumatic or hydraulic fracturing methods. This will increase implementation planning efforts to avoid impacts to subsurface utilities and structures.	Capital Cost - Medium O&M Cost - Low	Not retained for further evaluation due to low to moderate implementability.
	Biological	Enhanced Reductive Dechlorination	Injection of organic substrate and nutrients, typically in liquid form, to stimulate degradation of contaminants.	*Source Area and Downgradient Plume:* Moderate to High Effective for treating dissolved phase and sorbed contaminants. Effectiveness depends on site conditions and delivery of substrate.	*Source Area and Downgradient Plume:* Moderate Implementable at the site. The presence of underground utilities at the site would affect system implementation and layout.	Capital Cost - Low to Medium O&M Cost - Low to Medium. Typically requires multiple applications.	Retained for further evaluation because of moderate to high potential effectiveness, moderate implementability, and low to medium cost.
	Biological	Aerobic Cometabolic Biodegradation	Addition of oxygen and cometabolic substrate to stimulate cometabolic degradation of COCs. Oxygen can be added using Oxygen Release Compounds or via air sparging. Cometabolic substrates include methane and butane.	*Source Area and Downgradient Plume:* Low to Moderate May be effective for COCs but this process has not been widely applied. Requires significant process monitoring and control to be effective.	*Source Area and Downgradient Plume:* Low Implementable at the site. The need to add a substrate such as methane or butane, both flammable gases, decreases implementability. The presence of underground utilities at the site would affect system implementation and layout.	Capital Cost - Medium to High O&M Cost - Medium to High	Not retained for further evaluation due to low implementability and medium to high cost.
	Physical	Air sparging and possibly soil vapor extraction	Injection of air into the subsurface saturated zone, enabling a phase transfer from a dissolved state to a vapor phase. The air is then vented through the unsaturated zone. May be combined with Soil Vapor Extraction to provide treatment for offgas.	*Source Area and Downgradient Plume:* Moderate to High Effective for treating dissolved phase contaminants. Effectiveness depends on site conditions and contaminants.	*Source Area and Downgradient Plume:* Moderate Implementable at the site. The presence of underground utilities at the site would affect system implementation and layout.	Capital Cost - Medium O&M Cost - Medium	Retained for further evaluation because of moderate to high potential effectiveness, moderate implementability and medium cost.
	Physical	Soil Flushing via surfactant-enhanced extraction	Extraction of contaminants from the aquifer with a surfactant solution that is injected into the subsurface then recovered. Extraction fluids must be treated after recovery. This is not a widely used technology and the number of vendors with significant experience with this technology is limited.	*Source Area:* Moderate Effective for treating dissolved and sorbed phase contaminants, and, potentially, residual NAPL. Effectiveness may vary widely and depends on site conditions, geologic setting, and contaminants.	*Source Area:* Low to Moderate Implementable at the site. The presence of underground utilities at the site would affect system implementation and layout. Additionally, implementation would require the presence of above ground treatment equipment for the recovered injected fluid.	Capital Cost - Medium to high O&M Cost - Medium to high. May require multiple applications.	Not retained for further evaluation due to low to moderate implementability and limited number of sites at which this has been applied.

TABLE 3-1
Screening of Remedial Technologies
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Corrective Actions	Remedial Technology	Process Option	Description	Effectiveness	Implementability	Relative Cost	Evaluation Result
Thermal	Various thermal technologies, including Hot Air or Steam Stripping, thermal conductive heating, and electrical resistive heating	Thermal	Application of heat to the subsurface by thermal conduction or electrical resistive heating. In-situ thermal treatment is typically reserved for application at large dense non-aqueous phase liquid source zones.	*Source Area:* High Effective for treating dissolved and sorbed phase contaminants, and NAPL.	*Source Area:* Low Implementable at the site. Implementation requires a large amount of construction and installation of thermal and SVE wells, electrical equipment, vapor recovery manifolds, and off gas treatment systems. Creates significant site impacts during implementation.	Capital Cost - High O&M Cost - High.	Not retained for further evaluation due to low implementability and high relative costs.

Notes:

1. All highlighted rows indicate technologies retained for further consideration.
2. COCs for the source area include tetrachloroethene (PCE) and trichloroethylene (TCE).

\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\345721_SITE11A_FS\FIGURE 3-1 - SOURCE AND PLUME TREATMENT AREAS - ALT 2 - ERD.MXD CBOWMAN 12/14/2010 09:00:21

Legend

- New Monitoring Well
- ERD Injection Point
- Monitoring Well
- Historic ISCO Application Well
- Abandoned Historic ISCO Application Well
- Approximate Location of Former Underground Waste Oil Tank
- Demolished Building
- Area of Investigation
- Source Area

COPC Concentrations (µg/L)

- 5-100
- 100-500
- 500+

N W E S

0 40 80 Feet

Note:
ERD = Enhanced Reductive Dechlorination
Value shown below monitoring well ID indicates total COC concentration in µg/L

Figure 3-1
Alternative 2 Layout (ERD)
Site 11a Feasibility Study Report
JEB Little Creek
Virginia Beach, Virginia

CH2MHILL

\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\345721_SITE11A_FS\FIGURE 3-2 - SOURCE AND PLUME TREATMENT AREAS - ALT 3 - ERD_ISCO.MXD CBOWMAN 12/14/2010 09:01:07

Legend

- New Monitoring Well
- ISCO Injection Point
- ERD Injection Point
- Monitoring Well
- Historic ISCO Application Well
- Abandoned Historic ISCO Application Well
- Approximate Location of Former Underground Waste Oil Tank
- Demolished Building
- Area of Investigation
- Source Area

COPC Concentrations (µg/L)

- 5-100
- 100-500
- 500+

N
W E
S

0 40 80
Feet

Note:
ERD = Enhanced Reductive Dechlorination
ISCO = In-situ Chemical Oxidation
Value shown below monitoring well ID indicates total COC concentration in µg/L

Figure 3-2
Alternative 3 Layout (ISCO and ERD)
Site 11a Feasibility Study Report
JEB Little Creek
Virginia Beach, Virginia

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\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\345721_SITE11A_FS\FIGURE 3-3 - SOURCE AND PLUME TREATMENT AREAS - ALT 4 - AS_SVE.MXD CBOWMAN 12/14/2010 09:01:40

Legend

- New Monitoring Well
- AS Injection Well
- Monitoring Well
- Historic ISCO Application Well
- Abandoned Historic ISCO Application Well
- Vapor Monitoring Point
- Approximate Location of Former Underground Waste Oil Tank
- Horizontal SVE Well
- Demolished Building
- Area of Investigation
- Source Area

COPC Concentrations (µg/L)

- 5-100
- 100-500
- 500+

N W E S

0 40 80 Feet

Note:
AS = Air Sparge
SVE = Soil Vapor Extraction
Value shown below monitoring well ID indicates total COC concentration in µg/L

Figure 3-3
Alternative 4 Layout (AS/SVE)
Site 11a Feasibility Study Report
JEB Little Creek
Virginia Beach, Virginia

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SECTION 4

Detailed Evaluation of Remedial Alternatives

In this section, the alternatives developed in the previous section are evaluated to provide a basis for selecting a remedy. Section 4.1 discusses the criteria used to evaluate the alternatives, Section 4.2 discusses the consideration of sustainable practices during alternative evaluation, and Section 4.3 summarizes the evaluations of the alternatives.

4.1 Evaluation Criteria

Each remedial alternative that has been developed for Site 11a was evaluated with respect to NCP criteria and one another. The purpose of this comparative analysis is to identify the relative advantages and disadvantages of each alternative and identify the best balance of trade-offs for remedy selection. The nine NCP criteria are as follows:

- Overall protection of human health and the environment
- Compliance with ARARs
- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, and volume through treatment
- Short-term effectiveness
- Implementability
- Cost
- State acceptance
- Community acceptance

The first two criteria are *threshold criteria* and must be achieved by alternatives at a minimum, and the next five are considered *primary balancing criteria*. These first seven criteria form the basis of the detailed evaluation of alternatives. The last two criteria, state and community acceptance, are *modifying criteria*, and will be addressed in the Proposed Plan and ROD for Site 11a.

4.1.1 Overall Protection of Human Health and the Environment

This criterion provides a final check to assess whether each alternative provides adequate protection of human health and the environment. The overall assessment of protection draws on the assessments conducted under other evaluation criteria, especially long-term effectiveness and permanence and short-term effectiveness. This evaluation focuses on whether each alternative achieves adequate protection and describes how site risks are being eliminated, reduced, or controlled. This criterion allows for consideration of whether an alternative poses any unacceptable short-term or cross-media impacts.

4.1.2 Compliance with ARARs

This criterion is used to determine whether each alternative will meet all of the federal and state ARARs that have been identified. ARARs are discussed in Section 2.3. The following factors will be considered as each alternative is evaluated for this criterion on federal and state levels:

- Compliance with location-specific ARARs
- Compliance with chemical-specific ARARs
- Compliance with action-specific ARARs
- Compliance with other criteria, advisories, or guidelines

4.1.3 Long-Term Effectiveness and Permanence

This criterion addresses the results of the remedial action in terms of risk remaining at the site after response objectives have been met. The primary focus of this evaluation is the extent and effectiveness of the controls that may be required to manage the risk posed by treatment residuals and/or untreated wastes. The following factors will be considered as each alternative is evaluated for this criterion:

- Magnitude of estimated residual risk
- Adequacy and reliability of controls

4.1.4 Reduction of Toxicity, Mobility, and Volume through Treatment

This criterion addresses the statutory preference for selecting remedial actions that employ treatment technologies that permanently and significantly reduce toxicity, mobility, or volume of hazardous substances, and thereby reduce the principal threats at a site. The following factors will be considered as each alternative is evaluated for this criterion:

- Treatment processes used and materials treated
- Amount of hazardous material destroyed or treated
- Degree of expected reduction in toxicity, mobility, or volume
- Degree to which treatment is irreversible
- Type and quantity of residuals remaining after treatment
- Satisfaction of the statutory preference for treatment as a principal element

4.1.5 Short-term Effectiveness

This criterion addresses the effects of the alternative on human health and the environment during the construction and implementation phases until RAOs are met. The following factors will be considered as each alternative is evaluated for this criterion:

- Protection of community during remedial actions
- Protection of workers during remedial actions
- Environmental impacts
- Time to achieve the RAOs

4.1.6 Implementability

This criterion addresses the technical and administrative feasibility of implementing each alternative, as well as the availability of services and materials required for implementation. The following factors will be considered as each alternative is evaluated for this criterion:

- Technical feasibility
  - Ability to construct, operate, and monitor the technology
  - Reliability of the technology
  - Ease of undertaking additional remedial action, if necessary
  - Ability to monitor the effectiveness

- Administrative feasibility
  - Ability to coordinate with and obtain approvals from other agencies
  - Availability of equipment, specialists, technologies, off-property treatment, storage or disposal services, and capacity

4.1.7 Cost

This criterion evaluates alternatives based on the associated capital cost and O&M cost to achieve the RAOs. The estimated cost of each remedial option is expressed as present value based on an assumed discount rate of 2.7 percent over a 30-year operation period. The discount rate was selected based on information from the Federal Office of Management and Budget (http://www.whitehouse.gov/omb/circulars_a094_a94_appx-c/). Note that the 30-year O&M period is assumed for evaluation purposes only; the actual O&M period could be much longer in some cases. Cost estimates have been prepared in accordance with USEPA guidance (USEPA, 2000) and represent a plus 50 to minus 30 percent range of accuracy.

4.1.8 State Acceptance

This criterion evaluates the technical and administrative issues and concerns the State may have regarding each of the alternatives. This criterion is not discussed in this report, but will be addressed in the ROD.

4.1.9 Community Acceptance

This criterion evaluates the technical and administrative issues and concerns the public may have regarding each of the alternatives. This criterion is not discussed in this report, but will be addressed in the Proposed Plan and ROD.

4.2 Sustainability

Consideration of sustainable practices is becoming increasingly important throughout the remediation community, and this emphasis is now being reflected in federal policy and guidance.

Executive Order (EO) 13423 mandated all federal agencies to conduct environmental, transportation, and energy activities in an environmentally, economically, fiscally sound, integrated, continuously improving, efficient, and sustainable manner (President, 2007). In April 2008, the USEPA issued a guidance document titled *Green Remediation: Incorporating Sustainable Environmental Practices into the Remediation of Contaminated Sites,* which is dedicated to developing and promoting innovative cleanup strategies that restore contaminated sites to productive use and reduce associated costs while promoting environmental stewardship.

The Department of the Navy Environmental Strategy lays out a vision for *Sustaining our Environment, Protecting our Freedom*, which links accomplishing the Navy's defense mission with its responsibility to safeguard the natural systems upon which the nation's quality of life depends. The Department of Defense issued a *Green and Sustainable Remediation Policy* on August 10, 2009, encouraging services to use strategies that consider all environmental effects of remedy implementation and operation and incorporate options to maximize the overall benefit of cleanup actions. EO 13514 sets sustainability goals for federal agencies and

focuses on making improvements in environmental, energy, and economic performance (President, 2009). The EO requires federal agencies to set a 2020 greenhouse gas emissions reduction target within 90 days, increase energy efficiency, reduce fleet petroleum consumption, conserve water, reduce waste, support sustainable communities, and leverage federal purchasing power to promote environmentally responsible products and technologies. NAVFAC prepared a *Sustainable Environmental Remediation Fact Sheet*, which outlines the Navy's guidance on incorporating sustainable remediation into the environmental remediation process (NAVFAC, 2009). Furthermore, regulatory agencies are beginning to request that sustainability be considered during remedy implementation.

Sustainability was evaluated under each of the NCP Criteria for Site 11a. The eight sustainability metrics discussed in the NAVFAC (2009) Fact Sheet consist of the following:

- Energy Consumption
- Green House Gas Emissions
- Criteria Pollutant Emissions
- Water Impacts
- Ecological Impacts
- Resource Consumption
- Worker Safety
- Community Impacts

Using these general metrics, a qualitative evaluation of the three active remedial alternatives (Alternatives 2, 3, and 4) was conducted. **Table 4-1** summarizes the results of this qualitative evaluation. The results of this evaluation are incorporated into the comparative analysis in Subsection 4.3.3.

4.3 Evaluation of Remedial Technologies

The detailed analysis of remedial alternatives comprises individual and comparative evaluation of the remedial alternatives. During the individual evaluation, each alternative is assessed against the NCP criteria described in Section 4.1. The results are then arrayed to compare the alternatives and identify the key trade-offs among them. This approach provides decision-makers with sufficient information to adequately compare the alternatives, select an appropriate remedy for the site, and demonstrate satisfaction of the remedy selection requirements in the ROD. The individual evaluation of the alternatives is provided in **Table 4-2**.

The comparative evaluation is summarized in the following subsections. A qualitative comparative analysis was employed using a ranking system of 1 to 5, with 1 being the lowest valued metric and 5 being the highest. The results of the ranking for each alternative are included in **Table 4-3.**

Alternative 1, No Action, is easily implemented, with no concerns for short-term effectiveness and no associated cost. However, Alternative 1 does not provide protection of human health and the environment, does not comply with ARARs, is not effective in the long term, and does not reduce toxicity, mobility or volume through treatment. Alternative 1 serves only as a baseline for comparison and therefore is not discussed in the following sections.

4.3.1 Overall Protection of Human Health and the Environment

Alternatives 2, 3, and 4 are all protective of human health and the environment. Monitoring will be conducted, and LUCs will provide adequate protection of human health and the environment by controlling exposure to shallow groundwater until the RAOs are achieved. Therefore, the alternatives received the same ranking for this criterion.

4.3.2 Compliance with ARARs

Alternatives 2, 3, and 4 are expected to comply with ARARs. Each alternative employs active treatment and is expected to meet the ARARs in an accelerated timeframe. The applicability of most ARARs is the same for Alternatives 2, 3, and 4, with the following exceptions: Alternatives 2 and 3 require compliance with federal underground injection regulations because underground injections are a component of these alternatives; Alternative 4 requires compliance with regulations associated with air emissions because the technology would result in volatilization of the COCs. Therefore, the alternatives received the same ranking for this criterion. The ARARs are provided in **Appendix C**.

4.3.3 Long-Term Effectiveness and Permanence

Alternatives 2, 3, and 4 would effectively reduce concentrations of chlorinated VOCs in shallow groundwater to allow for unlimited use and unrestricted exposure over time. Alternatives 2 and 3 are expected to be more effective than Alternative 4 because these rely on injection of reagents to condition the aquifer for continued degradation following termination of treatment activities and therefore reduce the risk of rebound of contaminants. However, the AS/SVE system (Alternative 4) could easily be reinitiated if rebound occurred following system shutdown. Therefore, Alternatives 2 and 3 received higher rankings for this criterion than Alternative 4.

4.3.4 Reduction of Toxicity, Mobility, and Volume through Treatment

Alternatives 2, 3, and 4 each expected to reduce toxicity, mobility, and volume to a similar degree through active treatment, which is the statutory preference. Alternatives 2 and 3 utilize the injection of substrate to enhance the rate of natural degradation of site contaminants; whereas Alternative 4 utilizes mechanical processes for the destruction of site contaminants. Each Alternative employs active treatment within both the source area and downgradient plume and is therefore expected to result in the treatment or destruction of similar amounts of contaminants. Therefore, the alternatives received the same ranking for this criterion.

4.3.5 Short-Term Effectiveness

The short-term effectiveness associated with Alternatives 2 and 3 is similar with regard to impacts on the community, as both treatments rely on direct injection methods for implementation. Alternative 4 has a slightly higher risk of impacting the community, as the technology will rely on an ex situ component to treat soil vapors. Alternatives 2 and 3 have a slightly higher risk to construction workers during implementation than Alternative 4 due to the handling and potential exposure to reagents, with Alternative 3 posing a higher risk due to use of oxidizing chemicals. Alternative 3 has a slightly higher risk of creating environmental impacts than Alternatives 2 and 4 because it has the potential to temporarily mobilize naturally occurring metals. All the alternatives have the potential to temporarily

increase the concentrations of COCs in soil gas during active treatment. Alternatives 2, 3, and 4 are expected to achieve RAOs within a similar timeframe.

As a result of the sustainability evaluation performed (**Table 4-1**), Alternative 2 has a slightly higher resource consumption than Alternative 3, since the reagent used (emulsified vegetable oil) is a naturally derived material, which imposes a slightly lower resource demand than production of the permanganate associated with Alternative 3. Alternative 4 has higher energy consumption, green house gas emissions, and resource consumption than Alternatives 2 and 3 because it requires on-going electrical energy input throughout its effective life to power the blower for the AS equipment, and possibly for the SVE. This energy usage will result in generation of green house gases. Additionally, Alternative 4 requires permanent installation of equipment (mechanical treatment equipment, PVC or other plastic or metal piping, electrical conduits, etc), which increases its resource consumption.

Therefore, Alternative 2 received the highest ranking, and Alternatives 3 and 4 received equivalent rankings for this criterion.

4.3.6 Implementability

Alternatives 2, 3, and 4 can each be implemented using standard and widely available technologies. Alternative 4 is less implementable because the technology is more difficult to construct and requires an increased operation component. Additionally, the shallow water table presents a technical challenge for successfully implementing Alternative 4. Therefore, Alternative 4 received a lower ranking than Alternatives 2 and 3 for this criterion.

4.3.7 Cost

The estimated capital cost for implementation of Alternative 2 ($401,000) is less than Alternative 3 ($582,000) and 4 ($665,000). The estimated present value cost, factoring in a 30-year O&M period for each alternative, for Alternative 2 ($3 million) is less than the estimated present value costs for Alternatives 3 ($3.4 million) and 4 ($3.6 million). For the purposes of this FS, it is assumed that vapor intrusion monitoring samples (e.g. soil gas and indoor air) will not be collected. However, if vapor intrusion monitoring is required, the cost implications for sampling and analysis would be the same for Alternatives 2, 3, and 4. Because the costs associated with Alternative 2 are lower than those for Alternatives 3 and 4, Alternative 2 received a higher ranking than Alternatives 3 and 4 for this criterion. The detailed cost estimates are provided in **Appendix D**.

4.4 Summary

Overall, the total scores for the three active remedial alternatives (Alternatives 2, 3, and 4) are relatively similar. Each of these alternatives would be reasonably expected to be effective at the site and achieve the RAOs. Of these alternatives, Alternative 2 has the highest score and is the lowest cost alternative.

TABLE 4-1
Qualitative Screening of Sustainability Metrics for Active Remedial Alternatives
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Evaluation Criteria	Alternative 2 ERD	Alternative 3 ISCO & ERD	Alternative 4 AS/SVE
Energy Consumption	5	5	2
Green House Gas Emissions	4	4	2
Criteria Pollutant Emissions	5	5	5
Water Impacts	5	5	5
Ecological Impacts	5	5	5
Resource Consumption	5	4	2
Worker Safety	5	5	5
Community Impacts	5	5	5
Total	39	38	31

Qualitative comparative analysis using a rating scale
of 1 through 5 (1 = lowest score, 5 = highest score)

TABLE 4-2
Detailed Evaluation of Remedial Alternatives
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Evaluation Criteria	Alternative 1 No Action	Alternative 2 ERD	Alternative 3 ISCO & ERD	Alternative 4 AS/SVE
Overall Protection of Human Health & the Environment	**Not protective** Does not prevent exposure to contaminated groundwater or provide measures to reduce chemicals of concern (COCs) concentrations to achieve Remedial Action Objectives (RAOs).	**Protective** Actively treats COCs. Performance monitoring and land use controls (LUCs) implemented and maintained until groundwater RAOs are achieved.	**Protective** Actively treats COCs. Performance monitoring and LUCs implemented and maintained until groundwater RAOs are achieved.	**Protective** Actively treats COCs. Performance monitoring and LUCs implemented and maintained until groundwater RAOs are achieved.
Compliance with ARARs	**Does not meet**	**Meets** Accelerated cleanup timeframe.	**Meets** Accelerated cleanup timeframe.	**Meets** Accelerated cleanup timeframe.
Long-Term Effectiveness & Permanence	**Ineffective** Past groundwater monitoring suggests reductive dechlorination of VOCs is occurring naturally, but is limited. With no treatment or monitoring, it is uncertain if/when RAOs will be achieved. Timeframe considered unacceptable. LUCs not in place to prevent exposure to COCs.	**Effective** Greatly reduces timeframe to achieve RAOs through active treatment. Following termination of injection activities, aquifer conditioned for continued degradation; rebound risk reduced. LUCs will prevent exposure to COCs until RAOs are achieved.	**Effective** Greatly reduces timeframe to achieve RAOs through active treatment. Following termination of injection activities, aquifer conditioned for continued degradation; rebound risk reduced. LUCs will prevent exposure to COCs until RAOs are achieved.	**Moderately Effective** Greatly reduces timeframe to achieve RAOs through active treatment. System can easily be turned back on if rebound occurs. LUCs will prevent exposure to COCs until RAOs are achieved.
Reduction of Toxicity, Mobility, & Volume Through Treatment	**No treatment** Reduction would only gradually occur as a result of natural processes. Reduction and mobility of COCs would remain unknown and undocumented.	**Treatment** Reduced at an accelerated rate.	**Treatment** Reduced at an accelerated rate.	**Treatment** Reduced at an accelerated rate.
Short-Term Effectiveness	**Not effective/No change** No short-term change in the level of risk posed by groundwater contamination would result.	**Moderately high** Minimal risks to the community. Potential risks to workers during installation of wells and from the handling and potential exposure to reagents during injections. Impacts to the community, workers, and the environment are minimal because treatment is performed in-situ. Timeframe to achieve RAOs is accelerated due to active treatment.	**Moderately low** Minimal risks to the community. Potential risks to workers during installation of wells and from the handling and potential exposure to reagents during injections. The use and handling of oxidizing chemicals require additional health and safety precautions. The chemical oxidant and the oxidizing conditions produced may temporarily increase some metals (hexavalent chromium and manganese) above background levels, but these are expected to not be very mobile and are expected to stabilize over time. Impacts to the community, workers, and the environment are minimal because treatment is performed in-situ. Timeframe to achieve RAOs is accelerated due to active treatment.	**Moderately low** Minimal risks to the community. Potential risks to workers during installation of wells and soil vapor extraction system. Timeframe to achieve RAOs is accelerated due to active treatment. Increased energy consumption, green house gas emissions, and resource consumption due to on-going electrical energy input throughout its effective life to power the equipment and installation of permanent equipment.
Implementability	**No implementation**	**High** Proven technology.	**High** Proven technologies.	**Moderate** Proven technology. However, challenges are associated with the shallow water table, which increases the chance of the system not working.
Cost	**No cost**	**Capital Cost = $401K** **O&M Present Value = $2.6M** **Total Cost = $3M**	**Capital Cost = $582K** **O&M Present Value = $2.8M** **Total Cost = $3.4M**	**Capital Cost = $665K** **O&M Present Value = $3M** **Total Cost = $3.6M**

TABLE 4-3
Comparative Analysis of Remedial Alternatives
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Evaluation Criteria	Alternative 1 No Action	Alternative 2 ERD	Alternative 3 ISCO & ERD	Alternative 4 AS/SVE
Overall Protection of Human Health and the Environment	1	5	5	5
Compliance with ARARs	1	5	5	5
Long-Term Effectiveness and Permanence	1	5	5	4
Reduction of Toxicity, Mobility, and Volume Through Treatment	1	5	5	5
Short-Term Effectiveness	1	4	2	2
Implementability	5	5	5	3
Cost	5	4	3	3
Total	15	33	30	27

Qualitative comparative analysis of alternatives using a rating scale of 1 through 5 (1 = lowest score, 5 = highest score)

SECTION 5

References

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Appendix A
Technical Memorandum Site 11a Data Gap Investigation Results

Site 11a, Building 3033 Former Vehicle Repair Facility and Waste Oil Tank Data Gap Investigation Results, Joint Expeditionary Base (JEB) Little Creek-Fort Story Naval Amphibious Base (NAB) Little Creek

PREPARED FOR: NAB Little Creek Partnering Team

PREPARED BY: CH2M HILL

DATE: October 15, 2010

This memorandum presents the results of the groundwater data gap investigation for Site 11a conducted in September 2009. The specific objectives of the investigation are discussed below. This investigation was performed in accordance with the Master Project Plans (CH2M HILL 2007a) and the Remedial Investigation Work Plan (CH2M HILL, 2007b).

Background

On October 1, 2009, Hampton Roads' first Joint Base was established. This new installation comprises the former Naval Amphibious Base (NAB) Little Creek and the Army post Fort Story; the new name is Joint Expeditionary Base (JEB) Little Creek-Fort Story. With the forming of this new command, the Navy assumes responsibility for managing both properties and will now merge public meetings regarding the ongoing environmental restoration. However, separate records will be maintained to ensure the integrity of ongoing efforts at both properties. When required for public notices and distributions, the former bases are identified as JEB Little Creek-Fort Story. For Environmental Restoration (ER) Program documents, the former names NAB Little Creek and Fort Story are being used to maintain consistency within the program.

Site 11a, Building 3033 Former Vehicle Repair Facility and Waste Oil Tank, is centrally located in the industrial area of NAB Little Creek. The current southern portion of the site boundary adjoins the northern portion of the boundary for ER (formerly Installation Restoration [IR]) Site 11 (**Figure 1**). The site consists of an open, grass-covered field, Building 3606, and an asphalt parking area that surrounds Building 3606. Building 3606 is a four-story barracks used as single residence lodging for active duty personnel. The open field south of Building 3606 is used primarily as a recreational area for barracks personnel.

Former Buildings 3033 and 3034 were located at the site. Former Building 3034 was located in the grass-covered field and was used as a garden supply center. There are no documented releases associated with the building. Former Building 3033 was a 12-bay vehicle repair facility located immediately south of the current barracks building. Historical records document the presence of an underground waste oil tank associated with the vehicle repair facility operations. The tank was identified as Solid Waste Management Unit (SWMU) 60 in the SWMU/IR Summary report (NAB Little Creek, 2000). The contents of the

tank were not documented, and there is no record of solvent disposal in the tank. The tank was reportedly excavated and removed in 1988 under the Underground Storage Tank (UST) Program. Prior to NAB Little Creek's placement on the National Priorities List (NPL) in 1999, SWMU 60 was closed out under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), with no further action following a desktop audit (NAB Little Creek, 2000).

During the 1998 Supplemental Remedial Investigation (RI) at ER Site 11, trichloroethene was detected in groundwater collected from an upgradient monitoring well, LS11-MW16D (CH2M HILL, 2004), located approximately 330 feet north of the Site 11 source area. This indicated a separate source of volatile organic compound (VOC) contamination. Subsequently, the area north of Site 11 became identified as Site 11a and was included in the CERCLA process for site investigation. Further investigation of the Site 11a plume found that the southern (downgradient) edge of the Site 11a plume adjoins the northern portion of the Site 11plume. Several investigations were conducted at Site 11a between 2001 and 2007 to characterize the nature and extent of contamination at the site.

During the 2007 RI, pentachlorophenol (PCP) was detected in the groundwater sample collected from monitoring well LS11-MW20D at a concentration of 6J micrograms per liter (µg/L), which is in exceedance of the maximum contaminant limit (MCL) of 1 µg/L (CH2M HILL, 2009) (**Figure 2**). For the 2007 investigation, the laboratory detection limit for analysis of PCP ranged from 25 µg/L to 28 µg/L, and the method detection limit for PCP ranged from 1.9 µg/L to 2.2 µg/L, in excess of the MCL. Therefore, although PCP was detected in only one monitoring well at a concentration exceeding the MCL, the elevated laboratory detection limit used for the investigation resulted in uncertainty regarding the concentration of PCP with respect to the MCL in the remaining site monitoring wells. To confirm the presence or absence of PCP at concentrations exceeding the MCL, the NAB Little Creek Partnering Team concluded additional investigation was warranted.

In conjunction with the collection of groundwater samples for analysis of PCP, additional field data were included in the investigation to support development of alternatives for the Site 11a Feasibility Study (FS). The collection of a round of water levels was included to document current groundwater flow and direction. Because dissolved oxygen (DO) concentrations at Site 11a are generally elevated in the central portion of the site, the collection of DO concentrations was undertaken to confirm the localized elevated DO concentrations. The purpose of this technical memorandum is to document the field investigation, results, and conclusions associated with this sampling event.

Objectives

The objectives of the September 2009 sampling were as follows:

- To collect groundwater elevations at Site 11a monitoring wells to document groundwater flow direction to aid in developing remedial alternatives in a future FS.
- To collect DO concentrations from groundwater collected from each Site 11a monitoring well to aid in developing remedial alternatives in a future FS.
- To confirm the presence or absence of PCP in Site 11a groundwater at concentrations in excess of the MCL by collecting and analyzing groundwater samples for PCP using a method capable of detecting PCP at concentrations below the MCL.

Methods

Sampling methods for the investigation were in accordance with the Master Project Plans (CH2M HILL, 2007a) and Site 11a RI Work Plan (CH2M HILL, 2007b). From September 14 through September 18, 2009, groundwater samples were collected from the 16 monitoring wells sampled during the RI; 15 monitoring wells associated with Site 11a and 1 monitoring well associated with Site 11 (LS11-MW06D). Samples were collected using a peristaltic pump following a low-flow sampling protocol. Before sample collection began, depth to groundwater was measured and recorded at each well. Similar to the RI, all samples were collected from the midpoint of the well screen. Well screen intervals are provided on **Table 1**. Water quality parameters (DO, oxidation-reduction potential [ORP], pH, temperature, conductivity, turbidity, and salinity) were field measured with a YSI 6820 (YSI) and flow-through cell to ensure aquifer stability before sample collection. Water quality parameters were recorded in the field notebook. The aquifer was considered stable after at least one well volume was purged and water-quality readings collected 5 minutes apart were stabilized to within 10 percent of one another, with the exception of turbidity, which was reduced to the extent practical. Following parameter stabilization, DO measurements were confirmed with CHEMets® field test kits. Groundwater samples were collected for analysis of PCP only. For quality assurance/ quality control, one field blank, one equipment blank, two field duplicates, one matrix spike, and one matrix spike duplicate were collected. Samples were collected in laboratory-supplied bottleware and submitted to a pre-approved subcontracted laboratory. Samples were analyzed using EPA SW 846 Method 8270C-SIM.

Investigation-derived waste (IDW) generated during the investigation was limited to purge water. IDW was placed in approved 55-gallon drums, stored in secondary containment at the approved IDW staging location, and properly labeled. The drums were sampled for disposal characterization. Based on the analytical results, the waste was characterized as non-hazardous and was disposed at an approved disposal facility within 90 days of generation.

Investigation Results

Figure 3 depicts the groundwater contours based on the water level survey data collected in September 2009. Water level data were inconsistent with the data collected during the RI (CH2M HILL, 2009), so additional water level surveys were conducted in March 2010 and

April 2010. The groundwater contours based on the March 2010 and April 2010 water level surveys are depicted on **Figure 4** and **Figure 5**, respectively. A summary of the water level measurements collected in September 2009, March 2010, and April 2010 are provided in **Table 1**.

Water quality parameters were measured using the YSI to ensure well stabilization before sample collection. The measurement recorded for each well before sample collection is provided in **Table 2**. Data measured using the YSI are considered sufficient to determine stabilization of the water quality parameters for sample collection; however, CHEMets® test kits more accurately reflect the DO concentrations in the aquifer. Therefore, the DO concentrations measured with the CHEMets® test kits are used to discuss DO concentrations at the site and are listed in **Table 2**. DO concentrations varied widely across the site, ranging from 0.5 to 10 milligrams per liter (mg/L). The highest concentration of DO was detected in the groundwater sample collected from monitoring well LS11-MW16D. DO concentrations were elevated, ranging from 2 to 4 mg/L in groundwater samples collected from monitoring wells adjacent to monitoring well LS11-MW16D. The DO concentrations measured using the CHEMets® test kits are provided on **Figure 6**.

PCP was not detected in any site monitoring wells during the September 2009 sampling. A summary of the validated analytical data is provided in **Table 3**.

Conclusions and Recommendations

Groundwater elevation data measured in September 2009 are provided in **Table 1**; corresponding groundwater elevation contours are illustrated on **Figure 3**. Groundwater elevation data measured in January 2005, April 2005, June 2005, November 2005, and October 2007 suggest groundwater flow direction is generally toward the southwest (CH2M HILL, 2009). Because the groundwater flow direction in September 2009 was not consistent with previously documented groundwater flow direction, confirmatory water elevation data were collected in March 2010 and April 2010. The March 2010 and April 2010 groundwater elevation data are provided in **Table 1** and illustrated on **Figure 4** and **Figure 5**, respectively. The September 2009, March 2010, and April 2010 groundwater elevations suggest groundwater gradient is relatively flat and varies by less than 1 foot across the site. The slight variations in the overall groundwater flow direction may be attributable to seasonal variation of groundwater elevations and the location of utilities beneath the site. Based upon the current shape of the groundwater plume, it can be concluded that the predominant direction of groundwater flow is to the southwest; however, the slight variations in flow direction should be taken into consideration during the evaluation of alternatives in the FS.

Consistent with previous measurements (CH2M HILL, 2009), DO concentrations varied across the site. The highest DO concentration was detected in the groundwater sample collected from LS11-MW16D (10 mg/L) and neighboring monitoring wells. DO concentrations historically have been elevated within the proximity of monitoring well LS11-MW16D (CH2M HILL, 2009). The cause of the elevated DO concentration in the central portion of the site versus the relatively anaerobic conditions found throughout the site and other ER sites at NAB Little Creek is unknown. The wide range of DO

concentrations should be taken into consideration during the evaluation of alternatives in the FS.

In 2007, PCP was detected in a groundwater sample collected from a monitoring well located generally upgradient from the Site 11a source area at a concentration of 6J µg/L. Because PCP is not considered to be a common laboratory contaminant and the laboratory and method detection limits used during the 2007 investigation were higher than the MCL for PCP, confirmatory sampling was completed in September 2009. To evaluate more accurately the presence of PCP concentrations in groundwater at concentrations exceeding the MCL for PCP (1 µg/L), lower laboratory detection limits were used to analyze the samples collected in 2009. The laboratory detection limit for PCP was approximately 1 µg/L for the samples analyzed in 2009 versus approximately 26 µg/L for the samples analyzed in 2007. The MDL was approximately 0.33 µg/L for samples analyzed in 2009 versus approximately 2 µg/L for samples analyzed in 2007 (**Table 4**). If PCP was present in a given sample at a concentration between the MDL and the laboratory detection limit, the concentration would be reported as a valid value and would be flagged with a "J." To further verify the analytical results collected from LS11-MW20D in 2009, a duplicate sample was also collected from this location. PCP was not detected in groundwater samples from any of the site monitoring wells sampled during the September 2009 investigation, including the duplicate sample. Because lower laboratory and method detection limits were used during the September 2009 sampling event, PCP would have been expected to be detected in groundwater samples if it was present at concentrations exceeding the MCL.

Groundwater flow velocity in the Columbia Aquifer at Site 11a is estimated to be approximately 2.4 feet/year. Like all organic contaminants, if PCP were present in groundwater, its migration rate would be retarded with respect to groundwater flow velocity and consequently it would migrate at a slower rate than groundwater. Given the low groundwater flow velocity at Site 11a, PCP, if present, would have been expected to be detected within the vicinity of LS11-MW20D during the 2009 sampling event.

The source of the PCP detected in groundwater during the 2007 investigation is unknown. The contents of the former UST were not documented. Information regarding the use of the former Building 3033 vehicle repair facility is limited; however, PCP is more commonly known as a biocide and therefore is not expected to be associated with the activities conducted in former Building 3033. PCP-containing pesticides were historically employed at NAB Little Creek; however, the location and the frequency of use were not documented and their use has since been discontinued (NAB Little Creek Partnering Team, 2010). While former Building 3034 was used as a garden supply center, there are no documented releases associated with former Building 3034, and the building is located further downgradient from the location where PCP was detected (**Figure 2**). Because there is no documented use of PCP associated with Site 11a activities and PCP was not detected in groundwater within the proximity of the former UST where VOC concentrations are most elevated, the one-time detection of PCP at Site 11a in 2007 does not define a plume worthy of further investigation nor is it considered to be related to a CERCLA release from Site 11a.

References

CH2M HILL. 2004. *Final Supplemental Remedial Investigation for Site 11 – School of Music Plating Shop, Virginia Beach, Virginia.* June.

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NAB Little Creek. 2000. *SWMU/IR Summary for Naval Amphibious Base, Little Creek.* June.

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TABLE 1
Site 11a Groundwater Elevation Data
Joint Expeditionary Base Little Creek-Fort Story
Naval Amphibious Base Little Creek
Virginia Beach, VA

Monitoring Well ID	Well Screen Interval (ft bgs)	Top of Casing (ft amsl)	September 14, 2009		March 1, 2010		April 27, 2010	
			Depth to Water (ft below TOC)	Groundwater Elevation (ft amsl)	Depth to Water (ft below TOC)	Groundwater Elevation (ft amsl)	Depth to Water (ft below TOC)	Groundwater Elevation (ft amsl)
LS11-MW06D	15 - 20	6.76	2.78	3.98	3.91	2.85	6.94*	-0.18*
LS11-MW15D	15 - 20	7.19	3.45	3.74	4.23	2.96	4.35	2.84
LS11-MW16D	15 - 20	8.44	4.88	3.56	5.22	3.22	5.44	3
LS11-MW20D	16 - 26	9.17	5.72	3.45	6.07	3.1	6.16	3.01
LS11-MW21D	19 - 29	8.03	4.28	3.75	NA	NA	NA	NA
LS11-MW22D	18 - 28	8.41	5.35	3.06	5.43	2.98	5.51	2.9
LS11-MW31D	5 - 30	9.24	5.37	3.87	6.00	3.24	6.19	3.05
LS11-MW32D	4 - 29	8.05	4.17	3.88	4.84	3.21	5.00	3.05
LS11-MW33D	5 - 25	8.79	4.86	3.93	5.67	3.12	5.77	3.02
LS11-MW34D	3 - 28	8.47	4.71	3.76	5.43	3.04	5.56	2.91
LS11-MW35D	5 - 25	8.23	4.33	3.9	NA	NA	5.29	2.94
LS11A-MW36D	9 - 29	7.97	4.18	3.79	4.70	3.27	4.92	3.05
LS11A-MW37D	8 - 28	8.6	4.72	3.88	5.28	3.32	5.49	3.11
LS11A-MW38D	20 - 30	8.97	5.39	3.58	5.75	3.22	5.99	2.98
LS11A-MW39D	8 - 28	8.9	5.06	3.84	5.71	3.19	5.89	3.01
LS11A-MW40D	9 - 29	9.37	5.44	3.93	6.02	3.35	6.21	3.16

Notes:
bgs - below ground surface
amsl - above mean sea level
ft - feet
NA - Not Accessible during time of sampling
TOC - top of casing
* - inaccurate data point

TABLE 2
Site 11a Groundwater Monitoring Field Parameters (September 2009)
Joint Expeditionary Base Little Creek-Fort Story
Naval Amphibious Base Little Creek
Virginia Beach, Virginia

Station ID	LS11-MW06D	LS11-MW15D	LS11-MW16D	LS11-MW20D	LS11-MW21D	LS11-MW22D	LS11-MW31D	LS11-MW32D
Sample ID	LS11-MW06D-09C	LS11-MW15D-09C	LS11-MW16D-09C	LS11-MW20D-09C	LS11-MW21D-09C	LS11-MW22D-09C	LS11-MW31D-09C	LS11-MW32D-09C
Sample Date	9/14/2009	9/14/2009	9/17/2009	9/15/2009	9/14/2009	9/17/2009	9/17/2009	9/18/2009
Field Parameters								
Dissolved Oxygen by YSI (MG_L)	0.16	0.26	10.6	0.2	0.21	1.57	3.34	1.64
Dissolved Oxygen by CHEMets (MG_L)	0.6	0.7	10	0.5	0.8	2	3.5	2
Depth to Water (Ft)	3.4	3.76	5.01	5.8	4.4	5.45	5.8	4.65
Oxidation Reduction Potential	359.2	28.8	186	287.9	250	207.3	177.5	192.7
Flow Rate (GAL_MIN)	NA	NA	0.067	0.079	NA	0.067	0.066	0.92
Gallons Purged (GAL)	8	6.75	3	6	5	4	5	5.5
pH (PH)	5.4	6.02	5.39	5.1	5.12	5.14	4.77	4.97
Salinity (PCT)	0.16	0.27	0.18	0.15	0.05	0.51	0.15	0.21
Specific Conductivity (MS_CM)	0.3	0.543	0.358	0.284	0.124	0.994	0.3	0.438
Temperature (DEG_C)	20.45	23.17	22.38	20.76	28.3	22.9	21.38	23.93
Turbidity (NTU)	0	0	5.5	25.8	0	48.5	28.8	57.8

Station ID	LS11-MW33D	LS11-MW34D	LS11-MW35D	LS11-MW37D	LS11A-MW36D	LS11A-MW38D	LS11A-MW39D	LS11A-MW40D
Sample ID	LS11-MW33D-09C	LS11-MW34D-09C	LS11-MW35D-09C	LS11-MW37D-09C	LS11A-MW36D-09C	LS11A-MW38D-09C	LS11A-MW39D-09C	LS11A-MW40D-09C
Sample Date	9/15/2009	9/17/2009	9/14/2009	9/15/2009	9/17/2009	9/18/2009	9/16/2009	9/15/2009
Field Parameters								
Dissolved Oxygen by YSI (MG_L)	2.5	4.19	0.54	0.19	0.42	0.45	0.8	0.19
Dissolved Oxygen by CHEMets (MG_L)	2.5	4	0.6	0.5	0.9	1	0.5	1
Depth to Water (Ft)	5.2	5.2	4.43	4.89	4.5	5.8	5.47	5.62
Oxidation Reduction Potential	621.1	176.6	569.5	209.3	179.8	126.2	182.3	573.4
Flow Rate (GAL_MIN)	0.092	0.092	NA	0.092	0.092	0.92	0.066	0.092
Gallons Purged (GAL)	4.5	6	5.5	5	8	5.5	7.5	4.5
pH (PH)	5.12	6.4	4.9	5.23	5.18	5.12	5.57	4.67
Salinity (PCT)	0.14	0.19	0.15	0.12	0.12	0.09	0.11	0.11
Specific Conductivity (MS_CM)	0.328	0.374	0.315	0.237	0.253	0.176	0.206	0.22
Temperature (DEG_C)	33.17	21.71	25.2	21.66	24.57	18.21	18.76	22.02
Turbidity (NTU)	0	7.9	0	0	61.6	27.5	0.8	0

NOTES:

Depth to water is recorded as the measurement collected during well stabilization. The depth to water measurement recorded for the water level survey is provided on Table 2.

The YSI water quality meter is used to measure groundwater parameters during well purging. Parameter stabilization indicates sufficient purging has occurred. Dissolved oxygen values measured with a water quality meter are suitable to signify sufficient purging; however dissolved oxygen values collected using CHEMets® test kits more accurately reflect dissolved oxygen concentrations in the aquifer.

Due to a malfunction of the turbidity meter, the turbidity data may be inaccurate.

NA- Not Analyzed
MG_L- Milligrams per liter
GAL_MIN- Gallons per minute
GAL- Gallons
MV- Millivolts
PH- pH units
PCT- percent
MS_CM- Milliseimens per centimeter
DEG_C- Degrees centigrade
NTU- Nephlometric turbidity unit

TABLE 3
Site 11a Monitoring Well Analytical Results (September 2009)
Joint Expeditionary Base Little Creek-Fort Story
Naval Amphibious Base Little Creek
Virginia Beach, VA

Sample ID	LS11A-MW36D-09C	LS11A-MW37D-09C	LS11A-MW38D-09C	LS11A-MW38DP-09C	LS11A-MW39D-09C	LS11A-MW40D-09C	LS11-MW06D-09C	LS11-MW15D-09C	LS11-MW16D-09C
Sample Date	9/17/09	9/15/09	9/18/09	9/18/09	9/16/09	9/15/09	9/14/09	9/14/09	9/17/09
Chemical Name									
Semivolatile Organic Compounds (UG/L)									
Pentachlorophenol	1.1 UL	0.94 U	1.1 UL	1 UL	0.94 UL	0.94 U	0.94 U	0.95 U	1.1 UL

Sample ID	LS11-MW20D-09C	LS11-MW20DP-09C	LS11-MW21D-09C	LS11-MW22D-09C	LS11-MW31D-09C	LS11-MW32D-09C	LS11-MW33D-09C	LS11-MW34D-09C	LS11-MW35D-09C
Sample Date	9/15/09	9/15/09	9/14/09	9/17/09	9/17/09	9/18/09	9/15/09	9/17/09	9/14/09
Chemical Name									
Semivolatile Organic Compounds (UG/L)									
Pentachlorophenol	0.94 U	0.94 U	0.94 U	1 UL	1 UL	0.94 UL	0.94 U	1 UL	0.94 U

Notes:

U - The material was analyzed for, but not detected

UL - Analyte not detected, quantitation limit is probably higher

UG/L - Micrograms per liter

TABLE 4
Site 11a Pentachlorophenol Laboratory Detection Limits
Joint Expeditionary Base Little Creek-Fort Story
Naval Amphibious Base Little Creek
Virginia Beach, VA

Sample Name	Analysis Group	Dilution	Chemical Name	Analyte Value	Result Units	Lab Qualifier	Validator Qualifier	Method Detection Limit	Detection Limit	Method
2007 RI Groundwater Sampling Data										
LS11A-EB100207	SVOA	1	Pentachlorophenol	25	UG_L	U	U	2	25	OLM04
LS11A-FB100207	SVOA	1	Pentachlorophenol	25	UG_L	U	U	2	25	OLM04
LS11A-EB100807	SVOA	1	Pentachlorophenol	27	UG_L	U	U	2.2	27	OLM04
LS11A-FB101107	SVOA	1	Pentachlorophenol	25	UG_L	U	U	1.9	25	OLM04
LS11A-MW38D-07C	SVOA	1	Pentachlorophenol	28	UG_L	U	U	2.2	28	OLM04
LS11A-MW39D-07C	SVOA	1	Pentachlorophenol	26	UG_L	U	U	2.1	26	OLM04
LS11A-MW40D-07C	SVOA	1	Pentachlorophenol	25	UG_L	U	U	2	25	OLM04
LS11-MW06D-07C	SVOA	1	Pentachlorophenol	27	UG_L	U	U	2.2	27	OLM04
LS11-MW15D-07C	SVOA	1	Pentachlorophenol	26	UG_L	U	U	2.1	26	OLM04
LS11-MW16D-07C	SVOA	1	Pentachlorophenol	26	UG_L	U	U	2.1	26	OLM04
LS11-MW20D-07C	SVOA	1	Pentachlorophenol	6	UG_L	J	J	2	25	OLM04
LS11-MW21D-07C	SVOA	1	Pentachlorophenol	26	UG_L	U	U	2.1	26	OLM04
LS11-MW22D-07C	SVOA	1	Pentachlorophenol	27	UG_L	U	U	2.2	27	OLM04
LS11-MW31D-07C	SVOA	1	Pentachlorophenol	28	UG_L	U	U	2.2	28	OLM04
LS11-MW32D-07C	SVOA	1	Pentachlorophenol	26	UG_L	U	U	2.1	26	OLM04
LS11-MW33D-07C	SVOA	1	Pentachlorophenol	26	UG_L	U	U	2.1	26	OLM04
LS11-MW34D-07C	SVOA	1	Pentachlorophenol	25	UG_L	U	U	1.9	25	OLM04
LS11-MW34DP-07C	SVOA	1	Pentachlorophenol	25	UG_L	U	U	1.9	25	OLM04
LS11-MW35D-07C	SVOA	1	Pentachlorophenol	25	UG_L	U	U	2	25	OLM04
LS11-MW35DP-07C	SVOA	1	Pentachlorophenol	25	UG_L	U	U	1.9	25	OLM04
LS11A-MW36D-07C	SVOA	1	Pentachlorophenol	25	UG_L	U	U	2	25	OLM04
LS11A-MW37D-07C	SVOA	1	Pentachlorophenol	25	UG_L	U	U	2	25	OLM04
2009 Data Gap Investigation Groundwater Sampling Data										
LS11-MW21D-09C	SVOA	1	Pentachlorophenol	0.94	UG_L	U	U	.31	.94	SW846 8270C SIM
LS11-MW35D-09C	SVOA	1	Pentachlorophenol	0.94	UG_L	U	U	.31	.94	SW846 8270C SIM
LS11-MW15D-09C	SVOA	1	Pentachlorophenol	0.95	UG_L	U	U	.31	.95	SW846 8270C SIM
LS11-MW06D-09C	SVOA	1	Pentachlorophenol	0.94	UG_L	U	U	.31	.94	SW846 8270C SIM
LS11-MW20D-09C	SVOA	1	Pentachlorophenol	0.94	UG_L	U	U	.31	.94	SW846 8270C SIM
LS11-MW20DP-09C	SVOA	1	Pentachlorophenol	0.94	UG_L	U	U	.31	.94	SW846 8270C SIM
LS11A-MW37D-09C	SVOA	1	Pentachlorophenol	0.94	UG_L	U	U	.31	.94	SW846 8270C SIM
LS11A-MW40D-09C	SVOA	1	Pentachlorophenol	0.94	UG_L	U	U	.31	.94	SW846 8270C SIM
LS11A-FB01-091509	SVOA	1	Pentachlorophenol	1.0	UG_L	U	U	.33	1	SW846 8270C SIM
LS11-MW33D-09C	SVOA	1	Pentachlorophenol	0.94	UG_L	U	U	.31	.94	SW846 8270C SIM
LS11A-MW39D-09C	SVOA	1	Pentachlorophenol	0.94	UG_L	U	UL	.31	.94	SW846 8270C SIM
LS11A-MW39D-09C	SVOA	1	Pentachlorophenol	0.94	UG_L	U	R	.31	.94	SW846 8270C SIM
LS11A-EB091609	SVOA	1	Pentachlorophenol	0.94	UG_L	U	UL	.31	.94	SW846 8270C SIM
LS11A-EB091609	SVOA	1	Pentachlorophenol	0.94	UG_L	U	R	.31	.94	SW846 8270C SIM
LS11-MW31D-09C	SVOA	1	Pentachlorophenol	1.0	UG_L	U	UL	.34	1	SW846 8270C SIM
LS11-MW31D-09C	SVOA	1	Pentachlorophenol	1.0	UG_L	U	R	.34	1	SW846 8270C SIM
LS11-MW16D-09C	SVOA	1	Pentachlorophenol	1.1	UG_L	U	UL	.35	1.1	SW846 8270C SIM
LS11-MW16D-09C	SVOA	1	Pentachlorophenol	1.0	UG_L	U	R	.35	1	SW846 8270C SIM
LS11-MW34D-09C	SVOA	1	Pentachlorophenol	1.0	UG_L	U	UL	.34	1	SW846 8270C SIM
LS11-MW34D-09C	SVOA	1	Pentachlorophenol	1.0	UG_L	U	R	.33	1	SW846 8270C SIM
LS11-MW22D-09C	SVOA	1	Pentachlorophenol	1.0	UG_L	U	UL	.33	1	SW846 8270C SIM
LS11-MW22D-09C	SVOA	1	Pentachlorophenol	1.1	UG_L	U	R	.36	1.1	SW846 8270C SIM
LS11A-MW36D-09C	SVOA	1	Pentachlorophenol	1.1	UG_L	U	UL	.36	1.1	SW846 8270C SIM
LS11A-MW36D-09C	SVOA	1	Pentachlorophenol	1.0	UG_L	U	R	.35	1	SW846 8270C SIM
LS11-MW32D-09C	SVOA	1	Pentachlorophenol	0.94	UG_L	U	UL	.31	.94	SW846 8270C SIM
LS11-MW32D-09C	SVOA	1	Pentachlorophenol	0.97	UG_L	U	R	.32	.97	SW846 8270C SIM
LS11A-MW38D-09C	SVOA	1	Pentachlorophenol	1.1	UG_L	U	UL	.36	1.1	SW846 8270C SIM
LS11A-MW38D-09C	SVOA	1	Pentachlorophenol	0.97	UG_L	U	R	.32	.97	SW846 8270C SIM
LS11A-MW38DP-09C	SVOA	1	Pentachlorophenol	1.0	UG_L	U	UL	.33	1	SW846 8270C SIM
LS11A-MW38DP-09C	SVOA	1	Pentachlorophenol	1.0	UG_L	U	R	.33	1	SW846 8270C SIM

Notes:
SVOA - Semivolatile
UG_L - micrograms per liter

\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\379837_SITE11A_PCP_TM\FIGURE 1 - SITE LOCATION MAP.MXD CBOWMAN 6/28/2010 09:00:42

Legend

- Site 11a Area of Investigation
- Installation Boundary

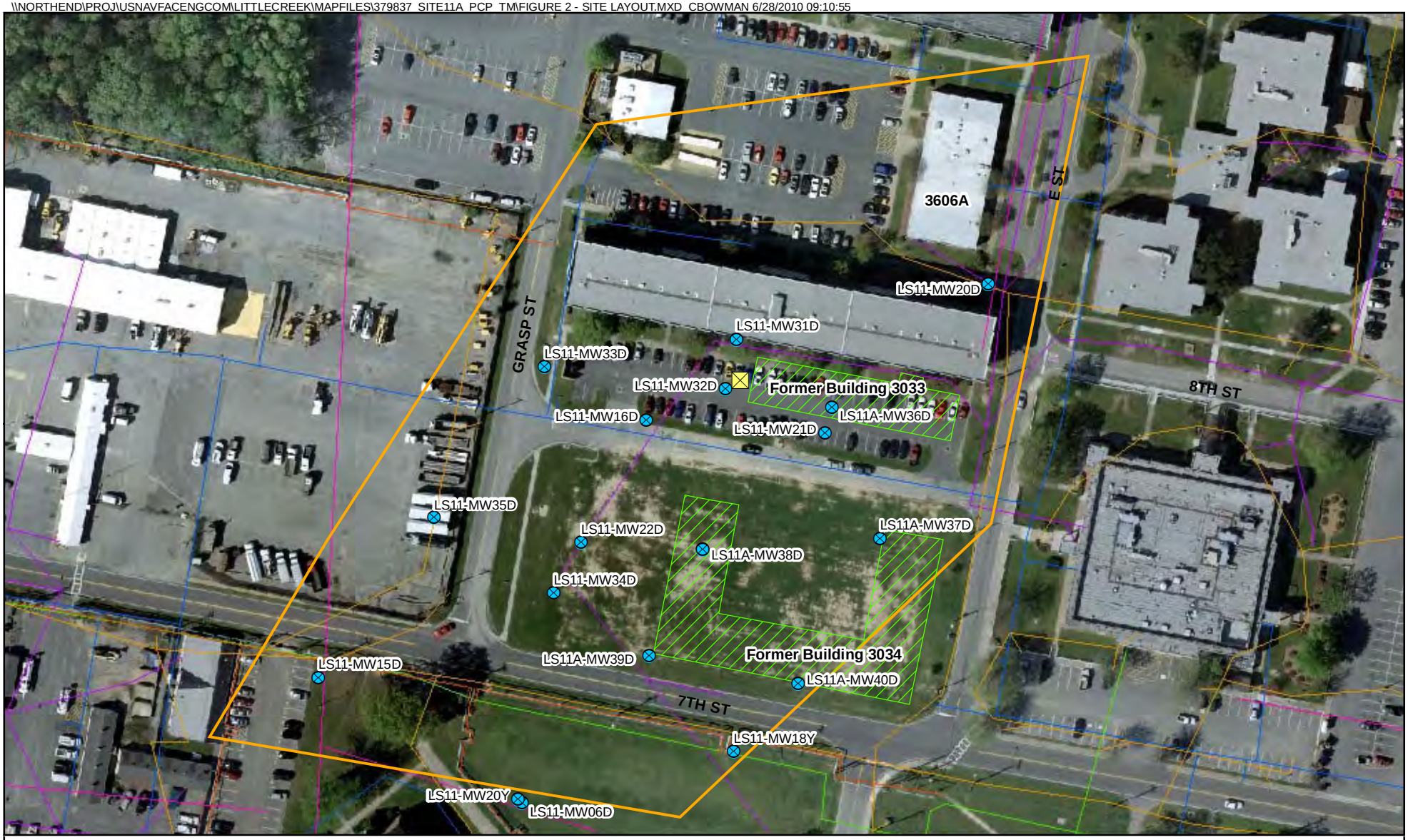
N
W E
S

0 1,000 2,000 4,000 Feet

Figure 1-1
Naval Amphibious Base Little Creek Location and Vicinity
Joint Expeditionary Base Little Creek-Fort Story
Naval Amphibious Base Little Creek
Virginia Beach, VA

CH2MHILL

\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\379837_SITE11A_PCP_TM\FIGURE 2 - SITE LAYOUT.MXD CBOWMAN 6/28/2010 09:10:55



Legend

- Approximate Location of Former Underground Waste Oil Tank
- Monitoring Well Location
- Water Line
- Wastewater Line
- Storm Sewer Line
- Natural Gas Line
- Heat Cool Line
- Electrical Cable Line
- Demolished Building
- Area of Investigation

N
W E
S

0 120 240 Feet

Figure 2
Site Layout
Joint Expeditionary Base Little Creek-Fort Story
Naval Amphibious Base Little Creek
Virginia Beach, VA

CH2MHILL

\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\379837_SITE11A_PCP_TM\FIGURE 3 - SITE 11A GROUNDWATER CONTOURS (SEPT 2009).MXD CBOWMAN 6/28/2010 09:22:20

Legend

- Monitoring Well Location
- Groundwater Contour (Dashed where inferred)
- Water Line
- Wastewater Line
- Storm Sewer Line
- Natural Gas Line
- Heat Cool Line
- Electrical Cable Line
- Area of Investigation
- Demolished Building
- Groundwater Flow Direction

N
W E
S

0 80 160
Feet

Figure 3
Site 11a Groundwater Contours (September 2009)
Joint Expeditionary Base Little Creek-Fort Story
Naval Amphibious Base Little Creek
Virginia Beach, VA

Note:
Groundwater elevations are shown in feet above mean sea level

CH2MHILL

\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\379837_SITE11A_PCP_TM\FIGURE 4 - SITE 11A GROUNDWATER CONTOURS (MARCH 2010).MXD CBOWMAN 6/28/2010 09:24:27

Legend

- Monitoring Well Location
- Groundwater Contour (Dashed where inferred)
- Water Line
- Wastewater Line
- Storm Sewer Line
- Natural Gas Line
- Heat Cool Line
- Electrical Cable Line
- Area of Investigation
- Demolished Building
- Groundwater Flow Direction

N
W E
S

0 80 160
Feet

Note:
Groundwater elevations are shown in feet above mean sea level
*** - Data point not used**
NA - Not Accessible during sampling

Figure 4
Site 11a Groundwater Contours (March 2010)
Joint Expeditionary Base Little Creek-Fort Story
Naval Amphibious Base Little Creek
Virginia Beach, VA

CH2MHILL

\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\379837_SITE11A_PCP_TM\FIGURE 5 - SITE 11A GROUNDWATER CONTOURS (APRIL 2010).MXD CBOWMAN 6/28/2010 09:25:57

Legend

- Monitoring Well Location
- Groundwater Contour (Dashed where inferred)
- Water Line
- Wastewater Line
- Storm Sewer Line
- Natural Gas Line
- Heat Cool Line
- Electrical Cable Line
- Area of Investigation
- Demolished Building
- Groundwater Flow Direction

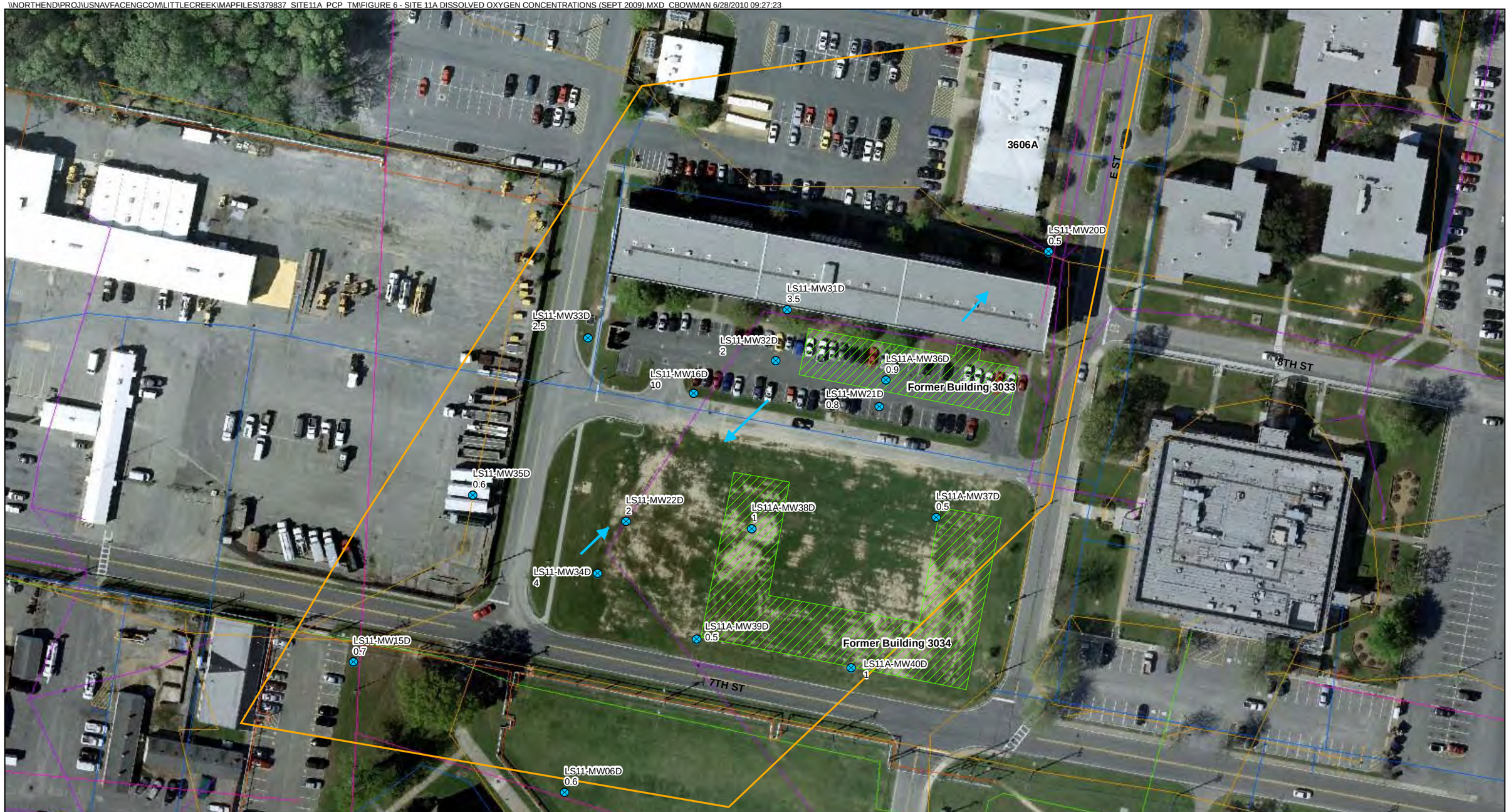
N
W E
S

0 80 160
Feet

Note:
Groundwater elevations are shown in feet above mean sea level
NA - Not Accessible during sampling

Figure 5
Site 11a Groundwater Contours (April 2010)
Joint Expeditionary Base Little Creek-Fort Story
Naval Amphibious Base Little Creek
Virginia Beach, VA

CH2MHILL



Legend

- Monitoring Well Location
- Water Line
- Wastewater Line
- Storm Sewer Line
- Natural Gas Line
- Heat Cool Line
- Electrical Cable Line
- Area of Investigation
- Demolished Building
- Groundwater Flow Direction (September 2009)

N
W E
S

0 80 160
Feet

Note:
Dissolved oxygen concentrations are milligrams per liter (mg/L)"

Figure 6
Site 11a Dissolved Oxygen Concentrations (September 2009)
Joint Expeditionary Base Little Creek-Fort Story
Naval Amphibious Base Little Creek
Virginia Beach, VA

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Appendix B
Site 11a RI Addendum Report

Final

Remedial Investigation Addendum Report for Site 11a

Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Contract Task Order 125

February 2011

Prepared for

Department of the Navy
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Mid-Atlantic

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Prepared by

CH2MHILL

Virginia Beach, Virginia

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Acronyms and Abbreviations

3-D	three-dimensional
µg/L	micrograms per liter
µg/m^3	micrograms per cubic meter
AF	attenuation factor
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CLEAN	Comprehensive Long-term Environmental Action—Navy
COC	chemical of concern
COI	contaminant of interest
CSM	conceptual site model
CVOC	chlorinated volatile organic compound
DCE	dichloroethene
DCA	dichloroethane
DoD	Department of Defense
ELCR	excess lifetime cancer risk
EPC	exposure point concentration
GPR	ground-penetrating radar
HHRA	Human Health Risk Assessment
HQ	hazard quotient
HVAC	heating, ventilation, and air conditioning
IRP	Installation Restoration Program
ITRC	Interstate Technology and Regulatory Council
JEB	Joint Expeditionary Base
L	liter
LUC	land use control
MCL	maximum contaminant level
mL/min	milliliters per minute
NAB	Naval Amphibious Base
PAL	project action limit
PCE	tetrachloroethene
PCP	pentachlorophenol

QA	quality assurance
QC	quality control
RI	Remedial Investigation
RSL	Regional Screening Level
SWMU	solid waste management unit
TCE	trichloroethene
UFP-SAP	Uniform Federal Policy Sampling and Analysis Plan
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

SECTION 1

Introduction

This Remedial Investigation (RI) Addendum presents the field activities, analytical results, and data evaluation of the phased vapor intrusion evaluation that was conducted at Installation Restoration Program (IRP) Site 11a, Building 3033, Former Vehicle Repair Facility and Waste Oil Tank, at Joint Expeditionary Base (JEB) Little Creek, Virginia Beach, Virginia. The investigation was performed in response to the recommendations put forth in the Site 11a RI Report (CH2M HILL, 2010) in compliance with the Uniform Federal Policy Sampling and Analysis Plan (UFP-SAP) (CH2M HILL, 2009). The vapor intrusion investigation was conducted for the Department of the Navy (Navy), Naval Facilities Engineering Command Mid-Atlantic, under the Comprehensive Long-term Environmental Action—Navy (CLEAN), Contract N62470-05-D-3052, Contract Task Order 224, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986, and, to the extent practicable, the National Oil and Hazardous Substances Contingency Plan.

The following objectives were identified for this vapor intrusion investigation (CH2M HILL, 2009):

- Determine whether the vapor intrusion pathway is complete (contaminant of interest [COI] concentrations in indoor air are due to vapor intrusion from groundwater)
- If the vapor intrusion pathway is complete, determine whether it is significant (COI concentrations due to vapor intrusion result in risks above target levels)

This objective was accomplished by the following actions:

- Collecting site-specific data pertinent to vapor intrusion; including subslab vapor, indoor air, outdoor air, indoor to outdoor pressure differential measurement, and weather data
- Comparing the subslab vapor and indoor air data to the risk-based project action limits (PALs) from the approved UFP-SAP (CH2M HILL, 2009)
- Evaluating multiple lines of evidence (e.g., subslab vapor, indoor air, and outdoor air concentrations, pressure differential measurements, and building survey results)
- Estimating potential human health risks associated with the potential vapor intrusion pathway

The following guidance was consulted for this vapor intrusion evaluation: *Department of Defense* (*DoD) Vapor Intrusion Handbook* (DoD, 2009), *OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils* (USEPA, 2002), and *Vapor Intrusion Pathway: A Practical Guideline* (ITRC, 2007). The Commonwealth of Virginia does not currently have vapor intrusion guidance.

SECTION 2

Site Background and Characterization

2.1 Facility Description

On October 1, 2009, Hampton Roads' first DoD Joint Base was established. This new installation comprises the former Naval Amphibious Base (NAB) Little Creek and Army post of Fort Story; the new name is JEB Little Creek-Fort Story. With the forming of this new command, the Navy assumes responsibility for management of both properties and will now merge meetings regarding the ongoing Environmental Restoration Programs. However, separate records will be maintained to ensure the integrity of ongoing efforts at both properties. When required for public notices and distributions, the former bases will be individually identified as JEB Little Creek and JEB Fort Story.

JEB Little Creek is primarily an industrial and training facility located in the northwest corner of Virginia Beach, Virginia (**Figure 2-1**). In addition to industrial land use, JEB Little Creek and the surrounding areas are also used for recreational, commercial, and residential purposes. Specifically, the southeast corner of the base has been developed for residential use. Land development surrounding the base is residential, commercial, and industrial.

2.2 Site 11a Description and Background

Site 11a is centrally located in the industrial area of JEB Little Creek (**Figure 2-1**). The current southern portion of the site boundary adjoins the northern portion of the boundary for IRP Site 11. Site 11a was identified in 1998 when volatile organic compounds (VOCs) were detected in groundwater from a Site 11 upgradient monitoring well (LS11-MW16D) during the Site 11 Supplemental RI (CH2M HILL, 2004). Groundwater samples were collected in 1999 in the Site 11a vicinity as part of Site 11 investigations to identify a potential upgradient source of VOCs. Consequently, the trichloroethene (TCE) groundwater contamination upgradient of Site 11 became identified in the Federal Facility Agreement as Site 11a, an Appendix A Site, in 2001 and was proposed for investigation under CERCLA.

Surface features at Site 11a consist of Buildings 3606 and 3606A, their surrounding asphalt parking areas, and an open mown grass field (**Figure 2-2**). Building 3606 is a five-story barracks building used as single residence lodging for active duty personnel. Building 3606A is a one-story building used primarily for administrative and recreational activities associated with the barracks. The open field south of Building 3606 is used primarily as a recreational area for building occupants. The topography at Site 11a is flat, ranging from 8.3 to 9.5 feet above mean sea level, with no natural drainage features evident. Several underground utilities are located within the site boundary, including storm sewer and wastewater lines, which pass beneath or adjacent to Buildings 3606 and/or 3606A (**Figure 2-2**). The majority of precipitation is expected to run off into the neighboring storm sewer system that eventually drains into Little Creek Cove. Precipitation that does not drain to the storm sewer system would be expected to percolate to the groundwater, evaporate, or transpire.

Two former buildings, Buildings 3033 and 3034, were located at the site (**Figure 2-2**). Former Building 3033, a 12-bay vehicle repair facility, was located immediately south of the current barracks building. Historical records indicate the presence of an underground waste-oil tank associated with the vehicle repair activities. The tank was identified as Solid Waste Management Unit (SWMU) 60 in the SWMU/IR Summary report (NAB Little Creek, 2000). Contents of the tank were not documented, and there is no record of solvent disposal in the tank. The tank was reportedly excavated and removed in 1988 under the Underground Storage Tank Program; however, documentation of tank closure is not available (NAB Little Creek, 2000). Prior to JEB Little Creek's placement on the National Priorities List in 1999, SWMU 60 was closed under CERCLA with no further action following a desktop audit (NAB Little Creek, 2000). SWMU 60 was documented in the Federal Facilities Agreement as closed with no further CERCLA action (DON, 2003). Former Building 3034, used as a garden supply center, was located in the grass-covered field. No releases associated with the building have been documented.

2.3 Site 11a Characterization

Several investigations were conducted at Site 11a prior to the vapor intrusion investigation. The most recent field activities conducted at Site 11a were for the RI, which was conducted from September through October 2007. The information that is pertinent to the vapor intrusion pathway, including site geology and hydrogeology, nature and extent of contamination, and human health risk estimates, is presented below and has been summarized from the RI report (CH2M HILL, 2010).

2.3.1 Geology and Hydrogeology

The shallow subsurface geology at Site 11a consists primarily of medium- and fine-grained sands of the Columbia aquifer underlain by the high-plasticity clay of the Yorktown confining unit. Grain-sized data collected within the Columbia aquifer at the site indicate the soils are predominantly fine- to medium-grained sands with a general coarsening downward. Shallow groundwater in the Columbia aquifer at Site 11a is generally encountered from 5 to 10 feet below ground surface (bgs) and extends to a depth of approximately 20 to 30 feet bgs. The groundwater flow direction fluctuates based on seasonal recharge periods; however, based on the March 2010 groundwater elevation data, the groundwater flow direction is semiradial to the north, west, and southwest (**Figure 2-3**). The hydraulic gradient at the site has ranged from 6.1×10^{-4} to 8.1×10^{-4} during multiple groundwater elevation surveys, with an average of 7.3×10^{-4}. Groundwater velocity is approximately 2.4 feet per year within the Columbia aquifer.

2.3.2 Nature and Extent of Contamination

Tetrachloroethene (PCE) and TCE were detected during the RI in groundwater above their 5 microgram-per-liter (µg/L) Maximum Contaminant Levels (MCLs) (USEPA, 2008a). The chlorinated volatile organic compound (CVOC) plume, consisting of PCE and TCE, trends south-southwest following the primary direction of groundwater flow, as identified in the RI, from the source area near the footprint of the former Building 3033 and the suspected location of the former underground waste oil tank (**Figure 2-4**). However, grab groundwater data just north and south of the Building 3606 detected VOCs extending beneath the building, indicating that groundwater may also be dispersing out from the source area due

to the low groundwater gradient. The plume was delineated using analytical data collected from the monitoring wells during the RI and the grab groundwater samples collected north of Building 3606. TCE is the most horizontally extensive CVOC, while PCE is concentrated to the source area and the area just south of the source. Based on the results of the grab groundwater samples, the Site 11a and Site 11(CVOC plume located south of 7th Street) plumes appear to be comingled. Therefore, the true extent of the southern area of the Site 11a groundwater plume cannot be clearly defined.

Additionally, the semivolatile organic compound pentachlorophenol (PCP) was detected above the MCL during the RI in the upgradient site monitoring well (LS11-MW20D). The PCP source is unknown and is currently under further investigation.

2.3.3 Human Health Risk

A baseline human health risk assessment (HHRA) was conducted in the RI to evaluate the potential human health risks for current receptors (adult residents) and hypothetical future receptors (industrial workers, trespassers/visitors, construction workers, adult residents, child residents, lifetime residents) (CH2M HILL, 2010). Multiple exposure pathways were considered (ingestion, dermal contact, and inhalation [through showering and through groundwater emissions from excavation]).

The potential unacceptable risks and hazards to the construction worker are primarily associated with inhalation of TCE and PCE vapors from the groundwater in an open excavation. The potential unacceptable risks and hazards to the future resident are associated primarily with ingestion of and/or dermal contact with organic compounds (PCE, TCE, and PCP). Although potential risks associated with PCP in shallow groundwater were identified, uncertainties associated with the risk were identified in the RI. An additional investigation to further evaluate the potential risk is currently ongoing, and the results will be incorporated into the Feasibility Study report.

Groundwater samples were collected during the RI for use in USEPA's (2004) version of the Johnson and Ettinger (1991) vapor intrusion model in order to evaluate the vapor intrusion pathway at Building 3606. However, the validity of the Johnson and Ettinger model for use at this site was questioned after collection of the data, and therefore the vapor intrusion pathway was not quantitatively evaluated in the RI risk assessment. Collection of additional data was recommended in the RI report (CH2M HILL, 2010) in order to quantitatively evaluate the vapor intrusion pathway. The results of the additional data collection are summarized in this report and were used to evaluate potential human health risks.

\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\376781_SITE11A_RI_ADDENDUM\FIGURE 2-1 - SITE LOCATION MAP.MXD CBOWMAN 12/20/2010 11:52:30

Legend

- Site 11a Area of Investigation
- Installation Boundary

N
W E
S

0 1,000 2,000 Feet

Figure 2-1
JEB and Site 11a Location
Site 11a RI Addendum Report
JEB Little Creek
Virginia Beach, Virginia

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\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\376781_SITE11A_RI_ADDENDUM\FIGURE 2-2 - SITE 11A LOCATION AND VICINITY.MXD CBOWMAN 12/20/2010 11:53:30

Legend

- Site 11a Area of Investigation
- Site 11 Area of Investigation
- Demolished Building
- Approximate Location of Former Underground Waste Oil Tank
- Water Line
- Wastewater Line
- Storm Sewer Line
- Natural Gas Line
- Heat Cool Line
- Electrical Cable Line

N
W E
S

0 40 80
Feet

Figure 2-2
Site 11a Location and Vicinity
Site 11a RI Addendum Report
JEB Little Creek
Virginia Beach, Virginia

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\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\376781_SITE11A_RI_ADDENDUM\FIGURE 2-3 - COLUMBIA AQUIFER GW ELEVATION CONTOURS MAR 2010.MXD CBOWMAN 12/20/2010 11:54:42

Legend

- Monitoring Well Location
- Groundwater Contour (Dashed where inferred)
- Water Line
- Wastewater Line
- Storm Sewer Line
- Natural Gas Line
- Area of Investigation
- Demolished Building
- Groundwater Flow Direction

Note:
Groundwater elevations are shown in feet above mean sea level
* - Data point not used
NA - Not Accessible during sampling

N
W E
S

0 40 80
Feet

Figure 2-3
Columbia Aquifer Groundwater Elevation Contours (March 2010)
Site 11a RI Addendum Report
JEB Little Creek
Virginia Beach, Virginia

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\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\376781_SITE11A_RI_ADDENDUM\FIGURE 2-4 - EXTENT OF COC PLUME - COLUMBIA AQUIFER.MXD CBOWMAN 12/20/2010 11:55:23

Legend

- Monitoring Well Location
- Grab Groundwater Location (collected in four feet intervals from 8 feet bgs to bottom of aquifer)
- Grab Groundwater Location (collected at top four feet of aquifer)
- Approximate Location of Former Underground Waste Oil Tank
- Demolished Building
- Area of Investigation

COPC Concentrations (µg/L)

- 5-100
- 100-500
- 500+

Groundwater Flow Direction

Note:
ND - Non detect
All sample IDs begin with base and site indentification "LS11" or "LS11A"
Value shown below sample location ID indicates total COPC concentration in µg/L
COPC - contaminant of concern
µg/L - micrograms per liter
bgs - below ground surface

N
W E
S

0 40 80
Feet

Figure 2-4
Extent of COPC Plume in Columbia Aquifer
Site 11a RI Addendum Report
JEB Little Creek
Virginia Beach, Virginia

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SECTION 3

Field Investigation Activities

The vapor intrusion investigation at Site 11a was conducted in two phases in accordance with the UFP-SAP (CH2M HILL, 2009) and the decision tree shown on **Figure 3-1**, with the exceptions noted in this section. Phase I field activities consisted of a building survey, site preparation, installation of subslab probes, and collection of subslab vapor samples, indoor-to-subslab pressure differential measurements, and weather data at Building 3606. Phase II field activities consisted of building surveys, site preparation, installation of subslab probes, and collection of subslab vapor samples, indoor-to-subslab pressure differential measurements, indoor and outdoor air samples, and weather data.

Phase I of the investigation targeted the occupied building (Building 3606) that overlies the footprint of the CVOC groundwater plume. The Partnering Team recommended that the investigation be expanded to include occupied Building 3606A during Phase II, based on its proximity to the estimated groundwater plume (within 100 feet) and because Phase I subslab vapor concentrations at Building 3606 exceeded their PALs. Building 3606B is also within 100 feet of the groundwater plume; however, this building was not included in Phase II because it is unoccupied and land use controls (LUCs) prohibiting a change from its current use will be implemented to ensure that it remains unoccupied.

The COIs for the Site 11a vapor intrusion investigation consist of the site-related chemicals of concern (COCs) identified in the RI as posing potential unacceptable risk in groundwater (PCE and TCE) and their potential break-down products (1,1-dichloroethene (DCE), 1,2-dichloroethane [1,2-DCA], trans-1,2-DCE, cis-1,2-DCE, vinyl chloride, and chloroethane). Although PCP was identified as a COC in the RI, it is not considered a sufficiently volatile constituent (USEPA, 2002); therefore, it was not included in the vapor intrusion investigation.

3.1 Building Surveys

Building surveys were completed approximately one week prior to sampling activities. Building characteristics and conditions that may be pertinent to the vapor intrusion evaluation were documented, including building use and occupancy, building dimensions, floor/foundation type and condition, typical operation of the heating, ventilation, and air conditioning (HVAC) system, presence of potential preferential pathways, and the indoor storage of products containing VOCs. In some instances the information gathered was based on rough estimates (e.g., dimensions were estimated, not measured). Completed building survey forms are presented in **Attachment A**.

3.2 Site Preparation

Following completion of the building surveys, the building occupants were informed of the investigation and provided a brochure that included a list of actions to follow during sample collection.

A subcontractor performed utility clearance prior to installing the probes. Ground-penetrating radar (GPR) was employed to identify, mark, and differentiate between any underground utilities, conduit, rebar, post-tension cables, wire mesh, and other nonconductive targets within 4 ft^2 around and 2 feet below the proposed probe drill points. The GPR unit used during Phase I was unable to identify areas within the mechanical rooms to safely install the probes. Therefore, a special type of GPR unit, a concrete scanner, was used during Phase II in order provide the precision needed to install probes in the mechanical rooms. The utility clearance activities were overseen by a member of the field team.

Although not identified in the UFP-SAP (CH2M HILL, 2009), groundwater level measurements were collected from several site monitoring wells near the building prior to installation of the subslab probes to confirm the groundwater table was not in contact with the bottom of the building foundations, which would have prevented subslab vapor sampling. Additionally, all site monitoring wells were gauged during Phase II in order to assess the groundwater potentiometric surface at Site 11a (**Figure 2-4**). The groundwater levels are provided in **Table 3-1**.

3.3 Subslab Vapor Probe Installation and Sampling

Subslab vapor probes were installed at seven locations on the first floor of Building 3606. The rationale for sampling location selection is provided in **Table 3-2**. The probe locations are shown on **Figure 3-2**.

The following deviations from the sampling approach included in the UFP-SAP were identified (CH2M HILL, 2009):

- Permanent sampling probes were installed instead of temporary sampling probes since more than one round of subslab vapor sampling was expected.
- The subslab vapor samples proposed for the mechanical rooms of Building 3606 were not collected in Phase I, as discussed in Section 3.2. Rather, one subslab vapor probe was installed within a barracks room adjacent to one of the mechanical rooms (SV07).
- Tetrachloroethene was included in the COI analysis; it was inadvertently omitted in the USP-SAP.

Subslab vapor probes consisted of stainless steel Swagelok® gas-tight fittings (a length of ¼-inch stainless steel tubing [not to extend below the slab], a probe union, a sampling union, and a probe cap). The probes were installed within 2 inches of the bottom of the foundation by drilling through the building foundation with a rotary hammer drill and securing the probe by emplacing portland cement into the hole so that the probe was flush with the top of the foundation floor. The cement was allowed to cure for 24 hours

(**Attachment B, Photograph 1**). The Phase I and Phase II subslab vapor probe installation information is provided in **Table 3-3** and **Table 3-4**, respectively.

Prior to sample collection or pressure monitoring, a helium leak check was performed to ensure each probe was installed correctly and the subslab vapor in each probe was purged. The probes were purged using a sampling manifold (consisting of stainless steel Swagelok® gas tight valves and fittings and Teflon tubing) and a vacuum pump. Two liters (L) of subslab vapor were purged at approximately 200 milliliters per minute (mL/min). Subslab vapor samples were collected in 6-L SUMMA canisters equipped with flow controllers following the purging step (**Attachment B, Photograph 2**). The flow controllers regulated the sample collection rate to 4.16 mL/min, which resulted in an approximate sample collection period of 24 hours. The SUMMA canisters were filled until the pressure gauge read between -5 and -9.5 inches of mercury (Hg). The subslab vapor sampling field data sheets are provided in **Attachment C**. Quality control (QC) samples were collected in accordance with Worksheet #12-2 of the UFP-SAP (CH2M HILL, 2009) (one duplicate subslab vapor sample was collected). The Phase I and Phase II subslab vapor probe sampling information is provided in **Table 3-5** and **Table 3-6**, respectively.

The subslab vapor samples were shipped under standard chain-of-custody procedures to Test America for COI analysis by VOC analytical Method TO-15. The chain-of-custody forms are provided in **Attachment D**.

3.4 Pressure Differential Probe Installation and Monitoring

One dedicated probe was installed in both Buildings 3606 and 3606A in order to collect indoor air-to-subslab pressure differential measurements before, during, and after subslab vapor sampling (**Attachment B, Photograph 8**). The probes were installed following the procedures described in Section 3.1.3. An Omniguard 4 Differential Pressure Recorder was connected to the probe, and pressure differential readings were collected every 15 minutes. A Barologger barometric pressure data logger was also set up near the probe to record barometric pressure of the indoor environment once every 15 minutes. The measurements were collected continuously over 7 days at the time of subslab vapor sampling. However, the Omniguard setup at the Building 3606A pressure monitoring location experienced a power failure on March 4, 2010, and did not record pressure differential readings for the remainder of the investigation.

3.5 Indoor Air Sampling

Concurrent indoor air and subslab vapor samples were collected in Buildings 3606 and 3606A during Phase II (**Attachment B, Photographs 4** and **5**). The sample location rationale is provided in **Table 3-2**. The indoor air sample locations are shown on **Figure 3-2**.

Indoor air samples were collected over approximately 24 hours in 6-L SUMMA canisters equipped with flow controllers. The canisters were placed within 5 feet of the co-located subslab vapor probe and in the breathing zone (approximately 2 to 5 feet above the ground). The canisters were turned on and left undisturbed for approximately 24 hours. The canisters were periodically checked to ensure that the proper pressure was maintained during sample collection. Approximately 5 hours after initiation of sample collection, it was noted that the canister for LS11A-IA05 was at zero inches of Hg; therefore, this canister was replaced, and

sample collection was reinitiated for approximately 20 hours. The indoor air field data sheets are provided in **Attachment C**. QC samples were collected in accordance with the UFP-SAP (CH2M HILL, 2009) (two duplicate indoor air samples were collected). The Phase II indoor air sampling information is provided in **Table 3-7**.

The indoor air samples were shipped under standard chain-of-custody procedures to Test America for VOC analysis by Method TO-15. The chain–of-custody forms are provided in **Attachment D**. The indoor air samples were analyzed for the vapor intrusion COIs.

3.6 Outdoor Air Sampling

Outdoor air samples were collected in conjunction with indoor air samples during Phase II. A total of five outdoor air samples were collected: three near the air intakes of Building 3606 (**Attachment B, Photograph 6**), one near the air intake located on the north side of Building 3606A, and one upwind of the site approximately 180 feet southwest of Building 3606 (**Attachment B, Photograph 7**). The sample location rationale is provided in **Table 3-2**. The outdoor air sample locations are shown on **Figure 3-2**. The outdoor air samples were placed in secure locations or fastened to a fence or other structure with a chain and padlock. Protective covers made from aluminum foil were placed over the canister inlets to prevent precipitation from entering the canister. Outdoor air samples were collected over an approximately 24-hour period in 6-L SUMMA canisters equipped with flow controllers. The outdoor air field data sheets are provided in **Attachment C**. QC samples were collected in accordance with Worksheet #12-2 of the UFP-SAP (CH2M HILL, 2009) (one duplicate outdoor air sample was collected). The Phase II ambient air sampling information is provided in **Table 3-7**.

The outdoor air samples were shipped under standard chain-of-custody procedures to Test America for VOC analysis by Method TO-15. The chain–of-custody forms are provided in **Attachment D**. The ambient air samples were analyzed for the vapor intrusion COIs.

3.7 Weather Data Collection

Weather data were collected from one location at the site (**Attachment B, Photograph 3**) during both phases of investigation. The data were collected using a Davis Vantage Pro Weather Station before, during, and after the subslab vapor sampling for a total of approximately 7 days. The Davis Vantage Pro Weather Station recorded wind speed and direction, barometric pressure, temperature, humidity, and rainfall once every 15 minutes.

TABLE 3-1
Groundwater Elevations
Site 11A Remedial Investigation Addendum Report
Naval Amphibious Base Little Creek
Joint Expeditionary Base Little Creek - Fort Story
Virginia Beach, Virginia

Well ID	Phase I Depth to Water (ft. below top of casing)	Phase II Depth to Water (ft. below top of casing)
MW20D	6.15	6.07
MW36D	4.96	4.7
MW32D	5.08	4.84
MW31D	6.27	6
MW16D	5.44	5.22
MW38D		5.75
MW37D		5.28
MW40D		6.02
MW39D		5.71
MW06D		3.91
MW15D		4.23
MW34D		5.45
MW22D		5.43
MW33D	5.9	5.67
MW21D	Unavailable*	Unavailable*

*Vehicle parked on top of well at the time of water level measurements

TABLE 3-2
Sample Location Rationale
Site 11a Remedial Investigation Addendum Report
Naval Amphibious Base Little Creek
Joint Expeditionary Base Little Creek - Fort Story
Virginia Beach, Virginia

Site Location	Subslab Vapor Sample Location	Subslab Vapor Sample Location Rationale
Building 3606	LS11A-SV01	Within room 125 (resident advisor room) along the southeastern side of building
	LS11A-SV02	Within room 133 (two-resident occupancy barracks room) near the center of the building
	LS11A-SV03	Within room 139 (two-resident occupancy room), located near site monitoring well (MW31D) with CVOC detections along southern side of building
	LS11A-SV04	Within room 148 (resident advisor room) along the southwestern side of building
	LS11A-SV05	Within room 107 (two-resident occupancy room), located along the northern side of building
	LS11A-SV06	Within room 113 (two-resident occupancy room), located along the northern side of building
	LS11A-SV07	Within room 120 (two-resident occupancy room), located along the northern side of building
	LS11A-SV08	Within the eastern mechanical room due to potential for vapors intruding into the mechanical rooms to be distributed to residential rooms along potential preferential pathways
	LS11A-SV09	Within the Western mechanical room due to potential for vapors intruding into the mechanical rooms to be distributed to residential rooms along potential preferential pathways
Building 3606A	LS11A-SV10	Within conference/office room used daily, southern portion of the building, near the CVOC groundwater plume
	LS11A-SV11	Centrally located within open portion of the building

Site Location	Pressure Differential Monitoring Location	Pressuring Differential Monitoring Location Rationale
Building 3606	LS11A-PM01	As close to the center as possible, while taking into consideration location of subslab vapor sample location
Building 3606A	LS11A-PM02	As close to the center of the building as possible

Site Location	Indoor Air Sample Location	Indoor Air Sample Location Rationale
Building 3606	LS11A-IA01	Co-located with LS11A-SV01
	LS11A-IA02	Co-located with LS11A-SV02
	LS11A-IA03	Co-located with LS11A-SV03
	LS11A-IA04	Co-located with LS11A-SV04
	LS11A-IA05	Co-located with LS11A-SV05
	LS11A-IA06	Co-located with LS11A-SV06
	LS11A-IA07	Co-located with LS11A-SV07
	LS11A-IA08	Co-located with LS11A-SV08
	LS11A-IA09	Co-located with LS11A-SV09
Building 3606A	LS11A-IA10	Co-located with LS11A-SV10
	LS11A-IA11	Co-located with LS11A-SV11

Site Location	Outdoor Air Sample Location	Outdoor Air Sample Location Rationale
Building 3606	LS11A-OA01	Near the air intakes on the southern side of the building
	LS11A-OA02	Near the air intakes on the southern side of the building
	LS11A-OA03	Near the air intakes on the northern side of the building
Building 3606A	LS11A-OA04	Near the exterior vent on the north side of the building
Upwind	LS11A-OA05	Upwind based on prevailing wind direction at time of Phase II investigation (W to E)

TABLE 3-3
Phase I Subslab Vapor and Pressure Differential Probe Installation Information
Site 11a Remedial Investigation Addendum Report
Naval Amphibious Base Little Creek
Joint Expeditionary Base Little Creek - Fort Story
Virginia Beach, Virginia

Building Number	Sample Location	Slab Depth (inches)	Probe Depth (inches)	Installation Date	Installation Time
3606	LS11A-PM01	9	7	11/2/2009	16:17
	LS11A-SV01	9	7	11/2/2009	15:45
	LS11A-SV02	9	7	11/2/2009	16:17
	LS11A-SV03	9	7	11/2/2009	16:40
	LS11A-SV04	9	7	11/2/2009	17:10
	LS11A-SV05	9	7	11/2/2009	17:45
	LS11A-SV06	9	7	11/2/2009	18:05
	LS11A-SV07	9	7	11/2/2009	15:00

TABLE 3-4
Phase II Subslab Vapor and Pressure Differential Probe Installation Information
Site 11A Remedial Investigation Addendum Report
Naval Amphibious Base Little Creek
Joint Expeditionary Base Little Creek - Fort Story
Virginia Beach, Virginia

Building Number	Sample Location	Slab Depth (inches)	Probe Depth (inches)	Installation Date	Installation Time
3606	LS11A-SV08	8	6	3/1/2010	15:30
	LS11A-SV09	8	6	3/1/2010	16:00
3606A	LS11A-PM02	6	4	3/1/2010	14:00
	LS11A-SV10	6	4	3/1/2010	12:55
	LS11A-SV11	8	6	3/1/2010	13:30

TABLE 3-5
Phase I Subslab Vapor and Pressure Differential Probe Sampling Information
Site 11a Remedial Investigation Addendum Report
Naval Amphibious Base Little Creek
Joint Expeditionary Base Little Creek - Fort Story
Virginia Beach, Virginia

Building Number	Sample Location	Sample ID	Leak Check (ppm He)	Canister ID	Flow Controller ID	Sample Start Date	Sample Start Time	Initial Canister Pressure (" Hg)	Sample End Date	Sample End Time	Final Canister Pressure (" Hg)
3606	LS11A-PM01	LS11A-PM01	1.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	LS11A-SV01	LS11A-SV01-09D	0	1310N	K223	11/4/2009	11:25	-30	11/5/2009	11:25	-6
	LS11A-SV02	LS11A-SV02-09D	300	6606	K212	11/4/2009	11:29	-30	11/5/2009	11:31	-6
	LS11A-SV03	LS11A-SV03-09D	50	4339	K292	11/4/2009	11:31	-32	11/5/2009	15:15	-9.5
		LS11A-SV03P-09D*	50	3270	K234	11/4/2009	11:31	-32	11/5/2009	11:35	-8.5
	LS11A-SV04	LS11A-SV04-09D	0	6347	K168	11/4/2009	11:33	-30	11/5/2009	11:37	-8.5
	LS11A-SV05	LS11A-SV05-09D	825	6123	K270	11/4/2009	11:35	-30	11/5/2009	11:39	-5
	LS11A-SV06	LS11A-SV06-09D	0	6679	K177	11/4/2009	11:37	-30	11/5/2009	11:41	-8
	LS11A-SV07	LS11A-SV07-09D	0	6351	K316	11/4/2009	11:38	-30	11/5/2009	11:42	-8

Notes:
N/A - Not applicable
*Duplicate sample location

TABLE 3-6
Phase II Subslab Vapor and Pressure Differential Probe Sampling Information
Site 11A Remedial Investigation Addendum Report
Naval Amphibious Base Little Creek
Joint Expeditionary Base Little Creek - Fort Story
Virginia Beach, Virginia

Site Location	Sample Location	Sample ID	Leak Check (ppm He)	Canister ID	Flow Controller ID	Sample Start Date	Sample Start Time	Initial Canister Pressure (" Hg)	Sample End Date	Sample End Time	Final Canister Pressure (" Hg)
Building 3606	LS11A-PM01	LS11A-PM01	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	LS11A-SV01	LS11A-SV01-10A	0	2957	K327	3/3/2010	20:59	-32	3/4/2010	22:12	-4
	LS11A-SV02	LS11A-SV02-10A	0	1366	K366	3/3/2010	20:57	-30	3/4/2010	22:05	-5
	LS11A-SV03	LS11A-SV03-10A	875	93210	K118	3/3/2010	20:55	-32	3/4/2010	22:00	-5
		LS11A-SV03P-10A*	875	1142	K168	3/3/2010	20:55	-32	3/4/2010	22:00	-5.5
	LS11A-SV04	LS11A-SV04-10A	675	1340N	K179	3/3/2010	20:53	-30	3/4/2010	21:42	-5.5
	LS11A-SV05	LS11A-SV05-10A	475	1006	K201	3/3/2010	20:50	-33	3/4/2010	21:36	-6.5
	LS11A-SV06	LS11A-SV06-10A	0	1320N	K143	3/3/2010	20:48	-29.5	3/4/2010	21:29	-5
	LS11A-SV07	LS11A-SV07-10A	75	6611	K331	3/3/2010	20:43	-33	3/4/2010	21:21	-6
	LS11A-SV08	LS11A-SV08-10A	0	1500	K152	3/3/2010	20:45	-30	3/4/2010	21:11	-7
	LS11A-SV09	LS11A-SV09-10A	0	1528	K379	3/3/2010	20:51	-30	3/4/2010	21:50	-6
Building 3606A	LS11A-PM02	LS11A-PM02	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	LS11A-SV10	LS11A-SV10-10A	50	1363	K151	3/3/2010	20:51	-29	3/4/2010	21:50	-6
		LS11A-SV10P-10A*	50	62356N	K397	3/3/2010	20:09	-29.5	3/4/2010	12:10	-4.5
	LS11A-SV11	LS11A-SV11-10A	25	6627	K277	3/3/2010	20:10	-30	3/4/2010	20:42	-6.5

Notes:
*Duplicate sample locations
N/A - Not applicable

TABLE 3-7
Phase II Indoor and Outdoor Air Sampling Information
Site 11A Remedial Investigation Addendum Report
Naval Amphibious Base Little Creek
Joint Expeditionary Base Little Creek - Fort Story
Virginia Beach, Virginia

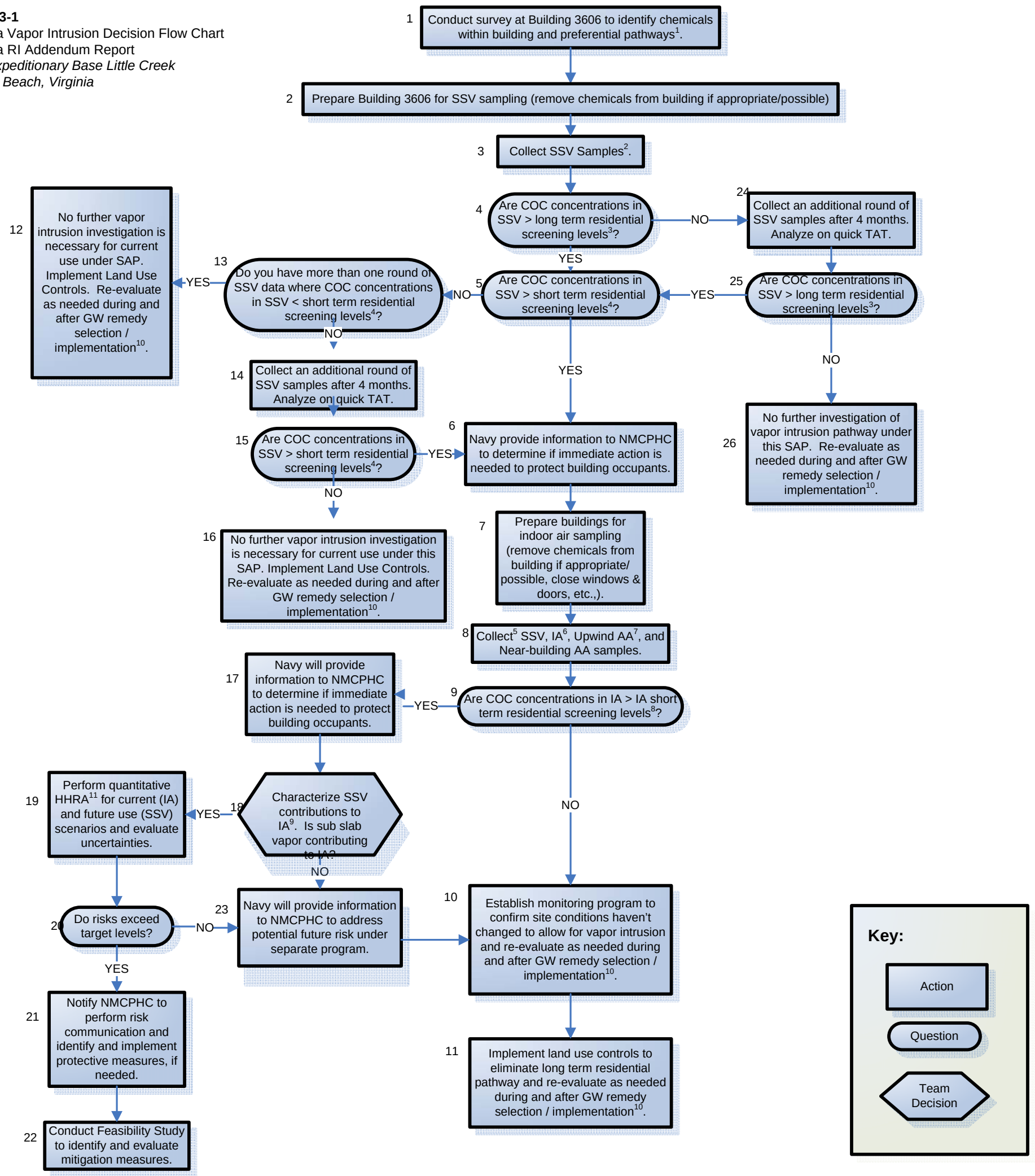
Site Location	Sample Location	Sample ID	Canister ID	Flow Controller ID	Sample Start Date	Sample Start Time	Initial Canister Pressure (" Hg)	Sample End Date	Sample End Time	Final Canister Pressure (" Hg)
Building 3606	LS11A-IA01	LS11A-IA01-10A	6957	K142	3/3/2010	20:59	-28	3/4/2010	22:11	-6
	LS11A-IA02	LS11A-IA02-10A	6671	K419	3/3/2010	20:57	-32	3/4/2010	22:06	-7
	LS11A-IA03	LS11A-IA03-10A	6365	K370	3/3/2010	20:55	-30	3/4/2010	21:59	-4
	LS11A-IA04	LS11A-IA04-10A	6619	K398	3/3/2010	20:53	-30	3/4/2010	21:43	-5.5
	LS11A-IA05	LS11A-IA05-10A	6520	K397	3/4/2010**	2:15	-30	3/4/2010	22:19	-10
	LS11A-IA06	LS11A-IA06-10A	6600	K130	3/3/2010	20:45	-30	3/4/2010	21:30	-7
	LS11A-IA07	LS11A-IA07-10A	6390	K278	3/3/2010	20:43	-30	3/4/2010	21:09	-6
	LS11A-IA08	LS11A-IA08-10A	6359	K459	3/3/2010	20:45	-30	3/4/2010	21:09	-8.5
		LS11A-IA08P-10A*	93272	K453	3/3/2010	20:45	-30	3/4/2010	21:09	-7
	LS11A-IA09	LS11A-IA09-10A	11408	K173	3/3/2010	20:51	-30	3/4/2010	21:48	-7.5
	LS11A-OA01	LS11A-OA01-10A	1397	K251	3/3/2010	20:45	-29	3/4/2010	21:07	-6
	LS11A-OA02	LS11A-OA02-10A	6137	K222	3/3/2010	20:45	-30	3/4/2010	21:11	-6.5
	LS11A-OA03	LS11A-OA03-10A	1523	K463	3/3/2010	20:51	-32	3/4/2010	21:51	-7
		LS11A-OA03P-10A*	1304N	K113	3/3/2010	20:51	-32	3/4/2010	21:51	-5
Building 3606A	LS11A-IA10	LS11A-IA10-10A	1131	K354	3/3/2010	20:09	-29.5	3/4/2010	20:45	-6
		LS11A-IA10P-10A*	1124	K355	3/3/2010	20:09	-30	3/4/2010	20:46	-5.5
	LS11A-IA11	LS11A-IA11-10A	6631	K303	3/3/2010	20:17	-28	3/4/2010	17:00	-4.5
	LS11A-OA04	LS11A-OA04-10A	62276	K442	3/3/2010	20:26	-30	3/4/2010	21:00	-7
Upwind	LS11A-OA05	LS11A-OA05-10A	92009	K251	3/3/2010	20:25	-29	3/4/2010	18:20	-4.5

Notes:

*Duplicate sample locations

**The canister for LS11A-IA05 had a pressure of 0.0" Hg when canisters were checked early morning 3/4/2010. Therefore, sample collection was started in a replacement canister and the initial canister was not analyzed. The sampling information provided in the table is for the replacement canister and sample.

Figure 3-1
Site 11a Vapor Intrusion Decision Flow Chart
Site 11a RI Addendum Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia



Notes:

1 - Per USEPA (www.iavi.rti.org) , and ITRC (2007), if appropriate and available, additional lines of evidence will be considered throughout the decision process.
2 - SSV sample: vapor samples collected immediately under the building foundation.
3 - SSV long term residential PALs for the carcinogenic COCs are the USEPA Regional Screening Levels (indoor air, residential) multiplied by 10, based on the conservative attenuation factor of 0.1, for which shallow soil gas is conservatively assumed to intrude into indoor air spaces. SSV PALs for the non-carcinogenic COCs are the USEPA Regional Screening Levels (indoor air, residential) adjusted by a Hazard Quotient of 0.1 (divided by 10) to account for additive effects and multiplied by 10 in order to adjust for a conservative attenuation factor of 0.1.
4 – SSV short term residential PALs for the carcinogenic COCs are the USEPA Regional Screening Levels (indoor air, residential) multiplied by 10, based on the conservative attenuation factor of 0.1, for which shallow soil gas is conservatively assumed to intrude into indoor air spaces and adjusted by a 30/6 factor to account for short term residency of 6 years versus the long term residency of 30 years used to calculate the unadjusted RSL. SSV short term residential PALs for the non-carcinogenic COCs are the USEPA Regional Screening Levels (indoor air, residential) adjusted by a Hazard Quotient of 0.1 (divided by 10) to account for additive effects, adjusted by a 30/6 factor to account for short term residency, and multiplied by 10 in order to adjust for a conservative attenuation factor of 0.1.
5 - If this is the second sampling event, collect the samples 4 months after the initial event. If this is the third sampling event, collect the samples immediately after results are obtained from the previous sampling event.
6 - IA sample: indoor air sample collected at 3- to 5-ft above the floor.
7 - Upwind AA samples should be collected upwind and away from the contaminant plume. Near-building AA samples should be collected near air intakes to the extent feasible.
8 – Indoor air short term residential air PALs for the carcinogenic COCs are the USEPA Regional Screening Levels (indoor air, residential) adjusted by a 30/6 factor to account for short term residency of 6 years versus the long term residency of 30 years used to calculate the unadjusted RSL. Indoor air short term residential air PALs for the non-carcinogenic COCs are the USEPA Regional Screening Levels (indoor air, residential) adjusted by a 30/6 factor to account for short term residency of 6 years versus the long term residency of 30 years used to calculate the unadjusted RSL and by a Hazard Quotient of 0.1 (divided by 10) to account for additive effects.
9 - Use of: tracer compounds to develop building specific attenuation factors, constituent ratios within each sample (SSV Ratio, IA Ratio, Upwind AA Ratio, Near-building AA Ratio), national background levels for indoor air, national background levels for outdoor air, clean water layer, magnitude of exceedance of RSL in comparison to IA/AA concentrations, and building survey information
10 - Additional SSV/GW samples may be needed post remedial action to monitor remedy effectiveness.
11- Where feasible and appropriate, a building specific attenuation factor will be used. If a building specific attenuation factor is not feasible, then the direct IA or a default attenuation factor will be used in the risk assessment of 0.1 (USEPA, 2002).

Acronyms:

AA - ambient air
CERCLA - Comprehensive Response, Compensation, and Liability Act
COC - chemical of concern
HHRA - Human Health Risk Assessment
IA - indoor air
NMCPHC - Navy and Marine Corps Public Health Center
SAP - Sampling and Analysis Plan
SSV - sub slab vapor
TAT - turn-around-time

\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\376781_SITE11A_RI_ADDENDUM\FIGURE 3-2 - VAPOR INTRUSION SAMPLE LOCATIONS.MXD CBOWMAN 12/20/2010 11:56:10

Legend

- Approximate Location of Former Underground Waste Oil Tank
- Pressure Monitoring location
- Co-located Subslab and Indoor Air Samples
- Upwind Ambient Air Sample
- Near Building Oudoor Air Sample
- Monitoring Well Location
- Area of Investigation
- Electrical Cable Line
- Heat Cool Line
- Natural Gas Line
- Storm Sewer Line
- Wastewater Line
- Water Line

COPC Concentrations (µg/L)

- 5-100
- 100-500
- 500+

Note:
µg/L - micrograms per liter

N W E S

0 20 40 Feet

Figure 3-2
Site 11a Vapor Intrusion Sample Locations
Site 11a RI Addendum Report
JEB Little Creek
Virginia Beach, Virginia

CH2MHILL

SECTION 4

Data Evaluation

The subslab vapor, indoor air, and ambient air data collected during the Phase I and II sampling events were validated by an independent third-party validator. Details of the data quality evaluation are presented in **Attachment E**. The full data validation report from the third-party validator is presented in **Attachment F**. All data collected in support of the investigation were found to be of exceptional quality. No data were rejected because of quality assurance (QA)/QC deficiencies, and all data were deemed available for use by the project team.

Following validation, all valid results (including field duplicate results) were compared to the PALs to evaluate the potential for vapor intrusion impacts. Additional lines of evidence were evaluated for COIs with indoor air concentrations exceeding PALs in order to determine whether the measured concentrations were due to vapor intrusion. These additional lines of evidence included a review of outdoor air data, pressure differential data, weather data, and other site data. A vapor intrusion HHRA was conducted in order to estimate potential risks and hazards, since a complete vapor intrusion pathway could not be definitively ruled out. The results of these evaluations are presented below.

4.1 Results

The PALs established in the UFP-SAP (CH2M HILL, 2009) were used in this evaluation, along with PALs that were derived for PCE and evaluation of the industrial scenario; which were developed consistent with the methods described in the UFP-SAP. The PALs are risk-based subslab vapor or indoor air screening levels based on the USEPA 2008 Regional Screening Levels (RSLs) (USEPA, 2008b). The RSLs were derived using a 10^{-6} target excess lifetime cancer risk (ELCR) level and target noncancer hazard quotient (HQ) of 0.1 (to account for additive noncancer effects. Refer to the UFP-SAP for (CH2M HILL, 2009) for additional details on the derivation of the PALs. Residential and industrial-based PALs were used at Buildings 3606 and 3606A given their uses as a short-term residence for military personnel and for industrial operations, respectively. Short-term residential indoor air PALs were developed to evaluate Building 3606 because residents do not stay in the building for more than 6 years; it is a temporary housing facility. The indoor air residential and industrial PALs are provided in **Table 4-1**. The subslab vapor PALs were calculated by applying USEPA's default subslab-vapor-to-indoor-air attenuation factor (AF) of 0.1 (USEPA, 2002, 2008c) to the residential (short-term and long-term) and industrial indoor air PALs. The subslab vapor PALs are provided in **Table 4-1**.

4.1.1 Subslab Vapor Data

Phase I

All of the COIs except 1,1-DCE, 1,2-DCA, and vinyl chloride were detected in the subslab vapor at Building 3606 during Phase I of the investigation. PCE and TCE were detected at concentrations that exceeded subslab vapor PALs (**Table 4-2** and **Figure 4-1**). PCE concentrations at four locations (LS11A-SV01, LS11A-SV02, LS11A-SV03, and LS11A-SV04) exceeded the long-term and short-term residential subslab vapor PALs (4.1 and 21 µg/m^3, respectively) at concentrations ranging from 79 to 960J µg/m^3. TCE concentrations at five locations exceeded the long-term and short-term residential subslab vapor PALs (12 and 60 µg/m^3, respectively) at concentrations ranging from 120 to 270 µg/m^3. The TCE concentrations detected at LS11A-SV06 and LS11SA-SV07 exceeded the long-term residential subslab vapor PAL but were less than the short-term residential PAL. Subslab vapor concentrations in the southern/central portion of the building appeared to be higher and appeared to potentially correlate with to the area closest to the core of the groundwater plume. There does not appear to be any correlation between subslab vapor concentrations and the locations of the utility lines (Figure 4-1), suggesting that preferential transport in the utility corridors is not a significant pathway.

Phase II

All of the COIs except chloroethene, 1,1-DCE, 1,2-DCA, and vinyl chloride were detected in the subslab vapor at Building 3606A during Phase II of the investigation. PCE and TCE were again detected at concentrations that exceeded residential subslab vapor PALs at Building 3606 during Phase II (**Table 4-2** and **Figure 4-1)**. PCE concentrations at five locations (LS11A-SV01, LS11A-SV02, LS11A-SV03, LS11A-SV04, and LS11A-SV08) exceeded the long-term and short-term residential subslab vapor PALs (4.1 and 21 µg/m^3, respectively) at concentrations ranging from 48 to 520J µg/m^3. The PCE concentrations detected at LS11A-SV07 and LS11A-SV09 exceeded the long-term residential subslab vapor PAL but were less than the short-term residential PAL. TCE concentrations at three locations (LS11A-SV01, LS11A-SV02, and LS11A-SV03) exceeded the long-term and short-term residential subslab vapor PALs (12 and 60 µg/m^3, respectively) at concentrations ranging from 81 to 140 µg/m^3. The TCE concentrations detected at LS11A-SV04, LS11A-SV05, LS11A-SV07, LS11A-SV08, and LS11A-SV09 exceeded the long-term residential subslab vapor PAL but were less than the short-term residential PAL. Temporal variability in PCE and TCE subslab vapor concentrations between Phases I and II was relatively minimal (2.5 times or less). The spatial distribution of PCE and TCE subslab concentrations at Building 3606 during Phases I and II was also relatively consistent (Figure 4-1).

TCE was the only COI at Building 3606A that was detected at a concentration above the industrial subslab vapor PAL (**Table 4-3** and **Figure 4-1**). The TCE concentration at one location (LS11A-SV10) exceeded its industrial subslab vapor PAL (61 µg/m^3) at a concentration of 110 µg/m^3 (by approximately two times). There was no apparent spatial correlation of elevated subslab vapor concentrations and groundwater concentrations, particularly since there is no evidence to indicate the groundwater plume extends beneath Building 3606A.

4.1.2 Indoor Air Data

PCE was the only COI detected above its indoor air PAL in the indoor air samples collected at Building 3606 (**Table 4-4** and **Figure 4-1**). The PCE concentration at (LS11A-IA06) slightly exceeded (1.1 times) the short-term residential indoor air PAL (2.1 µg/m^3) at a concentration of 2.4 µg/m^3 (**Table 4-4** and **Figure 4-1**). PCE was also the only COI detected above its industrial indoor air PAL at Building 3606A. The PCE concentration detected at one location (LS11A-IA10) exceeded the industrial indoor air PAL (2.1 µg/m^3) at a concentration of 11J µg/m^3 (**Table 4-5** and **Figure 4-1**). However, the indoor air concentration of 11J µg/m3 was two times higher than the PCE concentration in the co-located subslab vapor location (LS11A-SV10), suggesting a potential indoor air source. (PCE is a common background indoor contaminant; see http://householdproducts.nlm.nih.gov.)

4.1.3 Outdoor Air Data

The concentrations in the outdoor air samples were compared to the concentrations in the indoor air samples collected during Phase II to evaluate the potential for additional contributing sources of COIs. The results of the outdoor air samples are provided in **Table 4-6**. No COIs were detected in the upwind outdoor air sample.

Three COIs (chloroethane, PCE, and TCE) were detected in the near-building outdoor air samples (**Table 4-6**) at similar concentrations as those detected in indoor air, with the exception of PCE detected in indoor air samples LS11A-IA06 (2.4 µg/m^3) and LS11A-IA07 (1.8 µg/m^3) within Building 3606 and LS11A-IA10 (11 J µg/m^3) within Building 3606A. The detection of COIs in near-building outdoor air suggests the outdoor air may be a potential source contributing to the measured indoor air concentrations.

4.1.4 Pressure Differential Monitoring Data

The pressure differences between the indoors and the subsurface can cause advective transport of subslab vapor into or out of a building (ITRC, 2007). Vapor flows from the subsurface into a building under "negative" indoor to subslab pressure conditions, and air flows from the building into the subsurface under "positive" indoor to subslab pressure conditions. Fluctuations in barometric pressure can cause fluctuations in pressure differences.

The pressure differential data and evaluation are presented in **Attachment G**. The pressure differential monitoring at Building 3606 from both Phases I and II indicated the building's pressure is neutral to negatively pressurized (highly variable pressure measurements typically greater than zero) whereas pressure differential monitoring at Building 3606A from Phase II indicated that building is neutral to positively pressurized. In the absence of a strongly pressurized building relative to the subsurface (e.g., 6 pascals; USEPA, 1993), these pressure differential data cannot be used to rule out the potential for vapors to intrude from the subsurface into Buildings 3606 and 3606A during various periods.

4.1.5 Weather Data

The weather data were collected in order to determine the predominant wind direction and record any significant weather events that could have impacted the results of the investigation. Weather data are compiled in **Attachment H**. A significant storm event occurred during Phase II of the investigation. The rain could have washed out the outdoor air VOCs, lowering the concentrations in the outdoor air samples that were collected. Additionally, the storm event may have affected the pressure differential measurements collected during Phase II of the investigation due to changes in the barometric pressure. However, based on the temporal consistency in the subslab vapor concentrations, changes in the barometric pressure resulting from the storm did not have a significant effect on the pressure differential measurements.

4.2 Source Determination

Although the results of the data evaluation suggest that the vapor intrusion pathway may not be complete at Building 3606 or 3606A, the potential for some subsurface-to-indoor-air contribution to the indoor air measurements cannot be conclusively ruled out. At Building 3606, subslab vapor concentrations in the southern/central portion of the building were highest and correlate with the area closest to the core of the groundwater plume. Additionally, PCE subslab vapor concentrations at select locations underlying the building were significantly higher than the elevated PCE indoor air concentrations which were elevated relative to the outdoor air suggesting there may be some contribution from the subsurface to indoor air. Whereas, at Building 3606A there was no apparent spatial correlation of elevated subslab vapor concentrations and groundwater concentrations, as there is no evidence indicating the groundwater plume extends beneath the building and the indoor air concentration of PCE was two times higher than the PCE concentration in the co-located subslab vapor sample, suggesting there may be a potential indoor and/or outdoor source of PCE.

4.3 Vapor Intrusion Human Health Risk Assessment

Because the potential for subsurface contribution to indoor air could not be ruled out, an HHRA for the vapor intrusion pathway was conducted to determine the potential significance if the pathway is conservatively assumed to be complete.

4.3.1 Methodology

The HHRA evaluation consisted of estimating risks using measured indoor air or subslab vapor concentrations, risk-based criteria [i.e., PALs]), and risk ratios. The methodology used to derive the PALs is presented in the UFP-SAP (CH2M HILL, 2009) and summarized in Section 4.1. PALs defined in the UFP SAP, as well as residential and industrial PALs for PCE and industrial PALs for TCE, chloroethane, cis-1,2-DCE, trans-1,2-DCE, 1,2-DCA, vinyl chloride, and 1,1-DCE calculated using the same methodology following the completion of the UFP SAP were used in this evaluation (**Table 4-1**) Because the PALs were derived using the USEPA RSLs, the standard exposure factors (i.e. residential exposure occurs 350 days/year for 30 years and industrial exposure occurs 250 days/year for 25 years) used to calculate the ambient air RSLs are captured in the PALs. The only deviation from the

standard exposure factors is that the short-term residential PAL, reflective of active duty personnel living in the barracks, assumes an exposure duration of 6 years.

Industrial or short-term residential indoor air PALs and measured indoor air concentrations were used to estimate risks and hazards to current building occupants at Buildings 3606A and 3606, respectively. Industrial and short-term residential subslab vapor PALs and the measured subslab concentrations were used to estimate risks and hazards for future occupants at Buildings 3606A and 3606, respectively. Subslab vapor concentrations and PALs were used to evaluate the future scenario at the existing buildings due to the potential for subsurface-to-indoor air attenuation to change as the buildings age. Cancer risks or noncancer hazards were calculated using the following equation:

$$\text{Risk or Hazard} = \frac{\text{Exposure Point Concetration (EPC)} \times \text{Target Risk or Hazard}}{\text{PAL}}$$

Cumulative estimates were calculated by summing (if necessary) the risks or hazards for the individual COIs that exceeded the PALs (i.e., PCE and/or TCE). This approach assumes that the contribution of the COIs with concentrations below the PALs to the overall cumulative risk or hazard is insignificant. The minimum and maximum detected indoor air or subslab vapor concentrations were used as the EPCs to estimate the potential range of risks or hazards. Receptors, exposure pathways, exposure durations and EPCs used to estimate risk are presented in **Table 4-7**. The target risk (10^{-6}) or hazard (0.1) used to calculate the PALs were used in the above equation.

For carcinogenic constituents, the USEPA (1991) acceptable ELCR range is 10^{-6} to 10^{-4}. ELCR estimates above this range (i.e., greater than 10^{-4}) generally require further action (e.g., remediation, mitigation). ELCRs within the acceptable range may require further action (e.g., further evaluation, additional investigation) based on site conditions. For noncarcinogenic compounds, noncancer HQs of 1.0 or less were considered acceptable (i.e., no adverse health effects). Concentrations above the USEPA (1991) noncancer target HQ of 1.0 may require further action based on site conditions. The corresponding risk level calculated using the equation above was compared to the USEPA ELCR acceptable range or noncancer target HQ.

4.3.2 Results

Current Resident—Building 3606

Indoor air data were used to assess the potential for current vapor intrusion risks. A comparison of the indoor air data to the appropriate risk-based screening levels (i.e., PAL) is provided in **Table 4-4.** The concentration of PCE in indoor air at one location in Building 3606 slightly exceeded the short-term residential indoor air PAL. Therefore, risk ratios were calculated for PCE. The potential current residential ELCR for PCE range from 7×10^{-8} to 1×10^{-6} (**Table 4-8**), which is below or equal to the lower end of the acceptable ELCR range of 10^{-6} to 10^{-4}. Therefore, the risk ratio evaluation demonstrates that there are no unacceptable risks to current residents of Building 3606.

Current Industrial Worker—Building 3606A

Indoor air data were used to assess the potential for current vapor intrusion risks. A comparison of the indoor air data to the appropriate risk-based screening levels (i.e., PAL) is provided in **Table 4-5.** The concentration of PCE in indoor air at one location in Building 3606A exceeded the industrial indoor air PAL. Therefore, risk ratios were calculated for PCE. The potential current industrial worker ELCR for PCE is 5×10^{-6} (**Table 4-9**), which is within the acceptable ELCR range of 10^{-6} to 10^{-4}. Therefore, the risk ratio evaluation demonstrates that there are no unacceptable risks to current industrial workers at Building 3606A.

Future Resident—Building 3606

Subslab vapor data were used to assess the potential for future vapor intrusion risks. A comparison of the subslab vapor data to the appropriate risk-based screening levels (i.e., PAL) is provided in **Table 4-2.** As seen in **Table 4-2**, the concentrations of PCE and TCE in subslab vapor in Building 3606 exceeded the short-term and/or long-term residential subslab vapor PALs. Potential future residential ELCRs for PCE range from 6×10^{-8} to 5×10^{-5}; potential future residential ELCRs for TCE range from 1×10^{-7} to 5×10^{-6} (**Table 4-10**). The individual ELCRs for PCE and TCE result in corresponding risk levels below or within the acceptable ELCR range of 10^{-6} to 10^{-4} for the future residential scenario. The cumulative (PCE and TCE only) risk levels range from 2×10^{-7} to 5×10^{-5}, which is below or within the acceptable risk range. Therefore, the risk ratio evaluation demonstrates that there are no unacceptable risks to future residents at Building 3606.

Future Industrial Worker—Building 3606A

Subslab vapor data were used to assess the potential for future vapor intrusion risks. A comparison of the subslab vapor data, to the appropriate risk-based screening levels (i.e., PAL) are provided in **Tables 4-3.** As seen in **Table 4-3**, the concentration of TCE in subslab vapor at one location in Building 3606A exceeded the industrial subslab vapor PAL. Potential future industrial worker ELCRs for TCE range from 5×10^{-9} to 2×10^{-6}, which is below or within the acceptable risk range of 10^{-6} to 10^{-4} (**Table 4-11**). Therefore, the risk ratio evaluation demonstrates that there are no unacceptable risks to future industrial workers at Building 3606A.

Future Residents and/or Industrial Workers—Hypothetical Buildings

The data used in this evaluation were collected within the footprint of two site buildings. The assumption that these data points represent sitewide conditions may result in an underestimation or overestimation of site risks. Therefore, due to the high level of uncertainty associated with the spatial coverage of the data at the site and future building characteristics, the future hypothetical building scenario was not quantitatively evaluated.

4.4 Uncertainty Evaluation

The following sections discuss some of the uncertainties associated with evaluating the vapor intrusion pathway.

4.4.1 Sample Quantitation Limits

Prior to sample analysis by TO-15, the vacuum pressure of the SUMMA canisters is measured. If the pressure is lower than the ideal working range (approximately -10 to -20 inches of mercury), the laboratory pressurizes the canister, thereby diluting the sample. The laboratory uses the initial and final canister pressures to calculate the dilution factor. This dilution raises the quantitation limits for all constituents. Upon analysis, if one or more constituents are found over the analytical instrument's calibration curve, a dilution is performed to bring them within the acceptable range. The samples are then analyzed at the appropriate dilutions; however, secondary dilutions are sometimes necessary. Dilutions may be required based on the presence of either target or nontarget constituents. Dilutions raise the quantitation limits for all constituents, including those which are reported as nondetect.

Although 1,2-DCA was not detected in subslab vapor, the quantitation limit for one sample during Phase I (at LS11A-SV03P) was slightly above the 1,2-DCA long-term residential subslab vapor PAL (0.94 $\mu g/m^3$). However, 1,2-DCA was not detected in indoor air samples, all of which had quantitation limits less than their indoor air PALs. Therefore, it is unlikely that this uncertainty impacted the outcome of the investigation.

4.4.2 Duplicate Samples

Duplicate subslab vapor samples were collected in Building 3606 at LS11A-SV03 during both Phase I and Phase II. One duplicate subslab vapor sample was collected in Building 3606A at LS11A-SV10 during Phase II. Two duplicate indoor air samples were collected, one in Building 3606 at LS11A-IA08 and one in Building 3606A at LS11A-IA10. One duplicate ambient air sample was collected at LS11A-OA03. The maximum concentrations from the parent and field duplicate sample results were utilized for the purposes of this evaluation.

Similar results were reported for both the parent and duplicate samples with the exception of the results for PCE at LS11A-SV10. PCE was detected in the duplicate sample collected at LS11A-SV10 at a concentration of 0.54 $\mu g/m^3$ while the parent sample concentration was reported at 11 $\mu g/m^3$. These results were used to calculate a relative percent difference (RPD) for PCE. The calculated RPD was above the limit of 35 percent, which was specified in the UFP-SAP (CH2M HILL, 2009). These results were J-qualified as estimated by the third-party data validator. J-qualified results are usable as qualified. See the Data Quality Evaluation in **Attachment E** for further discussion of data usability.

4.4.3 Constituents without RSLs

Cis-1,2-DCE does not have an RSL (USEPA, 2008b) because toxicity values were not available from USEPA's recommended health toxicity-value hierarchy (USEPA, 2003). A surrogate value (RSL for trans-1,2-DCE) was used to establish the PALs for cis-1,2-DCE. Cis-1,2-DCE was detected at 10 of the 11 subslab vapor sample locations: all nine samples in Building 3606 (ranging from 0.13J $\mu g/m^3$ to 6.5 $\mu g/m^3$) and one of the two samples in

Building 3606A (0.28J μg/m^3). However, cis-1,2-DCE was not detected in any of the indoor air samples collected in either building. Therefore, although no RSL is available for cis-1,2-DCE, the detected concentrations of cis-1,2-DCE are unlikely to affect the conclusions of the vapor intrusion evaluation.

4.4.4 TCE Toxicity

When using the CalEPA slope factor for TCE, USEPA advocates truncating risks at 1E-05 rather than 1E-04 due to uncertainties associated with the CalEPA slope factor, including more recent studies indicating TCE is a more potent carcinogen than previously thought, and evidence that non-cancer threats may predominate when cancer risks are in the 10-5 range. The maximum calculated cancer risk for TCE was 5E-06 (future resident, Building 3606); therefore, truncating the acceptable risk range for TCE at 1E-05 does not change the conclusion that there is no potential unacceptable risk from current and future exposure to TCE in indoor air.

USEPA has noted that, under a long-term residential exposure scenario, evidence suggests that non-cancer threats resulting from exposure to TCE in indoor air may supersede cancer endpoints as indoor air concentrations of TCE approach 5 ug/m^3, USEPA's draft Tier 3 non-cancer toxicity value (USEPA, 2009). However, additional Tier 3 toxicity values have been documented and are up to three orders of magnitude greater than the value presented in the USEPA 2009 draft TCE document (i.e. CalEPA TCE non-cancer toxicity value is 600 ug/m^3). Because non-caner reference concentrations for the calculation of an inhalation hazard quotient associated with TCE have not been formally established and are not provided on the most recent USEPA RSL table (May 2010), non-cancer hazards associated with exposure to TCE in indoor air were not evaluated as part of this assessment.

4.4.5 Comparison of Indoor and Subslab Vapor Concentrations

The ratios of indoor air and subslab vapor concentrations were calculated and compared with empirical indoor-subslab AFs published by USEPA (2008c). This comparison can provide suggestive evidence as to the potential sources of VOCs detected in the indoor air. For example, an indoor to subslab ratio greater than the generic USEPA (2002, 2008c) conservative default AF of 0.1 suggests an aboveground (indoor or outdoor) vapor source.

Indoor to subslab vapor VOC concentration ratios were calculated for Buildings 3606 and 3606A using the March 2010 analytical data. Ratios were not calculated for VOCs that were not detected in the subslab vapor samples. The ratios that were calculated from the PCE data are shown in **Table 4-11**. The ratios for Building 3606 ranged from 0.0004 to 0.66. The ratio for Building 3606A was 2.2. Some of the ratios calculated for Building 3606 exceeded the USEPA default value of 0.1 and are greater than the 95th percentile values published in the USEPA database. The value of 2.2 for Building 3606A is greater than one, which cannot plausibly be representative of vapor intrusion. The existence of these elevated ratios is a suggestive line of evidence that detected indoor-air PCE concentrations are most likely being impacted by aboveground sources unrelated to subsurface contamination.

The actual AF for these two buildings cannot be calculated based on the site-specific empirical data and the variability and uncertainties discussed above. However, this does not affect the overall conclusion because the conservative USEPA default AF of 0.1 was used in deriving the PALs.

4.4.6 Spatial Variability

Spatial variability in soil vapor is most commonly due to spatial variability in the vapor source. However, uneven bedding material, preferential pathways, and vadose zone sources may also cause spatial variability in subslab vapor. Significant (greater than one order of magnitude) spatial variability was observed in soil vapor at both buildings. PCE concentrations in March 2010 ranged from 1.3 µg/m^3 to 520J µg/m^3 at Building 3606 and from 0.77J µg/m^3 to 18 µg/m^3 at Building 3606A. At Building 3606, COI concentrations in soil vapor were generally higher on the south side of the building, where the CVOC groundwater plume is located (**Figure 4-2**). However, COI concentrations in soil vapor did not directly correspond to the CVOC groundwater plume; the highest COI concentrations in soil vapor were detected at LS11A-SV01, which is further from the CVOC groundwater plume than several other soil vapor probes where COIs were detected at lower concentrations (i.e., LS11A-SV02 and LS11A-SV03). At Building 3606A the highest COI concentrations in soil vapor were detected at the soil vapor probe farther from the CVOC groundwater plume. The spatial variability observed in the subslab vapor was greater than that observed in the indoor air, which is common (Folkes, 2009). The higher spatial variability in the subslab vapor makes the future existing buildings calculations more uncertain than the current scenario based on indoor air results; however, this uncertainty was offset by the use of the maximum detected subslab vapor concentrations for the risk calculations.

4.4.7 Temporal Variability

Temporal variability in soil vapor may be caused by changes in weather conditions (short-term), seasons (long-term), and activities in the overlying buildings (ITRC, 2007). Seven subslab vapor samples were collected within Building 3606 during the late fall/early winter season (November 2009) and again from those same locations, in addition to new locations, in the spring season (March 2010). There was less than one order of magnitude difference, generally less than a factor of three, between the sample results in most of the subslab vapor samples between the two events (Folkes, 2009); therefore it is unlikely that temporal variability could affect the conclusions of this investigation.

Temporal variability in indoor air could not be evaluated because there was only one round of indoor air sampling. Uncertainties regarding temporal variability for the current exposure scenarios were offset by the use of the maximum detected concentrations for the risk calculations.

There is also uncertainty regarding the use of current subslab concentrations to estimate future exposures. For this evaluation, it was assumed future subslab soil vapor concentrations are equivalent to current concentrations. If future subslab vapor concentrations increase, this assumption may result in an underestimation of risks. If future subslab vapor concentrations decrease, this assumption may result in an overestimation of risks. The use of the current maximum subslab concentrations offsets this uncertainty.

TABLE 4-1
Project Action Limits
Site 11a Remedial Investigation Addendum Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Constituent	Short-term Residential Subslab Vapor PAL (µg/m^3)	Long-term Residential Subslab Vapor PAL (µg/m^3)	Short-term Residential Indoor Air PAL (µg/m^3)	Industrial Subslab Vapor PAL (µg/m^3)	Industrial Indoor Air PAL (µg/m^3)
Chloroethane	50,000	10,000	5,000	44,000	4,400
1,1-Dichloroethene (1,1-DCE)	1050	210	105	8800	880
1,2-Dichloroethane (1,2-DCA)	4.7	0.94	0.47	4.7	0.47
Cis-1,2-Dichloroethene (cis-1,2-DCE)	315	63	31.5	260	26
Trans-1,2-Dichloroethene (trans-1,2-DCE)	315	63	31.5	260	26
Tetrachloroethene (PCE)	21	4.1	2.1	21	2.1
Trichloroethene (TCE)	60	12	6	61	6.1
Vinyl Chloride	8	1.6	0.8	28	2.8

TABLE 4-2
Phase I and Phase II Building 3606 Subslab Vapor Results
Site 11a RI Addendum Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Station ID	Short-term Residential Subslab PAL	Long-term Residential Subslab PAL	LS11A-SV01		LS11A-SV02		LS11A-SV03				LS11A-SV04	
Sample ID			LS11A-SV01-09D	LS11A-SV01-10A	LS11A-SV02-09D	LS11A-SV02-10A	LS11A-SV03-09D	LS11A-SV03P-09D*	LS11A-SV03-10A	LS11A-SV03P-10A*	LS11A-SV04-09D	LS11A-SV04-10A
Sample Date			11/5/09	3/4/10	11/5/09	3/4/10	11/5/09	11/5/09	3/4/10	3/4/10	11/5/09	3/4/10
VOCs (UG/M^3)												
Chloroethane	50,000	10,000	0.43 J	0.19 J	0.38 J	0.12 J	0.53 U	1.1 U	0.35 J	0.42 U	0.53 U	0.42 U
1,1-Dichloroethene	1050	210	0.79 U	0.32 U	0.79 U	0.32 U	0.79 U	1.6 U	0.63 U	0.63 U	0.79 U	0.63 U
1,2-Dichloroethane	4.7	0.94	0.81 U	0.32 U	0.81 U	0.32 U	0.81 U	1.6 U	0.65 U	0.65 U	0.81 U	0.65 U
cis-1,2-Dichloroethene	315	63	0.8	0.35	2.7	1.5	6.5	5.2	4.5	6.2	0.89	0.48 J
trans-1,2-Dichloroethene	315	63	0.38 J	0.13 J	1.5	0.67	3.4	2.6	1.5	1.1	1.1	0.5 J
Tetrachloroethene	21	4.1	**960 J**	**520 J**	**600 J**	**440 J**	**250**	**140**	**88**	**110**	**120**	**48**
Trichloroethene	60	12	**240**	**110**	**160**	**81**	**270**	**170**	**110**	**140**	**130**	52
Vinyl chloride	8	1.6	0.51 U	0.2 U	0.51 U	0.2 U	0.51 U	1 U	0.41 U	0.41 U	0.51 U	0.41 U

Notes:
* - Duplicate sample
E - Concentration exceeds calibration range of GC/MS instrument
J - Analyte present; below detection limit
U - Analyte analyzed for, but not detected
UG/M^3 - Micrograms per cubic meter
Shaded cells represent detections
Bold blue text represent exceedances of short-term residential PALs
Outlined cells represent exceedances of long-term residential PALs

TABLE 4-2
Phase I and Phase II Building 3606 Subslab Vapor Results
Site 11a RI Addendum Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Station ID	Short-term Residential Subslab PAL	Long-term Residential Subslab PAL	LS11A-SV05		LS11A-SV06		LS11A-SV07		LS11A-SV08	LS11A-SV09
Sample ID			LS11A-SV05-09D	LS11A-SV05-10A	LS11A-SV06-09D	LS11A-SV06-10A	LS11A-SV07-09D	LS11A-SV07-10A	LS11A-SV08-10A	LS11A-SV09-10A
Sample Date			11/5/09	3/4/10	11/5/09	3/4/10	11/5/09	3/4/10	3/4/10	3/4/10
VOCs (UG/M^3)										
Chloroethane	50,000	10,000	0.53 U	0.21 U	0.21 U	0.052 J	0.21 U	0.21 U	0.21 U	0.16 J
1,1-Dichloroethene	1050	210	0.79 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
1,2-Dichloroethane	4.7	0.94	0.81 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
cis-1,2-Dichloroethene	315	63	0.29 J	0.32 U	0.19 J	0.32 U	0.13 J	0.32 U	0.16 J	0.13 J
trans-1,2-Dichloroethene	315	63	0.79 U	0.32 U	0.1 J	0.32 U	0.32 U	0.32 U	0.14 J	0.32 U
Tetrachloroethene	21	4.1	2.5	1.3	1.6	3.6	2.6	4.4	**93**	5
Trichloroethene	60	12	**79**	31	31	6.1	32	20	28	23
Vinyl chloride	8	1.6	0.51 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.088 J

Notes:
* - Duplicate sample
E - Concentration exceeds calibration range of GC/MS instrument
J - Analyte present; below detection limit
U - Analyte analyzed for, but not detected
UG/M^3 - Micrograms per cubic meter
Shaded cells represent detections
Bold blue text represent exceedances of short-term residential PALs
Outlined cells represent exceedances of long-term residential PALs

TABLE 4-3
Phase II Building 3606A Subslab Vapor Results
Site 11a RI Addendum Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Station ID	Industrial Subslab PAL	LS11A-SV10		LS11A-SV11
Sample ID		LS11A-SV10-10A	LS11A-SV10P-10A*	LS11A-SV11-10A
Sample Date		3/4/10	3/4/10	3/4/10
Volatile Organic Compounds (UG/M3)				
Chloroethane	44,000	0.21 U	0.21 U	0.21 U
1,1-Dichloroethene	8800	0.32 U	0.32 U	0.32 U
1,2-Dichloroethane	4.7	0.32 U	0.32 U	0.32 U
cis-1,2-Dichloroethene	260	0.32 U	0.32 U	0.28 J
trans-1,2-Dichloroethene	260	0.32 U	0.32 U	0.16 J
Tetrachloroethene	21	5 J	0.77 J	18
Trichloroethene	61	0.29 J	0.095 J	**110**
Vinyl chloride	28	0.2 U	0.2 U	0.2 U

Notes:
* - Duplicate sample
J - Analyte present; below detection limit
U - Analyte was analyzed for, but not detected
UG/M3 - Micrograms per cubic meter
Shaded cells represent detections
Bold blue text represent exceedances of industrial subslab vapor PALs

TABLE 4-4
Phase II Building 3606 Indoor Air Results
Site 11a RI Addendum Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Station ID	Short-term Residential Indoor Air PAL	LS11A-IA01	LS11A-IA02	LS11A-IA03	LS11A-IA04	LS11A-IA05	LS11A-IA06	LS11A-IA07	LS11A-IA08		LS11A-IA09
Sample ID		LS11A-IA01-10A	LS11A-IA02-10A	LS11A-IA03-10A	LS11A-IA04-10A	LS11A-IA05-10A	LS11A-IA06-10A	LS11A-IA07-10A	LS11A-IA08-10A	LS11A-IA08P-10A*	LS11A-IA09-10A
Sample Date		3/4/10	3/4/10	3/4/10	3/4/10	3/4/10	3/4/10	3/4/10	3/4/10	3/4/10	3/4/10
Volatile Organic Compounds (UG/M3)											
Chloroethane	5,000	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,1-Dichloroethene	105	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
1,2-Dichloroethane	0.47	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
cis-1,2-Dichloroethene	31.5	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
trans-1,2-Dichloroethene	31.5	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Tetrachloroethene	2.1	0.22 J	0.22 J	0.15 J	0.14 J	0.17 J	**2.4**	1.8	0.21 J	0.18 J	0.18 J
Trichloroethene	6	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Vinyl chloride	0.8	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

Notes:
* - Duplicate sample
J - Analyte present; below detection limit
U - Analyte was analyzed for, but not detected
Shaded cells represent detections
Bold blue text represent exceedances of short-term residential indoor air PALs

TABLE 4-5
Phase II Building 3606A Indoor Air Results
Site 11a RI Addendum Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Station ID	Industrial Indoor Air PAL	LS11A-IA10		LS11A-IA11
Sample ID		LS11A-IA10-10A	LS11A-IA10P-10A*	LS11A-IA11-10A
Sample Date		3/4/10	3/4/10	3/4/10
Volatile Organic Compounds (UG/M3)				
Chloroethane	4,400	0.21 U	0.041 J	0.21 U
1,1-Dichloroethene	880	0.32 U	0.32 U	0.32 U
1,2-Dichloroethane	4.7	0.32 U	0.32 U	0.32 U
cis-1,2-Dichloroethene	26	0.32 U	0.32 U	0.32 U
trans-1,2-Dichloroethene	26	0.32 U	0.32 U	0.32 U
Tetrachloroethene	2.1	**11 J**	0.54 UJ	0.54 U
Trichloroethene	6.1	0.45 J	0.21 UJ	0.21 U
Vinyl chloride	2.8	0.2 U	0.2 U	0.2 U

Notes:
* - Duplicate sample
J - Analyte present; below detection limit
U - The material was analyzed for, but not detected
UG/M3 - Micrograms per cubic meter
Shaded cells represent detections
Bold blue text represent exceedances of industrial indoor air PALs

TABLE 4-6
Phase II Outdoor Air Results
Site 11a RI Addendum Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Sample Location	Building 3606				Building 3606A	Upwind
Station ID	LS11A-OA01	LS11A-OA02	LS11A-OA03		LS11A-OA04	LS11A-OA05
Sample ID	LS11A-OA01-10A	LS11A-OA02-10A	LS11A-OA03-10A	LS11A-OA03P-10A*	LS11A-OA04-10A	LS11A-OA05-10A
Sample Date	3/4/10	3/4/10	3/4/10	3/4/10	3/4/10	3/4/10
Volatile Organic Compounds (UG/M3)						
Chloroethane	0.17 J	0.16 J	0.21 U	0.21 U	0.041 J	0.21 U
1,1-Dichloroethene	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
1,2-Dichloroethane	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
cis-1,2-Dichloroethene	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
trans-1,2-Dichloroethene	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Tetrachloroethene	0.15 J	0.54 U	0.54 U	0.11 J	0.12 J	0.54 U
Trichloroethene	0.21 U	0.1 J	0.21 U	0.21 U	0.21 U	0.21 U
Vinyl chloride	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

Notes:
* - Duplicate sample
J - Analyte present; below detection limit
U - Analyte analyzed for, but not detected
UG/M3 - Micrograms per cubic meter
Shaded cells represent detections

TABLE 4-7
Exposure Assumptions
Site 11a Remedial Investigation Addendum Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Exposure Route	Receptor	Exposure Point	Exposure Duration*	COI	Exposure Point Concentration (µg/m3)	
					Minimum	Maximum
Inhalation	Current Resident	Indoor Air - Building 3606	6 years	Tetrachloroethene	0.14 J	2.4
	Current Industrial Worker	Indoor Air - Building 3606A	25 years	Tetrachloroethene	ND	11 J
	Future Resident	Subslab Vapor - Building 3606	6 years	Tetrachloroethene	1.3	960 J
				Trichloroethene	6.1	270
	Future Industrial Worker	Subslab Vapor - Building 3606A	25 years	Trichloroethene	0.29 J	110

* Exposure duration for current/future residents accounts for short-term residency of barracks ocupants.
ND - Not detected
J - reported value is estimated

TABLE 4-8
Risk Ratio - Building 3606 - Current Resident[1]
Site 11a Remedial Investigation Addendum Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Analyte	Detection Frequency	Detected Concentration (Qualifier)	Sample Location of Detected Concentration	Short-Term IA Residential PAL ($\mu g/m^3$)	Acceptable Risk Level	Corresponding Hazard Index[a]	Corresponding Cancer Risk[b]	Target Organ
Minimum Detected Concentration ($\mu g/m^3$)								
Tetrachloroethene	9 / 9	1.4E-01 J	LS11A-IA04-10A	2.1E+00	1E-06	NA	7E-08	NA
Maximum Detected Concentration ($\mu g/m^3$)								
Tetrachloroethene	9 / 9	2.4E+00	LS11A-IA06-10A	2.1E+00	1E-06	NA	1E-06	NA

Notes:

[1] Current Residents are active duty personnel living at Building 3606, a barracks.

[a] Corresponding Hazard Index equals maximum detected concentration divided by the PAL divided by the acceptable risk level.

[b] Corresponding Cancer Risk equals maximum detected concentration divided by the PAL divided by the acceptable risk level.

HI = Hazard Index

$\mu g/m^3$ = micrograms per cubic meter

NA = Not available/not applicable.

TABLE 4-9
Risk Ratio - Building 3606A - Current Industrial Worker
Site 11a Remedial Investigation Addendum Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Analyte	Detection Frequency	Detected Concentration (Qualifier)	Sample Location of Detected Concentration	Industrial IA PAL ($\mu g/m^3$)	Acceptable Risk Level	Corresponding Hazard Index[a]	Corresponding Cancer Risk[b]	Target Organ
Maximum Detected Concentration ($\mu g/m^3$)								
Tetrachloroethene	1 / 2	1.1E+01 J	LS11A-IA10-10A	2.1E+00	1E-06	NA	5E-06	NA

Notes:

[1] Current Industrial Workers are active duty personnel using the facilities at the Quarterdeck, Building 3606a.

[a] Corresponding Hazard Index equals maximum detected concentration divided by the PAL divided by the acceptable risk level.

[b] Corresponding Cancer Risk equals maximum detected concentration divided by the PAL divided by the acceptable risk level.

HI = Hazard Index

$\mu g/m^3$ = micrograms per cubic meter

NA = Not available/not applicable.

TABLE 4-10
Risk Ratio - Building 3606 - Future Residents[1]
Site 11a Remedial Investigation Addendum Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Analyte	Detection Frequency	Detected Concentration (Qualifier)	Sample Location of Detected Concentration	Short-Term SV Residential PAL ($\mu g/m^3$)	Acceptable Risk Level	Corresponding Hazard Index[a]	Corresponding Cancer Risk[b]	Target Organ
Minimum Detected Concentration ($\mu g/m^3$)								
Tetrachloroethene	16 / 16	1.3E+00	LS11A-SV05-10A	2.1E+01	1E-06	NA	6E-08	NA
Trichloroethene	16 / 16	6.1E+00	LS11A-SV06-10A	6.0E+01	1E-06	NA	1E-07	NA
Cumulative Corresponding Cancer Risk[c]							**2E-07**	
Maximum Detected Concentration ($\mu g/m^3$)								
Tetrachloroethene	16 / 16	9.6E+02 J	LS11A-SV01-09D	2.1E+01	1E-06	NA	5E-05	NA
Trichloroethene	16 / 16	2.7E+02	LS11A-SV03-09D	6.0E+01	1E-06	NA	5E-06	NA
Cumulative Corresponding Cancer Risk[c]							**5E-05**	

Notes:

[1] Future Residents are active duty personnel that will be living at Building 3606, a barracks.

[a] Corresponding Hazard Index equals maximum detected concentration divided by the PAL divided by the acceptable risk level.

[b] Corresponding Cancer Risk equals maximum detected concentration divided by the PAL divided by the acceptable risk level.

[c] Cumulative Corresponding Cancer Risk equals sum of Corresponding Cancer Risks for each constituent.

HI = Hazard Index

$\mu g/m^3$ = micrograms per cubic meter

NA = Not available/not applicable.

TABLE 4-11
Risk Ratio - Building 3606A - Future Industrial Worker[1]
Site 11a Remedial Investigation Addendum Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Analyte	Detection Frequency	Detected Concentration (Qualifier)	Sample Location of Detected Concentration	Industrial SV PAL ($\mu g/m^3$)	Acceptable Risk Level	Corresponding Hazard Index[a]	Corresponding Cancer Risk[b]	Target Organ
Minimum Detected Concentration ($\mu g/m^3$)								
Trichloroethene	2 / 2	2.9E-01 J	LS11A-SV10-10A	6.1E+01	1E-06	NA	5E-09	NA
Maximum Detected Concentration ($\mu g/m^3$)								
Trichloroethene	2 / 2	1.1E+02	LS11A-SV11-10A	6.1E+01	1E-06	NA	2E-06	NA

Notes:

[1] Future Industrial Workers are active duty personnel that will be using the facilities at the Quarterdeck, Building 3606a.

[a] Corresponding Hazard Index equals maximum detected concentration divided by the PAL divided by the acceptable risk level.

[b] Corresponding Cancer Risk equals maximum detected concentration divided by the PAL divided by the acceptable risk level.

HI = Hazard Index

$\mu g/m^3$ = micrograms per cubic meter

NA = Not available/not applicable.

TABLE 4-12
Subslab Vapor Concentrations to Indoor Air Concentrations Ratios
Site 11a Remedial Investigation Addendum Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Building	Subslab Vapor Probe	PCE Concentrations		Ratio
		Indoor Air ($\mu g/m^3$)	Subslab Vapor ($\mu g/m^3$)	
3606	SV01	0.22	520	0.00042
	SV02	0.22	440	0.0005
	SV03	0.15	110	0.0014
	SV04	0.14	48	0.0029
	SV05	0.17	1.3	0.13
	SV06	2.4	3.6	0.67
	SV07	1.8	4.4	0.41
	SV08	0.21	93	0.0023
	SV09	0.18	5	0.036
3606A	SV10	11	5	2.2
	SV11	ND	18	N/A

ND - Non-detect
N/A - Not Available

\\NORTHEND\PROJ\USNAVFACENGCOM\LITTLECREEK\MAPFILES\376781_SITE11A_RI_ADDENDUM\FIGURE 4-1 - VAPOR INTRUSION EVAL RESULTS.MXD CBOWMAN 12/20/2010 11:57:09

Chemical Name	Short-Term Residential Subslab PAL	Long-Term Residential Subslab PAL	Short-Term Residential Indoor Air PAL	Industrial Subslab PAL	Industrial Indoor Air PAL
Chloroethane	50,000	10,000	5,000	44,400	4,400
Cis-1,2-DCE	315	63	31.5	260	26
Trans-1,2-DCE	315	63	31.5	260	26
PCE	21	4.1	2.1	21	2.1
TCE	60	12	6	61	6.1
VC	8	1.6	0.8	28	2.8

Legend

- Approximate Location of Former Underground Waste Oil Tank
- Pressure Monitoring location
- Co-located Subslab and Indoor Air Samples
- Upwind Outdoor Air Sample
- Near Building Oudoor Air Sample
- Monitoring Well Location
- Area of Investigation
- Electrical Cable Line
- Heat Cool Line
- Storm Sewer Line
- Wastewater Line
- Water Line

COC Concentrations (µg/L)

- 5-100
- 100-500
- 500+

µg/L - micrograms per liter

Bold blue values represent Indoor Air PAL exceedances

Shaded values represent Subslab Vapor PAL exceedances

Results are shown in µg/m^3

µg/m^3 - micrograms per cubic meter

J - Analyte present; result is estimated

U - Nondetect

N W E S

0 20 40 Feet

Figure 4-1
Site 11a Vapor Intrusion Evaluation Results
Site 11a RI Addendum Report
JEB Little Creek
Virginia Beach, Virginia

CH2MHILL

SECTION 5

Conceptual Site Model

5.1 Building 3606 Conceptual Site Model Update

Building 3606 is a barracks building used to house active military personnel for short-term duration (i.e., less than 6 years). The building can provide housing for up to 480 residents at a time (each of the 240 rooms may be inhabited by up to two people). It has five stories and is approximately 55 feet wide, 360 feet long, and 80 feet tall. On each story there are 48 individual rooms with a bathroom for every two rooms. Stairwells are located at either end of the building, and there is an elevator and stairwell in the center of the building. There are also two mechanical rooms located approximately one-third and two-thirds along the length of the building. A utility corridor runs down the center of the building; the bottom of this corridor is approximately 3 ft bgs. A three-dimensional (3-D) conceptual site model (CSM) of Building 3606 is provided as **Figure 5-1**.

Building 3606 is constructed of concrete and has a concrete slab level with the exterior ground surface that was estimated to be between 8 and 9-inches in thickness. The slab appears to be in good condition; however, only small portions of it were observed during the sampling events because it is mostly covered with carpet tiles (in the rooms) or ceramic tile (in the bathrooms). There are multiple utilities that penetrate the slab in the two mechanical rooms. Each of the 240 rooms has a door that opens to the outside; there is a balcony around the perimeter of the building on the upper stories. Each room also has window that may be opened by the residents. Each floor contains a central air conditioning/heating unit in each of the two mechanical rooms to provide heating, cooling and ventilation for the building.

The source area of the Site 11a CVOC groundwater plume is south of Building 3606, and the outer edge of the plume (COC concentrations between 5 and 100 µg/L) is believed to extend under the southern portion of the building (**Figure 2-4**). COIs were detected throughout the subslab vapor samples collected at the building, suggesting that the shallow groundwater plume is a likely source of contamination in the soil vapor. The results do not indicate a clear spatial pattern of elevated concentrations in the subslab vapor or a clear correlation with the groundwater plume concentrations beneath Building 3606.

Although several COIs were detected in the subslab vapor, PCE was the only COI detected in the indoor air of Building 3606. PCE was detected at a concentration slightly above the short-term residential indoor air PALs at one location; but below the subslab vapor PAL in the corresponding subslab vapor sample at that location. The empirical AF calculations suggest that detected PCE concentrations may result from aboveground sources unrelated to vapor intrusion. The HHRA, which used conservative AFs and conservatively assumed that indoor air concentrations were entirely from subslab vapor, concluded the risks to current or future receptors from inhalation of indoor air in Building 3606 are below or within the target risk range.

5.2 Building 3606A Conceptual Site Model

Building 3606A, referred to as the Quarterdeck, is used primarily for office space and recreational use. Approximately 10 employees work 10 hours per day, five days per week in the building. Additionally, residents from the neighboring barracks, including Building 3606, access the building periodically for recreational use and use of the laundry facilities. The building is divided into several spaces: (1) an open area in the middle, (2) a recreational area in the southeast section, (3) a recreational room in the northeast section, (4) several offices and a conference room in the southwest section, (5) a laundry room on the north side, and (6) a mechanical room in the northwest corner. There are two bathrooms in the center of the building; the men's and women's bathrooms each have several stalls. A 3-D CSM of Building 3606A is provided as **Figure 5-2**.

Building 3606A is single-story building approximately 60 feet wide, 140 feet long, and 25 feet tall. The building is constructed of brick and concrete and has an 8-inch-thick concrete slab, which is level with the exterior ground surface. The slab appears to be in good condition; however, only small portions of it were observed during the sampling events because it is mostly covered with linoleum tile (center open area and laundry room), carpet tiles (recreational areas and offices), and ceramic tile (bathrooms). Multiple expansion joints are present, mostly in good condition. There are two exterior doors on Building 3606A. On the eastern side there is one double-wide automatic door, and on the western side there is a double-wide door. There are several windows throughout the building. A central heating/air conditioning unit located in the mechanical room provides environmental control to the building.

The footprint of the Site 11a CVOC groundwater plume is south of Building 3606A. The outer edge of the plume (COC concentrations between 5 and 100 µg/L) is approximately 80 feet from Building 3606A (**Figure 4-1**). COIs were detected in both of the subslab vapor samples collected at the building, suggesting that the shallow groundwater plume may be impacting soil vapor beyond the footprint of the plume boundary. The results do not indicate a clear spatial pattern of elevated concentrations in the subslab vapor. Although several COIs were detected in the subslab vapor, PCE was the only COI detected at a concentration above the industrial indoor air PALs. The subslab vapor concentration at that location was below the industrial subslab vapor PAL. This, in combination with the elevated AF calculated for PCE at this location, suggests that there is likely a contributing indoor air source. However, the currently available data cannot definitively rule out the possibility of vapor intrusion. The HHRA, which used conservative AFs and conservatively assumed that indoor air concentrations were entirely from subslab vapor, concluded that risks to current or future receptors are below or within the target risk range.

Note: VOC-Volatile Organic Compound

FIGURE 5-1
Building 3606 Conceptual Site Model for Vapor Intrusion
Site 11a RI Addendum Report
JEB Little Creek
Virginia Beach, Virginia

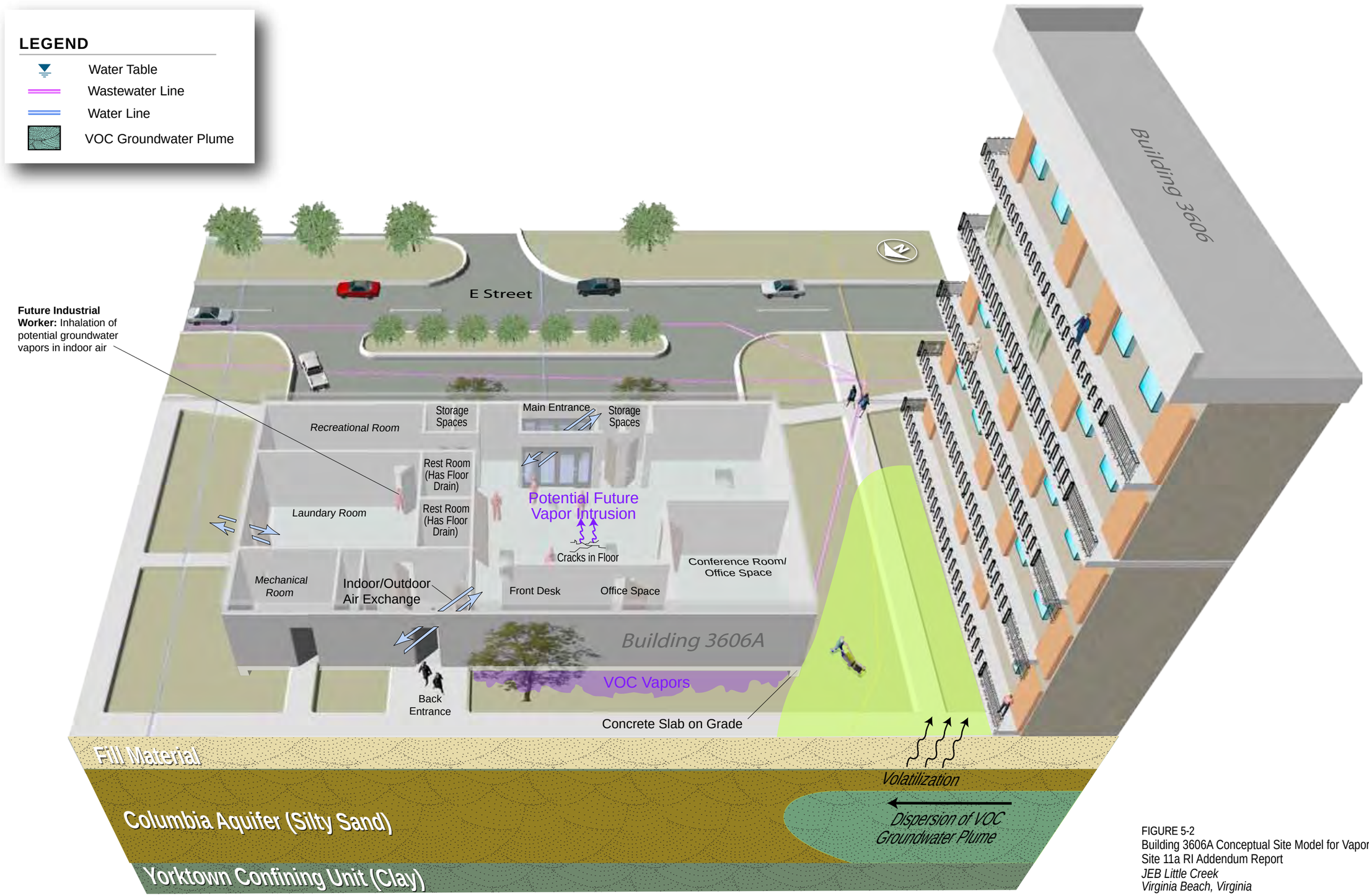


FIGURE 5-2
Building 3606A Conceptual Site Model for Vapor Intrusion
Site 11a RI Addendum Report
JEB Little Creek
Virginia Beach, Virginia

SECTION 6

Conclusions and Recommendations

6.1 Conclusions

With the exception of PCE and TCE, COIs were not detected in exceedance of PALs in subslab and/or indoor air samples collected during Phase I or Phase II of the vapor intrusion investigation. During Phase I, which consisted of subslab vapor sampling at Building 3606, PCE was detected at concentrations exceeding the long-term and/or short-term residential PALs at five of the seven sample locations; and TCE was detected at concentrations exceeding the long-term and/or short-term residential PALs at eight of the nine sample locations. As a result, Phase II was conducted and consisted of the collection of concurrent subslab vapor, indoor air, and outdoor air samples at Building 3606 and at Building 3606A. The Phase II subslab vapor sample results were generally consistent with the Phase I results for Building 3606, with PCE and TCE concentrations in subslab vapor exceeding the long-term and/or short-term residential PALs in several locations. PCE was the only COI detected in indoor air exceeding the indoor air PALs.

Although evaluation of the multiple lines of evidence suggests the vapor intrusion pathway may not be complete, contribution to indoor air from subslab vapor concentrations could not be definitively ruled out. Therefore, a vapor intrusion HHRA was conducted to evaluate the significance of the pathway in the event it is complete. The results of the risk evaluation indicated that the risks to current and future residents in the existing Building 3606 and industrial workers in Building 3606A were within the USEPA (1991) target ECLR range of 10^{-6} to 10^{-4}. If structures are constructed at the site, risks could exceed the USEPA target risk of 10^{-6} to 10^{-4} if the risk is calculated using the measured subslab vapor concentrations and USEPA's (2002, 2008c) conservative generic soil-vapor-to-indoor-air-vapor AF. However, it is uncertain and highly unlikely that the indoor air concentrations due to vapor intrusion in a future/hypothetical newly constructed building would be as high as those predicted by USEPA's (2002, 2008c) generic AF based on the measured indoor versus subslab vapor concentrations in the existing 3606 and 3606A buildings.

6.2 Recommendations

Based upon the results of the risk assessment, no further action is recommended for Buildings 3606 and 3606A to address vapor intrusion from CVOCs in shallow groundwater at Site 11a. Due to the potential for concentrations of groundwater COCs (TCE and its daughter products) to temporarily increase during implementation of a groundwater remedy, resulting in potential short-term risks, it is recommended that a vapor intrusion monitoring plan be scoped by the Partnering Team for implementation during groundwater remedial action and LTM. Additionally, it is recommended that LUCs be implemented during groundwater remedial action to maintain current building uses, prevent activities that would compromise the integrity of the building envelopes, and prevent construction of additional structures at the site without further evaluation and/or implementation of mitigation measures until the groundwater remedial action is completed. It is assumed that following completion of the

remedial action (achievement of groundwater clean-up goals), no potential for future risks from vapor intrusion will remain; therefore, monitoring and LUCs will no longer be necessary.

SECTION 7

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Attachment A
Building Surveys

Preliminary Building Survey for Vapor Intrusion Investigation

CH2MHILL

Date: 10/26/09

Preparer: A Petree and P. Murphy

Facility: Building 3406 - Site 11a

Address: Naval Amphibious Base Little Creek

Contact Person: Mr. Parker

Phone Number: 757-462-4862

e-mail address:

Building Description

Building or Room Identifier: 3406

Primary Activity within Building (select one):

- [ ] Manufacturing
- [ ] Storage
- [x] Other Short-Term Residential
- [ ] Chemical processing
- [ ] Chemical Storage
- [ ] Administrative
- [ ] Instrumentation/Control

Notes: One small office on 1st floor (East side of building)

Approximate floor space

Number of floors 5

Multi-room building [x] or Single room [ ]

Ceiling height ~ 12'

Aboveground Construction
- [ ] Wood
- [x] Concrete
- [ ] Brick
- [ ] Cinderblock
- [ ] Other

Floor plan attached? [ ] Yes [x] No

Notes: Building plans provided prior to arrival (used in planning phase of investigation)

Evaluation of Potential Conduits from Soil

Floor/foundation description (check all that apply)

- [ ] Wood
- [x] Concrete
- [x] Elevated above grade? SLIGHTLY
- [ ] Below grade?
- [x] Other UTILITY CORRIDOR IN CENTER OF BLDG PENETRATES GROUND SURFACE

Expansion joints present (if concrete floor)? UNABLE TO DETERMINE	[ ] Yes	[ ] No	[ ] N/A
Are expansion joints sealed? SEE ABOVE	[ ] Yes	[ ] No	[ ] N/A
Are sumps or floor drains present? MECHANICAL ROOMS	[x] Yes	[ ] No	[ ] N/A
Are basements or subsurface vaults present? UTILITY CORRIDOR	[x] Yes	[ ] No	[ ] N/A
Are there subsurface drainage problems?	[ ] Yes	[x] No	[ ] N/A

Notes:

Evaluation of Potential Pathways/Driving Forces

Are there locations with elevated positive or negative pressure (look for doors not opening/closing properly, perceptible airflow, audible fan noise)

NONE OBSERVED

Is there one air conditioning zone or multiple zones (if in a multi-room building)?

- [ ] Single zone
- [x] Multi-zone
- [ ] Other

EACH FLOOR HAS 2 AC/HEATING UNITS

(building management may know; another tip-off is the presence of multiple thermostats = multiple zones)

Sources of outdoor air

- [x] Mechanical (air handling unit)
- [ ] Doors
- [x] Windows (RESIDENT PREFERENCE)

Are windows/doors left open routinely? ☐ Yes ☐ No resident preference

Notes: _____

Evaluation of Potential Existing Chemical Sources Indoors

List principal solvent or VOC-containing products used (obtain MSDSs if available)

see notes _____ _____

Are any of the target analytes used in this building/room?

☐ Yes ☒ No

Are pesticides used indoors for pest control? ☒ Yes ☐ No at need

Names of pesticide products used? Terminex

Has there been a pesticide application within the past 6 months? ☐ Yes ☒ No

Is smoking permitted in the building? ☐ Yes ☒ No

Description of Vapor Mitigation Systems

Has a radon or vapor mitigation system been installed in this building/room? ☐ Yes ☒ No

Date of installation? _____

Type of system?

☐ Passive venting ☐ Active subslab depressurization

☐ Crack/crevice sealing ☐ Dilution ventilation control

☐ N/A

Notes: _____

Additional Notes Gary Dacher (PWC), 462-2780 Roger White (NAVFAC): ~~462-8564~~
Mr. Parker: 462-4862 462-8564 x 384
373-9753 cell

- Resident Adviser Room: Ceiling is about 8' in height. Room is ~18' x 20'. Two closets. Perfumes/colognes present, bug spray in bathroom (shared). Floor is carpet
- Mechanical Room (East side): 42' x 10' x 8'. HVAC system, electrical, HVAC Dual Temp. East N62470-86-C-6364. Feeds 24 rooms on the east side of the building. Floor is concrete w/ one drain (diameter ~ 8") no significant cracks.
- Room 133: 18' x 20' x 8', two closets, carpet floor, one window, nothing of note (Room was pretty much empty)
- Room 139: 18' x 20' x 8', carpet, one window, two closets.
- Room 148: Same as all rooms, febreeze, AJAX (Soap), Tilex (Shower cleaner).
- Mechanical Room (other side of building) [West side], Same set up as above, no significant cracks on concrete floor.
- Room 113: Same as other rooms, ~~fe~~ febreze, perfume/cologne, electric vacuum Tide.
- Room 120: Same as other rooms, nothing of note; had to move location due to limited access space (would not be able to clear for utilities).
- Cleaning Room: 2 paint cans, stainless steel cleaner, glass cleaner.
- Outside Note: On east side of building steam is venting. Wind is blowing in direction of building.

Additional Notes

Date: _____

Preparer: _____

Facility: _____

Description (floor): _____

CH2MHILL

Floor Plan Information See UFP-SAP

Preliminary Building Survey for Vapor Intrusion Investigation

CH2MHILL

Date: 2/22/2010

Preparer: A Petree P. Murphy

Facility: Building 3604

Address:

Contact Person: Mr. Parker

Phone Number:

e-mail address:

Building Description

Building or Room Identifier: 3604 - Williams Hall (Barrack)

Primary Activity within Building (select one):

- [ ] Manufacturing
- [ ] Storage
- [ ] Other
- [ ] Chemical processing
- [ ] Chemical Storage
- [ ] Administrative
- [ ] Instrumentation/Control

Notes: Temporary Housing

Approximate floor space ~30,000 SF

Number of floors 5

Multi-room building [X] or Single room [ ] residence access exterior

Ceiling height ~12'

Aboveground Construction

- [ ] Wood
- [ ] Concrete
- [X] Brick
- [ ] Cinderblock
- [ ] Other

Floor plan attached? [ ] Yes [X] No

Notes: Floor plan retrieved during Phase1

Evaluation of Potential Conduits from Soil

Floor/foundation description (check all that apply)

- [ ] Wood
- [x] Concrete
- [ ] Elevated above grade?
- [ ] Below grade?
- [ ] Other carpet in resident rooms - concrete in mechanical rooms

Expansion joints present (if concrete floor)?	[ ] Yes	[ ] No	[ ] N/A	none observed
Are expansion joints sealed?	[ ] Yes	[ ] No	[ ] N/A	none observed
Are sumps or floor drains present?	[ ] Yes	[x] No	[ ] N/A	
Are basements or subsurface vaults present?	[x] Yes	[ ] No	[ ] N/A	central to building (utility corridor)
Are there subsurface drainage problems?	[ ] Yes	[x] No	[ ] N/A	

Notes:

Evaluation of Potential Pathways/Driving Forces

Are there locations with elevated positive or negative pressure (look for doors not opening/closing properly, perceptible airflow, audible fan noise)

None observed - mechanical rooms slightly negative

Is there one air conditioning zone or multiple zones (if in a multi-room building)?

- [ ] Single zone
- [x] Multi-zone
- [ ] Other

2 air handlers - split building down the middle

(building management may know; another tip-off is the presence of multiple thermostats = multiple zones)

Sources of outdoor air

- [x] Mechanical (air handling unit)
- [ ] Doors
- [ ] Windows

Are windows/doors left open routinely? [X] Yes [ ] No

Notes: DEPENDENT OF RESIDENT

Evaluation of Potential Existing Chemical Sources Indoors

List principal solvent or VOC-containing products used (obtain MSDSs if available)

NONE OBSERVED - SEE NOTES

Are any of the target analytes used in this building/room?

[ ] Yes [ ] No

NONE OBSERVED

Are pesticides used indoors for pest control? [X] Yes [ ] No

Names of pesticide products used? AT NEED - CONTACT PWC

Has there been a pesticide application within the past 6 months? [ ] Yes [X] No NOT ON FIRST FLOOR

Is smoking permitted in the building? [ ] Yes [X] No

Description of Vapor Mitigation Systems

Has a radon or vapor mitigation system been installed in this building/room? [ ] Yes [X] No

Date of installation?

Type of system?

[ ] Passive venting [ ] Active subslab depressurization

[ ] Crack/crevice sealing [ ] Dilution ventilation control

[ ] N/A

Notes:

Additional Notes

- Room 125 - Resident advisor ajax, listerine, air wick air freshener, cologne
  Bathroom - 1 small can "air space" encounter
- 1st Mechanical room - 5 gt decocoat (1.5 gallon bucket
- Room 138 - 1 occupant - Room empty - 1 bottle mold master (EMC)
- Room 139 - Really messy - 2 occupants
- 2nd mechanical room - Boxes of air filters | maintenance supplies (mechanical parts | tubing) - brand new motor
- Room 148 - glass cleaner, (5) Febreeze, clorox wipes - room occupied
- Room 107 - comet, multi-surface cleaner (2 occupants)
- Room 113 - windex, greased lightning, windex, Febreeze, ajax (no occupants)
- Room 120 - very strong cologne odor - 1 occupant
- storage room:
  - simple green
  - liquid 1309 (stainless steel cleaner)
  - Big D deodorant powder
  - Cavalier All surface duster & polish
  - Fire extinguisher
  - 1 Gallon exterior paint

* 2 air intake vents observed

* No pictures taken

Additional Notes

Preliminary Building Survey for Vapor Intrusion Investigation

Date: 2/22/2010

Preparer: A. Petree

CH2MHILL

Facility: JEB LC-FS

Address:

Contact Person: Mr. Parker

Phone Number: 757 462 4862

e-mail address: Harold.parker@navy.mil

Building Description

Building or Room Identifier: Building 3606a Quarterdeck

Primary Activity within Building (select one):

- [ ] Manufacturing
- [ ] Storage
- [ ] Other
- [ ] Chemical processing
- [ ] Chemical Storage
- Recreational/administrative
- [ ] Administrative
- [ ] Instrumentation/Control

Notes:

Approximate floor space ~210' x 60'

Number of floors 1

Multi-room building [X] or Single room [ ]

Ceiling height ~12'

Aboveground Construction
- [ ] Wood
- [X] Concrete
- [ ] Brick
- [ ] Cinderblock
- [ ] Other

Floor plan attached? [ ] Yes [X] No

Notes:

Evaluation of Potential Conduits from Soil

Floor/foundation description (check all that apply)

- [ ] Wood
- [x] Concrete
- [ ] Elevated above grade?
- [ ] Below grade?
- [ ] Other Areas of carpet cover/TILE

Expansion joints present (if concrete floor)?	[x] Yes	[ ] No	[ ] N/A	
Are expansion joints sealed?	[x] Yes	[ ] No	[ ] N/A	
Are sumps or floor drains present?	[x] Yes	[ ] No	[ ] N/A	Laundry room & bathrooms
Are basements or subsurface vaults present?	[ ] Yes	[ ] No	[ ] N/A	
Are there subsurface drainage problems?	[ ] Yes	[ ] No	[ ] N/A	

Notes: * sometimes washer/dryers FLOOD & water pools on floor

Evaluation of Potential Pathways/Driving Forces

Are there locations with elevated positive or negative pressure (look for doors not opening/closing properly, perceptible airflow, audible fan noise)

NONE OBSERVED

Is there one air conditioning zone or multiple zones (if in a multi-room building)?

- [ ] Single zone
- [ ] Multi-zone
- [ ] Other

central air | central HEAT

(building management may know; another tip-off is the presence of multiple thermostats = multiple zones)

Sources of outdoor air

- [x] Mechanical (air handling unit)
- [ ] Doors
- [ ] Windows

Additional Notes

AT NEED PESTICIDE/INSECTICIDE TREATMENTS
- SPRAYED BEGINNING OF DECEMBER

* CLEAN FLOORS W/ WATER EVERY NIGHT
* TWICE A WEEK WINDOWS CLEANED W/ GLASS CLEANER/VINEGAR

* COULD PLACE INDOOR AIR SAMPLE IN SECURE CONFERENCE ROOM AT SOUTHERN LOCATION OF BUILDING
* SEALED PRINT CARTRIDGES LOCATED IN SUPPLY CLOSET
* 5 PRINTERS LOCATED THROUGHOUT BUILDING
* FURNITURE IS NOT NEW (MORE THAN 2 YEARS OLD)

PHOTO LOG - QUARTER DECK
1- MAIN ROOM LOOKING NORTH
2- SECURE CONFERENCE ROOM (SOUTHSIDE OF BUILDING)
3- SECURE CONF. ROOM FACING NORTH
4- REC ROOM ON N. SIDE OF BLDG
5- SNACK AREA, JUST SOUTH OF REC ROOM ALONG E. SIDE OF BLDG
6-7,8,9 LAUNDRY ROOM
10-11 CLEANING SUPPLY CLOSET - OUTSIDE OF LAUNDRY ROOM ON W. SIDE OF BLDG
12-13 CHIEF LAKE/MR. PARKER OFFICE
14- SUPPLY CLOSET - OFF OF MAIN ROOM
15- SIDE ROOM OFF OF MAIN ROOM (FRIDGE, ICE MAKER)
16- FLOOR DRAIN IN RESTROOMS
17,18- FLOOR DRAINS IN LAUNDRY ROOMS
The mechanical Air handling unit is located in another building in parking lot
19- TILE FLOOR
20- AIR HANDLING BUILDING

Are windows/doors left open routinely? ☐ Yes ☐ No

Notes: sporadically/seasonly

Evaluation of Potential Existing Chemical Sources Indoors

List principal solvent or VOC-containing products used (obtain MSDSs if available)

None observed - listed all cleaning products in notes section

Are any of the target analytes used in this building/room?

☐ Yes ☒ No (none identified)

Are pesticides (insecticides) used indoors for pest control? ☒ Yes ☐ No

Names of pesticide products used? contact PWC

Has there been a pesticide application within the past 6 months? early December ☒ Yes ☐ No

Is smoking permitted in the building? ☐ Yes ☒ No

Description of Vapor Mitigation Systems

Has a radon or vapor mitigation system been installed in this building/room? ☐ Yes ☒ No

Date of installation?

Type of system?

☐ Passive venting ☐ Active subslab depressurization

☐ Crack/crevice sealing ☐ Dilution ventilation control

☐ N/A

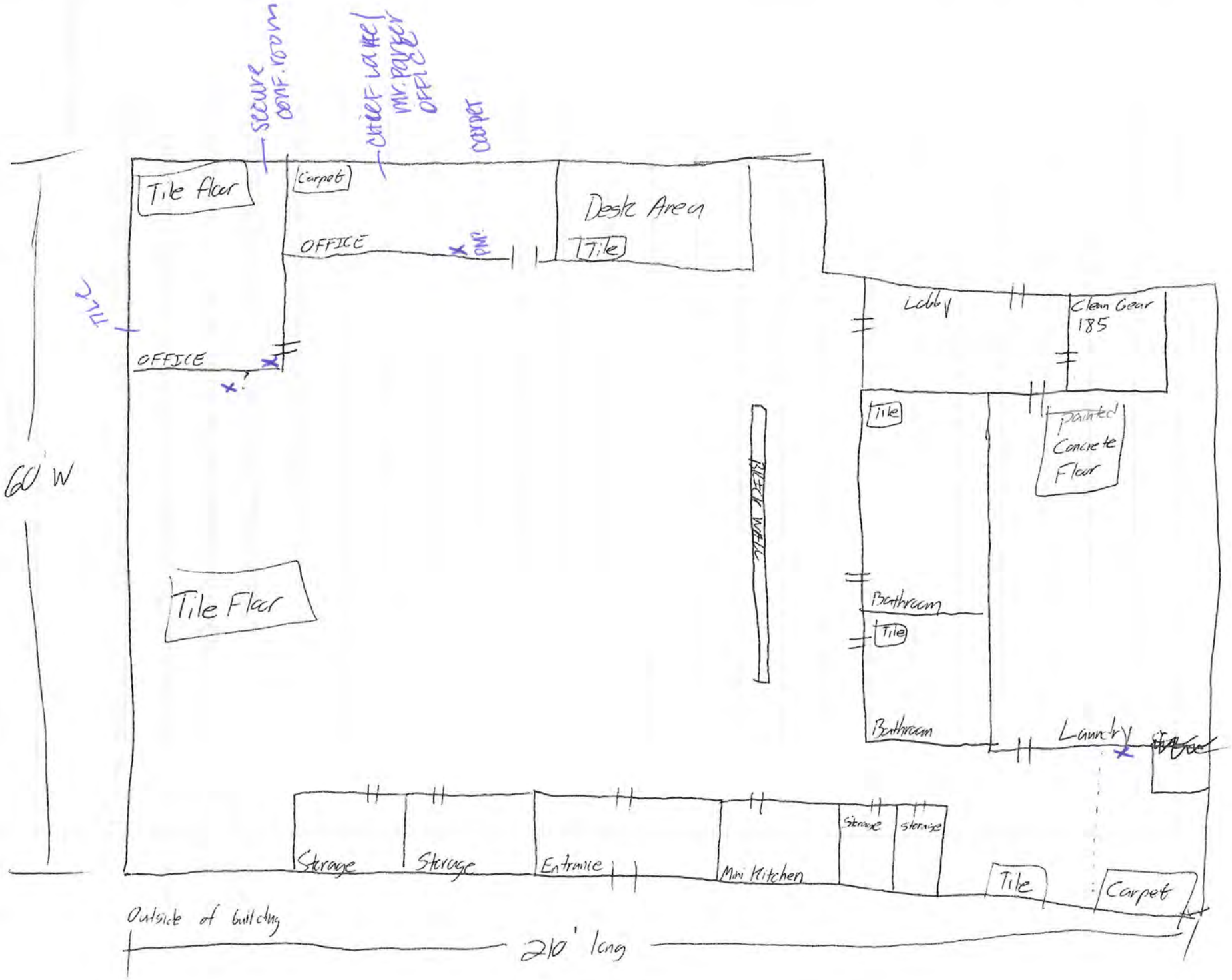
Notes:

Additional Notes

MPC Stainless Steel Cleaner, Scouring Powder ASTM D2356: Type 7, Simple Green (Cleaner), SkillCraft Glass cleaner, Bleach, Bright White laundry detergent, Sporicidin disinfectant Solution, Organic Acid Restroom cleaner (others), Formula 409, Urinal Cakes, Micro-Clean Tile, Grout & Stone Cleaner

Located in cleaning closet have MSDS (old)

Not to Scale


SECURE CONF. ROOM
CHIEF LAWRE / MR. PARKER OFFICE
CARPET
Tile floor
Carpet
Desk Area
OFFICE
PWC
Tile
TILE
OFFICE
60' W
Lobby
Clean Gear 185
Tile
painted Concrete Floor
BREEZE WALL
Tile Floor
Bathroom
Tile
Bathroom
Laundry
Storage
Storage
Entrance
Mini Kitchen
Storage
Storage
Tile
Carpet
Outside of building
210' long

Hazardous Materials Authorized Use List for Bachelor Housing

Div: N01BH
Shop:
Bldg: All

MSDS #	Serial #	Process Code	Manufacturer	Product Description	NSN1	Size Container	Qty 1	NSN2	Size Container	Qty 2	NSN3	Size Container	Qty 3
190	BVBBL	34	LIGHTHOUSE FOR THE BLIND	GENERAL PURPOSE DETERGENT	7930005308067	GL	52			0			0
285	BKRHH	34	ALLIED ENTERPRISES	MIRACLE FINISH	7930013980992	GL	42			0			0
357	BJZCP	34	ALLIED BLOCK INDUSTRIES	BRITE GLO SCOURING COMPOUND WITH BLEACH	7930007218592	21 OZ CN	65			0			0
374	CDPHT	3	DAP, BEECHAM	DAP EXTERIOR VINYL SPACKLING	5610009264562	QT	4	803000F002959		0			0
387	BPGYD	34	ALLIED ENTERPRISES	EXTRACTO CARPET STEAM CLEANER #9H147		GL	14			0			0
390	BMBLG	57	GLIDDEN	SPRED ENAMEL LATEX SEMI-GLOSS 3700 SERIES	801000N025322	GL	9			0			0
394	BVNLW	34	S.C. JOHNSON & SON	DRACKETT PRO LEMON PLEDGE - FURNITURE POLISH -AEROSOL (*Q/P)	7930013813491	18 OZ	12	793000F013082	CN	0	7930009990510	CN*	0
427	BHWYB	34	KNIGHT CHEMICAL	SPRAY NINE	7930011468091	PT	10	0930011177095	24 OZ	0	7930011770795	QT	0
497	MFR	34	STATE CHEMICAL	AQUA WISE FORMULATED BOWL CLEANER		GL	4			0			0
620	CBBLW	3	DAP NORTH DIV ENSIGN-BICKFORD	POLYSEAMSEAL ADHESIVE CAULK (CARTRIDGE) ALL COLORS	803000N023820	10.3 OZ TU	3	8030HZ0000227	10.3 OZ TU	1			0
659	BPBQY	3	MACCO ADHESIVES/GLIDDEN	LIQUID NAILS LN-601	804000LOC1007	10.5 OZ TU	3	8040HZ0000330	10.5 OZ TU	0	8040013288043		0
697	MFR	34	DRUMMOND AMERICAN CORP	GALLANT SWIPES (DN 4990)		CN	2			0			0
776	MFR	73	GLIDDEN	GLID-GUARD/SANI-GIENE IND/TNK/STRCTR ENAMEL 4503/5220/5069		GL	5			0			0
886	MFR	73	SHERWIN-WILLIAMS	A-100 LATEX EXT FINISH BASE LE/2 (VAR COLORS-SEE MSDS)	8010HZ0000024	GL	1	801000LOC1020	GL	1	801000LOC2016	GL	0
937	MFR	73	BENJAMIN MOORE	MOORE'S MURESCO CEILING WHITE PAINT P/C 258		GL	1			0			0
942	BKPMJ	73	THOMPSON & FORMBY	THOMPSON'S WOOD PROTECTOR	803000B200082	GL CN	5			0			0
960	MFR		WILLIAM ZINSSER CO INC	BONDEX SKID TEX	8010HZ0010549		0			0			0
969	MFR		PPG INDUSTRIES CO INC	SEMI-GLOSS AQUAPON WB	8010HZ0010547		0			0			0
978	MFR	34	SELECT SPECIALTY PRODUCTS	P1535 SSP BOWL BOSS - BOWL & PORCELAIN CLEANER	7930HZ0001039	32 OZ BT	160			0			0
992	MFR	73	PPG INDUSTRIES INC	AQUAPON WB PASTEL BASE	8010HZ0010546		1			0			0
994	MFR	73	RICHARDS PAINT CO	ACRYLIC SATIN INT/EXT (SEE MSDS FOR ALL PARTS #'S)			1			0			0
1022	BJXDQ	52	CAPITOL	STOP RUST	6850013939045	GL	1	685000N012193	GL	0	6850013939047	6 GL	0
1054	MFR		PPG INDUSTRIES, INC	MANOR HALL EXT FLT LTX MIDTONE BASE	6850001449816	GL	1	6850000055305	13 OZ	0			0
1091	BZZXG	73	BENJAMIN MOORE	283 MOORCRAFT SUPER-HIDE LATEX	801000N016199	GL	1			0			0
1222	CCNFL	73	MASTERCHEM INDUSTRIES INC CALDWELL	KILZ 2 - WATER-BASE STAINBLOCKING SEALER/PRIMER	671000NO25546	GL	2		QT	0			0
1342	MFR	3	DAP INC	GUTTER AND FLASHING		GL	1			0			0

Hazardous Materials Authorized Use List for Bachelor Housing

Div: N01BH
Shop:
Bldg: All

MSDS #	Serial #	Process Code	Manufacturer	Product Description	NSN1	Size Container	Qty 1	NSN2	Size Container	Qty 2	NSN3	Size Container	Qty 3
1344	MFR	34	CAPITOL, INC	DRAIN DEVIL		QT	0			0			0
1370	MFR	34	S.C. JOHNSON & SON	RAID ANT AND ROACH KILLER	6840000017949	16 OZ	10	6840HZ0007397	16 OZ	0			0
1391	BRGWQ	34	FINI ORGANICS/OMEGA CHEMICAL	TOILET BOWL CLEANING CMPD	7930005599481	20 OZ CN	36			0			0
1400	BSGNH	34	ALL ED ENTERPRISES	IMPACT CLEANING COMPOUND, SOLVENT	6850013804369	5 GL	0	6850013840618	QT BT	1	6850013804053	55 GL	0
1416	MFR	34	DRUMMOND AMERICAN	ADDED ATTRACTION (DL 3280)		GL	3			0			0
1423	MFR	34	DRUMMOND AMERICAN	RIGHT DRESS SWIPES (DN 5210)		PK	5			0			0
1434	MFR	34	DRUMMOND AMERICAN	CAVALCADE SWIPES (DN 5530)		PK	5			0			0
1435	MFR	34	DRUMMOND AMERICAN	TRUST ME SWIPES (DN 4681)		PK	5			0			0
1438	MFR	3	DRUMMOND AMERICAN	TERRAIN (DN 4620)		GL	1			0			0
1440	MFR	34	DRUMMOND AMERICAN	TORPEDO (DN 47320)		QT	2			0			0
1444	MFR	34	DRUMMOND AMERICAN	COBRA (DL 1670)		QT	2			0			0
1446	MFR	3	DRUMMOND AMERICAN	GROOVY (DN 4670)		TU	2			0			0
1448	MFR	3	DRUMMOND AMERICAN	CRACK BLACK GREY (DL 3170)		GL	1			0			0
1588	MFR	36	OMEGA CHEMICAL	DETERGENT/BLEACH, LAUNDRY	7930012367280	40 LB DR	1			0			0
1626	MFR	3	GEORGIA-PACIFIC	READY MIX JOINT COMPOUND	561000L0C3131	5 GL	1			0			0
1913	BTQPT	73	GLIDDEN	ULTRA-HIDE LATEX SEMI-GLOSS ENAMEL UH 6300	804000N046730	GL	1			0			0
1997	CBVBH	34	ALL ED ENTERPRISES	CLEAR FREE, ALKALI CLEANER (SOLVENT-DETERGENT CLEANING CMPD)	7930013815971	QT	1			0			0
2041	BLBDT	34	3M	3M ADHESIVE CLEANER, P/N 08984, GEN PURPOSE ADHESIVE REMOVER	8040011975430	QT	1	8010HZ0000953	QT	0			0
2919	BPQDG	3	CONGOLEUM	3033 PREMIUM FLOORING ADHESIVE	804000N033197		1			0			0
3181	MFR	34	CASTEX INDUSTRIES	ALL PURPOSE SPOTTER - CARPET SPOTTER			1			0			0
3182	MFR	34	CASTEX INDUSTRIES	GUM REMOVER - MAT GUM REMOVER & DEGREASER			1			0			0
3183	MFR	34	CASTEX INDUSTRIES	ODOR ELIMINATOR ENZYME			1			0			0
3263	MFR	3	DRUMMOND AMERICAN	BULLDOG GRIP MULTIPURPOSE ADHESIVE DB 1041		12 OZ TU	3			0			0
3477	BPJTG	34	ALL ED ENTERPRISES	FORMULA 980 LIQUID CARPET STAIN REMOVER	793000N031078		1			0			0
3478	BPGYD	34	ALL ED ENTERPRISES	EXTRACTO CARPET STEAM CLEANER	793000N031079	GL	3			0			0
3587	MFR	34	BUTCHER	TAKEAWAY CARPET SPOT REMOVER			1			0			0
3596	MFR	34	PRO CHEM	2680 REMOVE OX		GL	1			0			0
3597	MFR	34	PRO CHEM	1243 AMAZING			1			0			0
3705	CBHNL	34	PRO CHEM	1239 SQUEAKY SHINE		GL	1			0			0
4167	MFR	3	DRUMMOND AMERICAN	DA 6610 REAL SEAL CLEAR - PATCHING	8040HZ0006209	12 OZ CN	2			0			0

Hazardous Materials Authorized Use List for Bachelor Housing

Div: N01BH
Shop:
Bldg: All

MSDS #	Serial #	Process Code	Manufacturer	Product Description	NSN1	Size Container	Qty 1	NSN2	Size Container	Qty 2	NSN3	Size Container	Qty 3
4187	BKTNY	64	DRUMMOND AMERICAN	METALIZE DL 2150 - COATING	801000F016877	QT	1	8010HZ0006342		0			0
4287	BZZYL	34	ALLIED ENTERPRISES	FORMULA 450 MILDEW/STAIN REMOVER	6850OON016922	QT	1			0			0
4407	MFR	73	PPG	AQUAPON W/B EPOXY MIDTONE TINT BASE 98-56 (PART A)	8010HZ0010548	GL	1			0			0
4424	MFR	73	SHERWIN-WILLIAMS	ENAMEL, SILICONE ALKYD COPOLYMER, GLOSS BLACK 17038 N40-00	8010013446695	GL	1			0			0
4695	MFR	34	DRUMMOND AMERICAN CORPORATION	OGLE SWIPES (DN 5190)		BT	3			0			0
4914	MFR	34	DRUMMOND AMERICAN CORP	SCANDAL SWIPES (DN 4740)		CN	3			0			0

Attachment B
Photograph Log

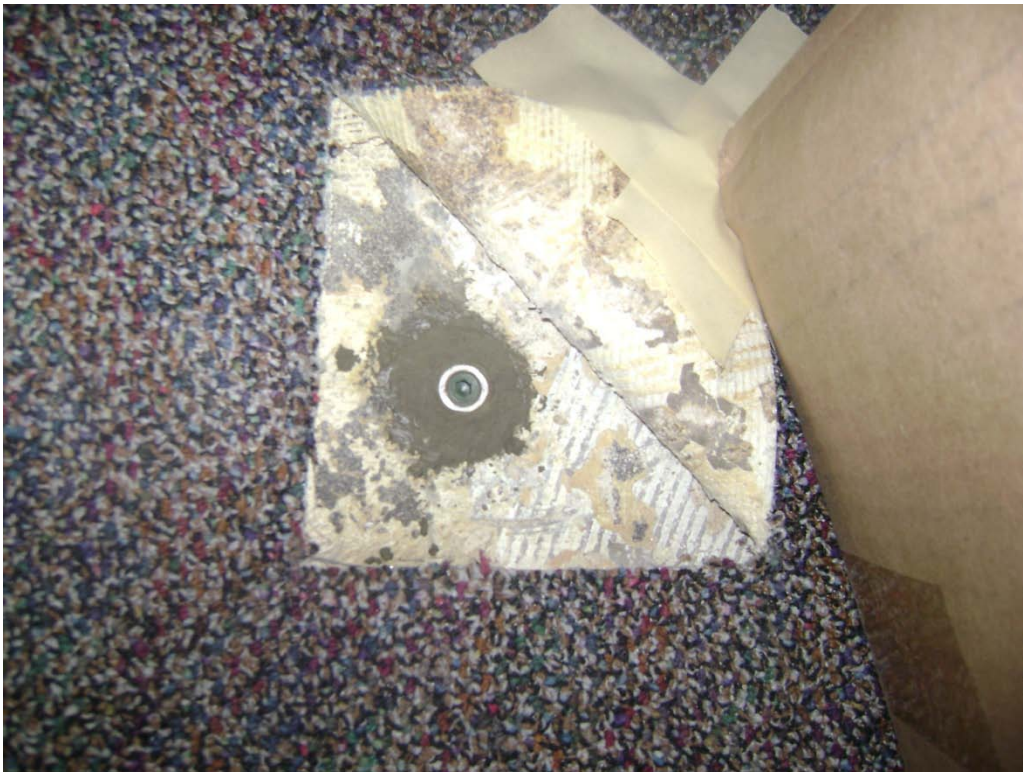


Photo 1: Building 3606A_Phase II_stainless steel probe installed with probe hexplug in place at location LS11A-PM01	Filename:Photo01.jpg

Photo 2: Building 3606_Phase I_Duplicate subslab vapor sample collection at location LS11A-SV03	Filename: Photo02.jpg

Photo 3: Phase 1_Weather station, south of building 3606	Filename:Photo03.jpg

Photo 4: Building 3606_Phase II_Concurrent subslab vapor and indoor air sample collection at locations LS11-SV01 and LS11A-IA01	Filename:Photo04.jpg

Photo 5: Building 3606A_Phase II_Concurrent subslab vapor and indoor air sample collection at locations LS11A-SV11 and LS11A-IA11	Filename:Photo05.jpg

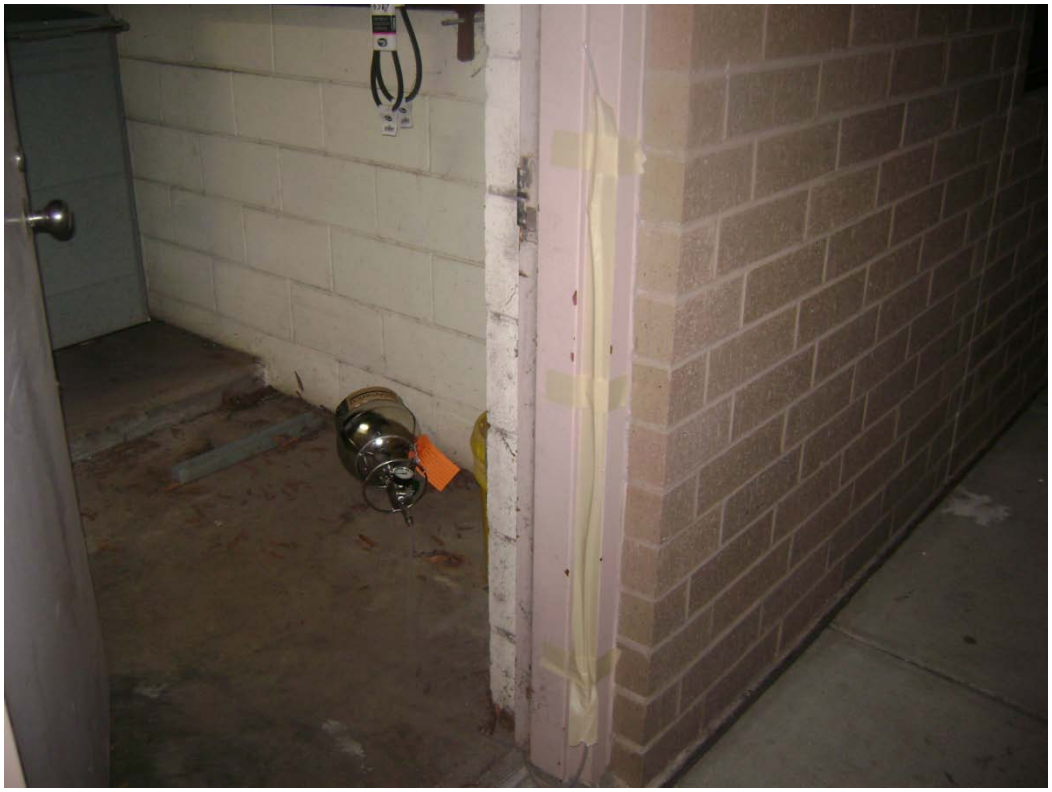


Photo 6: Building 3606_Phase II_Near-building outdoor air sample collection at location LS11A-OA01	Filename:Photo06.jpg

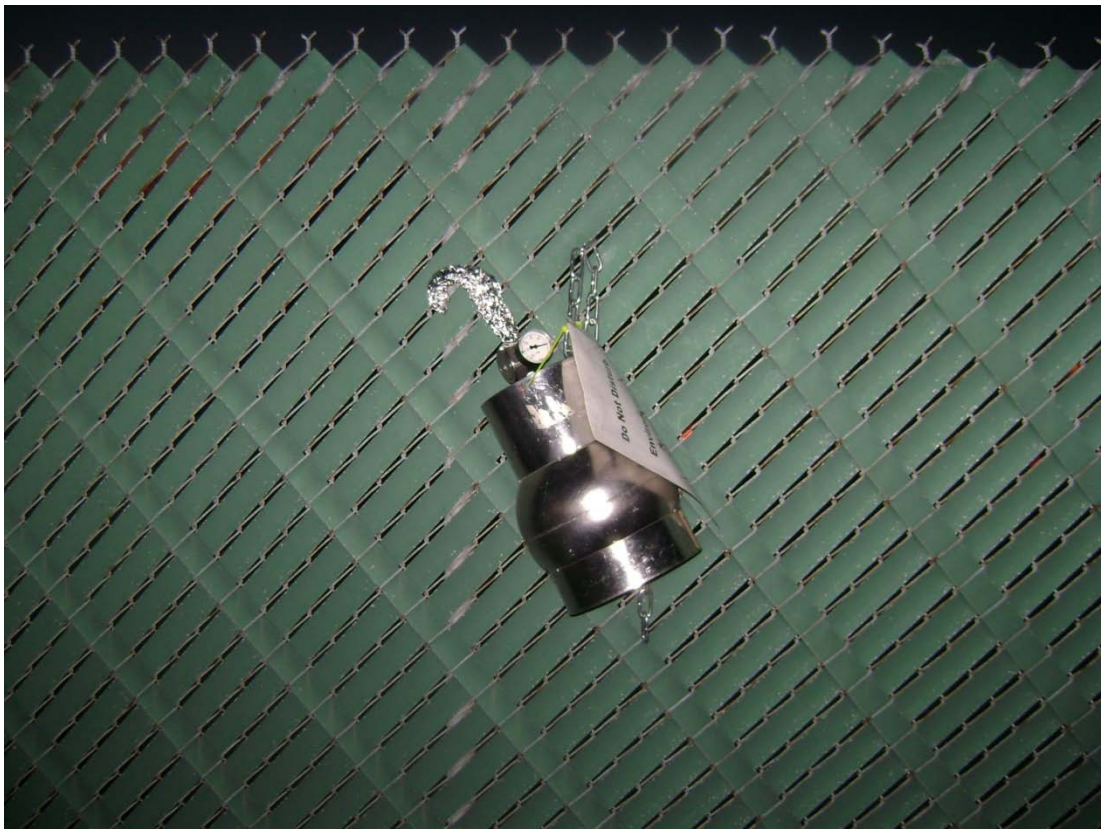


Photo 7: Site 11a_Phase II_LS11A-OA05 Upwind outdoor air sample collection at location LS11A-OA05 (SUMMA canister attached to fence along western investigation boundary)	Filename:Photo07.jpg

Photo 8: Building 3606A_Phase II_Pressure monitoring equipment setup at location LS11A-PM02	Filename:Photo08.jpg

Attachment C
Field Data Sheets

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Indoor Vapor Intrusion Assessment
Sub-slab Vapor Field Sampling Log - Summa Canister Method

Project Info

Project Name: JEB FS-LC Site 11a Vapor Intrusion Invest. Project # : 376781. AR.FI

By: Angela Petree Date: 11/3/09

Structure

Identification: Building 3604

Address: JOint Expeditionary Base Little Creek- Fort Story

Slab Information:

- [x] Concrete slab on grade (directly on top of soil)
- [ ] Other (describe)
- [ ] Concrete slab on gravel underlayment

Condition of slab: good (carpeted throughout)

Type of Sub Slab Soil: Sand

Is water present in the soil: No

Sub-slab Probe Installation, Leak Checking, Probe Purging, & Sampling Log

	Sample location (show in diagram)	1	2	3	4
	Sample Identification (field ID)	LS11A-SV01	LS11A-SV02	LS11A-PM01	LS11A-SV03
Probe Installation	Depth of slab (inches)	9"	9"	9"	9"
	Depth of hole drilled (inches below slab surface)	12"	12"	12"	12"
	Depth of installed probe (inches below slab surface)	7"	7"	7"	7"
Manifold Leak check	Leak check (sampling manifold) - Pass/No Pass	PASS	PASS	PASS	PASS
Probe Purge	Purge rate, cc/min.	~200 ml/min	~200	~200	~200
	Purge Start (time of day)	1252	1310	1348	1405
	Purge vacuum, " Hg				
	Purge completed (time of day)	1257	1315	1353	1410
Helium Leak Check (optional)	Leak check (Helium) - %	0	*0.925%	0.300%	0.050%
Field Analysis (optional)	Gem 2000 (O2 / CO2 / CH4) - %				
	PID - ppmv	5.4 ppm	2.4 ppm	1.6 ppm	1.2 ppm
Canister Sampling	Canister & flow controller ID (if used)	1310N / K223	~~1310N / K223~~ dup	6606 / K212	04339 / K292 DUP 32740 / K234 ~~K339~~
	Initial Canister Pressure (" Hg)	-30	~~-30~~ dup	-30	-32 / -32
	Sampling rate, cc/min				
	Sampling period started (time of day)	1125 11/4/09		1129 11/4/09	1131 11/4/09
	Sampling vacuum, " Hg	~~1124 11/4~~			
	Sampling period ended (time of day)	1124 11/5/09	~~1131 11/5/09~~	1131 11/5/09	11/5/09 1515 11/5/09 1135
	Final Canister Pressure (" Hg)	-8	~~-6~~	-6	-9.5 DUP -8.5

Observations and Comments: *Added modeling clay to sample union as a precaution

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Indoor Vapor Intrusion Assessment
Sub-slab Vapor Field Sampling Log - Summa Canister Method

Project Info

Project Name: JEB LC-FS Site 11a VI Investigation **Project #:** 376781.AK.F1
By: Angela Petree **Date:** 11/2/09

Structure

Identification: Building 2606
Address: JEB LC-FS
Slab Information:
- [x] Concrete slab on grade (directly on top of soil)
- [ ] Other (describe)
- [ ] Concrete slab on gravel underlayment

Condition of slab: good (carpeted throughout)
Type of Sub Slab Soil: sand
Is water present in the soil: No

Sub-slab Probe Installation, Leak Checking, Probe Purging, & Sampling Log

	Sample location (show in diagram)	1	2	3	4
	Sample Identification (field ID)	LS11A-SV04	LS11A-SV05	LS11A-SV06	LS11A-SV07
Probe Installation	Depth of slab (inches)	9"	9"	9"	9"
	Depth of hole drilled (inches below slab surface)	12"	12"	12"	12"
	Depth of installed probe (inches below slab surface)	7"	7"	7"	7"
Manifold Leak check	Leak check (sampling manifold) - Pass/No Pass	PASS	*PASS	PASS	PASS
Probe Purge	Purge rate, cc/min.	~200	~200	~200	~200 ~~MG/MH~~
	Purge Start (time of day)	1420	1440	1503	1238
	Purge vacuum, " Hg				~~1243~~ AP
	Purge completed (time of day)	1425	1445	1508	1243
Helium Leak Check (optional)	Leak check (Helium) - %	0	0.825	0	0
Field Analysis (optional)	Gem 2000 (O2 / CO2 / CH4) - %				
	PID - ppmv	3.6	2.5	1.6	1.7
Canister Sampling	Canister & flow controller ID (if used)	6347 / K168	6123 / K270	6079 / K177	6351 / K316
	Initial Canister Pressure (" Hg)	-30	-30	-30	-30
	Sampling rate, cc/min				
	Sampling period started (time of day)	1133 11/4/09	1135 11/4/09	1137 11/4/09	1138 11/4/09
	Sampling vacuum, " Hg				
	Sampling period ended (time of day)	1137 11/5/09	1139 11/5/09	1141 11/5/09	1142 11/5/09
	Final Canister Pressure (" Hg)	-8.5	-5.0	-8.0	-8.0

Observations and Comments: * SV05 Failed initially, Helium=3%. Modeling clay placed around sample union and pass. Purge time 1448 to 1503

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Sheet 1 of __

Ambient Air, Outdoor Air & Crawl Space Air Sampling Log (Summa Canister)

Project Information

Project Name: LITTLE Creek SITE 11a VI PHASE II

Project #: 376781

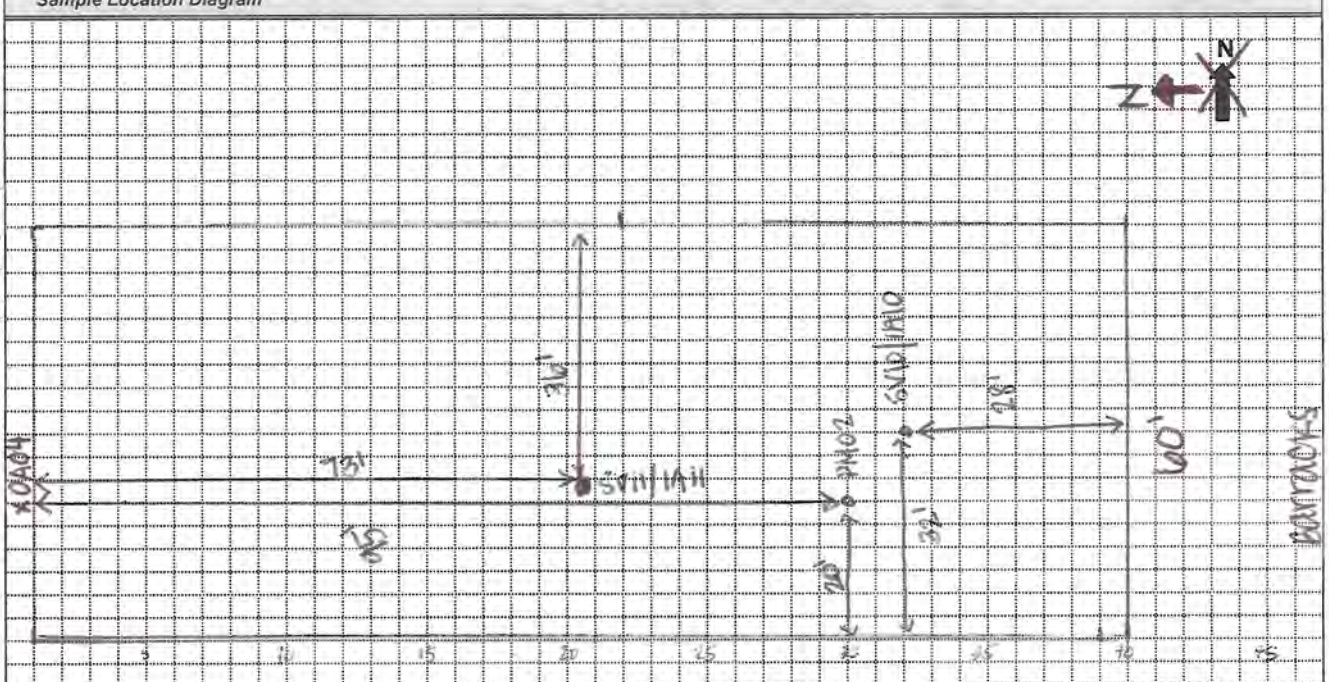
By: A Petree P. Murphy

Date: 3/3/10

Sampling Data Log

Sample Location	Field ID	Canister ID	Flow Controller ID	Initial Canister Pressure ("Hg)	Initial Flow Controller Rate (ml/min)	Start Date & Time	End Data & Time	Final Pressure ("Hg)	Final Flow Controller Rate (ml/min)
LS11A-1A01	LS11A-1A01-10A	6957	K142	-28	~4ml/min	2059 3/3/10	2211 3/4/10	ap -28.6	
LS11A-1A02	LS11A-1A02-10A	6671	K419	-32	"	2054 3/3/10	2206 3/4/10	ap -27	
LS11A-1A03	LS11A-1A03-10A	6365	K370	-30	"	2055 3/3/10	2159 3/4/10	-4.0	
LS11A-1A04	LS11A-1A04-10A	6619	K398	-30	"	2053 3/3/10	2143 3/4/10	-5.5	
* LS11A-1A05	LS11A-1A05-10A	~~8543~~ 8520	K397	-30	"	0215 3/4/10	2219 3/4/10	-10	
LS11A-1A06	LS11A-1A06-10A	6600	K130	-30	"	2048 3/3/10	2130 3/4/10	-7.0	
LS11A-1A07	LS11A-1A07-10A	6390	K278	-30	"	2043 3/3/10	2123 3/4/10	-6.0	
LS11A-1A08	LS11A-1A08-10A	6359	K459	-30	~4ml/min	2045 3/3/10	2109 3/4/10	-8.5	

Sample Location Diagram



Note:
Draw in outline the structure's foundation and interior walls, identify rooms, and note other defining features. Show location of canister relative to physical objects, etc.

Other Observations and Comments (note any unique circumstances): * when checking on samples 3/4/10, the pressure gauge read 0"Hg 5 hrs after initiation (original sample canister ID 12270 / reg # K200), therefore initiated another sample of which information is above

CH2M HILL *Applied Sciences Laboratory*

Sheet 1 of __

Ambient Air, Outdoor Air & Crawl Space Air Sampling Log (Summa Canister)

Project Information

Project Name: LITTLE Creek Site 11a VI Phase II

Project # : 376781

By: A Petree P Murphy

Date: 3/3/10

Sampling Data Log

Sample Location	Field ID	Canister ID	Flow Controller ID	Initial Canister Pressure ("Hg)	Initial Flow Controller Rate (ml/min)	Start Date & Time	End Data & Time	Final Pressure ("Hg)	Final Flow Controller Rate (ml/min)
LS11A-1A08P	LS11A-1A08P-10A	93272	K453	-30	~4ml/min	2045 3/3/10	2109 3/4/10	-7.0	
LS11A-1A09	LS11A-1A09-10A	11408	K473	-30	"	2051 3/3/10	2148 3/4/10	-7.5	
LS11A-1A10	LS11A-1A10-10A	1131	K354	-29.5	"	2009 3/3/10	2045 3/4/10	-6.0	
LS11A-1A10P	LS11A-1A10P-10A	1124	K355	-30	"	2009 3/3/10	2046 3/4/10	-5.5	
LS11A-1A11	LS11A-1A11-10A	6631	K303	-28	"	2017 3/3/10	1700 3/4/10	-4.5"Hg	

Sample Location Diagram

N

Note:

Draw in outline the structure's foundation and interior walls, identify rooms, and note other defining features. Show location of canister relative to physical objects, etc.

Other Observations and Comments (note any unique circumstances):

CH2M HILL *Applied Sciences Laboratory*

Sheet 1 of __

Ambient Air, Outdoor Air & Crawl Space Air Sampling Log (Summa Canister)

Project Information

Project Name: LITTLE CREEK STELLA VI PHASE II

Project # : 376781

By: A Petree P Murphy

Date: 3/3/10

Sampling Data Log

Sample Location	Field ID	Canister ID	Flow Controller ID	Initial Canister Pressure ("Hg)	Initial Flow Controller Rate (ml/min)	Start Date & Time	End Data & Time	Final Pressure ("Hg)	Final Flow Controller Rate (ml/min)
LS11A-OA01	LS11A-OA01-10A	1397	K251	-29	~4ml/min	~~2044~~ 2045 3/3/2010	2107 3/4/10	-6.0	
LS11A-OA02	LS11A-OA02-10A	1637	K222	-30	~4ml/min	~~2034~~ 2045 3/3/2010	2111 3/4/10	-6.5	
LS11A-OA03	LS11A-OA03-10A	1523	K443	-32	"	2051 3/3/2010	2151 3/4/10	-7.0	
LS11A-OA03P	LS11A-OA03P-10A	1304N	K113	-32	"	2051 3/3/2010	2151 3/4/10	-5.0	
LS11A-OA04	LS11A-OA04-10A	16227	K442	-30	"	2020 3/3/10	2100 3/4/10	-7.0	
LS11A-OA05	LS11A-OA05-10A	92009	K241	-30	"	2025 3/3/10	1830 3/4/10	-4.5	

Sample Location Diagram

N

Note:

Draw in outline the structure's foundation and interior walls, identify rooms, and note other defining features. Show location of canister relative to physical objects, etc.

Other Observations and Comments (note any unique circumstances):

CH2MHILL

Indoor Vapor Intrusion Assessment
Sub-slab Vapor Field Sampling Log - Summa Canister Method

Project Info

Project Name: Little Creek Sitelka VI Phase 2 **Project #:** 376781.AR.F1

By: A. Petree P. Murphy **Date:** 3/2/2010

Structure

Identification: Building 3606 (Williams Hall)

Address: JEB Little Creek - Fort Story

Slab Information:

- [x] Concrete slab on grade (directly on top of soil)
- [ ] Other (describe)
- [ ] Concrete slab on gravel underlayment

Condition of slab: Excellent; resident rooms have carpet cover and mechanical rooms have concrete

Type of Sub Slab Soil: sand

Is water present in the soil: none observed

Sub-slab Probe Installation, Leak Checking, Probe Purging, & Sampling Log

	Sample location (show in diagram)	1	2	3	4
	Sample Identification (field ID)	LS11A-SV01	LS11A-SV02	LS11A-PM01	LS11A-SV03
Probe Installation	Depth of slab (inches)				
	Depth of hole drilled (inches below slab surface)				
	Depth of installed probe (inches below slab surface)				
Manifold Leak check	Leak check (sampling manifold) - Pass/No Pass	PASS	PASS	PASS	PASS
Probe Purge	Purge rate, cc/min.	~.2 L/min	~.2 L/min	~.2 L/min	~.2 L/min
	Purge Start (time of day)	1010	0943	0933	1024
	Purge vacuum, " Hg	0	0	0	0
	Purge completed (time of day)	1015	0948	0937	1031
Helium Leak Check (optional)	Leak check (Helium) - %	0%	75 ppm	0%	875 ppm
Field Analysis (optional)	Gem 2000 (O2 / CO2 / CH4) - %	—	—	—	—
	PID - ppmv	1.0	1.3	1.3	0.9
Canister Sampling	Canister & flow controller ID (if used)	2957/K327	1366/K366		93210/K118
	Initial Canister Pressure (" Hg)	-32" Hg	-30" Hg		-32" Hg
	Sampling rate, cc/min	0-4 ml/min	0-4 ml/min		0-4 ml/min
	Sampling period started (time of day)	2059 3/3/10	2057 3/3/10		2055 3/3/10
	Sampling vacuum, " Hg	0	0		0
	Sampling period ended (time of day)	2212 3/4/10	2205 3/4/10		2200 3/4/10
	Final Canister Pressure (" Hg)	-4.0	-5.0		-5.0

Observations and Comments:

CH2MHILL

Indoor Vapor Intrusion Assessment
Sub-slab Vapor Field Sampling Log - Summa Canister Method

Project Info

Project Name: LITTLE CREEK SITE 11d V1 PHASE 2 **Project # :** 376781

By: A. Petree P. Murphy **Date:** 3/2/2010

Structure

Identification: BUILDING 3606 (WILLIAMS HALL)

Address: JEB LITTLE CREEK- FORT STORY

Slab Information:

- [x] Concrete slab on grade (directly on top of soil)
- [ ] Other (describe)
- [ ] Concrete slab on gravel underlayment

Condition of slab: EXCELLENT; RESIDENT ROOMS HAVE CARPET, MECHANICAL ROOMS CONCRETE

Type of Sub Slab Soil: SAND

Is water present in the soil: NONE OBSERVED

Sub-slab Probe Installation, Leak Checking, Probe Purging, & Sampling Log

	Sample location (show in diagram)	1	2	3	4
	Sample Identification (field ID)	LS11A-SV03P	LS11A-SV04	LS11A-SV05	LS11A-SV06
Probe Installation	Depth of slab (inches)				
	Depth of hole drilled (inches below slab surface)				
	Depth of installed probe (inches below slab surface)				
Manifold Leak check	Leak check (sampling manifold) - Pass/No Pass	PASS	PASS	PASS	PASS
Probe Purge	Purge rate, cc/min.	~.2 L/min	~.2 L/min	~.2 L/min	~.2 L/min
	Purge Start (time of day)	1026	1044	1105	0900
	Purge vacuum, " Hg	0	0	~~475 ppm~~ 0	0
	Purge completed (time of day)	1031	1048	1110	0903
Helium Leak Check (optional)	Leak check (Helium) - %	875 ppm	675 ppm	475 ppm	0%
Field Analysis (optional)	Gem 2000 (O2 / CO2 / CH4) - %	—		—	—
	PID - ppmv	0.9	0.9	0.6	0.7
Canister Sampling	Canister & flow controller ID (if used)	1142 / K168	1340N / K179	1006 / K201	1320N / K143
	Initial Canister Pressure (" Hg)	-32" Hg	-30" Hg	-33" Hg	-29.5" Hg
	Sampling rate, cc/min	~4 mL/min	~4 mL/min	~4 mL/min	~4 mL/min
	Sampling period started (time of day)	2055 3/3/10	2053 3/3/10	2050 3/3/10	2048 3/3/10
	Sampling vacuum, " Hg	0	0	0	0
	Sampling period ended (time of day)	2200 3/4/10	2142 3/4/10	2136 3/4/10	2129 3/4/10
	Final Canister Pressure (" Hg)	-5.5	-5.5	-6.5	-5.0

Observations and Comments:

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Indoor Vapor Intrusion Assessment
Sub-slab Vapor Field Sampling Log - Summa Canister Method

Project Info

Project Name: Little Creek Site 11a Phase 2 **Project # :** 376781

By: A Petree P Murphy **Date:** 3/2/2010

Structure

Identification: Building 3600 (Williams Hall)

Address: JEB Little Creek - Fort Story

Slab Information:

- [x] Concrete slab on grade (directly on top of soil)
- [ ] Other (describe)
- [ ] Concrete slab on gravel underlayment

Condition of slab: Excellent; Resident rooms carpet cover, mechanical rooms concrete

Type of Sub Slab Soil: sand

Is water present in the soil: none observed

Sub-slab Probe Installation, Leak Checking, Probe Purging, & Sampling Log

	Sample location (show in diagram)	1	2	3	4
	Sample Identification (field ID)	LS11A-SV07	LS11A-SV08	LS11A-SV09	
Probe Installation	Depth of slab (inches)		8"	8"	
	Depth of hole drilled (inches below slab surface)		10"	10"	
	Depth of installed probe (inches below slab surface)		6"	6"	
Manifold Leak check	Leak check (sampling manifold) - Pass/No Pass	PASS	PASS	PASS	
Probe Purge	Purge rate, cc/min.	~.2 L/min	~.2 L/min	~.2 L/min	
	Purge Start (time of day)	1120	1527	1546	
	Purge vacuum, " Hg	0	0	0	
	Purge completed (time of day)	1125	1532	1552	
Helium Leak Check (optional)	Leak check (Helium) - %	75 ppm	0%	0%	
Field Analysis (optional)	Gem 2000 (O2 / CO2 / CH4) - %	—	—	—	
	PID - ppmv	0.3	1.1	1.3	
Canister Sampling	Canister & flow controller ID (if used)	1611 / K331	1500 / K152	1528 / K379	
	Initial Canister Pressure (" Hg)	-33" Hg	-30" Hg	-30" Hg	
	Sampling rate, cc/min	~4 mL/min	~4 mL/min	~4 mL/min	
	Sampling period started (time of day)	2043 3/3/10	2045 3/3/10	2051 3/3/10	
	Sampling vacuum, " Hg	0	0	0	
	Sampling period ended (time of day)	2121 3/4/10	2111 3/4/10	2150 3/4/10	
	Final Canister Pressure (" Hg)	-6.0	-7.0	-6.0	

Observations and Comments:

CH2MHILL

Indoor Vapor Intrusion Assessment
Sub-slab Vapor Field Sampling Log - Summa Canister Method

Project Info

Project Name: Little Creek Stella VI Phase 2 **Project # :** 376781

By: A. Petree P. Murphy **Date:** 3/2/2010

Structure

Identification: Building 3600a (Quarterdeck)

Address: JEB Little Creek - Fort Story

Slab Information:

- ☒ Concrete slab on grade (directly on top of soil)
- ☐ Other (describe)
- ☐ Concrete slab on gravel underlayment

Condition of slab: Excellent; Tile & carpet cover

Type of Sub Slab Soil: Sand

Is water present in the soil: none observed

Sub-slab Probe Installation, Leak Checking, Probe Purging, & Sampling Log

	Sample location (show in diagram)	1	2	3	4
	Sample Identification (field ID)	LS11A-PM02	LS11A-SV10	LS11A-SV10P	LS11A-SV11
Probe Installation	Depth of slab (inches)	6"	6"	6"	8"
	Depth of hole drilled (inches below slab surface)	8"	8"	8"	10"
	Depth of installed probe (inches below slab surface)	4"	4"	4"	6"
Manifold Leak check	Leak check (sampling manifold) - Pass/No Pass	PASS	PASS	PASS	PASS
Probe Purge	Purge rate, cc/min.	~.2 L/min	~.2 L/min	~.2 L/min	~.2 L/min
	Purge Start (time of day)	1425	1337	1337	1353
	Purge vacuum, " Hg	0	0	0	0
	Purge completed (time of day)	1430	1342	1342	1358
Helium Leak Check (optional)	Leak check (Helium) - %	0%	50 ppm	50 ppm	25 ppm
Field Analysis (optional)	Gem 2000 (O2 / CO2 / CH4) - %	—	—	—	—
	PID - ppmv	1.0	0.8	0.8	0.9
Canister Sampling	Canister & flow controller ID (if used)		1363/K151	02356N/K297	6627/K277
	Initial Canister Pressure (" Hg)		-29" Hg	-29.5" Hg	-30" Hg
	Sampling rate, cc/min		~4ml/min	~4 ml/min	~4 ml/min
	Sampling period started (time of day)		2009 3/3/10	2009 3/3/10	2010 3/3/10
	Sampling vacuum, " Hg		0	0	0
	Sampling period ended (time of day)		2047 3/4/10	1210 3/4/10	2042 3/4/10
	Final Canister Pressure (" Hg)		-4.5	-4.5" Hg	-6.5

Observations and Comments:

Attachment D
Chain-of-Custody Forms

TAL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

CTO 224

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information
Company: CH2MHILL
Address: 5700 Cleveland St Suite 101
City/State/Zip: Virginia Beach, VA 23462
Phone: 757-671-6252
FAX: 757-497-6885
Project Name: CTO224 LC SITE 11A VI
Site/location: SITE 11A JRB LC-FS
PO# PN: 376781.AR.F1

Project Manager: Adrienne Jones
Phone: 757-671-6252
Site Contact: Vickie Brynilosen
TAL Contact: Jamie McKinney

Sampled By: Angela Petree, Patrick Murphy

1 of 2 COCs

Analysis Turnaround Time
Standard (Specify) per contract
Rush (Specify)

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15*	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
LS11A-SV01-09D	11/4-11/5	1125		-30		1310N ↔	K223	x											
LS11A-SV02-09D	11/4-11/5	1129		-30		K212	6606	x											
LS11A-SV03-09D	↓	1131		-32		K292	04339	x											
LS11A-SV03P-09D	↓	1131		-32		K234	~~04334~~ 8338	x											
LS11A-SV04-09D	↓	1133		-30		K168	0347	x											
LS11A-SV05-09D	↓	1135		-30		K270	6123	x											

Sampled by:
A. Petree
P. Murphy

Temperature (Fahrenheit)

	Interior	Ambient
Start	72°F	68°F
Stop	72°F	65°F

Measured by onsite weather station

Pressure (inches of Hg)

	Interior	Ambient
Start		
Stop		

Special Instructions/QC Requirements & Comments:
Select VOCs by TO-15: TCE, VC, 1,2-DCA, trans-1,2-DCE, cis,1-2-DCE, 1,1-DCE, and chloroethane
canisters not used: 3270 and 8396. Reg. not used: K158 and K396

Canisters Shipped by: angela petree	Date/Time: 11/5/09 1540	Canisters Received by:
Samples Relinquished by: Angela	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

CTO 224

TAL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information
Company: CH2MHILL
Address: 5700 Cleveland St Suite101
City/State/Zip VA Beach VA 23462
Phone: 757.671.6252
FAX: 757.497.6885
Project Name: CTO 224 LC Site 11A
Site/location: Site 11A JEB LC-FS
PO# PN: 376781.AR.F1

Project Manager: Adrienne Jones
Phone: 757.671.6252
Site Contact: Vickie Brynildsen
TAL Contact: Jamie McKinney

Analysis Turnaround Time
Standard (Specify) PCR contract
Rush (Specify)

Sampled By: Angela Petree, Patrick Murphy

2 of 2 COCs

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15 *	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
LS11A-SV06-09D	11/4-11/5	1137	.	-30		K177	6679	x											
LS11A-SV07-09D	11/4-11/5	1138		-30		K316	6351	x											

Sampled by :
A Petree
P. Murphy

Temperature (Fahrenheit)	Interior	Ambient
Start	72°F	62°F
Stop	72°F	65°F

Measured by onsite weather station

Pressure (inches of Hg)	Interior	Ambient
Start		
Stop		

Special Instructions/QC Requirements & Comments:
Canisters not used: 3270 and 8396. Reg. not used: K158 and K396
* Select VOCs by TO-15: TCE, VC, 1,2-DCA, Trans-1,2-DCE, Cis-1,2-DCE, 1,1-DCE, and chloroethane

Canisters Shipped by: Angela Petree	Date/Time: 11/5/09 1540	Canisters Received by:
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

CTO 224

Canister Samples Chain of Custody Record

TAL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information	Project Manager: Adrienne Jones	Sampled By: A Petree P.Murphy	1 of 6 COCs
Company: CH2MHILL	Phone: 757.671.6252		
Address: 5700 Cleveland St. Suite 101	Site Contact: Vickie Brynildsen		
City/State/Zip Virginia Beach, VA 23462	TAL Contact: Jamie McKinney		
Phone: 757.671.8311			
FAX: 757-497-6885			
Project Name: Site 11A VI Phase II	Analysis Turnaround Time		
Site/location: Little Creek Site 11A VI	Standard (Specify) 28 DAYS		
PO #	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	* TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
LS11A-1A01-10A	3/3-3/4	3/3 2059	3/4 2211	-28	-6	K142	6957	1											
LS11A-1A02-10A	3/3-3/4	3/3 2057	3/4 2206	-32	-7	K419	6671	1											
LS11A-1A03-10A	3/3-3/4	3/3 2055	3/4 2159	-30	-4	K370	6365	1											
LS11A-1A04-10A	3/3-3/4	3/3 2053	3/4 2143	-30	-5.5	K398	6619	1											
LS11A-1A05-10A	3/4	3/4 0215	3/4 2219	-30	-10	K397	6520	1											
LS11A-1A06-10A	3/3-3/4	3/3 2045	3/4 2130	-30	-7	K130	6400	1											

Sampled by : A.Petree, P.Murphy

Temperature (Fahrenheit)	Interior	Ambient
Start	~65°F	~38°F
Stop	~65°F	

A.Petree, P.Murphy

Pressure (inches of Hg)	Interior	Ambient
Start	29.3	29.3
Stop	29.3	29.3

Special Instructions/QC Requirements & Comments:

*TO-15 VOC analysis of TCE, VC, 1,2-DCA, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE, chloroethane
unused canisters: 92051 & 1141 canisters w/ some sample (do not analyze): 93143, 12270
Bad regulators: K249, K310, K457, K200

Canisters Shipped by: Angela Peters	Date/Time: 3/5/10 00:00	Canisters Received by:
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

TAL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

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Canister Samples Chain of Custody Record

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information	Project Manager: Adrianne Jones	Sampled By: A Perree P Murphy	2 of 6 COCs
Company: CH2MHILL	Phone: 757.671.6252		
Address: 5100 Cleveland St Suite 101	Site Contact: Vickie Brynildsen		
City/State/Zip VA Beach, VA 23462	TAL Contact: Jamie McKinney		
Phone: 757.671.8311			
FAX: 757.497.6885			
Project Name: Stella VI Phase II	Analysis Turnaround Time		
Site/location: Little Creek Stella	Standard (Specify) 28 Days		
PO #	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, 'Hg (Stop)	Flow Controller ID	Canister ID	TO-15*	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
LS11A-1A07-10A	3/3-3/4	3/3 2043	3/4 2123	-30	6390	K278	-6	1											
LS11A-1A08-10A	↓	3/3 2045	3/4 2109	-30	6359	K459	-8.5	1											
LS11A-1A08P-10A		3/3 2045	3/4 2109	-30	-7.0	K453	93272	1											
LS11A-1A09-10A		3/3 2051 ~~2009~~	3/4 2148	-30	-7.5	K173	11408	1											
LS11A-1A10-10A		3/3 2009	3/4 2045	-29.5	-6.0	K354	1131	1											
LS11A-1A10P-10A	↓	3/3 2009	3/4 2046	-30	-5.5	K355	1124	1											

Sampled by :	Temperature (Fahrenheit)		
	Interior	Ambient	
AP PM	Start ~65	~38	
	Stop ~65		

	Pressure (inches of Hg)		
	Interior	Ambient	
AP PM	Start 29.3	29.3	
	Stop		

Special Instructions/QC Requirements & Comments:
*TO15 VOC analysis of TCE, VC, 1,2-DCA, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE, chloroethane

Canisters Shipped by: Angie Peters	Date/Time: 3/5/10 00:00	Canisters Received by:
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

TAL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

OTO 224

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information	Project Manager: Adrienne Jones	Sampled By: A Petree P Murphy	3 of 4 COCs
Company: CH2MHILL	Phone: 757.671.6252		
Address: 5100 Cleveland St. Suite 101	Site Contact: Vickie Brynildsen		
City/State/Zip VA Beach, VA 23462	TAL Contact: Jamie McKinney		
Phone: 757.671.8311			
FAX: 757.497.6885			
Project Name: Site 11a VI Phase II	Analysis Turnaround Time		
Site/location: Little Creek Site 11a	Standard (Specify) 28 Days		
PO #	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15*	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
LS11A-1A11-10A	3/3-3/4	3/3 2017	3/4 1700	-28	-4.5	K303	6631	1											
LS11A-0A01-10A	↓	3/3 2045	3/4 2107	-29	-6.0	K251	1397	1											
LS11A-0A02-10A		3/3 2045	3/4 2111	-30	-6.5	K222	6137	1											
LS11A-0A03-10A		3/3 2051	3/4 2151	-32	-7.0	K463	1523	1											
LS11A-0A03P-10A		3/3 2051	3/4 2151	-32	-5.0	K113	1304N	1											
LS11A-0A04-10A		3/3 2026	3/4 2100	-30	-7.0	K442	62276	1											

Sampled by : AP PM

Temperature (Fahrenheit)	Interior	Ambient
Start	~65	~38
Stop	~65	

Pressure (inches of Hg)	Interior	Ambient
Start	29.3	29.3
Stop		

AP PM

Special Instructions/QC Requirements & Comments:

* TO-15 VOC analysis of TCE, VC, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE, 1,2-DCA, chloroethane

Canisters Shipped by: Angela Petree	Date/Time: 3/5/10 00:00	Canisters Received by:
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

TAL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

CTO 224

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information
Company: CH2MHILL
Address: 5700 Cleveland St. Suite 101
City/State/Zip VA Beach VA 23462
Phone: 757.671.8311
FAX: 757.497.6885
Project Name: Site 11a VI Phase II
Site/location: Little Creek Site 11a
PO #

Project Manager: Adrienne Jones
Phone: 757.671.6252
Site Contact: Vickie Brynildsen
TAL Contact: Jamie McKinney

Analysis Turnaround Time
Standard (Specify) 28 days
Rush (Specify)

Sampled By: APetrec PMurphy

4 of 6 COCs

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
LS11A-OA05-10A	3/2-3/4	3/3 2025	3/4 1830	-29	-4.5	K251	92009	1											
LS11A-SV01-10A	↓	3/3 2059	3/4 2212	-32	-4.0	K327	2957	1											
LS11A-SV02-10A	↓	3/3 2057	3/4 2205 ~~2210~~	-30	~~-4~~ -5	K366	1366	1											
LS11A-SV03-10A	↓	3/3 2055	3/4 2200	-32	-5.0	K118	93210	1											
LS11A-SV03P-10A	↓	3/3 2055	3/4 2200	-32	-5.5	K168	1142	1											
LS11A-SV04-10A	↓	3/3 2053	3/4 2142	-30	-5.5	K179	1340N	1											

Sampled by : AP PM

Temperature (Fahrenheit)	Interior	Ambient
Start	~65	~70
Stop	~65	

AP PM

Pressure (inches of Hg)	Interior	Ambient
Start	29.3	29.3
Stop		

Special Instructions/QC Requirements & Comments:
* TO-15 VOC analysis of TCE, VC, 1,2-DCA, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE, Chloroethane

Canisters Shipped by: Angela Petrec	Date/Time: 3/5/10 00:00	Canisters Received by:
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

TAL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information	Project Manager: Adrienne Jones	Sampled By: A Petrec P.Murphy	5 of 4 COCs
Company: CH2M HILL	Phone: 757.671.6252		
Address: 5700 Cleveland St Suite 101	Site Contact: Vickie Brynilosch		
City/State/Zip VA Beach, VA 23462	TAL Contact: Jamie McKinney		
Phone: 757.671.6311			
FAX: 757.497.6885			
Project Name: Site 11a VI Phase II	Analysis Turnaround Time		
Site/location: Little Creek Site 11a	Standard (Specify) 28 DAYS		
PO #	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, 'Hg (Stop)	Flow Controller ID	Canister ID	TO-15 *	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
LS11A-SV05-10A	3/3-3/4	3/3 2050	3/4 2136	-33	-6.5	K201	1006	1											
LS11A-SV06-10A		3/3 2048	3/4 2129	-29.5	-5.0	K143	1320N	1											
LS11A-SV07-10A		3/3 2043	3/4 2121	-33	-6.0	K331	1011	1											
LS11A-SV08-10A		3/3 2045	3/4 2111	-30	-7.0	K152	1500	1											
LS11A-SV09-10A		3/3 2051	3/4 2150	-30	-6.0	K379	1528	1											
LS11A-SV10-10A		3/3 2009	3/4 2047	-29	-4.5	K151	1363	1											

Sampled by :	Temperature (Fahrenheit)			
		Interior	Ambient	
AP PM	Start	~65	~38	
	Stop	~65		

	Pressure (inches of Hg)			
		Interior	Ambient	
AP PM	Start	29.3	29.3	
	Stop			

Special Instructions/QC Requirements & Comments:
*TO-15 VOC analysis of TCE, VC, 1,2-DCE, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE, chloroethane

Canisters Shipped by: Angela Petrec	Date/Time: 3/5/10 00:00	Canisters Received by:
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

CTO 224

Canister Samples Chain of Custody Record

TAL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information	Project Manager: Adrienne Jones	Sampled By: APetree P.Murphy	6 of 6 COCs
Company: CH2MHILL	Phone: 757.671.6252		
Address: 5700 Cleveland St. Suite101	Site Contact: Vickie Brynildsen		
City/State/Zip VA Beach, VA 23462	TAL Contact: Jamie McKinney		
Phone: 757.671.8311			
FAX: 757.497.6885			
Project Name: Site 11a VI Phase II	Analysis Turnaround Time		
Site/location: Little Creek Site 11a	Standard (Specify) 28 DAYS		
PO #	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15*	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
LS11A-SMOP-10A	3/3-3/4	3/3 2009	3/4 1210	-29.5	-4.5	K397	02356N	1	X										
LS11A-SV11-10A	3/3-3/4	3/3 2010	3/4 2042	-30	-6.5	K277	6627	1	X										

Sampled by :
A.Petree
P.Murphy

Temperature (Fahrenheit)	Interior	Ambient
Start	~45°F	~38°F
Stop	~45°F	

A.Petree
P.Murphy

Pressure (inches of Hg)	Interior	Ambient
Start	29.3	29.3
Stop		

Special Instructions/QC Requirements & Comments:
*TO-15 VOC analysis of TCE, VC, 1,2-DCA, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE, chloroethane

Canisters Shipped by: Angela Pettus	Date/Time: 3/5/10 00:00	Canisters Received by:
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Attachment E
Data Quality Evaluation

Data Quality Evaluation

1 Data Quality Assessment

This data quality evaluation assesses the effect of the overall analytical process on the "availability" of the analytical data. "Availability" in this context refers to whether results can be used by the project team based on the results' analytical soundness. If a result is analytically sound, it is available for the project team to use.

The three major categories of data evaluation are laboratory performance, field collection performance (i.e., field duplicates), and matrix interferences. Evaluation of laboratory performance is a check for the laboratory's compliance with the method requirements. An independent, third-party validator reviewed the laboratory data to assess whether the analytical methods were within required control limits at the time of analysis. Evaluation of potential matrix interferences involved the review of several areas of results, including surrogate spike recoveries and duplicate sample results. Evaluation of field collection performance, such as field duplicates, involves the review of field quality control (QC) and the determination of their effect on the sample results. Field blanks, equipment blanks, or trip blanks were not necessary for this project.

The data evaluation and validation is a multi-tiered approach. The process begins with an internal laboratory review, continues with an independent review by a third-party validator, and ends with an overall review by the Navy contractor project chemistry team. While only the data validator is allowed to apply qualifiers to the data, the process provides a medium for essential communication between the laboratory, validator, and project team and allows for data quality to be thoroughly evaluated.

1.1 Laboratory Internal Quality Control Review

Prior to releasing the analytical data, the laboratory reviewed both the sample and QC data to verify sample identity, instrument calibration, quantitation limits (QLs), dilution factors, numerical computations, accuracy of transcriptions, and chemical interpretations. The laboratory referred to its in-house standard operating procedures (SOPs) and the limits agreed to in CH2M HILL's 2009 "Site 11a Vapor Intrusion Investigation UFP-SAP" in order to define a laboratory QC exceedance. The SOPs were based on Department of Defense (DoD) requirements, the requested analytical method, and accumulated laboratory experience. If a laboratory QC exceedance occurred, the situation was reviewed by the appropriate personnel to determine whether it was acceptable or it required further action by the laboratory.

In addition, the QC data were tabulated and the results reviewed to determine whether they were within the contract-required limits for accuracy and precision. Any non-conforming data were discussed in the data package cover letter and case narrative.

1.2 Data Validation

An independent data validator reviewed all data packages using the validation criteria outlined in the UFP-SAP. Analytical methods and laboratory SOPs presented in the sampling and analysis plan (SAP) were used to evaluate compliance against quality assurance (QA)/QC criteria. If adherence to QA/QC criteria yielded deficiencies, data were considered for qualification. The data qualifiers were those presented in the U.S. Environmental Protection Agency's (USEPA) "Region III Modifications to National Functional Guidelines for Organic Data Review" (October 1994). These guidelines were not used for data validation; however, the specific qualifiers listed there may have been applied to data had nonconformances against the QA/QC criteria, as presented in the SAP, been identified.

The data validation process was focused specifically on the effects of the laboratory's performance and sample matrix on the analytical results. Areas of review consisted of holding-time compliance, surrogate recovery accuracy, method blank contamination, initial and continuing calibration accuracy and precision, laboratory control sample accuracy, internal standard response and retention time accuracy, instrument tune criteria accuracy, and duplicate sample precision (laboratory and field duplicates). Additionally, the analytical spectrum and raw data output were reviewed, and 10 percent of the laboratory results were recalculated from the raw data to verify final laboratory identification and quantitation.

When multiple analyses were performed, the analytical run with the lowest QLs was selected by the validator if the QC criteria were met for that analysis. If a sample was analyzed more than once as a result of concentrations exceeding the calibration range, the data validator selected results from the appropriate dilution. The data validator examined each data point and determined any effects that QC exceedances may have had.

1.3 Primary Data Validation Qualifiers

The following data validation qualifiers were applied to one or more analytical results:

- U—Not detected. Sample was analyzed for this parameter, but it was not detected at a concentration greater than the reported QL.
- J—Concentration estimated. The parameter was positively identified and the associated numerical value is the approximate concentration of the parameter in the sample.
- UJ—Not detected; QL may be inaccurate or imprecise.
- [No qualifier present]—Detected. Qualification was not warranted.

Data validation qualification codes are used to supplement the primary data validation qualifiers; they give a more detailed reason for the qualification of a particular result. Data validation qualification codes were applied to one or more analytical results, resulting in the combinations below. Table E-1 provides the validation qualification codes and a description of those codes that were applied to one or more analytical results.

2 Data Quality Evaluation

The purpose of this data quality evaluation is to summarize the findings of the data validation and any effects on the availability of the data for both phases of the vapor intrusion investigation at Site 11a as well as to provide an assessment of data usability. All samples were analyzed by USEPA method TO-15. The data packages were reviewed by an independent data validator using the analytical method and USEPA Region III's Modifications to the National Functional Guidelines.

The laboratory utilized qualifiers to represent "nondetect" and "detected." The data validator utilized U-qualifiers to represent "nondetect." U-qualified results are available for use as qualified. Detected results are represented by "clear" in the tables below.

The J-qualification of results has no adverse effect on the availability of that result to the project team for making decisions. J-qualified results are available, at the reported concentration, for use as detects as long as they are considered "estimated" by the project team. Human health risk assessment guidance suggests that these qualifiers "indicate uncertainty in the reported concentration of the chemical, but not in its assigned identity. Therefore, these data can be used just as positive data with no qualifiers or codes." In addition, one should use "J-qualified concentrations the same way as positive data that do not have this qualifier."[1] UJ-qualified results are available, at the reported quantitation limit, for use as nondetects as long as they are considered "nondetect, estimated QL," as appropriate.

2.1 Phase I Sampling

This evaluation assesses the analytical results of the samples collected on November 5, 2009.

2.1.1 Subslab Vapor Data

Sixty-four distinct data points were generated. Two results were J-qualified as "estimated" because the concentrations exceeded the linear range of the instrument. Seven results were J-qualified as "estimated" because the concentrations were between the method detection limit (MDL) and the QL. There were no rejected results. The volatile organic compounds (VOCs) data set is 100 percent complete (all results are available for use). The validation process resulted in the following qualifiers for results in the volatiles fraction:

DV Qualifier	DV Qualification Code	Data Point Count	Percent
U	CLEAR	32	50.00
CLEAR	CLEAR	23	35.94
J	BRL	7	10.94
J	LR	2	3.13
		64	100

[1] "Risk Assessment Guidance for Superfund: Volume I— Human Health Evaluation Manual." (Part A) *EPA/540/1-89/002*. Office of Emergency and Remedial Response, U.S. Environmental Protection Agency, Washington, D.C. 1989.

2.2 Phase II Sampling

This evaluation assesses the analytical results of the samples collected on March 4, 2010.

2.2.1 Subslab Vapor Data

One hundred and four distinct data points were generated. Four results were J-qualified as "estimated" because the relative percent difference between the parent sample and field duplicate was greater than the control limit of 35 percent, which was defined in the UFP-SAP. Fourteen results were J-qualified as "estimated" because the concentration of the analytes was between the MDL and the QL. Two results were J-qualified as "estimated" because the concentration of the analytes exceeded the linear range of the instrument. There were no rejected results. The VOCs data set is 100 percent complete (all results are available for use). The validation process resulted in the following qualifiers for results in the VOCs fraction:

DV Qualifier	DV Qualification Code	Data Point Count	Percent
U	CLEAR	57	54.81
CLEAR	CLEAR	27	25.96
J	BRL	14	13.46
J	FD	4	3.85
J	LR	2	1.92
		104	100

2.2.2 Indoor Air Data

One hundred and four distinct data points were generated. Nine results were J-qualified as "estimated" because the concentration of the analytes was between the MDL and the QL. Two results were J-qualified as "estimated" because the RPD between the parent sample and field duplicate was greater than the control limit of 35 percent, which was defined in the UFP-SAP. Two results were UJ-qualified as "nondetect, estimated QL" because two analytes were detected in the parent sample and not detected in the duplicate sample. There were no rejected results. The VOCs data set is 100 percent complete (all results are available for use). The validation process resulted in the following qualifiers for results in the volatiles fraction:

DV Qualifier	DV Qualification Code	Data Point Count	Percent
U	CLEAR	89	85.58
J	BRL	9	8.65
J	FD	2	1.92
CLEAR	CLEAR	2	1.92
UJ	FD	2	1.92
		104	100

2.2.3 Outdoor Air Data

Forty-eight distinct data points were generated. A total of seven results were J-qualified as "estimated" because the concentration of the analytes was between the MDL and the QL. There were no rejected results. The VOCs data set is 100 percent complete (all results are available for use). The validation process resulted in the following qualifiers for results in the volatiles fraction:

DV Qualifier	DV Qualification Code	Data Point Count	Percent
U	CLEAR	41	85.42
J	BRL	7	14.58
		48	100.0

3 Overall Assessment

All data collected during Phase I and Phase II of the Site 11a vapor intrusion investigation are found to be of exceptional quality. No data were rejected due to QA/QC deficiencies, and 100 percent of the data is available for use by the project team.

TABLE E-1

Data Qualification and Availability Summary Table

DV Qualifier	DV Qualification Code	Meaning of Code	Analyte Count	Percent	Available as Reported	Available as Qualified	Not Available	Impact on PARCC
CLEAR	CLEAR	Detected	52	16.25%	X			
J	BRL	Detected; Below Reporting Limit	37	11.56%	X			
J	FD	Detected, but Estimated; Poor Field Duplicate Reproducibility	6	1.88%		X		
J	LR	Detected, but Estimated; Concentration Exceeds Linear Range	4	1.250%		X		
U	CLEAR	Not detected	219	68.44%	X			
UJ	FD	Not detected, QL may be inaccurate or imprecise; Poor Field Duplicate Reproducibility	2	0.63%		X		
		TOTAL:	**320**	**100.00%**	**96.25%**	**3.75%**	**0.00%**	
					100% available for use, qualified as applicable (completeness goal of 95% available data met)		**Unavailable for use**	

"CLEAR" qualifiers indicate a detected result.

Attachment F
Data Validation Summary Reports

DataQual
Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

January 5, 2010
SDG# H9K140402, Test America, Knoxville
NAB Little Creek- Site 11a

Dear Ms. Brynildsen,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # H9K140402. The data validation was performed in accordance with method TO-15 for volatiles. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3 review), as applicable. All areas of concern are discussed in the body of the report and a summary of data qualifications is provided.

Sample ID	Lab ID	Matrix	VOA
LS11A-SV03-09D	H9K140402-001	air	X
LS11A-SV03P-09D	H9K140402-002	air	X
LS11A-SV04-09D	H9K140402-003	air	X
LS11A-SV05-09D	H9K140402-004	air	X

The following quality control samples were provided with this SDG: sample LS11A-SV03P-09D -field duplicate of sample LS11A-SV03-09D.

The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times *
- Instrument Performance *
- Initial/Continuing Calibrations *
- Blanks *
- Internal Standards *
- Surrogates *
- Laboratory Control Samples *
- Matrix Spike Recoveries NA
- Matrix Duplicate RPDs NA
- Field Duplicates *
- Identification/Quantitation *

- Reporting Limits *

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page.

Major Problems

No issues requiring rejection of the analytical data were found in the validation of this SDG.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

No qualifications were required to be added to the data.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 11/5/09 and samples were received at the laboratory 11/10/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q-Flag	Q Code
No qualifications				

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%SOL	High moisture content

Southern University and A&M College

Client Sample ID: LS11A-SV03-09D

GC/MS Volatiles

Lot-Sample #	H9K140402 - 001	Work Order #	LPGR41AA	Matrix.....:	AIR

Date Sampled...:	11/05/2009	Date Received..:	11/10/2009
Prep Date.....:	11/12/2009	Analysis Date...	11/12/2009
Prep Batch #.....:	9320176		
Dilution Factor.:	2.5	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Trichloroethene	50	0.10	270	0.54
Vinyl chloride	ND	0.20	ND	0.51
Chloroethane	ND	0.20	ND	0.53
1,2-Dichloroethane	ND	0.20	ND	0.81
1,1-Dichloroethene	ND	0.20	ND	0.79
cis-1,2-Dichloroethene	1.6	0.20	6.5	0.79
trans-1,2-Dichloroethene	0.86	0.20	3.4	0.79

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	104	60 - 140

MK 010510

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Southern University and A&M College

Client Sample ID: LS11A-SV03P-09D

GC/MS Volatiles

Lot-Sample #	H9K140402 - 002	Work Order #	LPGR51AA	Matrix.....:	AIR

Date Sampled...:	11/05/2009	Date Received..:	11/10/2009
Prep Date.....:	11/16/2009	Analysis Date...	11/17/2009
Prep Batch #.....:	9321054		
Dilution Factor.:	5	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Trichloroethene	32	0.20	170	1.1
Vinyl chloride	ND	0.40	ND	1.0
Chloroethane	ND	0.40	ND	1.1
1,2-Dichloroethane	ND	0.40	ND	1.6
1,1-Dichloroethene	ND	0.40	ND	1.6
cis-1,2-Dichloroethene	1.3	0.40	5.2	1.6
trans-1,2-Dichloroethene	0.64	0.40	2.6	1.6

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	116	60 - 140

WM 010510

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Southern University and A&M College

Client Sample ID: LS11A-SV04-09D

GC/MS Volatiles

Lot-Sample #	H9K140402 - 003	Work Order #	LPGR61AA	Matrix.....:	AIR

Date Sampled...:	11/05/2009	Date Received..:	11/10/2009
Prep Date.....:	11/12/2009	Analysis Date...	11/12/2009
Prep Batch #.....:	9320176		
Dilution Factor.:	2.5	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Trichloroethene	25	0.10	130	0.54
Vinyl chloride	ND	0.20	ND	0.51
Chloroethane	ND	0.20	ND	0.53
1,2-Dichloroethane	ND	0.20	ND	0.81
1,1-Dichloroethene	ND	0.20	ND	0.79
cis-1,2-Dichloroethene	0.22	0.20	0.89	0.79
trans-1,2-Dichloroethene	0.27	0.20	1.1	0.79

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	109	60 - 140

WM
010510

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Southern University and A&M College

Client Sample ID: LS11A-SV05-09D

GC/MS Volatiles

Lot-Sample #	H9K140402 - 004	Work Order #	LPGR71AA	Matrix.....:	AIR

Date Sampled...:	11/05/2009	Date Received..:	11/10/2009
Prep Date.....:	11/12/2009	Analysis Date...	11/12/2009
Prep Batch #.....:	9320176		
Dilution Factor.:	2.5	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
Trichloroethene	15	0.10	79		0.54
Vinyl chloride	ND	0.20	ND		0.51
Chloroethane	ND	0.20	ND		0.53
1,2-Dichloroethane	ND	0.20	ND		0.81
1,1-Dichloroethene	ND	0.20	ND		0.79
cis-1,2-Dichloroethene	0.073	0.20	0.29	J	0.79
trans-1,2-Dichloroethene	ND	0.20	ND		0.79

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	110	60 - 140

WM 010510

Qualifiers

J Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

TO-14_rev5.rpt version 5.0.163 10/12/200

Data Completeness

The data package was received intact and complete. Resubmissions were not required. (Method TO-15 with Region III modifications)

Holding Times

Sampling Date: 11/5/06
Received Date: 11/10/09
Analysis Dates: 11/12-17/06

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB. No qualifications were required for the initial and continuing calibrations.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) the blank value.

There was no contamination for the method blanks associated with these samples. There was no field QC associated with this data package.

Laboratory Control Sample

All criteria were met.

Matrix Spike/Spike Duplicate Samples

No MS/MSD was submitted for this data package.

Field Duplicate Sample Summary

A field duplicate was submitted for sample LS11A-SV03-09D-no qualifications required, see attached sheet.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

We have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications were required.

Reviewer Laura Masumoto **Date:** 1/6/10

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: LS11A-SV03-09D
Duplicate Sample ID: LS11A-SV03P-09D

Water: RPD>75%
Soil: RPD>100%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
trichloroethene	50	32	44
cis-1,2-DCE	1.6	1.3	21
trans-1,2-DCE	0.86	0.64	29
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!

COMMENTS: No qualifications

* result below the CRQL

Initial Calibration Date: 10/13/2009

RRF and %RSD Calculations:

Compound Name: trichloroethene
Lab Value: 0.254

Area of Compound	3643056
Area of Internal STD	2294767
Conc. of Internal STD	4
Conc. of Compound	25
Calculated RRF	0.254

Compound Name: 1,2-dichloroethane
Lab Value: 12.48

RRF of STD 1	0.3006
RRF of STD 2	0.3039
RRF of STD 3	0.2699
RRF of STD 4	0.2602
RRF of STD 5	0.2354
RRF of STD 6	0.2147
RRF of STD 7	0.3095
RRF of STD 8	0.2771
Calculated % RSD	12.48

Continuing Calibration File ID: 11/12/2009

RRF and %D Calculations:

Compound Name: vinyl chloride
Lab Value: 1.259

Area of Compound	91729
Area of Internal STD	291452
Conc. of Internal STD	4
Conc. of Compound	1
Calculated RRF	1.259

Compound Name: chloroethane
Lab Value: 7.8

Average RRF	0.606
Calibration Check RRF	0.559
Calculated % D	7.8

SAMPLE CALCULATION

Sample ID: LS11A-SV03-09D
Standard ID: 11/12/2009
Compound: trichloroethene
Concnetration: 50 ppb

	Air (ppb)		
Area of Compound	2315306		
Area of Internal STD	1450772		
Conc. of Internal (ng)	4		
Avg. RRF of Compd	0.31963		
Calibration Volume	500		
Weight of Sample	NA		
Volume of Sample	500		
Dilution factor	2.5		
Aliquot of methol	NA		
Concentration	49.93		

	RT of Internal STD	RT of Compound	RRT
Sample	11.679	12.375	1.06
Standard	11.669	12.37	1.06

PROJECT NARRATIVE
H9K140402

The results reported herein are applicable to the samples submitted for analysis only.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

The samples were received in two shipments. One on 11/09/09 and the other on 11/10/09.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

TestAmerica Knoxville maintains the following certifications, approvals and accreditations: Arkansas DEQ Lab #88-0688, California DHS ELAP Cert. #2423, Colorado DPHE, Connecticut DPH Lab #PH-0223, Florida DOH Lab #E87177, Georgia DNR Lab #906, Hawaii DOH, Illinois EPA Lab #200012, Indiana DOH Lab #C-TN-02, Iowa DNR Lab #375, Kansas DHE Cert. #E-10349, Kentucky DEP Lab #90101, Louisiana DEQ Cert. #03079, Louisiana DOHH, Maryland DOE Cert. #277, Michigan DEQ Lab #9933, Nevada DEP, New Jersey DEP Lab #TN001, New York DOH Lab #10781, North Carolina DPH Lab #21705, North Carolina DEHNR Cert. #64, Ohio EPA VAP Lab #CL0059, Oklahoma DEQ Lab #9415, Pennsylvania DEP Lab #68-00576, South Carolina DHEC Cert #84001001, Tennessee DOH Lab #02014, Texas CEQ, Utah DOH Lab # QUAN3, Virginia DGS Lab #00165, Washington DOE Lab #C1314, West Virginia DEP Cert. #345, West Virginia DHHR Cert #9955C, Wisconsin DNR Lab #998044300, Naval Facilities Engineering Service Center and USDA Soil Permit #S-46424. This list of approvals is subject to change and does not imply that laboratory certification is available for all parameters reported in this environmental sample data report.

CTO 224 149K140402 ~~149K100535~~ 11-14-09

TAL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information
Company: CH2MHILL
Address: 5700 Cleveland St Suite 101
City/State/Zip Virginia Beach, VA 23462
Phone: 757.671.6252
FAX: 757.497.6885
Project Name: CTO224 LC SITE 11A VI
Site/location: SITE 11A JRB LC-FS
PO# DN. 376781.AR.F1

Project Manager: Adrienne Jones
Phone: 757-671-6252
Site Contact: Vicki Brynilosen
TAL Contact: Jamie McKinney

Sampled By: Angela Petree, Patrick Murphy

1 of 2 COCs

Analysis Turnaround Time
Standard (Specify) per contract
Rush (Specify)

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
LS11A-SV01-09D	11/4-11/5	1125		-30		1310N	K223	X											
LS11A-SV02-09D	11/4-11/5	1129		-30		K212	6606	X											
LS11A-SV03-09D	↓	1131		-32		K292	04339	X											
LS11A-SV03P-09D	↓	1131		-32		K334	~~04339~~ 8370	X											
LS11A-SV04-09D	↓	1133		-30		K168	6347	X											
LS11A-SV05-09D	↓	1135		-30		K270	6123	X											

Sampled by:
A. Petree
P. Murphy

Temperature (Fahrenheit)	Interior	Ambient
Start	72°F	62°F
Stop	72°F	65°F

Pressure (inches of Hg)	Interior	Ambient
Start		
Stop		

Measured by onsite weather station
2 BOXES REC'D AMBIENT
FEDEX #'S 8705 3402 0274
8709 5376 7304
CUSTODY SEALS INTACT
6 ~~No~~ CANS, ~~No~~ FLOWS ok

Special Instructions/QC Requirements & Comments:
Select VOCs by TO-15: TCE, VC, 1,2-DCA, trans-1,2-DCE, cis,1-2-DCE, 1,1-DCE, and chloroethane TS 11/10/09 TS 11/10/09
canisters not used: 3270 and 8396. Reg. not used: K158 and K396

Canisters Shipped by: Angela Petree	Date/Time: 11/5/09 1540	Canisters Received by: [signature] 11/10/09 10:00 AM	
Samples Relinquished by: Angela	Date/Time:	Received by:	
Relinquished by:	Date/Time:	Received by:	

CTO 224 ~~H9K100555~~ H9K190402

AL Knoxville
315 Middlebrook Pike
Knoxville, TN 37921
Phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information
Company: CH2MHILL
Address: 5700 Cleveland St Suite101
City/State/Zip VA Beach VA 23462
Phone: 757.671.6252
Fax: 757.497.6885
Project Name: CTO 224 LC Site 11A
Site/Location: Site 11A JEB LC-FS
PN: 376781.AR.F1

Project Manager: Adrienne Jones
Phone: 757.671-6252
Site Contact: Vickie Brynildsen
TAL Contact: Jamie McKinney

Sampled By: Angela Petree, Patrick Murphy

2 of 2 COCs

Analysis Turnaround Time
Standard (Specify) PCR contract
Rush (Specify)

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15 *	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type:	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
LS11A-SV06-09D	11/4-11/5	1137		-30		K177	6679	x											
LS11A-SV07-09D	11/4-11/5	1138		-30		K316	6351	x											

Sampled by:
A Petree
P Murphy

Temperature (Fahrenheit)

	Interior	Ambient
Start	72°F	62°F
Stop	72°F	65°F

Measured by onsite weather station

Pressure (inches of Hg)

	Interior	Ambient
Start		
Stop		

Special Instructions/QC Requirements & Comments:
Canisters not used: 3270 and 8396. Reg. not used: K158 and K396
* Select VOCs by TO-15: TCE, VC, 1,2-DCA, Trans-1,2-DCE, cis-1,2-DCE, 1,1-DCE, and chloroethane

Canisters Shipped by: Angela Petree	Date/Time: 11/5/09 1540	Canisters Received by: Alex Smith 11/10/09 10:00AM
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

DataQual
Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

January 5, 2010
SDG# H9K140403, Test America, Knoxville
NAB Little Creek- Site 11a

Dear Ms. Brynildsen,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # H9K140403. The data validation was performed in accordance with method TO-15 for volatiles. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3 review), as applicable. All areas of concern are discussed in the body of the report and a summary of data qualifications is provided.

Sample ID	Lab ID	Matrix	VOA
LS11A-SV01-09D	H9K140403-001	air	X
LS11A-SV02-09D	H9K140403-002	air	X
LS11A-SV06-09D	H9K140403-003	air	X
LS11A-SV07-09D	H9K140403-004	air	X

The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times *
- Instrument Performance *
- Initial/Continuing Calibrations *
- Blanks *
- Internal Standards *
- Surrogates *
- Laboratory Control Samples *
- Matrix Spike Recoveries NA
- Matrix Duplicate RPDs NA
- Field Duplicates *
- Identification/Quantitation *
- Reporting Limits *

*- indicates that no qualifications were required based on this criteria

5830 Amberway Drive • St. Louis, MO 63128 • 314-330-1327 • Fax 314-849-6264

Overall Evaluation of Data/Potential Usability Issues

Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page.

Major Problems

No issues requiring rejection of the analytical data were found in the validation of this SDG.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

No qualifications were required to be added to the data.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 11/5/09 and samples were received at the laboratory 11/9/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q-Flag	Q Code
No qualifications				

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%SOL	High moisture content

Southern University and A&M College

Client Sample ID: LS11A-SV01-09D

GC/MS Volatiles

Lot-Sample #	H9K140403 - 001	Work Order #	LPGTA1AA	Matrix.....:	AIR

Date Sampled...:	11/05/2009	Date Received..:	11/09/2009
Prep Date.....:	11/12/2009	Analysis Date...	11/12/2009
Prep Batch #.....:	9320176		
Dilution Factor.:	2.5	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
Trichloroethene	44	0.10	240		0.54
Vinyl chloride	ND	0.20	ND		0.51
Chloroethane	0.16	0.20	0.43	J	0.53
1,2-Dichloroethane	ND	0.20	ND		0.81
1,1-Dichloroethene	ND	0.20	ND		0.79
cis-1,2-Dichloroethene	0.20	0.20	0.80		0.79
trans-1,2-Dichloroethene	0.096	0.20	0.38	J	0.79

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	108	60 - 140

010510

Qualifiers

J Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Southern University and A&M College

Client Sample ID: LS11A-SV02-09D

GC/MS Volatiles

Lot-Sample #	H9K140403 - 002	Work Order #	LPGTC1AA	Matrix.....:	AIR

Date Sampled...:	11/05/2009	Date Received..:	11/09/2009
Prep Date.....:	11/12/2009	Analysis Date...	11/12/2009
Prep Batch #.....:	9320176		
Dilution Factor.:	2.5	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
Trichloroethene	29	0.10	160		0.54
Vinyl chloride	ND	0.20	ND		0.51
Chloroethane	0.14	0.20	0.38	J	0.53
1,2-Dichloroethane	ND	0.20	ND		0.81
1,1-Dichloroethene	ND	0.20	ND		0.79
cis-1,2-Dichloroethene	0.68	0.20	2.7		0.79
trans-1,2-Dichloroethene	0.38	0.20	1.5		0.79

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	109	60 - 140

WM 010510

Qualifiers

J Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Southern University and A&M College

Client Sample ID: LS11A-SV06-09D

GC/MS Volatiles

Lot-Sample #	H9K140403 - 003	Work Order #	LPGTD1AA	Matrix.....:	AIR

Date Sampled...:	11/05/2009	Date Received..:	11/09/2009
Prep Date.....:	11/16/2009	Analysis Date...	11/16/2009
Prep Batch #.....:	9321054		
Dilution Factor.:	1	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
Trichloroethene	5.8	0.040	31		0.21
Vinyl chloride	ND	0.080	ND		0.20
Chloroethane	ND	0.080	ND		0.21
1,2-Dichloroethane	ND	0.080	ND		0.32
1,1-Dichloroethene	ND	0.080	ND		0.32
cis-1,2-Dichloroethene	0.049	0.080	0.19	J	0.32
trans-1,2-Dichloroethene	0.026	0.080	0.10	J	0.32

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	112	60 - 140

MM 11/05/10

Qualifiers

J Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Southern University and A&M College

Client Sample ID: LS11A-SV07-09D

GC/MS Volatiles

Lot-Sample #	H9K140403 - 004	Work Order #	LPGTE1AA	Matrix.....:	AIR

Date Sampled...:	11/05/2009	Date Received..:	11/09/2009
Prep Date.....:	11/16/2009	Analysis Date...	11/17/2009
Prep Batch #.....:	9321054		
Dilution Factor.:	1	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
Trichloroethene	6.0	0.040	32		0.21
Vinyl chloride	ND	0.080	ND		0.20
Chloroethane	ND	0.080	ND		0.21
1,2-Dichloroethane	ND	0.080	ND		0.32
1,1-Dichloroethene	ND	0.080	ND		0.32
cis-1,2-Dichloroethene	0.032	0.080	0.13	J	0.32
trans-1,2-Dichloroethene	ND	0.080	ND		0.32

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	107	60 - 140

WM 010510

Qualifiers

J Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Data Completeness

The data package was received intact and complete. Resubmissions were not required. (Method TO-15 with Region III modifications)

Holding Times

Sampling Date: 11/5/06
Received Date: 11/9/09
Analysis Dates: 11/12-17/06

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB. No qualifications were required for the initial and continuing calibrations.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) the blank value.

There was no contamination for the method blanks associated with these samples. There was no field QC associated with this data package.

Laboratory Control Sample

All criteria were met.

Matrix Spike/Spike Duplicate Samples

No MS/MSD was submitted for this data package.

Field Duplicate Sample Summary

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

We have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications were required.

Reviewer Laura Mascetta **Date:** 1/5/10

SAMPLE CALCULATION

Sample ID: LS11A-SV01-09D
Standard ID: 11/12/2009
Compound: trichloroethene
Concnetration: 44 ppb

	Air (ppb)		
Area of Compound	2097938		
Area of Internal STD	1490156		
Conc. of Internal (ng)	4		
Avg. RRF of Compd	0.31963		
Calibration Volume	500		
Weight of Sample	NA		
Volume of Sample	500		
Dilution factor	2.5		
Aliquot of methol	NA		
Concentration	44.05		

	RT of Internal STD	RT of Compound	RRT
Sample	11.669	12.37	1.06
Standard	11.669	12.37	1.06

Initial Calibration Date: 10/13/2009
RRF and %RSD Calculations:

Compound Name: trichloroethene
Lab Value: 0.254

Area of Compound	3643056
Area of Internal STD	2294767
Conc. of Internal STD	4
Conc. of Compound	25
Calculated RRF	0.254

Compound Name: 1,2-dichloroethane
Lab Value: 12.48

RRF of STD 1	0.3006
RRF of STD 2	0.3039
RRF of STD 3	0.2699
RRF of STD 4	0.2602
RRF of STD 5	0.2354
RRF of STD 6	0.2147
RRF of STD 7	0.3095
RRF of STD 8	0.2771
Calculated % RSD	12.48

Continuing Calibration File ID: 11/12/2009
RRF and %D Calculations:

Compound Name: vinyl chloride
Lab Value: 1.259

Area of Compound	91729
Area of Internal STD	291452
Conc. of Internal STD	4
Conc. of Compound	1
Calculated RRF	1.259

Compound Name: chloroethane
Lab Value: 7.8

Average RRF	0.606
Calibration Check RRF	0.559
Calculated % D	

PROJECT NARRATIVE
H9K140403

The results reported herein are applicable to the samples submitted for analysis only.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

Samples LS11A-SV03-09D, LS11A-SV04-09D, LS11A-SV05-09D and LS11A-SV03P-09D were not received, but was listed on the chain of custody documentation.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

TestAmerica Knoxville maintains the following certifications, approvals and accreditations: Arkansas DEQ Lab #88-0688, California DHS ELAP Cert. #2423, Colorado DPHE, Connecticut DPH Lab #PH-0223, Florida DOH Lab #E87177, Georgia DNR Lab #906, Hawaii DOH, Illinois EPA Lab #200012, Indiana DOH Lab #C-TN-02, Iowa DNR Lab #375, Kansas DHE Cert. #E-10349, Kentucky DEP Lab #90101, Louisiana DEQ Cert. #03079, Louisiana DOHH, Maryland DOE Cert. #277, Michigan DEQ Lab #9933, Nevada DEP, New Jersey DEP Lab #TN001, New York DOH Lab #10781, North Carolina DPH Lab #21705, North Carolina DEHNR Cert. #64, Ohio EPA VAP Lab #CL0059, Oklahoma DEQ Lab #9415, Pennsylvania DEP Lab #68-00576, South Carolina DHEC Cert #84001001, Tennessee DOH Lab #02014, Texas CEQ, Utah DOH Lab # QUAN3, Virginia DGS Lab #00165, Washington DOE Lab #C1314, West Virginia DEP Cert. #345, West Virginia DHHR Cert #9955C, Wisconsin DNR Lab #998044300, Naval Facilities Engineering Service Center and USDA Soil Permit #S-46424. This list of approvals is subject to change and does not imply that laboratory certification is available for all parameters reported in this environmental sample data report.

CTO 224 H9K140403 ~~H9K100402~~ JKD 11-14-09

TAL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information
Company: CH2MHILL
Address: 5700 Cleveland ST SUITE 101
City/State/Zip: Virginia Beach, VA 23462
Phone: 757.671.6252
FAX: 757.497.6885
Project Name: CTO224 LC SITE 11A VI
Site/location: SITE 11A JEB LC-FS
~~PO#~~ DN: 376781.AR.F1

Project Manager: Adrienne Jones
Phone: 757-671-6252
Site Contact: Vickie Brynilosen
TAL Contact: Jamie McKinney

Analysis Turnaround Time
Standard (Specify) per contract
Rush (Specify)

Sampled By: Angela Petree, Patrick Murphy

1 of 2 COCs

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15*	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
LS11A-SV01-09D	11/4-11/5	1125		-30		1310N	K223	X											
LS11A-SV02-09D	11/4-11/5	1129		-30		K212	6406	X											
LS11A-SV03-09D		1131		-32		K292	04339	X											
LS11A-SV03P-09D		1131		-32		K334	~~04339~~ 3270	X											
LS11A-SV04-09D		1133		-30		K168	6347	X											
LS11A-SV05-09D		1135		-30		K270	6123	X											

Sampled by:
A. Petree
P. Murphy

Temperature (Fahrenheit)

	Interior	Ambient
Start	72°F	62°F
Stop	72°F	65°F

Measured by onsite weather station

Pressure (inches of Hg)

	Interior	Ambient
Start		
Stop		

1 BOX RECD AMBIENT
4 CANS, 3 FLOWS
FED EX # 8705 3402 0213
CUSTODY SEAL INTACT

Special Instructions/QC Requirements & Comments:
Select VOCs by TO-15: TCE, VC, 1,2-DCA, trans-1,2-DCE, cis,1-2-DCE, 1,1-DCE, and chloroethane
canisters not used: 3270 and 8396. Reg. not used: K158 and K396

TS 11/9/09

Canisters Shipped by: Angela Petree	Date/Time: 11/5/09 1540	Canisters Received by: [signature]	11/9/09 11:15 AM
Samples Relinquished by: Angela	Date/Time:	Received by:	
Relinquished by:	Date/Time:	Received by:	

AL Knoxville
315 Middlebrook Pike
noxville, TN 37921
none 865-291-3000 fax 865-584-4315

CTO 224 H9K140403 ~~H9K100402~~ 11-1409

Canister Samples Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

lient Contact Information
ompany: CH2MHILL
ddress: 5700 CLEVELAND ST SUITE101
ity/State/Zip VA BEACH VA 23462
hone: 757.671.6252
AX: 757.497.6885
roject Name: CTO 224 LC SITE 11A
ite/location: SITE 11A JEB LC-FS
~~O#~~ PN: 376781.AR.F1

Project Manager: Adrienne Jones
Phone: 757.671-6252
Site Contact: Vickie Brynildsen
TAL Contact: Jamie McKinney

Sampled By: Angela Petree / Patrick Murphy

2 of 2 COCs

Analysis Turnaround Time
Standard (Specify) DCR CONTRACT
Rush (Specify)

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15 *	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
LS11A-SV06-09D	11/4-11/5	1137		-30		K177	6679	x											
LS11A-SV07-09D	11/4-11/5	1138		-30		K316	6351	x											

ampled by:
A Petree
P. Murphy

Temperature (Fahrenheit)

	Interior	Ambient
Start	72°F	62°F
Stop	72°F	65°F

Measured by onsite weather station

Pressure (inches of Hg)

	Interior	Ambient
Start		
Stop		

pecial Instructions/QC Requirements & Comments:
CANISTERS NOT USED: 3270 and 8396. Reg. NOT USED: K158 and K396
* Select VOCs by TO-15: TCE, VC, 1,2-DCA, Trans-1,2-DCE, cis-1,2-DCE, 1,1-DCE, and chloroethane

anisters Shipped by: Angela Petree	Date/Time: 11/5/09 1540	Canisters Received by: [signature] 11/9/09	11:15AM
amples Relinquished by:	Date/Time:	Received by:	
Relinquished by:	Date/Time:	Received by:	

DataQual
Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

May 25, 2010
SDG# H9K140402, Test America, Knoxville
NAB Little Creek- Site 11a

Dear Ms. Brynildsen,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # H9K140402. The data validation was performed in accordance with method TO-15 for volatiles. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3 review), as applicable. All areas of concern are discussed in the body of the report and a summary of data qualifications is provided.

Sample ID	Lab ID	Matrix	VOA
LS11A-SV03-09D	H9K140402-001	air	X
LS11A-SV03P-09D	H9K140402-002	air	X
LS11A-SV04-09D	H9K140402-003	air	X
LS11A-SV05-09D	H9K140402-004	air	X

The following quality control samples were provided with this SDG: sample LS11A-SV03P-09D -field duplicate of sample LS11A-SV03-09D.

The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times *
- Instrument Performance *
- Initial/Continuing Calibrations *
- Blanks *
- Internal Standards *
- Surrogates *
- Laboratory Control Samples *
- Matrix Spike Recoveries NA
- Matrix Duplicate RPDs NA
- Field Duplicates *
- Identification/Quantitation *

5830 Amberway Drive • St. Louis, MO 63128 • 314-330-1327 • Fax 314-849-6264

Southern University and A&M College

Client Sample ID: LS11A-SV03-09D

GC/MS Volatiles

Lot-Sample #	H9K140402 - 001	Work Order #	LPGR41AA	Matrix.....:	AIR

Date Sampled...:	11/05/2009	Date Received..:	11/10/2009
Prep Date.....:	11/12/2009	Analysis Date...	11/12/2009
Prep Batch #.....:	9320176		
Dilution Factor.:	2.5	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Trichloroethene	50	0.10	270	0.54
Vinyl chloride	ND	0.20	ND	0.51
Chloroethane	ND	0.20	ND	0.53
1,2-Dichloroethane	ND	0.20	ND	0.81
1,1-Dichloroethene	ND	0.20	ND	0.79
cis-1,2-Dichloroethene	1.7	0.20	6.7	0.79
trans-1,2-Dichloroethene	0.86	0.20	3.4	0.79
Tetrachloroethene	36	0.20	250	1.4

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	104	60 - 140

MM 052510

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Southern University and A&M College

Client Sample ID: LS11A-SV03P-09D

GC/MS Volatiles

Lot-Sample #	H9K140402 - 002	Work Order #	LPGR51AA	Matrix.....	AIR

Date Sampled...:	11/05/2009	Date Received..:	11/10/2009
Prep Date.....:	11/16/2009	Analysis Date...	11/17/2009
Prep Batch #.....:	9321054		
Dilution Factor.:	5	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Trichloroethene	32	0.20	170	1.1
Vinyl chloride	ND	0.40	ND	1.0
Chloroethane	ND	0.40	ND	1.1
1,2-Dichloroethane	ND	0.40	ND	1.6
1,1-Dichloroethene	ND	0.40	ND	1.6
cis-1,2-Dichloroethene	1.3	0.40	5.2	1.6
trans-1,2-Dichloroethene	0.64	0.40	2.6	1.6
Tetrachloroethene	20	0.40	140	2.7

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	116	60 - 140

VM 052510

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Southern University and A&M College

Client Sample ID: LS11A-SV04-09D

GC/MS Volatiles

Lot-Sample #	H9K140402 - 003	Work Order #	LPGR61AA	Matrix.....:	AIR

Date Sampled...:	11/05/2009	Date Received..:	11/10/2009
Prep Date.....:	11/12/2009	Analysis Date...	11/12/2009
Prep Batch #.....:	9320176		
Dilution Factor.:	2.5	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Trichloroethene	25	0.10	130	0.54
Vinyl chloride	ND	0.20	ND	0.51
Chloroethane	ND	0.20	ND	0.53
1,2-Dichloroethane	ND	0.20	ND	0.81
1,1-Dichloroethene	ND	0.20	ND	0.79
cis-1,2-Dichloroethene	0.22	0.20	0.89	0.79
trans-1,2-Dichloroethene	0.27	0.20	1.1	0.79
Tetrachloroethene	18	0.20	120	1.4

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	108	60 - 140

WM 052510

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Southern University and A&M College

Client Sample ID: LS11A-SV05-09D

GC/MS Volatiles

Lot-Sample #	H9K140402 - 004	Work Order #	LPGR71AA	Matrix.....:	AIR

Date Sampled...:	11/05/2009	Date Received..:	11/10/2009
Prep Date.....:	11/12/2009	Analysis Date...	11/12/2009
Prep Batch #.....:	9320176		
Dilution Factor.:	2.5	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
Trichloroethene	15	0.10	79		0.54
Vinyl chloride	ND	0.20	ND		0.51
Chloroethane	ND	0.20	ND		0.53
1,2-Dichloroethane	ND	0.20	ND		0.81
1,1-Dichloroethene	ND	0.20	ND		0.79
cis-1,2-Dichloroethene	0.073	0.20	0.29	J	0.79
trans-1,2-Dichloroethene	ND	0.20	ND		0.79
Tetrachloroethene	0.36	0.20	2.5		1.4

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	111	60 - 140

WM 052510

Qualifiers

J Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

D10

DataQual
Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

May 25, 2010
SDG# H9K140403, Test America, Knoxville
NAB Little Creek- Site 11a

Dear Ms. Brynildsen,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # H9K140403. The data validation was performed in accordance with method TO-15 for volatiles. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3 review), as applicable. All areas of concern are discussed in the body of the report and a summary of data qualifications is provided.

Sample ID	Lab ID	Matrix	VOA
LS11A-SV01-09D	H9K140403-001	air	X
LS11A-SV02-09D	H9K140403-002	air	X
LS11A-SV06-09D	H9K140403-003	air	X
LS11A-SV07-09D	H9K140403-004	air	X

The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times *
- Instrument Performance *
- Initial/Continuing Calibrations *
- Blanks *
- Internal Standards *
- Surrogates *
- Laboratory Control Samples *
- Matrix Spike Recoveries NA
- Matrix Duplicate RPDs NA
- Field Duplicates *
- Identification/Quantitation
- Reporting Limits *

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page.

Major Problems

No issues requiring rejection of the analytical data were found in the validation of this SDG.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

Two samples exhibited results above the calibration range; therefore the E-flagged results were qualified as estimated.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 11/5/09 and samples were received at the laboratory 11/9/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Identification/Quantitation

VOA

Samples LS11A-SV01-09D and LS11A-SV02-09D exhibited results above the calibration range for tetrachloroethene; therefore the E-flagged results were qualified as estimated (J), qualifier code: LR.

Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q-Flag	Q Code
LS11A-SV01-09D, LS11A-SV02-09D	tetrachloroethene	+	J	LR

Southern University and A&M College

Client Sample ID: LS11A-SV01-09D

GC/MS Volatiles

Lot-Sample #	H9K140403 - 001	Work Order #	LPGTA1AA	Matrix.....:	AIR

Date Sampled...:	11/05/2009	Date Received..:	11/09/2009
Prep Date.....:	11/12/2009	Analysis Date...	11/12/2009
Prep Batch #.....:	9320176		
Dilution Factor.:	2.5	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
Trichloroethene	44	0.10	240		0.54
Vinyl chloride	ND	0.20	ND		0.51
Chloroethane	0.16	0.20	0.43	J	0.53
1,2-Dichloroethane	ND	0.20	ND		0.81
1,1-Dichloroethene	ND	0.20	ND		0.79
cis-1,2-Dichloroethene	0.20	0.20	0.80		0.79
trans-1,2-Dichloroethene	0.096	0.20	0.38	J	0.79
Tetrachloroethene	140	0.20	960	E J,LL	1.4

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	109	60 - 140

MM 052510

Qualifiers

E	Estimated result. Result concentration exceeds the calibration range.
J	Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Southern University and A&M College

Client Sample ID: LS11A-SV02-09D

GC/MS Volatiles

Lot-Sample #	H9K140403 - 002	Work Order #	LPGTC1AA	Matrix.....:	AIR

Date Sampled...:	11/05/2009	Date Received..:	11/09/2009
Prep Date.....:	11/12/2009	Analysis Date...	11/12/2009
Prep Batch #.....:	9320176		
Dilution Factor.:	2.5	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
Trichloroethene	29	0.10	160		0.54
Vinyl chloride	ND	0.20	ND		0.51
Chloroethane	0.14	0.20	0.38	J	0.53
1,2-Dichloroethane	ND	0.20	ND		0.81
1,1-Dichloroethene	ND	0.20	ND		0.79
cis-1,2-Dichloroethene	0.68	0.20	2.7		0.79
trans-1,2-Dichloroethene	0.38	0.20	1.5		0.79
Tetrachloroethene	88	0.20	600	E J,LR	1.4

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	110	60 - 140

UM 052510

Qualifiers

E	Estimated result. Result concentration exceeds the calibration range.
J	Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Southern University and A&M College

Client Sample ID: LS11A-SV06-09D

GC/MS Volatiles

Lot-Sample #	H9K140403 - 003	Work Order #	LPGTD1AA	Matrix.....:	AIR

Date Sampled...:	11/05/2009	Date Received..:	11/09/2009
Prep Date.....:	11/16/2009	Analysis Date...	11/16/2009
Prep Batch #.....:	9321054		
Dilution Factor.:	1	Method.....:	TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
Trichloroethene	5.8	0.040	31		0.21
Vinyl chloride	ND	0.080	ND		0.20
Chloroethane	ND	0.080	ND		0.21
1,2-Dichloroethane	ND	0.080	ND		0.32
1,1-Dichloroethene	ND	0.080	ND		0.32
cis-1,2-Dichloroethene	0.049	0.080	0.19	J	0.32
trans-1,2-Dichloroethene	0.026	0.080	0.10	J	0.32
Tetrachloroethene	0.23	0.080	1.6		0.54

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	112	60 - 140

WM 052570

Qualifiers

J Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Southern University and A&M College

Client Sample ID: LS11A-SV07-09D

GC/MS Volatiles

Lot-Sample # H9K140403 - 004 Work Order # LPGTE1AA Matrix.....: AIR

Date Sampled...: 11/05/2009 Date Received..: 11/09/2009
Prep Date.....: 11/16/2009 Analysis Date... 11/17/2009
Prep Batch #.....: 9321054
Dilution Factor.: 1 Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
Trichloroethene	6.0	0.040	32		0.21
Vinyl chloride	ND	0.080	ND		0.20
Chloroethane	ND	0.080	ND		0.21
1,2-Dichloroethane	ND	0.080	ND		0.32
1,1-Dichloroethene	ND	0.080	ND		0.32
cis-1,2-Dichloroethene	0.032	0.080	0.13	J	0.32
trans-1,2-Dichloroethene	ND	0.080	ND		0.32
Tetrachloroethene	0.38	0.080	2.6		0.54

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	107	60 - 140

WM 052510

Qualifiers

J Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Attachment G
Pressure Differential Monitoring Report

Pressure Differential Monitoring Report

Pressure gradient measurements between the inside of the structure and the subslab can be useful in interpreting subslab vapor and indoor air data and assessing the potential for migration of VOCs detected in the subslab into the indoor air. As discussed in the Interstate Technology & Regulatory Council's (ITRC) "Vapor Intrusion Guidance" (2007), a default negative pressure of 4 pascals (Pa) between the subslab and indoor is typically assumed, suggesting that there is always an advective flow of vapors into a structure. However, a number of presentations have been given at the USEPA-sponsored vapor intrusion workshops (http://iavi.rti.org/WorkshopsAndConferences.cfm) to support the conclusion that pressure differences between the indoor and subslab may be positive, negative, or fluctuate between the two (i.e., the building "breathes").

Pressure differential monitoring was performed at Building 3606 during Phase I and at Buildings 3606 and 3606A during Phase II during and after subslab vapor sampling to assist in evaluating the subslab vapor and indoor air samples that were collected at those buildings.

A digital micromanometer (Omniguard 4) was attached to a subslab vapor probe in each of the selected buildings. Tables G-1 through G-3 summarize the results from the pressure differential monitoring that took place at Building 3606 during Phase I, Building 3606 during Phase II, and Building 3606A during Phase II, respectively. Figures G-1 through G-3 present graphs of the pressure differential over time for each of these buildings. There are no regulatory screening levels for interpreting differential pressure measurements. However, long-term average pressure differences between the indoors and the subslab can be interpreted using USEPA's 1993 guidance for radon mitigation. Although radon is not a COI under this investigation, the radon mitigation guidance provides information on interpretation of pressure differential readings. Table G-4 provides an interpretation matrix for differential pressure results on the basis of that guidance. For example, subslab depressurization systems for radon mitigation are designed to achieve a 6- to 9-Pa pressure difference between the subsurface and indoors. This represents the pressure difference needed to prevent soil vapor intrusion into a structure where indoor pressures are governed by heating and the operation of appliances or fans.

Building 3606—Phase I

The differential pressure recorder was set up at subslab probe LS11A-PM01 from November 3 through November 9, 2010. The average indoor-to-subslab differential pressure in Building 3606 ranged from a minimum of -12 Pa to a maximum of 4.75 Pa; however, the minimum differential pressure of -12 Pa appears to be an outlier: the next minimum is -6.75 Pa. The average maximum and minimum differential pressure measurements over the entire monitoring period and during daytime and nighttime hours are shown in Table G-1. There is no observable pattern indicating a difference in differential pressure when comparing daytime and nighttime hours. Figure G-1 shows the relationship between the differential pressure data at minimum and maximum data points over time for each of the 7

days of testing. According to Table G-4, the differential pressure readings indicate that Building 3606 is neutral to negatively pressurized; therefore, in the absence of a strongly pressurized building relative to the subsurface (e.g., 6 Pa; USEPA, 1993) these pressure differential data cannot be used to rule out the potential for vapors to intrude from the subsurface into Building 3606 during various periods.

The indoor and outdoor barometric pressures are shown on Figure G-1. The indoor pressure was greater than the outdoor pressure during the monitoring period. The difference in indoor and outdoor barometric pressures ranged from 4.8 to 9.1 inches Hg. This indicates that the building is positively pressurized with respect to outdoor air. Also, the fluctuations in indoor air pressure did not mimic fluctuations in outdoor air pressure.

Building 3606—Phase II

The differential pressure recorder was set up at subslab probe LS11A-PM01 from March 2 through March 10, 2010. The average indoor-to-subslab differential pressure in Building 3606 ranged from a minimum of -10 Pa to a maximum of 5 Pa. The average maximum and minimum differential pressure measurements over the entire monitoring period and during daytime and nighttime hours are shown in Table G-2. There is no observable pattern indicating a difference in differential pressure when comparing daytime and nighttime hours. Figure G-2 shows the relationship between the differential pressure data at minimum and maximum data points over time for each of the 9 days of testing. According to Table G-4, the differential pressure readings indicate that Building 3606 is neutral to negatively pressurized; therefore, in the absence of a strongly pressurized building relative to the subsurface (e.g., 6 Pa; USEPA, 1993) these pressure differential data cannot be used to rule out the potential for vapors to intrude from the subsurface into Building 3606 during various periods.

The indoor and outdoor barometric pressures are shown on Figure G-2. The indoor pressure was greater than the outdoor pressure during the monitoring period. The difference in indoor and outdoor barometric pressures ranged from 4.2 to 6.6 inches Hg. This indicates that the building is positively pressurized with respect to outdoor air. Also, the fluctuations in indoor air pressure did mimic fluctuations in outdoor air pressure.

The pressure of the indoor air environment in relation to the subslab of Building 3606 appears to be similar between phases; the building was determined to be neutral to negatively pressurized during both phases.

Building 3606A—Phase II

The differential pressure recorder was set up at subslab probe LS11A-PM02 from March 2 through March 4, 2010. The average indoor-to-subslab differential pressure in Building 3606A ranged from a minimum of 0.75 Pa to a maximum of 4 Pa. The average maximum and minimum differential pressure measurements over the entire monitoring period and during working and night-time hours are shown in Table G-3. There is no observable pattern indicating a difference in differential pressure when comparing working and nighttime hours. Figure G-3 shows the relationship between the differential pressure data at minimum and maximum data points over time for each of the 3 days of testing. According to Table G-4, the differential pressure readings indicate that Building 3606 is

neutral to positively pressurized; therefore, in the absence of a strongly pressurized building relative to the subsurface (e.g., 6 Pa; USEPA, 1993) these pressure differential data cannot be used to rule out the potential for vapors to intrude from the subsurface into Building 3606A during various periods.

The indoor and outdoor barometric pressures are shown on Figure G-3. The indoor pressure was greater than the outdoor pressure during the monitoring period. The difference in indoor and outdoor barometric pressures ranged from 4.6 to 6.3 inches Hg. This indicates that the building is positively pressurized with respect to outdoor air. Also, the fluctuations in indoor air pressure did mimic fluctuations in outdoor air pressure.

TABLE G-1
Building 3606 Pressure Difference Measurements [a]
Naval Amphibious Base Little Creek Site 11a

Averages over all measurements:

Maximum Differential Pressure:	1.0 Pa
Minimum Differential Pressure:	-4.0 Pa

Averages during Work Hours and Night Time:

		Work Hours, Daily 10-hour Average Pressure Difference (7 am to 5 pm)		Night Time, Daily 14-hour Average Pressure Difference (5 pm to 7 am)	
Date	**Time**	**max (Pa)**	**min (Pa)**	**max (Pa)**	**min (Pa)**
11/3/2009	average	2.50	-0.25	2.42	-3.08
11/4/2009	average	0.28	-4.29	1.08	-4.80
11/5/2009	average	0.14	-3.10	3.05	-3.85
11/6/2009	average	2.66	-5.13	-0.07	-3.80
11/7/2009	average	0.93	-7.35	0.20	-5.24
11/8/2009	average	0.71	-2.41	0.23	-2.50
11/9/2009	average	0.26	-3.19	NA	NA
	Median:	0.71	-3.19	0.66	-3.83

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure[c] (inches Hg)	Indoor Temperature (F)	Date + Time	Outdoor Barometric Pressure[d] (inches Hg)
11/3/2009 16:37	3	-1.5	0.75	11/3/2009 16:21	35.03	99.40	11/3/2009 17:00	30.14
11/3/2009 16:52	2	1	1.5	11/3/2009 16:36	34.94	100.02	11/3/2009 17:15	30.15
11/3/2009 17:07	2.5	-0.5	1	11/3/2009 16:51	35.03	99.45	11/3/2009 17:30	30.15
11/3/2009 17:22	1.5	0	0.75	11/3/2009 17:06	35.08	99.30	11/3/2009 17:45	30.15
11/3/2009 17:37	1.5	-1.5	0	11/3/2009 17:21	35.14	99.66	11/3/2009 18:00	30.16
11/3/2009 17:52	-0.5	-1.5	-1	11/3/2009 17:36	35.19	100.06	11/3/2009 18:15	30.16
11/3/2009 18:07	1.5	-1.5	0	11/3/2009 17:51	35.18	100.47	11/3/2009 18:30	30.17
11/3/2009 18:22	2	-2.5	-0.25	11/3/2009 18:06	35.31	100.85	11/3/2009 18:45	30.17
11/3/2009 18:37	0.5	-1	-0.25	11/3/2009 18:21	35.37	101.18	11/3/2009 19:00	30.18
11/3/2009 18:52	2.5	-1	0.75	11/3/2009 18:36	35.43	101.44	11/3/2009 19:15	30.18
11/3/2009 19:07	2	-2	0	11/3/2009 18:51	35.53	101.65	11/3/2009 19:30	30.19
11/3/2009 19:22	1.5	-2.5	-0.5	11/3/2009 19:06	35.60	101.82	11/3/2009 19:45	30.19
11/3/2009 19:37	1	-2	-0.5	11/3/2009 19:21	35.64	101.94	11/3/2009 20:00	30.19
11/3/2009 19:52	3	-4	-0.5	11/3/2009 19:36	35.67	102.04	11/3/2009 20:15	30.20
11/3/2009 20:07	1	-3	-1	11/3/2009 19:51	35.70	102.11	11/3/2009 20:30	30.20
11/3/2009 20:22	1	-2	-0.5	11/3/2009 20:06	35.81	102.18	11/3/2009 20:45	30.21
11/3/2009 20:37	1	-1.5	-0.25	11/3/2009 20:21	35.83	102.21	11/3/2009 21:00	30.22
11/3/2009 20:52	0.5	-1.5	-0.5	11/3/2009 20:36	35.91	102.24	11/3/2009 21:15	30.22
11/3/2009 21:07	0.5	-1.5	-0.5	11/3/2009 20:51	36.02	102.27	11/3/2009 21:30	30.22
11/3/2009 21:22	1.5	-0.5	0.5	11/3/2009 21:06	36.09	102.30	11/3/2009 21:45	30.23
11/3/2009 21:37	0.5	-2	-0.75	11/3/2009 21:21	36.16	102.30	11/3/2009 22:00	30.23
11/3/2009 21:52	0	-1.5	-0.75	11/3/2009 21:36	36.20	102.31	11/3/2009 22:15	30.24
11/3/2009 22:07	0.5	-1.5	-0.5	11/3/2009 21:51	36.26	102.35	11/3/2009 22:30	30.24
11/3/2009 22:22	1	-2	-0.5	11/3/2009 22:06	36.33	102.36	11/3/2009 22:45	30.26
11/3/2009 22:37	1.5	-1	0.25	11/3/2009 22:21	36.40	102.38	11/3/2009 23:00	30.26
11/3/2009 22:52	13.5	-4	4.75	11/3/2009 22:36	36.49	102.40	11/3/2009 23:15	30.27
11/3/2009 23:07	3	-2.5	0.25	11/3/2009 22:51	36.70	102.40	11/3/2009 23:30	30.28
11/3/2009 23:22	1	0	0.5	11/3/2009 23:06	36.76	102.42	11/3/2009 23:45	30.28
11/3/2009 23:37	2	-5	-1.5	11/3/2009 23:21	36.87	102.42	11/4/2009 0:00	30.29
11/3/2009 23:52	3.5	-3	0.25	11/3/2009 23:36	36.91	102.43	11/4/2009 0:15	30.29
11/4/2009 0:07	3.5	-2	0.75	11/3/2009 23:51	36.97	102.43	11/4/2009 0:30	30.29
11/4/2009 0:22	2	-4.5	-1.25	11/4/2009 0:06	37.07	102.44	11/4/2009 0:45	30.29
11/4/2009 0:37	2	-4.5	-1.25	11/4/2009 0:21	37.05	102.43	11/4/2009 1:00	30.29
11/4/2009 0:52	3	-4.5	-0.75	11/4/2009 0:36	37.06	102.43	11/4/2009 1:15	30.30
11/4/2009 1:07	2.5	-5	-1.25	11/4/2009 0:51	37.07	102.43	11/4/2009 1:30	30.30
11/4/2009 1:22	4	-3	0.5	11/4/2009 1:06	37.10	102.43	11/4/2009 1:45	30.30
11/4/2009 1:37	5	-4	0.5	11/4/2009 1:21	37.18	102.43	11/4/2009 2:00	30.31
11/4/2009 1:52	3.5	-5	-0.75	11/4/2009 1:36	37.28	102.44	11/4/2009 2:15	30.31
11/4/2009 2:07	3.5	-3.5	0	11/4/2009 1:51	37.31	102.45	11/4/2009 2:30	30.31
11/4/2009 2:22	2.5	-6	-1.75	11/4/2009 2:06	37.34	102.48	11/4/2009 2:45	30.31
11/4/2009 2:37	3	-4.5	-0.75	11/4/2009 2:21	37.30	102.50	11/4/2009 3:00	30.32
11/4/2009 2:52	2.5	-4	-0.75	11/4/2009 2:36	37.29	102.49	11/4/2009 3:15	30.32
11/4/2009 3:07	1.5	-4.5	-1.5	11/4/2009 2:51	37.38	102.47	11/4/2009 3:30	30.32
11/4/2009 3:22	3.5	-2	0.75	11/4/2009 3:06	37.37	102.45	11/4/2009 3:45	30.32
11/4/2009 3:37	3	-4.5	-0.75	11/4/2009 3:21	37.46	102.42	11/4/2009 4:00	30.33
11/4/2009 3:52	3.5	-4	-0.25	11/4/2009 3:36	37.47	102.40	11/4/2009 4:15	30.33
11/4/2009 4:07	4	-4	0	11/4/2009 3:51	37.54	102.37	11/4/2009 4:30	30.34
11/4/2009 4:22	2	-3.5	-0.75	11/4/2009 4:06	37.59	102.34	11/4/2009 4:45	30.34
11/4/2009 4:37	3	-6.5	-1.75	11/4/2009 4:21	37.65	102.34	11/4/2009 5:00	30.35
11/4/2009 4:52	5	-3	1	11/4/2009 4:36	37.69	102.35	11/4/2009 5:15	30.35
11/4/2009 5:07	2	-6	-2	11/4/2009 4:51	37.87	102.34	11/4/2009 5:30	30.36
11/4/2009 5:22	4.5	-3	0.75	11/4/2009 5:06	37.79	102.33	11/4/2009 5:45	30.36
11/4/2009 5:37	6.5	-1.5	2.5	11/4/2009 5:21	37.87	102.32	11/4/2009 6:00	30.36
11/4/2009 5:52	0	-8	-4	11/4/2009 5:36	38.10	102.32	11/4/2009 6:15	30.36
11/4/2009 6:07	1	-5	-2	11/4/2009 5:51	38.03	102.31	11/4/2009 6:30	30.37

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure[c] (inches Hg)	Indoor Temperature (F)	Date + Time	Outdoor Barometric Pressure[d] (inches Hg)
11/4/2009 6:22	5	-5.5	-0.25	11/4/2009 6:06	38.01	102.29	11/4/2009 6:45	30.37
11/4/2009 6:37	2	-4	-1	11/4/2009 6:21	38.12	102.25	11/4/2009 7:00	30.37
11/4/2009 6:52	1	-4.5	-1.75	11/4/2009 6:36	38.12	102.20	11/4/2009 7:15	30.38
11/4/2009 7:07	1	-2.5	-0.75	11/4/2009 6:51	38.08	102.14	11/4/2009 7:30	30.38
11/4/2009 7:22	1.5	-4	-1.25	11/4/2009 7:06	38.17	102.08	11/4/2009 7:45	30.38
11/4/2009 7:37	1.5	-3	-0.75	11/4/2009 7:21	38.24	102.03	11/4/2009 8:00	30.39
11/4/2009 7:52	1.5	-4	-1.25	11/4/2009 7:36	38.28	102.00	11/4/2009 8:15	30.39
11/4/2009 8:07	0.5	-2.5	-1	11/4/2009 7:51	38.28	101.99	11/4/2009 8:30	30.39
11/4/2009 8:22	1	-2	-0.5	11/4/2009 8:06	38.34	101.99	11/4/2009 8:45	30.39
11/4/2009 8:37	0.5	-5	-2.25	11/4/2009 8:21	38.40	102.00	11/4/2009 9:00	30.40
11/4/2009 8:52	2	-4	-1	11/4/2009 8:36	38.34	102.01	11/4/2009 9:15	30.40
11/4/2009 9:07	2	-3	-0.5	11/4/2009 8:51	38.44	101.97	11/4/2009 9:30	30.40
11/4/2009 9:22	0.5	-3.5	-1.5	11/4/2009 9:06	38.46	101.97	11/4/2009 9:45	30.40
11/4/2009 9:37	2	-2	0	11/4/2009 9:21	38.50	101.98	11/4/2009 10:00	30.40
11/4/2009 9:52	0.5	-4	-1.75	11/4/2009 9:36	38.54	101.99	11/4/2009 10:15	30.40
11/4/2009 10:07	1	-3	-1	11/4/2009 9:51	38.55	102.01	11/4/2009 10:30	30.39
11/4/2009 10:22	0	-4	-2	11/4/2009 10:06	38.51	102.01	11/4/2009 10:45	30.39
11/4/2009 10:37	1.5	-3.5	-1	11/4/2009 10:21	38.46	101.98	11/4/2009 11:00	30.38
11/4/2009 10:52	-0.5	-4	-2.25	11/4/2009 10:36	38.36	100.50	11/4/2009 11:15	30.38
11/4/2009 11:07	-0.5	-5	-2.75	11/4/2009 10:51	38.29	100.38	11/4/2009 11:30	30.36
11/4/2009 11:22	-1.5	-4.5	-3	11/4/2009 11:06	38.20	100.49	11/4/2009 11:45	30.33
11/4/2009 11:37	-1	-6	-3.5	11/4/2009 11:21	38.11	100.69	11/4/2009 12:00	30.33
11/4/2009 11:52	-0.5	-5	-2.75	11/4/2009 11:36	38.01	100.66	11/4/2009 12:15	30.35
11/4/2009 12:07	0	-3	-1.5	11/4/2009 11:51	37.92	100.83	11/4/2009 12:30	30.34
11/4/2009 12:22	0	-3.5	-1.75	11/4/2009 12:06	37.88	101.01	11/4/2009 12:45	30.34
11/4/2009 12:37	0	-5	-2.5	11/4/2009 12:21	37.84	101.19	11/4/2009 13:00	30.33
11/4/2009 12:52	0	-6	-3	11/4/2009 12:36	37.76	101.37	11/4/2009 13:15	30.32
11/4/2009 13:07	-1	-5.5	-3.25	11/4/2009 12:51	37.65	101.55	11/4/2009 13:30	30.32
11/4/2009 13:22	0.5	-3.5	-1.5	11/4/2009 13:06	37.52	101.71	11/4/2009 13:45	30.32
11/4/2009 13:37	0	-3	-1.5	11/4/2009 13:21	37.47	101.81	11/4/2009 14:00	30.30
11/4/2009 13:52	-2.5	-6	-4.25	11/4/2009 13:36	37.44	101.89	11/4/2009 14:15	30.29
11/4/2009 14:07	-2.5	-4.5	-3.5	11/4/2009 13:51	37.28	101.99	11/4/2009 14:30	30.28
11/4/2009 14:22	-2	-5	-3.5	11/4/2009 14:06	37.15	102.07	11/4/2009 14:45	30.27
11/4/2009 14:37	-2	-5.5	-3.75	11/4/2009 14:21	37.02	102.12	11/4/2009 15:00	30.27
11/4/2009 14:52	-0.5	-4.5	-2.5	11/4/2009 14:36	36.94	102.17	11/4/2009 15:15	30.27
11/4/2009 15:07	-1	-6	-3.5	11/4/2009 14:51	36.80	102.22	11/4/2009 15:30	30.27
11/4/2009 15:22	0	-4.5	-2.25	11/4/2009 15:06	36.75	102.26	11/4/2009 15:45	30.27
11/4/2009 15:37	0.5	-5	-2.25	11/4/2009 15:21	36.74	102.30	11/4/2009 16:00	30.27
11/4/2009 15:52	4	-6.5	-1.25	11/4/2009 15:36	36.70	102.33	11/4/2009 16:15	30.27
11/4/2009 16:07	3.5	-4.5	-0.5	11/4/2009 15:51	36.67	102.34	11/4/2009 16:30	30.26
11/4/2009 16:22	1.5	-4.5	-1.5	11/4/2009 16:06	36.73	102.36	11/4/2009 16:45	30.25
11/4/2009 16:37	-1	-5.5	-3.25	11/4/2009 16:21	36.71	102.38	11/4/2009 17:00	30.26
11/4/2009 16:52	0.5	-5.5	-2.5	11/4/2009 16:36	36.63	102.40	11/4/2009 17:15	30.26
11/4/2009 17:07	2	-6	-2	11/4/2009 16:51	36.60	102.43	11/4/2009 17:30	30.26
11/4/2009 17:22	2	-3.5	-0.75	11/4/2009 17:06	36.57	102.44	11/4/2009 17:45	30.26
11/4/2009 17:37	2.5	-4.5	-1	11/4/2009 17:21	36.64	102.43	11/4/2009 18:00	30.25
11/4/2009 17:52	-0.5	-5.5	-3	11/4/2009 17:36	36.66	102.42	11/4/2009 18:15	30.26
11/4/2009 18:07	1.5	-4.5	-1.5	11/4/2009 17:51	36.58	102.41	11/4/2009 18:30	30.25
11/4/2009 18:22	0	-6.5	-3.25	11/4/2009 18:06	36.62	102.40	11/4/2009 18:45	30.26
11/4/2009 18:37	0	-4.5	-2.25	11/4/2009 18:21	36.55	102.40	11/4/2009 19:00	30.25
11/4/2009 18:52	1	-3	-1	11/4/2009 18:36	36.52	102.40	11/4/2009 19:15	30.26
11/4/2009 19:07	0	-6	-3	11/4/2009 18:51	36.60	102.38	11/4/2009 19:30	30.26
11/4/2009 19:22	1	-2.5	-0.75	11/4/2009 19:06	36.54	102.36	11/4/2009 19:45	30.26
11/4/2009 19:37	1	-2.5	-0.75	11/4/2009 19:21	36.59	102.36	11/4/2009 20:00	30.26
11/4/2009 19:52	0	-2	-1	11/4/2009 19:36	36.65	102.32	11/4/2009 20:15	30.26
11/4/2009 20:07	-1	-3	-2	11/4/2009 19:51	36.70	102.29	11/4/2009 20:30	30.26
11/4/2009 20:22	0.5	-2.5	-1	11/4/2009 20:06	36.66	102.27	11/4/2009 20:45	30.26
11/4/2009 20:37	0	-3.5	-1.75	11/4/2009 20:21	36.68	102.25	11/4/2009 21:00	30.26
11/4/2009 20:52	1	-2.5	-0.75	11/4/2009 20:36	36.64	102.25	11/4/2009 21:15	30.25
11/4/2009 21:07	-0.5	-5.5	-3	11/4/2009 20:51	36.64	102.23	11/4/2009 21:30	30.25
11/4/2009 21:22	-1.5	-5	-3.25	11/4/2009 21:06	36.57	102.24	11/4/2009 21:45	30.25
11/4/2009 21:37	0.5	-3.5	-1.5	11/4/2009 21:21	36.48	102.24	11/4/2009 22:00	30.25
11/4/2009 21:52	-0.5	-3.5	-2	11/4/2009 21:36	36.54	102.23	11/4/2009 22:15	30.25
11/4/2009 22:07	-1	-3.5	-2.25	11/4/2009 21:51	36.48	102.25	11/4/2009 22:30	30.24
11/4/2009 22:22	-1	-5	-3	11/4/2009 22:06	36.42	102.26	11/4/2009 22:45	30.23
11/4/2009 22:37	-1	-5	-3	11/4/2009 22:21	36.36	102.27	11/4/2009 23:00	30.23
11/4/2009 22:52	-1	-4.5	-2.75	11/4/2009 22:36	36.23	102.26	11/4/2009 23:15	30.24
11/4/2009 23:07	1	-1.5	-0.25	11/4/2009 22:51	36.22	102.23	11/4/2009 23:30	30.24
11/4/2009 23:22	4	-2.5	0.75	11/4/2009 23:06	36.30	102.23	11/4/2009 23:45	30.23
11/4/2009 23:37	4	-14.5	-5.25	11/4/2009 23:21	36.39	102.22	11/5/2009 0:00	30.22
11/4/2009 23:52	7	-11.5	-2.25	11/4/2009 23:36	36.18	102.21	11/5/2009 0:15	30.24
11/5/2009 0:07	9.5	-3.5	3	11/4/2009 23:51	36.10	102.23	11/5/2009 0:30	30.23
11/5/2009 0:22	19.5	-11	4.25	11/5/2009 0:06	36.26	102.23	11/5/2009 0:45	30.24
11/5/2009 0:37	5	-5	0	11/5/2009 0:21	36.22	102.23	11/5/2009 1:00	30.23
11/5/2009 0:52	4.5	-10	-2.75	11/5/2009 0:36	36.37	102.25	11/5/2009 1:15	30.21
11/5/2009 1:07	0.5	-11.5	-5.5	11/5/2009 0:51	36.38	102.25	11/5/2009 1:30	30.20
11/5/2009 1:22	1	-25	-12	11/5/2009 1:06	36.17	102.28	11/5/2009 1:45	30.21
11/5/2009 1:37	1.5	-12	-5.25	11/5/2009 1:21	35.89	102.28	11/5/2009 2:00	30.21
11/5/2009 1:52	0.5	-3.5	-1.5	11/5/2009 1:36	35.89	102.27	11/5/2009 2:15	30.20

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure[c] (inches Hg)	Indoor Temperature (F)	Date + Time	Outdoor Barometric Pressure[d] (inches Hg)
11/5/2009 2:07	1.5	-6	-2.25	11/5/2009 1:51	35.93	102.25	11/5/2009 2:30	30.20
11/5/2009 2:22	0	-4.5	-2.25	11/5/2009 2:06	35.86	102.23	11/5/2009 2:45	30.20
11/5/2009 2:37	0	-4	-2	11/5/2009 2:21	35.84	102.23	11/5/2009 3:00	30.20
11/5/2009 2:52	0	-3	-1.5	11/5/2009 2:36	35.82	102.24	11/5/2009 3:15	30.19
11/5/2009 3:07	-1	-2.5	-1.75	11/5/2009 2:51	35.77	102.24	11/5/2009 3:30	30.19
11/5/2009 3:22	0.5	-3.5	-1.5	11/5/2009 3:06	35.79	102.25	11/5/2009 3:45	30.19
11/5/2009 3:37	0	-4.5	-2.25	11/5/2009 3:21	35.76	102.27	11/5/2009 4:00	30.19
11/5/2009 3:52	-0.5	-3	-1.75	11/5/2009 3:36	35.68	102.26	11/5/2009 4:15	30.19
11/5/2009 4:07	-1.5	-3	-2.25	11/5/2009 3:51	35.69	102.26	11/5/2009 4:30	30.19
11/5/2009 4:22	-1	-2.5	-1.75	11/5/2009 4:06	35.63	102.25	11/5/2009 4:45	30.19
11/5/2009 4:37	0	-2	-1	11/5/2009 4:21	35.64	102.23	11/5/2009 5:00	30.19
11/5/2009 4:52	-0.5	-2.5	-1.5	11/5/2009 4:36	35.67	102.20	11/5/2009 5:15	30.19
11/5/2009 5:07	0	-2	-1	11/5/2009 4:51	35.67	102.17	11/5/2009 5:30	30.19
11/5/2009 5:22	-0.5	-2	-1.25	11/5/2009 5:06	35.75	102.15	11/5/2009 5:45	30.19
11/5/2009 5:37	0	-2.5	-1.25	11/5/2009 5:21	35.70	102.13	11/5/2009 6:00	30.19
11/5/2009 5:52	-0.5	-2.5	-1.5	11/5/2009 5:36	35.73	102.12	11/5/2009 6:15	30.19
11/5/2009 6:07	0	-2.5	-1.25	11/5/2009 5:51	35.70	102.13	11/5/2009 6:30	30.20
11/5/2009 6:22	0.5	-2.5	-1	11/5/2009 6:06	35.78	102.13	11/5/2009 6:45	30.20
11/5/2009 6:37	0.5	-1.5	-0.5	11/5/2009 6:21	35.74	102.12	11/5/2009 7:00	30.20
11/5/2009 6:52	0	-3	-1.5	11/5/2009 6:36	35.78	102.13	11/5/2009 7:15	30.21
11/5/2009 7:07	1	-2.5	-0.75	11/5/2009 6:51	35.80	102.13	11/5/2009 7:30	30.21
11/5/2009 7:22	3	-1.5	0.75	11/5/2009 7:06	35.87	102.13	11/5/2009 7:45	30.21
11/5/2009 7:37	0	-2.5	-1.25	11/5/2009 7:21	36.07	101.65	11/5/2009 8:00	30.21
11/5/2009 7:52	0.5	-2	-0.75	11/5/2009 7:36	36.08	101.31	11/5/2009 8:15	30.21
11/5/2009 8:07	0	-3	-1.5	11/5/2009 7:51	36.12	101.11	11/5/2009 8:30	30.21
11/5/2009 8:22	0	-3.5	-1.75	11/5/2009 8:06	36.11	100.98	11/5/2009 8:45	30.21
11/5/2009 8:37	0.5	-2	-0.75	11/5/2009 8:21	36.09	100.90	11/5/2009 9:00	30.21
11/5/2009 8:52	0	-2.5	-1.25	11/5/2009 8:36	36.12	100.85	11/5/2009 9:15	30.21
11/5/2009 9:07	1	-3	-1	11/5/2009 8:51	36.11	100.83	11/5/2009 9:30	30.21
11/5/2009 9:22	0	-2.5	-1.25	11/5/2009 9:06	36.10	100.81	11/5/2009 9:45	30.21
11/5/2009 9:37	0	-3.5	-1.75	11/5/2009 9:21	36.10	100.81	11/5/2009 10:00	30.21
11/5/2009 9:52	0.5	-2.5	-1	11/5/2009 9:36	36.05	100.81	11/5/2009 10:15	30.22
11/5/2009 10:07	1	-0.5	0.25	11/5/2009 9:51	36.05	100.82	11/5/2009 10:30	30.22
11/5/2009 10:22	1	-2	-0.5	11/5/2009 10:06	36.10	100.82	11/5/2009 10:45	30.21
11/5/2009 10:37	1	-2.5	-0.75	11/5/2009 10:21	36.12	100.84	11/5/2009 11:00	30.21
11/5/2009 10:52	-0.5	-5	-2.75	11/5/2009 10:36	36.14	100.86	11/5/2009 11:15	30.21
11/5/2009 11:07	1	-3	-1	11/5/2009 10:51	36.08	100.90	11/5/2009 11:30	30.20
11/5/2009 11:22	-1	-6	-3.5	11/5/2009 11:06	36.09	100.92	11/5/2009 11:45	30.19
11/5/2009 11:37	0	-5.5	-2.75	11/5/2009 11:21	35.94	100.92	11/5/2009 12:00	30.19
11/5/2009 11:52	0	-3	-1.5	11/5/2009 11:36	35.88	100.78	11/5/2009 12:15	30.18
11/5/2009 12:07	0	-4	-2	11/5/2009 11:51	35.85	100.77	11/5/2009 12:30	30.18
11/5/2009 12:22	-1.5	-5.5	-3.5	11/5/2009 12:06	35.77	100.79	11/5/2009 12:45	30.18
11/5/2009 12:37	0	-3.5	-1.75	11/5/2009 12:21	35.64	100.82	11/5/2009 13:00	30.17
11/5/2009 12:52	0	-2	-1	11/5/2009 12:36	35.58	100.87	11/5/2009 13:15	30.17
11/5/2009 13:07	0	-3.5	-1.75	11/5/2009 12:51	35.60	100.97	11/5/2009 13:30	30.17
11/5/2009 13:22	-0.5	-3.5	-2	11/5/2009 13:06	35.55	101.03	11/5/2009 13:45	30.16
11/5/2009 13:37	-1	-4.5	-2.75	11/5/2009 13:21	35.53	101.08	11/5/2009 14:00	30.16
11/5/2009 13:52	-1	-4	-2.5	11/5/2009 13:36	35.43	101.12	11/5/2009 14:15	30.16
11/5/2009 14:07	1	-3	-1	11/5/2009 13:51	35.35	101.15	11/5/2009 14:30	30.16
11/5/2009 14:22	0	-3	-1.5	11/5/2009 14:06	35.37	101.19	11/5/2009 14:45	30.16
11/5/2009 14:37	1.5	-0.5	0.5	11/5/2009 14:21	35.35	101.21	11/5/2009 15:00	30.15
11/5/2009 14:52	0	-4.5	-2.25	11/5/2009 14:36	35.38	100.92	11/5/2009 15:15	30.15
11/5/2009 15:07	-0.5	-4.5	-2.5	11/5/2009 14:51	35.28	100.58	11/5/2009 15:30	30.15
11/5/2009 15:22	-1	-3	-2	11/5/2009 15:06	35.23	100.55	11/5/2009 15:45	30.14
11/5/2009 15:37	0	-3	-1.5	11/5/2009 15:21	35.18	100.58	11/5/2009 16:00	30.14
11/5/2009 15:52	0	-2.5	-1.25	11/5/2009 15:36	35.18	100.65	11/5/2009 16:15	30.14
11/5/2009 16:07	0	-2.5	-1.25	11/5/2009 15:51	35.16	100.72	11/5/2009 16:30	30.15
11/5/2009 16:22	0.5	-2.5	-1	11/5/2009 16:06	35.19	100.78	11/5/2009 16:45	30.15
11/5/2009 16:37	-0.5	-3	-1.75	11/5/2009 16:21	35.19	100.85	11/5/2009 17:00	30.15
11/5/2009 16:52	-0.5	-3	-1.75	11/5/2009 16:36	35.19	100.90	11/5/2009 17:15	30.15
11/5/2009 17:07	0.5	-3	-1.25	11/5/2009 16:51	35.16	100.94	11/5/2009 17:30	30.15
11/5/2009 17:22	0	-2.5	-1.25	11/5/2009 17:06	35.23	100.96	11/5/2009 17:45	30.15
11/5/2009 17:37	-0.5	-3	-1.75	11/5/2009 17:21	35.24	100.97	11/5/2009 18:00	30.15
11/5/2009 17:52	0.5	-2.5	-1	11/5/2009 17:36	35.25	100.97	11/5/2009 18:15	30.16
11/5/2009 18:07	0.5	-3	-1.25	11/5/2009 17:51	35.25	100.98	11/5/2009 18:30	30.16
11/5/2009 18:22	1	-2.5	-0.75	11/5/2009 18:06	35.29	100.99	11/5/2009 18:45	30.16
11/5/2009 18:37	-1	-3	-2	11/5/2009 18:21	35.34	101.00	11/5/2009 19:00	30.16
11/5/2009 18:52	0	-1	-0.5	11/5/2009 18:36	35.34	101.01	11/5/2009 19:15	30.16
11/5/2009 19:07	0	-2.5	-1.25	11/5/2009 18:51	35.38	101.01	11/5/2009 19:30	30.17
11/5/2009 19:22	0	-3	-1.5	11/5/2009 19:06	35.39	101.02	11/5/2009 19:45	30.17
11/5/2009 19:37	0	-2.5	-1.25	11/5/2009 19:21	35.40	101.03	11/5/2009 20:00	30.18
11/5/2009 19:52	3	-1.5	0.75	11/5/2009 19:36	35.43	101.05	11/5/2009 20:15	30.18
11/5/2009 20:07	4	-3	0.5	11/5/2009 19:51	35.56	101.08	11/5/2009 20:30	30.19
11/5/2009 20:22	4	-4	0	11/5/2009 20:06	35.63	101.08	11/5/2009 20:45	30.20
11/5/2009 20:37	5	-3	1	11/5/2009 20:21	35.72	101.03	11/5/2009 21:00	30.21
11/5/2009 20:52	5.5	-2	1.75	11/5/2009 20:36	35.80	100.99	11/5/2009 21:15	30.21
11/5/2009 21:07	5.5	-3.5	1	11/5/2009 20:51	35.91	100.97	11/5/2009 21:30	30.21
11/5/2009 21:22	4	-3	0.5	11/5/2009 21:06	36.01	100.96	11/5/2009 21:45	30.21
11/5/2009 21:37	3.5	-4.5	-0.5	11/5/2009 21:21	36.05	100.96	11/5/2009 22:00	30.22

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure[c] (inches Hg)	Indoor Temperature (F)	Date + Time	Outdoor Barometric Pressure[d] (inches Hg)
11/5/2009 21:52	4	-3.5	0.25	11/5/2009 21:36	36.08	100.96	11/5/2009 22:15	30.22
11/5/2009 22:07	4.5	-4.5	0	11/5/2009 21:51	36.09	100.97	11/5/2009 22:30	30.22
11/5/2009 22:22	3.5	-5	-0.75	11/5/2009 22:06	36.18	100.98	11/5/2009 22:45	30.22
11/5/2009 22:37	2	-4.5	-1.25	11/5/2009 22:21	36.18	100.98	11/5/2009 23:00	30.22
11/5/2009 22:52	2	-5.5	-1.75	11/5/2009 22:36	36.20	100.97	11/5/2009 23:15	30.22
11/5/2009 23:07	2.5	-4	-0.75	11/5/2009 22:51	36.17	100.97	11/5/2009 23:30	30.22
11/5/2009 23:22	1.5	-3.5	-1	11/5/2009 23:06	36.22	100.96	11/5/2009 23:45	30.22
11/5/2009 23:37	2	-3	-0.5	11/5/2009 23:21	36.24	100.94	11/6/2009 0:00	30.23
11/5/2009 23:52	2	-3	-0.5	11/5/2009 23:36	36.25	100.92	11/6/2009 0:15	30.23
11/6/2009 0:07	2.5	-2.5	0	11/5/2009 23:51	36.26	100.92	11/6/2009 0:30	30.23
11/6/2009 0:22	2	-3.5	-0.75	11/6/2009 0:06	36.33	100.95	11/6/2009 0:45	30.24
11/6/2009 0:37	1.5	-4	-1.25	11/6/2009 0:21	36.34	100.93	11/6/2009 1:00	30.24
11/6/2009 0:52	1.5	-3	-0.75	11/6/2009 0:36	36.37	100.93	11/6/2009 1:15	30.24
11/6/2009 1:07	2	-2.5	-0.25	11/6/2009 0:51	36.42	100.91	11/6/2009 1:30	30.25
11/6/2009 1:22	1.5	-6.5	-2.5	11/6/2009 1:06	36.48	100.92	11/6/2009 1:45	30.24
11/6/2009 1:37	4.5	-6.5	-1	11/6/2009 1:21	36.42	100.92	11/6/2009 2:00	30.25
11/6/2009 1:52	2	-5	-1.5	11/6/2009 1:36	36.45	100.92	11/6/2009 2:15	30.25
11/6/2009 2:07	3	-6	-1.5	11/6/2009 1:51	36.50	100.92	11/6/2009 2:30	30.26
11/6/2009 2:22	3.5	-4	-0.25	11/6/2009 2:06	36.55	100.88	11/6/2009 2:45	30.26
11/6/2009 2:37	4.5	-3	0.75	11/6/2009 2:21	36.62	100.86	11/6/2009 3:00	30.26
11/6/2009 2:52	3	-5	-1	11/6/2009 2:36	36.67	100.84	11/6/2009 3:15	30.26
11/6/2009 3:07	4	-3.5	0.25	11/6/2009 2:51	36.69	100.82	11/6/2009 3:30	30.27
11/6/2009 3:22	5	-5	0	11/6/2009 3:06	36.70	100.80	11/6/2009 3:45	30.27
11/6/2009 3:37	6	-4	1	11/6/2009 3:21	36.78	100.75	11/6/2009 4:00	30.27
11/6/2009 3:52	4	-5.5	-0.75	11/6/2009 3:36	36.86	100.73	11/6/2009 4:15	30.28
11/6/2009 4:07	3	-4.5	-0.75	11/6/2009 3:51	36.89	100.72	11/6/2009 4:30	30.28
11/6/2009 4:22	3	-3	0	11/6/2009 4:06	36.96	100.72	11/6/2009 4:45	30.29
11/6/2009 4:37	2	-4.5	-1.25	11/6/2009 4:21	37.03	100.75	11/6/2009 5:00	30.30
11/6/2009 4:52	4	-3.5	0.25	11/6/2009 4:36	37.02	100.77	11/6/2009 5:15	30.29
11/6/2009 5:07	5.5	-10	-2.25	11/6/2009 4:51	37.15	100.77	11/6/2009 5:30	30.30
11/6/2009 5:22	6.5	-5	0.75	11/6/2009 5:06	37.15	100.76	11/6/2009 5:45	30.30
11/6/2009 5:37	5.5	-4.5	0.5	11/6/2009 5:21	37.24	100.72	11/6/2009 6:00	30.31
11/6/2009 5:52	4	-4.5	-0.25	11/6/2009 5:36	37.28	100.67	11/6/2009 6:15	30.32
11/6/2009 6:07	6.5	-4.5	1	11/6/2009 5:51	37.32	100.63	11/6/2009 6:30	30.33
11/6/2009 6:22	6.5	-3	1.75	11/6/2009 6:06	37.47	100.63	11/6/2009 6:45	30.33
11/6/2009 6:37	8	-6	1	11/6/2009 6:21	37.60	100.63	11/6/2009 7:00	30.34
11/6/2009 6:52	6.5	-3.5	1.5	11/6/2009 6:36	37.63	100.62	11/6/2009 7:15	30.34
11/6/2009 7:07	6.5	-7	-0.25	11/6/2009 6:51	37.72	100.55	11/6/2009 7:30	30.35
11/6/2009 7:22	7	-6	0.5	11/6/2009 7:06	37.81	100.54	11/6/2009 7:45	30.35
11/6/2009 7:37	5.5	-2.5	1.5	11/6/2009 7:21	37.86	100.53	11/6/2009 8:00	30.35
11/6/2009 7:52	3.5	-4	-0.25	11/6/2009 7:36	37.93	100.55	11/6/2009 8:15	30.36
11/6/2009 8:07	5	-5	0	11/6/2009 7:51	38.00	100.53	11/6/2009 8:30	30.36
11/6/2009 8:22	3.5	-4.5	-0.5	11/6/2009 8:06	38.03	100.55	11/6/2009 8:45	30.36
11/6/2009 8:37	3.5	-5	-0.75	11/6/2009 8:21	38.07	100.56	11/6/2009 9:00	30.36
11/6/2009 8:52	4	-4.5	-0.25	11/6/2009 8:36	38.06	100.58	11/6/2009 9:15	30.36
11/6/2009 9:07	4	-8	-2	11/6/2009 8:51	38.06	100.58	11/6/2009 9:30	30.36
11/6/2009 9:22	3.5	-6.5	-1.5	11/6/2009 9:06	38.05	100.59	11/6/2009 9:45	30.36
11/6/2009 9:37	3.5	-4.5	-0.5	11/6/2009 9:21	38.05	100.60	11/6/2009 10:00	30.36
11/6/2009 9:52	3	-4.5	-0.75	11/6/2009 9:36	38.05	100.60	11/6/2009 10:15	30.37
11/6/2009 10:07	4	-5.5	-0.75	11/6/2009 9:51	38.08	100.59	11/6/2009 10:30	30.37
11/6/2009 10:22	3	-3.5	-0.25	11/6/2009 10:06	38.14	100.58	11/6/2009 10:45	30.37
11/6/2009 10:37	2.5	-6.5	-2	11/6/2009 10:21	38.20	100.57	11/6/2009 11:00	30.37
11/6/2009 10:52	3.5	-6	-1.25	11/6/2009 10:36	38.13	100.57	11/6/2009 11:15	30.36
11/6/2009 11:07	2.5	-8	-2.75	11/6/2009 10:51	38.17	100.59	11/6/2009 11:30	30.36
11/6/2009 11:22	1.5	-5	-1.75	11/6/2009 11:06	38.09	100.59	11/6/2009 11:45	30.35
11/6/2009 11:37	1.5	-6	-2.25	11/6/2009 11:21	38.08	100.60	11/6/2009 12:00	30.35
11/6/2009 11:52	1.5	-5.5	-2	11/6/2009 11:36	37.95	100.63	11/6/2009 12:15	30.34
11/6/2009 12:07	2.5	-7	-2.25	11/6/2009 11:51	37.94	100.64	11/6/2009 12:30	30.34
11/6/2009 12:22	1.5	-7.5	-3	11/6/2009 12:06	37.88	100.65	11/6/2009 12:45	30.34
11/6/2009 12:37	3	-5.5	-1.25	11/6/2009 12:21	37.82	100.66	11/6/2009 13:00	30.33
11/6/2009 12:52	2.5	-5	-1.25	11/6/2009 12:36	37.79	100.69	11/6/2009 13:15	30.33
11/6/2009 13:07	2	-6.5	-2.25	11/6/2009 12:51	37.77	100.75	11/6/2009 13:30	30.34
11/6/2009 13:22	3.5	-4	-0.25	11/6/2009 13:06	37.73	100.78	11/6/2009 13:45	30.33
11/6/2009 13:37	0.5	-5	-2.25	11/6/2009 13:21	37.77	100.80	11/6/2009 14:00	30.34
11/6/2009 13:52	1.5	-5	-1.75	11/6/2009 13:36	37.72	100.81	11/6/2009 14:15	30.33
11/6/2009 14:07	2	-5	-1.5	11/6/2009 13:51	37.71	100.81	11/6/2009 14:30	30.33
11/6/2009 14:22	2	-6	-2	11/6/2009 14:06	37.77	100.81	11/6/2009 14:45	30.33
11/6/2009 14:37	1	-5.5	-2.25	11/6/2009 14:21	37.71	100.82	11/6/2009 15:00	30.33
11/6/2009 14:52	1.5	-5	-1.75	11/6/2009 14:36	37.73	100.83	11/6/2009 15:15	30.34
11/6/2009 15:07	2.5	-5	-1.25	11/6/2009 14:51	37.77	100.83	11/6/2009 15:30	30.34
11/6/2009 15:22	1	-3	-1	11/6/2009 15:06	37.75	100.83	11/6/2009 15:45	30.34
11/6/2009 15:37	0.5	-4.5	-2	11/6/2009 15:21	37.81	100.83	11/6/2009 16:00	30.35
11/6/2009 15:52	1.5	-4	-1.25	11/6/2009 15:36	37.77	100.82	11/6/2009 16:15	30.35
11/6/2009 16:07	3	-3	0	11/6/2009 15:51	37.78	100.80	11/6/2009 16:30	30.35
11/6/2009 16:22	1	-5	-2	11/6/2009 16:06	37.86	100.77	11/6/2009 16:45	30.35
11/6/2009 16:37	0	-3.5	-1.75	11/6/2009 16:21	37.86	100.75	11/6/2009 17:00	30.35
11/6/2009 16:52	1	-2	-0.5	11/6/2009 16:36	37.87	100.73	11/6/2009 17:15	30.35
11/6/2009 17:07	0.5	-3.5	-1.5	11/6/2009 16:51	37.93	100.73	11/6/2009 17:30	30.36
11/6/2009 17:22	1	-2.5	-0.75	11/6/2009 17:06	37.94	100.72	11/6/2009 17:45	30.36

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure[c] (inches Hg)	Indoor Temperature (F)	Date + Time	Outdoor Barometric Pressure[d] (inches Hg)
11/6/2009 17:37	1.5	-2.5	-0.5	11/6/2009 17:21	37.98	100.77	11/6/2009 18:00	30.37
11/6/2009 17:52	2	-1.5	0.25	11/6/2009 17:36	38.04	100.81	11/6/2009 18:15	30.37
11/6/2009 18:07	2	-3	-0.5	11/6/2009 17:51	38.13	100.83	11/6/2009 18:30	30.37
11/6/2009 18:22	1.5	-4	-1.25	11/6/2009 18:06	38.19	100.82	11/6/2009 18:45	30.38
11/6/2009 18:37	2.5	-3	-0.25	11/6/2009 18:21	38.21	100.81	11/6/2009 19:00	30.38
11/6/2009 18:52	3	-3	0	11/6/2009 18:36	38.24	100.77	11/6/2009 19:15	30.38
11/6/2009 19:07	2.5	-2.5	0	11/6/2009 18:51	38.36	100.74	11/6/2009 19:30	30.38
11/6/2009 19:22	0	-3.5	-1.75	11/6/2009 19:06	38.38	100.72	11/6/2009 19:45	30.38
11/6/2009 19:37	-0.5	-3.5	-2	11/6/2009 19:21	38.36	100.70	11/6/2009 20:00	30.38
11/6/2009 19:52	0.5	-4	-1.75	11/6/2009 19:36	38.36	100.69	11/6/2009 20:15	30.38
11/6/2009 20:07	0.5	-4	-1.75	11/6/2009 19:51	38.37	100.66	11/6/2009 20:30	30.38
11/6/2009 20:22	0.5	-2.5	-1	11/6/2009 20:06	38.40	100.65	11/6/2009 20:45	30.39
11/6/2009 20:37	-0.5	-3	-1.75	11/6/2009 20:21	38.42	100.63	11/6/2009 21:00	30.39
11/6/2009 20:52	-0.5	-3.5	-2	11/6/2009 20:36	38.42	100.61	11/6/2009 21:15	30.39
11/6/2009 21:07	-1	-3.5	-2.25	11/6/2009 20:51	38.41	100.57	11/6/2009 21:30	30.39
11/6/2009 21:22	-0.5	-3	-1.75	11/6/2009 21:06	38.43	100.53	11/6/2009 21:45	30.39
11/6/2009 21:37	-0.5	-4	-2.25	11/6/2009 21:21	38.43	100.48	11/6/2009 22:00	30.39
11/6/2009 21:52	-0.5	-4	-2.25	11/6/2009 21:36	38.43	100.41	11/6/2009 22:15	30.39
11/6/2009 22:07	-1	-3.5	-2.25	11/6/2009 21:51	38.42	100.36	11/6/2009 22:30	30.39
11/6/2009 22:22	-0.5	-3	-1.75	11/6/2009 22:06	38.38	100.31	11/6/2009 22:45	30.38
11/6/2009 22:37	-1.5	-5.5	-3.5	11/6/2009 22:21	38.42	100.27	11/6/2009 23:00	30.38
11/6/2009 22:52	-2	-4	-3	11/6/2009 22:36	38.35	100.22	11/6/2009 23:15	30.38
11/6/2009 23:07	-1	-4.5	-2.75	11/6/2009 22:51	38.32	100.20	11/6/2009 23:30	30.39
11/6/2009 23:22	0	-3.5	-1.75	11/6/2009 23:06	38.30	100.18	11/6/2009 23:45	30.38
11/6/2009 23:37	-0.5	-3.5	-2	11/6/2009 23:21	38.36	100.16	11/7/2009 0:00	30.38
11/6/2009 23:52	-0.5	-4	-2.25	11/6/2009 23:36	38.34	100.12	11/7/2009 0:15	30.38
11/7/2009 0:07	-1.5	-3	-2.25	11/6/2009 23:51	38.40	100.09	11/7/2009 0:30	30.38
11/7/2009 0:22	-1.5	-5	-3.25	11/7/2009 0:06	38.38	100.05	11/7/2009 0:45	30.38
11/7/2009 0:37	-1	-5.5	-3.25	11/7/2009 0:21	38.33	100.01	11/7/2009 1:00	30.38
11/7/2009 0:52	0	-5	-2.5	11/7/2009 0:36	38.29	99.96	11/7/2009 1:15	30.38
11/7/2009 1:07	-0.5	-4.5	-2.5	11/7/2009 0:51	38.29	99.92	11/7/2009 1:30	30.38
11/7/2009 1:22	0	-3	-1.5	11/7/2009 1:06	38.29	99.89	11/7/2009 1:45	30.37
11/7/2009 1:37	-1	-6	-3.5	11/7/2009 1:21	38.33	99.86	11/7/2009 2:00	30.37
11/7/2009 1:52	0	-6	-3	11/7/2009 1:36	38.25	99.85	11/7/2009 2:15	30.37
11/7/2009 2:07	-0.5	-5.5	-3	11/7/2009 1:51	38.27	99.84	11/7/2009 2:30	30.37
11/7/2009 2:22	-1	-3	-2	11/7/2009 2:06	38.24	99.80	11/7/2009 2:45	30.37
11/7/2009 2:37	-1	-7.5	-4.25	11/7/2009 2:21	38.25	99.78	11/7/2009 3:00	30.37
11/7/2009 2:52	0.5	-3	-1.25	11/7/2009 2:36	38.17	99.76	11/7/2009 3:15	30.38
11/7/2009 3:07	0	-3	-1.5	11/7/2009 2:51	38.21	99.74	11/7/2009 3:30	30.38
11/7/2009 3:22	-0.5	-3	-1.75	11/7/2009 3:06	38.26	99.69	11/7/2009 3:45	30.38
11/7/2009 3:37	0	-2.5	-1.25	11/7/2009 3:21	38.30	99.66	11/7/2009 4:00	30.38
11/7/2009 3:52	-1	-4.5	-2.75	11/7/2009 3:36	38.34	99.63	11/7/2009 4:15	30.39
11/7/2009 4:07	1	-3.5	-1.25	11/7/2009 3:51	38.33	99.59	11/7/2009 4:30	30.39
11/7/2009 4:22	1	-3	-1	11/7/2009 4:06	38.37	99.58	11/7/2009 4:45	30.39
11/7/2009 4:37	0	-4.5	-2.25	11/7/2009 4:21	38.46	99.57	11/7/2009 5:00	30.39
11/7/2009 4:52	0	-3.5	-1.75	11/7/2009 4:36	38.48	99.55	11/7/2009 5:15	30.39
11/7/2009 5:07	-0.5	-5	-2.75	11/7/2009 4:51	38.49	99.55	11/7/2009 5:30	30.39
11/7/2009 5:22	0	-4	-2	11/7/2009 5:06	38.49	99.55	11/7/2009 5:45	30.39
11/7/2009 5:37	-1.5	-5	-3.25	11/7/2009 5:21	38.46	99.53	11/7/2009 6:00	30.39
11/7/2009 5:52	0	-3	-1.5	11/7/2009 5:36	38.42	99.52	11/7/2009 6:15	30.40
11/7/2009 6:07	-0.5	-4	-2.25	11/7/2009 5:51	38.49	99.49	11/7/2009 6:30	30.40
11/7/2009 6:22	0.5	-4	-1.75	11/7/2009 6:06	38.51	99.44	11/7/2009 6:45	30.40
11/7/2009 6:37	-1	-4.5	-2.75	11/7/2009 6:21	38.58	99.40	11/7/2009 7:00	30.40
11/7/2009 6:52	-1	-3.5	-2.25	11/7/2009 6:36	38.59	99.34	11/7/2009 7:15	30.40
11/7/2009 7:07	0.5	-3.5	-1.5	11/7/2009 6:51	38.61	99.32	11/7/2009 7:30	30.40
11/7/2009 7:22	0.5	-3	-1.25	11/7/2009 7:06	38.61	99.31	11/7/2009 7:45	30.40
11/7/2009 7:37	0.5	-3.5	-1.5	11/7/2009 7:21	38.68	99.31	11/7/2009 8:00	30.41
11/7/2009 7:52	0	-4	-2	11/7/2009 7:36	38.69	99.32	11/7/2009 8:15	30.41
11/7/2009 8:07	1.5	-4	-1.25	11/7/2009 7:51	38.71	99.35	11/7/2009 8:30	30.40
11/7/2009 8:22	0	-4.5	-2.25	11/7/2009 8:06	38.69	99.37	11/7/2009 8:45	30.40
11/7/2009 8:37	0	-5	-2.5	11/7/2009 8:21	38.68	99.41	11/7/2009 9:00	30.40
11/7/2009 8:52	0	-6	-3	11/7/2009 8:36	38.66	99.46	11/7/2009 9:15	30.40
11/7/2009 9:07	-1.5	-6	-3.75	11/7/2009 8:51	38.64	99.49	11/7/2009 9:30	30.39
11/7/2009 9:22	2	-7	-2.5	11/7/2009 9:06	38.56	99.52	11/7/2009 9:45	30.40
11/7/2009 9:37	-0.5	-9	-4.75	11/7/2009 9:21	38.56	99.54	11/7/2009 10:00	30.40
11/7/2009 9:52	2	-5	-1.5	11/7/2009 9:36	38.51	99.56	11/7/2009 10:15	30.39
11/7/2009 10:07	0	-7	-3.5	11/7/2009 9:51	38.54	99.58	11/7/2009 10:30	30.39
11/7/2009 10:22	-0.5	-9	-4.75	11/7/2009 10:06	38.51	99.60	11/7/2009 10:45	30.38
11/7/2009 10:37	0	-8	-4	11/7/2009 10:21	38.44	99.64	11/7/2009 11:00	30.37
11/7/2009 10:52	2	-7.5	-2.75	11/7/2009 10:36	38.35	99.68	11/7/2009 11:15	30.36
11/7/2009 11:07	0	-9	-4.5	11/7/2009 10:51	38.28	99.71	11/7/2009 11:30	30.35
11/7/2009 11:22	0	-9	-4.5	11/7/2009 11:06	38.16	99.72	11/7/2009 11:45	30.34
11/7/2009 11:37	0.5	-8	-3.75	11/7/2009 11:21	38.05	99.72	11/7/2009 12:00	30.33
11/7/2009 11:52	-1.5	-12	-6.75	11/7/2009 11:36	37.97	99.71	11/7/2009 12:15	30.33
11/7/2009 12:07	3	-9.5	-3.25	11/7/2009 11:51	37.74	99.69	11/7/2009 12:30	30.32
11/7/2009 12:22	1.5	-10.5	-4.5	11/7/2009 12:06	37.66	99.69	11/7/2009 12:45	30.31
11/7/2009 12:37	4	-9.5	-2.75	11/7/2009 12:21	37.60	99.71	11/7/2009 13:00	30.31
11/7/2009 12:52	-1.5	-10.5	-6	11/7/2009 12:36	37.52	99.73	11/7/2009 13:15	30.30
11/7/2009 13:07	4.5	-8	-1.75	11/7/2009 12:51	37.33	99.77	11/7/2009 13:30	30.30

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure[c] (inches Hg)	Indoor Temperature (F)	Date + Time	Outdoor Barometric Pressure[d] (inches Hg)
11/7/2009 13:22	3	-8	-2.5	11/7/2009 13:06	37.33	99.82	11/7/2009 13:45	30.29
11/7/2009 13:37	0.5	-7.5	-3.5	11/7/2009 13:21	37.25	99.87	11/7/2009 14:00	30.28
11/7/2009 13:52	0.5	-10.5	-5	11/7/2009 13:36	37.14	99.93	11/7/2009 14:15	30.27
11/7/2009 14:07	-0.5	-9	-4.75	11/7/2009 13:51	37.03	99.98	11/7/2009 14:30	30.27
11/7/2009 14:22	2.5	-8	-2.75	11/7/2009 14:06	36.94	99.99	11/7/2009 14:45	30.27
11/7/2009 14:37	2.5	-7	-2.25	11/7/2009 14:21	36.89	100.02	11/7/2009 15:00	30.27
11/7/2009 14:52	4.5	-7	-1.25	11/7/2009 14:36	36.88	100.05	11/7/2009 15:15	30.27
11/7/2009 15:07	0	-10.5	-5.25	11/7/2009 14:51	36.86	100.05	11/7/2009 15:30	30.26
11/7/2009 15:22	1	-6.5	-2.75	11/7/2009 15:06	36.78	100.05	11/7/2009 15:45	30.26
11/7/2009 15:37	2.5	-11	-4.25	11/7/2009 15:21	36.73	100.06	11/7/2009 16:00	30.26
11/7/2009 15:52	1.5	-8	-3.25	11/7/2009 15:36	36.69	100.06	11/7/2009 16:15	30.25
11/7/2009 16:07	2	-6	-2	11/7/2009 15:51	36.66	100.07	11/7/2009 16:30	30.25
11/7/2009 16:22	-1	-6	-3.5	11/7/2009 16:06	36.68	100.05	11/7/2009 16:45	30.25
11/7/2009 16:37	0.5	-5	-2.25	11/7/2009 16:21	36.59	100.03	11/7/2009 17:00	30.25
11/7/2009 16:52	0.5	-6	-2.75	11/7/2009 16:36	36.56	100.02	11/7/2009 17:15	30.25
11/7/2009 17:07	1	-5.5	-2.25	11/7/2009 16:51	36.51	100.02	11/7/2009 17:30	30.25
11/7/2009 17:22	0	-4.5	-2.25	11/7/2009 17:06	36.53	100.01	11/7/2009 17:45	30.25
11/7/2009 17:37	2	-4.5	-1.25	11/7/2009 17:21	36.54	100.06	11/7/2009 18:00	30.26
11/7/2009 17:52	1.5	-5	-1.75	11/7/2009 17:36	36.60	100.08	11/7/2009 18:15	30.26
11/7/2009 18:07	1	-7	-3	11/7/2009 17:51	36.64	100.08	11/7/2009 18:30	30.26
11/7/2009 18:22	1.5	-6.5	-2.5	11/7/2009 18:06	36.63	100.08	11/7/2009 18:45	30.26
11/7/2009 18:37	2.5	-4.5	-1	11/7/2009 18:21	36.61	100.06	11/7/2009 19:00	30.27
11/7/2009 18:52	1.5	-5	-1.75	11/7/2009 18:36	36.67	100.03	11/7/2009 19:15	30.27
11/7/2009 19:07	0.5	-5.5	-2.5	11/7/2009 18:51	36.73	100.03	11/7/2009 19:30	30.27
11/7/2009 19:22	1.5	-6	-2.25	11/7/2009 19:06	36.78	99.99	11/7/2009 19:45	30.27
11/7/2009 19:37	-1	-6	-3.5	11/7/2009 19:21	36.83	99.95	11/7/2009 20:00	30.27
11/7/2009 19:52	2	-4	-1	11/7/2009 19:36	36.78	99.90	11/7/2009 20:15	30.27
11/7/2009 20:07	0.5	-5	-2.25	11/7/2009 19:51	36.85	99.85	11/7/2009 20:30	30.28
11/7/2009 20:22	1	-3	-1	11/7/2009 20:06	36.84	99.80	11/7/2009 20:45	30.27
11/7/2009 20:37	3.5	-6	-1.25	11/7/2009 20:21	36.90	99.77	11/7/2009 21:00	30.28
11/7/2009 20:52	-0.5	-6	-3.25	11/7/2009 20:36	36.89	99.74	11/7/2009 21:15	30.28
11/7/2009 21:07	1	-3.5	-1.25	11/7/2009 20:51	36.87	99.72	11/7/2009 21:30	30.27
11/7/2009 21:22	1	-5	-2	11/7/2009 21:06	36.91	99.70	11/7/2009 21:45	30.28
11/7/2009 21:37	0.5	-5	-2.25	11/7/2009 21:21	36.92	99.68	11/7/2009 22:00	30.27
11/7/2009 21:52	0.5	-7	-3.25	11/7/2009 21:36	36.91	99.66	11/7/2009 22:15	30.27
11/7/2009 22:07	0	-7	-3.5	11/7/2009 21:51	36.91	99.64	11/7/2009 22:30	30.27
11/7/2009 22:22	0	-4.5	-2.25	11/7/2009 22:06	36.88	99.63	11/7/2009 22:45	30.27
11/7/2009 22:37	-1	-6	-3.5	11/7/2009 22:21	36.84	99.63	11/7/2009 23:00	30.27
11/7/2009 22:52	0	-5.5	-2.75	11/7/2009 22:36	36.80	99.62	11/7/2009 23:15	30.27
11/7/2009 23:07	0	-5.5	-2.75	11/7/2009 22:51	36.80	99.62	11/7/2009 23:30	30.26
11/7/2009 23:22	0	-6	-3	11/7/2009 23:06	36.77	99.61	11/7/2009 23:45	30.26
11/7/2009 23:37	-1	-5.5	-3.25	11/7/2009 23:21	36.73	99.59	11/8/2009 0:00	30.26
11/7/2009 23:52	-1	-5.5	-3.25	11/7/2009 23:36	36.73	99.56	11/8/2009 0:15	30.26
11/8/2009 0:07	0	-7	-3.5	11/7/2009 23:51	36.72	99.52	11/8/2009 0:30	30.26
11/8/2009 0:22	-1	-5.5	-3.25	11/8/2009 0:06	36.73	99.46	11/8/2009 0:45	30.26
11/8/2009 0:37	-1	-6.5	-3.75	11/8/2009 0:21	36.71	99.40	11/8/2009 1:00	30.26
11/8/2009 0:52	-1	-6	-3.5	11/8/2009 0:36	36.70	99.33	11/8/2009 1:15	30.26
11/8/2009 1:07	-0.5	-6.5	-3.5	11/8/2009 0:51	36.70	99.29	11/8/2009 1:30	30.26
11/8/2009 1:22	-0.5	-5.5	-3	11/8/2009 1:06	36.71	99.22	11/8/2009 1:45	30.26
11/8/2009 1:37	-0.5	-5	-2.75	11/8/2009 1:21	36.72	99.19	11/8/2009 2:00	30.26
11/8/2009 1:52	-1.5	-5.5	-3.5	11/8/2009 1:36	36.70	99.18	11/8/2009 2:15	30.26
11/8/2009 2:07	-1.5	-5	-3.25	11/8/2009 1:51	36.69	99.17	11/8/2009 2:30	30.26
11/8/2009 2:22	-1	-6	-3.5	11/8/2009 2:06	36.68	99.15	11/8/2009 2:45	30.26
11/8/2009 2:37	-1	-6.5	-3.75	11/8/2009 2:21	36.66	99.14	11/8/2009 3:00	30.26
11/8/2009 2:52	-1	-5	-3	11/8/2009 2:36	36.66	99.13	11/8/2009 3:15	30.25
11/8/2009 3:07	-2	-5	-3.5	11/8/2009 2:51	36.68	99.11	11/8/2009 3:30	30.26
11/8/2009 3:22	-1	-4.5	-2.75	11/8/2009 3:06	36.61	99.09	11/8/2009 3:45	30.26
11/8/2009 3:37	0	-5	-2.5	11/8/2009 3:21	36.61	99.06	11/8/2009 4:00	30.26
11/8/2009 3:52	-0.5	-5	-2.75	11/8/2009 3:36	36.64	99.03	11/8/2009 4:15	30.26
11/8/2009 4:07	0	-4	-2	11/8/2009 3:51	36.64	99.02	11/8/2009 4:30	30.26
11/8/2009 4:22	0	-4.5	-2.25	11/8/2009 4:06	36.69	99.02	11/8/2009 4:45	30.26
11/8/2009 4:37	-0.5	-5	-2.75	11/8/2009 4:21	36.68	99.04	11/8/2009 5:00	30.26
11/8/2009 4:52	0	-6.5	-3.25	11/8/2009 4:36	36.72	99.06	11/8/2009 5:15	30.26
11/8/2009 5:07	0	-5.5	-2.75	11/8/2009 4:51	36.72	99.07	11/8/2009 5:30	30.27
11/8/2009 5:22	3	-6.5	-1.75	11/8/2009 5:06	36.72	99.08	11/8/2009 5:45	30.27
11/8/2009 5:37	1	-5.5	-2.25	11/8/2009 5:21	36.77	99.07	11/8/2009 6:00	30.27
11/8/2009 5:52	-0.5	-4.5	-2.5	11/8/2009 5:36	36.80	99.06	11/8/2009 6:15	30.27
11/8/2009 6:07	1	-3.5	-1.25	11/8/2009 5:51	36.81	99.05	11/8/2009 6:30	30.28
11/8/2009 6:22	0	-3.5	-1.75	11/8/2009 6:06	36.85	99.04	11/8/2009 6:45	30.28
11/8/2009 6:37	1	-2	-0.5	11/8/2009 6:21	36.90	99.03	11/8/2009 7:00	30.30
11/8/2009 6:52	1.5	-3	-0.75	11/8/2009 6:36	37.00	99.02	11/8/2009 7:15	30.30
11/8/2009 7:07	1.5	-1.5	0	11/8/2009 6:51	37.07	99.01	11/8/2009 7:30	30.30
11/8/2009 7:22	1	-4.5	-1.75	11/8/2009 7:06	37.23	99.01	11/8/2009 7:45	30.31
11/8/2009 7:37	1.5	-2.5	-0.5	11/8/2009 7:21	37.21	99.03	11/8/2009 8:00	30.31
11/8/2009 7:52	1.5	-5	-1.75	11/8/2009 7:36	37.31	99.06	11/8/2009 8:15	30.31
11/8/2009 8:07	1.5	-4	-1.25	11/8/2009 7:51	37.37	99.09	11/8/2009 8:30	30.32
11/8/2009 8:22	2	-5	-1.5	11/8/2009 8:06	37.39	99.10	11/8/2009 8:45	30.32
11/8/2009 8:37	2	-2.5	-0.25	11/8/2009 8:21	37.43	99.13	11/8/2009 9:00	30.32
11/8/2009 8:52	2	-5	-1.5	11/8/2009 8:36	37.48	99.16	11/8/2009 9:15	30.32

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure[c] (inches Hg)	Indoor Temperature (F)	Date + Time	Outdoor Barometric Pressure[d] (inches Hg)
11/8/2009 9:07	1	-4	-1.5	11/8/2009 8:51	37.49	99.18	11/8/2009 9:30	30.32
11/8/2009 9:22	0	-3	-1.5	11/8/2009 9:06	37.51	99.20	11/8/2009 9:45	30.32
11/8/2009 9:37	1	-3.5	-1.25	11/8/2009 9:21	37.54	99.23	11/8/2009 10:00	30.32
11/8/2009 9:52	2	-4	-1	11/8/2009 9:36	37.57	99.24	11/8/2009 10:15	30.32
11/8/2009 10:07	0	-3	-1.5	11/8/2009 9:51	37.63	99.27	11/8/2009 10:30	30.32
11/8/2009 10:22	0	-2	-1	11/8/2009 10:06	37.61	99.30	11/8/2009 10:45	30.32
11/8/2009 10:37	0	-2.5	-1.25	11/8/2009 10:21	37.62	99.35	11/8/2009 11:00	30.32
11/8/2009 10:52	0.5	-2.5	-1	11/8/2009 10:36	37.59	99.43	11/8/2009 11:15	30.32
11/8/2009 11:07	0	-4.5	-2.25	11/8/2009 10:51	37.58	99.48	11/8/2009 11:30	30.31
11/8/2009 11:22	-1	-3	-2	11/8/2009 11:06	37.49	99.54	11/8/2009 11:45	30.31
11/8/2009 11:37	-0.5	-2.5	-1.5	11/8/2009 11:21	37.42	99.59	11/8/2009 12:00	30.31
11/8/2009 11:52	0	-1	-0.5	11/8/2009 11:36	37.39	99.60	11/8/2009 12:15	30.31
11/8/2009 12:07	0	-2	-1	11/8/2009 11:51	37.39	99.65	11/8/2009 12:30	30.31
11/8/2009 12:22	0.5	-1.5	-0.5	11/8/2009 12:06	37.36	99.71	11/8/2009 12:45	30.31
11/8/2009 12:37	0.5	-1.5	-0.5	11/8/2009 12:21	37.35	99.79	11/8/2009 13:00	30.30
11/8/2009 12:52	0.5	-2	-0.75	11/8/2009 12:36	37.33	99.87	11/8/2009 13:15	30.31
11/8/2009 13:07	0	-1.5	-0.75	11/8/2009 12:51	37.34	99.94	11/8/2009 13:30	30.30
11/8/2009 13:22	0.5	-1	-0.25	11/8/2009 13:06	37.29	100.02	11/8/2009 13:45	30.31
11/8/2009 13:37	0.5	-1.5	-0.5	11/8/2009 13:21	37.32	100.07	11/8/2009 14:00	30.30
11/8/2009 13:52	0.5	-1.5	-0.5	11/8/2009 13:36	37.30	100.11	11/8/2009 14:15	30.30
11/8/2009 14:07	-0.5	-2	-1.25	11/8/2009 13:51	37.31	100.14	11/8/2009 14:30	30.30
11/8/2009 14:22	0	-2.5	-1.25	11/8/2009 14:06	37.28	100.16	11/8/2009 14:45	30.31
11/8/2009 14:37	1.5	-1.5	0	11/8/2009 14:21	37.27	100.18	11/8/2009 15:00	30.31
11/8/2009 14:52	1.5	-1	0.25	11/8/2009 14:36	37.30	100.18	11/8/2009 15:15	30.32
11/8/2009 15:07	1.5	-1.5	0	11/8/2009 14:51	37.35	100.19	11/8/2009 15:30	30.32
11/8/2009 15:22	1	-1.5	-0.25	11/8/2009 15:06	37.41	100.19	11/8/2009 15:45	30.32
11/8/2009 15:37	0	-2.5	-1.25	11/8/2009 15:21	37.43	100.21	11/8/2009 16:00	30.32
11/8/2009 15:52	2.5	0	1.25	11/8/2009 15:36	37.39	100.23	11/8/2009 16:15	30.33
11/8/2009 16:07	2.5	-1.5	0.5	11/8/2009 15:51	37.48	100.25	11/8/2009 16:30	30.32
11/8/2009 16:22	0	-1.5	-0.75	11/8/2009 16:06	37.58	100.28	11/8/2009 16:45	30.32
11/8/2009 16:37	-0.5	-2	-1.25	11/8/2009 16:21	37.65	100.30	11/8/2009 17:00	30.33
11/8/2009 16:52	0	-1	-0.5	11/8/2009 16:36	37.58	100.32	11/8/2009 17:15	30.33
11/8/2009 17:07	1	-1	0	11/8/2009 16:51	37.61	100.33	11/8/2009 17:30	30.34
11/8/2009 17:22	2.5	-2	0.25	11/8/2009 17:06	37.72	100.33	11/8/2009 17:45	30.35
11/8/2009 17:37	2	0	1	11/8/2009 17:21	37.72	100.29	11/8/2009 18:00	30.35
11/8/2009 17:52	1	-1	0	11/8/2009 17:36	37.82	100.26	11/8/2009 18:15	30.35
11/8/2009 18:07	1.5	-1	0.25	11/8/2009 17:51	37.92	100.23	11/8/2009 18:30	30.36
11/8/2009 18:22	1.5	-2.5	-0.5	11/8/2009 18:06	37.97	100.20	11/8/2009 18:45	30.36
11/8/2009 18:37	0.5	-1	-0.25	11/8/2009 18:21	37.98	100.18	11/8/2009 19:00	30.36
11/8/2009 18:52	0.5	-4	-1.75	11/8/2009 18:36	38.04	100.16	11/8/2009 19:15	30.36
11/8/2009 19:07	0	-3	-1.5	11/8/2009 18:51	38.01	100.15	11/8/2009 19:30	30.36
11/8/2009 19:22	0.5	-4.5	-2	11/8/2009 19:06	38.07	100.13	11/8/2009 19:45	30.36
11/8/2009 19:37	0	-3.5	-1.75	11/8/2009 19:21	38.04	100.13	11/8/2009 20:00	30.37
11/8/2009 19:52	1	-1.5	-0.25	11/8/2009 19:36	38.07	100.11	11/8/2009 20:15	30.38
11/8/2009 20:07	1	-0.5	0.25	11/8/2009 19:51	38.13	100.11	11/8/2009 20:30	30.39
11/8/2009 20:22	1	-1	0	11/8/2009 20:06	38.21	100.11	11/8/2009 20:45	30.39
11/8/2009 20:37	1	-0.5	0.25	11/8/2009 20:21	38.37	100.14	11/8/2009 21:00	30.40
11/8/2009 20:52	1	-2	-0.5	11/8/2009 20:36	38.44	100.16	11/8/2009 21:15	30.40
11/8/2009 21:07	1.5	-1	0.25	11/8/2009 20:51	38.47	100.14	11/8/2009 21:30	30.40
11/8/2009 21:22	0.5	-4.5	-2	11/8/2009 21:06	38.57	100.12	11/8/2009 21:45	30.40
11/8/2009 21:37	0.5	-3	-1.25	11/8/2009 21:21	38.54	100.11	11/8/2009 22:00	30.40
11/8/2009 21:52	0	-3.5	-1.75	11/8/2009 21:36	38.55	100.10	11/8/2009 22:15	30.40
11/8/2009 22:07	-0.5	-3	-1.75	11/8/2009 21:51	38.56	100.09	11/8/2009 22:30	30.40
11/8/2009 22:22	-1	-4.5	-2.75	11/8/2009 22:06	38.58	100.07	11/8/2009 22:45	30.40
11/8/2009 22:37	0	-2.5	-1.25	11/8/2009 22:21	38.59	100.05	11/8/2009 23:00	30.40
11/8/2009 22:52	0	-4.5	-2.25	11/8/2009 22:36	38.60	100.04	11/8/2009 23:15	30.39
11/8/2009 23:07	-0.5	-5	-2.75	11/8/2009 22:51	38.58	100.02	11/8/2009 23:30	30.40
11/8/2009 23:22	0	-4	-2	11/8/2009 23:06	38.52	100.00	11/8/2009 23:45	30.40
11/8/2009 23:37	0	-1	-0.5	11/8/2009 23:21	38.54	99.98	11/9/2009 0:00	30.40
11/8/2009 23:52	-0.5	-2	-1.25	11/8/2009 23:36	38.63	99.95	11/9/2009 0:15	30.40
11/9/2009 0:07	-0.5	-2	-1.25	11/8/2009 23:51	38.64	99.93	11/9/2009 0:30	30.41
11/9/2009 0:22	-0.5	-1.5	-1	11/9/2009 0:06	38.69	99.90	11/9/2009 0:45	30.40
11/9/2009 0:37	0	-3.5	-1.75	11/9/2009 0:21	38.68	99.89	11/9/2009 1:00	30.40
11/9/2009 0:52	-0.5	-3	-1.75	11/9/2009 0:36	38.67	99.87	11/9/2009 1:15	30.40
11/9/2009 1:07	-0.5	-3	-1.75	11/9/2009 0:51	38.64	99.86	11/9/2009 1:30	30.40
11/9/2009 1:22	1.5	-3.5	-1	11/9/2009 1:06	38.65	99.85	11/9/2009 1:45	30.40
11/9/2009 1:37	-0.5	-4	-2.25	11/9/2009 1:21	38.71	99.83	11/9/2009 2:00	30.40
11/9/2009 1:52	-1	-3	-2	11/9/2009 1:36	38.68	99.83	11/9/2009 2:15	30.41
11/9/2009 2:07	0	-2	-1	11/9/2009 1:51	38.69	99.84	11/9/2009 2:30	30.41
11/9/2009 2:22	-1	-3.5	-2.25	11/9/2009 2:06	38.71	99.82	11/9/2009 2:45	30.41
11/9/2009 2:37	0	-1.5	-0.75	11/9/2009 2:21	38.68	99.83	11/9/2009 3:00	30.40
11/9/2009 2:52	-1.5	-3.5	-2.5	11/9/2009 2:36	38.75	99.82	11/9/2009 3:15	30.40
11/9/2009 3:07	0.5	-3.5	-1.5	11/9/2009 2:51	38.69	99.82	11/9/2009 3:30	30.40
11/9/2009 3:22	-1.5	-4	-2.75	11/9/2009 3:06	38.69	99.81	11/9/2009 3:45	30.40
11/9/2009 3:37	-0.5	-2.5	-1.5	11/9/2009 3:21	38.66	99.80	11/9/2009 4:00	30.41
11/9/2009 3:52	0	-2	-1	11/9/2009 3:36	38.66	99.79	11/9/2009 4:15	30.42
11/9/2009 4:07	0.5	-2.5	-1	11/9/2009 3:51	38.71	99.78	11/9/2009 4:30	30.42
11/9/2009 4:22	1	-1.5	-0.25	11/9/2009 4:06	38.75	99.76	11/9/2009 4:45	30.42
11/9/2009 4:37	0	-2.5	-1.25	11/9/2009 4:21	38.83	99.75	11/9/2009 5:00	30.42

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure[c] (inches Hg)	Indoor Temperature (F)	Date + Time	Outdoor Barometric Pressure[d] (inches Hg)
11/9/2009 4:52	0	-2.5	-1.25	11/9/2009 4:36	38.84	99.72	11/9/2009 5:15	30.42
11/9/2009 5:07	-1	-2	-1.5	11/9/2009 4:51	38.86	99.71	11/9/2009 5:30	30.42
11/9/2009 5:22	0	-2	-1	11/9/2009 5:06	38.87	99.70	11/9/2009 5:45	30.43
11/9/2009 5:37	0	-2.5	-1.25	11/9/2009 5:21	38.88	99.71	11/9/2009 6:00	30.43
11/9/2009 5:52	1.5	-2	-0.25	11/9/2009 5:36	38.93	99.71	11/9/2009 6:15	30.44
11/9/2009 6:07	0	-2	-1	11/9/2009 5:51	39.00	99.72	11/9/2009 6:30	30.44
11/9/2009 6:22	1	-2.5	-0.75	11/9/2009 6:06	39.06	99.71	11/9/2009 6:45	30.44
11/9/2009 6:37	0	-2.5	-1.25	11/9/2009 6:21	39.09	99.70	11/9/2009 7:00	30.44
11/9/2009 6:52	0	-2	-1	11/9/2009 6:36	39.12	99.70	11/9/2009 7:15	30.45
11/9/2009 7:07	1.5	-2	-0.25	11/9/2009 6:51	39.17	99.68	11/9/2009 7:30	30.46
11/9/2009 7:22	2	-1.5	0.25	11/9/2009 7:06	39.25	99.66	11/9/2009 7:45	30.46
11/9/2009 7:37	0.5	-1.5	-0.5	11/9/2009 7:21	39.36	99.65	11/9/2009 8:00	30.47
11/9/2009 7:52	2	-1.5	0.25	11/9/2009 7:36	39.43	99.64	11/9/2009 8:15	30.48
11/9/2009 8:07	2	-3	-0.5	11/9/2009 7:51	39.54	99.62	11/9/2009 8:30	30.47
11/9/2009 8:22	0	-3	-1.5	11/9/2009 8:06	39.59	99.63	11/9/2009 8:45	30.47
11/9/2009 8:37	-1	-3.5	-2.25	11/9/2009 8:21	39.61	99.63	11/9/2009 9:00	30.47
11/9/2009 8:52	-0.5	-4.5	-2.5	11/9/2009 8:36	39.57	99.63	11/9/2009 9:15	30.46
11/9/2009 9:07	1	-4	-1.5	11/9/2009 8:51	39.48	99.63	11/9/2009 9:30	30.47
11/9/2009 9:22	0	-4	-2	11/9/2009 9:06	39.49	99.64	11/9/2009 9:45	30.47
11/9/2009 9:37	1.5	-2.5	-0.5	11/9/2009 9:21	39.50	99.66	11/9/2009 10:00	30.47
11/9/2009 9:52	0.5	-2	-0.75	11/9/2009 9:36	39.53	99.68	11/9/2009 10:15	30.47
11/9/2009 10:07	0	-3.5	-1.75	11/9/2009 9:51	39.55	99.71	11/9/2009 10:30	30.46
11/9/2009 10:22	0	-4.5	-2.25	11/9/2009 10:06	39.52	99.74	11/9/2009 10:45	30.46
11/9/2009 10:37	-1	-4	-2.5	11/9/2009 10:21	39.48	99.76	11/9/2009 11:00	30.45
11/9/2009 10:52	0	-4	-2	11/9/2009 10:36	39.42	99.80	11/9/2009 11:15	30.44
11/9/2009 11:07	-0.5	-5	-2.75	11/9/2009 10:51	39.35	99.83	11/9/2009 11:30	30.43
11/9/2009 11:22	-1	-4	-2.5	11/9/2009 11:06	39.25	99.85	11/9/2009 11:45	30.43
11/9/2009 11:37	-1.5	-4	-2.75	11/9/2009 11:21	39.13	99.89	11/9/2009 12:00	30.41
11/9/2009 11:52	0	-4.5	-2.25	11/9/2009 11:36	39.00	99.95	11/9/2009 12:15	30.41
11/9/2009 12:07	0.5	-3.5	-1.5	11/9/2009 11:51	38.91	100.02	11/9/2009 12:30	30.40
11/9/2009 12:22	-1	-4	-2.5	11/9/2009 12:06	38.84	100.05	11/9/2009 12:45	30.40
11/9/2009 12:37	-1	-4.5	-2.75	11/9/2009 12:21	38.72	100.08	11/9/2009 13:00	30.39
11/9/2009 12:52	0	-3.5	-1.75	11/9/2009 12:36	38.61	100.11	11/9/2009 13:15	30.39
11/9/2009 13:07	0	-4	-2	11/9/2009 12:51	38.49	100.14	11/9/2009 13:30	30.39
11/9/2009 13:22	1	-2.5	-0.75	11/9/2009 13:06	38.44	100.19	11/9/2009 13:45	30.38
11/9/2009 13:37	2	-3	-0.5	11/9/2009 13:21	38.42	100.21	11/9/2009 14:00	30.38
11/9/2009 13:52	0	-2.5	-1.25	11/9/2009 13:36	38.38	100.28	11/9/2009 14:15	30.38
11/9/2009 14:07	-0.5	-3	-1.75	11/9/2009 13:51	38.38	100.32	11/9/2009 14:30	30.38
11/9/2009 14:22	0.5	-1	-0.25	11/9/2009 14:06	38.30	100.35		
11/9/2009 14:37	1	-1	0	11/9/2009 14:21	38.35	100.37		
				11/9/2009 14:36	38.37	100.47		

Notes:

a : Differential pressure measurements are monitored continuously and the maximum and minimum differential pressure in Pascals [Pa] are recorded during each 15 minute monitoring period.

b: Differential pressure measurements were made using a Omniguard 4 differential pressure monitor with data logger (http://www.engsolinc.com/docs/og/OG4broch.pdf).

c : Interior barometric pressure measurements were made using a Solinst barometric data logger (http://www.solinst.com/Downloads/3001/3001Manual/Introduction/Barologger.html).

d: Exterior barometric pressure measurements were made using a Davis Vantage Pro 2 weather station (http://www.davisnet.com/weather/products/weather_product.asp?pnum=06152)

TABLE G-2

Building 3606 Pressure Difference Measurements [a]

Naval Amphibious Base Little Creek Site 11a

Averages over all measurements:

Maximum Differential Pressure:	0.7 Pa
Minimum Differential Pressure:	-3.3 Pa

Averages during Work Hours and Night Time:

		Work Hours, Daily 10-hour Average Pressure Difference (7 am to 5 pm)		**Night Time, Daily 14-hour Average Pressure Difference (5 pm to 7 am)**	
Date	**Time**	**max (Pa)**	**min (Pa)**	**max (Pa)**	**min (Pa)**
3/2/2010	average	3.60	-2.75	1.88	-8.94
3/3/2010	average	2.63	-6.41	0.84	-3.67
3/4/2010	average	0.54	-3.78	1.12	-2.70
3/5/2010	average	1.10	-2.85	1.22	-2.17
3/6/2010	average	0.69	-3.18	-0.08	-1.77
3/7/2010	average	-0.58	-3.25	0.14	-2.32
3/8/2010	average	-0.52	-2.66	0.23	-1.43
3/9/2010	average	0.05	-1.94	0.34	-2.45
3/10/2010	average	1.66	-1.97	NA	NA
	Median:	0.69	-2.85	0.59	-2.38

Date + Time	**Maximum Differential Pressure[b] [Pa]**	**Minimum Differential Pressure[b] [Pa]**	**Average Pressure [Pa]**	**Date + Time**	**Indoor Barometric Pressure (inches Hg) [c]**	**Date + Time**	**Outdoor Barometric Pressure (inches Hg) [d]**
3/2/2010 16:14	0.5	-5.5	-2.5	3/2/10 16:19	30.66	3/2/2010 16:45	29.84
3/2/2010 16:19	3	-2.5	0.25	3/2/10 16:24	30.62	3/2/2010 17:00	29.83
3/2/2010 16:24	4.5	-1.5	1.5	3/2/10 16:29	30.62	3/2/2010 17:15	29.81
3/2/2010 16:29	2	-3	-0.5	3/2/10 16:34	30.63	3/2/2010 17:30	29.80
3/2/2010 16:34	-0.5	-5	-2.75	3/2/10 16:39	30.61	3/2/2010 17:45	29.80
3/2/2010 16:39	0	-4.5	-2.25	3/2/10 16:44	30.57	3/2/2010 18:00	29.80
3/2/2010 16:44	1	-4	-1.5	3/2/10 16:49	30.51	3/2/2010 18:15	29.79
3/2/2010 16:49	11	-1	5	3/2/10 16:54	30.51	3/2/2010 18:30	29.77
3/2/2010 16:54	10	0	5	3/2/10 16:59	30.56	3/2/2010 18:45	29.75
3/2/2010 16:59	4.5	-0.5	2	3/2/10 17:04	30.49	3/2/2010 19:00	29.75
3/2/2010 17:04	1.5	-3.5	-1	3/2/10 17:09	30.47	3/2/2010 19:15	29.76
3/2/2010 17:09	2	-2.5	-0.25	3/2/10 17:14	30.39	3/2/2010 19:30	29.74
3/2/2010 17:14	0	-4.5	-2.25	3/2/10 17:19	30.39	3/2/2010 19:45	29.74
3/2/2010 17:19	-3	-6	-4.5	3/2/10 17:24	30.35	3/2/2010 20:00	29.73
3/2/2010 17:24	-0.5	-5	-2.75	3/2/10 17:29	30.27	3/2/2010 20:15	29.71
3/2/2010 17:29	2.5	-3.5	-0.5	3/2/10 17:34	30.24	3/2/2010 20:30	29.72
3/2/2010 17:34	1	-2.5	-0.75	3/2/10 17:39	30.25	3/2/2010 20:45	29.71
3/2/2010 17:39	2.5	-0.5	1	3/2/10 17:44	30.25	3/2/2010 21:00	29.68
3/2/2010 17:44	1.5	-4	-1.25	3/2/10 17:49	30.29	3/2/2010 21:15	29.67
3/2/2010 17:49	0.5	-4	-1.75	3/2/10 17:54	30.26	3/2/2010 21:30	29.66
3/2/2010 17:54	0.5	-4.5	-2	3/2/10 17:59	30.24	3/2/2010 21:45	29.64
3/2/2010 17:59	1.5	-3.5	-1	3/2/10 18:04	30.23	3/2/2010 22:00	29.62
3/2/2010 18:04	0.5	-7	-3.25	3/2/10 18:09	30.22	3/2/2010 22:15	29.60
3/2/2010 18:09	-3.5	-7.5	-5.5	3/2/10 18:14	30.19	3/2/2010 22:30	29.58
3/2/2010 18:14	-3	-8.5	-5.75	3/2/10 18:19	30.09	3/2/2010 22:45	29.57
3/2/2010 18:19	-6.5	-10.5	-8.5	3/2/10 18:24	30.02	3/2/2010 23:00	29.56
3/2/2010 18:24	-6.5	-13.5	-10	3/2/10 18:29	29.88	3/2/2010 23:15	29.56
3/2/2010 18:29	-2.5	-11	-6.75	3/2/10 18:34	29.73	3/2/2010 23:30	29.55
3/2/2010 18:34	-0.5	-11	-5.75	3/2/10 18:39	29.67	3/2/2010 23:45	29.53
3/2/2010 18:39	0	-8.5	-4.25	3/2/10 18:44	29.62	3/3/2010 0:00	29.53
3/2/2010 18:44	0.5	-8	-3.75	3/2/10 18:49	29.55	3/3/2010 0:15	29.52
3/2/2010 18:49	2.5	-6	-1.75	3/2/10 18:54	29.54	3/3/2010 0:30	29.51
3/2/2010 18:54	8	-2	3	3/2/10 18:59	29.55	3/3/2010 0:45	29.51
3/2/2010 18:59	10	-1	4.5	3/2/10 19:04	29.58	3/3/2010 1:00	29.50
3/2/2010 19:04	8.5	-3	2.75	3/2/10 19:09	29.67	3/3/2010 1:15	29.49
3/2/2010 19:09	1.5	-6	-2.25	3/2/10 19:14	29.71	3/3/2010 1:30	29.49
3/2/2010 19:14	-2.5	-13	-7.75	3/2/10 19:19	29.66	3/3/2010 1:45	29.48
3/2/2010 19:19	0.5	-9	-4.25	3/2/10 19:24	29.51	3/3/2010 2:00	29.47
3/2/2010 19:24	0.5	-10	-4.75	3/2/10 19:29	29.48	3/3/2010 2:15	29.47
3/2/2010 19:29	3.5	-4	-0.25	3/2/10 19:34	29.41	3/3/2010 2:30	29.46

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/2/2010 19:34	3.5	-5	-0.75	3/2/10 19:39	29.43	3/3/2010 2:45	29.45
3/2/2010 19:39	5.5	-7.5	-1	3/2/10 19:44	29.42	3/3/2010 3:00	29.44
3/2/2010 19:44	1	-6.5	-2.75	3/2/10 19:49	29.38	3/3/2010 3:15	29.44
3/2/2010 19:49	-0.5	-9.5	-5	3/2/10 19:54	29.39	3/3/2010 3:30	29.43
3/2/2010 19:54	3	-5	-1	3/2/10 19:59	29.31	3/3/2010 3:45	29.43
3/2/2010 19:59	1	-6.5	-2.75	3/2/10 20:04	29.30	3/3/2010 4:00	29.43
3/2/2010 20:04	-1	-13	-7	3/2/10 20:09	29.26	3/3/2010 4:15	29.43
3/2/2010 20:09	5	-7	-1	3/2/10 20:14	29.16	3/3/2010 4:30	29.44
3/2/2010 20:14	5	-2.5	1.25	3/2/10 20:19	29.17	3/3/2010 4:45	29.45
3/2/2010 20:19	7.5	-3	2.25	3/2/10 20:24	29.17	3/3/2010 5:00	29.45
3/2/2010 20:24	6	-3	1.5	3/2/10 20:29	29.23	3/3/2010 5:15	29.46
3/2/2010 20:29	2	-9.5	-3.75	3/2/10 20:34	29.25	3/3/2010 5:30	29.48
3/2/2010 20:34	-2.5	-9	-5.75	3/2/10 20:39	29.20	3/3/2010 5:45	29.49
3/2/2010 20:39	-3.5	-13	-8.25	3/2/10 20:44	29.10	3/3/2010 6:00	29.50
3/2/2010 20:44	-4	-11	-7.5	3/2/10 20:49	28.96	3/3/2010 6:15	29.51
3/2/2010 20:49	-1.5	-12	-6.75	3/2/10 20:54	28.87	3/3/2010 6:30	29.51
3/2/2010 20:54	-5	-15	-10	3/2/10 20:59	28.76	3/3/2010 6:45	29.51
3/2/2010 20:59	-0.5	-9.5	-5	3/2/10 21:04	28.63	3/3/2010 7:00	29.51
3/2/2010 21:04	1	-10	-4.5	3/2/10 21:09	28.60	3/3/2010 7:15	29.51
3/2/2010 21:09	-1	-6.5	-3.75	3/2/10 21:14	28.54	3/3/2010 7:30	29.52
3/2/2010 21:14	-1.5	-12.5	-7	3/2/10 21:19	28.50	3/3/2010 7:45	29.52
3/2/2010 21:19	0	-7.5	-3.75	3/2/10 21:24	28.41	3/3/2010 8:00	29.52
3/2/2010 21:24	-1.5	-9.5	-5.5	3/2/10 21:29	28.36	3/3/2010 8:15	29.53
3/2/2010 21:29	-1	-7	-4	3/2/10 21:34	28.28	3/3/2010 8:30	29.53
3/2/2010 21:34	-2.5	-12.5	-7.5	3/2/10 21:39	28.22	3/3/2010 8:45	29.53
3/2/2010 21:39	-1.5	-9	-5.25	3/2/10 21:44	28.12	3/3/2010 9:00	29.53
3/2/2010 21:44	-1.5	-11.5	-6.5	3/2/10 21:49	28.03	3/3/2010 9:15	29.54
3/2/2010 21:49	-0.5	-13	-6.75	3/2/10 21:54	27.94	3/3/2010 9:30	29.54
3/2/2010 21:54	-4.5	-16.5	-10.5	3/2/10 21:59	27.84	3/3/2010 9:45	29.55
3/2/2010 21:59	-1.5	-19.5	-10.5	3/2/10 22:04	27.72	3/3/2010 10:00	29.55
3/2/2010 22:04	-0.5	-11.5	-6	3/2/10 22:09	27.62	3/3/2010 10:15	29.56
3/2/2010 22:09	0.5	-12	-5.75	3/2/10 22:14	27.54	3/3/2010 10:30	29.57
3/2/2010 22:14	3	-12.5	-4.75	3/2/10 22:19	27.49	3/3/2010 10:45	29.58
3/2/2010 22:19	1	-10	-4.5	3/2/10 22:24	27.46	3/3/2010 11:00	29.58
3/2/2010 22:24	-1.5	-16	-8.75	3/2/10 22:29	27.38	3/3/2010 11:15	29.58
3/2/2010 22:29	2	-12.5	-5.25	3/2/10 22:34	27.28	3/3/2010 11:30	29.58
3/2/2010 22:34	5.5	-9.5	-2	3/2/10 22:39	27.21	3/3/2010 11:45	29.59
3/2/2010 22:39	2	-12	-5	3/2/10 22:44	27.22	3/3/2010 12:00	29.60
3/2/2010 22:44	-0.5	-10	-5.25	3/2/10 22:49	27.15	3/3/2010 12:15	29.60
3/2/2010 22:49	0	-9.5	-4.75	3/2/10 22:54	27.09	3/3/2010 12:30	29.60
3/2/2010 22:54	0.5	-15	-7.25	3/2/10 22:59	27.06	3/3/2010 12:45	29.60
3/2/2010 22:59	3	-7.5	-2.25	3/2/10 23:04	27.00	3/3/2010 13:00	29.60
3/2/2010 23:04	3	-8.5	-2.75	3/2/10 23:09	26.98	3/3/2010 13:15	29.60
3/2/2010 23:09	2.5	-6.5	-2	3/2/10 23:14	26.96	3/3/2010 13:30	29.61
3/2/2010 23:14	1	-5.5	-2.25	3/2/10 23:19	26.96	3/3/2010 13:45	29.61
3/2/2010 23:19	4	-10.5	-3.25	3/2/10 23:24	26.96	3/3/2010 14:00	29.62
3/2/2010 23:24	-1	-6.5	-3.75	3/2/10 23:29	26.90	3/3/2010 14:15	29.63
3/2/2010 23:29	-1.5	-8.5	-5	3/2/10 23:34	26.88	3/3/2010 14:30	29.63
3/2/2010 23:34	-4	-13	-8.5	3/2/10 23:39	26.81	3/3/2010 14:45	29.63
3/2/2010 23:39	0.5	-11.5	-5.5	3/2/10 23:44	26.71	3/3/2010 15:00	29.64
3/2/2010 23:44	2	-5.5	-1.75	3/2/10 23:49	26.64	3/3/2010 15:15	29.64
3/2/2010 23:49	2	-5.5	-1.75	3/2/10 23:54	26.65	3/3/2010 15:30	29.64
3/2/2010 23:54	1	-9.5	-4.25	3/2/10 23:59	26.64	3/3/2010 15:45	29.65
3/2/2010 23:59	2	-5	-1.5	3/3/10 0:04	26.60	3/3/2010 16:00	29.65
3/3/2010 0:04	3	-7	-2	3/3/10 0:09	26.59	3/3/2010 16:15	29.66
3/3/2010 0:09	-0.5	-9.5	-5	3/3/10 0:14	26.57	3/3/2010 16:30	29.66
3/3/2010 0:14	-0.5	-10	-5.25	3/3/10 0:19	26.50	3/3/2010 16:45	29.67
3/3/2010 0:19	-1	-7	-4	3/3/10 0:24	26.45	3/3/2010 17:00	29.67
3/3/2010 0:24	0	-7.5	-3.75	3/3/10 0:29	26.41	3/3/2010 17:15	29.68
3/3/2010 0:29	2	-8	-3	3/3/10 0:34	26.40	3/3/2010 17:30	29.69
3/3/2010 0:34	2.5	-8	-2.75	3/3/10 0:39	26.35	3/3/2010 17:45	29.69
3/3/2010 0:39	2	-7	-2.5	3/3/10 0:44	26.33	3/3/2010 18:00	29.70
3/3/2010 0:44	1	-4.5	-1.75	3/3/10 0:49	26.33	3/3/2010 18:15	29.71
3/3/2010 0:49	0	-8	-4	3/3/10 0:54	26.31	3/3/2010 18:30	29.71
3/3/2010 0:54	-1	-8.5	-4.75	3/3/10 0:59	26.28	3/3/2010 18:45	29.72
3/3/2010 0:59	-2	-10.5	-6.25	3/3/10 1:04	26.22	3/3/2010 19:00	29.73

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/3/2010 1:04	2	-8.5	-3.25	3/3/10 1:09	26.18	3/3/2010 19:15	29.73
3/3/2010 1:09	0	-7	-3.5	3/3/10 1:14	26.17	3/3/2010 19:30	29.74
3/3/2010 1:14	-1	-8	-4.5	3/3/10 1:19	26.14	3/3/2010 19:45	29.74
3/3/2010 1:19	-0.5	-8.5	-4.5	3/3/10 1:24	26.09	3/3/2010 20:00	29.74
3/3/2010 1:24	0	-10	-5	3/3/10 1:29	26.06	3/3/2010 20:15	29.74
3/3/2010 1:29	-1.5	-9.5	-5.5	3/3/10 1:34	26.01	3/3/2010 20:30	29.74
3/3/2010 1:34	-0.5	-11	-5.75	3/3/10 1:39	25.94	3/3/2010 20:45	29.75
3/3/2010 1:39	2.5	-10.5	-4	3/3/10 1:44	25.89	3/3/2010 21:00	29.75
3/3/2010 1:44	1.5	-9	-3.75	3/3/10 1:49	25.89	3/3/2010 21:15	29.75
3/3/2010 1:49	0.5	-8.5	-4	3/3/10 1:54	25.85	3/3/2010 21:30	29.75
3/3/2010 1:54	2.5	-8	-2.75	3/3/10 1:59	25.83	3/3/2010 21:45	29.75
3/3/2010 1:59	-1	-10.5	-5.75	3/3/10 2:04	25.84	3/3/2010 22:00	29.75
3/3/2010 2:04	1.5	-11.5	-5	3/3/10 2:09	25.77	3/3/2010 22:15	29.75
3/3/2010 2:09	-1	-10.5	-5.75	3/3/10 2:14	25.79	3/3/2010 22:30	29.76
3/3/2010 2:14	1.5	-12.5	-5.5	3/3/10 2:19	25.71	3/3/2010 22:45	29.76
3/3/2010 2:19	3	-8	-2.5	3/3/10 2:24	25.67	3/3/2010 23:00	29.76
3/3/2010 2:24	3	-8.5	-2.75	3/3/10 2:29	25.65	3/3/2010 23:15	29.76
3/3/2010 2:29	4	-9	-2.5	3/3/10 2:34	25.67	3/3/2010 23:30	29.76
3/3/2010 2:34	-0.5	-11	-5.75	3/3/10 2:39	25.63	3/3/2010 23:45	29.76
3/3/2010 2:39	0	-11.5	-5.75	3/3/10 2:44	25.58	3/4/2010 0:00	29.76
3/3/2010 2:44	2.5	-13	-5.25	3/3/10 2:49	25.55	3/4/2010 0:15	29.76
3/3/2010 2:49	3.5	-14.5	-5.5	3/3/10 2:54	25.50	3/4/2010 0:30	29.77
3/3/2010 2:54	2.5	-13.5	-5.5	3/3/10 2:59	25.46	3/4/2010 0:45	29.77
3/3/2010 2:59	2	-12.5	-5.25	3/3/10 3:04	25.41	3/4/2010 1:00	29.77
3/3/2010 3:04	6.5	-10.5	-2	3/3/10 3:09	25.35	3/4/2010 1:15	29.78
3/3/2010 3:09	2.5	-12	-4.75	3/3/10 3:14	25.39	3/4/2010 1:30	29.78
3/3/2010 3:14	4	-18	-7	3/3/10 3:19	25.39	3/4/2010 1:45	29.78
3/3/2010 3:19	1.5	-16	-7.25	3/3/10 3:24	25.35	3/4/2010 2:00	29.78
3/3/2010 3:24	3.5	-12.5	-4.5	3/3/10 3:29	25.30	3/4/2010 2:15	29.78
3/3/2010 3:29	7	-15.5	-4.25	3/3/10 3:34	25.33	3/4/2010 2:30	29.78
3/3/2010 3:34	5.5	-10	-2.25	3/3/10 3:39	25.27	3/4/2010 2:45	29.77
3/3/2010 3:39	6	-12.5	-3.25	3/3/10 3:44	25.27	3/4/2010 3:00	29.77
3/3/2010 3:44	7	-9.5	-1.25	3/3/10 3:49	25.24	3/4/2010 3:15	29.78
3/3/2010 3:49	6	-10	-2	3/3/10 3:54	25.24	3/4/2010 3:30	29.78
3/3/2010 3:54	3.5	-9.5	-3	3/3/10 3:59	25.23	3/4/2010 3:45	29.79
3/3/2010 3:59	5	-9.5	-2.25	3/3/10 4:04	25.26	3/4/2010 4:00	29.79
3/3/2010 4:04	7	-11.5	-2.25	3/3/10 4:09	25.24	3/4/2010 4:15	29.79
3/3/2010 4:09	6	-11	-2.5	3/3/10 4:14	25.31	3/4/2010 4:30	29.79
3/3/2010 4:14	6.5	-9.5	-1.5	3/3/10 4:19	25.32	3/4/2010 4:45	29.80
3/3/2010 4:19	10.5	-25.5	-7.5	3/3/10 4:24	25.31	3/4/2010 5:00	29.80
3/3/2010 4:24	12	-10.5	0.75	3/3/10 4:29	25.34	3/4/2010 5:15	29.80
3/3/2010 4:29	12	-7.5	2.25	3/3/10 4:34	25.40	3/4/2010 5:30	29.80
3/3/2010 4:34	9	-10.5	-0.75	3/3/10 4:39	25.47	3/4/2010 5:45	29.80
3/3/2010 4:39	5	-6.5	-0.75	3/3/10 4:44	25.49	3/4/2010 6:00	29.81
3/3/2010 4:44	9	-10	-0.5	3/3/10 4:49	25.49	3/4/2010 6:15	29.81
3/3/2010 4:49	9.5	-17	-3.75	3/3/10 4:54	25.54	3/4/2010 6:30	29.82
3/3/2010 4:54	9.5	-10.5	-0.5	3/3/10 4:59	25.58	3/4/2010 6:45	29.82
3/3/2010 4:59	7	-8	-0.5	3/3/10 5:04	25.62	3/4/2010 7:00	29.82
3/3/2010 5:04	8	-6	1	3/3/10 5:09	25.66	3/4/2010 7:15	29.83
3/3/2010 5:09	7.5	-11	-1.75	3/3/10 5:14	25.68	3/4/2010 7:30	29.84
3/3/2010 5:14	7	-3.5	1.75	3/3/10 5:19	25.73	3/4/2010 7:45	29.84
3/3/2010 5:19	8.5	-1.5	3.5	3/3/10 5:24	25.81	3/4/2010 8:00	29.85
3/3/2010 5:24	5.5	-4	0.75	3/3/10 5:29	25.90	3/4/2010 8:15	29.85
3/3/2010 5:29	4.5	-3	0.75	3/3/10 5:34	25.95	3/4/2010 8:30	29.85
3/3/2010 5:34	8	-4	2	3/3/10 5:39	26.02	3/4/2010 8:45	29.85
3/3/2010 5:39	5	-5.5	-0.25	3/3/10 5:44	26.09	3/4/2010 9:00	29.85
3/3/2010 5:44	6	-4.5	0.75	3/3/10 5:49	26.12	3/4/2010 9:15	29.85
3/3/2010 5:49	3.5	-4	-0.25	3/3/10 5:54	26.16	3/4/2010 9:30	29.86
3/3/2010 5:54	2	-4.5	-1.25	3/3/10 5:59	26.23	3/4/2010 9:45	29.86
3/3/2010 5:59	2	-7.5	-2.75	3/3/10 6:04	26.25	3/4/2010 10:00	29.86
3/3/2010 6:04	1	-6.5	-2.75	3/3/10 6:09	26.28	3/4/2010 10:15	29.86
3/3/2010 6:09	0	-8	-4	3/3/10 6:14	26.31	3/4/2010 10:30	29.86
3/3/2010 6:14	0	-9.5	-4.75	3/3/10 6:19	26.29	3/4/2010 10:45	29.87
3/3/2010 6:19	-2	-10.5	-6.25	3/3/10 6:24	26.31	3/4/2010 11:00	29.87
3/3/2010 6:24	1	-9.5	-4.25	3/3/10 6:29	26.28	3/4/2010 11:15	29.87
3/3/2010 6:29	-0.5	-11.5	-6	3/3/10 6:34	26.30	3/4/2010 11:30	29.87

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/3/2010 6:34	0.5	-9.5	-4.5	3/3/10 6:39	26.25	3/4/2010 11:45	29.87
3/3/2010 6:39	-0.5	-11.5	-6	3/3/10 6:44	26.28	3/4/2010 12:00	29.86
3/3/2010 6:44	-0.5	-11	-5.75	3/3/10 6:49	26.29	3/4/2010 12:15	29.86
3/3/2010 6:49	-1.5	-12	-6.75	3/3/10 6:54	26.30	3/4/2010 12:30	29.85
3/3/2010 6:54	2.5	-11	-4.25	3/3/10 6:59	26.26	3/4/2010 12:45	29.85
3/3/2010 6:59	2	-8.5	-3.25	3/3/10 7:04	26.31	3/4/2010 13:00	29.85
3/3/2010 7:04	1.5	-9.5	-4	3/3/10 7:09	26.36	3/4/2010 13:15	29.84
3/3/2010 7:09	-1	-15.5	-8.25	3/3/10 7:14	26.35	3/4/2010 13:30	29.84
3/3/2010 7:14	3	-9.5	-3.25	3/3/10 7:19	26.34	3/4/2010 13:45	29.83
3/3/2010 7:19	4.5	-7.5	-1.5	3/3/10 7:24	26.38	3/4/2010 14:00	29.83
3/3/2010 7:24	2	-8.5	-3.25	3/3/10 7:29	26.45	3/4/2010 14:15	29.83
3/3/2010 7:29	1.5	-9	-3.75	3/3/10 7:34	26.45	3/4/2010 14:30	29.83
3/3/2010 7:34	-0.5	-10	-5.25	3/3/10 7:39	26.47	3/4/2010 14:45	29.84
3/3/2010 7:39	1	-12.5	-5.75	3/3/10 7:44	26.46	3/4/2010 15:00	29.84
3/3/2010 7:44	2	-10	-4	3/3/10 7:49	26.49	3/4/2010 15:15	29.84
3/3/2010 7:49	0.5	-9	-4.25	3/3/10 7:54	26.51	3/4/2010 15:30	29.85
3/3/2010 7:54	1	-9.5	-4.25	3/3/10 7:59	26.53	3/4/2010 15:45	29.85
3/3/2010 7:59	1.5	-9.5	-4	3/3/10 8:04	26.53	3/4/2010 16:00	29.85
3/3/2010 8:04	-1.5	-10.5	-6	3/3/10 8:09	26.56	3/4/2010 16:15	29.86
3/3/2010 8:09	1.5	-14	-6.25	3/3/10 8:14	26.55	3/4/2010 16:30	29.86
3/3/2010 8:14	2	-7	-2.5	3/3/10 8:19	26.52	3/4/2010 16:45	29.86
3/3/2010 8:19	1.5	-13	-5.75	3/3/10 8:24	26.55	3/4/2010 17:00	29.87
3/3/2010 8:24	5	-9	-2	3/3/10 8:29	26.59	3/4/2010 17:15	29.88
3/3/2010 8:29	0	-11	-5.5	3/3/10 8:34	26.59	3/4/2010 17:30	29.89
3/3/2010 8:34	-1	-12.5	-6.75	3/3/10 8:39	26.61	3/4/2010 17:45	29.90
3/3/2010 8:39	-0.5	-9	-4.75	3/3/10 8:44	26.57	3/4/2010 18:00	29.90
3/3/2010 8:44	0	-12	-6	3/3/10 8:49	26.59	3/4/2010 18:15	29.91
3/3/2010 8:49	1.5	-10	-4.25	3/3/10 8:54	26.59	3/4/2010 18:30	29.92
3/3/2010 8:54	2.5	-9	-3.25	3/3/10 8:59	26.61	3/4/2010 18:45	29.92
3/3/2010 8:59	3.5	-8.5	-2.5	3/3/10 9:04	26.61	3/4/2010 19:00	29.93
3/3/2010 9:04	5	-5.5	-0.25	3/3/10 9:09	26.62	3/4/2010 19:15	29.94
3/3/2010 9:09	8	-5	1.5	3/3/10 9:14	26.69	3/4/2010 19:30	29.94
3/3/2010 9:14	3	-5.5	-1.25	3/3/10 9:19	26.76	3/4/2010 19:45	29.94
3/3/2010 9:19	2	-5.5	-1.75	3/3/10 9:24	26.77	3/4/2010 20:00	29.94
3/3/2010 9:24	3.5	-5	-0.75	3/3/10 9:29	26.79	3/4/2010 20:15	29.95
3/3/2010 9:29	2	-7.5	-2.75	3/3/10 9:34	26.82	3/4/2010 20:30	29.95
3/3/2010 9:34	2.5	-6.5	-2	3/3/10 9:39	26.83	3/4/2010 20:45	29.96
3/3/2010 9:39	5	-5.5	-0.25	3/3/10 9:44	26.86	3/4/2010 21:00	29.97
3/3/2010 9:44	4.5	-5	-0.25	3/3/10 9:49	26.89	3/4/2010 21:15	29.97
3/3/2010 9:49	4	-4	0	3/3/10 9:54	26.93	3/4/2010 21:30	29.97
3/3/2010 9:54	5	-7.5	-1.25	3/3/10 9:59	26.95	3/4/2010 21:45	29.97
3/3/2010 9:59	5	-6	-0.5	3/3/10 10:04	27.00	3/4/2010 22:00	29.98
3/3/2010 10:04	3.5	-4.5	-0.5	3/3/10 10:09	27.03	3/4/2010 22:15	29.98
3/3/2010 10:09	1.5	-5.5	-2	3/3/10 10:14	27.06	3/4/2010 22:30	29.98
3/3/2010 10:14	3.5	-4	-0.25	3/3/10 10:19	27.07	3/4/2010 22:45	29.98
3/3/2010 10:19	5	-3	1	3/3/10 10:24	27.10	3/4/2010 23:00	29.98
3/3/2010 10:24	4.5	-7.5	-1.5	3/3/10 10:29	27.17	3/4/2010 23:15	29.98
3/3/2010 10:29	2.5	-6	-1.75	3/3/10 10:34	27.17	3/4/2010 23:30	29.98
3/3/2010 10:34	4	-4	0	3/3/10 10:39	27.22	3/4/2010 23:45	29.99
3/3/2010 10:39	2.5	-5.5	-1.5	3/3/10 10:44	27.26	3/5/2010 0:00	29.99
3/3/2010 10:44	2.5	-7.5	-2.5	3/3/10 10:49	27.24	3/5/2010 0:15	29.99
3/3/2010 10:49	3	-16	-6.5	3/3/10 10:54	27.26	3/5/2010 0:30	29.99
3/3/2010 10:54	4.5	-5.5	-0.5	3/3/10 10:59	27.23	3/5/2010 0:45	29.99
3/3/2010 10:59	3	-6.5	-1.75	3/3/10 11:04	27.24	3/5/2010 1:00	30.00
3/3/2010 11:04	0	-7.5	-3.75	3/3/10 11:09	27.27	3/5/2010 1:15	30.00
3/3/2010 11:09	1	-9.5	-4.25	3/3/10 11:14	27.26	3/5/2010 1:30	29.99
3/3/2010 11:14	4	-10	-3	3/3/10 11:19	27.25	3/5/2010 1:45	29.99
3/3/2010 11:19	3.5	-10.5	-3.5	3/3/10 11:24	27.27	3/5/2010 2:00	29.99
3/3/2010 11:24	7	-3.5	1.75	3/3/10 11:29	27.27	3/5/2010 2:15	29.99
3/3/2010 11:29	6.5	-6	0.25	3/3/10 11:34	27.36	3/5/2010 2:30	29.99
3/3/2010 11:34	7	-3.5	1.75	3/3/10 11:39	27.41	3/5/2010 2:45	29.99
3/3/2010 11:39	5.5	-4.5	0.5	3/3/10 11:44	27.47	3/5/2010 3:00	29.99
3/3/2010 11:44	3.5	-4.5	-0.5	3/3/10 11:49	27.49	3/5/2010 3:15	29.99
3/3/2010 11:49	6	-5.5	0.25	3/3/10 11:54	27.51	3/5/2010 3:30	29.99
3/3/2010 11:54	7	-6.5	0.25	3/3/10 11:59	27.57	3/5/2010 3:45	30.00
3/3/2010 11:59	1.5	-7.5	-3	3/3/10 12:04	27.61	3/5/2010 4:00	30.00

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/3/2010 12:04	2	-11	-4.5	3/3/10 12:09	27.61	3/5/2010 4:15	30.00
3/3/2010 12:09	2	-6.5	-2.25	3/3/10 12:14	27.58	3/5/2010 4:30	30.01
3/3/2010 12:14	2	-8	-3	3/3/10 12:19	27.59	3/5/2010 4:45	30.01
3/3/2010 12:19	4.5	-7.5	-1.5	3/3/10 12:24	27.61	3/5/2010 5:00	30.02
3/3/2010 12:24	0	-13.5	-6.75	3/3/10 12:29	27.63	3/5/2010 5:15	30.02
3/3/2010 12:29	0.5	-8.5	-4	3/3/10 12:34	27.59	3/5/2010 5:30	30.02
3/3/2010 12:34	4	-6.5	-1.25	3/3/10 12:39	27.60	3/5/2010 5:45	30.02
3/3/2010 12:39	3.5	-7	-1.75	3/3/10 12:44	27.59	3/5/2010 6:00	30.03
3/3/2010 12:44	2	-7.5	-2.75	3/3/10 12:49	27.62	3/5/2010 6:15	30.03
3/3/2010 12:49	2.5	-10	-3.75	3/3/10 12:54	27.60	3/5/2010 6:30	30.04
3/3/2010 12:54	0	-7	-3.5	3/3/10 12:59	27.59	3/5/2010 6:45	30.04
3/3/2010 12:59	0	-6.5	-3.25	3/3/10 13:04	27.56	3/5/2010 7:00	30.05
3/3/2010 13:04	4	-5	-0.5	3/3/10 13:09	27.58	3/5/2010 7:15	30.05
3/3/2010 13:09	6	-5	0.5	3/3/10 13:14	27.62	3/5/2010 7:30	30.06
3/3/2010 13:14	3.5	-5	-0.75	3/3/10 13:19	27.64	3/5/2010 7:45	30.06
3/3/2010 13:19	2	-5	-1.5	3/3/10 13:24	27.68	3/5/2010 8:00	30.06
3/3/2010 13:24	3	-6	-1.5	3/3/10 13:29	27.70	3/5/2010 8:15	30.07
3/3/2010 13:29	1.5	-7.5	-3	3/3/10 13:34	27.72	3/5/2010 8:30	30.07
3/3/2010 13:34	1	-5.5	-2.25	3/3/10 13:39	27.69	3/5/2010 8:45	30.07
3/3/2010 13:39	2.5	-3	-0.25	3/3/10 13:44	27.71	3/5/2010 9:00	30.07
3/3/2010 13:44	3.5	-3	0.25	3/3/10 13:49	27.74	3/5/2010 9:15	30.07
3/3/2010 13:49	4	-4.5	-0.25	3/3/10 13:54	27.81	3/5/2010 9:30	30.08
3/3/2010 13:54	2.5	-4	-0.75	3/3/10 13:59	27.82	3/5/2010 9:45	30.08
3/3/2010 13:59	3	-3	0	3/3/10 14:04	27.85	3/5/2010 10:00	30.08
3/3/2010 14:04	3.5	-3.5	0	3/3/10 14:09	27.89	3/5/2010 10:15	30.09
3/3/2010 14:09	1	-5	-2	3/3/10 14:14	27.92	3/5/2010 10:30	30.09
3/3/2010 14:14	0.5	-5.5	-2.5	3/3/10 14:19	27.91	3/5/2010 10:45	30.09
3/3/2010 14:19	2	-4	-1	3/3/10 14:24	27.92	3/5/2010 11:00	30.09
3/3/2010 14:24	2	-6.5	-2.25	3/3/10 14:29	27.93	3/5/2010 11:15	30.09
3/3/2010 14:29	1.5	-7.5	-3	3/3/10 14:34	27.94	3/5/2010 11:30	30.09
3/3/2010 14:34	4	-3.5	0.25	3/3/10 14:39	27.94	3/5/2010 11:45	30.09
3/3/2010 14:39	5	-2	1.5	3/3/10 14:44	27.99	3/5/2010 12:00	30.09
3/3/2010 14:44	2.5	-3	-0.25	3/3/10 14:49	28.04	3/5/2010 12:15	30.09
3/3/2010 14:49	2	-4.5	-1.25	3/3/10 14:54	28.07	3/5/2010 12:30	30.08
3/3/2010 14:54	0	-5	-2.5	3/3/10 14:59	28.09	3/5/2010 12:45	30.08
3/3/2010 14:59	0	-6.5	-3.25	3/3/10 15:04	28.07	3/5/2010 13:00	30.07
3/3/2010 15:04	1	-7	-3	3/3/10 15:09	28.07	3/5/2010 13:15	30.07
3/3/2010 15:09	2	-5	-1.5	3/3/10 15:14	28.06	3/5/2010 13:30	30.07
3/3/2010 15:14	2.5	-5	-1.25	3/3/10 15:19	28.08	3/5/2010 13:45	30.07
3/3/2010 15:19	1	-4.5	-1.75	3/3/10 15:24	28.10	3/5/2010 14:00	30.06
3/3/2010 15:24	2.5	-3.5	-0.5	3/3/10 15:29	28.12	3/5/2010 14:15	30.06
3/3/2010 15:29	3.5	-3.5	0	3/3/10 15:34	28.14	3/5/2010 14:30	30.06
3/3/2010 15:34	3	-4.5	-0.75	3/3/10 15:39	28.17	3/5/2010 14:45	30.07
3/3/2010 15:39	2.5	-5	-1.25	3/3/10 15:44	28.19	3/5/2010 15:00	30.07
3/3/2010 15:44	2.5	-2.5	0	3/3/10 15:49	28.19	3/5/2010 15:15	30.07
3/3/2010 15:49	4	-4	0	3/3/10 15:54	28.23	3/5/2010 15:30	30.08
3/3/2010 15:54	2	-3.5	-0.75	3/3/10 15:59	28.25	3/5/2010 15:45	30.08
3/3/2010 15:59	1.5	-4.5	-1.5	3/3/10 16:04	28.27	3/5/2010 16:00	30.08
3/3/2010 16:04	2.5	-2.5	0	3/3/10 16:09	28.28	3/5/2010 16:15	30.08
3/3/2010 16:09	4	-1.5	1.25	3/3/10 16:14	28.30	3/5/2010 16:30	30.08
3/3/2010 16:14	5	-1	2	3/3/10 16:19	28.35	3/5/2010 16:45	30.09
3/3/2010 16:19	3	-2.5	0.25	3/3/10 16:24	28.41	3/5/2010 17:00	30.10
3/3/2010 16:24	2.5	-2.5	0	3/3/10 16:29	28.43	3/5/2010 17:15	30.10
3/3/2010 16:29	4.5	-2	1.25	3/3/10 16:34	28.45	3/5/2010 17:30	30.10
3/3/2010 16:34	3	-4	-0.5	3/3/10 16:39	28.49	3/5/2010 17:45	30.11
3/3/2010 16:39	1	-5	-2	3/3/10 16:44	28.50	3/5/2010 18:00	30.12
3/3/2010 16:44	1.5	-3	-0.75	3/3/10 16:49	28.53	3/5/2010 18:15	30.12
3/3/2010 16:49	1	-4	-1.5	3/3/10 16:54	28.55	3/5/2010 18:30	30.12
3/3/2010 16:54	2	-2.5	-0.25	3/3/10 16:59	28.54	3/5/2010 18:45	30.12
3/3/2010 16:59	1	-5	-2	3/3/10 17:04	28.60	3/5/2010 19:00	30.13
3/3/2010 17:04	1	-4	-1.5	3/3/10 17:09	28.61	3/5/2010 19:15	30.13
3/3/2010 17:09	1	-3	-1	3/3/10 17:14	28.62	3/5/2010 19:30	30.13
3/3/2010 17:14	1.5	-3.5	-1	3/3/10 17:19	28.65	3/5/2010 19:45	30.13
3/3/2010 17:19	2.5	-2	0.25	3/3/10 17:24	28.67	3/5/2010 20:00	30.14
3/3/2010 17:24	2.5	-1.5	0.5	3/3/10 17:29	28.70	3/5/2010 20:15	30.14
3/3/2010 17:29	2.5	-2	0.25	3/3/10 17:34	28.76	3/5/2010 20:30	30.15

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/3/2010 17:34	1.5	-2	-0.25	3/3/10 17:39	28.79	3/5/2010 20:45	30.15
3/3/2010 17:39	2	-2.5	-0.25	3/3/10 17:44	28.82	3/5/2010 21:00	30.15
3/3/2010 17:44	2	-4.5	-1.25	3/3/10 17:49	28.85	3/5/2010 21:15	30.15
3/3/2010 17:49	2.5	-2.5	0	3/3/10 17:54	28.87	3/5/2010 21:30	30.15
3/3/2010 17:54	2	-3.5	-0.75	3/3/10 17:59	28.90	3/5/2010 21:45	30.15
3/3/2010 17:59	2.5	-2.5	0	3/3/10 18:04	28.92	3/5/2010 22:00	30.15
3/3/2010 18:04	1.5	-3.5	-1	3/3/10 18:09	28.95	3/5/2010 22:15	30.15
3/3/2010 18:09	1	-3	-1	3/3/10 18:14	28.96	3/5/2010 22:30	30.15
3/3/2010 18:14	3	-2	0.5	3/3/10 18:19	28.98	3/5/2010 22:45	30.15
3/3/2010 18:19	3	-0.5	1.25	3/3/10 18:24	29.02	3/5/2010 23:00	30.15
3/3/2010 18:24	2.5	-1.5	0.5	3/3/10 18:29	29.07	3/5/2010 23:15	30.16
3/3/2010 18:29	2.5	-2	0.25	3/3/10 18:34	29.10	3/5/2010 23:30	30.16
3/3/2010 18:34	1.5	-2.5	-0.5	3/3/10 18:39	29.13	3/5/2010 23:45	30.16
3/3/2010 18:39	1.5	-1	0.25	3/3/10 18:44	29.14	3/6/2010 0:00	30.16
3/3/2010 18:44	2.5	-0.5	1	3/3/10 18:49	29.17	3/6/2010 0:15	30.16
3/3/2010 18:49	2	-2	0	3/3/10 18:54	29.21	3/6/2010 0:30	30.17
3/3/2010 18:54	2	-2	0	3/3/10 18:59	29.25	3/6/2010 0:45	30.17
3/3/2010 18:59	1	-3	-1	3/3/10 19:04	29.25	3/6/2010 1:00	30.17
3/3/2010 19:04	2	-0.5	0.75	3/3/10 19:09	29.27	3/6/2010 1:15	30.17
3/3/2010 19:09	2.5	-1	0.75	3/3/10 19:14	29.31	3/6/2010 1:30	30.17
3/3/2010 19:14	1.5	-3	-0.75	3/3/10 19:19	29.36	3/6/2010 1:45	30.17
3/3/2010 19:19	2.5	-3	-0.25	3/3/10 19:24	29.37	3/6/2010 2:00	30.18
3/3/2010 19:24	0.5	-1.5	-0.5	3/3/10 19:29	29.39	3/6/2010 2:15	30.18
3/3/2010 19:29	1.5	-3.5	-1	3/3/10 19:34	29.41	3/6/2010 2:30	30.18
3/3/2010 19:34	0.5	-2.5	-1	3/3/10 19:39	29.43	3/6/2010 2:45	30.18
3/3/2010 19:39	1	-4	-1.5	3/3/10 19:44	29.43	3/6/2010 3:00	30.18
3/3/2010 19:44	-0.5	-4	-2.25	3/3/10 19:49	29.43	3/6/2010 3:15	30.18
3/3/2010 19:49	0.5	-4	-1.75	3/3/10 19:54	29.42	3/6/2010 3:30	30.18
3/3/2010 19:54	2	-4	-1	3/3/10 19:59	29.43	3/6/2010 3:45	30.19
3/3/2010 19:59	1	-3	-1	3/3/10 20:04	29.43	3/6/2010 4:00	30.19
3/3/2010 20:04	0	-4.5	-2.25	3/3/10 20:09	29.45	3/6/2010 4:15	30.19
3/3/2010 20:09	0	-4.5	-2.25	3/3/10 20:14	29.45	3/6/2010 4:30	30.20
3/3/2010 20:14	1	-4.5	-1.75	3/3/10 20:19	29.45	3/6/2010 4:45	30.20
3/3/2010 20:19	0	-3.5	-1.75	3/3/10 20:24	29.45	3/6/2010 5:00	30.20
3/3/2010 20:24	2.5	-3.5	-0.5	3/3/10 20:29	29.46	3/6/2010 5:15	30.21
3/3/2010 20:29	1	-2.5	-0.75	3/3/10 20:34	29.49	3/6/2010 5:30	30.22
3/3/2010 20:34	1.5	-3	-0.75	3/3/10 20:39	29.50	3/6/2010 5:45	30.22
3/3/2010 20:39	2	-2.5	-0.25	3/3/10 20:44	29.50	3/6/2010 6:00	30.22
3/3/2010 20:44	1	-3.5	-1.25	3/3/10 20:49	29.55	3/6/2010 6:15	30.27
3/3/2010 20:49	1.5	-3.5	-1	3/3/10 20:54	29.53	3/6/2010 6:30	30.23
3/3/2010 20:54	1.5	-3.5	-1	3/3/10 20:59	29.55	3/6/2010 6:45	30.24
3/3/2010 20:59	0	-3.5	-1.75	3/3/10 21:04	29.55	3/6/2010 7:00	30.24
3/3/2010 21:04	-1	-4.5	-2.75	3/3/10 21:09	29.55	3/6/2010 7:15	30.25
3/3/2010 21:09	0.5	-4.5	-2	3/3/10 21:14	29.54	3/6/2010 7:30	30.25
3/3/2010 21:14	0	-3.5	-1.75	3/3/10 21:19	29.56	3/6/2010 7:45	30.25
3/3/2010 21:19	0	-5	-2.5	3/3/10 21:24	29.54	3/6/2010 8:00	30.25
3/3/2010 21:24	0.5	-4.5	-2	3/3/10 21:29	29.54	3/6/2010 8:15	30.26
3/3/2010 21:29	2.5	-4	-0.75	3/3/10 21:34	29.54	3/6/2010 8:30	30.26
3/3/2010 21:34	2.5	-5	-1.25	3/3/10 21:39	29.56	3/6/2010 8:45	30.27
3/3/2010 21:39	1	-3	-1	3/3/10 21:44	29.57	3/6/2010 9:00	30.27
3/3/2010 21:44	0.5	-4	-1.75	3/3/10 21:49	29.58	3/6/2010 9:15	30.27
3/3/2010 21:49	0.5	-3.5	-1.5	3/3/10 21:54	29.60	3/6/2010 9:30	30.28
3/3/2010 21:54	0.5	-3.5	-1.5	3/3/10 21:59	29.59	3/6/2010 9:45	30.28
3/3/2010 21:59	0	-3.5	-1.75	3/3/10 22:04	29.60	3/6/2010 10:00	30.28
3/3/2010 22:04	1	-4.5	-1.75	3/3/10 22:09	29.60	3/6/2010 10:15	30.28
3/3/2010 22:09	1	-2.5	-0.75	3/3/10 22:14	29.61	3/6/2010 10:30	30.28
3/3/2010 22:14	2	-3.5	-0.75	3/3/10 22:19	29.62	3/6/2010 10:45	30.28
3/3/2010 22:19	1.5	-3.5	-1	3/3/10 22:24	29.63	3/6/2010 11:00	30.28
3/3/2010 22:24	2	-3.5	-0.75	3/3/10 22:29	29.67	3/6/2010 11:15	30.28
3/3/2010 22:29	3.5	-4	-0.25	3/3/10 22:34	29.66	3/6/2010 11:30	30.27
3/3/2010 22:34	1	-4	-1.5	3/3/10 22:39	29.67	3/6/2010 11:45	30.27
3/3/2010 22:39	1.5	-3	-0.75	3/3/10 22:44	29.67	3/6/2010 12:00	30.27
3/3/2010 22:44	1	-4.5	-1.75	3/3/10 22:49	29.68	3/6/2010 12:15	30.26
3/3/2010 22:49	2.5	-3.5	-0.5	3/3/10 22:54	29.68	3/6/2010 12:30	30.26
3/3/2010 22:54	2	-3.5	-0.75	3/3/10 22:59	29.73	3/6/2010 12:45	30.25
3/3/2010 22:59	1.5	-4	-1.25	3/3/10 23:04	29.74	3/6/2010 13:00	30.24

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/3/2010 23:04	0.5	-5	-2.25	3/3/10 23:09	29.76	3/6/2010 13:15	30.24
3/3/2010 23:09	0	-5.5	-2.75	3/3/10 23:14	29.75	3/6/2010 13:30	30.24
3/3/2010 23:14	1	-3.5	-1.25	3/3/10 23:19	29.73	3/6/2010 13:45	30.24
3/3/2010 23:19	0.5	-4.5	-2	3/3/10 23:24	29.76	3/6/2010 14:00	30.23
3/3/2010 23:24	0	-4.5	-2.25	3/3/10 23:29	29.75	3/6/2010 14:15	30.22
3/3/2010 23:29	-0.5	-6	-3.25	3/3/10 23:34	29.75	3/6/2010 14:30	30.22
3/3/2010 23:34	0	-5	-2.5	3/3/10 23:39	29.75	3/6/2010 14:45	30.22
3/3/2010 23:39	0	-6.5	-3.25	3/3/10 23:44	29.74	3/6/2010 15:00	30.22
3/3/2010 23:44	0.5	-4.5	-2	3/3/10 23:49	29.73	3/6/2010 15:15	30.22
3/3/2010 23:49	0.5	-3	-1.25	3/3/10 23:54	29.74	3/6/2010 15:30	30.23
3/3/2010 23:54	0.5	-4	-1.75	3/3/10 23:59	29.75	3/6/2010 15:45	30.22
3/3/2010 23:59	1.5	-5	-1.75	3/4/10 0:04	29.73	3/6/2010 16:00	30.22
3/4/2010 0:04	1	-4	-1.5	3/4/10 0:09	29.75	3/6/2010 16:15	30.22
3/4/2010 0:09	1	-3	-1	3/4/10 0:14	29.77	3/6/2010 16:30	30.23
3/4/2010 0:14	1	-4.5	-1.75	3/4/10 0:19	29.78	3/6/2010 16:45	30.29
3/4/2010 0:19	2	-3	-0.5	3/4/10 0:24	29.78	3/6/2010 17:00	30.29
3/4/2010 0:24	2	-4	-1	3/4/10 0:29	29.79	3/6/2010 17:15	30.23
3/4/2010 0:29	1	-4	-1.5	3/4/10 0:34	29.81	3/6/2010 17:30	30.23
3/4/2010 0:34	2	-1.5	0.25	3/4/10 0:39	29.82	3/6/2010 17:45	30.24
3/4/2010 0:39	2.5	-2	0.25	3/4/10 0:44	29.85	3/6/2010 18:00	30.24
3/4/2010 0:44	2	-3	-0.5	3/4/10 0:49	29.86	3/6/2010 18:15	30.24
3/4/2010 0:49	1	-3.5	-1.25	3/4/10 0:54	29.91	3/6/2010 18:30	30.24
3/4/2010 0:54	2	-3.5	-0.75	3/4/10 0:59	29.92	3/6/2010 18:45	30.25
3/4/2010 0:59	1	-4	-1.5	3/4/10 1:04	29.92	3/6/2010 19:00	30.25
3/4/2010 1:04	0	-3.5	-1.75	3/4/10 1:09	29.93	3/6/2010 19:15	30.25
3/4/2010 1:09	0.5	-4.5	-2	3/4/10 1:14	29.95	3/6/2010 19:30	30.25
3/4/2010 1:14	0.5	-4	-1.75	3/4/10 1:19	29.95	3/6/2010 19:45	30.25
3/4/2010 1:19	1.5	-4	-1.25	3/4/10 1:24	29.95	3/6/2010 20:00	30.26
3/4/2010 1:24	1.5	-4	-1.25	3/4/10 1:29	29.96	3/6/2010 20:15	30.25
3/4/2010 1:29	2	-3	-0.5	3/4/10 1:34	29.97	3/6/2010 20:30	30.26
3/4/2010 1:34	1	-4	-1.5	3/4/10 1:39	29.99	3/6/2010 20:45	30.26
3/4/2010 1:39	1	-5	-2	3/4/10 1:44	29.99	3/6/2010 21:00	30.26
3/4/2010 1:44	0.5	-5	-2.25	3/4/10 1:49	29.99	3/6/2010 21:15	30.26
3/4/2010 1:49	1	-5	-2	3/4/10 1:54	29.98	3/6/2010 21:30	30.26
3/4/2010 1:54	1.5	-4	-1.25	3/4/10 1:59	29.98	3/6/2010 21:45	30.26
3/4/2010 1:59	0	-5	-2.5	3/4/10 2:04	30.00	3/6/2010 22:00	30.26
3/4/2010 2:04	-1	-5.5	-3.25	3/4/10 2:09	29.98	3/6/2010 22:15	30.25
3/4/2010 2:09	-0.5	-6	-3.25	3/4/10 2:14	29.98	3/6/2010 22:30	30.25
3/4/2010 2:14	-1.5	-6.5	-4	3/4/10 2:19	29.97	3/6/2010 22:45	30.25
3/4/2010 2:19	-1	-5.5	-3.25	3/4/10 2:24	29.95	3/6/2010 23:00	30.25
3/4/2010 2:24	-2	-5	-3.5	3/4/10 2:29	29.93	3/6/2010 23:15	30.25
3/4/2010 2:29	-2	-6.5	-4.25	3/4/10 2:34	29.92	3/6/2010 23:30	30.25
3/4/2010 2:34	-3	-6.5	-4.75	3/4/10 2:39	29.91	3/6/2010 23:45	30.25
3/4/2010 2:39	-0.5	-6	-3.25	3/4/10 2:44	29.87	3/7/2010 0:00	30.25
3/4/2010 2:44	-1	-5.5	-3.25	3/4/10 2:49	29.86	3/7/2010 0:15	30.25
3/4/2010 2:49	-0.5	-4.5	-2.5	3/4/10 2:54	29.85	3/7/2010 0:30	30.25
3/4/2010 2:54	-0.5	-3.5	-2	3/4/10 2:59	29.85	3/7/2010 0:45	30.25
3/4/2010 2:59	0.5	-3	-1.25	3/4/10 3:04	29.87	3/7/2010 1:00	30.24
3/4/2010 3:04	1.5	-3	-0.75	3/4/10 3:09	29.90	3/7/2010 1:15	30.24
3/4/2010 3:09	-0.5	-3.5	-2	3/4/10 3:14	29.93	3/7/2010 1:30	30.24
3/4/2010 3:14	-1	-5	-3	3/4/10 3:19	29.93	3/7/2010 1:45	30.24
3/4/2010 3:19	-0.5	-3	-1.75	3/4/10 3:24	29.93	3/7/2010 2:00	30.23
3/4/2010 3:24	-1	-3.5	-2.25	3/4/10 3:29	29.95	3/7/2010 2:15	30.23
3/4/2010 3:29	-0.5	-4	-2.25	3/4/10 3:34	29.95	3/7/2010 2:30	30.23
3/4/2010 3:34	0	-3.5	-1.75	3/4/10 3:39	29.96	3/7/2010 2:45	30.23
3/4/2010 3:39	-0.5	-4.5	-2.5	3/4/10 3:44	29.98	3/7/2010 3:00	30.23
3/4/2010 3:44	0	-5	-2.5	3/4/10 3:49	29.99	3/7/2010 3:15	30.23
3/4/2010 3:49	0	-3.5	-1.75	3/4/10 3:54	30.01	3/7/2010 3:30	30.23
3/4/2010 3:54	1	-4	-1.5	3/4/10 3:59	30.03	3/7/2010 3:45	30.23
3/4/2010 3:59	-1	-4.5	-2.75	3/4/10 4:04	30.05	3/7/2010 4:00	30.23
3/4/2010 4:04	-0.5	-4	-2.25	3/4/10 4:09	30.05	3/7/2010 4:15	30.23
3/4/2010 4:09	-1	-4	-2.5	3/4/10 4:14	30.05	3/7/2010 4:30	30.24
3/4/2010 4:14	-0.5	-4.5	-2.5	3/4/10 4:19	30.06	3/7/2010 4:45	30.24
3/4/2010 4:19	-0.5	-5	-2.75	3/4/10 4:24	30.06	3/7/2010 5:00	30.24
3/4/2010 4:24	0	-3.5	-1.75	3/4/10 4:29	30.08	3/7/2010 5:15	30.25
3/4/2010 4:29	-0.5	-4.5	-2.5	3/4/10 4:34	30.09	3/7/2010 5:30	30.26

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/4/2010 4:34	-0.5	-3	-1.75	3/4/10 4:39	30.09	3/7/2010 5:45	30.26
3/4/2010 4:39	1	-4	-1.5	3/4/10 4:44	30.11	3/7/2010 6:00	30.27
3/4/2010 4:44	0	-3.5	-1.75	3/4/10 4:49	30.13	3/7/2010 6:15	30.27
3/4/2010 4:49	0	-3.5	-1.75	3/4/10 4:54	30.15	3/7/2010 6:30	30.27
3/4/2010 4:54	0.5	-3.5	-1.5	3/4/10 4:59	30.17	3/7/2010 6:45	30.28
3/4/2010 4:59	0.5	-4.5	-2	3/4/10 5:04	30.19	3/7/2010 7:00	30.29
3/4/2010 5:04	-1	-4.5	-2.75	3/4/10 5:09	30.20	3/7/2010 7:15	30.29
3/4/2010 5:09	-0.5	-6	-3.25	3/4/10 5:14	30.20	3/7/2010 7:30	30.30
3/4/2010 5:14	0	-4.5	-2.25	3/4/10 5:19	30.19	3/7/2010 7:45	30.30
3/4/2010 5:19	0	-4.5	-2.25	3/4/10 5:24	30.20	3/7/2010 8:00	30.30
3/4/2010 5:24	0	-4.5	-2.25	3/4/10 5:29	30.21	3/7/2010 8:15	30.30
3/4/2010 5:29	0.5	-3.5	-1.5	3/4/10 5:34	30.20	3/7/2010 8:30	30.29
3/4/2010 5:34	0.5	-3.5	-1.5	3/4/10 5:39	30.22	3/7/2010 8:45	30.29
3/4/2010 5:39	2	-3.5	-0.75	3/4/10 5:44	30.23	3/7/2010 9:00	30.29
3/4/2010 5:44	0	-4	-2	3/4/10 5:49	30.24	3/7/2010 9:15	30.28
3/4/2010 5:49	0	-3.5	-1.75	3/4/10 5:54	30.26	3/7/2010 9:30	30.28
3/4/2010 5:54	0	-4	-2	3/4/10 5:59	30.27	3/7/2010 9:45	30.28
3/4/2010 5:59	0.5	-3.5	-1.5	3/4/10 6:04	30.28	3/7/2010 10:00	30.27
3/4/2010 6:04	1.5	-2.5	-0.5	3/4/10 6:09	30.29	3/7/2010 10:15	30.27
3/4/2010 6:09	0.5	-4	-1.75	3/4/10 6:14	30.31	3/7/2010 10:30	30.27
3/4/2010 6:14	2.5	-2.5	0	3/4/10 6:19	30.32	3/7/2010 10:45	30.27
3/4/2010 6:19	1	-2	-0.5	3/4/10 6:24	30.35	3/7/2010 11:00	30.27
3/4/2010 6:24	1	-4.5	-1.75	3/4/10 6:29	30.36	3/7/2010 11:15	30.27
3/4/2010 6:29	1.5	-2.5	-0.5	3/4/10 6:34	30.39	3/7/2010 11:30	30.26
3/4/2010 6:34	1	-3	-1	3/4/10 6:39	30.41	3/7/2010 11:45	30.25
3/4/2010 6:39	2	-4	-1	3/4/10 6:44	30.42	3/7/2010 12:00	30.24
3/4/2010 6:44	1	-2	-0.5	3/4/10 6:49	30.44	3/7/2010 12:15	30.24
3/4/2010 6:49	2	-3	-0.5	3/4/10 6:54	30.47	3/7/2010 12:30	30.23
3/4/2010 6:54	2.5	-2	0.25	3/4/10 6:59	30.48	3/7/2010 12:45	30.22
3/4/2010 6:59	2.5	-2.5	0	3/4/10 7:04	30.51	3/7/2010 13:00	30.21
3/4/2010 7:04	3	-1	1	3/4/10 7:09	30.54	3/7/2010 13:15	30.20
3/4/2010 7:09	2	-2.5	-0.25	3/4/10 7:14	30.58	3/7/2010 13:30	30.19
3/4/2010 7:14	2.5	-1.5	0.5	3/4/10 7:19	30.59	3/7/2010 13:45	30.18
3/4/2010 7:19	3	-2	0.5	3/4/10 7:24	30.65	3/7/2010 14:00	30.17
3/4/2010 7:24	3	-2	0.5	3/4/10 7:29	30.67	3/7/2010 14:15	30.16
3/4/2010 7:29	1.5	-2	-0.25	3/4/10 7:34	30.69	3/7/2010 14:30	30.16
3/4/2010 7:34	1.5	-2.5	-0.5	3/4/10 7:39	30.71	3/7/2010 14:45	30.16
3/4/2010 7:39	3	-3.5	-0.25	3/4/10 7:44	30.73	3/7/2010 15:00	30.15
3/4/2010 7:44	1.5	-3	-0.75	3/4/10 7:49	30.76	3/7/2010 15:15	30.15
3/4/2010 7:49	3	-3	0	3/4/10 7:54	30.78	3/7/2010 15:30	30.14
3/4/2010 7:54	3	-4.5	-0.75	3/4/10 7:59	30.80	3/7/2010 15:45	30.13
3/4/2010 7:59	2	-5.5	-1.75	3/4/10 8:04	30.83	3/7/2010 16:00	30.13
3/4/2010 8:04	1.5	-4.5	-1.5	3/4/10 8:09	30.84	3/7/2010 16:15	30.13
3/4/2010 8:09	3	-6	-1.5	3/4/10 8:14	30.84	3/7/2010 16:30	30.13
3/4/2010 8:14	3	-4	-0.5	3/4/10 8:19	30.85	3/7/2010 16:45	30.13
3/4/2010 8:19	2	-4.5	-1.25	3/4/10 8:24	30.87	3/7/2010 17:00	30.13
3/4/2010 8:24	1.5	-6	-2.25	3/4/10 8:29	30.87	3/7/2010 17:15	30.13
3/4/2010 8:29	2	-5	-1.5	3/4/10 8:34	30.87	3/7/2010 17:30	30.13
3/4/2010 8:34	2.5	-4.5	-1	3/4/10 8:39	30.88	3/7/2010 17:45	30.13
3/4/2010 8:39	3	-4	-0.5	3/4/10 8:44	30.89	3/7/2010 18:00	30.14
3/4/2010 8:44	2.5	-4	-0.75	3/4/10 8:49	30.88	3/7/2010 18:15	30.14
3/4/2010 8:49	0.5	-3	-1.25	3/4/10 8:54	30.92	3/7/2010 18:30	30.14
3/4/2010 8:54	1	-5	-2	3/4/10 8:59	30.91	3/7/2010 18:45	30.14
3/4/2010 8:59	1.5	-6.5	-2.5	3/4/10 9:04	30.93	3/7/2010 19:00	30.14
3/4/2010 9:04	2	-5.5	-1.75	3/4/10 9:09	30.94	3/7/2010 19:15	30.14
3/4/2010 9:09	1	-3.5	-1.25	3/4/10 9:14	30.95	3/7/2010 19:30	30.14
3/4/2010 9:14	3.5	-3	0.25	3/4/10 9:19	30.97	3/7/2010 19:45	30.14
3/4/2010 9:19	2.5	-3	-0.25	3/4/10 9:24	30.98	3/7/2010 20:00	30.14
3/4/2010 9:24	3	-4.5	-0.75	3/4/10 9:29	31.00	3/7/2010 20:15	30.14
3/4/2010 9:29	3	-1	1	3/4/10 9:34	31.02	3/7/2010 20:30	30.13
3/4/2010 9:34	3.5	-1.5	1	3/4/10 9:39	31.06	3/7/2010 20:45	30.14
3/4/2010 9:39	2	-2.5	-0.25	3/4/10 9:44	31.09	3/7/2010 21:00	30.13
3/4/2010 9:44	0.5	-5	-2.25	3/4/10 9:49	31.11	3/7/2010 21:15	30.13
3/4/2010 9:49	1.5	-4.5	-1.5	3/4/10 9:54	31.09	3/7/2010 21:30	30.13
3/4/2010 9:54	0.5	-3.5	-1.5	3/4/10 9:59	31.10	3/7/2010 21:45	30.13
3/4/2010 9:59	0	-5.5	-2.75	3/4/10 10:04	31.10	3/7/2010 22:00	30.13

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/4/2010 10:04	1	-6	-2.5	3/4/10 10:09	31.12	3/7/2010 22:15	30.12
3/4/2010 10:09	1.5	-3	-0.75	3/4/10 10:14	31.12	3/7/2010 22:30	30.12
3/4/2010 10:14	0	-4.5	-2.25	3/4/10 10:19	31.13	3/7/2010 22:45	30.12
3/4/2010 10:19	0	-4.5	-2.25	3/4/10 10:24	31.13	3/7/2010 23:00	30.19
3/4/2010 10:24	0	-4.5	-2.25	3/4/10 10:29	31.14	3/7/2010 23:15	30.18
3/4/2010 10:29	0.5	-4	-1.75	3/4/10 10:34	31.14	3/7/2010 23:30	30.14
3/4/2010 10:34	0.5	-4.5	-2	3/4/10 10:39	31.14	3/7/2010 23:45	30.11
3/4/2010 10:39	1	-3.5	-1.25	3/4/10 10:44	31.14	3/8/2010 0:00	30.11
3/4/2010 10:44	0.5	-3	-1.25	3/4/10 10:49	31.16	3/8/2010 0:15	30.10
3/4/2010 10:49	1	-3	-1	3/4/10 10:54	31.18	3/8/2010 0:30	30.10
3/4/2010 10:54	0.5	-4	-1.75	3/4/10 10:59	31.19	3/8/2010 0:45	30.10
3/4/2010 10:59	-0.5	-5.5	-3	3/4/10 11:04	31.19	3/8/2010 1:00	30.10
3/4/2010 11:04	0	-4	-2	3/4/10 11:09	31.20	3/8/2010 1:15	30.10
3/4/2010 11:09	-1	-4.5	-2.75	3/4/10 11:14	31.19	3/8/2010 1:30	30.10
3/4/2010 11:14	-1	-3.5	-2.25	3/4/10 11:19	31.18	3/8/2010 1:45	30.09
3/4/2010 11:19	0	-5	-2.5	3/4/10 11:24	31.18	3/8/2010 2:00	30.09
3/4/2010 11:24	-0.5	-4	-2.25	3/4/10 11:29	31.18	3/8/2010 2:15	30.08
3/4/2010 11:29	-1.5	-5.5	-3.5	3/4/10 11:34	31.18	3/8/2010 2:30	30.07
3/4/2010 11:34	-2	-4.5	-3.25	3/4/10 11:39	31.16	3/8/2010 2:45	30.07
3/4/2010 11:39	-1.5	-5	-3.25	3/4/10 11:44	31.14	3/8/2010 3:00	30.06
3/4/2010 11:44	-2	-5	-3.5	3/4/10 11:49	31.13	3/8/2010 3:15	30.06
3/4/2010 11:49	-1	-4	-2.5	3/4/10 11:54	31.11	3/8/2010 3:30	30.06
3/4/2010 11:54	0	-4	-2	3/4/10 11:59	31.11	3/8/2010 3:45	30.06
3/4/2010 11:59	-0.5	-4	-2.25	3/4/10 12:04	31.11	3/8/2010 4:00	30.07
3/4/2010 12:04	-2	-5.5	-3.75	3/4/10 12:09	31.09	3/8/2010 4:15	30.07
3/4/2010 12:09	-1.5	-4.5	-3	3/4/10 12:14	31.08	3/8/2010 4:30	30.07
3/4/2010 12:14	-2	-5	-3.5	3/4/10 12:19	31.06	3/8/2010 4:45	30.08
3/4/2010 12:19	-0.5	-6	-3.25	3/4/10 12:24	31.03	3/8/2010 5:00	30.08
3/4/2010 12:24	-1.5	-5.5	-3.5	3/4/10 12:29	31.03	3/8/2010 5:15	30.08
3/4/2010 12:29	-2	-5	-3.5	3/4/10 12:34	30.99	3/8/2010 5:30	30.08
3/4/2010 12:34	-0.5	-4	-2.25	3/4/10 12:39	30.98	3/8/2010 5:45	30.09
3/4/2010 12:39	0	-4.5	-2.25	3/4/10 12:44	30.98	3/8/2010 6:00	30.09
3/4/2010 12:44	-1.5	-5	-3.25	3/4/10 12:49	30.98	3/8/2010 6:15	30.10
3/4/2010 12:49	-1.5	-5.5	-3.5	3/4/10 12:54	30.95	3/8/2010 6:30	30.10
3/4/2010 12:54	-1.5	-6.5	-4	3/4/10 12:59	30.93	3/8/2010 6:45	30.11
3/4/2010 12:59	-2	-6	-4	3/4/10 13:04	30.91	3/8/2010 7:00	30.11
3/4/2010 13:04	-0.5	-5.5	-3	3/4/10 13:09	30.87	3/8/2010 7:15	30.10
3/4/2010 13:09	-1.5	-5.5	-3.5	3/4/10 13:14	30.86	3/8/2010 7:30	30.11
3/4/2010 13:14	-1	-4.5	-2.75	3/4/10 13:19	30.84	3/8/2010 7:45	30.12
3/4/2010 13:19	-2.5	-7	-4.75	3/4/10 13:24	30.84	3/8/2010 8:00	30.12
3/4/2010 13:24	0	-4	-2	3/4/10 13:29	30.80	3/8/2010 8:15	30.11
3/4/2010 13:29	-1	-4	-2.5	3/4/10 13:34	30.81	3/8/2010 8:30	30.12
3/4/2010 13:34	-1	-5	-3	3/4/10 13:39	30.80	3/8/2010 8:45	30.12
3/4/2010 13:39	-0.5	-4	-2.25	3/4/10 13:44	30.80	3/8/2010 9:00	30.12
3/4/2010 13:44	-0.5	-3.5	-2	3/4/10 13:49	30.80	3/8/2010 9:15	30.12
3/4/2010 13:49	-1	-4.5	-2.75	3/4/10 13:54	30.81	3/8/2010 9:30	30.12
3/4/2010 13:54	0.5	-5	-2.25	3/4/10 13:59	30.78	3/8/2010 9:45	30.12
3/4/2010 13:59	0.5	-5	-2.25	3/4/10 14:04	30.80	3/8/2010 10:00	30.12
3/4/2010 14:04	-1	-5	-3	3/4/10 14:09	30.81	3/8/2010 10:15	30.12
3/4/2010 14:09	-0.5	-3.5	-2	3/4/10 14:14	30.79	3/8/2010 10:30	30.12
3/4/2010 14:14	1	-3	-1	3/4/10 14:19	30.80	3/8/2010 10:45	30.12
3/4/2010 14:19	1	-2	-0.5	3/4/10 14:24	30.81	3/8/2010 11:00	30.11
3/4/2010 14:24	0.5	-3.5	-1.5	3/4/10 14:29	30.84	3/8/2010 11:15	30.11
3/4/2010 14:29	0.5	-2.5	-1	3/4/10 14:34	30.85	3/8/2010 11:30	30.10
3/4/2010 14:34	0	-3	-1.5	3/4/10 14:39	30.86	3/8/2010 11:45	30.10
3/4/2010 14:39	0	-4.5	-2.25	3/4/10 14:44	30.86	3/8/2010 12:00	30.09
3/4/2010 14:44	0.5	-5	-2.25	3/4/10 14:49	30.86	3/8/2010 12:15	30.09
3/4/2010 14:49	1	-1.5	-0.25	3/4/10 14:54	30.86	3/8/2010 12:30	30.09
3/4/2010 14:54	-0.5	-5	-2.75	3/4/10 14:59	30.89	3/8/2010 12:45	30.07
3/4/2010 14:59	-0.5	-3	-1.75	3/4/10 15:04	30.88	3/8/2010 13:00	30.07
3/4/2010 15:04	0	-1.5	-0.75	3/4/10 15:09	30.89	3/8/2010 13:15	30.06
3/4/2010 15:09	0.5	-2.5	-1	3/4/10 15:14	30.91	3/8/2010 13:30	30.06
3/4/2010 15:14	-0.5	-4	-2.25	3/4/10 15:19	30.94	3/8/2010 13:45	30.05
3/4/2010 15:19	0	-3	-1.5	3/4/10 15:24	30.94	3/8/2010 14:00	30.05
3/4/2010 15:24	0.5	-2.5	-1	3/4/10 15:29	30.94	3/8/2010 14:15	30.04
3/4/2010 15:29	0.5	-2.5	-1	3/4/10 15:34	30.97	3/8/2010 14:30	30.04

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/4/2010 15:34	0.5	-2.5	-1	3/4/10 15:39	30.98	3/8/2010 14:45	30.03
3/4/2010 15:39	0	-3	-1.5	3/4/10 15:44	31.00	3/8/2010 15:00	30.03
3/4/2010 15:44	0	-2	-1	3/4/10 15:49	31.00	3/8/2010 15:15	30.03
3/4/2010 15:49	0	-3	-1.5	3/4/10 15:54	31.02	3/8/2010 15:30	30.02
3/4/2010 15:54	0	-2.5	-1.25	3/4/10 15:59	31.04	3/8/2010 15:45	30.02
3/4/2010 15:59	2	-3	-0.5	3/4/10 16:04	31.05	3/8/2010 16:00	30.02
3/4/2010 16:04	0.5	-3	-1.25	3/4/10 16:09	31.08	3/8/2010 16:15	30.02
3/4/2010 16:09	1	-2.5	-0.75	3/4/10 16:14	31.08	3/8/2010 16:30	30.02
3/4/2010 16:14	1	-2	-0.5	3/4/10 16:19	31.11	3/8/2010 16:45	30.02
3/4/2010 16:19	0	-3.5	-1.75	3/4/10 16:24	31.13	3/8/2010 17:00	30.02
3/4/2010 16:24	0.5	-3	-1.25	3/4/10 16:29	31.12	3/8/2010 17:15	30.02
3/4/2010 16:29	1	-1.5	-0.25	3/4/10 16:34	31.15	3/8/2010 17:30	30.02
3/4/2010 16:34	2	-1	0.5	3/4/10 16:39	31.17	3/8/2010 17:45	30.02
3/4/2010 16:39	1.5	-1.5	0	3/4/10 16:44	31.20	3/8/2010 18:00	30.03
3/4/2010 16:44	0.5	-1.5	-0.5	3/4/10 16:49	31.23	3/8/2010 18:15	30.03
3/4/2010 16:49	2	-0.5	0.75	3/4/10 16:54	31.25	3/8/2010 18:30	30.03
3/4/2010 16:54	1.5	-1	0.25	3/4/10 16:59	31.29	3/8/2010 18:45	30.04
3/4/2010 16:59	2	-2	0	3/4/10 17:04	31.31	3/8/2010 19:00	30.04
3/4/2010 17:04	1	-1.5	-0.25	3/4/10 17:09	31.34	3/8/2010 19:15	30.04
3/4/2010 17:09	1.5	-1.5	0	3/4/10 17:14	31.36	3/8/2010 19:30	30.05
3/4/2010 17:14	1.5	-0.5	0.5	3/4/10 17:19	31.40	3/8/2010 19:45	30.05
3/4/2010 17:19	2	-1	0.5	3/4/10 17:24	31.43	3/8/2010 20:00	30.05
3/4/2010 17:24	1	-1.5	-0.25	3/4/10 17:29	31.47	3/8/2010 20:15	30.05
3/4/2010 17:29	0.5	-2	-0.75	3/4/10 17:34	31.49	3/8/2010 20:30	30.05
3/4/2010 17:34	2	0	1	3/4/10 17:39	31.51	3/8/2010 20:45	30.06
3/4/2010 17:39	1.5	-2	-0.25	3/4/10 17:44	31.55	3/8/2010 21:00	30.05
3/4/2010 17:44	0	-1.5	-0.75	3/4/10 17:49	31.58	3/8/2010 21:15	30.06
3/4/2010 17:49	1	-1	0	3/4/10 17:54	31.60	3/8/2010 21:30	30.06
3/4/2010 17:54	1	-0.5	0.25	3/4/10 17:59	31.64	3/8/2010 21:45	30.06
3/4/2010 17:59	0.5	-0.5	0	3/4/10 18:04	31.68	3/8/2010 22:00	30.06
3/4/2010 18:04	0.5	-1	-0.25	3/4/10 18:09	31.70	3/8/2010 22:15	30.06
3/4/2010 18:09	1	0	0.5	3/4/10 18:14	31.73	3/8/2010 22:30	30.06
3/4/2010 18:14	0.5	-1.5	-0.5	3/4/10 18:19	31.77	3/8/2010 22:45	30.06
3/4/2010 18:19	0.5	-2	-0.75	3/4/10 18:24	31.79	3/8/2010 23:00	30.06
3/4/2010 18:24	1.5	-1	0.25	3/4/10 18:29	31.82	3/8/2010 23:15	30.06
3/4/2010 18:29	1.5	-1	0.25	3/4/10 18:34	31.84	3/8/2010 23:30	30.06
3/4/2010 18:34	1	-1.5	-0.25	3/4/10 18:39	31.88	3/8/2010 23:45	30.06
3/4/2010 18:39	0	-2.5	-1.25	3/4/10 18:44	31.91	3/9/2010 0:00	30.06
3/4/2010 18:44	2	-1	0.5	3/4/10 18:49	31.92	3/9/2010 0:15	30.06
3/4/2010 18:49	2	0	1	3/4/10 18:54	31.95	3/9/2010 0:30	30.06
3/4/2010 18:54	1	-2	-0.5	3/4/10 18:59	32.01	3/9/2010 0:45	30.06
3/4/2010 18:59	0	-2	-1	3/4/10 19:04	32.01	3/9/2010 1:00	30.07
3/4/2010 19:04	1	-3	-1	3/4/10 19:09	32.04	3/9/2010 1:15	30.07
3/4/2010 19:09	-1	-4	-2.5	3/4/10 19:14	32.05	3/9/2010 1:30	30.06
3/4/2010 19:14	1	-2.5	-0.75	3/4/10 19:19	32.04	3/9/2010 1:45	30.06
3/4/2010 19:19	0.5	-1	-0.25	3/4/10 19:24	32.08	3/9/2010 2:00	30.07
3/4/2010 19:24	0.5	-1.5	-0.5	3/4/10 19:29	32.10	3/9/2010 2:15	30.07
3/4/2010 19:29	-0.5	-2.5	-1.5	3/4/10 19:34	32.12	3/9/2010 2:30	30.07
3/4/2010 19:34	0	-2	-1	3/4/10 19:39	32.12	3/9/2010 2:45	30.07
3/4/2010 19:39	0	-2.5	-1.25	3/4/10 19:44	32.13	3/9/2010 3:00	30.07
3/4/2010 19:44	0	-2	-1	3/4/10 19:49	32.15	3/9/2010 3:15	30.07
3/4/2010 19:49	0.5	-2	-0.75	3/4/10 19:54	32.16	3/9/2010 3:30	30.07
3/4/2010 19:54	0.5	-1.5	-0.5	3/4/10 19:59	32.17	3/9/2010 3:45	30.07
3/4/2010 19:59	0.5	-0.5	0	3/4/10 20:04	32.19	3/9/2010 4:00	30.08
3/4/2010 20:04	0	-2.5	-1.25	3/4/10 20:09	32.22	3/9/2010 4:15	30.08
3/4/2010 20:09	0	-2.5	-1.25	3/4/10 20:14	32.24	3/9/2010 4:30	30.09
3/4/2010 20:14	-0.5	-1.5	-1	3/4/10 20:19	32.24	3/9/2010 4:45	30.09
3/4/2010 20:19	1.5	-1.5	0	3/4/10 20:24	32.25	3/9/2010 5:00	30.09
3/4/2010 20:24	1	0	0.5	3/4/10 20:29	32.28	3/9/2010 5:15	30.08
3/4/2010 20:29	0.5	-0.5	0	3/4/10 20:34	32.32	3/9/2010 5:30	30.08
3/4/2010 20:34	1	-0.5	0.25	3/4/10 20:39	32.34	3/9/2010 5:45	30.09
3/4/2010 20:39	0.5	-1	-0.25	3/4/10 20:44	32.37	3/9/2010 6:00	30.09
3/4/2010 20:44	0.5	-0.5	0	3/4/10 20:49	32.39	3/9/2010 6:15	30.09
3/4/2010 20:49	0.5	-1.5	-0.5	3/4/10 20:54	32.42	3/9/2010 6:30	30.09
3/4/2010 20:54	0	-2	-1	3/4/10 20:59	32.43	3/9/2010 6:45	30.09
3/4/2010 20:59	-0.5	-2	-1.25	3/4/10 21:04	32.45	3/9/2010 7:00	30.10

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/4/2010 21:04	0	-2.5	-1.25	3/4/10 21:09	32.45	3/9/2010 7:15	30.11
3/4/2010 21:09	1	-1.5	-0.25	3/4/10 21:14	32.45	3/9/2010 7:30	30.10
3/4/2010 21:14	0.5	-2.5	-1	3/4/10 21:19	32.47	3/9/2010 7:45	30.11
3/4/2010 21:19	1	-1.5	-0.25	3/4/10 21:24	32.49	3/9/2010 8:00	30.11
3/4/2010 21:24	1.5	-3	-0.75	3/4/10 21:29	32.51	3/9/2010 8:15	30.12
3/4/2010 21:29	1	-4	-1.5	3/4/10 21:34	32.52	3/9/2010 8:30	30.11
3/4/2010 21:34	1.5	-2.5	-0.5	3/4/10 21:39	32.52	3/9/2010 8:45	30.11
3/4/2010 21:39	0.5	-3	-1.25	3/4/10 21:44	32.54	3/9/2010 9:00	30.11
3/4/2010 21:44	1	-2.5	-0.75	3/4/10 21:49	32.54	3/9/2010 9:15	30.12
3/4/2010 21:49	0	-3	-1.5	3/4/10 21:54	32.55	3/9/2010 9:30	30.12
3/4/2010 21:54	0.5	-3	-1.25	3/4/10 21:59	32.55	3/9/2010 9:45	30.13
3/4/2010 21:59	1	-3.5	-1.25	3/4/10 22:04	32.56	3/9/2010 10:00	30.13
3/4/2010 22:04	1.5	-1.5	0	3/4/10 22:09	32.58	3/9/2010 10:15	30.12
3/4/2010 22:09	1	-1.5	-0.25	3/4/10 22:14	32.60	3/9/2010 10:30	30.12
3/4/2010 22:14	0.5	-3	-1.25	3/4/10 22:19	32.61	3/9/2010 10:45	30.12
3/4/2010 22:19	1	-2.5	-0.75	3/4/10 22:24	32.63	3/9/2010 11:00	30.12
3/4/2010 22:24	0.5	-2.5	-1	3/4/10 22:29	32.64	3/9/2010 11:15	30.12
3/4/2010 22:29	0	-3.5	-1.75	3/4/10 22:34	32.65	3/9/2010 11:30	30.11
3/4/2010 22:34	-0.5	-3.5	-2	3/4/10 22:39	32.64	3/9/2010 11:45	30.11
3/4/2010 22:39	-0.5	-4	-2.25	3/4/10 22:44	32.63	3/9/2010 12:00	30.11
3/4/2010 22:44	-0.5	-3.5	-2	3/4/10 22:49	32.63	3/9/2010 12:15	30.11
3/4/2010 22:49	1	-2.5	-0.75	3/4/10 22:54	32.62	3/9/2010 12:30	30.11
3/4/2010 22:54	0.5	-1.5	-0.5	3/4/10 22:59	32.63	3/9/2010 12:45	30.10
3/4/2010 22:59	0	-2.5	-1.25	3/4/10 23:04	32.64	3/9/2010 13:00	30.09
3/4/2010 23:04	0	-2	-1	3/4/10 23:09	32.65	3/9/2010 13:15	30.09
3/4/2010 23:09	0	-2	-1	3/4/10 23:14	32.66	3/9/2010 13:30	30.08
3/4/2010 23:14	1	-2	-0.5	3/4/10 23:19	32.67	3/9/2010 13:45	30.08
3/4/2010 23:19	1	-1.5	-0.25	3/4/10 23:24	32.68	3/9/2010 14:00	30.07
3/4/2010 23:24	0.5	-2	-0.75	3/4/10 23:29	32.69	3/9/2010 14:15	30.07
3/4/2010 23:29	1.5	-2	-0.25	3/4/10 23:34	32.70	3/9/2010 14:30	30.07
3/4/2010 23:34	0	-3.5	-1.75	3/4/10 23:39	32.71	3/9/2010 14:45	30.06
3/4/2010 23:39	-0.5	-3	-1.75	3/4/10 23:44	32.71	3/9/2010 15:00	30.06
3/4/2010 23:44	0	-3	-1.5	3/4/10 23:49	32.70	3/9/2010 15:15	30.05
3/4/2010 23:49	0	-3.5	-1.75	3/4/10 23:54	32.70	3/9/2010 15:30	30.05
3/4/2010 23:54	1	-3	-1	3/4/10 23:59	32.71	3/9/2010 15:45	30.05
3/4/2010 23:59	0.5	-3	-1.25	3/5/10 0:04	32.72	3/9/2010 16:00	30.04
3/5/2010 0:04	0	-2.5	-1.25	3/5/10 0:09	32.73	3/9/2010 16:15	30.05
3/5/2010 0:09	1	-3.5	-1.25	3/5/10 0:14	32.73	3/9/2010 16:30	30.05
3/5/2010 0:14	0	-3.5	-1.75	3/5/10 0:19	32.74	3/9/2010 16:45	30.05
3/5/2010 0:19	0.5	-2.5	-1	3/5/10 0:24	32.73	3/9/2010 17:00	30.05
3/5/2010 0:24	0.5	-3.5	-1.5	3/5/10 0:29	32.74	3/9/2010 17:15	30.05
3/5/2010 0:29	1	-2.5	-0.75	3/5/10 0:34	32.75	3/9/2010 17:30	30.06
3/5/2010 0:34	2	-2.5	-0.25	3/5/10 0:39	32.76	3/9/2010 17:45	30.06
3/5/2010 0:39	1.5	-4.5	-1.5	3/5/10 0:44	32.77	3/9/2010 18:00	30.06
3/5/2010 0:44	1	-3.5	-1.25	3/5/10 0:49	32.79	3/9/2010 18:15	30.07
3/5/2010 0:49	1	-5	-2	3/5/10 0:54	32.77	3/9/2010 18:30	30.07
3/5/2010 0:54	1	-3.5	-1.25	3/5/10 0:59	32.80	3/9/2010 18:45	30.06
3/5/2010 0:59	1.5	-4	-1.25	3/5/10 1:04	32.81	3/9/2010 19:00	30.07
3/5/2010 1:04	1	-3	-1	3/5/10 1:09	32.81	3/9/2010 19:15	30.07
3/5/2010 1:09	0	-5	-2.5	3/5/10 1:14	32.82	3/9/2010 19:30	30.07
3/5/2010 1:14	0	-6	-3	3/5/10 1:19	32.80	3/9/2010 19:45	30.08
3/5/2010 1:19	1.5	-5	-1.75	3/5/10 1:24	32.79	3/9/2010 20:00	30.08
3/5/2010 1:24	-0.5	-4	-2.25	3/5/10 1:29	32.79	3/9/2010 20:15	30.08
3/5/2010 1:29	0	-4	-2	3/5/10 1:34	32.79	3/9/2010 20:30	30.08
3/5/2010 1:34	0.5	-3.5	-1.5	3/5/10 1:39	32.77	3/9/2010 20:45	30.07
3/5/2010 1:39	1	-4	-1.5	3/5/10 1:44	32.79	3/9/2010 21:00	30.08
3/5/2010 1:44	0.5	-3.5	-1.5	3/5/10 1:49	32.79	3/9/2010 21:15	30.07
3/5/2010 1:49	0.5	-5.5	-2.5	3/5/10 1:54	32.78	3/9/2010 21:30	30.07
3/5/2010 1:54	1	-6	-2.5	3/5/10 1:59	32.77	3/9/2010 21:45	30.07
3/5/2010 1:59	1.5	-4.5	-1.5	3/5/10 2:04	32.72	3/9/2010 22:00	30.07
3/5/2010 2:04	2	-3.5	-0.75	3/5/10 2:09	32.74	3/9/2010 22:15	30.07
3/5/2010 2:09	2.5	-5.5	-1.5	3/5/10 2:14	32.75	3/9/2010 22:30	30.07
3/5/2010 2:14	2	-5.5	-1.75	3/5/10 2:19	32.73	3/9/2010 22:45	30.07
3/5/2010 2:19	2	-3.5	-0.75	3/5/10 2:24	32.74	3/9/2010 23:00	30.06
3/5/2010 2:24	1.5	-5	-1.75	3/5/10 2:29	32.73	3/9/2010 23:15	30.06
3/5/2010 2:29	1.5	-3	-0.75	3/5/10 2:34	32.75	3/9/2010 23:30	30.06

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/5/2010 2:34	1.5	-4	-1.25	3/5/10 2:39	32.75	3/9/2010 23:45	30.05
3/5/2010 2:39	2	-4.5	-1.25	3/5/10 2:44	32.75	3/10/2010 0:00	30.05
3/5/2010 2:44	1.5	-3.5	-1	3/5/10 2:49	32.75	3/10/2010 0:15	30.04
3/5/2010 2:49	1	-5	-2	3/5/10 2:54	32.76	3/10/2010 0:30	30.04
3/5/2010 2:54	1.5	-4	-1.25	3/5/10 2:59	32.74	3/10/2010 0:45	30.03
3/5/2010 2:59	1	-6	-2.5	3/5/10 3:04	32.74	3/10/2010 1:00	30.03
3/5/2010 3:04	0.5	-6.5	-3	3/5/10 3:09	32.75	3/10/2010 1:15	30.03
3/5/2010 3:09	2	-5	-1.5	3/5/10 3:14	32.73	3/10/2010 1:30	30.03
3/5/2010 3:14	2.5	-6	-1.75	3/5/10 3:19	32.75	3/10/2010 1:45	30.03
3/5/2010 3:19	3	-3	0	3/5/10 3:24	32.75	3/10/2010 2:00	30.03
3/5/2010 3:24	2	-3.5	-0.75	3/5/10 3:29	32.77	3/10/2010 2:15	30.03
3/5/2010 3:29	1.5	-2.5	-0.5	3/5/10 3:34	32.76	3/10/2010 2:30	30.02
3/5/2010 3:34	1.5	-4	-1.25	3/5/10 3:39	32.80	3/10/2010 2:45	30.02
3/5/2010 3:39	2	-3	-0.5	3/5/10 3:44	32.82	3/10/2010 3:00	30.02
3/5/2010 3:44	3	-2	0.5	3/5/10 3:49	32.83	3/10/2010 3:15	30.01
3/5/2010 3:49	3	-2.5	0.25	3/5/10 3:54	32.85	3/10/2010 3:30	30.01
3/5/2010 3:54	2	-1.5	0.25	3/5/10 3:59	32.87	3/10/2010 3:45	30.01
3/5/2010 3:59	1	-4.5	-1.75	3/5/10 4:04	32.90	3/10/2010 4:00	30.01
3/5/2010 4:04	2.5	-3	-0.25	3/5/10 4:09	32.91	3/10/2010 4:15	30.01
3/5/2010 4:09	1.5	-4	-1.25	3/5/10 4:14	32.93	3/10/2010 4:30	30.02
3/5/2010 4:14	1.5	-2.5	-0.5	3/5/10 4:19	32.94	3/10/2010 4:45	30.02
3/5/2010 4:19	2	-3.5	-0.75	3/5/10 4:24	32.93	3/10/2010 5:00	30.02
3/5/2010 4:24	2	-3.5	-0.75	3/5/10 4:29	32.96	3/10/2010 5:15	30.02
3/5/2010 4:29	3.5	-3	0.25	3/5/10 4:34	32.99	3/10/2010 5:30	30.01
3/5/2010 4:34	3	-3	0	3/5/10 4:39	33.00	3/10/2010 5:45	30.02
3/5/2010 4:39	3	-3	0	3/5/10 4:44	33.04	3/10/2010 6:00	30.02
3/5/2010 4:44	1.5	-3	-0.75	3/5/10 4:49	33.07	3/10/2010 6:15	30.03
3/5/2010 4:49	1	-3.5	-1.25	3/5/10 4:54	33.08	3/10/2010 6:30	30.03
3/5/2010 4:54	2	-3	-0.5	3/5/10 4:59	33.09	3/10/2010 6:45	30.03
3/5/2010 4:59	1	-3	-1	3/5/10 5:04	33.09	3/10/2010 7:00	30.03
3/5/2010 5:04	1.5	-2.5	-0.5	3/5/10 5:09	33.09	3/10/2010 7:15	30.03
3/5/2010 5:09	1.5	-2.5	-0.5	3/5/10 5:14	33.12	3/10/2010 7:30	30.03
3/5/2010 5:14	2.5	-2.5	0	3/5/10 5:19	33.14	3/10/2010 7:45	30.03
3/5/2010 5:19	1.5	-1.5	0	3/5/10 5:24	33.15	3/10/2010 8:00	30.03
3/5/2010 5:24	1.5	-3.5	-1	3/5/10 5:29	33.18	3/10/2010 8:15	30.04
3/5/2010 5:29	0.5	-3	-1.25	3/5/10 5:34	33.18	3/10/2010 8:30	30.04
3/5/2010 5:34	2	-3.5	-0.75	3/5/10 5:39	33.18	3/10/2010 8:45	30.04
3/5/2010 5:39	2	-4.5	-1.25	3/5/10 5:44	33.20	3/10/2010 9:00	30.04
3/5/2010 5:44	1.5	-1.5	0	3/5/10 5:49	33.20	3/10/2010 9:15	30.04
3/5/2010 5:49	3	-2.5	0.25	3/5/10 5:54	33.22	3/10/2010 9:30	30.04
3/5/2010 5:54	2	-1	0.5	3/5/10 5:59	33.26	3/10/2010 9:45	30.04
3/5/2010 5:59	3	-2	0.5	3/5/10 6:04	33.28	3/10/2010 10:00	30.04
3/5/2010 6:04	2	-2.5	-0.25	3/5/10 6:09	33.31	3/10/2010 10:15	30.04
3/5/2010 6:09	2	-2.5	-0.25	3/5/10 6:14	33.32		29.43
3/5/2010 6:14	2	-2.5	-0.25	3/5/10 6:19	33.35		30.30
3/5/2010 6:19	1.5	-3	-0.75	3/5/10 6:24	33.37		
3/5/2010 6:24	1.5	-2	-0.25	3/5/10 6:29	33.38		
3/5/2010 6:29	1.5	-1.5	0	3/5/10 6:34	33.38		
3/5/2010 6:34	4.5	-2.5	1	3/5/10 6:39	33.42		
3/5/2010 6:39	2.5	-2	0.25	3/5/10 6:44	33.46		
3/5/2010 6:44	3.5	-2.5	0.5	3/5/10 6:49	33.47		
3/5/2010 6:49	2.5	-3	-0.25	3/5/10 6:54	33.49		
3/5/2010 6:54	1.5	-1.5	0	3/5/10 6:59	33.50		
3/5/2010 6:59	2.5	-3	-0.25	3/5/10 7:04	33.52		
3/5/2010 7:04	2.5	-2	0.25	3/5/10 7:09	33.55		
3/5/2010 7:09	1.5	-2.5	-0.5	3/5/10 7:14	33.59		
3/5/2010 7:14	1.5	-2	-0.25	3/5/10 7:19	33.60		
3/5/2010 7:19	2	-1	0.5	3/5/10 7:24	33.63		
3/5/2010 7:24	2	-2	0	3/5/10 7:29	33.66		
3/5/2010 7:29	1.5	-2.5	-0.5	3/5/10 7:34	33.68		
3/5/2010 7:34	3.5	-2.5	0.5	3/5/10 7:39	33.69		
3/5/2010 7:39	2	-3	-0.5	3/5/10 7:44	33.72		
3/5/2010 7:44	3	-3	0	3/5/10 7:49	33.73		
3/5/2010 7:49	3.5	-2	0.75	3/5/10 7:54	33.74		
3/5/2010 7:54	1	-4	-1.5	3/5/10 7:59	33.77		
3/5/2010 7:59	2.5	-2.5	0	3/5/10 8:04	33.75		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/5/2010 8:04	1.5	-3.5	-1	3/5/10 8:09	33.79		
3/5/2010 8:09	2	-2	0	3/5/10 8:14	33.80		
3/5/2010 8:14	1.5	-4.5	-1.5	3/5/10 8:19	33.81		
3/5/2010 8:19	2.5	-3	-0.25	3/5/10 8:24	33.81		
3/5/2010 8:24	1	-5	-2	3/5/10 8:29	33.83		
3/5/2010 8:29	1.5	-2.5	-0.5	3/5/10 8:34	33.84		
3/5/2010 8:34	3.5	-3	0.25	3/5/10 8:39	33.84		
3/5/2010 8:39	2	-2.5	-0.25	3/5/10 8:44	33.85		
3/5/2010 8:44	0.5	-3	-1.25	3/5/10 8:49	33.88		
3/5/2010 8:49	2.5	-3.5	-0.5	3/5/10 8:54	33.87		
3/5/2010 8:54	3	-2	0.5	3/5/10 8:59	33.89		
3/5/2010 8:59	3.5	-2.5	0.5	3/5/10 9:04	33.91		
3/5/2010 9:04	1.5	-3	-0.75	3/5/10 9:09	33.94		
3/5/2010 9:09	1.5	-4	-1.25	3/5/10 9:14	33.95		
3/5/2010 9:14	2.5	-3.5	-0.5	3/5/10 9:19	33.95		
3/5/2010 9:19	3	-2.5	0.25	3/5/10 9:24	33.96		
3/5/2010 9:24	3	-2	0.5	3/5/10 9:29	33.98		
3/5/2010 9:29	2.5	-2	0.25	3/5/10 9:34	34.00		
3/5/2010 9:34	1.5	-2	-0.25	3/5/10 9:39	34.03		
3/5/2010 9:39	1	-4	-1.5	3/5/10 9:44	34.03		
3/5/2010 9:44	3	-2.5	0.25	3/5/10 9:49	34.05		
3/5/2010 9:49	0.5	-3	-1.25	3/5/10 9:54	34.08		
3/5/2010 9:54	1	-2.5	-0.75	3/5/10 9:59	34.08		
3/5/2010 9:59	2	-2	0	3/5/10 10:04	34.08		
3/5/2010 10:04	3.5	-2	0.75	3/5/10 10:09	34.11		
3/5/2010 10:09	1.5	-3	-0.75	3/5/10 10:14	34.14		
3/5/2010 10:14	1.5	-3	-0.75	3/5/10 10:19	34.16		
3/5/2010 10:19	1.5	-3.5	-1	3/5/10 10:24	34.17		
3/5/2010 10:24	2.5	-3.5	-0.5	3/5/10 10:29	34.18		
3/5/2010 10:29	0	-2	-1	3/5/10 10:34	34.18		
3/5/2010 10:34	1.5	-3	-0.75	3/5/10 10:39	34.17		
3/5/2010 10:39	1	-4	-1.5	3/5/10 10:44	34.18		
3/5/2010 10:44	0.5	-3	-1.25	3/5/10 10:49	34.19		
3/5/2010 10:49	2	-3	-0.5	3/5/10 10:54	34.18		
3/5/2010 10:54	1	-4	-1.5	3/5/10 10:59	34.18		
3/5/2010 10:59	1.5	-3.5	-1	3/5/10 11:04	34.19		
3/5/2010 11:04	1	-2.5	-0.75	3/5/10 11:09	34.19		
3/5/2010 11:09	1.5	-3.5	-1	3/5/10 11:14	34.21		
3/5/2010 11:14	0	-4.5	-2.25	3/5/10 11:19	34.20		
3/5/2010 11:19	1.5	-3.5	-1	3/5/10 11:24	34.18		
3/5/2010 11:24	0.5	-3.5	-1.5	3/5/10 11:29	34.20		
3/5/2010 11:29	1	-4	-1.5	3/5/10 11:34	34.19		
3/5/2010 11:34	0	-3.5	-1.75	3/5/10 11:39	34.19		
3/5/2010 11:39	0	-4	-2	3/5/10 11:44	34.18		
3/5/2010 11:44	0.5	-4	-1.75	3/5/10 11:49	34.17		
3/5/2010 11:49	0	-3	-1.5	3/5/10 11:54	34.16		
3/5/2010 11:54	0	-3.5	-1.75	3/5/10 11:59	34.16		
3/5/2010 11:59	0	-2.5	-1.25	3/5/10 12:04	34.16		
3/5/2010 12:04	0	-3.5	-1.75	3/5/10 12:09	34.16		
3/5/2010 12:09	-1	-4	-2.5	3/5/10 12:14	34.14		
3/5/2010 12:14	0	-4.5	-2.25	3/5/10 12:19	34.12		
3/5/2010 12:19	-1	-4	-2.5	3/5/10 12:24	34.09		
3/5/2010 12:24	-0.5	-3.5	-2	3/5/10 12:29	34.07		
3/5/2010 12:29	0	-4.5	-2.25	3/5/10 12:34	34.06		
3/5/2010 12:34	-0.5	-5	-2.75	3/5/10 12:39	34.06		
3/5/2010 12:39	-0.5	-4	-2.25	3/5/10 12:44	34.02		
3/5/2010 12:44	-1	-3.5	-2.25	3/5/10 12:49	34.02		
3/5/2010 12:49	-1	-3.5	-2.25	3/5/10 12:54	34.00		
3/5/2010 12:54	-0.5	-3.5	-2	3/5/10 12:59	34.00		
3/5/2010 12:59	0	-4	-2	3/5/10 13:04	33.96		
3/5/2010 13:04	-0.5	-4	-2.25	3/5/10 13:09	33.96		
3/5/2010 13:09	0	-5	-2.5	3/5/10 13:14	33.94		
3/5/2010 13:14	-0.5	-4	-2.25	3/5/10 13:19	33.92		
3/5/2010 13:19	-0.5	-3.5	-2	3/5/10 13:24	33.91		
3/5/2010 13:24	0	-3.5	-1.75	3/5/10 13:29	33.90		
3/5/2010 13:29	1	-3.5	-1.25	3/5/10 13:34	33.90		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/5/2010 13:34	0.5	-2.5	-1	3/5/10 13:39	33.89		
3/5/2010 13:39	1.5	-2.5	-0.5	3/5/10 13:44	33.90		
3/5/2010 13:44	0	-2.5	-1.25	3/5/10 13:49	33.90		
3/5/2010 13:49	2	-2	0	3/5/10 13:54	33.89		
3/5/2010 13:54	0	-3	-1.5	3/5/10 13:59	33.91		
3/5/2010 13:59	-0.5	-4	-2.25	3/5/10 14:04	33.91		
3/5/2010 14:04	1	-3	-1	3/5/10 14:09	33.88		
3/5/2010 14:09	0.5	-2.5	-1	3/5/10 14:14	33.90		
3/5/2010 14:14	1.5	-2.5	-0.5	3/5/10 14:19	33.90		
3/5/2010 14:19	0	-3.5	-1.75	3/5/10 14:24	33.90		
3/5/2010 14:24	1.5	-2.5	-0.5	3/5/10 14:29	33.90		
3/5/2010 14:29	2	-1	0.5	3/5/10 14:34	33.92		
3/5/2010 14:34	2.5	-1.5	0.5	3/5/10 14:39	33.95		
3/5/2010 14:39	1.5	-2	-0.25	3/5/10 14:44	33.98		
3/5/2010 14:44	2	-2.5	-0.25	3/5/10 14:49	33.97		
3/5/2010 14:49	1.5	-1.5	0	3/5/10 14:54	33.99		
3/5/2010 14:54	1	-2.5	-0.75	3/5/10 14:59	34.01		
3/5/2010 14:59	2	-0.5	0.75	3/5/10 15:04	34.01		
3/5/2010 15:04	1	-4	-1.5	3/5/10 15:09	34.04		
3/5/2010 15:09	1	-2.5	-0.75	3/5/10 15:14	34.04		
3/5/2010 15:14	1	-2	-0.5	3/5/10 15:19	34.04		
3/5/2010 15:19	1.5	-1	0.25	3/5/10 15:24	34.07		
3/5/2010 15:24	1	-1	0	3/5/10 15:29	34.08		
3/5/2010 15:29	0	-2.5	-1.25	3/5/10 15:34	34.10		
3/5/2010 15:34	0.5	-1.5	-0.5	3/5/10 15:39	34.09		
3/5/2010 15:39	0.5	-3	-1.25	3/5/10 15:44	34.11		
3/5/2010 15:44	0	-3.5	-1.75	3/5/10 15:49	34.12		
3/5/2010 15:49	-0.5	-3	-1.75	3/5/10 15:54	34.11		
3/5/2010 15:54	0	-3	-1.5	3/5/10 15:59	34.09		
3/5/2010 15:59	0	-3	-1.5	3/5/10 16:04	34.09		
3/5/2010 16:04	0	-2.5	-1.25	3/5/10 16:09	34.09		
3/5/2010 16:09	-0.5	-4.5	-2.5	3/5/10 16:14	34.09		
3/5/2010 16:14	0	-4.5	-2.25	3/5/10 16:19	34.08		
3/5/2010 16:19	1.5	-1.5	0	3/5/10 16:24	34.07		
3/5/2010 16:24	1.5	-0.5	0.5	3/5/10 16:29	34.10		
3/5/2010 16:29	2.5	-0.5	1	3/5/10 16:34	34.12		
3/5/2010 16:34	2	0	1	3/5/10 16:39	34.15		
3/5/2010 16:39	1.5	-1	0.25	3/5/10 16:44	34.18		
3/5/2010 16:44	2	-1	0.5	3/5/10 16:49	34.20		
3/5/2010 16:49	0.5	-1.5	-0.5	3/5/10 16:54	34.22		
3/5/2010 16:54	1.5	-1.5	0	3/5/10 16:59	34.24		
3/5/2010 16:59	1.5	-1.5	0	3/5/10 17:04	34.25		
3/5/2010 17:04	0	-2	-1	3/5/10 17:09	34.26		
3/5/2010 17:09	1.5	-1	0.25	3/5/10 17:14	34.26		
3/5/2010 17:14	1.5	0	0.75	3/5/10 17:19	34.30		
3/5/2010 17:19	1	-0.5	0.25	3/5/10 17:24	34.33		
3/5/2010 17:24	1	-0.5	0.25	3/5/10 17:29	34.35		
3/5/2010 17:29	1.5	-0.5	0.5	3/5/10 17:34	34.36		
3/5/2010 17:34	1.5	-1	0.25	3/5/10 17:39	34.40		
3/5/2010 17:39	1	-0.5	0.25	3/5/10 17:44	34.42		
3/5/2010 17:44	2.5	-1	0.75	3/5/10 17:49	34.43		
3/5/2010 17:49	3.5	0	1.75	3/5/10 17:54	34.46		
3/5/2010 17:54	3	0	1.5	3/5/10 17:59	34.50		
3/5/2010 17:59	2	-4	-1	3/5/10 18:04	34.54		
3/5/2010 18:04	1.5	-1	0.25	3/5/10 18:09	34.54		
3/5/2010 18:09	0.5	-3	-1.25	3/5/10 18:14	34.55		
3/5/2010 18:14	0.5	-3.5	-1.5	3/5/10 18:19	34.55		
3/5/2010 18:19	1	-3	-1	3/5/10 18:24	34.54		
3/5/2010 18:24	-0.5	-2	-1.25	3/5/10 18:29	34.54		
3/5/2010 18:29	0	-1.5	-0.75	3/5/10 18:34	34.54		
3/5/2010 18:34	0.5	-1	-0.25	3/5/10 18:39	34.55		
3/5/2010 18:39	0	-2.5	-1.25	3/5/10 18:44	34.56		
3/5/2010 18:44	0	-1.5	-0.75	3/5/10 18:49	34.56		
3/5/2010 18:49	0	-1.5	-0.75	3/5/10 18:54	34.56		
3/5/2010 18:54	2	-1	0.5	3/5/10 18:59	34.57		
3/5/2010 18:59	2	-0.5	0.75	3/5/10 19:04	34.61		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/5/2010 19:04	0	-2	-1	3/5/10 19:09	34.63		
3/5/2010 19:09	-0.5	-2.5	-1.5	3/5/10 19:14	34.63		
3/5/2010 19:14	0	-3.5	-1.75	3/5/10 19:19	34.62		
3/5/2010 19:19	1	-0.5	0.25	3/5/10 19:24	34.62		
3/5/2010 19:24	1.5	-1.5	0	3/5/10 19:29	34.64		
3/5/2010 19:29	-0.5	-2.5	-1.5	3/5/10 19:34	34.65		
3/5/2010 19:34	0.5	-1.5	-0.5	3/5/10 19:39	34.65		
3/5/2010 19:39	1.5	-1	0.25	3/5/10 19:44	34.66		
3/5/2010 19:44	2.5	-1	0.75	3/5/10 19:49	34.69		
3/5/2010 19:49	2	-1	0.5	3/5/10 19:54	34.72		
3/5/2010 19:54	2	0	1	3/5/10 19:59	34.74		
3/5/2010 19:59	0	-1.5	-0.75	3/5/10 20:04	34.78		
3/5/2010 20:04	2	-0.5	0.75	3/5/10 20:09	34.78		
3/5/2010 20:09	2	-0.5	0.75	3/5/10 20:14	34.80		
3/5/2010 20:14	1	-1	0	3/5/10 20:19	34.83		
3/5/2010 20:19	0	-2	-1	3/5/10 20:24	34.84		
3/5/2010 20:24	0	-1.5	-0.75	3/5/10 20:29	34.85		
3/5/2010 20:29	0	-0.5	-0.25	3/5/10 20:34	34.85		
3/5/2010 20:34	0	-1.5	-0.75	3/5/10 20:39	34.87		
3/5/2010 20:39	0	-2	-1	3/5/10 20:44	34.87		
3/5/2010 20:44	-1.5	-2	-1.75	3/5/10 20:49	34.87		
3/5/2010 20:49	0	-1.5	-0.75	3/5/10 20:54	34.86		
3/5/2010 20:54	1	-1	0	3/5/10 20:59	34.87		
3/5/2010 20:59	0	-1	-0.5	3/5/10 21:04	34.88		
3/5/2010 21:04	0	-0.5	-0.25	3/5/10 21:09	34.90		
3/5/2010 21:09	0	-1	-0.5	3/5/10 21:14	34.91		
3/5/2010 21:14	0	-1	-0.5	3/5/10 21:19	34.92		
3/5/2010 21:19	0	-1.5	-0.75	3/5/10 21:24	34.93		
3/5/2010 21:24	-1	-1.5	-1.25	3/5/10 21:29	34.94		
3/5/2010 21:29	-1	-2	-1.5	3/5/10 21:34	34.93		
3/5/2010 21:34	-1	-2	-1.5	3/5/10 21:39	34.92		
3/5/2010 21:39	-1	-2	-1.5	3/5/10 21:44	34.91		
3/5/2010 21:44	0	-2	-1	3/5/10 21:49	34.91		
3/5/2010 21:49	0	-1	-0.5	3/5/10 21:54	34.91		
3/5/2010 21:54	0.5	-1.5	-0.5	3/5/10 21:59	34.92		
3/5/2010 21:59	1.5	-0.5	0.5	3/5/10 22:04	34.92		
3/5/2010 22:04	0	-1.5	-0.75	3/5/10 22:09	34.96		
3/5/2010 22:09	0	-2	-1	3/5/10 22:14	34.96		
3/5/2010 22:14	0	-2	-1	3/5/10 22:19	34.95		
3/5/2010 22:19	0	-1.5	-0.75	3/5/10 22:24	34.95		
3/5/2010 22:24	0	-1	-0.5	3/5/10 22:29	34.95		
3/5/2010 22:29	0.5	-1	-0.25	3/5/10 22:34	34.96		
3/5/2010 22:34	0.5	-2	-0.75	3/5/10 22:39	34.98		
3/5/2010 22:39	-1	-2.5	-1.75	3/5/10 22:44	34.97		
3/5/2010 22:44	-1	-2.5	-1.75	3/5/10 22:49	34.96		
3/5/2010 22:49	-0.5	-2	-1.25	3/5/10 22:54	34.97		
3/5/2010 22:54	0.5	-2	-0.75	3/5/10 22:59	34.97		
3/5/2010 22:59	0	-2	-1	3/5/10 23:04	34.97		
3/5/2010 23:04	0	-1.5	-0.75	3/5/10 23:09	34.98		
3/5/2010 23:09	0.5	-0.5	0	3/5/10 23:14	34.99		
3/5/2010 23:14	0.5	-0.5	0	3/5/10 23:19	35.00		
3/5/2010 23:19	0.5	-1.5	-0.5	3/5/10 23:24	35.02		
3/5/2010 23:24	0.5	-1	-0.25	3/5/10 23:29	35.03		
3/5/2010 23:29	0	-1.5	-0.75	3/5/10 23:34	35.05		
3/5/2010 23:34	0	-1.5	-0.75	3/5/10 23:39	35.04		
3/5/2010 23:39	0	-2	-1	3/5/10 23:44	35.04		
3/5/2010 23:44	0.5	-2	-0.75	3/5/10 23:49	35.04		
3/5/2010 23:49	0.5	-2	-0.75	3/5/10 23:54	35.03		
3/5/2010 23:54	0.5	-1	-0.25	3/5/10 23:59	35.05		
3/5/2010 23:59	0.5	-2	-0.75	3/6/10 0:04	35.06		
3/6/2010 0:04	0	-2.5	-1.25	3/6/10 0:09	35.06		
3/6/2010 0:09	2.5	-2	0.25	3/6/10 0:14	35.06		
3/6/2010 0:14	2	-2	0	3/6/10 0:19	35.09		
3/6/2010 0:19	1	-1	0	3/6/10 0:24	35.10		
3/6/2010 0:24	1	-2	-0.5	3/6/10 0:29	35.11		
3/6/2010 0:29	1	-3	-1	3/6/10 0:34	35.11		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/6/2010 0:34	1	-1	0	3/6/10 0:39	35.13		
3/6/2010 0:39	0	-1.5	-0.75	3/6/10 0:44	35.14		
3/6/2010 0:44	0.5	-1	-0.25	3/6/10 0:49	35.13		
3/6/2010 0:49	1	-2	-0.5	3/6/10 0:54	35.16		
3/6/2010 0:54	0	-2	-1	3/6/10 0:59	35.16		
3/6/2010 0:59	0	-2	-1	3/6/10 1:04	35.17		
3/6/2010 1:04	0.5	-1.5	-0.5	3/6/10 1:09	35.16		
3/6/2010 1:09	1.5	-2	-0.25	3/6/10 1:14	35.17		
3/6/2010 1:14	1.5	-2	-0.25	3/6/10 1:19	35.19		
3/6/2010 1:19	1.5	-1.5	0	3/6/10 1:24	35.19		
3/6/2010 1:24	0.5	-2.5	-1	3/6/10 1:29	35.22		
3/6/2010 1:29	1.5	-2	-0.25	3/6/10 1:34	35.21		
3/6/2010 1:34	1	-1	0	3/6/10 1:39	35.23		
3/6/2010 1:39	1	-1.5	-0.25	3/6/10 1:44	35.26		
3/6/2010 1:44	1.5	-1.5	0	3/6/10 1:49	35.27		
3/6/2010 1:49	0.5	-2.5	-1	3/6/10 1:54	35.29		
3/6/2010 1:54	1	-2.5	-0.75	3/6/10 1:59	35.29		
3/6/2010 1:59	0.5	-3	-1.25	3/6/10 2:04	35.30		
3/6/2010 2:04	0	-3.5	-1.75	3/6/10 2:09	35.30		
3/6/2010 2:09	0	-2.5	-1.25	3/6/10 2:14	35.29		
3/6/2010 2:14	0.5	-2.5	-1	3/6/10 2:19	35.28		
3/6/2010 2:19	0	-2.5	-1.25	3/6/10 2:24	35.28		
3/6/2010 2:24	0	-5	-2.5	3/6/10 2:29	35.28		
3/6/2010 2:29	-0.5	-5	-2.75	3/6/10 2:34	35.27		
3/6/2010 2:34	0.5	-5.5	-2.5	3/6/10 2:39	35.28		
3/6/2010 2:39	0.5	-5	-2.25	3/6/10 2:44	35.26		
3/6/2010 2:44	1	-3	-1	3/6/10 2:49	35.25		
3/6/2010 2:49	0.5	-3.5	-1.5	3/6/10 2:54	35.27		
3/6/2010 2:54	3.5	-2.5	0.5	3/6/10 2:59	35.27		
3/6/2010 2:59	2.5	-2	0.25	3/6/10 3:04	35.28		
3/6/2010 3:04	2.5	-3	-0.25	3/6/10 3:09	35.32		
3/6/2010 3:09	2	-3	-0.5	3/6/10 3:14	35.33		
3/6/2010 3:14	1	-5	-2	3/6/10 3:19	35.35		
3/6/2010 3:19	2	-3.5	-0.75	3/6/10 3:24	35.34		
3/6/2010 3:24	1.5	-3	-0.75	3/6/10 3:29	35.35		
3/6/2010 3:29	1.5	-2	-0.25	3/6/10 3:34	35.37		
3/6/2010 3:34	2.5	-4	-0.75	3/6/10 3:39	35.37		
3/6/2010 3:39	2	-3.5	-0.75	3/6/10 3:44	35.39		
3/6/2010 3:44	3.5	-4	-0.25	3/6/10 3:49	35.38		
3/6/2010 3:49	2.5	-4	-0.75	3/6/10 3:54	35.41		
3/6/2010 3:54	3	-3.5	-0.25	3/6/10 3:59	35.43		
3/6/2010 3:59	3.5	-5.5	-1	3/6/10 4:04	35.46		
3/6/2010 4:04	3	-3	0	3/6/10 4:09	35.45		
3/6/2010 4:09	3	-2.5	0.25	3/6/10 4:14	35.50		
3/6/2010 4:14	4	-2	1	3/6/10 4:19	35.51		
3/6/2010 4:19	1.5	-3.5	-1	3/6/10 4:24	35.53		
3/6/2010 4:24	1	-3	-1	3/6/10 4:29	35.53		
3/6/2010 4:29	1.5	-3.5	-1	3/6/10 4:34	35.54		
3/6/2010 4:34	2	-4.5	-1.25	3/6/10 4:39	35.54		
3/6/2010 4:39	2.5	-3.5	-0.5	3/6/10 4:44	35.55		
3/6/2010 4:44	2	-2.5	-0.25	3/6/10 4:49	35.58		
3/6/2010 4:49	3.5	-2.5	0.5	3/6/10 4:54	35.61		
3/6/2010 4:54	3	-2	0.5	3/6/10 4:59	35.65		
3/6/2010 4:59	4	-1.5	1.25	3/6/10 5:04	35.66		
3/6/2010 5:04	3.5	-3.5	0	3/6/10 5:09	35.70		
3/6/2010 5:09	3	-3.5	-0.25	3/6/10 5:14	35.70		
3/6/2010 5:14	4.5	-2.5	1	3/6/10 5:19	35.73		
3/6/2010 5:19	4	0	2	3/6/10 5:24	35.74		
3/6/2010 5:24	3.5	-2	0.75	3/6/10 5:29	35.78		
3/6/2010 5:29	3	-4.5	-0.75	3/6/10 5:34	35.81		
3/6/2010 5:34	1.5	-4.5	-1.5	3/6/10 5:39	35.81		
3/6/2010 5:39	2.5	-4	-0.75	3/6/10 5:44	35.82		
3/6/2010 5:44	3	-4	-0.5	3/6/10 5:49	35.83		
3/6/2010 5:49	3	-5	-1	3/6/10 5:54	35.84		
3/6/2010 5:54	1.5	-4	-1.25	3/6/10 5:59	35.86		
3/6/2010 5:59	4	-3.5	0.25	3/6/10 6:04	35.89		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/6/2010 6:04	3.5	-3.5	0	3/6/10 6:09	35.90		
3/6/2010 6:09	3	-3	0	3/6/10 6:14	35.93		
3/6/2010 6:14	4.5	-2.5	1	3/6/10 6:19	35.92		
3/6/2010 6:19	2	-3.5	-0.75	3/6/10 6:24	36.00		
3/6/2010 6:24	3.5	-3.5	0	3/6/10 6:29	35.98		
3/6/2010 6:29	4	-2	1	3/6/10 6:34	36.01		
3/6/2010 6:34	2.5	-3.5	-0.5	3/6/10 6:39	36.06		
3/6/2010 6:39	4	-1.5	1.25	3/6/10 6:44	36.05		
3/6/2010 6:44	2.5	-2	0.25	3/6/10 6:49	36.10		
3/6/2010 6:49	2	-2	0	3/6/10 6:54	36.12		
3/6/2010 6:54	2	-3.5	-0.75	3/6/10 6:59	36.14		
3/6/2010 6:59	1.5	-5.5	-2	3/6/10 7:04	36.16		
3/6/2010 7:04	3	-1.5	0.75	3/6/10 7:09	36.15		
3/6/2010 7:09	2	-2.5	-0.25	3/6/10 7:14	36.19		
3/6/2010 7:14	3	-3.5	-0.25	3/6/10 7:19	36.21		
3/6/2010 7:19	3.5	-2	0.75	3/6/10 7:24	36.21		
3/6/2010 7:24	2.5	-3	-0.25	3/6/10 7:29	36.24		
3/6/2010 7:29	1	-3.5	-1.25	3/6/10 7:34	36.26		
3/6/2010 7:34	2	-2.5	-0.25	3/6/10 7:39	36.26		
3/6/2010 7:39	3	-4	-0.5	3/6/10 7:44	36.28		
3/6/2010 7:44	2	-3.5	-0.75	3/6/10 7:49	36.31		
3/6/2010 7:49	2	-3.5	-0.75	3/6/10 7:54	36.31		
3/6/2010 7:54	1	-4	-1.5	3/6/10 7:59	36.30		
3/6/2010 7:59	3	-2.5	0.25	3/6/10 8:04	36.30		
3/6/2010 8:04	2.5	-4	-0.75	3/6/10 8:09	36.34		
3/6/2010 8:09	3.5	-2.5	0.5	3/6/10 8:14	36.37		
3/6/2010 8:14	0.5	-2	-0.75	3/6/10 8:19	36.40		
3/6/2010 8:19	3	-2	0.5	3/6/10 8:24	36.41		
3/6/2010 8:24	3.5	-1.5	1	3/6/10 8:29	36.43		
3/6/2010 8:29	3	-3	0	3/6/10 8:34	36.46		
3/6/2010 8:34	3	-4.5	-0.75	3/6/10 8:39	36.48		
3/6/2010 8:39	2	-2	0	3/6/10 8:44	36.49		
3/6/2010 8:44	2.5	-2.5	0	3/6/10 8:49	36.52		
3/6/2010 8:49	2	-5	-1.5	3/6/10 8:54	36.53		
3/6/2010 8:54	1	-3	-1	3/6/10 8:59	36.54		
3/6/2010 8:59	3	-2	0.5	3/6/10 9:04	36.54		
3/6/2010 9:04	2.5	-3	-0.25	3/6/10 9:09	36.57		
3/6/2010 9:09	2	-2	0	3/6/10 9:14	36.58		
3/6/2010 9:14	2	-2.5	-0.25	3/6/10 9:19	36.60		
3/6/2010 9:19	4	-3.5	0.25	3/6/10 9:24	36.62		
3/6/2010 9:24	2.5	-2.5	0	3/6/10 9:29	36.64		
3/6/2010 9:29	2.5	-3.5	-0.5	3/6/10 9:34	36.65		
3/6/2010 9:34	1.5	-2.5	-0.5	3/6/10 9:39	36.67		
3/6/2010 9:39	3	-3	0	3/6/10 9:44	36.69		
3/6/2010 9:44	2.5	-2.5	0	3/6/10 9:49	36.70		
3/6/2010 9:49	2	-3	-0.5	3/6/10 9:54	36.73		
3/6/2010 9:54	2	-2	0	3/6/10 9:59	36.72		
3/6/2010 9:59	3	-3	0	3/6/10 10:04	36.75		
3/6/2010 10:04	1.5	-2.5	-0.5	3/6/10 10:09	36.76		
3/6/2010 10:09	0.5	-6	-2.75	3/6/10 10:14	36.77		
3/6/2010 10:14	0	-4.5	-2.25	3/6/10 10:19	36.75		
3/6/2010 10:19	1	-4	-1.5	3/6/10 10:24	36.74		
3/6/2010 10:24	2	-3.5	-0.75	3/6/10 10:29	36.73		
3/6/2010 10:29	0.5	-3	-1.25	3/6/10 10:34	36.75		
3/6/2010 10:34	1	-5.5	-2.25	3/6/10 10:39	36.76		
3/6/2010 10:39	1	-4.5	-1.75	3/6/10 10:44	36.74		
3/6/2010 10:44	0	-4	-2	3/6/10 10:49	36.76		
3/6/2010 10:49	0	-3.5	-1.75	3/6/10 10:54	36.74		
3/6/2010 10:54	0.5	-3.5	-1.5	3/6/10 10:59	36.71		
3/6/2010 10:59	0.5	-3.5	-1.5	3/6/10 11:04	36.72		
3/6/2010 11:04	0	-3.5	-1.75	3/6/10 11:09	36.72		
3/6/2010 11:09	0	-3	-1.5	3/6/10 11:14	36.71		
3/6/2010 11:14	0	-3.5	-1.75	3/6/10 11:19	36.70		
3/6/2010 11:19	0	-4	-2	3/6/10 11:24	36.69		
3/6/2010 11:24	-0.5	-4.5	-2.5	3/6/10 11:29	36.68		
3/6/2010 11:29	0	-4	-2	3/6/10 11:34	36.66		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/6/2010 11:34	0	-4.5	-2.25	3/6/10 11:39	36.66		
3/6/2010 11:39	0	-3.5	-1.75	3/6/10 11:44	36.65		
3/6/2010 11:44	0	-4	-2	3/6/10 11:49	36.64		
3/6/2010 11:49	-0.5	-4	-2.25	3/6/10 11:54	36.63		
3/6/2010 11:54	0	-3	-1.5	3/6/10 11:59	36.62		
3/6/2010 11:59	-1	-4.5	-2.75	3/6/10 12:04	36.60		
3/6/2010 12:04	-1.5	-4.5	-3	3/6/10 12:09	36.58		
3/6/2010 12:09	0	-4	-2	3/6/10 12:14	36.55		
3/6/2010 12:14	-0.5	-3.5	-2	3/6/10 12:19	36.53		
3/6/2010 12:19	-0.5	-4	-2.25	3/6/10 12:24	36.51		
3/6/2010 12:24	-2	-6	-4	3/6/10 12:29	36.49		
3/6/2010 12:29	-0.5	-8	-4.25	3/6/10 12:34	36.45		
3/6/2010 12:34	-0.5	-4	-2.25	3/6/10 12:39	36.40		
3/6/2010 12:39	-0.5	-4	-2.25	3/6/10 12:44	36.39		
3/6/2010 12:44	-1	-4.5	-2.75	3/6/10 12:49	36.38		
3/6/2010 12:49	-2	-5	-3.5	3/6/10 12:54	36.33		
3/6/2010 12:54	-2	-5	-3.5	3/6/10 12:59	36.30		
3/6/2010 12:59	-0.5	-3.5	-2	3/6/10 13:04	36.27		
3/6/2010 13:04	-1	-5.5	-3.25	3/6/10 13:09	36.26		
3/6/2010 13:09	-1	-4	-2.5	3/6/10 13:14	36.22		
3/6/2010 13:14	-1	-3.5	-2.25	3/6/10 13:19	36.20		
3/6/2010 13:19	0	-2.5	-1.25	3/6/10 13:24	36.18		
3/6/2010 13:24	0.5	-2.5	-1	3/6/10 13:29	36.19		
3/6/2010 13:29	0.5	-3	-1.25	3/6/10 13:34	36.17		
3/6/2010 13:34	0	-2.5	-1.25	3/6/10 13:39	36.18		
3/6/2010 13:39	-0.5	-2.5	-1.5	3/6/10 13:44	36.17		
3/6/2010 13:44	-0.5	-4	-2.25	3/6/10 13:49	36.17		
3/6/2010 13:49	-0.5	-4.5	-2.5	3/6/10 13:54	36.16		
3/6/2010 13:54	-1.5	-4	-2.75	3/6/10 13:59	36.13		
3/6/2010 13:59	-1.5	-4	-2.75	3/6/10 14:04	36.11		
3/6/2010 14:04	-1	-4	-2.5	3/6/10 14:09	36.09		
3/6/2010 14:09	0.5	-3.5	-1.5	3/6/10 14:14	36.07		
3/6/2010 14:14	1	-2.5	-0.75	3/6/10 14:19	36.06		
3/6/2010 14:19	0.5	-3	-1.25	3/6/10 14:24	36.06		
3/6/2010 14:24	1	-1.5	-0.25	3/6/10 14:29	36.06		
3/6/2010 14:29	1.5	-2.5	-0.5	3/6/10 14:34	36.07		
3/6/2010 14:34	1	-2	-0.5	3/6/10 14:39	36.08		
3/6/2010 14:39	1	-1.5	-0.25	3/6/10 14:44	36.10		
3/6/2010 14:44	0.5	-2.5	-1	3/6/10 14:49	36.12		
3/6/2010 14:49	-1.5	-4.5	-3	3/6/10 14:54	36.12		
3/6/2010 14:54	0	-3	-1.5	3/6/10 14:59	36.07		
3/6/2010 14:59	-0.5	-4	-2.25	3/6/10 15:04	36.07		
3/6/2010 15:04	-0.5	-4	-2.25	3/6/10 15:09	36.05		
3/6/2010 15:09	0	-3	-1.5	3/6/10 15:14	36.02		
3/6/2010 15:14	1	-1	0	3/6/10 15:19	36.02		
3/6/2010 15:19	0	-2	-1	3/6/10 15:24	36.03		
3/6/2010 15:24	0	-3.5	-1.75	3/6/10 15:29	36.03		
3/6/2010 15:29	0	-3.5	-1.75	3/6/10 15:34	36.02		
3/6/2010 15:34	0.5	-1.5	-0.5	3/6/10 15:39	36.01		
3/6/2010 15:39	0	-2.5	-1.25	3/6/10 15:44	36.02		
3/6/2010 15:44	0.5	-2.5	-1	3/6/10 15:49	36.01		
3/6/2010 15:49	1	-1.5	-0.25	3/6/10 15:54	36.03		
3/6/2010 15:54	1.5	-1.5	0	3/6/10 15:59	36.04		
3/6/2010 15:59	1.5	-1.5	0	3/6/10 16:04	36.06		
3/6/2010 16:04	0.5	-2	-0.75	3/6/10 16:09	36.07		
3/6/2010 16:09	0.5	-1.5	-0.5	3/6/10 16:14	36.07		
3/6/2010 16:14	0	-1.5	-0.75	3/6/10 16:19	36.09		
3/6/2010 16:19	-0.5	-2	-1.25	3/6/10 16:24	36.10		
3/6/2010 16:24	0	-2.5	-1.25	3/6/10 16:29	36.09		
3/6/2010 16:29	-0.5	-2.5	-1.5	3/6/10 16:34	36.10		
3/6/2010 16:34	-1	-2.5	-1.75	3/6/10 16:39	36.09		
3/6/2010 16:39	-0.5	-2.5	-1.5	3/6/10 16:44	36.09		
3/6/2010 16:44	-0.5	-2	-1.25	3/6/10 16:49	36.10		
3/6/2010 16:49	0	-2	-1	3/6/10 16:54	36.10		
3/6/2010 16:54	0	-2	-1	3/6/10 16:59	36.10		
3/6/2010 16:59	0	-1	-0.5	3/6/10 17:04	36.11		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/6/2010 17:04	0.5	-0.5	0	3/6/10 17:09	36.11		
3/6/2010 17:09	0	-1.5	-0.75	3/6/10 17:14	36.13		
3/6/2010 17:14	-0.5	-1.5	-1	3/6/10 17:19	36.14		
3/6/2010 17:19	-0.5	-2	-1.25	3/6/10 17:24	36.14		
3/6/2010 17:24	-1	-2	-1.5	3/6/10 17:29	36.14		
3/6/2010 17:29	-0.5	-1.5	-1	3/6/10 17:34	36.13		
3/6/2010 17:34	-1	-1.5	-1.25	3/6/10 17:39	36.14		
3/6/2010 17:39	-0.5	-2.5	-1.5	3/6/10 17:44	36.13		
3/6/2010 17:44	-0.5	-2	-1.25	3/6/10 17:49	36.12		
3/6/2010 17:49	-0.5	-2	-1.25	3/6/10 17:54	36.13		
3/6/2010 17:54	0	-1.5	-0.75	3/6/10 17:59	36.13		
3/6/2010 17:59	0	-1.5	-0.75	3/6/10 18:04	36.14		
3/6/2010 18:04	0	-1	-0.5	3/6/10 18:09	36.14		
3/6/2010 18:09	0	-1	-0.5	3/6/10 18:14	36.15		
3/6/2010 18:14	0.5	-0.5	0	3/6/10 18:19	36.17		
3/6/2010 18:19	0.5	-1	-0.25	3/6/10 18:24	36.20		
3/6/2010 18:24	0	-1	-0.5	3/6/10 18:29	36.20		
3/6/2010 18:29	-0.5	-1	-0.75	3/6/10 18:34	36.22		
3/6/2010 18:34	0	-1.5	-0.75	3/6/10 18:39	36.22		
3/6/2010 18:39	0	-0.5	-0.25	3/6/10 18:44	36.23		
3/6/2010 18:44	0	-0.5	-0.25	3/6/10 18:49	36.25		
3/6/2010 18:49	0	-0.5	-0.25	3/6/10 18:54	36.27		
3/6/2010 18:54	0	-0.5	-0.25	3/6/10 18:59	36.29		
3/6/2010 18:59	-0.5	-2	-1.25	3/6/10 19:04	36.30		
3/6/2010 19:04	-0.5	-2	-1.25	3/6/10 19:09	36.30		
3/6/2010 19:09	-1.5	-3	-2.25	3/6/10 19:14	36.29		
3/6/2010 19:14	-2	-2.5	-2.25	3/6/10 19:19	36.28		
3/6/2010 19:19	-1	-2.5	-1.75	3/6/10 19:24	36.26		
3/6/2010 19:24	0	-1.5	-0.75	3/6/10 19:29	36.27		
3/6/2010 19:29	0	-1	-0.5	3/6/10 19:34	36.29		
3/6/2010 19:34	-0.5	-2	-1.25	3/6/10 19:39	36.30		
3/6/2010 19:39	0	-1.5	-0.75	3/6/10 19:44	36.31		
3/6/2010 19:44	2.5	-2	0.25	3/6/10 19:49	36.32		
3/6/2010 19:49	2	-0.5	0.75	3/6/10 19:54	36.35		
3/6/2010 19:54	-0.5	-3	-1.75	3/6/10 19:59	36.37		
3/6/2010 19:59	-2	-3	-2.5	3/6/10 20:04	36.34		
3/6/2010 20:04	0	-2	-1	3/6/10 20:09	36.32		
3/6/2010 20:09	0.5	-1.5	-0.5	3/6/10 20:14	36.33		
3/6/2010 20:14	0.5	-0.5	0	3/6/10 20:19	36.35		
3/6/2010 20:19	0	-1.5	-0.75	3/6/10 20:24	36.37		
3/6/2010 20:24	-0.5	-2	-1.25	3/6/10 20:29	36.36		
3/6/2010 20:29	-0.5	-3	-1.75	3/6/10 20:34	36.36		
3/6/2010 20:34	0	-1	-0.5	3/6/10 20:39	36.34		
3/6/2010 20:39	0.5	-1	-0.25	3/6/10 20:44	36.37		
3/6/2010 20:44	-1	-2.5	-1.75	3/6/10 20:49	36.37		
3/6/2010 20:49	0	-3	-1.5	3/6/10 20:54	36.35		
3/6/2010 20:54	-1	-2	-1.5	3/6/10 20:59	36.35		
3/6/2010 20:59	-0.5	-2	-1.25	3/6/10 21:04	36.34		
3/6/2010 21:04	-0.5	-2	-1.25	3/6/10 21:09	36.34		
3/6/2010 21:09	-1	-3	-2	3/6/10 21:14	36.35		
3/6/2010 21:14	-1.5	-2.5	-2	3/6/10 21:19	36.33		
3/6/2010 21:19	0	-3	-1.5	3/6/10 21:24	36.31		
3/6/2010 21:24	0	-0.5	-0.25	3/6/10 21:29	36.31		
3/6/2010 21:29	-0.5	-2	-1.25	3/6/10 21:34	36.33		
3/6/2010 21:34	0	-1.5	-0.75	3/6/10 21:39	36.32		
3/6/2010 21:39	-0.5	-2.5	-1.5	3/6/10 21:44	36.34		
3/6/2010 21:44	0.5	-2	-0.75	3/6/10 21:49	36.33		
3/6/2010 21:49	0	-2	-1	3/6/10 21:54	36.34		
3/6/2010 21:54	-0.5	-2	-1.25	3/6/10 21:59	36.34		
3/6/2010 21:59	-1	-3	-2	3/6/10 22:04	36.34		
3/6/2010 22:04	-0.5	-2.5	-1.5	3/6/10 22:09	36.32		
3/6/2010 22:09	-1.5	-3	-2.25	3/6/10 22:14	36.31		
3/6/2010 22:14	-1	-2.5	-1.75	3/6/10 22:19	36.30		
3/6/2010 22:19	-1	-2.5	-1.75	3/6/10 22:24	36.30		
3/6/2010 22:24	-0.5	-3	-1.75	3/6/10 22:29	36.29		
3/6/2010 22:29	0	-3.5	-1.75	3/6/10 22:34	36.29		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/6/2010 22:34	0	-3.5	-1.75	3/6/10 22:39	36.28		
3/6/2010 22:39	0	-2	-1	3/6/10 22:44	36.27		
3/6/2010 22:44	0	-2	-1	3/6/10 22:49	36.27		
3/6/2010 22:49	1	-0.5	0.25	3/6/10 22:54	36.29		
3/6/2010 22:54	0	-1	-0.5	3/6/10 22:59	36.32		
3/6/2010 22:59	-1	-2	-1.5	3/6/10 23:04	36.32		
3/6/2010 23:04	-1	-2.5	-1.75	3/6/10 23:09	36.31		
3/6/2010 23:09	-0.5	-3	-1.75	3/6/10 23:14	36.30		
3/6/2010 23:14	-1	-3	-2	3/6/10 23:19	36.29		
3/6/2010 23:19	0	-1	-0.5	3/6/10 23:24	36.28		
3/6/2010 23:24	-0.5	-3	-1.75	3/6/10 23:29	36.29		
3/6/2010 23:29	-0.5	-3	-1.75	3/6/10 23:34	36.29		
3/6/2010 23:34	-0.5	-2	-1.25	3/6/10 23:39	36.28		
3/6/2010 23:39	-1	-2.5	-1.75	3/6/10 23:44	36.29		
3/6/2010 23:44	-1	-3	-2	3/6/10 23:49	36.27		
3/6/2010 23:49	0	-1.5	-0.75	3/6/10 23:54	36.26		
3/6/2010 23:54	-0.5	-2	-1.25	3/6/10 23:59	36.29		
3/6/2010 23:59	-1.5	-3	-2.25	3/7/10 0:04	36.27		
3/7/2010 0:04	-3	-4.5	-3.75	3/7/10 0:09	36.25		
3/7/2010 0:09	-2	-4	-3	3/7/10 0:14	36.21		
3/7/2010 0:14	-1	-2.5	-1.75	3/7/10 0:19	36.19		
3/7/2010 0:19	-1	-2.5	-1.75	3/7/10 0:24	36.20		
3/7/2010 0:24	0	-2	-1	3/7/10 0:29	36.19		
3/7/2010 0:29	-1	-2	-1.5	3/7/10 0:34	36.20		
3/7/2010 0:34	-1	-2	-1.5	3/7/10 0:39	36.19		
3/7/2010 0:39	-0.5	-2	-1.25	3/7/10 0:44	36.18		
3/7/2010 0:44	-0.5	-1.5	-1	3/7/10 0:49	36.18		
3/7/2010 0:49	-0.5	-3	-1.75	3/7/10 0:54	36.19		
3/7/2010 0:54	-2.5	-3.5	-3	3/7/10 0:59	36.16		
3/7/2010 0:59	-2.5	-2.5	-2.5	3/7/10 1:04	36.14		
3/7/2010 1:04	-0.5	-2.5	-1.5	3/7/10 1:09	36.12		
3/7/2010 1:09	0	-1.5	-0.75	3/7/10 1:14	36.13		
3/7/2010 1:14	0.5	-1.5	-0.5	3/7/10 1:19	36.14		
3/7/2010 1:19	-1	-3	-2	3/7/10 1:24	36.14		
3/7/2010 1:24	0	-2	-1	3/7/10 1:29	36.12		
3/7/2010 1:29	-1.5	-3	-2.25	3/7/10 1:34	36.12		
3/7/2010 1:34	-1.5	-3.5	-2.5	3/7/10 1:39	36.11		
3/7/2010 1:39	-1.5	-2	-1.75	3/7/10 1:44	36.10		
3/7/2010 1:44	-1.5	-3	-2.25	3/7/10 1:49	36.08		
3/7/2010 1:49	-2	-3	-2.5	3/7/10 1:54	36.06		
3/7/2010 1:54	-0.5	-3	-1.75	3/7/10 1:59	36.04		
3/7/2010 1:59	-0.5	-3	-1.75	3/7/10 2:04	36.03		
3/7/2010 2:04	-1.5	-3	-2.25	3/7/10 2:09	36.02		
3/7/2010 2:09	-1	-3	-2	3/7/10 2:14	36.00		
3/7/2010 2:14	-1	-3.5	-2.25	3/7/10 2:19	35.99		
3/7/2010 2:19	-0.5	-2.5	-1.5	3/7/10 2:24	35.97		
3/7/2010 2:24	-0.5	-2.5	-1.5	3/7/10 2:29	35.97		
3/7/2010 2:29	-1	-2.5	-1.75	3/7/10 2:34	35.96		
3/7/2010 2:34	-1	-3	-2	3/7/10 2:39	35.95		
3/7/2010 2:39	-1	-2.5	-1.75	3/7/10 2:44	35.94		
3/7/2010 2:44	-1	-3	-2	3/7/10 2:49	35.92		
3/7/2010 2:49	-0.5	-3	-1.75	3/7/10 2:54	35.91		
3/7/2010 2:54	-1	-2.5	-1.75	3/7/10 2:59	35.90		
3/7/2010 2:59	0	-2	-1	3/7/10 3:04	35.89		
3/7/2010 3:04	1	-0.5	0.25	3/7/10 3:09	35.90		
3/7/2010 3:09	1.5	-0.5	0.5	3/7/10 3:14	35.92		
3/7/2010 3:14	0	-1	-0.5	3/7/10 3:19	35.95		
3/7/2010 3:19	-0.5	-1.5	-1	3/7/10 3:24	35.95		
3/7/2010 3:24	-1	-2	-1.5	3/7/10 3:29	35.95		
3/7/2010 3:29	0	-1.5	-0.75	3/7/10 3:34	35.94		
3/7/2010 3:34	-0.5	-1.5	-1	3/7/10 3:39	35.94		
3/7/2010 3:39	0	-2.5	-1.25	3/7/10 3:44	35.94		
3/7/2010 3:44	0	-3.5	-1.75	3/7/10 3:49	35.93		
3/7/2010 3:49	0.5	-0.5	0	3/7/10 3:54	35.92		
3/7/2010 3:54	0	-1	-0.5	3/7/10 3:59	35.94		
3/7/2010 3:59	0.5	-0.5	0	3/7/10 4:04	35.95		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/7/2010 4:04	0.5	-0.5	0	3/7/10 4:09	35.98		
3/7/2010 4:09	1.5	-1	0.25	3/7/10 4:14	35.98		
3/7/2010 4:14	2.5	0	1.25	3/7/10 4:19	36.01		
3/7/2010 4:19	2	-0.5	0.75	3/7/10 4:24	36.04		
3/7/2010 4:24	0.5	-1.5	-0.5	3/7/10 4:29	36.07		
3/7/2010 4:29	2.5	0.5	1.5	3/7/10 4:34	36.06		
3/7/2010 4:34	1	-0.5	0.25	3/7/10 4:39	36.11		
3/7/2010 4:39	1.5	-0.5	0.5	3/7/10 4:44	36.12		
3/7/2010 4:44	2.5	0	1.25	3/7/10 4:49	36.15		
3/7/2010 4:49	0.5	-2	-0.75	3/7/10 4:54	36.18		
3/7/2010 4:54	0	-2	-1	3/7/10 4:59	36.18		
3/7/2010 4:59	1	0	0.5	3/7/10 5:04	36.19		
3/7/2010 5:04	2	0.5	1.25	3/7/10 5:09	36.22		
3/7/2010 5:09	1.5	0	0.75	3/7/10 5:14	36.27		
3/7/2010 5:14	1	-0.5	0.25	3/7/10 5:19	36.29		
3/7/2010 5:19	0.5	-0.5	0	3/7/10 5:24	36.31		
3/7/2010 5:24	1	-0.5	0.25	3/7/10 5:29	36.33		
3/7/2010 5:29	0.5	-1.5	-0.5	3/7/10 5:34	36.35		
3/7/2010 5:34	1.5	-1.5	0	3/7/10 5:39	36.36		
3/7/2010 5:39	1.5	-0.5	0.5	3/7/10 5:44	36.39		
3/7/2010 5:44	1	0	0.5	3/7/10 5:49	36.40		
3/7/2010 5:49	1.5	-1	0.25	3/7/10 5:54	36.43		
3/7/2010 5:54	0.5	-1	-0.25	3/7/10 5:59	36.45		
3/7/2010 5:59	0.5	-0.5	0	3/7/10 6:04	36.47		
3/7/2010 6:04	1	-1.5	-0.25	3/7/10 6:09	36.48		
3/7/2010 6:09	2	0	1	3/7/10 6:14	36.49		
3/7/2010 6:14	1	-0.5	0.25	3/7/10 6:19	36.53		
3/7/2010 6:19	1.5	0	0.75	3/7/10 6:24	36.55		
3/7/2010 6:24	1	-0.5	0.25	3/7/10 6:29	36.58		
3/7/2010 6:29	1	-0.5	0.25	3/7/10 6:34	36.59		
3/7/2010 6:34	3	0.5	1.75	3/7/10 6:39	36.61		
3/7/2010 6:39	2.5	0	1.25	3/7/10 6:44	36.67		
3/7/2010 6:44	2.5	-0.5	1	3/7/10 6:49	36.70		
3/7/2010 6:49	1	-1.5	-0.25	3/7/10 6:54	36.72		
3/7/2010 6:54	1	-2.5	-0.75	3/7/10 6:59	36.74		
3/7/2010 6:59	1	-2.5	-0.75	3/7/10 7:04	36.75		
3/7/2010 7:04	4.5	0.5	2.5	3/7/10 7:09	36.75		
3/7/2010 7:09	4	-0.5	1.75	3/7/10 7:14	36.84		
3/7/2010 7:14	1.5	-0.5	0.5	3/7/10 7:19	36.86		
3/7/2010 7:19	1.5	-0.5	0.5	3/7/10 7:24	36.88		
3/7/2010 7:24	0	-3	-1.5	3/7/10 7:29	36.90		
3/7/2010 7:29	1	-2	-0.5	3/7/10 7:34	36.89		
3/7/2010 7:34	1	-2.5	-0.75	3/7/10 7:39	36.90		
3/7/2010 7:39	2	-1.5	0.25	3/7/10 7:44	36.90		
3/7/2010 7:44	-0.5	-2.5	-1.5	3/7/10 7:49	36.92		
3/7/2010 7:49	0.5	-1.5	-0.5	3/7/10 7:54	36.90		
3/7/2010 7:54	0	-2.5	-1.25	3/7/10 7:59	36.91		
3/7/2010 7:59	0	-3.5	-1.75	3/7/10 8:04	36.91		
3/7/2010 8:04	-1	-3	-2	3/7/10 8:09	36.89		
3/7/2010 8:09	0	-2	-1	3/7/10 8:14	36.87		
3/7/2010 8:14	-0.5	-3.5	-2	3/7/10 8:19	36.87		
3/7/2010 8:19	-1.5	-3.5	-2.5	3/7/10 8:24	36.86		
3/7/2010 8:24	0	-2.5	-1.25	3/7/10 8:29	36.83		
3/7/2010 8:29	-1	-3.5	-2.25	3/7/10 8:34	36.83		
3/7/2010 8:34	0	-3	-1.5	3/7/10 8:39	36.80		
3/7/2010 8:39	1	-1.5	-0.25	3/7/10 8:44	36.78		
3/7/2010 8:44	1	-1.5	-0.25	3/7/10 8:49	36.79		
3/7/2010 8:49	3	-2	0.5	3/7/10 8:54	36.80		
3/7/2010 8:54	3.5	-4	-0.25	3/7/10 8:59	36.83		
3/7/2010 8:59	-2.5	-6.5	-4.5	3/7/10 9:04	36.82		
3/7/2010 9:04	1	-3	-1	3/7/10 9:09	36.76		
3/7/2010 9:09	1.5	-0.5	0.5	3/7/10 9:14	36.75		
3/7/2010 9:14	0.5	-3.5	-1.5	3/7/10 9:19	36.80		
3/7/2010 9:19	0	-2.5	-1.25	3/7/10 9:24	36.76		
3/7/2010 9:24	-1.5	-4	-2.75	3/7/10 9:29	36.76		
3/7/2010 9:29	0	-3.5	-1.75	3/7/10 9:34	36.73		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/7/2010 9:34	0	-3.5	-1.75	3/7/10 9:39	36.72		
3/7/2010 9:39	-2	-5.5	-3.75	3/7/10 9:44	36.70		
3/7/2010 9:44	-0.5	-3	-1.75	3/7/10 9:49	36.66		
3/7/2010 9:49	-0.5	-2.5	-1.5	3/7/10 9:54	36.65		
3/7/2010 9:54	1.5	-2.5	-0.5	3/7/10 9:59	36.63		
3/7/2010 9:59	0.5	-3.5	-1.5	3/7/10 10:04	36.66		
3/7/2010 10:04	0	-3	-1.5	3/7/10 10:09	36.63		
3/7/2010 10:09	0.5	-4	-1.75	3/7/10 10:14	36.63		
3/7/2010 10:14	0	-3	-1.5	3/7/10 10:19	36.62		
3/7/2010 10:19	0	-3.5	-1.75	3/7/10 10:24	36.60		
3/7/2010 10:24	1	-2	-0.5	3/7/10 10:29	36.59		
3/7/2010 10:29	0.5	-2	-0.75	3/7/10 10:34	36.61		
3/7/2010 10:34	0.5	-0.5	0	3/7/10 10:39	36.62		
3/7/2010 10:39	2	-1.5	0.25	3/7/10 10:44	36.64		
3/7/2010 10:44	1	-3	-1	3/7/10 10:49	36.66		
3/7/2010 10:49	-1.5	-5	-3.25	3/7/10 10:54	36.64		
3/7/2010 10:54	0	-4.5	-2.25	3/7/10 10:59	36.58		
3/7/2010 10:59	0	-3.5	-1.75	3/7/10 11:04	36.59		
3/7/2010 11:04	-1	-3	-2	3/7/10 11:09	36.56		
3/7/2010 11:09	-1	-4	-2.5	3/7/10 11:14	36.55		
3/7/2010 11:14	-2	-4.5	-3.25	3/7/10 11:19	36.52		
3/7/2010 11:19	-1.5	-4	-2.75	3/7/10 11:24	36.48		
3/7/2010 11:24	-0.5	-2.5	-1.5	3/7/10 11:29	36.45		
3/7/2010 11:29	0	-2	-1	3/7/10 11:34	36.45		
3/7/2010 11:34	-0.5	-5.5	-3	3/7/10 11:39	36.46		
3/7/2010 11:39	-3	-5	-4	3/7/10 11:44	36.40		
3/7/2010 11:44	-2.5	-4	-3.25	3/7/10 11:49	36.34		
3/7/2010 11:49	-1.5	-4.5	-3	3/7/10 11:54	36.30		
3/7/2010 11:54	-3.5	-5	-4.25	3/7/10 11:59	36.27		
3/7/2010 11:59	-2.5	-4.5	-3.5	3/7/10 12:04	36.21		
3/7/2010 12:04	-1.5	-3.5	-2.5	3/7/10 12:09	36.18		
3/7/2010 12:09	-2.5	-4	-3.25	3/7/10 12:14	36.15		
3/7/2010 12:14	-2.5	-5.5	-4	3/7/10 12:19	36.10		
3/7/2010 12:19	-3	-5	-4	3/7/10 12:24	36.05		
3/7/2010 12:24	-1.5	-4	-2.75	3/7/10 12:29	36.01		
3/7/2010 12:29	-2	-5	-3.5	3/7/10 12:34	35.98		
3/7/2010 12:34	-1.5	-5	-3.25	3/7/10 12:39	35.95		
3/7/2010 12:39	-0.5	-2.5	-1.5	3/7/10 12:44	35.91		
3/7/2010 12:44	-1.5	-4	-2.75	3/7/10 12:49	35.91		
3/7/2010 12:49	-3	-4.5	-3.75	3/7/10 12:54	35.88		
3/7/2010 12:54	-4.5	-7	-5.75	3/7/10 12:59	35.84		
3/7/2010 12:59	-1	-5.5	-3.25	3/7/10 13:04	35.75		
3/7/2010 13:04	-1.5	-6	-3.75	3/7/10 13:09	35.74		
3/7/2010 13:09	-1.5	-4	-2.75	3/7/10 13:14	35.68		
3/7/2010 13:14	-3	-5	-4	3/7/10 13:19	35.67		
3/7/2010 13:19	-4	-5	-4.5	3/7/10 13:24	35.61		
3/7/2010 13:24	-1	-4	-2.5	3/7/10 13:29	35.56		
3/7/2010 13:29	-1.5	-4	-2.75	3/7/10 13:34	35.54		
3/7/2010 13:34	-2	-4	-3	3/7/10 13:39	35.51		
3/7/2010 13:39	-2	-3.5	-2.75	3/7/10 13:44	35.46		
3/7/2010 13:44	-1	-3.5	-2.25	3/7/10 13:49	35.43		
3/7/2010 13:49	-1.5	-4.5	-3	3/7/10 13:54	35.42		
3/7/2010 13:54	-0.5	-3	-1.75	3/7/10 13:59	35.37		
3/7/2010 13:59	-2.5	-4.5	-3.5	3/7/10 14:04	35.36		
3/7/2010 14:04	-2	-3.5	-2.75	3/7/10 14:09	35.33		
3/7/2010 14:09	-2.5	-4	-3.25	3/7/10 14:14	35.30		
3/7/2010 14:14	-0.5	-2.5	-1.5	3/7/10 14:19	35.26		
3/7/2010 14:19	-1	-2	-1.5	3/7/10 14:24	35.27		
3/7/2010 14:24	-2	-2.5	-2.25	3/7/10 14:29	35.25		
3/7/2010 14:29	-1	-4	-2.5	3/7/10 14:34	35.22		
3/7/2010 14:34	-2	-3.5	-2.75	3/7/10 14:39	35.20		
3/7/2010 14:39	-1.5	-2.5	-2	3/7/10 14:44	35.17		
3/7/2010 14:44	-1.5	-3	-2.25	3/7/10 14:49	35.16		
3/7/2010 14:49	-2.5	-3.5	-3	3/7/10 14:54	35.13		
3/7/2010 14:54	-2.5	-4	-3.25	3/7/10 14:59	35.09		
3/7/2010 14:59	0	-4	-2	3/7/10 15:04	35.05		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/7/2010 15:04	1	-1	0	3/7/10 15:09	35.05		
3/7/2010 15:09	-1	-3.5	-2.25	3/7/10 15:14	35.06		
3/7/2010 15:14	-1.5	-3.5	-2.5	3/7/10 15:19	35.04		
3/7/2010 15:19	-2.5	-6	-4.25	3/7/10 15:24	35.01		
3/7/2010 15:24	-0.5	-3.5	-2	3/7/10 15:29	34.94		
3/7/2010 15:29	-2	-4.5	-3.25	3/7/10 15:34	34.94		
3/7/2010 15:34	-1	-4	-2.5	3/7/10 15:39	34.90		
3/7/2010 15:39	-1	-4	-2.5	3/7/10 15:44	34.87		
3/7/2010 15:44	-0.5	-2	-1.25	3/7/10 15:49	34.85		
3/7/2010 15:49	-0.5	-4	-2.25	3/7/10 15:54	34.83		
3/7/2010 15:54	-1	-2.5	-1.75	3/7/10 15:59	34.82		
3/7/2010 15:59	0.5	-3.5	-1.5	3/7/10 16:04	34.80		
3/7/2010 16:04	0	-4	-2	3/7/10 16:09	34.78		
3/7/2010 16:09	2.5	-1.5	0.5	3/7/10 16:14	34.76		
3/7/2010 16:14	-1	-3	-2	3/7/10 16:19	34.79		
3/7/2010 16:19	0	-1.5	-0.75	3/7/10 16:24	34.76		
3/7/2010 16:24	0.5	-1.5	-0.5	3/7/10 16:29	34.77		
3/7/2010 16:29	0	-2.5	-1.25	3/7/10 16:34	34.77		
3/7/2010 16:34	0.5	-2.5	-1	3/7/10 16:39	34.75		
3/7/2010 16:39	1	-1	0	3/7/10 16:44	34.76		
3/7/2010 16:44	0	-1	-0.5	3/7/10 16:49	34.77		
3/7/2010 16:49	0	-1	-0.5	3/7/10 16:54	34.77		
3/7/2010 16:54	1	-2	-0.5	3/7/10 16:59	34.77		
3/7/2010 16:59	0	-2.5	-1.25	3/7/10 17:04	34.77		
3/7/2010 17:04	0	-1.5	-0.75	3/7/10 17:09	34.76		
3/7/2010 17:09	-1	-2.5	-1.75	3/7/10 17:14	34.76		
3/7/2010 17:14	-0.5	-1.5	-1	3/7/10 17:19	34.74		
3/7/2010 17:19	-0.5	-2	-1.25	3/7/10 17:24	34.74		
3/7/2010 17:24	0.5	-0.5	0	3/7/10 17:29	34.72		
3/7/2010 17:29	1.5	0.5	1	3/7/10 17:34	34.74		
3/7/2010 17:34	1	0	0.5	3/7/10 17:39	34.77		
3/7/2010 17:39	1	0	0.5	3/7/10 17:44	34.79		
3/7/2010 17:44	0.5	-0.5	0	3/7/10 17:49	34.80		
3/7/2010 17:49	0	-0.5	-0.25	3/7/10 17:54	34.81		
3/7/2010 17:54	0	-0.5	-0.25	3/7/10 17:59	34.83		
3/7/2010 17:59	0	-1	-0.5	3/7/10 18:04	34.82		
3/7/2010 18:04	0	-0.5	-0.25	3/7/10 18:09	34.83		
3/7/2010 18:09	0	-0.5	-0.25	3/7/10 18:14	34.84		
3/7/2010 18:14	-0.5	-1	-0.75	3/7/10 18:19	34.85		
3/7/2010 18:19	-0.5	-3.5	-2	3/7/10 18:24	34.84		
3/7/2010 18:24	0	-4	-2	3/7/10 18:29	34.82		
3/7/2010 18:29	1	-1	0	3/7/10 18:34	34.80		
3/7/2010 18:34	-0.5	-2	-1.25	3/7/10 18:39	34.82		
3/7/2010 18:39	0.5	-2	-0.75	3/7/10 18:44	34.81		
3/7/2010 18:44	0.5	-1.5	-0.5	3/7/10 18:49	34.83		
3/7/2010 18:49	-0.5	-1.5	-1	3/7/10 18:54	34.82		
3/7/2010 18:54	0	-1	-0.5	3/7/10 18:59	34.82		
3/7/2010 18:59	0.5	-0.5	0	3/7/10 19:04	34.82		
3/7/2010 19:04	0	-1	-0.5	3/7/10 19:09	34.84		
3/7/2010 19:09	-0.5	-2	-1.25	3/7/10 19:14	34.84		
3/7/2010 19:14	0	-2.5	-1.25	3/7/10 19:19	34.84		
3/7/2010 19:19	-2	-4	-3	3/7/10 19:24	34.82		
3/7/2010 19:24	0	-2	-1	3/7/10 19:29	34.78		
3/7/2010 19:29	0	-1	-0.5	3/7/10 19:34	34.79		
3/7/2010 19:34	0	-0.5	-0.25	3/7/10 19:39	34.79		
3/7/2010 19:39	0	-1	-0.5	3/7/10 19:44	34.80		
3/7/2010 19:44	-0.5	-2	-1.25	3/7/10 19:49	34.81		
3/7/2010 19:49	-1.5	-2.5	-2	3/7/10 19:54	34.79		
3/7/2010 19:54	-1	-1.5	-1.25	3/7/10 19:59	34.78		
3/7/2010 19:59	0	-1.5	-0.75	3/7/10 20:04	34.78		
3/7/2010 20:04	0	-2	-1	3/7/10 20:09	34.79		
3/7/2010 20:09	-0.5	-2.5	-1.5	3/7/10 20:14	34.78		
3/7/2010 20:14	0	-2.5	-1.25	3/7/10 20:19	34.77		
3/7/2010 20:19	-2	-3.5	-2.75	3/7/10 20:24	34.77		
3/7/2010 20:24	-0.5	-3.5	-2	3/7/10 20:29	34.74		
3/7/2010 20:29	0	-3.5	-1.75	3/7/10 20:34	34.74		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/7/2010 20:34	0.5	-1	-0.25	3/7/10 20:39	34.73		
3/7/2010 20:39	0	-2.5	-1.25	3/7/10 20:44	34.74		
3/7/2010 20:44	-1.5	-3	-2.25	3/7/10 20:49	34.73		
3/7/2010 20:49	0.5	-2.5	-1	3/7/10 20:54	34.72		
3/7/2010 20:54	0.5	-1.5	-0.5	3/7/10 20:59	34.72		
3/7/2010 20:59	0.5	-2	-0.75	3/7/10 21:04	34.73		
3/7/2010 21:04	-0.5	-2	-1.25	3/7/10 21:09	34.73		
3/7/2010 21:09	-0.5	-1.5	-1	3/7/10 21:14	34.72		
3/7/2010 21:14	0	-1	-0.5	3/7/10 21:19	34.71		
3/7/2010 21:19	0	-1.5	-0.75	3/7/10 21:24	34.72		
3/7/2010 21:24	0.5	-3.5	-1.5	3/7/10 21:29	34.72		
3/7/2010 21:29	-2	-5	-3.5	3/7/10 21:34	34.71		
3/7/2010 21:34	-2	-3.5	-2.75	3/7/10 21:39	34.67		
3/7/2010 21:39	-1	-3.5	-2.25	3/7/10 21:44	34.64		
3/7/2010 21:44	-0.5	-4	-2.25	3/7/10 21:49	34.62		
3/7/2010 21:49	0	-1.5	-0.75	3/7/10 21:54	34.60		
3/7/2010 21:54	0	-2.5	-1.25	3/7/10 21:59	34.62		
3/7/2010 21:59	-1	-2.5	-1.75	3/7/10 22:04	34.61		
3/7/2010 22:04	0	-2	-1	3/7/10 22:09	34.60		
3/7/2010 22:09	-0.5	-2	-1.25	3/7/10 22:14	34.60		
3/7/2010 22:14	-0.5	-2	-1.25	3/7/10 22:19	34.60		
3/7/2010 22:19	-1.5	-3.5	-2.5	3/7/10 22:24	34.59		
3/7/2010 22:24	-1	-3.5	-2.25	3/7/10 22:29	34.56		
3/7/2010 22:29	0	-2	-1	3/7/10 22:34	34.53		
3/7/2010 22:34	-0.5	-3	-1.75	3/7/10 22:39	34.54		
3/7/2010 22:39	-0.5	-2	-1.25	3/7/10 22:44	34.52		
3/7/2010 22:44	0	-2	-1	3/7/10 22:49	34.51		
3/7/2010 22:49	0	-2.5	-1.25	3/7/10 22:54	34.51		
3/7/2010 22:54	-0.5	-2	-1.25	3/7/10 22:59	34.50		
3/7/2010 22:59	0	-1.5	-0.75	3/7/10 23:04	34.49		
3/7/2010 23:04	-1	-2.5	-1.75	3/7/10 23:09	34.49		
3/7/2010 23:09	-1.5	-3	-2.25	3/7/10 23:14	34.47		
3/7/2010 23:14	0	-2	-1	3/7/10 23:19	34.45		
3/7/2010 23:19	-1	-2.5	-1.75	3/7/10 23:24	34.46		
3/7/2010 23:24	-0.5	-3	-1.75	3/7/10 23:29	34.44		
3/7/2010 23:29	-2	-3.5	-2.75	3/7/10 23:34	34.42		
3/7/2010 23:34	-1.5	-3.5	-2.5	3/7/10 23:39	34.40		
3/7/2010 23:39	-1	-3.5	-2.25	3/7/10 23:44	34.37		
3/7/2010 23:44	-0.5	-2.5	-1.5	3/7/10 23:49	34.36		
3/7/2010 23:49	-1.5	-3	-2.25	3/7/10 23:54	34.36		
3/7/2010 23:54	-1	-3	-2	3/7/10 23:59	34.34		
3/7/2010 23:59	-1	-2.5	-1.75	3/8/10 0:04	34.33		
3/8/2010 0:04	-1	-4	-2.5	3/8/10 0:09	34.31		
3/8/2010 0:09	-0.5	-3	-1.75	3/8/10 0:14	34.29		
3/8/2010 0:14	0	-2	-1	3/8/10 0:19	34.29		
3/8/2010 0:19	0	-2	-1	3/8/10 0:24	34.29		
3/8/2010 0:24	1.5	-2	-0.25	3/8/10 0:29	34.30		
3/8/2010 0:29	0	-3	-1.5	3/8/10 0:34	34.31		
3/8/2010 0:34	-1.5	-3.5	-2.5	3/8/10 0:39	34.29		
3/8/2010 0:39	-1	-4	-2.5	3/8/10 0:44	34.27		
3/8/2010 0:44	1	-1.5	-0.25	3/8/10 0:49	34.25		
3/8/2010 0:49	0	-2.5	-1.25	3/8/10 0:54	34.26		
3/8/2010 0:54	0	-1.5	-0.75	3/8/10 0:59	34.26		
3/8/2010 0:59	0.5	-2	-0.75	3/8/10 1:04	34.27		
3/8/2010 1:04	-0.5	-3	-1.75	3/8/10 1:09	34.27		
3/8/2010 1:09	0	-2.5	-1.25	3/8/10 1:14	34.25		
3/8/2010 1:14	-0.5	-4	-2.25	3/8/10 1:19	34.24		
3/8/2010 1:19	-0.5	-4.5	-2.5	3/8/10 1:24	34.24		
3/8/2010 1:24	1.5	-4	-1.25	3/8/10 1:29	34.22		
3/8/2010 1:29	-1	-3	-2	3/8/10 1:34	34.20		
3/8/2010 1:34	-1.5	-4.5	-3	3/8/10 1:39	34.20		
3/8/2010 1:39	-0.5	-3.5	-2	3/8/10 1:44	34.16		
3/8/2010 1:44	-1	-4	-2.5	3/8/10 1:49	34.16		
3/8/2010 1:49	-1.5	-4.5	-3	3/8/10 1:54	34.14		
3/8/2010 1:54	0	-5.5	-2.75	3/8/10 1:59	34.11		
3/8/2010 1:59	-1.5	-5	-3.25	3/8/10 2:04	34.07		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/8/2010 2:04	-2	-5	-3.5	3/8/10 2:09	34.03		
3/8/2010 2:09	-1.5	-6	-3.75	3/8/10 2:14	33.99		
3/8/2010 2:14	-1	-5	-3	3/8/10 2:19	33.96		
3/8/2010 2:19	-1.5	-6	-3.75	3/8/10 2:24	33.92		
3/8/2010 2:24	-1.5	-5	-3.25	3/8/10 2:29	33.90		
3/8/2010 2:29	-0.5	-3.5	-2	3/8/10 2:34	33.86		
3/8/2010 2:34	0	-4.5	-2.25	3/8/10 2:39	33.84		
3/8/2010 2:39	0	-2.5	-1.25	3/8/10 2:44	33.82		
3/8/2010 2:44	0.5	-4	-1.75	3/8/10 2:49	33.81		
3/8/2010 2:49	0	-4.5	-2.25	3/8/10 2:54	33.79		
3/8/2010 2:54	-1.5	-4	-2.75	3/8/10 2:59	33.77		
3/8/2010 2:59	0.5	-2	-0.75	3/8/10 3:04	33.74		
3/8/2010 3:04	-0.5	-3.5	-2	3/8/10 3:09	33.76		
3/8/2010 3:09	0	-3	-1.5	3/8/10 3:14	33.73		
3/8/2010 3:14	-0.5	-3	-1.75	3/8/10 3:19	33.73		
3/8/2010 3:19	0.5	-2.5	-1	3/8/10 3:24	33.72		
3/8/2010 3:24	0.5	-1	-0.25	3/8/10 3:29	33.71		
3/8/2010 3:29	2.5	-0.5	1	3/8/10 3:34	33.72		
3/8/2010 3:34	2.5	-1.5	0.5	3/8/10 3:39	33.75		
3/8/2010 3:39	2	0	1	3/8/10 3:44	33.76		
3/8/2010 3:44	1.5	-1.5	0	3/8/10 3:49	33.79		
3/8/2010 3:49	0.5	-2	-0.75	3/8/10 3:54	33.80		
3/8/2010 3:54	2.5	-2	0.25	3/8/10 3:59	33.79		
3/8/2010 3:59	3	-0.5	1.25	3/8/10 4:04	33.81		
3/8/2010 4:04	3.5	-1.5	1	3/8/10 4:09	33.84		
3/8/2010 4:09	2.5	-0.5	1	3/8/10 4:14	33.86		
3/8/2010 4:14	2.5	-2	0.25	3/8/10 4:19	33.88		
3/8/2010 4:19	-0.5	-4	-2.25	3/8/10 4:24	33.88		
3/8/2010 4:24	1.5	-2	-0.25	3/8/10 4:29	33.85		
3/8/2010 4:29	1	-2	-0.5	3/8/10 4:34	33.89		
3/8/2010 4:34	3.5	-2.5	0.5	3/8/10 4:39	33.89		
3/8/2010 4:39	5.5	-0.5	2.5	3/8/10 4:44	33.93		
3/8/2010 4:44	0	-2	-1	3/8/10 4:49	34.00		
3/8/2010 4:49	0.5	-2	-0.75	3/8/10 4:54	33.99		
3/8/2010 4:54	0.5	-7.5	-3.5	3/8/10 4:59	33.99		
3/8/2010 4:59	-0.5	-7.5	-4	3/8/10 5:04	33.96		
3/8/2010 5:04	-1	-3	-2	3/8/10 5:09	33.95		
3/8/2010 5:09	1	-1	0	3/8/10 5:14	33.92		
3/8/2010 5:14	1	-1	0	3/8/10 5:19	33.96		
3/8/2010 5:19	0.5	-1	-0.25	3/8/10 5:24	33.99		
3/8/2010 5:24	1	0	0.5	3/8/10 5:29	34.00		
3/8/2010 5:29	4.5	-1	1.75	3/8/10 5:34	34.02		
3/8/2010 5:34	5	-3	1	3/8/10 5:39	34.07		
3/8/2010 5:39	5.5	-1.5	2	3/8/10 5:44	34.09		
3/8/2010 5:44	0.5	-4	-1.75	3/8/10 5:49	34.12		
3/8/2010 5:49	2	-1.5	0.25	3/8/10 5:54	34.10		
3/8/2010 5:54	4.5	-0.5	2	3/8/10 5:59	34.12		
3/8/2010 5:59	3	0	1.5	3/8/10 6:04	34.18		
3/8/2010 6:04	2	0	1	3/8/10 6:09	34.20		
3/8/2010 6:09	1.5	0	0.75	3/8/10 6:14	34.23		
3/8/2010 6:14	0.5	-1	-0.25	3/8/10 6:19	34.26		
3/8/2010 6:19	-0.5	-2	-1.25	3/8/10 6:24	34.26		
3/8/2010 6:24	1	-1	0	3/8/10 6:29	34.26		
3/8/2010 6:29	0.5	0	0.25	3/8/10 6:34	34.28		
3/8/2010 6:34	0	-0.5	-0.25	3/8/10 6:39	34.30		
3/8/2010 6:39	1	-0.5	0.25	3/8/10 6:44	34.30		
3/8/2010 6:44	0	-1.5	-0.75	3/8/10 6:49	34.33		
3/8/2010 6:49	1	-1	0	3/8/10 6:54	34.33		
3/8/2010 6:54	1	-1	0	3/8/10 6:59	34.35		
3/8/2010 6:59	-0.5	-2	-1.25	3/8/10 7:04	34.36		
3/8/2010 7:04	-1	-3	-2	3/8/10 7:09	34.34		
3/8/2010 7:09	0	-1.5	-0.75	3/8/10 7:14	34.32		
3/8/2010 7:14	2	-0.5	0.75	3/8/10 7:19	34.32		
3/8/2010 7:19	2	-1	0.5	3/8/10 7:24	34.36		
3/8/2010 7:24	3	-1	1	3/8/10 7:29	34.37		
3/8/2010 7:29	2.5	0	1.25	3/8/10 7:34	34.42		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/8/2010 7:34	0	-1.5	-0.75	3/8/10 7:39	34.44		
3/8/2010 7:39	1	-1	0	3/8/10 7:44	34.43		
3/8/2010 7:44	1.5	0	0.75	3/8/10 7:49	34.44		
3/8/2010 7:49	0	-0.5	-0.25	3/8/10 7:54	34.48		
3/8/2010 7:54	0.5	-1	-0.25	3/8/10 7:59	34.48		
3/8/2010 7:59	-0.5	-2	-1.25	3/8/10 8:04	34.49		
3/8/2010 8:04	-0.5	-1.5	-1	3/8/10 8:09	34.48		
3/8/2010 8:09	0.5	-1	-0.25	3/8/10 8:14	34.48		
3/8/2010 8:14	1	0	0.5	3/8/10 8:19	34.48		
3/8/2010 8:19	1	-2	-0.5	3/8/10 8:24	34.50		
3/8/2010 8:24	0.5	-1	-0.25	3/8/10 8:29	34.51		
3/8/2010 8:29	0	-1.5	-0.75	3/8/10 8:34	34.52		
3/8/2010 8:34	0	-1.5	-0.75	3/8/10 8:39	34.52		
3/8/2010 8:39	1	-1	0	3/8/10 8:44	34.52		
3/8/2010 8:44	0.5	-1.5	-0.5	3/8/10 8:49	34.54		
3/8/2010 8:49	2.5	-1	0.75	3/8/10 8:54	34.54		
3/8/2010 8:54	2.5	-0.5	1	3/8/10 8:59	34.58		
3/8/2010 8:59	1.5	-1.5	0	3/8/10 9:04	34.58		
3/8/2010 9:04	0.5	-1.5	-0.5	3/8/10 9:09	34.59		
3/8/2010 9:09	0	-2	-1	3/8/10 9:14	34.60		
3/8/2010 9:14	0	-1.5	-0.75	3/8/10 9:19	34.60		
3/8/2010 9:19	1.5	-1.5	0	3/8/10 9:24	34.60		
3/8/2010 9:24	0.5	-1.5	-0.5	3/8/10 9:29	34.62		
3/8/2010 9:29	1	-1	0	3/8/10 9:34	34.62		
3/8/2010 9:34	-1	-3	-2	3/8/10 9:39	34.64		
3/8/2010 9:39	-0.5	-4	-2.25	3/8/10 9:44	34.62		
3/8/2010 9:44	1	-3.5	-1.25	3/8/10 9:49	34.60		
3/8/2010 9:49	0.5	-2	-0.75	3/8/10 9:54	34.60		
3/8/2010 9:54	0	-2.5	-1.25	3/8/10 9:59	34.60		
3/8/2010 9:59	0	-3	-1.5	3/8/10 10:04	34.60		
3/8/2010 10:04	0.5	-1.5	-0.5	3/8/10 10:09	34.59		
3/8/2010 10:09	1	-2.5	-0.75	3/8/10 10:14	34.61		
3/8/2010 10:14	0	-3	-1.5	3/8/10 10:19	34.61		
3/8/2010 10:19	0.5	-2.5	-1	3/8/10 10:24	34.60		
3/8/2010 10:24	0	-3	-1.5	3/8/10 10:29	34.61		
3/8/2010 10:29	-1	-3	-2	3/8/10 10:34	34.60		
3/8/2010 10:34	-0.5	-3	-1.75	3/8/10 10:39	34.59		
3/8/2010 10:39	-2	-6	-4	3/8/10 10:44	34.58		
3/8/2010 10:44	-1.5	-5.5	-3.5	3/8/10 10:49	34.52		
3/8/2010 10:49	-2.5	-4	-3.25	3/8/10 10:54	34.49		
3/8/2010 10:54	-1	-4.5	-2.75	3/8/10 10:59	34.45		
3/8/2010 10:59	0.5	-3	-1.25	3/8/10 11:04	34.42		
3/8/2010 11:04	-1	-3	-2	3/8/10 11:09	34.43		
3/8/2010 11:09	-1	-3.5	-2.25	3/8/10 11:14	34.41		
3/8/2010 11:14	-2	-5	-3.5	3/8/10 11:19	34.38		
3/8/2010 11:19	-1.5	-4.5	-3	3/8/10 11:24	34.34		
3/8/2010 11:24	-0.5	-3	-1.75	3/8/10 11:29	34.31		
3/8/2010 11:29	0.5	-2	-0.75	3/8/10 11:34	34.30		
3/8/2010 11:34	-0.5	-4	-2.25	3/8/10 11:39	34.32		
3/8/2010 11:39	-1	-5	-3	3/8/10 11:44	34.28		
3/8/2010 11:44	-1	-4.5	-2.75	3/8/10 11:49	34.26		
3/8/2010 11:49	-1	-2.5	-1.75	3/8/10 11:54	34.23		
3/8/2010 11:54	-0.5	-2	-1.25	3/8/10 11:59	34.22		
3/8/2010 11:59	-0.5	-3	-1.75	3/8/10 12:04	34.22		
3/8/2010 12:04	-0.5	-2.5	-1.5	3/8/10 12:09	34.19		
3/8/2010 12:09	-0.5	-3.5	-2	3/8/10 12:14	34.20		
3/8/2010 12:14	-0.5	-2.5	-1.5	3/8/10 12:19	34.18		
3/8/2010 12:19	-0.5	-4	-2.25	3/8/10 12:24	34.18		
3/8/2010 12:24	-2.5	-4.5	-3.5	3/8/10 12:29	34.15		
3/8/2010 12:29	-2.5	-5.5	-4	3/8/10 12:34	34.11		
3/8/2010 12:34	-2.5	-5.5	-4	3/8/10 12:39	34.06		
3/8/2010 12:39	-2	-3	-2.5	3/8/10 12:44	34.02		
3/8/2010 12:44	-2.5	-5	-3.75	3/8/10 12:49	34.00		
3/8/2010 12:49	-2	-4.5	-3.25	3/8/10 12:54	33.93		
3/8/2010 12:54	-1	-3.5	-2.25	3/8/10 12:59	33.91		
3/8/2010 12:59	-2	-3.5	-2.75	3/8/10 13:04	33.90		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/8/2010 13:04	-2	-3.5	-2.75	3/8/10 13:09	33.88		
3/8/2010 13:09	-1.5	-5	-3.25	3/8/10 13:14	33.85		
3/8/2010 13:14	-0.5	-2	-1.25	3/8/10 13:19	33.82		
3/8/2010 13:19	-0.5	-3	-1.75	3/8/10 13:24	33.81		
3/8/2010 13:24	-2.5	-5.5	-4	3/8/10 13:29	33.80		
3/8/2010 13:29	-2	-5	-3.5	3/8/10 13:34	33.74		
3/8/2010 13:34	-1	-2.5	-1.75	3/8/10 13:39	33.73		
3/8/2010 13:39	-0.5	-2	-1.25	3/8/10 13:44	33.72		
3/8/2010 13:44	-1	-3.5	-2.25	3/8/10 13:49	33.72		
3/8/2010 13:49	-2.5	-5	-3.75	3/8/10 13:54	33.70		
3/8/2010 13:54	-2	-5	-3.5	3/8/10 13:59	33.66		
3/8/2010 13:59	-1.5	-2.5	-2	3/8/10 14:04	33.62		
3/8/2010 14:04	-1.5	-3	-2.25	3/8/10 14:09	33.61		
3/8/2010 14:09	-1	-3	-2	3/8/10 14:14	33.60		
3/8/2010 14:14	-2	-3	-2.5	3/8/10 14:19	33.58		
3/8/2010 14:19	-2.5	-4	-3.25	3/8/10 14:24	33.56		
3/8/2010 14:24	-1.5	-4	-2.75	3/8/10 14:29	33.53		
3/8/2010 14:29	-1.5	-3	-2.25	3/8/10 14:34	33.50		
3/8/2010 14:34	-1	-2.5	-1.75	3/8/10 14:39	33.49		
3/8/2010 14:39	-2	-3	-2.5	3/8/10 14:44	33.48		
3/8/2010 14:44	-2	-3.5	-2.75	3/8/10 14:49	33.46		
3/8/2010 14:49	-1	-2.5	-1.75	3/8/10 14:54	33.43		
3/8/2010 14:54	-1	-3	-2	3/8/10 14:59	33.43		
3/8/2010 14:59	-1	-3	-2	3/8/10 15:04	33.41		
3/8/2010 15:04	0	-1.5	-0.75	3/8/10 15:09	33.40		
3/8/2010 15:09	-0.5	-2	-1.25	3/8/10 15:14	33.41		
3/8/2010 15:14	-1	-2.5	-1.75	3/8/10 15:19	33.41		
3/8/2010 15:19	-1.5	-4.5	-3	3/8/10 15:24	33.39		
3/8/2010 15:24	0	-3.5	-1.75	3/8/10 15:29	33.36		
3/8/2010 15:29	0	-1.5	-0.75	3/8/10 15:34	33.35		
3/8/2010 15:34	-1.5	-3.5	-2.5	3/8/10 15:39	33.37		
3/8/2010 15:39	-1.5	-3	-2.25	3/8/10 15:44	33.34		
3/8/2010 15:44	-1	-3.5	-2.25	3/8/10 15:49	33.33		
3/8/2010 15:49	-1	-3.5	-2.25	3/8/10 15:54	33.31		
3/8/2010 15:54	-0.5	-1.5	-1	3/8/10 15:59	33.30		
3/8/2010 15:59	-1	-2.5	-1.75	3/8/10 16:04	33.30		
3/8/2010 16:04	0.5	-1	-0.25	3/8/10 16:09	33.29		
3/8/2010 16:09	0	-1	-0.5	3/8/10 16:14	33.31		
3/8/2010 16:14	-1	-1.5	-1.25	3/8/10 16:19	33.31		
3/8/2010 16:19	0.5	-1	-0.25	3/8/10 16:24	33.31		
3/8/2010 16:24	0.5	-0.5	0	3/8/10 16:29	33.33		
3/8/2010 16:29	-0.5	-2	-1.25	3/8/10 16:34	33.34		
3/8/2010 16:34	-1.5	-2.5	-2	3/8/10 16:39	33.34		
3/8/2010 16:39	-1.5	-2	-1.75	3/8/10 16:44	33.32		
3/8/2010 16:44	-1	-1.5	-1.25	3/8/10 16:49	33.30		
3/8/2010 16:49	-1	-1.5	-1.25	3/8/10 16:54	33.30		
3/8/2010 16:54	-1.5	-2.5	-2	3/8/10 16:59	33.30		
3/8/2010 16:59	-1	-2	-1.5	3/8/10 17:04	33.28		
3/8/2010 17:04	0.5	-1	-0.25	3/8/10 17:09	33.29		
3/8/2010 17:09	0.5	-2.5	-1	3/8/10 17:14	33.31		
3/8/2010 17:14	-1	-2.5	-1.75	3/8/10 17:19	33.30		
3/8/2010 17:19	0	-1	-0.5	3/8/10 17:24	33.29		
3/8/2010 17:24	0	-1	-0.5	3/8/10 17:29	33.29		
3/8/2010 17:29	0	-1	-0.5	3/8/10 17:34	33.30		
3/8/2010 17:34	0	-0.5	-0.25	3/8/10 17:39	33.32		
3/8/2010 17:39	0	-1	-0.5	3/8/10 17:44	33.32		
3/8/2010 17:44	0.5	-0.5	0	3/8/10 17:49	33.33		
3/8/2010 17:49	0	-1	-0.5	3/8/10 17:54	33.34		
3/8/2010 17:54	0.5	0	0.25	3/8/10 17:59	33.34		
3/8/2010 17:59	0.5	-1	-0.25	3/8/10 18:04	33.37		
3/8/2010 18:04	0	-1	-0.5	3/8/10 18:09	33.37		
3/8/2010 18:09	1	0	0.5	3/8/10 18:14	33.38		
3/8/2010 18:14	0.5	-2	-0.75	3/8/10 18:19	33.40		
3/8/2010 18:19	-0.5	-2	-1.25	3/8/10 18:24	33.41		
3/8/2010 18:24	0.5	-0.5	0	3/8/10 18:29	33.41		
3/8/2010 18:29	0.5	-1.5	-0.5	3/8/10 18:34	33.43		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/8/2010 18:34	0	-1.5	-0.75	3/8/10 18:39	33.43		
3/8/2010 18:39	0	-1	-0.5	3/8/10 18:44	33.43		
3/8/2010 18:44	0	-1.5	-0.75	3/8/10 18:49	33.44		
3/8/2010 18:49	0.5	-0.5	0	3/8/10 18:54	33.44		
3/8/2010 18:54	-0.5	-1.5	-1	3/8/10 18:59	33.46		
3/8/2010 18:59	0	-1.5	-0.75	3/8/10 19:04	33.46		
3/8/2010 19:04	0.5	-1	-0.25	3/8/10 19:09	33.47		
3/8/2010 19:09	1.5	0	0.75	3/8/10 19:14	33.49		
3/8/2010 19:14	0.5	-0.5	0	3/8/10 19:19	33.52		
3/8/2010 19:19	1	-1	0	3/8/10 19:24	33.53		
3/8/2010 19:24	0	-1.5	-0.75	3/8/10 19:29	33.55		
3/8/2010 19:29	0	-2	-1	3/8/10 19:34	33.55		
3/8/2010 19:34	0	-2	-1	3/8/10 19:39	33.55		
3/8/2010 19:39	0	-1.5	-0.75	3/8/10 19:44	33.56		
3/8/2010 19:44	0.5	-1.5	-0.5	3/8/10 19:49	33.55		
3/8/2010 19:49	1	-1.5	-0.25	3/8/10 19:54	33.56		
3/8/2010 19:54	1	-0.5	0.25	3/8/10 19:59	33.58		
3/8/2010 19:59	0.5	-1	-0.25	3/8/10 20:04	33.60		
3/8/2010 20:04	0	-2	-1	3/8/10 20:09	33.61		
3/8/2010 20:09	0.5	-1.5	-0.5	3/8/10 20:14	33.60		
3/8/2010 20:14	0.5	-1	-0.25	3/8/10 20:19	33.61		
3/8/2010 20:19	0.5	-1	-0.25	3/8/10 20:24	33.62		
3/8/2010 20:24	1.5	-2	-0.25	3/8/10 20:29	33.64		
3/8/2010 20:29	0	-1.5	-0.75	3/8/10 20:34	33.64		
3/8/2010 20:34	-0.5	-1	-0.75	3/8/10 20:39	33.64		
3/8/2010 20:39	-0.5	-2	-1.25	3/8/10 20:44	33.64		
3/8/2010 20:44	-0.5	-3	-1.75	3/8/10 20:49	33.63		
3/8/2010 20:49	0.5	-1.5	-0.5	3/8/10 20:54	33.62		
3/8/2010 20:54	0	-2	-1	3/8/10 20:59	33.63		
3/8/2010 20:59	1	-1	0	3/8/10 21:04	33.62		
3/8/2010 21:04	1.5	-0.5	0.5	3/8/10 21:09	33.64		
3/8/2010 21:09	-0.5	-2	-1.25	3/8/10 21:14	33.66		
3/8/2010 21:14	0.5	-1.5	-0.5	3/8/10 21:19	33.64		
3/8/2010 21:19	1.5	0	0.75	3/8/10 21:24	33.65		
3/8/2010 21:24	0.5	-1	-0.25	3/8/10 21:29	33.67		
3/8/2010 21:29	0.5	-1.5	-0.5	3/8/10 21:34	33.67		
3/8/2010 21:34	0.5	-1.5	-0.5	3/8/10 21:39	33.66		
3/8/2010 21:39	0.5	-1	-0.25	3/8/10 21:44	33.68		
3/8/2010 21:44	1	-2	-0.5	3/8/10 21:49	33.69		
3/8/2010 21:49	-1	-2.5	-1.75	3/8/10 21:54	33.68		
3/8/2010 21:54	1	-1	0	3/8/10 21:59	33.68		
3/8/2010 21:59	1	-0.5	0.25	3/8/10 22:04	33.69		
3/8/2010 22:04	2.5	-1.5	0.5	3/8/10 22:09	33.70		
3/8/2010 22:09	1	-2	-0.5	3/8/10 22:14	33.73		
3/8/2010 22:14	1	-1.5	-0.25	3/8/10 22:19	33.73		
3/8/2010 22:19	0.5	-1	-0.25	3/8/10 22:24	33.73		
3/8/2010 22:24	1.5	-0.5	0.5	3/8/10 22:29	33.74		
3/8/2010 22:29	0	-2.5	-1.25	3/8/10 22:34	33.76		
3/8/2010 22:34	-1	-2.5	-1.75	3/8/10 22:39	33.74		
3/8/2010 22:39	0	-1.5	-0.75	3/8/10 22:44	33.72		
3/8/2010 22:44	1	-1	0	3/8/10 22:49	33.72		
3/8/2010 22:49	1	0	0.5	3/8/10 22:54	33.73		
3/8/2010 22:54	1	0	0.5	3/8/10 22:59	33.76		
3/8/2010 22:59	0.5	-1.5	-0.5	3/8/10 23:04	33.77		
3/8/2010 23:04	-0.5	-2	-1.25	3/8/10 23:09	33.78		
3/8/2010 23:09	0	-2	-1	3/8/10 23:14	33.76		
3/8/2010 23:14	-1	-2	-1.5	3/8/10 23:19	33.76		
3/8/2010 23:19	-1.5	-2.5	-2	3/8/10 23:24	33.76		
3/8/2010 23:24	0	-1.5	-0.75	3/8/10 23:29	33.74		
3/8/2010 23:29	1	-0.5	0.25	3/8/10 23:34	33.75		
3/8/2010 23:34	0	-2	-1	3/8/10 23:39	33.77		
3/8/2010 23:39	0	-1.5	-0.75	3/8/10 23:44	33.75		
3/8/2010 23:44	0	-1	-0.5	3/8/10 23:49	33.76		
3/8/2010 23:49	0	-1	-0.5	3/8/10 23:54	33.76		
3/8/2010 23:54	0	-1.5	-0.75	3/8/10 23:59	33.77		
3/8/2010 23:59	-0.5	-2	-1.25	3/9/10 0:04	33.77		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/9/2010 0:04	-1.5	-2.5	-2	3/9/10 0:09	33.75		
3/9/2010 0:09	0	-2.5	-1.25	3/9/10 0:14	33.73		
3/9/2010 0:14	-0.5	-2	-1.25	3/9/10 0:19	33.73		
3/9/2010 0:19	-1.5	-2.5	-2	3/9/10 0:24	33.71		
3/9/2010 0:24	0	-1.5	-0.75	3/9/10 0:29	33.70		
3/9/2010 0:29	1	-1	0	3/9/10 0:34	33.71		
3/9/2010 0:34	1	-0.5	0.25	3/9/10 0:39	33.73		
3/9/2010 0:39	0.5	-0.5	0	3/9/10 0:44	33.74		
3/9/2010 0:44	0.5	-0.5	0	3/9/10 0:49	33.75		
3/9/2010 0:49	2	0	1	3/9/10 0:54	33.77		
3/9/2010 0:54	1.5	0	0.75	3/9/10 0:59	33.81		
3/9/2010 0:59	0.5	-2	-0.75	3/9/10 1:04	33.82		
3/9/2010 1:04	0	-1.5	-0.75	3/9/10 1:09	33.82		
3/9/2010 1:09	-1.5	-2.5	-2	3/9/10 1:14	33.82		
3/9/2010 1:14	-2	-3.5	-2.75	3/9/10 1:19	33.79		
3/9/2010 1:19	-0.5	-3	-1.75	3/9/10 1:24	33.75		
3/9/2010 1:24	0.5	-1	-0.25	3/9/10 1:29	33.75		
3/9/2010 1:29	0.5	-1	-0.25	3/9/10 1:34	33.76		
3/9/2010 1:34	-0.5	-2	-1.25	3/9/10 1:39	33.78		
3/9/2010 1:39	0.5	-2	-0.75	3/9/10 1:44	33.78		
3/9/2010 1:44	1	0	0.5	3/9/10 1:49	33.79		
3/9/2010 1:49	1	-1.5	-0.25	3/9/10 1:54	33.82		
3/9/2010 1:54	0.5	-2	-0.75	3/9/10 1:59	33.83		
3/9/2010 1:59	1.5	-1	0.25	3/9/10 2:04	33.83		
3/9/2010 2:04	0	-1.5	-0.75	3/9/10 2:09	33.85		
3/9/2010 2:09	0	-2	-1	3/9/10 2:14	33.85		
3/9/2010 2:14	0	-4	-2	3/9/10 2:19	33.85		
3/9/2010 2:19	-2.5	-4	-3.25	3/9/10 2:24	33.82		
3/9/2010 2:24	-1	-3	-2	3/9/10 2:29	33.79		
3/9/2010 2:29	-0.5	-1	-0.75	3/9/10 2:34	33.78		
3/9/2010 2:34	-0.5	-2.5	-1.5	3/9/10 2:39	33.79		
3/9/2010 2:39	0.5	-2.5	-1	3/9/10 2:44	33.77		
3/9/2010 2:44	1	-0.5	0.25	3/9/10 2:49	33.79		
3/9/2010 2:49	0	-1.5	-0.75	3/9/10 2:54	33.81		
3/9/2010 2:54	0	-1	-0.5	3/9/10 2:59	33.81		
3/9/2010 2:59	0	-1.5	-0.75	3/9/10 3:04	33.82		
3/9/2010 3:04	0.5	-0.5	0	3/9/10 3:09	33.82		
3/9/2010 3:09	2	0	1	3/9/10 3:14	33.83		
3/9/2010 3:14	1	-0.5	0.25	3/9/10 3:19	33.88		
3/9/2010 3:19	0	-1	-0.5	3/9/10 3:24	33.88		
3/9/2010 3:24	1.5	-2	-0.25	3/9/10 3:29	33.89		
3/9/2010 3:29	1.5	-1.5	0	3/9/10 3:34	33.89		
3/9/2010 3:34	0	-1.5	-0.75	3/9/10 3:39	33.91		
3/9/2010 3:39	0.5	-0.5	0	3/9/10 3:44	33.90		
3/9/2010 3:44	0.5	-0.5	0	3/9/10 3:49	33.93		
3/9/2010 3:49	0	-0.5	-0.25	3/9/10 3:54	33.94		
3/9/2010 3:54	0	-1	-0.5	3/9/10 3:59	33.96		
3/9/2010 3:59	0	-1	-0.5	3/9/10 4:04	33.97		
3/9/2010 4:04	1	0	0.5	3/9/10 4:09	33.98		
3/9/2010 4:09	1	-0.5	0.25	3/9/10 4:14	34.01		
3/9/2010 4:14	0	-1.5	-0.75	3/9/10 4:19	34.02		
3/9/2010 4:19	0	-0.5	-0.25	3/9/10 4:24	34.02		
3/9/2010 4:24	0	-1	-0.5	3/9/10 4:29	34.04		
3/9/2010 4:29	0.5	-1	-0.25	3/9/10 4:34	34.05		
3/9/2010 4:34	0.5	-1	-0.25	3/9/10 4:39	34.07		
3/9/2010 4:39	-1	-3	-2	3/9/10 4:44	34.08		
3/9/2010 4:44	-1	-2.5	-1.75	3/9/10 4:49	34.06		
3/9/2010 4:49	0	-2	-1	3/9/10 4:54	34.06		
3/9/2010 4:54	-2	-4	-3	3/9/10 4:59	34.06		
3/9/2010 4:59	-1.5	-3.5	-2.5	3/9/10 5:04	34.02		
3/9/2010 5:04	-2	-4	-3	3/9/10 5:09	34.00		
3/9/2010 5:09	-1	-2.5	-1.75	3/9/10 5:14	33.97		
3/9/2010 5:14	1	-2.5	-0.75	3/9/10 5:19	33.97		
3/9/2010 5:19	0.5	-1.5	-0.5	3/9/10 5:24	34.00		
3/9/2010 5:24	0	-2	-1	3/9/10 5:29	34.00		
3/9/2010 5:29	1	0	0.5	3/9/10 5:34	34.01		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/9/2010 5:34	1	0	0.5	3/9/10 5:39	34.05		
3/9/2010 5:39	0	-2	-1	3/9/10 5:44	34.07		
3/9/2010 5:44	-0.5	-2	-1.25	3/9/10 5:49	34.06		
3/9/2010 5:49	0	-2.5	-1.25	3/9/10 5:54	34.07		
3/9/2010 5:54	0.5	-1	-0.25	3/9/10 5:59	34.06		
3/9/2010 5:59	0	-1	-0.5	3/9/10 6:04	34.08		
3/9/2010 6:04	0	-1.5	-0.75	3/9/10 6:09	34.08		
3/9/2010 6:09	-1	-2	-1.5	3/9/10 6:14	34.09		
3/9/2010 6:14	0	-1.5	-0.75	3/9/10 6:19	34.09		
3/9/2010 6:19	1.5	0	0.75	3/9/10 6:24	34.11		
3/9/2010 6:24	1.5	-0.5	0.5	3/9/10 6:29	34.14		
3/9/2010 6:29	0	-1	-0.5	3/9/10 6:34	34.16		
3/9/2010 6:34	-0.5	-2.5	-1.5	3/9/10 6:39	34.17		
3/9/2010 6:39	1	-1.5	-0.25	3/9/10 6:44	34.15		
3/9/2010 6:44	1	-2	-0.5	3/9/10 6:49	34.18		
3/9/2010 6:49	-1.5	-2	-1.75	3/9/10 6:54	34.20		
3/9/2010 6:54	0	-1.5	-0.75	3/9/10 6:59	34.19		
3/9/2010 6:59	3.5	0	1.75	3/9/10 7:04	34.20		
3/9/2010 7:04	3	1	2	3/9/10 7:09	34.27		
3/9/2010 7:09	1	-3	-1	3/9/10 7:14	34.32		
3/9/2010 7:14	-0.5	-3	-1.75	3/9/10 7:19	34.31		
3/9/2010 7:19	-0.5	-2	-1.25	3/9/10 7:24	34.30		
3/9/2010 7:24	-0.5	-1.5	-1	3/9/10 7:29	34.29		
3/9/2010 7:29	2	-1	0.5	3/9/10 7:34	34.29		
3/9/2010 7:34	2	1	1.5	3/9/10 7:39	34.33		
3/9/2010 7:39	1.5	1	1.25	3/9/10 7:44	34.36		
3/9/2010 7:44	1.5	1	1.25	3/9/10 7:49	34.39		
3/9/2010 7:49	1	0	0.5	3/9/10 7:54	34.43		
3/9/2010 7:54	0	-2.5	-1.25	3/9/10 7:59	34.44		
3/9/2010 7:59	1.5	-1.5	0	3/9/10 8:04	34.42		
3/9/2010 8:04	1.5	0.5	1	3/9/10 8:09	34.46		
3/9/2010 8:09	0.5	0	0.25	3/9/10 8:14	34.48		
3/9/2010 8:14	0	-2	-1	3/9/10 8:19	34.49		
3/9/2010 8:19	-0.5	-1.5	-1	3/9/10 8:24	34.48		
3/9/2010 8:24	0	-2.5	-1.25	3/9/10 8:29	34.49		
3/9/2010 8:29	0	-1.5	-0.75	3/9/10 8:34	34.47		
3/9/2010 8:34	-0.5	-1.5	-1	3/9/10 8:39	34.47		
3/9/2010 8:39	-0.5	-2.5	-1.5	3/9/10 8:44	34.47		
3/9/2010 8:44	-0.5	-2	-1.25	3/9/10 8:49	34.45		
3/9/2010 8:49	2.5	-0.5	1	3/9/10 8:54	34.45		
3/9/2010 8:54	3	0	1.5	3/9/10 8:59	34.47		
3/9/2010 8:59	0.5	-1.5	-0.5	3/9/10 9:04	34.51		
3/9/2010 9:04	1	0	0.5	3/9/10 9:09	34.50		
3/9/2010 9:09	0.5	0	0.25	3/9/10 9:14	34.53		
3/9/2010 9:14	2	-0.5	0.75	3/9/10 9:19	34.54		
3/9/2010 9:19	2	0.5	1.25	3/9/10 9:24	34.57		
3/9/2010 9:24	1	-0.5	0.25	3/9/10 9:29	34.59		
3/9/2010 9:29	1	0	0.5	3/9/10 9:34	34.60		
3/9/2010 9:34	0.5	-0.5	0	3/9/10 9:39	34.63		
3/9/2010 9:39	1.5	-1	0.25	3/9/10 9:44	34.64		
3/9/2010 9:44	0	-1	-0.5	3/9/10 9:49	34.65		
3/9/2010 9:49	1.5	0	0.75	3/9/10 9:54	34.65		
3/9/2010 9:54	1	-1.5	-0.25	3/9/10 9:59	34.67		
3/9/2010 9:59	0.5	-0.5	0	3/9/10 10:04	34.66		
3/9/2010 10:04	0	-1	-0.5	3/9/10 10:09	34.68		
3/9/2010 10:09	0	-1.5	-0.75	3/9/10 10:14	34.66		
3/9/2010 10:14	0	-2	-1	3/9/10 10:19	34.67		
3/9/2010 10:19	0	-1	-0.5	3/9/10 10:24	34.65		
3/9/2010 10:24	0	-2	-1	3/9/10 10:29	34.65		
3/9/2010 10:29	-0.5	-2	-1.25	3/9/10 10:34	34.64		
3/9/2010 10:34	0	-1.5	-0.75	3/9/10 10:39	34.63		
3/9/2010 10:39	0	-2	-1	3/9/10 10:44	34.63		
3/9/2010 10:44	-1.5	-2.5	-2	3/9/10 10:49	34.62		
3/9/2010 10:49	0	-1.5	-0.75	3/9/10 10:54	34.60		
3/9/2010 10:54	0	-1	-0.5	3/9/10 10:59	34.60		
3/9/2010 10:59	0.5	-1	-0.25	3/9/10 11:04	34.60		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/9/2010 11:04	0.5	-1.5	-0.5	3/9/10 11:09	34.61		
3/9/2010 11:09	-1.5	-3.5	-2.5	3/9/10 11:14	34.61		
3/9/2010 11:14	-1	-3.5	-2.25	3/9/10 11:19	34.57		
3/9/2010 11:19	-1	-3	-2	3/9/10 11:24	34.55		
3/9/2010 11:24	0	-2	-1	3/9/10 11:29	34.53		
3/9/2010 11:29	0	-2	-1	3/9/10 11:34	34.53		
3/9/2010 11:34	0	-2	-1	3/9/10 11:39	34.52		
3/9/2010 11:39	0	-1.5	-0.75	3/9/10 11:44	34.51		
3/9/2010 11:44	-0.5	-2	-1.25	3/9/10 11:49	34.51		
3/9/2010 11:49	0	-1.5	-0.75	3/9/10 11:54	34.50		
3/9/2010 11:54	-0.5	-3	-1.75	3/9/10 11:59	34.50		
3/9/2010 11:59	-0.5	-2.5	-1.5	3/9/10 12:04	34.47		
3/9/2010 12:04	-0.5	-1.5	-1	3/9/10 12:09	34.47		
3/9/2010 12:09	0	-1.5	-0.75	3/9/10 12:14	34.46		
3/9/2010 12:14	-1	-2.5	-1.75	3/9/10 12:19	34.46		
3/9/2010 12:19	0	-2.5	-1.25	3/9/10 12:24	34.43		
3/9/2010 12:24	0	-2	-1	3/9/10 12:29	34.42		
3/9/2010 12:29	-1.5	-5	-3.25	3/9/10 12:34	34.41		
3/9/2010 12:34	-1.5	-3.5	-2.5	3/9/10 12:39	34.36		
3/9/2010 12:39	-1.5	-3	-2.25	3/9/10 12:44	34.35		
3/9/2010 12:44	0	-3	-1.5	3/9/10 12:49	34.31		
3/9/2010 12:49	0	-3	-1.5	3/9/10 12:54	34.30		
3/9/2010 12:54	-1	-3	-2	3/9/10 12:59	34.28		
3/9/2010 12:59	-1.5	-3	-2.25	3/9/10 13:04	34.25		
3/9/2010 13:04	-0.5	-2	-1.25	3/9/10 13:09	34.23		
3/9/2010 13:09	-1	-3.5	-2.25	3/9/10 13:14	34.22		
3/9/2010 13:14	-2.5	-5	-3.75	3/9/10 13:19	34.18		
3/9/2010 13:19	-3	-5.5	-4.25	3/9/10 13:24	34.13		
3/9/2010 13:24	-0.5	-3	-1.75	3/9/10 13:29	34.06		
3/9/2010 13:29	-1	-3	-2	3/9/10 13:34	34.08		
3/9/2010 13:34	-0.5	-3	-1.75	3/9/10 13:39	34.03		
3/9/2010 13:39	-1.5	-3	-2.25	3/9/10 13:44	34.04		
3/9/2010 13:44	-0.5	-2.5	-1.5	3/9/10 13:49	34.01		
3/9/2010 13:49	0	-2	-1	3/9/10 13:54	33.99		
3/9/2010 13:54	0.5	-2	-0.75	3/9/10 13:59	34.00		
3/9/2010 13:59	-1.5	-3.5	-2.5	3/9/10 14:04	34.00		
3/9/2010 14:04	-1	-3	-2	3/9/10 14:09	33.96		
3/9/2010 14:09	-1.5	-3	-2.25	3/9/10 14:14	33.95		
3/9/2010 14:14	0	-2	-1	3/9/10 14:19	33.93		
3/9/2010 14:19	0	-1.5	-0.75	3/9/10 14:24	33.93		
3/9/2010 14:24	0	-3	-1.5	3/9/10 14:29	33.94		
3/9/2010 14:29	N/A	N/A	N/A	3/9/10 14:34	33.91		
3/9/2010 14:34	N/A	N/A	N/A	3/9/10 14:39	33.90		
3/9/2010 14:39	N/A	N/A	N/A	3/9/10 14:44	33.87		
3/9/2010 14:45	1	-1.5	-0.25	3/9/10 14:49	33.86		
3/9/2010 14:50	-1	-2.5	-1.75	3/9/10 14:54	33.86		
3/9/2010 14:55	-1.5	-3.5	-2.5	3/9/10 14:59	33.83		
3/9/2010 15:00	-0.5	-2.5	-1.5	3/9/10 15:04	33.80		
3/9/2010 15:05	-0.5	-2.5	-1.5	3/9/10 15:09	33.78		
3/9/2010 15:10	-1	-3	-2	3/9/10 15:14	33.78		
3/9/2010 15:15	-1	-2.5	-1.75	3/9/10 15:19	33.76		
3/9/2010 15:20	-0.5	-1.5	-1	3/9/10 15:24	33.74		
3/9/2010 15:25	-1.5	-3	-2.25	3/9/10 15:29	33.74		
3/9/2010 15:30	-0.5	-2.5	-1.5	3/9/10 15:34	33.71		
3/9/2010 15:35	-1	-2	-1.5	3/9/10 15:39	33.69		
3/9/2010 15:40	-0.5	-3.5	-2	3/9/10 15:44	33.68		
3/9/2010 15:45	0	-2	-1	3/9/10 15:49	33.67		
3/9/2010 15:50	0.5	-2	-0.75	3/9/10 15:54	33.66		
3/9/2010 15:55	-1	-4	-2.5	3/9/10 15:59	33.66		
3/9/2010 16:00	1.5	-1	0.25	3/9/10 16:04	33.63		
3/9/2010 16:05	2	-0.5	0.75	3/9/10 16:09	33.64		
3/9/2010 16:10	1	-1.5	-0.25	3/9/10 16:14	33.67		
3/9/2010 16:15	-0.5	-3.5	-2	3/9/10 16:19	33.68		
3/9/2010 16:20	0.5	-2	-0.75	3/9/10 16:24	33.66		
3/9/2010 16:25	0.5	-3	-1.25	3/9/10 16:29	33.66		
3/9/2010 16:30	1.5	-2.5	-0.5	3/9/10 16:34	33.66		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/9/2010 16:35	1	-2	-0.5	3/9/10 16:39	33.67		
3/9/2010 16:40	0.5	-2.5	-1	3/9/10 16:44	33.67		
3/9/2010 16:45	0	-2	-1	3/9/10 16:49	33.67		
3/9/2010 16:50	2	-3	-0.5	3/9/10 16:54	33.67		
3/9/2010 16:55	3	-1	1	3/9/10 16:59	33.67		
3/9/2010 17:00	3	-2	0.5	3/9/10 17:04	33.70		
3/9/2010 17:05	1.5	-1.5	0	3/9/10 17:09	33.72		
3/9/2010 17:10	1	-1.5	-0.25	3/9/10 17:14	33.73		
3/9/2010 17:15	0	-1.5	-0.75	3/9/10 17:19	33.73		
3/9/2010 17:20	1.5	-1	0.25	3/9/10 17:24	33.73		
3/9/2010 17:25	1.5	-1	0.25	3/9/10 17:29	33.76		
3/9/2010 17:30	0	-1.5	-0.75	3/9/10 17:34	33.77		
3/9/2010 17:35	2	-0.5	0.75	3/9/10 17:39	33.76		
3/9/2010 17:40	1.5	-2.5	-0.5	3/9/10 17:44	33.79		
3/9/2010 17:45	1.5	-1	0.25	3/9/10 17:49	33.79		
3/9/2010 17:50	4	-1.5	1.25	3/9/10 17:54	33.81		
3/9/2010 17:55	4	-2.5	0.75	3/9/10 17:59	33.82		
3/9/2010 18:00	-0.5	-4	-2.25	3/9/10 18:04	33.83		
3/9/2010 18:05	2	-4	-1	3/9/10 18:09	33.82		
3/9/2010 18:10	2	-2.5	-0.25	3/9/10 18:14	33.83		
3/9/2010 18:15	2	-3	-0.5	3/9/10 18:19	33.85		
3/9/2010 18:20	2.5	-3.5	-0.5	3/9/10 18:24	33.84		
3/9/2010 18:25	-0.5	-4.5	-2.5	3/9/10 18:29	33.83		
3/9/2010 18:30	-0.5	-4	-2.25	3/9/10 18:34	33.82		
3/9/2010 18:35	0.5	-3	-1.25	3/9/10 18:39	33.80		
3/9/2010 18:40	2.5	-0.5	1	3/9/10 18:44	33.81		
3/9/2010 18:45	1	-2	-0.5	3/9/10 18:49	33.84		
3/9/2010 18:50	0.5	-1.5	-0.5	3/9/10 18:54	33.84		
3/9/2010 18:55	2	-1.5	0.25	3/9/10 18:59	33.85		
3/9/2010 19:00	0.5	-2	-0.75	3/9/10 19:04	33.87		
3/9/2010 19:05	1.5	-0.5	0.5	3/9/10 19:09	33.87		
3/9/2010 19:10	0.5	-2	-0.75	3/9/10 19:14	33.90		
3/9/2010 19:15	0	-2.5	-1.25	3/9/10 19:19	33.91		
3/9/2010 19:20	1.5	-1.5	0	3/9/10 19:24	33.89		
3/9/2010 19:25	0.5	-2.5	-1	3/9/10 19:29	33.92		
3/9/2010 19:30	1	-2	-0.5	3/9/10 19:34	33.92		
3/9/2010 19:35	0.5	-1.5	-0.5	3/9/10 19:39	33.95		
3/9/2010 19:40	0.5	-2	-0.75	3/9/10 19:44	33.96		
3/9/2010 19:45	1	-3.5	-1.25	3/9/10 19:49	33.96		
3/9/2010 19:50	0	-2	-1	3/9/10 19:54	33.97		
3/9/2010 19:55	0.5	-2	-0.75	3/9/10 19:59	33.97		
3/9/2010 20:00	0	-3	-1.5	3/9/10 20:04	33.98		
3/9/2010 20:05	-0.5	-3.5	-2	3/9/10 20:09	33.98		
3/9/2010 20:10	-1	-2.5	-1.75	3/9/10 20:14	33.96		
3/9/2010 20:15	-0.5	-2.5	-1.5	3/9/10 20:19	33.96		
3/9/2010 20:20	1.5	-2	-0.25	3/9/10 20:24	33.95		
3/9/2010 20:25	0	-2	-1	3/9/10 20:29	33.96		
3/9/2010 20:30	-1	-2.5	-1.75	3/9/10 20:34	33.96		
3/9/2010 20:35	-1	-3.5	-2.25	3/9/10 20:39	33.96		
3/9/2010 20:40	0.5	-2.5	-1	3/9/10 20:44	33.93		
3/9/2010 20:45	0	-2	-1	3/9/10 20:49	33.94		
3/9/2010 20:50	1	-1.5	-0.25	3/9/10 20:54	33.94		
3/9/2010 20:55	0.5	-2	-0.75	3/9/10 20:59	33.94		
3/9/2010 21:00	0	-3	-1.5	3/9/10 21:04	33.93		
3/9/2010 21:05	-0.5	-3	-1.75	3/9/10 21:09	33.94		
3/9/2010 21:10	0.5	-2.5	-1	3/9/10 21:14	33.92		
3/9/2010 21:15	1	-1.5	-0.25	3/9/10 21:19	33.91		
3/9/2010 21:20	0	-2.5	-1.25	3/9/10 21:24	33.92		
3/9/2010 21:25	1	-3	-1	3/9/10 21:29	33.92		
3/9/2010 21:30	0.5	-2.5	-1	3/9/10 21:34	33.92		
3/9/2010 21:35	0.5	-4	-1.75	3/9/10 21:39	33.91		
3/9/2010 21:40	-0.5	-4	-2.25	3/9/10 21:44	33.89		
3/9/2010 21:45	0	-2.5	-1.25	3/9/10 21:49	33.87		
3/9/2010 21:50	-0.5	-2.5	-1.5	3/9/10 21:54	33.86		
3/9/2010 21:55	0.5	-1.5	-0.5	3/9/10 21:59	33.85		
3/9/2010 22:00	1.5	-3	-0.75	3/9/10 22:04	33.87		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/9/2010 22:05	0	-2.5	-1.25	3/9/10 22:09	33.85		
3/9/2010 22:10	0	-2	-1	3/9/10 22:14	33.86		
3/9/2010 22:15	0	-1.5	-0.75	3/9/10 22:19	33.86		
3/9/2010 22:20	0	-1.5	-0.75	3/9/10 22:24	33.87		
3/9/2010 22:25	0	-1	-0.5	3/9/10 22:29	33.87		
3/9/2010 22:30	-0.5	-2	-1.25	3/9/10 22:34	33.89		
3/9/2010 22:35	0	-3	-1.5	3/9/10 22:39	33.87		
3/9/2010 22:40	-2	-4.5	-3.25	3/9/10 22:44	33.86		
3/9/2010 22:45	0	-4	-2	3/9/10 22:49	33.82		
3/9/2010 22:50	-0.5	-3	-1.75	3/9/10 22:54	33.80		
3/9/2010 22:55	0	-2.5	-1.25	3/9/10 22:59	33.79		
3/9/2010 23:00	0.5	-1.5	-0.5	3/9/10 23:04	33.78		
3/9/2010 23:05	-0.5	-3	-1.75	3/9/10 23:09	33.79		
3/9/2010 23:10	0	-2.5	-1.25	3/9/10 23:14	33.76		
3/9/2010 23:15	-0.5	-3	-1.75	3/9/10 23:19	33.76		
3/9/2010 23:20	-1.5	-3.5	-2.5	3/9/10 23:24	33.75		
3/9/2010 23:25	-1.5	-3.5	-2.5	3/9/10 23:29	33.72		
3/9/2010 23:30	-2.5	-5	-3.75	3/9/10 23:34	33.70		
3/9/2010 23:35	-2	-4	-3	3/9/10 23:39	33.65		
3/9/2010 23:40	0	-3.5	-1.75	3/9/10 23:44	33.62		
3/9/2010 23:45	0	-3	-1.5	3/9/10 23:49	33.60		
3/9/2010 23:50	-2	-4	-3	3/9/10 23:54	33.59		
3/9/2010 23:55	-1	-4	-2.5	3/9/10 23:59	33.55		
3/10/2010 0:00	-2	-4.5	-3.25	3/10/10 0:04	33.54		
3/10/2010 0:05	-1.5	-3.5	-2.5	3/10/10 0:09	33.50		
3/10/2010 0:10	0	-2	-1	3/10/10 0:14	33.48		
3/10/2010 0:15	1	-2	-0.5	3/10/10 0:19	33.48		
3/10/2010 0:20	-1.5	-3.5	-2.5	3/10/10 0:24	33.48		
3/10/2010 0:25	-2	-4	-3	3/10/10 0:29	33.45		
3/10/2010 0:30	-2	-4	-3	3/10/10 0:34	33.41		
3/10/2010 0:35	-1.5	-3.5	-2.5	3/10/10 0:39	33.38		
3/10/2010 0:40	0.5	-2	-0.75	3/10/10 0:44	33.35		
3/10/2010 0:45	0	-2	-1	3/10/10 0:49	33.35		
3/10/2010 0:50	-0.5	-2	-1.25	3/10/10 0:54	33.35		
3/10/2010 0:55	0	-1.5	-0.75	3/10/10 0:59	33.34		
3/10/2010 1:00	0	-1.5	-0.75	3/10/10 1:04	33.34		
3/10/2010 1:05	0.5	-2	-0.75	3/10/10 1:09	33.35		
3/10/2010 1:10	1	-2.5	-0.75	3/10/10 1:14	33.35		
3/10/2010 1:15	0	-3	-1.5	3/10/10 1:19	33.36		
3/10/2010 1:20	-0.5	-3	-1.75	3/10/10 1:24	33.34		
3/10/2010 1:25	1	-3	-1	3/10/10 1:29	33.34		
3/10/2010 1:30	1	-3.5	-1.25	3/10/10 1:34	33.35		
3/10/2010 1:35	1	-1	0	3/10/10 1:39	33.34		
3/10/2010 1:40	0	-1	-0.5	3/10/10 1:44	33.36		
3/10/2010 1:45	0.5	-0.5	0	3/10/10 1:49	33.36		
3/10/2010 1:50	0	-2.5	-1.25	3/10/10 1:54	33.38		
3/10/2010 1:55	-1	-2.5	-1.75	3/10/10 1:59	33.36		
3/10/2010 2:00	-1	-2	-1.5	3/10/10 2:04	33.35		
3/10/2010 2:05	0.5	-2	-0.75	3/10/10 2:09	33.34		
3/10/2010 2:10	-0.5	-3.5	-2	3/10/10 2:14	33.35		
3/10/2010 2:15	-0.5	-2	-1.25	3/10/10 2:19	33.31		
3/10/2010 2:20	-0.5	-4.5	-2.5	3/10/10 2:24	33.31		
3/10/2010 2:25	-4.5	-6.5	-5.5	3/10/10 2:29	33.27		
3/10/2010 2:30	0	-5.5	-2.75	3/10/10 2:34	33.18		
3/10/2010 2:35	1.5	-1	0.25	3/10/10 2:39	33.17		
3/10/2010 2:40	-1	-3	-2	3/10/10 2:44	33.20		
3/10/2010 2:45	-0.5	-2.5	-1.5	3/10/10 2:49	33.17		
3/10/2010 2:50	-2	-3	-2.5	3/10/10 2:54	33.17		
3/10/2010 2:55	-1	-2.5	-1.75	3/10/10 2:59	33.13		
3/10/2010 3:00	-0.5	-2	-1.25	3/10/10 3:04	33.12		
3/10/2010 3:05	-2	-3	-2.5	3/10/10 3:09	33.12		
3/10/2010 3:10	-3	-4	-3.5	3/10/10 3:14	33.09		
3/10/2010 3:15	-1.5	-3	-2.25	3/10/10 3:19	33.03		
3/10/2010 3:20	0	-3	-1.5	3/10/10 3:24	33.03		
3/10/2010 3:25	0	-1.5	-0.75	3/10/10 3:29	33.01		
3/10/2010 3:30	-0.5	-2	-1.25	3/10/10 3:34	33.02		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/10/2010 3:35	2	-1.5	0.25	3/10/10 3:39	33.02		
3/10/2010 3:40	2	-1	0.5	3/10/10 3:44	33.04		
3/10/2010 3:45	1	-0.5	0.25	3/10/10 3:49	33.06		
3/10/2010 3:50	1.5	-2.5	-0.5	3/10/10 3:54	33.07		
3/10/2010 3:55	0.5	-3	-1.25	3/10/10 3:59	33.09		
3/10/2010 4:00	0.5	-0.5	0	3/10/10 4:04	33.08		
3/10/2010 4:05	1	-1.5	-0.25	3/10/10 4:09	33.09		
3/10/2010 4:10	3	0.5	1.75	3/10/10 4:14	33.10		
3/10/2010 4:15	4.5	-4.5	0	3/10/10 4:19	33.15		
3/10/2010 4:20	0	-4	-2	3/10/10 4:24	33.17		
3/10/2010 4:25	0	-2.5	-1.25	3/10/10 4:29	33.16		
3/10/2010 4:30	0.5	-1.5	-0.5	3/10/10 4:34	33.15		
3/10/2010 4:35	0.5	-1.5	-0.5	3/10/10 4:39	33.16		
3/10/2010 4:40	0.5	-2	-0.75	3/10/10 4:44	33.17		
3/10/2010 4:45	0.5	-2	-0.75	3/10/10 4:49	33.16		
3/10/2010 4:50	0.5	-2	-0.75	3/10/10 4:54	33.16		
3/10/2010 4:55	1	-3	-1	3/10/10 4:59	33.16		
3/10/2010 5:00	-1	-3.5	-2.25	3/10/10 5:04	33.16		
3/10/2010 5:05	-1	-2.5	-1.75	3/10/10 5:09	33.14		
3/10/2010 5:10	-1	-2.5	-1.75	3/10/10 5:14	33.12		
3/10/2010 5:15	0	-2.5	-1.25	3/10/10 5:19	33.10		
3/10/2010 5:20	0	-1.5	-0.75	3/10/10 5:24	33.10		
3/10/2010 5:25	5	0	2.5	3/10/10 5:29	33.11		
3/10/2010 5:30	5	-1.5	1.75	3/10/10 5:34	33.17		
3/10/2010 5:35	0	-3	-1.5	3/10/10 5:39	33.20		
3/10/2010 5:40	3	-0.5	1.25	3/10/10 5:44	33.18		
3/10/2010 5:45	3.5	0	1.75	3/10/10 5:49	33.21		
3/10/2010 5:50	2	-1	0.5	3/10/10 5:54	33.24		
3/10/2010 5:55	-0.5	-3	-1.75	3/10/10 5:59	33.26		
3/10/2010 6:00	2.5	-1.5	0.5	3/10/10 6:04	33.24		
3/10/2010 6:05	4	1	2.5	3/10/10 6:09	33.25		
3/10/2010 6:10	4.5	-0.5	2	3/10/10 6:14	33.31		
3/10/2010 6:15	-0.5	-4	-2.25	3/10/10 6:19	33.36		
3/10/2010 6:20	-1	-4	-2.5	3/10/10 6:24	33.33		
3/10/2010 6:25	1	-1.5	-0.25	3/10/10 6:29	33.31		
3/10/2010 6:30	1	-0.5	0.25	3/10/10 6:34	33.33		
3/10/2010 6:35	-0.5	-3.5	-2	3/10/10 6:39	33.35		
3/10/2010 6:40	-1.5	-5	-3.25	3/10/10 6:44	33.31		
3/10/2010 6:45	-0.5	-6	-3.25	3/10/10 6:49	33.29		
3/10/2010 6:50	0.5	-3	-1.25	3/10/10 6:54	33.26		
3/10/2010 6:55	4	-2.5	0.75	3/10/10 6:59	33.26		
3/10/2010 7:00	1	-3.5	-1.25	3/10/10 7:04	33.29		
3/10/2010 7:05	1.5	-3.5	-1	3/10/10 7:09	33.29		
3/10/2010 7:10	3.5	-0.5	1.5	3/10/10 7:14	33.30		
3/10/2010 7:15	2.5	0	1.25	3/10/10 7:19	33.33		
3/10/2010 7:20	1	-1.5	-0.25	3/10/10 7:24	33.36		
3/10/2010 7:25	-0.5	-3.5	-2	3/10/10 7:29	33.36		
3/10/2010 7:30	1	-3.5	-1.25	3/10/10 7:34	33.33		
3/10/2010 7:35	0.5	-0.5	0	3/10/10 7:39	33.34		
3/10/2010 7:40	1.5	-1.5	0	3/10/10 7:44	33.35		
3/10/2010 7:45	3.5	-1	1.25	3/10/10 7:49	33.35		
3/10/2010 7:50	1.5	-3.5	-1	3/10/10 7:54	33.39		
3/10/2010 7:55	0	-3.5	-1.75	3/10/10 7:59	33.39		
3/10/2010 8:00	2.5	-4	-0.75	3/10/10 8:04	33.37		
3/10/2010 8:05	3.5	-0.5	1.5	3/10/10 8:09	33.38		
3/10/2010 8:10	1	-1.5	-0.25	3/10/10 8:14	33.43		
3/10/2010 8:15	5	-0.5	2.25	3/10/10 8:19	33.41		
3/10/2010 8:20	3.5	-1	1.25	3/10/10 8:24	33.48		
3/10/2010 8:25	1	-1.5	-0.25	3/10/10 8:29	33.48		
3/10/2010 8:30	0.5	-1.5	-0.5	3/10/10 8:34	33.50		
3/10/2010 8:35	2	-1	0.5	3/10/10 8:39	33.49		
3/10/2010 8:40	1	-2.5	-0.75	3/10/10 8:44	33.51		
3/10/2010 8:45	-0.5	-3	-1.75	3/10/10 8:49	33.50		
3/10/2010 8:50	1	-2	-0.5	3/10/10 8:54	33.48		
3/10/2010 8:55	3	0	1.5	3/10/10 8:59	33.49		
3/10/2010 9:00	1.5	0	0.75	3/10/10 9:04	33.52		

Date + Time	Maximum Differential Pressure[b] [Pa]	Minimum Differential Pressure[b] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/10/2010 9:05	0.5	-3	-1.25	3/10/10 9:09	33.54		
3/10/2010 9:10	2	-3.5	-0.75	3/10/10 9:14	33.52		
3/10/2010 9:15	3	-1	1	3/10/10 9:19	33.53		
3/10/2010 9:20	4	-1.5	1.25	3/10/10 9:24	33.56		
3/10/2010 9:25	0.5	-3	-1.25	3/10/10 9:29	33.57		
3/10/2010 9:30	-0.5	-4	-2.25	3/10/10 9:34	33.55		
						3/10/10 9:39	33.52
						3/10/10 9:44	33.54

Notes:

a : Differential pressure measurements are monitored continuously and the maximum and minimum differential pressure in Pascals [Pa] are recorded during each 15 minute monitoring period.

b: Differential pressure measurements were made using a Omniguard 4 differential pressure monitor with data logger (http://www.engsolinc.com/docs/og/OG4broch.pdf).

c : Interior barometric pressure measurements were made using a Solinst barometric data logger (http://www.solinst.com/Downloads/3001/3001Manual/Introduction/Barologger.html).

d: Exterior barometric pressure measurements were made using a Davis Vantage Pro 2 weather station (http://www.davisnet.com/weather/products/weather_product.asp?pnum=06152)

TABLE G-3

Building 3606A Pressure Difference Measurements [a]

Naval Amphibious Base Little Creek Site 11a

Averages over all measurements: [b]

Maximum Differential Pressure:	2.8 Pa
Minimum Differential Pressure:	1.4 Pa

Averages during Work Hours and Night Time: [c]

		Work Hours, Daily 10-hour Average Pressure Difference (7 am to 5 pm)		Night Time, Daily 14-hour Average Pressure Difference (5 pm to 7 am)	
Date	**Time**	**max (Pa)**	**min (Pa)**	**max (Pa)**	**min (Pa)**
3/2/2010	average	3.15	1.63	3.56	1.93
3/3/2010	average	2.39	0.75	2.42	1.37
3/4/2010	average	2.39	1.02	NA	NA
	Median:	2.39	1.02	2.99	1.65

Date + Time	Maximum Differential Pressure[d] [Pa]	Minimum Differential Pressure[d] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/2/2010 14:52	2.5	2	2.25	3/2/10 14:47	30.33	3/2/10 16:45	29.84
3/2/2010 14:57	2.5	1.5	2	3/2/10 14:52	30.21	3/2/10 17:00	29.83
3/2/2010 15:02	2.5	1	1.75	3/2/10 14:57	30.14	3/2/10 17:15	29.81
3/2/2010 15:07	3	1	2	3/2/10 15:02	30.00	3/2/10 17:30	29.80
3/2/2010 15:12	3	1.5	2.25	3/2/10 15:07	29.97	3/2/10 17:45	29.80
3/2/2010 15:17	3	1.5	2.25	3/2/10 15:12	30.04	3/2/10 18:00	29.80
3/2/2010 15:22	3	1.5	2.25	3/2/10 15:17	30.21	3/2/10 18:15	29.79
3/2/2010 15:27	3	1	2	3/2/10 15:22	30.19	3/2/10 18:30	29.77
3/2/2010 15:32	2.5	2	2.25	3/2/10 15:27	30.23	3/2/10 18:45	29.75
3/2/2010 15:37	3	1	2	3/2/10 15:32	30.18	3/2/10 19:00	29.75
3/2/2010 15:42	2.5	2	2.25	3/2/10 15:37	30.31	3/2/10 19:15	29.76
3/2/2010 15:47	2.5	1.5	2	3/2/10 15:42	30.24	3/2/10 19:30	29.74
3/2/2010 15:52	3	1.5	2.25	3/2/10 15:47	30.24	3/2/10 19:45	29.74
3/2/2010 15:57	3	1.5	2.25	3/2/10 15:52	30.42	3/2/10 20:00	29.73
3/2/2010 16:02	3	2	2.5	3/2/10 15:57	30.40	3/2/10 20:15	29.71
3/2/2010 16:07	3	2	2.5	3/2/10 16:02	30.44	3/2/10 20:30	29.72
3/2/2010 16:12	3.5	1.5	2.5	3/2/10 16:07	30.49	3/2/10 20:45	29.71
3/2/2010 16:17	4	2	3	3/2/10 16:12	30.42	3/2/10 21:00	29.68
3/2/2010 16:22	4	2	3	3/2/10 16:17	30.38	3/2/10 21:15	29.67
3/2/2010 16:27	4	1.5	2.75	3/2/10 16:22	30.35	3/2/10 21:30	29.66
3/2/2010 16:32	4	2	3	3/2/10 16:27	30.33	3/2/10 21:45	29.64
3/2/2010 16:37	4	2	3	3/2/10 16:32	30.35	3/2/10 22:00	29.62
3/2/2010 16:42	4	2	3	3/2/10 16:37	30.36	3/2/10 22:15	29.60
3/2/2010 16:47	3.5	1	2.25	3/2/10 16:42	30.31	3/2/10 22:30	29.58
3/2/2010 16:52	3	1.5	2.25	3/2/10 16:47	30.25	3/2/10 22:45	29.57
3/2/2010 16:57	3	2.5	2.75	3/2/10 16:52	30.24	3/2/10 23:00	29.56
3/2/2010 17:02	3	1.5	2.25	3/2/10 16:57	30.26	3/2/10 23:15	29.56
3/2/2010 17:07	3	2	2.5	3/2/10 17:02	30.25	3/2/10 23:30	29.55
3/2/2010 17:12	3	1.5	2.25	3/2/10 17:07	30.20	3/2/10 23:45	29.53
3/2/2010 17:17	4	2	3	3/2/10 17:12	30.17	3/3/10 0:00	29.53
3/2/2010 17:22	4	3.5	3.75	3/2/10 17:17	30.15	3/3/10 0:15	29.52
3/2/2010 17:27	4	1.5	2.75	3/2/10 17:22	30.13	3/3/10 0:30	29.51
3/2/2010 17:32	3	1.5	2.25	3/2/10 17:27	30.06	3/3/10 0:45	29.51
3/2/2010 17:37	3.5	1.5	2.5	3/2/10 17:32	30.01	3/3/10 1:00	29.50
3/2/2010 17:42	3	2	2.5	3/2/10 17:37	30.00	3/3/10 1:15	29.49
3/2/2010 17:47	3	1.5	2.25	3/2/10 17:42	30.00	3/3/10 1:30	29.49
3/2/2010 17:52	3	1.5	2.25	3/2/10 17:47	30.02	3/3/10 1:45	29.48
3/2/2010 17:57	3	2	2.5	3/2/10 17:52	30.01	3/3/10 2:00	29.47
3/2/2010 18:02	3	2	2.5	3/2/10 17:57	30.00	3/3/10 2:15	29.47
3/2/2010 18:07	3	2	2.5	3/2/10 18:02	29.96	3/3/10 2:30	29.46
3/2/2010 18:12	3	1.5	2.25	3/2/10 18:07	29.95	3/3/10 2:45	29.45
3/2/2010 18:17	3	0.5	1.75	3/2/10 18:12	29.94	3/3/10 3:00	29.44
3/2/2010 18:22	3	1.5	2.25	3/2/10 18:17	29.85	3/3/10 3:15	29.44
3/2/2010 18:27	3	1.5	2.25	3/2/10 18:22	29.78	3/3/10 3:30	29.43

Date + Time	Maximum Differential Pressure[d] [Pa]	Minimum Differential Pressure[d] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/2/2010 18:32	3	1.5	2.25	3/2/10 18:27	29.66	3/3/10 3:45	29.43
3/2/2010 18:37	3	1.5	2.25	3/2/10 18:32	29.52	3/3/10 4:00	29.43
3/2/2010 18:42	3.5	1.5	2.5	3/2/10 18:37	29.40	3/3/10 4:15	29.43
3/2/2010 18:47	3.5	1.5	2.5	3/2/10 18:42	29.34	3/3/10 4:30	29.44
3/2/2010 18:52	3.5	0.5	2	3/2/10 18:47	29.31	3/3/10 4:45	29.45
3/2/2010 18:57	3.5	2	2.75	3/2/10 18:52	29.29	3/3/10 5:00	29.45
3/2/2010 19:02	3.5	1.5	2.5	3/2/10 18:57	29.27	3/3/10 5:15	29.46
3/2/2010 19:07	4	2.5	3.25	3/2/10 19:02	29.31	3/3/10 5:30	29.48
3/2/2010 19:12	3.5	2	2.75	3/2/10 19:07	29.34	3/3/10 5:45	29.49
3/2/2010 19:17	3	2	2.5	3/2/10 19:12	29.40	3/3/10 6:00	29.50
3/2/2010 19:22	3	1.5	2.25	3/2/10 19:17	29.37	3/3/10 6:15	29.51
3/2/2010 19:27	2.5	0.5	1.5	3/2/10 19:22	29.31	3/3/10 6:30	29.51
3/2/2010 19:32	3	1	2	3/2/10 19:27	29.19	3/3/10 6:45	29.51
3/2/2010 19:37	3.5	2	2.75	3/2/10 19:32	29.15	3/3/10 7:00	29.51
3/2/2010 19:42	3	2	2.5	3/2/10 19:37	29.12	3/3/10 7:15	29.51
3/2/2010 19:47	3	2	2.5	3/2/10 19:42	29.13	3/3/10 7:30	29.52
3/2/2010 19:52	4.5	1.5	3	3/2/10 19:47	29.15	3/3/10 7:45	29.52
3/2/2010 19:57	3	2	2.5	3/2/10 19:52	29.08	3/3/10 8:00	29.52
3/2/2010 20:02	3	2	2.5	3/2/10 19:57	29.06	3/3/10 8:15	29.53
3/2/2010 20:07	3	1.5	2.25	3/2/10 20:02	29.03	3/3/10 8:30	29.53
3/2/2010 20:12	3	1.5	2.25	3/2/10 20:07	28.98	3/3/10 8:45	29.53
3/2/2010 20:17	3	1	2	3/2/10 20:12	28.90	3/3/10 9:00	29.53
3/2/2010 20:22	3	1.5	2.25	3/2/10 20:17	28.86	3/3/10 9:15	29.54
3/2/2010 20:27	3	1.5	2.25	3/2/10 20:22	28.86	3/3/10 9:30	29.54
3/2/2010 20:32	3	2	2.5	3/2/10 20:27	28.92	3/3/10 9:45	29.55
3/2/2010 20:37	3	1.5	2.25	3/2/10 20:32	28.96	3/3/10 10:00	29.55
3/2/2010 20:42	3	1.5	2.25	3/2/10 20:37	28.91	3/3/10 10:15	29.56
3/2/2010 20:47	3	1.5	2.25	3/2/10 20:42	28.86	3/3/10 10:30	29.57
3/2/2010 20:52	2.5	1.5	2	3/2/10 20:47	28.73	3/3/10 10:45	29.58
3/2/2010 20:57	2.5	1.5	2	3/2/10 20:52	28.61	3/3/10 11:00	29.58
3/2/2010 21:02	3	1.5	2.25	3/2/10 20:57	28.54	3/3/10 11:15	29.58
3/2/2010 21:07	3	1	2	3/2/10 21:02	28.36	3/3/10 11:30	29.58
3/2/2010 21:12	3	1.5	2.25	3/2/10 21:07	28.32	3/3/10 11:45	29.59
3/2/2010 21:17	4	1	2.5	3/2/10 21:12	28.26	3/3/10 12:00	29.60
3/2/2010 21:22	4	2.5	3.25	3/2/10 21:17	28.20	3/3/10 12:15	29.60
3/2/2010 21:27	4	2	3	3/2/10 21:22	28.18	3/3/10 12:30	29.60
3/2/2010 21:32	3	1.5	2.25	3/2/10 21:27	28.08	3/3/10 12:45	29.60
3/2/2010 21:37	3	1	2	3/2/10 21:32	28.01	3/3/10 13:00	29.60
3/2/2010 21:42	3	1	2	3/2/10 21:37	27.97	3/3/10 13:15	29.60
3/2/2010 21:47	2.5	1.5	2	3/2/10 21:42	27.82	3/3/10 13:30	29.61
3/2/2010 21:52	3	0.5	1.75	3/2/10 21:47	27.77	3/3/10 13:45	29.61
3/2/2010 21:57	3	0.5	1.75	3/2/10 21:52	27.69	3/3/10 14:00	29.62
3/2/2010 22:02	3	1.5	2.25	3/2/10 21:57	27.57	3/3/10 14:15	29.63
3/2/2010 22:07	3	1.5	2.25	3/2/10 22:02	27.47	3/3/10 14:30	29.63
3/2/2010 22:12	4	1	2.5	3/2/10 22:07	27.34	3/3/10 14:45	29.63
3/2/2010 22:17	3.5	1	2.25	3/2/10 22:12	27.28	3/3/10 15:00	29.64
3/2/2010 22:22	3	1	2	3/2/10 22:17	27.26	3/3/10 15:15	29.64
3/2/2010 22:27	3	1	2	3/2/10 22:22	27.17	3/3/10 15:30	29.64
3/2/2010 22:32	4	1.5	2.75	3/2/10 22:27	27.12	3/3/10 15:45	29.65
3/2/2010 22:37	4	2.5	3.25	3/2/10 22:32	27.00	3/3/10 16:00	29.65
3/2/2010 22:42	4.5	2.5	3.5	3/2/10 22:37	26.92	3/3/10 16:15	29.66
3/2/2010 22:47	4	2	3	3/2/10 22:42	26.94	3/3/10 16:30	29.66
3/2/2010 22:52	3.5	2	2.75	3/2/10 22:47	26.88	3/3/10 16:45	29.67
3/2/2010 22:57	3.5	2	2.75	3/2/10 22:52	26.81	3/3/10 17:00	29.67
3/2/2010 23:02	3.5	2	2.75	3/2/10 22:57	26.79	3/3/10 17:15	29.68
3/2/2010 23:07	3	1.5	2.25	3/2/10 23:02	26.73	3/3/10 17:30	29.69
3/2/2010 23:12	3.5	2	2.75	3/2/10 23:07	26.72	3/3/10 17:45	29.69
3/2/2010 23:17	4	1.5	2.75	3/2/10 23:12	26.66	3/3/10 18:00	29.70
3/2/2010 23:22	3.5	2.5	3	3/2/10 23:17	26.67	3/3/10 18:15	29.71
3/2/2010 23:27	3.5	2.5	3	3/2/10 23:22	26.62	3/3/10 18:30	29.71
3/2/2010 23:32	3.5	2.5	3	3/2/10 23:27	26.64	3/3/10 18:45	29.72
3/2/2010 23:37	3.5	2.5	3	3/2/10 23:32	26.58	3/3/10 19:00	29.73
3/2/2010 23:42	3.5	2	2.75	3/2/10 23:37	26.51	3/3/10 19:15	29.73
3/2/2010 23:47	3.5	1.5	2.5	3/2/10 23:42	26.40	3/3/10 19:30	29.74
3/2/2010 23:52	3.5	2.5	3	3/2/10 23:47	26.31	3/3/10 19:45	29.74

Date + Time	Maximum Differential Pressure[d] [Pa]	Minimum Differential Pressure[d] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg)[c]	Date + Time	Outdoor Barometric Pressure (inches Hg)[d]
3/2/2010 23:57	3.5	3	3.25	3/2/10 23:52	26.29	3/3/10 20:00	29.74
3/3/2010 0:02	3.5	2.5	3	3/2/10 23:57	26.28	3/3/10 20:15	29.74
3/3/2010 0:07	3.5	3	3.25	3/3/10 0:02	26.27	3/3/10 20:30	29.74
3/3/2010 0:12	3.5	2.5	3	3/3/10 0:07	26.24	3/3/10 20:45	29.75
3/3/2010 0:17	3.5	2.5	3	3/3/10 0:12	26.25	3/3/10 21:00	29.75
3/3/2010 0:22	3.5	2	2.75	3/3/10 0:17	26.19	3/3/10 21:15	29.75
3/3/2010 0:27	3.5	2	2.75	3/3/10 0:22	26.15	3/3/10 21:30	29.75
3/3/2010 0:32	4	2.5	3.25	3/3/10 0:27	26.09	3/3/10 21:45	29.75
3/3/2010 0:37	3.5	2.5	3	3/3/10 0:32	26.11	3/3/10 22:00	29.75
3/3/2010 0:42	3.5	2.5	3	3/3/10 0:37	26.03	3/3/10 22:15	29.75
3/3/2010 0:47	3.5	1.5	2.5	3/3/10 0:42	25.98	3/3/10 22:30	29.76
3/3/2010 0:52	4	2.5	3.25	3/3/10 0:47	25.95	3/3/10 22:45	29.76
3/3/2010 0:57	4.5	3	3.75	3/3/10 0:52	25.98	3/3/10 23:00	29.76
3/3/2010 1:02	3	2	2.5	3/3/10 0:57	25.98	3/3/10 23:15	29.76
3/3/2010 1:07	4	2	3	3/3/10 1:02	25.92	3/3/10 23:30	29.76
3/3/2010 1:12	4	3	3.5	3/3/10 1:07	25.83	3/3/10 23:45	29.76
3/3/2010 1:17	4	3	3.5	3/3/10 1:12	25.77	3/4/10 0:00	29.76
3/3/2010 1:22	4	3.5	3.75	3/3/10 1:17	25.78	3/4/10 0:15	29.76
3/3/2010 1:27	4	3.5	3.75	3/3/10 1:22	25.77	3/4/10 0:30	29.77
3/3/2010 1:32	4	3.5	3.75	3/3/10 1:27	25.72	3/4/10 0:45	29.77
3/3/2010 1:37	4	3	3.5	3/3/10 1:32	25.72	3/4/10 1:00	29.77
3/3/2010 1:42	3.5	2.5	3	3/3/10 1:37	25.63	3/4/10 1:15	29.78
3/3/2010 1:47	3	1.5	2.25	3/3/10 1:42	25.55	3/4/10 1:30	29.78
3/3/2010 1:52	3	2	2.5	3/3/10 1:47	25.56	3/4/10 1:45	29.78
3/3/2010 1:57	3	2.5	2.75	3/3/10 1:52	25.53	3/4/10 2:00	29.78
3/3/2010 2:02	3.5	2	2.75	3/3/10 1:57	25.47	3/4/10 2:15	29.78
3/3/2010 2:07	4	1.5	2.75	3/3/10 2:02	25.50	3/4/10 2:30	29.78
3/3/2010 2:12	4	2	3	3/3/10 2:07	25.47	3/4/10 2:45	29.77
3/3/2010 2:17	4	3	3.5	3/3/10 2:12	25.43	3/4/10 3:00	29.77
3/3/2010 2:22	4	3	3.5	3/3/10 2:17	25.41	3/4/10 3:15	29.78
3/3/2010 2:27	4.5	3.5	4	3/3/10 2:22	25.35	3/4/10 3:30	29.78
3/3/2010 2:32	4	3	3.5	3/3/10 2:27	25.29	3/4/10 3:45	29.79
3/3/2010 2:37	4	3	3.5	3/3/10 2:32	25.34	3/4/10 4:00	29.79
3/3/2010 2:42	5.5	1.5	3.5	3/3/10 2:37	25.31	3/4/10 4:15	29.79
3/3/2010 2:47	4	2.5	3.25	3/3/10 2:42	25.31	3/4/10 4:30	29.79
3/3/2010 2:52	4	2	3	3/3/10 2:47	25.27	3/4/10 4:45	29.80
3/3/2010 2:57	4	1.5	2.75	3/3/10 2:52	25.15	3/4/10 5:00	29.80
3/3/2010 3:02	4	2	3	3/3/10 2:57	25.13	3/4/10 5:15	29.80
3/3/2010 3:07	4	2	3	3/3/10 3:02	25.07	3/4/10 5:30	29.80
3/3/2010 3:12	4	2	3	3/3/10 3:07	25.10	3/4/10 5:45	29.80
3/3/2010 3:17	4	1.5	2.75	3/3/10 3:12	25.07	3/4/10 6:00	29.81
3/3/2010 3:22	3.5	2	2.75	3/3/10 3:17	25.03	3/4/10 6:15	29.81
3/3/2010 3:27	4	2	3	3/3/10 3:22	25.10	3/4/10 6:30	29.82
3/3/2010 3:32	4	2.5	3.25	3/3/10 3:27	25.01	3/4/10 6:45	29.82
3/3/2010 3:37	4.5	2.5	3.5	3/3/10 3:32	24.96	3/4/10 7:00	29.82
3/3/2010 3:42	4	2	3	3/3/10 3:37	24.94	3/4/10 7:15	29.83
3/3/2010 3:47	4.5	2.5	3.5	3/3/10 3:42	24.93	3/4/10 7:30	29.84
3/3/2010 3:52	4	2	3	3/3/10 3:47	24.93	3/4/10 7:45	29.84
3/3/2010 3:57	4	2.5	3.25	3/3/10 3:52	24.91	3/4/10 8:00	29.85
3/3/2010 4:02	4	2	3	3/3/10 3:57	24.86	3/4/10 8:15	29.85
3/3/2010 4:07	4	2	3	3/3/10 4:02	24.94	3/4/10 8:30	29.85
3/3/2010 4:12	4.5	2.5	3.5	3/3/10 4:07	24.91	3/4/10 8:45	29.85
3/3/2010 4:17	4	2	3	3/3/10 4:12	24.94	3/4/10 9:00	29.85
3/3/2010 4:22	4	2	3	3/3/10 4:17	24.92	3/4/10 9:15	29.85
3/3/2010 4:27	4	2	3	3/3/10 4:22	25.02		
3/3/2010 4:32	4.5	2.5	3.5	3/3/10 4:27	24.98		
3/3/2010 4:37	4.5	2.5	3.5	3/3/10 4:32	25.09		
3/3/2010 4:42	4	2	3	3/3/10 4:37	25.11		
3/3/2010 4:47	3.5	2	2.75	3/3/10 4:42	25.19		
3/3/2010 4:52	4	2	3	3/3/10 4:47	25.12		
3/3/2010 4:57	4	1	2.5	3/3/10 4:52	25.19		
3/3/2010 5:02	4	2.5	3.25	3/3/10 4:57	25.23		
3/3/2010 5:07	4	2	3	3/3/10 5:02	25.27		
3/3/2010 5:12	4	2.5	3.25	3/3/10 5:07	25.33		
3/3/2010 5:17	4	2.5	3.25	3/3/10 5:12	25.31		

Date + Time	Maximum Differential Pressure[d] [Pa]	Minimum Differential Pressure[d] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/3/2010 5:22	4	2.5	3.25	3/3/10 5:17	25.38		
3/3/2010 5:27	4	2.5	3.25	3/3/10 5:22	25.48		
3/3/2010 5:32	4	2	3	3/3/10 5:27	25.52		
3/3/2010 5:37	4	2	3	3/3/10 5:32	25.57		
3/3/2010 5:42	3.5	2.5	3	3/3/10 5:37	25.64		
3/3/2010 5:47	3.5	2.5	3	3/3/10 5:42	25.68		
3/3/2010 5:52	4	2	3	3/3/10 5:47	25.76		
3/3/2010 5:57	3.5	2.5	3	3/3/10 5:52	25.81		
3/3/2010 6:02	3.5	2.5	3	3/3/10 5:57	25.85		
3/3/2010 6:07	3	1.5	2.25	3/3/10 6:02	25.91		
3/3/2010 6:12	3.5	2	2.75	3/3/10 6:07	25.92		
3/3/2010 6:17	3.5	2	2.75	3/3/10 6:12	25.94		
3/3/2010 6:22	3.5	1.5	2.5	3/3/10 6:17	25.96		
3/3/2010 6:27	3.5	1	2.25	3/3/10 6:22	25.94		
3/3/2010 6:32	4	1.5	2.75	3/3/10 6:27	25.94		
3/3/2010 6:37	3	1	2	3/3/10 6:32	25.94		
3/3/2010 6:42	3	1	2	3/3/10 6:37	25.94		
3/3/2010 6:47	3.5	1	2.25	3/3/10 6:42	25.93		
3/3/2010 6:52	3.5	2	2.75	3/3/10 6:47	25.94		
3/3/2010 6:57	3.5	1	2.25	3/3/10 6:52	25.94		
3/3/2010 7:02	3	1	2	3/3/10 6:57	25.93		
3/3/2010 7:07	3	0.5	1.75	3/3/10 7:02	25.94		
3/3/2010 7:12	3	2	2.5	3/3/10 7:07	25.98		
3/3/2010 7:17	3	2	2.5	3/3/10 7:12	26.00		
3/3/2010 7:22	3.5	1	2.25	3/3/10 7:17	26.01		
3/3/2010 7:27	3.5	1.5	2.5	3/3/10 7:22	26.02		
3/3/2010 7:32	3	1.5	2.25	3/3/10 7:27	26.08		
3/3/2010 7:37	3	1	2	3/3/10 7:32	26.07		
3/3/2010 7:42	3	1	2	3/3/10 7:37	26.09		
3/3/2010 7:47	3	1	2	3/3/10 7:42	26.10		
3/3/2010 7:52	3	1.5	2.25	3/3/10 7:47	26.09		
3/3/2010 7:57	3	1	2	3/3/10 7:52	26.12		
3/3/2010 8:02	3.5	1	2.25	3/3/10 7:57	26.14		
3/3/2010 8:07	2.5	1	1.75	3/3/10 8:02	26.20		
3/3/2010 8:12	3	1	2	3/3/10 8:07	26.14		
3/3/2010 8:17	3	1.5	2.25	3/3/10 8:12	26.17		
3/3/2010 8:22	3	1.5	2.25	3/3/10 8:17	26.18		
3/3/2010 8:27	3.5	1.5	2.5	3/3/10 8:22	26.21		
3/3/2010 8:32	3	1.5	2.25	3/3/10 8:27	26.22		
3/3/2010 8:37	3	1.5	2.25	3/3/10 8:32	26.30		
3/3/2010 8:42	3	1.5	2.25	3/3/10 8:37	26.28		
3/3/2010 8:47	3	1	2	3/3/10 8:42	26.26		
3/3/2010 8:52	3	1	2	3/3/10 8:47	26.23		
3/3/2010 8:57	2.5	0.5	1.5	3/3/10 8:52	26.23		
3/3/2010 9:02	2.5	1	1.75	3/3/10 8:57	26.25		
3/3/2010 9:07	2.5	0	1.25	3/3/10 9:02	26.29		
3/3/2010 9:12	3	1	2	3/3/10 9:07	26.37		
3/3/2010 9:17	3	1	2	3/3/10 9:12	26.34		
3/3/2010 9:22	3	1.5	2.25	3/3/10 9:17	26.41		
3/3/2010 9:27	3	0.5	1.75	3/3/10 9:22	26.45		
3/3/2010 9:32	3.5	0.5	2	3/3/10 9:27	26.46		
3/3/2010 9:37	3	1	2	3/3/10 9:32	26.49		
3/3/2010 9:42	3	1.5	2.25	3/3/10 9:37	26.52		
3/3/2010 9:47	3.5	0.5	2	3/3/10 9:42	26.51		
3/3/2010 9:52	3	0.5	1.75	3/3/10 9:47	26.56		
3/3/2010 9:57	3.5	0.5	2	3/3/10 9:52	26.58		
3/3/2010 10:02	3	0.5	1.75	3/3/10 9:57	26.62		
3/3/2010 10:07	3	1.5	2.25	3/3/10 10:02	26.63		
3/3/2010 10:12	3	0.5	1.75	3/3/10 10:07	26.70		
3/3/2010 10:17	3	1	2	3/3/10 10:12	26.75		
3/3/2010 10:22	3	1	2	3/3/10 10:17	26.75		
3/3/2010 10:27	3	1	2	3/3/10 10:22	26.80		
3/3/2010 10:32	3	0.5	1.75	3/3/10 10:27	26.84		
3/3/2010 10:37	2	0.5	1.25	3/3/10 10:32	26.85		
3/3/2010 10:42	2	0.5	1.25	3/3/10 10:37	26.87		

Date + Time	Maximum Differential Pressure[d] [Pa]	Minimum Differential Pressure[d] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/3/2010 10:47	2	1	1.5	3/3/10 10:42	26.90		
3/3/2010 10:52	2	1	1.5	3/3/10 10:47	26.95		
3/3/2010 10:57	2.5	1	1.75	3/3/10 10:52	26.91		
3/3/2010 11:02	2	0.5	1.25	3/3/10 10:57	26.91		
3/3/2010 11:07	2	1	1.5	3/3/10 11:02	26.92		
3/3/2010 11:12	2.5	0.5	1.5	3/3/10 11:07	26.97		
3/3/2010 11:17	2	0.5	1.25	3/3/10 11:12	26.93		
3/3/2010 11:22	2.5	0.5	1.5	3/3/10 11:17	26.94		
3/3/2010 11:27	2	1	1.5	3/3/10 11:22	26.94		
3/3/2010 11:32	2	0	1	3/3/10 11:27	26.98		
3/3/2010 11:37	2	0.5	1.25	3/3/10 11:32	26.97		
3/3/2010 11:42	2.5	1	1.75	3/3/10 11:37	27.07		
3/3/2010 11:47	2	0.5	1.25	3/3/10 11:42	27.15		
3/3/2010 11:52	2	0	1	3/3/10 11:47	27.19		
3/3/2010 11:57	2.5	0.5	1.5	3/3/10 11:52	27.23		
3/3/2010 12:02	2	0	1	3/3/10 11:57	27.24		
3/3/2010 12:07	2	0.5	1.25	3/3/10 12:02	27.27		
3/3/2010 12:12	2	1	1.5	3/3/10 12:07	27.28		
3/3/2010 12:17	2	1	1.5	3/3/10 12:12	27.30		
3/3/2010 12:22	2	1	1.5	3/3/10 12:17	27.26		
3/3/2010 12:27	2.5	1	1.75	3/3/10 12:22	27.30		
3/3/2010 12:32	2	0.5	1.25	3/3/10 12:27	27.31		
3/3/2010 12:37	2	0.5	1.25	3/3/10 12:32	27.33		
3/3/2010 12:42	2	0	1	3/3/10 12:37	27.28		
3/3/2010 12:47	2	0.5	1.25	3/3/10 12:42	27.28		
3/3/2010 12:52	2	1	1.5	3/3/10 12:47	27.31		
3/3/2010 12:57	2.5	1	1.75	3/3/10 12:52	27.31		
3/3/2010 13:02	2	0.5	1.25	3/3/10 12:57	27.30		
3/3/2010 13:07	2	0.5	1.25	3/3/10 13:02	27.27		
3/3/2010 13:12	2	0.5	1.25	3/3/10 13:07	27.28		
3/3/2010 13:17	2	0.5	1.25	3/3/10 13:12	27.28		
3/3/2010 13:22	2	0	1	3/3/10 13:17	27.36		
3/3/2010 13:27	2	0.5	1.25	3/3/10 13:22	27.35		
3/3/2010 13:32	2	0.5	1.25	3/3/10 13:27	27.37		
3/3/2010 13:37	2.5	0.5	1.5	3/3/10 13:32	27.40		
3/3/2010 13:42	2	1	1.5	3/3/10 13:37	27.40		
3/3/2010 13:47	2	1	1.5	3/3/10 13:42	27.40		
3/3/2010 13:52	2.5	1	1.75	3/3/10 13:47	27.40		
3/3/2010 13:57	2	0	1	3/3/10 13:52	27.44		
3/3/2010 14:02	2	1	1.5	3/3/10 13:57	27.50		
3/3/2010 14:07	2	0.5	1.25	3/3/10 14:02	27.52		
3/3/2010 14:12	2	0.5	1.25	3/3/10 14:07	27.54		
3/3/2010 14:17	2	0.5	1.25	3/3/10 14:12	27.59		
3/3/2010 14:22	2	0	1	3/3/10 14:17	27.60		
3/3/2010 14:27	2	1	1.5	3/3/10 14:22	27.57		
3/3/2010 14:32	2	0.5	1.25	3/3/10 14:27	27.61		
3/3/2010 14:37	2	0	1	3/3/10 14:32	27.61		
3/3/2010 14:42	2	0.5	1.25	3/3/10 14:37	27.62		
3/3/2010 14:47	2	0	1	3/3/10 14:42	27.66		
3/3/2010 14:52	2	0.5	1.25	3/3/10 14:47	27.70		
3/3/2010 14:57	2	1	1.5	3/3/10 14:52	27.73		
3/3/2010 15:02	1.5	0	0.75	3/3/10 14:57	27.75		
3/3/2010 15:07	2	0	1	3/3/10 15:02	27.71		
3/3/2010 15:12	2	0.5	1.25	3/3/10 15:07	27.75		
3/3/2010 15:17	1.5	0.5	1	3/3/10 15:12	27.74		
3/3/2010 15:22	1.5	0	0.75	3/3/10 15:17	27.73		
3/3/2010 15:27	2	0.5	1.25	3/3/10 15:22	27.77		
3/3/2010 15:32	2	0.5	1.25	3/3/10 15:27	27.79		
3/3/2010 15:37	2	0.5	1.25	3/3/10 15:32	27.78		
3/3/2010 15:42	1.5	1	1.25	3/3/10 15:37	27.85		
3/3/2010 15:47	1.5	0.5	1	3/3/10 15:42	27.86		
3/3/2010 15:52	2	0.5	1.25	3/3/10 15:47	27.86		
3/3/2010 15:57	2	0.5	1.25	3/3/10 15:52	27.88		
3/3/2010 16:02	1.5	0.5	1	3/3/10 15:57	27.94		
3/3/2010 16:07	2	0.5	1.25	3/3/10 16:02	27.92		

Date + Time	Maximum Differential Pressure[d] [Pa]	Minimum Differential Pressure[d] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/3/2010 16:12	2	0.5	1.25	3/3/10 16:07	27.94		
3/3/2010 16:17	2	0.5	1.25	3/3/10 16:12	27.98		
3/3/2010 16:22	2	0.5	1.25	3/3/10 16:17	27.99		
3/3/2010 16:27	2	1	1.5	3/3/10 16:22	28.05		
3/3/2010 16:32	2	1	1.5	3/3/10 16:27	28.08		
3/3/2010 16:37	2	1	1.5	3/3/10 16:32	28.11		
3/3/2010 16:42	2	0.5	1.25	3/3/10 16:37	28.13		
3/3/2010 16:47	2.5	1	1.75	3/3/10 16:42	28.16		
3/3/2010 16:52	2	1	1.5	3/3/10 16:47	28.19		
3/3/2010 16:57	2	1.5	1.75	3/3/10 16:52	28.21		
3/3/2010 17:02	2	0.5	1.25	3/3/10 16:57	28.22		
3/3/2010 17:07	2.5	0	1.25	3/3/10 17:02	28.23		
3/3/2010 17:12	2	0.5	1.25	3/3/10 17:07	28.24		
3/3/2010 17:17	2	1	1.5	3/3/10 17:12	28.27		
3/3/2010 17:22	2	0.5	1.25	3/3/10 17:17	28.30		
3/3/2010 17:27	2	1	1.5	3/3/10 17:22	28.31		
3/3/2010 17:32	2	0	1	3/3/10 17:27	28.37		
3/3/2010 17:37	2	0.5	1.25	3/3/10 17:32	28.36		
3/3/2010 17:42	2	1	1.5	3/3/10 17:37	28.44		
3/3/2010 17:47	2	0.5	1.25	3/3/10 17:42	28.48		
3/3/2010 17:52	2.5	1	1.75	3/3/10 17:47	28.50		
3/3/2010 17:57	2	0.5	1.25	3/3/10 17:52	28.53		
3/3/2010 18:02	1.5	0.5	1	3/3/10 17:57	28.56		
3/3/2010 18:07	1.5	0	0.75	3/3/10 18:02	28.57		
3/3/2010 18:12	1.5	0.5	1	3/3/10 18:07	28.61		
3/3/2010 18:17	1.5	0.5	1	3/3/10 18:12	28.63		
3/3/2010 18:22	1.5	0.5	1	3/3/10 18:17	28.62		
3/3/2010 18:27	1.5	0.5	1	3/3/10 18:22	28.67		
3/3/2010 18:32	1.5	1	1.25	3/3/10 18:27	28.69		
3/3/2010 18:37	1.5	1	1.25	3/3/10 18:32	28.75		
3/3/2010 18:42	1.5	1	1.25	3/3/10 18:37	28.80		
3/3/2010 18:47	1.5	1	1.25	3/3/10 18:42	28.80		
3/3/2010 18:52	1.5	1	1.25	3/3/10 18:47	28.82		
3/3/2010 18:57	1.5	0.5	1	3/3/10 18:52	28.86		
3/3/2010 19:02	1.5	1	1.25	3/3/10 18:57	28.90		
3/3/2010 19:07	1.5	1	1.25	3/3/10 19:02	28.91		
3/3/2010 19:12	1.5	1	1.25	3/3/10 19:07	28.92		
3/3/2010 19:17	2	0.5	1.25	3/3/10 19:12	28.96		
3/3/2010 19:22	1.5	0.5	1	3/3/10 19:17	29.01		
3/3/2010 19:27	2	1	1.5	3/3/10 19:22	29.02		
3/3/2010 19:32	1.5	1	1.25	3/3/10 19:27	29.02		
3/3/2010 19:37	1.5	0.5	1	3/3/10 19:32	29.06		
3/3/2010 19:42	1.5	0.5	1	3/3/10 19:37	29.09		
3/3/2010 19:47	1.5	0.5	1	3/3/10 19:42	29.09		
3/3/2010 19:52	1.5	0.5	1	3/3/10 19:47	29.11		
3/3/2010 19:57	2.5	1	1.75	3/3/10 19:52	29.08		
3/3/2010 20:02	2.5	1	1.75	3/3/10 19:57	29.09		
3/3/2010 20:07	3	1	2	3/3/10 20:02	29.11		
3/3/2010 20:12	2.5	1	1.75	3/3/10 20:07	29.12		
3/3/2010 20:17	2.5	1.5	2	3/3/10 20:12	29.10		
3/3/2010 20:22	2.5	1	1.75	3/3/10 20:17	29.11		
3/3/2010 20:27	2.5	1	1.75	3/3/10 20:22	29.11		
3/3/2010 20:32	2.5	1	1.75	3/3/10 20:27	29.11		
3/3/2010 20:37	2.5	1	1.75	3/3/10 20:32	29.14		
3/3/2010 20:42	2	1	1.5	3/3/10 20:37	29.16		
3/3/2010 20:47	2	1	1.5	3/3/10 20:42	29.17		
3/3/2010 20:52	2	1.5	1.75	3/3/10 20:47	29.18		
3/3/2010 20:57	2	1.5	1.75	3/3/10 20:52	29.19		
3/3/2010 21:02	2.5	1.5	2	3/3/10 20:57	29.20		
3/3/2010 21:07	2.5	1	1.75	3/3/10 21:02	29.21		
3/3/2010 21:12	2.5	1	1.75	3/3/10 21:07	29.22		
3/3/2010 21:17	2	0.5	1.25	3/3/10 21:12	29.18		
3/3/2010 21:22	2.5	1	1.75	3/3/10 21:17	29.19		
3/3/2010 21:27	2.5	1.5	2	3/3/10 21:22	29.19		
3/3/2010 21:32	2.5	1	1.75	3/3/10 21:27	29.19		

Date + Time	Maximum Differential Pressure[d] [Pa]	Minimum Differential Pressure[d] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/3/2010 21:37	2.5	1	1.75	3/3/10 21:32	29.18		
3/3/2010 21:42	2.5	1	1.75	3/3/10 21:37	29.21		
3/3/2010 21:47	2.5	1	1.75	3/3/10 21:42	29.20		
3/3/2010 21:52	3	1.5	2.25	3/3/10 21:47	29.23		
3/3/2010 21:57	2.5	1.5	2	3/3/10 21:52	29.22		
3/3/2010 22:02	2.5	1	1.75	3/3/10 21:57	29.24		
3/3/2010 22:07	2	1	1.5	3/3/10 22:02	29.24		
3/3/2010 22:12	2.5	1.5	2	3/3/10 22:07	29.25		
3/3/2010 22:17	2.5	1.5	2	3/3/10 22:12	29.26		
3/3/2010 22:22	2.5	1.5	2	3/3/10 22:17	29.28		
3/3/2010 22:27	2.5	2	2.25	3/3/10 22:22	29.29		
3/3/2010 22:32	2.5	1.5	2	3/3/10 22:27	29.29		
3/3/2010 22:37	3	2	2.5	3/3/10 22:32	29.31		
3/3/2010 22:42	3	1.5	2.25	3/3/10 22:37	29.31		
3/3/2010 22:47	4	2	3	3/3/10 22:42	29.31		
3/3/2010 22:52	4.5	2.5	3.5	3/3/10 22:47	29.34		
3/3/2010 22:57	3.5	0.5	2	3/3/10 22:52	29.33		
3/3/2010 23:02	3	1	2	3/3/10 22:57	29.35		
3/3/2010 23:07	3	1.5	2.25	3/3/10 23:02	29.40		
3/3/2010 23:12	3	1.5	2.25	3/3/10 23:07	29.40		
3/3/2010 23:17	3	1.5	2.25	3/3/10 23:12	29.39		
3/3/2010 23:22	3	2	2.5	3/3/10 23:17	29.40		
3/3/2010 23:27	3	2	2.5	3/3/10 23:22	29.39		
3/3/2010 23:32	3	2	2.5	3/3/10 23:27	29.41		
3/3/2010 23:37	3	1	2	3/3/10 23:32	29.41		
3/3/2010 23:42	3	1.5	2.25	3/3/10 23:37	29.38		
3/3/2010 23:47	3	1.5	2.25	3/3/10 23:42	29.39		
3/3/2010 23:52	3	2	2.5	3/3/10 23:47	29.40		
3/3/2010 23:57	3	2	2.5	3/3/10 23:52	29.38		
3/4/2010 0:02	3	2	2.5	3/3/10 23:57	29.38		
3/4/2010 0:07	2.5	2	2.25	3/4/10 0:02	29.40		
3/4/2010 0:12	3	1.5	2.25	3/4/10 0:07	29.40		
3/4/2010 0:17	3	1.5	2.25	3/4/10 0:12	29.39		
3/4/2010 0:22	3	2	2.5	3/4/10 0:17	29.42		
3/4/2010 0:27	3	1.5	2.25	3/4/10 0:22	29.41		
3/4/2010 0:32	2.5	1.5	2	3/4/10 0:27	29.42		
3/4/2010 0:37	3	2	2.5	3/4/10 0:32	29.44		
3/4/2010 0:42	3	2	2.5	3/4/10 0:37	29.45		
3/4/2010 0:47	3	1.5	2.25	3/4/10 0:42	29.47		
3/4/2010 0:52	3	2	2.5	3/4/10 0:47	29.51		
3/4/2010 0:57	2.5	2	2.25	3/4/10 0:52	29.53		
3/4/2010 1:02	2.5	1.5	2	3/4/10 0:57	29.55		
3/4/2010 1:07	2.5	2	2.25	3/4/10 1:02	29.56		
3/4/2010 1:12	2.5	1.5	2	3/4/10 1:07	29.57		
3/4/2010 1:17	2.5	1.5	2	3/4/10 1:12	29.58		
3/4/2010 1:22	2.5	2	2.25	3/4/10 1:17	29.58		
3/4/2010 1:27	2.5	2	2.25	3/4/10 1:22	29.59		
3/4/2010 1:32	2.5	2	2.25	3/4/10 1:27	29.59		
3/4/2010 1:37	3	2	2.5	3/4/10 1:32	29.61		
3/4/2010 1:42	3	1.5	2.25	3/4/10 1:37	29.64		
3/4/2010 1:47	3	2	2.5	3/4/10 1:42	29.63		
3/4/2010 1:52	3	1.5	2.25	3/4/10 1:47	29.62		
3/4/2010 1:57	3	1.5	2.25	3/4/10 1:52	29.62		
3/4/2010 2:02	2.5	2	2.25	3/4/10 1:57	29.65		
3/4/2010 2:07	2.5	2	2.25	3/4/10 2:02	29.63		
3/4/2010 2:12	2.5	1.5	2	3/4/10 2:07	29.63		
3/4/2010 2:17	2.5	2	2.25	3/4/10 2:12	29.62		
3/4/2010 2:22	2.5	1.5	2	3/4/10 2:17	29.61		
3/4/2010 2:27	2.5	2	2.25	3/4/10 2:22	29.60		
3/4/2010 2:32	2.5	2	2.25	3/4/10 2:27	29.57		
3/4/2010 2:37	2.5	1.5	2	3/4/10 2:32	29.57		
3/4/2010 2:42	2.5	2	2.25	3/4/10 2:37	29.56		
3/4/2010 2:47	2.5	2	2.25	3/4/10 2:42	29.53		
3/4/2010 2:52	2.5	1.5	2	3/4/10 2:47	29.51		
3/4/2010 2:57	2.5	1.5	2	3/4/10 2:52	29.50		

Date + Time	Maximum Differential Pressure[d] [Pa]	Minimum Differential Pressure[d] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/4/2010 3:02	2.5	2	2.25	3/4/10 2:57	29.50		
3/4/2010 3:07	2.5	1.5	2	3/4/10 3:02	29.50		
3/4/2010 3:12	3	1.5	2.25	3/4/10 3:07	29.53		
3/4/2010 3:17	2.5	2	2.25	3/4/10 3:12	29.55		
3/4/2010 3:22	2.5	2	2.25	3/4/10 3:17	29.57		
3/4/2010 3:27	2.5	2	2.25	3/4/10 3:22	29.57		
3/4/2010 3:32	2.5	2	2.25	3/4/10 3:27	29.58		
3/4/2010 3:37	2.5	2	2.25	3/4/10 3:32	29.59		
3/4/2010 3:42	2.5	2	2.25	3/4/10 3:37	29.60		
3/4/2010 3:47	2.5	2	2.25	3/4/10 3:42	29.62		
3/4/2010 3:52	2.5	2	2.25	3/4/10 3:47	29.62		
3/4/2010 3:57	2.5	2	2.25	3/4/10 3:52	29.66		
3/4/2010 4:02	2.5	1.5	2	3/4/10 3:57	29.66		
3/4/2010 4:07	2.5	2	2.25	3/4/10 4:02	29.69		
3/4/2010 4:12	2	2	2	3/4/10 4:07	29.69		
3/4/2010 4:17	2.5	2	2.25	3/4/10 4:12	29.70		
3/4/2010 4:22	2.5	2	2.25	3/4/10 4:17	29.69		
3/4/2010 4:27	2.5	1.5	2	3/4/10 4:22	29.69		
3/4/2010 4:32	2.5	1.5	2	3/4/10 4:27	29.70		
3/4/2010 4:37	2	2	2	3/4/10 4:32	29.72		
3/4/2010 4:42	2.5	1.5	2	3/4/10 4:37	29.73		
3/4/2010 4:47	2.5	2	2.25	3/4/10 4:42	29.74		
3/4/2010 4:52	2.5	1.5	2	3/4/10 4:47	29.78		
3/4/2010 4:57	2.5	2	2.25	3/4/10 4:52	29.79		
3/4/2010 5:02	2.5	1.5	2	3/4/10 4:57	29.81		
3/4/2010 5:07	2.5	2	2.25	3/4/10 5:02	29.81		
3/4/2010 5:12	2.5	2	2.25	3/4/10 5:07	29.85		
3/4/2010 5:17	2.5	2	2.25	3/4/10 5:12	29.84		
3/4/2010 5:22	2.5	2	2.25	3/4/10 5:17	29.84		
3/4/2010 5:27	2.5	1.5	2	3/4/10 5:22	29.85		
3/4/2010 5:32	2.5	1	1.75	3/4/10 5:27	29.85		
3/4/2010 5:37	2.5	1.5	2	3/4/10 5:32	29.85		
3/4/2010 5:42	2.5	2	2.25	3/4/10 5:37	29.86		
3/4/2010 5:47	2.5	1	1.75	3/4/10 5:42	29.87		
3/4/2010 5:52	2.5	1.5	2	3/4/10 5:47	29.89		
3/4/2010 5:57	2.5	1.5	2	3/4/10 5:52	29.90		
3/4/2010 6:02	2.5	1	1.75	3/4/10 5:57	29.91		
3/4/2010 6:07	2.5	1	1.75	3/4/10 6:02	29.92		
3/4/2010 6:12	2.5	1	1.75	3/4/10 6:07	29.92		
3/4/2010 6:17	2.5	1	1.75	3/4/10 6:12	29.95		
3/4/2010 6:22	2.5	1.5	2	3/4/10 6:17	29.98		
3/4/2010 6:27	2	1	1.5	3/4/10 6:22	29.98		
3/4/2010 6:32	2	1	1.5	3/4/10 6:27	30.00		
3/4/2010 6:37	2	1	1.5	3/4/10 6:32	30.01		
3/4/2010 6:42	2	1	1.5	3/4/10 6:37	30.04		
3/4/2010 6:47	2.5	1	1.75	3/4/10 6:42	30.06		
3/4/2010 6:52	2.5	1.5	2	3/4/10 6:47	30.09		
3/4/2010 6:57	2.5	1	1.75	3/4/10 6:52	30.10		
3/4/2010 7:02	2.5	1.5	2	3/4/10 6:57	30.11		
3/4/2010 7:07	2.5	1	1.75	3/4/10 7:02	30.14		
3/4/2010 7:12	2.5	1.5	2	3/4/10 7:07	30.18		
3/4/2010 7:17	2.5	1.5	2	3/4/10 7:12	30.22		
3/4/2010 7:22	2	0.5	1.25	3/4/10 7:17	30.24		
3/4/2010 7:27	2	1	1.5	3/4/10 7:22	30.26		
3/4/2010 7:32	2.5	1.5	2	3/4/10 7:27	30.30		
3/4/2010 7:37	2.5	1	1.75	3/4/10 7:32	30.34		
3/4/2010 7:42	2.5	1	1.75	3/4/10 7:37	30.35		
3/4/2010 7:47	2	1	1.5	3/4/10 7:42	30.39		
3/4/2010 7:52	2	1	1.5	3/4/10 7:47	30.40		
3/4/2010 7:57	2	1.5	1.75	3/4/10 7:52	30.41		
3/4/2010 8:02	2	1.5	1.75	3/4/10 7:57	30.44		
3/4/2010 8:07	2.5	1	1.75	3/4/10 8:02	30.47		
3/4/2010 8:12	2	1.5	1.75	3/4/10 8:07	30.50		
3/4/2010 8:17	2.5	1	1.75	3/4/10 8:12	30.52		
3/4/2010 8:22	2.5	1.5	2	3/4/10 8:17	30.49		

Date + Time	Maximum Differential Pressure[d] [Pa]	Minimum Differential Pressure[d] [Pa]	Average Pressure [Pa]	Date + Time	Indoor Barometric Pressure (inches Hg) [c]	Date + Time	Outdoor Barometric Pressure (inches Hg) [d]
3/4/2010 8:27	2.5	1.5	2	3/4/10 8:22	30.53		
3/4/2010 8:32	2.5	1	1.75	3/4/10 8:27	30.57		
3/4/2010 8:37	2.5	1	1.75	3/4/10 8:32	30.57		
3/4/2010 8:42	2.5	0.5	1.5	3/4/10 8:37	30.55		
3/4/2010 8:47	2.5	0.5	1.5	3/4/10 8:42	30.57		
3/4/2010 8:52	2.5	1	1.75	3/4/10 8:47	30.58		
3/4/2010 8:57	3	1	2	3/4/10 8:52	30.60		
3/4/2010 9:02	3	0	1.5	3/4/10 8:57	30.60		
3/4/2010 9:07	2.5	0	1.25	3/4/10 9:02	30.59		
3/4/2010 9:12	2	0.5	1.25	3/4/10 9:07	30.62		
3/4/2010 9:17	2.5	1	1.75	3/4/10 9:12	30.60		
				3/4/10 9:17	30.64		

Notes:

a : Differential pressure measurements are monitored continuously and the maximum and minimum differential pressure in Pascals [Pa] are recorded during each 15 minute monitoring period.

b: Differential pressure measurements were made using a Omniguard 4 differential pressure monitor with data logger (http://www.engsolinc.com/docs/og/OG4broch.pdf).

c : Interior barometric pressure measurements were made using a Solinst barometric data logger (http://www.solinst.com/Downloads/3001/3001Manual/Introduction/Barologger.html).

d: Exterior barometric pressure measurements were made using a Davis Vantage Pro 2 weather station (http://www.davisnet.com/weather/products/weather_product.asp?pnum=06152)

TABLE G-4

Suggested Interpretation of Differential Pressure Level Measurements

Condition	Description	Comments	Possible Outcome
Positively Pressurized	Consistent pressure measurements of > 6 to 9 Pa relative to outdoors or subsurface.	Based on the pressure difference needed to prevent soil gas intrusion in a structure with combined heating and appliance or fan operation effects (0.025 to 0.035 in water, based on USEPA, 1993).	No apparent driver for vapor intrusion pathway. Further investigation may not be needed
Neutral to Positively Pressurized	Consistent pressure measurements of <2 to 5 Pa relative to outdoors or subsurface. *OR* Highly variable pressure measurements typically greater than zero.	Minimum acceptable pressure difference needed to prevent in a structure with either heating effects OR appliance/fan effects (0.01 to 0.02 in water, based on USEPA, 1993).	Potential transient (intermittent) driver for vapor intrusion pathway may be present. Further investigation may be warranted to identify a potential source for vapor intrusion (i.e. groundwater sampling).
Neutral to Negatively Pressurized	Consistent pressure measurements of -5 to <2 Pa relative to outdoors or subsurface. *OR* Highly variable pressure measurements <5 Pa	Range of depressurization that could occur either from heating effects OR appliance/fan effects (0.01 to 0.02 in water, based on USEPA, 1993).	Potential transient (intermittent) driver for vapor intrusion pathway may be present. Further investigation may be warranted to identify a potential source and transport pathways for vapor intrusion (i.e. groundwater and near slab sampling).
Negatively Pressurized	Consistent pressure measurements of > -6 to -9 Pa relative to outdoors or subsurface.	Range of depressurization that could occur from heating effects and appliance/fan effects (0.025 to 0.035 in water, based on USEPA, 1993).	Potential driver for vapor intrusion pathway. Further investigation may be warranted. Consideration may need to be given to sub slab and/or indoor air sampling.

Notes:

Pa - pascal

1 Pa = 0.004 inches of water

Table Adapted from U.S. Environmental Protection Agency (USEPA). 1993. *Radon Reduction Techniques for Existing Detached Houses. Technical Guidance (Third Edition) for Active Soil Depressurization Systems.* EPA/625/R-03/011.

Attachment H
Weather Station Data

JEB LC-FS Site 11a 11/03/09

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	THSW Index	Bar	Rain	Rain Rate	Solar Rad.
11/03/09	4:56p	---	---	---	---	---	0.0	---	0.00	0.0	---	---	---	---	---	------	0.00	0.00	---
11/03/09	5:00p	62.4	62.5	62.4	67	51.3	0.0	---	0.00	0.0	---	62.4	61.8	61.8	59.0	1020.6	0.00	0.00	7
11/03/09	5:15p	61.2	62.4	61.2	69	50.9	0.0	---	0.00	0.0	---	61.2	60.6	60.6	57.6	1020.8	0.00	0.00	1
11/03/09	5:30p	59.8	61.2	59.8	72	50.8	0.0	---	0.00	0.0	---	59.8	59.3	59.3	56.3	1020.9	0.00	0.00	0
11/03/09	5:45p	58.5	59.9	58.5	75	50.6	0.0	---	0.00	0.0	---	58.5	58.0	58.0	55.0	1021.0	0.00	0.00	0
11/03/09	6:00p	57.4	58.4	57.4	77	50.2	0.0	---	0.00	0.0	---	57.4	57.0	57.0	54.0	1021.1	0.00	0.00	0
11/03/09	6:15p	56.6	57.4	56.6	79	50.2	0.0	---	0.00	0.0	---	56.6	56.3	56.3	53.3	1021.2	0.00	0.00	0
11/03/09	6:30p	56.0	56.6	56.0	80	49.9	0.0	---	0.00	0.0	---	56.0	55.7	55.7	52.6	1021.5	0.00	0.00	0
11/03/09	6:45p	55.7	56.0	55.6	81	50.0	0.0	---	0.00	0.0	---	55.7	55.4	55.4	52.3	1021.7	0.00	0.00	0
11/03/09	7:00p	55.4	55.7	55.4	82	50.0	0.0	---	0.00	0.0	---	55.4	55.2	55.2	52.1	1021.9	0.00	0.00	0
11/03/09	7:15p	55.2	55.4	55.2	83	50.1	0.0	---	0.00	0.0	---	55.2	55.0	55.0	52.0	1022.0	0.00	0.00	0
11/03/09	7:30p	55.3	55.3	55.1	83	50.2	0.0	---	0.00	0.0	---	55.3	55.1	55.1	52.1	1022.2	0.00	0.00	0
11/03/09	7:45p	55.4	55.4	55.3	82	50.0	0.0	---	0.00	0.0	---	55.4	55.2	55.2	52.1	1022.3	0.00	0.00	0
11/03/09	8:00p	55.4	55.4	55.3	85	51.0	0.0	---	0.00	0.0	---	55.4	55.3	55.3	52.3	1022.4	0.00	0.00	0
11/03/09	8:15p	55.2	55.4	55.2	82	49.8	0.0	---	0.00	0.0	---	55.2	55.0	55.0	51.9	1022.6	0.00	0.00	0
11/03/09	8:30p	54.8	55.2	54.8	83	49.7	0.0	---	0.00	0.0	---	54.8	54.6	54.6	51.5	1022.7	0.00	0.00	0
11/03/09	8:45p	54.5	54.8	54.5	84	49.8	0.0	---	0.00	0.0	---	54.5	54.4	54.4	51.3	1022.9	0.00	0.00	0
11/03/09	9:00p	54.0	54.5	54.0	84	49.3	0.0	---	0.00	0.0	---	54.0	53.9	53.9	50.8	1023.1	0.00	0.00	0
11/03/09	9:15p	53.6	54.0	53.6	86	49.5	0.0	---	0.00	0.0	---	53.6	53.5	53.5	50.4	1023.3	0.00	0.00	0
11/03/09	9:30p	53.4	53.6	53.4	86	49.3	0.0	---	0.00	0.0	---	53.4	53.3	53.3	50.2	1023.4	0.00	0.00	0
11/03/09	9:45p	53.3	53.4	53.3	87	49.5	0.0	---	0.00	0.0	---	53.3	53.3	53.3	50.2	1023.5	0.00	0.00	0
11/03/09	10:00p	53.0	53.3	52.9	87	49.2	0.0	---	0.00	0.0	---	53.0	53.0	53.0	49.9	1023.7	0.00	0.00	0
11/03/09	10:15p	52.7	52.9	52.7	87	48.9	0.0	---	0.00	0.0	---	52.7	52.7	52.7	49.6	1023.8	0.00	0.00	0
11/03/09	10:30p	52.6	52.7	52.6	88	49.1	0.0	---	0.00	0.0	---	52.6	52.7	52.7	49.6	1024.0	0.00	0.00	0
11/03/09	10:45p	53.2	53.2	52.6	90	50.3	0.0	---	0.00	0.0	---	53.2	53.3	53.3	50.3	1024.6	0.00	0.00	0
11/03/09	11:00p	55.5	55.5	53.2	87	51.7	0.0	---	0.00	0.0	---	55.5	55.5	55.5	52.5	1024.7	0.00	0.00	0
11/03/09	11:15p	56.5	56.5	55.6	85	52.0	0.0	---	0.00	0.0	---	56.5	56.4	56.4	53.5	1025.0	0.00	0.00	0
11/03/09	11:30p	57.3	57.3	56.5	86	53.1	0.0	---	0.00	0.0	---	57.3	57.2	57.2	54.3	1025.2	0.00	0.00	0
11/03/09	11:45p	59.1	59.1	57.3	55	42.9	0.0	---	0.00	0.0	---	59.1	57.5	57.5	54.1	1025.3	0.00	0.00	0
11/04/09	12:00a	59.4	59.4	59.1	53	42.3	0.0	---	0.00	0.0	---	59.4	57.6	57.6	54.2	1025.5	0.00	0.00	0

JEB LC-FS Site 11a 11/04/09

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	THSW Index	Bar	Rain	Rain Rate	Solar Rad.
11/04/09	12:15a	59.1	59.4	59.1	51	41.0	0.0	---	0.00	0.0	---	59.1	57.2	57.2	53.7	1025.6	0.00	0.00	0
11/04/09	12:30a	58.9	59.2	58.9	51	40.8	0.0	---	0.00	0.0	---	58.9	57.0	57.0	53.5	1025.6	0.00	0.00	0
11/04/09	12:45a	58.9	59.0	58.9	55	42.8	0.0	---	0.00	0.0	---	58.9	57.3	57.3	53.9	1025.5	0.00	0.00	0
11/04/09	1:00a	58.6	58.9	58.6	56	42.9	0.0	---	0.00	0.0	---	58.6	57.1	57.1	53.7	1025.6	0.00	0.00	0
11/04/09	1:15a	58.2	58.6	58.2	58	43.5	0.0	---	0.00	0.0	---	58.2	56.8	56.8	53.4	1025.9	0.00	0.00	0
11/04/09	1:30a	57.6	58.2	57.6	55	41.5	0.0	---	0.00	0.0	---	57.6	56.0	56.0	52.5	1026.0	0.00	0.00	0
11/04/09	1:45a	57.3	57.6	57.3	53	40.3	0.0	---	0.00	0.0	---	57.3	55.6	55.6	52.1	1026.1	0.00	0.00	0
11/04/09	2:00a	56.9	57.3	56.9	52	39.4	0.0	---	0.00	0.0	---	56.9	55.1	55.1	51.6	1026.3	0.00	0.00	0
11/04/09	2:15a	56.7	56.9	56.7	53	39.7	0.0	---	0.00	0.0	---	56.7	55.0	55.0	51.5	1026.2	0.00	0.00	0
11/04/09	2:30a	56.4	56.7	56.4	54	40.0	0.0	---	0.00	0.0	---	56.4	54.7	54.7	51.2	1026.3	0.00	0.00	0
11/04/09	2:45a	55.8	56.3	55.8	54	39.4	0.0	---	0.00	0.0	---	55.8	54.2	54.2	50.7	1026.3	0.00	0.00	0
11/04/09	3:00a	55.4	55.8	55.4	53	38.5	0.0	---	0.00	0.0	---	55.4	53.7	53.7	50.1	1026.5	0.00	0.00	0
11/04/09	3:15a	55.0	55.4	55.0	53	38.2	0.0	---	0.00	0.0	---	55.0	53.4	53.4	49.8	1026.6	0.00	0.00	0
11/04/09	3:30a	54.8	55.0	54.8	52	37.5	0.0	---	0.00	0.0	---	54.8	53.1	53.1	49.5	1026.6	0.00	0.00	0
11/04/09	3:45a	54.3	54.8	54.3	52	37.0	0.0	---	0.00	0.0	---	54.3	52.7	52.7	49.1	1026.8	0.00	0.00	0
11/04/09	4:00a	54.1	54.3	54.1	52	36.9	0.0	---	0.00	0.0	---	54.1	52.5	52.5	48.8	1027.0	0.00	0.00	0
11/04/09	4:15a	53.7	54.1	53.7	54	37.4	0.0	---	0.00	0.0	---	53.7	52.2	52.2	48.6	1027.1	0.00	0.00	0
11/04/09	4:30a	53.4	53.7	53.4	55	37.6	0.0	---	0.00	0.0	---	53.4	52.0	52.0	48.4	1027.3	0.00	0.00	0
11/04/09	4:45a	53.2	53.4	53.2	56	37.9	0.0	---	0.00	0.0	---	53.2	51.9	51.9	48.3	1027.4	0.00	0.00	0
11/04/09	5:00a	53.0	53.2	53.0	56	37.7	0.0	---	0.00	0.0	---	53.0	51.7	51.7	48.1	1027.6	0.00	0.00	0
11/04/09	5:15a	52.9	53.0	52.8	55	37.2	0.0	---	0.00	0.0	---	52.9	51.5	51.5	47.9	1027.5	0.00	0.00	0
11/04/09	5:30a	52.8	52.9	52.8	56	37.5	0.0	---	0.00	0.0	---	52.8	51.5	51.5	47.9	1028.1	0.00	0.00	0
11/04/09	5:45a	52.4	52.8	52.4	56	37.2	0.0	---	0.00	0.0	---	52.4	51.2	51.2	47.6	1028.0	0.00	0.00	0
11/04/09	6:00a	52.1	52.4	52.1	55	36.4	0.0	---	0.00	0.0	---	52.1	50.9	50.9	47.2	1028.0	0.00	0.00	0
11/04/09	6:15a	51.7	52.1	51.7	52	34.6	0.0	---	0.00	0.0	---	51.7	50.4	50.4	46.7	1028.0	0.00	0.00	0
11/04/09	6:30a	51.5	51.7	51.5	50	33.5	0.0	---	0.00	0.0	---	51.5	50.1	50.1	46.3	1028.3	0.00	0.00	1
11/04/09	6:45a	51.3	51.5	51.3	52	34.3	0.0	---	0.00	0.0	---	51.3	50.0	50.0	46.5	1028.3	0.00	0.00	10
11/04/09	7:00a	51.1	51.3	51.1	55	35.5	0.0	---	0.00	0.0	---	51.1	50.0	50.0	46.7	1028.4	0.00	0.00	20
11/04/09	7:15a	51.1	51.1	51.0	54	35.0	0.0	---	0.00	0.0	---	51.1	49.9	49.9	46.8	1028.5	0.00	0.00	30
11/04/09	7:30a	51.5	51.5	51.0	57	36.8	0.0	---	0.00	0.0	---	51.5	50.4	50.4	48.6	1028.8	0.00	0.00	87
11/04/09	7:45a	51.9	51.9	51.5	57	37.1	0.0	---	0.00	0.0	---	51.9	50.8	50.8	53.0	1028.7	0.00	0.00	118
11/04/09	8:00a	52.4	52.4	51.9	58	38.0	0.0	---	0.00	0.0	---	52.4	51.3	51.3	55.2	1028.9	0.00	0.00	179
11/04/09	8:15a	52.8	52.8	52.4	58	38.4	0.0	---	0.00	0.0	---	52.8	51.6	51.6	57.1	1029.0	0.00	0.00	214
11/04/09	8:30a	53.3	53.4	52.7	60	39.8	0.0	---	0.00	0.0	---	53.3	52.2	52.2	59.6	1029.1	0.00	0.00	294
11/04/09	8:45a	53.9	53.9	53.3	59	39.9	0.0	---	0.00	0.0	---	53.9	52.7	52.7	60.3	1029.1	0.00	0.00	326
11/04/09	9:00a	54.7	54.7	53.9	56	39.3	0.0	---	0.00	0.0	---	54.7	53.3	53.3	60.9	1029.2	0.00	0.00	303
11/04/09	9:15a	53.9	54.7	53.9	61	40.8	0.0	---	0.00	0.0	---	53.9	52.8	52.8	57.3	1029.3	0.00	0.00	198
11/04/09	9:30a	53.8	53.9	53.7	60	40.2	0.0	---	0.00	0.0	---	53.8	52.6	52.6	57.3	1029.4	0.00	0.00	214
11/04/09	9:45a	55.2	55.2	53.7	59	41.1	0.0	---	0.00	0.0	---	55.2	53.9	53.9	63.4	1029.4	0.00	0.00	468
11/04/09	10:00a	55.1	55.3	54.9	61	41.9	0.0	---	0.00	0.0	---	55.1	53.9	53.9	63.6	1029.5	0.00	0.00	493
11/04/09	10:15a	55.7	55.7	55.1	62	42.9	1.0	NE	0.25	8.0	NE	55.7	54.5	54.5	64.4	1029.3	0.00	0.00	531
11/04/09	10:30a	55.7	56.0	55.7	61	42.5	2.0	ENE	0.50	8.0	NNE	55.7	54.5	54.5	64.4	1029.1	0.00	0.00	563
11/04/09	10:45a	55.6	55.8	55.6	63	43.2	3.0	NE	0.75	7.0	NE	55.6	54.5	54.5	64.6	1028.9	0.00	0.00	582
11/04/09	11:00a	55.6	55.6	55.4	63	43.2	3.0	ENE	0.75	8.0	NNE	55.6	54.5	54.5	64.7	1028.7	0.00	0.00	599
11/04/09	11:15a	56.0	56.0	55.5	64	44.0	3.0	NE	0.75	8.0	NNE	56.0	54.9	54.9	65.1	1028.6	0.00	0.00	613
11/04/09	11:30a	56.4	56.4	56.0	64	44.4	3.0	NE	0.75	8.0	NNE	56.4	55.3	55.3	65.6	1028.1	0.00	0.00	625
11/04/09	11:45a	56.5	56.6	56.2	66	45.3	3.0	ENE	0.75	10.0	NNE	56.5	55.5	55.5	65.8	1027.9	0.00	0.00	637
11/04/09	12:00p	56.6	56.7	56.6	66	45.4	3.0	ENE	0.75	10.0	NNE	56.6	55.6	55.6	66.0	1027.7	0.00	0.00	640
11/04/09	12:15p	56.6	56.7	56.5	66	45.4	3.0	ESE	0.75	6.0	ESE	56.6	55.6	55.6	65.9	1027.6	0.00	0.00	598
11/04/09	12:30p	57.3	57.3	56.6	65	45.6	3.0	NE	0.75	8.0	NNE	57.3	56.3	56.3	66.5	1027.4	0.00	0.00	657
11/04/09	12:45p	57.5	57.5	57.2	66	46.2	3.0	NNE	0.75	8.0	NNE	57.5	56.5	56.5	66.7	1027.3	0.00	0.00	657
11/04/09	1:00p	57.5	57.7	57.4	67	46.6	3.0	ENE	0.75	9.0	NE	57.5	56.6	56.6	67.0	1027.1	0.00	0.00	609
11/04/09	1:15p	57.4	57.5	57.3	67	46.5	3.0	NE	0.75	8.0	NNE	57.4	56.5	56.5	66.9	1026.7	0.00	0.00	592

JEB LC-FS Site 11a 11/04/09

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	THSW Index	Bar	Rain	Rain Rate	Solar Rad.
11/04/09	1:30p	57.9	57.9	57.5	67	47.0	3.0	NE	0.75	8.0	NE	57.9	57.0	57.0	67.4	1026.8	0.00	0.00	576
11/04/09	1:45p	57.8	58.1	57.8	67	46.9	4.0	NE	1.00	9.0	NE	57.8	56.9	56.9	67.1	1026.5	0.00	0.00	550
11/04/09	2:00p	58.2	58.2	57.8	65	46.5	4.0	ENE	1.00	9.0	NNE	58.2	57.2	57.2	67.3	1026.1	0.00	0.00	523
11/04/09	2:15p	58.2	58.2	58.0	67	47.3	4.0	ENE	1.00	7.0	ENE	58.2	57.3	57.3	67.2	1025.7	0.00	0.00	488
11/04/09	2:30p	58.9	58.9	58.2	63	46.3	3.0	NE	0.75	8.0	ENE	58.9	57.8	57.8	67.3	1025.4	0.00	0.00	450
11/04/09	2:45p	59.7	59.7	58.9	58	44.9	4.0	ENE	1.00	7.0	NNE	59.7	58.3	58.3	67.4	1025.1	0.00	0.00	413
11/04/09	3:00p	59.8	59.9	59.7	57	44.5	4.0	ENE	1.00	8.0	ENE	59.8	58.3	58.3	66.9	1025.0	0.00	0.00	372
11/04/09	3:15p	59.3	59.8	59.3	59	45.0	4.0	ENE	1.00	8.0	E	59.3	57.9	57.9	65.4	1024.9	0.00	0.00	306
11/04/09	3:30p	59.7	59.8	59.3	59	45.3	3.0	E	0.75	7.0	E	59.7	58.3	58.3	64.1	1024.9	0.00	0.00	226
11/04/09	3:45p	59.2	59.7	59.2	60	45.3	4.0	ENE	1.00	9.0	ENE	59.2	57.9	57.9	62.6	1024.9	0.00	0.00	184
11/04/09	4:00p	59.5	59.5	59.1	60	45.6	3.0	E	0.75	7.0	SE	59.5	58.2	58.2	62.9	1024.8	0.00	0.00	177
11/04/09	4:15p	59.6	59.6	59.4	60	45.7	1.0	E	0.25	7.0	ESE	59.6	58.3	58.3	61.2	1024.9	0.00	0.00	119
11/04/09	4:30p	59.0	59.6	59.0	61	45.6	2.0	SE	0.50	7.0	SE	59.0	57.8	57.8	58.8	1024.6	0.00	0.00	67
11/04/09	4:45p	58.1	59.0	58.1	63	45.6	2.0	SE	0.50	7.0	SSE	58.1	57.0	57.0	56.0	1024.4	0.00	0.00	23
11/04/09	5:00p	57.2	58.1	57.2	65	45.5	2.0	SE	0.50	7.0	SE	57.2	56.2	56.2	53.9	1024.6	0.00	0.00	12
11/04/09	5:15p	56.6	57.2	56.6	66	45.4	1.0	SE	0.25	8.0	SE	56.6	55.6	55.6	53.0	1024.5	0.00	0.00	1
11/04/09	5:30p	56.3	56.7	56.3	66	45.1	1.0	SE	0.25	7.0	SE	56.3	55.3	55.3	52.7	1024.6	0.00	0.00	0
11/04/09	5:45p	56.0	56.3	56.0	67	45.2	1.0	SSE	0.25	5.0	SE	56.0	55.1	55.1	52.5	1024.5	0.00	0.00	0
11/04/09	6:00p	55.8	56.0	55.8	67	45.0	1.0	SE	0.25	7.0	ESE	55.8	54.9	54.9	52.3	1024.4	0.00	0.00	0
11/04/09	6:15p	55.5	55.8	55.5	69	45.5	0.0	ESE	0.00	2.0	SE	55.5	54.7	54.7	52.1	1024.5	0.00	0.00	0
11/04/09	6:30p	55.5	55.5	55.5	69	45.5	1.0	SE	0.25	6.0	SE	55.5	54.7	54.7	52.1	1024.3	0.00	0.00	0
11/04/09	6:45p	55.6	55.6	55.5	69	45.6	1.0	SE	0.25	5.0	SE	55.6	54.8	54.8	52.2	1024.5	0.00	0.00	0
11/04/09	7:00p	55.7	55.7	55.6	69	45.7	1.0	SE	0.25	4.0	SSE	55.7	54.9	54.9	52.3	1024.3	0.00	0.00	0
11/04/09	7:15p	55.7	55.7	55.7	69	45.7	1.0	SE	0.25	2.0	SE	55.7	54.9	54.9	52.3	1024.5	0.00	0.00	0
11/04/09	7:30p	55.7	55.7	55.7	69	45.7	0.0	SE	0.00	3.0	SE	55.7	54.9	54.9	52.3	1024.5	0.00	0.00	0
11/04/09	7:45p	55.7	55.7	55.7	69	45.7	0.0	SE	0.00	1.0	SE	55.7	54.9	54.9	52.3	1024.6	0.00	0.00	0
11/04/09	8:00p	55.8	55.8	55.7	71	46.5	0.0	---	0.00	0.0	---	55.8	55.0	55.0	52.4	1024.6	0.00	0.00	0
11/04/09	8:15p	55.6	55.8	55.6	71	46.3	0.0	SE	0.00	1.0	SE	55.6	54.8	54.8	52.2	1024.7	0.00	0.00	0
11/04/09	8:30p	55.7	55.7	55.6	72	46.8	0.0	---	0.00	0.0	---	55.7	55.0	55.0	52.4	1024.7	0.00	0.00	0
11/04/09	8:45p	55.8	55.8	55.7	72	46.9	0.0	SE	0.00	1.0	SE	55.8	55.1	55.1	52.5	1024.6	0.00	0.00	0
11/04/09	9:00p	55.9	55.9	55.8	72	47.0	0.0	SE	0.00	1.0	SE	55.9	55.2	55.2	52.7	1024.6	0.00	0.00	0
11/04/09	9:15p	56.0	56.0	55.9	75	48.2	0.0	---	0.00	0.0	---	56.0	55.4	55.4	52.9	1024.3	0.00	0.00	0
11/04/09	9:30p	55.6	56.0	55.6	77	48.5	0.0	SE	0.00	1.0	SE	55.6	55.1	55.1	52.6	1024.3	0.00	0.00	0
11/04/09	9:45p	55.0	55.6	55.0	78	48.3	0.0	---	0.00	0.0	---	55.0	54.6	54.6	52.1	1024.3	0.00	0.00	0
11/04/09	10:00p	54.9	55.1	54.9	79	48.5	0.0	---	0.00	0.0	---	54.9	54.6	54.6	52.1	1024.1	0.00	0.00	0
11/04/09	10:15p	54.3	54.9	54.3	79	47.9	0.0	---	0.00	0.0	---	54.3	54.0	54.0	51.5	1024.1	0.00	0.00	0
11/04/09	10:30p	53.8	54.3	53.8	81	48.1	0.0	---	0.00	0.0	---	53.8	53.5	53.5	51.0	1023.8	0.00	0.00	0
11/04/09	10:45p	53.5	53.8	53.5	81	47.8	0.0	---	0.00	0.0	---	53.5	53.2	53.2	50.7	1023.6	0.00	0.00	0
11/04/09	11:00p	53.1	53.5	53.1	83	48.1	0.0	---	0.00	0.0	---	53.1	52.9	52.9	50.4	1023.7	0.00	0.00	0
11/04/09	11:15p	53.6	53.6	53.1	83	48.6	0.0	SE	0.00	1.0	SE	53.6	53.4	53.4	50.9	1023.9	0.00	0.00	0
11/04/09	11:30p	55.1	55.1	53.6	81	49.4	1.0	WSW	0.25	4.0	WSW	55.1	54.8	54.8	52.4	1023.9	0.00	0.00	0
11/04/09	11:45p	56.2	56.2	55.1	79	49.8	1.0	SW	0.25	5.0	W	56.2	55.8	55.8	53.4	1023.7	0.00	0.00	0
11/05/09	12:00a	56.2	56.4	56.2	78	49.4	0.0	WSW	0.00	4.0	WSW	56.2	55.8	55.8	53.4	1023.4	0.00	0.00	0

JEB LC-FS Site 11a 11/05/09

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	THSW Index	Bar	Rain	Rain Rate	Solar Rad.
11/05/09	12:15a	56.4	56.5	56.0	79	50.0	3.0	WNW	0.75	9.0	W	56.4	56.0	56.0	53.6	1023.9	0.00	0.00	0
11/05/09	12:30a	55.9	56.5	55.9	83	50.8	2.0	WNW	0.50	8.0	W	55.9	55.7	55.7	53.3	1023.6	0.00	0.00	0
11/05/09	12:45a	55.6	55.9	55.5	83	50.5	4.0	W	1.00	9.0	W	55.3	55.4	55.1	52.7	1024.0	0.00	0.00	0
11/05/09	1:00a	55.1	55.6	55.1	85	50.7	1.0	SW	0.25	5.0	WSW	55.1	55.0	55.0	52.6	1023.7	0.00	0.00	0
11/05/09	1:15a	54.6	55.1	54.6	86	50.5	1.0	SW	0.25	5.0	SW	54.6	54.5	54.5	52.1	1023.0	0.00	0.00	0
11/05/09	1:30a	54.4	54.6	54.4	88	50.9	0.0	SSW	0.00	2.0	SSW	54.4	54.4	54.4	52.0	1022.7	0.00	0.00	0
11/05/09	1:45a	54.1	54.4	54.1	88	50.6	0.0	SSW	0.00	5.0	SSW	54.1	54.1	54.1	51.7	1022.8	0.00	0.00	0
11/05/09	2:00a	53.9	54.1	53.9	88	50.4	0.0	SSW	0.00	1.0	SSW	53.9	53.9	53.9	51.5	1023.0	0.00	0.00	0
11/05/09	2:15a	53.8	53.9	53.7	88	50.3	0.0	---	0.00	0.0	---	53.8	53.8	53.8	51.4	1022.6	0.00	0.00	0
11/05/09	2:30a	53.6	53.7	53.6	89	50.4	0.0	---	0.00	0.0	---	53.6	53.7	53.7	51.3	1022.6	0.00	0.00	0
11/05/09	2:45a	53.6	53.7	53.6	90	50.7	0.0	SSW	0.00	1.0	SSW	53.6	53.7	53.7	51.3	1022.5	0.00	0.00	0
11/05/09	3:00a	53.3	53.6	53.3	90	50.4	0.0	SSW	0.00	1.0	SSW	53.3	53.4	53.4	51.0	1022.6	0.00	0.00	0
11/05/09	3:15a	53.2	53.3	53.1	90	50.3	0.0	---	0.00	0.0	---	53.2	53.3	53.3	50.9	1022.4	0.00	0.00	0
11/05/09	3:30a	53.1	53.1	53.0	90	50.2	0.0	---	0.00	0.0	---	53.1	53.2	53.2	50.8	1022.4	0.00	0.00	0
11/05/09	3:45a	53.1	53.1	53.0	90	50.2	0.0	SSW	0.00	1.0	SSW	53.1	53.2	53.2	50.8	1022.3	0.00	0.00	0
11/05/09	4:00a	52.9	53.1	52.9	90	50.0	0.0	SW	0.00	2.0	SW	52.9	53.0	53.0	50.6	1022.2	0.00	0.00	0
11/05/09	4:15a	52.4	52.9	52.4	90	49.6	0.0	---	0.00	0.0	---	52.4	52.6	52.6	50.2	1022.1	0.00	0.00	0
11/05/09	4:30a	52.2	52.4	52.2	90	49.4	0.0	SW	0.00	1.0	SW	52.2	52.4	52.4	50.0	1022.3	0.00	0.00	0
11/05/09	4:45a	52.8	52.8	52.2	90	49.9	0.0	SW	0.00	3.0	SW	52.8	52.9	52.9	50.5	1022.3	0.00	0.00	0
11/05/09	5:00a	53.0	53.0	52.8	89	49.8	0.0	SW	0.00	3.0	SW	53.0	53.1	53.1	50.7	1022.4	0.00	0.00	0
11/05/09	5:15a	53.1	53.1	53.0	88	49.6	0.0	SW	0.00	3.0	SW	53.1	53.1	53.1	50.7	1022.3	0.00	0.00	0
11/05/09	5:30a	52.4	53.1	52.4	87	48.6	0.0	SW	0.00	1.0	SW	52.4	52.4	52.4	49.9	1022.4	0.00	0.00	0
11/05/09	5:45a	51.5	52.4	51.5	88	48.1	0.0	---	0.00	0.0	---	51.5	51.6	51.6	49.1	1022.4	0.00	0.00	0
11/05/09	6:00a	51.6	51.6	51.5	89	48.5	0.0	SW	0.00	2.0	SW	51.6	51.8	51.8	49.3	1022.4	0.00	0.00	0
11/05/09	6:15a	52.2	52.2	51.5	90	49.4	0.0	SW	0.00	2.0	SW	52.2	52.4	52.4	50.0	1022.4	0.00	0.00	0
11/05/09	6:30a	53.7	53.7	52.2	89	50.5	2.0	W	0.50	7.0	WNW	53.7	53.8	53.8	51.4	1022.6	0.00	0.00	0
11/05/09	6:45a	54.2	54.2	53.7	87	50.4	4.0	W	1.00	8.0	W	53.7	54.2	53.7	51.5	1022.6	0.00	0.00	9
11/05/09	7:00a	54.2	54.2	54.2	87	50.4	5.0	W	1.25	9.0	W	53.1	54.2	53.1	51.2	1022.7	0.00	0.00	21
11/05/09	7:15a	54.1	54.2	54.0	86	50.0	3.0	W	0.75	8.0	W	54.1	54.0	54.0	52.4	1022.9	0.00	0.00	35
11/05/09	7:30a	54.0	54.1	53.9	85	49.6	3.0	W	0.75	7.0	W	54.0	53.9	53.9	53.4	1022.9	0.00	0.00	83
11/05/09	7:45a	54.3	54.3	54.0	85	49.9	3.0	WSW	0.75	8.0	SW	54.3	54.2	54.2	57.1	1023.0	0.00	0.00	132
11/05/09	8:00a	54.9	54.9	54.3	82	49.5	2.0	W	0.50	8.0	W	54.9	54.7	54.7	59.4	1023.0	0.00	0.00	185
11/05/09	8:15a	55.5	55.5	54.9	81	49.8	2.0	WSW	0.50	8.0	W	55.5	55.2	55.2	61.4	1022.9	0.00	0.00	231
11/05/09	8:30a	55.7	55.8	55.6	79	49.3	3.0	W	0.75	8.0	WSW	55.7	55.3	55.3	61.8	1023.0	0.00	0.00	228
11/05/09	8:45a	55.9	55.9	55.6	79	49.5	2.0	WSW	0.50	8.0	W	55.9	55.5	55.5	63.1	1023.0	0.00	0.00	280
11/05/09	9:00a	56.7	56.7	55.9	76	49.2	2.0	WNW	0.50	7.0	NNE	56.7	56.2	56.2	63.7	1023.0	0.00	0.00	281
11/05/09	9:15a	56.8	56.8	56.7	74	48.6	2.0	SW	0.50	9.0	SW	56.8	56.2	56.2	64.5	1023.0	0.00	0.00	327
11/05/09	9:30a	56.7	56.9	56.6	75	48.9	4.0	WSW	1.00	10.0	WSW	56.6	56.2	56.1	62.0	1023.0	0.00	0.00	241
11/05/09	9:45a	57.4	57.4	56.7	75	49.5	2.0	WNW	0.50	9.0	WSW	57.4	56.9	56.9	66.4	1022.9	0.00	0.00	424
11/05/09	10:00a	57.9	57.9	57.4	72	48.9	2.0	WSW	0.50	7.0	NNE	57.9	57.2	57.2	67.0	1023.0	0.00	0.00	463
11/05/09	10:15a	58.0	58.0	57.8	73	49.4	3.0	W	0.75	6.0	WSW	58.0	57.4	57.4	67.5	1023.1	0.00	0.00	497
11/05/09	10:30a	57.7	58.2	57.7	71	48.4	3.0	W	0.75	9.0	WNW	57.7	57.0	57.0	67.3	1023.2	0.00	0.00	536
11/05/09	10:45a	57.1	57.7	57.1	73	48.5	5.0	W	1.25	10.0	WNW	56.5	56.5	55.9	66.2	1023.0	0.00	0.00	570
11/05/09	11:00a	57.8	57.8	57.1	71	48.5	2.0	W	0.50	8.0	NNE	57.8	57.1	57.1	67.5	1023.0	0.00	0.00	592
11/05/09	11:15a	57.6	57.9	57.4	69	47.5	3.0	W	0.75	10.0	WSW	57.6	56.8	56.8	67.2	1022.9	0.00	0.00	608
11/05/09	11:30a	57.5	57.7	57.5	69	47.4	4.0	W	1.00	10.0	W	57.5	56.7	56.7	67.1	1022.5	0.00	0.00	620
11/05/09	11:45a	57.5	57.8	57.4	69	47.4	4.0	W	1.00	10.0	W	57.5	56.7	56.7	67.1	1022.4	0.00	0.00	630
11/05/09	12:00p	57.5	57.5	57.2	66	46.2	5.0	W	1.25	11.0	W	57.0	56.5	56.0	66.4	1022.3	0.00	0.00	632
11/05/09	12:15p	57.7	57.7	57.5	66	46.4	4.0	W	1.00	9.0	W	57.7	56.7	56.7	67.1	1022.0	0.00	0.00	629
11/05/09	12:30p	57.9	57.9	57.6	66	46.6	3.0	NE	0.75	7.0	E	57.9	56.9	56.9	67.4	1021.8	0.00	0.00	622
11/05/09	12:45p	58.4	58.4	57.9	62	45.4	3.0	NE	0.75	8.0	NE	58.4	57.2	57.2	67.6	1021.8	0.00	0.00	610
11/05/09	1:00p	58.4	58.5	58.4	63	45.8	3.0	NE	0.75	8.0	NE	58.4	57.3	57.3	67.6	1021.7	0.00	0.00	595
11/05/09	1:15p	58.6	58.6	58.4	62	45.6	2.0	NE	0.50	7.0	NNE	58.6	57.4	57.4	67.7	1021.6	0.00	0.00	579

JEB LC-FS Site 11a 11/05/09

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	THSW Index	Bar	Rain	Rain Rate	Solar Rad.
11/05/09	1:30p	59.1	59.1	58.7	59	44.8	2.0	NE	0.50	6.0	WSW	59.1	57.7	57.7	67.9	1021.5	0.00	0.00	560
11/05/09	1:45p	59.3	59.5	59.1	58	44.5	2.0	ENE	0.50	7.0	NNE	59.3	57.9	57.9	67.9	1021.2	0.00	0.00	535
11/05/09	2:00p	59.2	59.3	59.1	58	44.4	2.0	NE	0.50	6.0	NNE	59.2	57.8	57.8	67.7	1021.1	0.00	0.00	510
11/05/09	2:15p	59.5	59.5	59.2	57	44.2	2.0	N	0.50	6.0	W	59.5	58.0	58.0	67.7	1021.2	0.00	0.00	478
11/05/09	2:30p	59.8	59.8	59.4	60	45.9	2.0	WNW	0.50	5.0	NE	59.8	58.5	58.5	67.9	1021.3	0.00	0.00	442
11/05/09	2:45p	59.9	59.9	59.8	58	45.1	1.0	NNE	0.25	5.0	ESE	59.9	58.5	58.5	67.5	1021.1	0.00	0.00	401
11/05/09	3:00p	59.6	60.0	59.6	57	44.3	2.0	NE	0.50	6.0	NNE	59.6	58.1	58.1	66.4	1020.9	0.00	0.00	356
11/05/09	3:15p	59.2	59.6	59.2	56	43.5	2.0	NE	0.50	7.0	NNE	59.2	57.7	57.7	65.4	1020.8	0.00	0.00	317
11/05/09	3:30p	59.4	59.4	59.1	56	43.7	2.0	NE	0.50	6.0	NE	59.4	57.9	57.9	64.8	1020.8	0.00	0.00	269
11/05/09	3:45p	59.2	59.7	59.2	55	43.0	3.0	NE	0.75	6.0	NNE	59.2	57.6	57.6	63.3	1020.7	0.00	0.00	218
11/05/09	4:00p	59.4	59.4	59.1	55	43.2	1.0	NE	0.25	4.0	NE	59.4	57.8	57.8	61.9	1020.7	0.00	0.00	162
11/05/09	4:15p	58.9	59.4	58.9	56	43.2	1.0	NE	0.25	4.0	NE	58.9	57.4	57.4	59.9	1020.7	0.00	0.00	109
11/05/09	4:30p	59.0	59.0	58.9	57	43.8	0.0	NE	0.00	1.0	NE	59.0	57.5	57.5	58.2	1020.8	0.00	0.00	62
11/05/09	4:45p	58.5	59.0	58.5	56	42.8	0.0	NE	0.00	1.0	NE	58.5	57.0	57.0	56.4	1020.8	0.00	0.00	31
11/05/09	5:00p	57.3	58.5	57.3	63	44.8	0.0	---	0.00	0.0	---	57.3	56.2	56.2	53.8	1020.8	0.00	0.00	13
11/05/09	5:15p	56.2	57.2	56.2	67	45.4	0.0	NE	0.00	1.0	NE	56.2	55.3	55.3	52.7	1021.0	0.00	0.00	2
11/05/09	5:30p	55.1	56.2	55.1	68	44.7	0.0	---	0.00	0.0	---	55.1	54.2	54.2	51.5	1020.9	0.00	0.00	0
11/05/09	5:45p	54.2	55.1	54.2	70	44.6	0.0	NE	0.00	1.0	NE	54.2	53.5	53.5	50.8	1020.9	0.00	0.00	0
11/05/09	6:00p	53.5	54.2	53.5	72	44.7	0.0	NE	0.00	1.0	NE	53.5	52.9	52.9	50.2	1020.9	0.00	0.00	0
11/05/09	6:15p	52.7	53.5	52.6	73	44.3	0.0	NE	0.00	1.0	NE	52.7	52.2	52.2	49.5	1021.1	0.00	0.00	0
11/05/09	6:30p	53.5	53.5	52.6	71	44.3	1.0	NW	0.25	5.0	NNW	53.5	52.8	52.8	50.1	1021.1	0.00	0.00	0
11/05/09	6:45p	53.1	53.5	53.1	72	44.3	0.0	NW	0.00	1.0	NW	53.1	52.5	52.5	49.8	1021.2	0.00	0.00	0
11/05/09	7:00p	52.6	53.1	52.6	73	44.2	0.0	---	0.00	0.0	---	52.6	52.1	52.1	49.4	1021.3	0.00	0.00	0
11/05/09	7:15p	52.3	52.6	52.3	75	44.6	0.0	NW	0.00	1.0	NW	52.3	51.9	51.9	49.2	1021.3	0.00	0.00	0
11/05/09	7:30p	52.1	52.3	52.1	76	44.8	0.0	NW	0.00	1.0	NW	52.1	51.7	51.7	49.0	1021.4	0.00	0.00	0
11/05/09	7:45p	52.4	52.4	52.1	76	45.1	0.0	NW	0.00	1.0	NW	52.4	52.0	52.0	49.4	1021.4	0.00	0.00	0
11/05/09	8:00p	54.9	54.9	52.4	65	43.4	3.0	NW	0.75	11.0	WNW	54.9	53.9	53.9	51.2	1021.8	0.00	0.00	0
11/05/09	8:15p	57.6	57.6	54.9	55	41.5	11.0	WNW	2.75	21.0	W	53.6	56.0	52.0	49.6	1021.9	0.00	0.00	0
11/05/09	8:30p	57.3	57.6	57.3	61	44.0	12.0	W	3.00	22.0	W	52.7	56.1	51.5	49.3	1022.2	0.00	0.00	0
11/05/09	8:45p	57.3	57.3	57.2	58	42.6	10.0	W	2.50	21.0	W	53.8	55.9	52.4	50.0	1022.5	0.00	0.00	0
11/05/09	9:00p	57.1	57.3	57.1	55	41.1	10.0	W	2.50	27.0	W	53.6	55.5	52.0	49.5	1022.8	0.00	0.00	0
11/05/09	9:15p	56.9	57.1	56.9	50	38.4	10.0	W	2.50	22.0	WNW	53.4	55.0	51.5	48.9	1022.9	0.00	0.00	0
11/05/09	9:30p	56.7	56.9	56.7	46	36.1	10.0	W	2.50	21.0	WNW	53.1	54.6	51.0	48.4	1022.9	0.00	0.00	0
11/05/09	9:45p	56.6	56.8	56.6	47	36.6	9.0	W	2.25	16.0	SW	53.7	54.5	51.6	49.0	1022.9	0.00	0.00	0
11/05/09	10:00p	56.3	56.6	56.3	48	36.8	9.0	W	2.25	19.0	WNW	53.3	54.3	51.3	48.7	1023.1	0.00	0.00	0
11/05/09	10:15p	56.0	56.3	56.0	51	38.1	10.0	W	2.50	19.0	W	52.3	54.2	50.5	47.9	1023.2	0.00	0.00	0
11/05/09	10:30p	55.6	56.0	55.6	50	37.2	9.0	W	2.25	18.0	W	52.5	53.7	50.6	48.0	1023.2	0.00	0.00	0
11/05/09	10:45p	55.3	55.6	55.2	49	36.5	8.0	W	2.00	16.0	WNW	52.9	53.4	51.0	48.3	1023.3	0.00	0.00	0
11/05/09	11:00p	55.4	55.4	55.2	48	36.0	8.0	W	2.00	15.0	WNW	53.0	53.4	51.0	48.3	1023.3	0.00	0.00	0
11/05/09	11:15p	55.4	55.5	55.3	47	35.5	9.0	W	2.25	19.0	WNW	52.3	53.4	50.3	47.6	1023.3	0.00	0.00	0
11/05/09	11:30p	55.1	55.4	55.1	50	36.8	8.0	W	2.00	13.0	WSW	52.6	53.3	50.8	48.1	1023.4	0.00	0.00	0
11/05/09	11:45p	54.8	55.1	54.8	50	36.5	8.0	W	2.00	13.0	WNW	52.3	53.0	50.5	47.8	1023.4	0.00	0.00	0
11/06/09	12:00a	54.4	54.8	54.4	51	36.6	8.0	W	2.00	18.0	WNW	51.8	52.7	50.1	47.3	1023.5	0.00	0.00	0

JEB LC-FS Site 11a 11/06/09

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	THSW Index	Bar	Rain	Rain Rate	Solar Rad.
11/06/09	12:15a	54.2	54.4	54.2	50	35.9	8.0	W	2.00	16.0	WNW	51.5	52.5	49.8	47.0	1023.6	0.00	0.00	0
11/06/09	12:30a	54.1	54.2	54.1	48	34.8	7.0	W	1.75	15.0	W	52.1	52.3	50.3	47.3	1023.6	0.00	0.00	0
11/06/09	12:45a	53.9	54.1	53.9	48	34.6	7.0	W	1.75	12.0	WNW	51.9	52.1	50.1	47.1	1023.8	0.00	0.00	0
11/06/09	1:00a	53.8	53.9	53.8	49	35.1	7.0	W	1.75	14.0	W	51.8	52.1	50.1	47.1	1023.9	0.00	0.00	0
11/06/09	1:15a	53.5	53.8	53.5	49	34.8	7.0	W	1.75	15.0	W	51.4	51.8	49.7	46.7	1024.0	0.00	0.00	0
11/06/09	1:30a	53.2	53.5	53.2	50	35.0	7.0	W	1.75	11.0	W	51.0	51.6	49.4	46.4	1024.1	0.00	0.00	0
11/06/09	1:45a	53.2	53.3	53.2	50	35.0	8.0	W	2.00	15.0	W	50.3	51.6	48.7	45.9	1024.0	0.00	0.00	0
11/06/09	2:00a	53.2	53.2	53.1	49	34.5	8.0	W	2.00	18.0	W	50.3	51.5	48.6	45.8	1024.1	0.00	0.00	0
11/06/09	2:15a	53.2	53.2	53.1	53	36.5	9.0	W	2.25	25.0	WNW	49.6	51.7	48.1	45.5	1024.4	0.00	0.00	0
11/06/09	2:30a	52.8	53.2	52.7	55	37.1	7.0	W	1.75	15.0	WNW	50.6	51.4	49.2	46.3	1024.5	0.00	0.00	0
11/06/09	2:45a	52.5	52.8	52.5	56	37.2	7.0	W	1.75	15.0	W	50.2	51.2	48.9	46.0	1024.5	0.00	0.00	0
11/06/09	3:00a	52.2	52.5	52.2	56	37.0	7.0	W	1.75	16.0	WNW	49.8	51.0	48.6	45.7	1024.6	0.00	0.00	0
11/06/09	3:15a	52.3	52.3	52.2	55	36.6	9.0	W	2.25	19.0	SW	48.6	51.0	47.3	44.7	1024.7	0.00	0.00	0
11/06/09	3:30a	52.0	52.3	52.0	56	36.8	8.0	WSW	2.00	20.0	WNW	48.9	50.8	47.7	44.9	1024.8	0.00	0.00	0
11/06/09	3:45a	52.0	52.0	51.9	59	38.1	6.0	W	1.50	15.0	WNW	50.0	51.0	49.0	46.1	1025.0	0.00	0.00	0
11/06/09	4:00a	51.8	52.0	51.8	60	38.3	8.0	W	2.00	18.0	W	48.7	50.8	47.7	45.0	1025.1	0.00	0.00	0
11/06/09	4:15a	51.5	51.8	51.5	60	38.1	8.0	WNW	2.00	19.0	W	48.3	50.5	47.3	44.6	1025.2	0.00	0.00	0
11/06/09	4:30a	51.4	51.5	51.3	58	37.1	7.0	W	1.75	13.0	W	48.9	50.4	47.9	45.0	1025.4	0.00	0.00	0
11/06/09	4:45a	51.3	51.4	51.2	57	36.6	7.0	W	1.75	13.0	NNW	48.8	50.2	47.7	44.8	1025.6	0.00	0.00	0
11/06/09	5:00a	51.4	51.4	51.3	55	35.8	8.0	W	2.00	14.0	W	48.2	50.3	47.1	44.3	1025.8	0.00	0.00	0
11/06/09	5:15a	51.3	51.4	51.3	52	34.3	8.0	W	2.00	18.0	W	48.1	50.0	46.8	44.0	1025.7	0.00	0.00	0
11/06/09	5:30a	51.2	51.4	51.2	49	32.7	7.0	W	1.75	15.0	W	48.6	49.8	47.2	44.1	1025.9	0.00	0.00	0
11/06/09	5:45a	50.9	51.2	50.9	52	33.9	8.0	W	2.00	20.0	W	47.6	49.7	46.4	43.6	1026.1	0.00	0.00	0
11/06/09	6:00a	50.7	50.9	50.7	52	33.7	7.0	W	1.75	19.0	NW	48.0	49.5	46.8	43.8	1026.4	0.00	0.00	0
11/06/09	6:15a	50.4	50.7	50.4	52	33.4	6.0	WSW	1.50	18.0	SW	48.2	49.2	47.0	44.0	1026.8	0.00	0.00	0
11/06/09	6:30a	50.0	50.4	50.0	52	33.1	7.0	W	1.75	16.0	E	47.2	48.9	46.1	43.1	1026.9	0.00	0.00	0
11/06/09	6:45a	49.7	50.0	49.7	51	32.3	8.0	WSW	2.00	22.0	SW	46.1	48.5	44.9	42.1	1027.1	0.00	0.00	9
11/06/09	7:00a	49.6	49.7	49.5	51	32.2	7.0	WSW	1.75	19.0	WNW	46.7	48.4	45.5	42.9	1027.2	0.00	0.00	19
11/06/09	7:15a	49.6	49.6	49.5	50	31.7	7.0	W	1.75	16.0	W	46.7	48.4	45.5	43.1	1027.3	0.00	0.00	29
11/06/09	7:30a	49.6	49.6	49.4	51	32.2	8.0	W	2.00	22.0	WNW	46.0	48.4	44.8	43.6	1027.6	0.00	0.00	73
11/06/09	7:45a	49.7	49.7	49.5	53	33.2	9.0	W	2.25	20.0	W	45.5	48.6	44.4	46.9	1027.7	0.00	0.00	142
11/06/09	8:00a	50.0	50.0	49.7	53	33.5	8.0	W	2.00	19.0	SW	46.5	48.9	45.4	49.4	1027.8	0.00	0.00	188
11/06/09	8:15a	49.9	50.0	49.9	55	34.4	8.0	W	2.00	22.0	WSW	46.4	48.9	45.4	50.6	1027.9	0.00	0.00	232
11/06/09	8:30a	50.0	50.1	49.9	55	34.5	7.0	W	1.75	21.0	WNW	47.2	49.0	46.2	52.8	1027.9	0.00	0.00	278
11/06/09	8:45a	50.3	50.3	50.0	55	34.7	7.0	W	1.75	16.0	NNE	47.6	49.3	46.6	53.9	1028.0	0.00	0.00	321
11/06/09	9:00a	49.9	50.3	49.9	56	34.8	9.0	W	2.25	21.0	W	45.8	48.9	44.8	51.9	1028.0	0.00	0.00	336
11/06/09	9:15a	50.2	50.3	49.9	55	34.6	6.0	W	1.50	18.0	SSW	47.9	49.2	46.9	55.4	1027.9	0.00	0.00	374
11/06/09	9:30a	50.3	50.3	50.0	57	35.6	7.0	W	1.75	19.0	W	47.6	49.3	46.6	53.1	1027.9	0.00	0.00	288
11/06/09	9:45a	50.4	50.4	50.2	56	35.3	7.0	W	1.75	19.0	W	47.7	49.4	46.7	55.4	1027.9	0.00	0.00	474
11/06/09	10:00a	50.5	50.5	50.2	58	36.3	7.0	W	1.75	18.0	WNW	47.8	49.6	46.9	56.0	1028.1	0.00	0.00	515
11/06/09	10:15a	50.7	50.9	50.5	56	35.6	7.0	W	1.75	15.0	W	48.0	49.7	47.0	56.0	1028.2	0.00	0.00	542
11/06/09	10:30a	51.0	51.0	50.6	56	35.8	8.0	W	2.00	19.0	W	47.7	49.9	46.6	55.3	1028.2	0.00	0.00	569
11/06/09	10:45a	51.0	51.2	51.0	55	35.4	8.0	W	2.00	20.0	WNW	47.7	49.9	46.6	55.3	1028.2	0.00	0.00	593
11/06/09	11:00a	51.4	51.4	51.0	54	35.3	8.0	W	2.00	19.0	SW	48.2	50.2	47.0	55.8	1028.2	0.00	0.00	608
11/06/09	11:15a	51.4	51.4	51.2	55	35.8	8.0	W	2.00	16.0	W	48.2	50.3	47.1	55.8	1028.0	0.00	0.00	627
11/06/09	11:30a	51.7	51.7	51.4	54	35.6	7.0	W	1.75	18.0	W	49.2	50.5	48.0	57.5	1027.9	0.00	0.00	633
11/06/09	11:45a	52.2	52.3	51.7	50	34.1	7.0	W	1.75	15.0	W	49.8	50.7	48.3	57.8	1027.6	0.00	0.00	643
11/06/09	12:00p	52.6	52.6	52.0	48	33.5	7.0	W	1.75	16.0	WNW	50.3	51.0	48.7	58.1	1027.5	0.00	0.00	649
11/06/09	12:15p	52.6	52.6	52.4	49	34.0	6.0	W	1.50	14.0	WNW	50.7	51.0	49.1	58.9	1027.4	0.00	0.00	643
11/06/09	12:30p	52.8	52.8	52.6	47	33.1	8.0	W	2.00	16.0	WNW	49.9	51.1	48.2	57.4	1027.3	0.00	0.00	639
11/06/09	12:45p	53.1	53.1	52.8	46	32.8	7.0	W	1.75	18.0	W	50.9	51.3	49.1	58.7	1027.2	0.00	0.00	631
11/06/09	1:00p	53.1	53.2	53.0	48	33.9	6.0	WSW	1.50	18.0	WSW	51.3	51.4	49.6	59.5	1027.1	0.00	0.00	619
11/06/09	1:15p	53.3	53.3	53.1	47	33.6	5.0	W	1.25	12.0	SW	52.1	51.5	50.3	60.2	1027.1	0.00	0.00	601

JEB LC-FS Site 11a 11/06/09

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	THSW Index	Bar	Rain	Rain Rate	Solar Rad.
11/06/09	1:30p	53.7	53.7	53.3	47	33.9	4.0	ENE	1.00	11.0	WSW	53.1	51.9	51.3	61.1	1027.2	0.00	0.00	581
11/06/09	1:45p	53.3	53.7	53.3	44	31.9	4.0	NE	1.00	11.0	NE	52.7	51.4	50.8	60.5	1027.1	0.00	0.00	558
11/06/09	2:00p	53.6	53.7	53.2	45	32.8	4.0	ENE	1.00	11.0	ENE	53.0	51.7	51.1	60.7	1027.2	0.00	0.00	531
11/06/09	2:15p	53.3	53.6	53.2	45	32.5	4.0	ENE	1.00	13.0	ENE	52.7	51.4	50.8	60.2	1027.1	0.00	0.00	499
11/06/09	2:30p	53.5	53.6	53.3	43	31.5	4.0	NE	1.00	11.0	WSW	52.9	51.5	50.9	60.1	1027.1	0.00	0.00	464
11/06/09	2:45p	53.3	53.5	53.3	43	31.4	4.0	NE	1.00	11.0	ENE	52.7	51.3	50.7	59.6	1027.1	0.00	0.00	426
11/06/09	3:00p	52.8	53.4	52.8	45	32.0	5.0	NE	1.25	12.0	NE	51.5	51.0	49.7	58.2	1027.1	0.00	0.00	386
11/06/09	3:15p	52.5	52.9	52.5	48	33.4	6.0	NE	1.50	13.0	NE	50.6	50.9	49.0	56.9	1027.3	0.00	0.00	342
11/06/09	3:30p	52.7	52.7	52.5	45	31.9	4.0	NE	1.00	10.0	NE	52.0	50.9	50.2	57.3	1027.3	0.00	0.00	296
11/06/09	3:45p	52.6	52.8	52.5	48	33.5	4.0	NE	1.00	10.0	NE	51.9	51.0	50.3	56.3	1027.3	0.00	0.00	239
11/06/09	4:00p	52.7	52.7	52.4	45	31.9	3.0	NE	0.75	8.0	NE	52.7	50.9	50.9	55.3	1027.5	0.00	0.00	180
11/06/09	4:15p	52.6	52.7	52.5	47	32.9	3.0	NE	0.75	9.0	NE	52.6	50.9	50.9	53.6	1027.5	0.00	0.00	124
11/06/09	4:30p	52.1	52.6	52.0	49	33.5	4.0	NE	1.00	8.0	NE	51.3	50.5	49.7	50.6	1027.5	0.00	0.00	73
11/06/09	4:45p	51.2	52.0	51.2	50	33.2	4.0	NE	1.00	8.0	NE	50.2	49.9	48.9	47.9	1027.6	0.00	0.00	29
11/06/09	5:00p	50.8	51.2	50.8	51	33.3	3.0	NE	0.75	9.0	NNE	50.6	49.6	49.4	46.7	1027.6	0.00	0.00	12
11/06/09	5:15p	50.5	50.8	50.5	51	33.0	3.0	NE	0.75	8.0	NNE	50.3	49.3	49.1	46.1	1027.8	0.00	0.00	3
11/06/09	5:30p	50.4	50.5	50.4	51	32.9	3.0	NE	0.75	10.0	NE	50.1	49.2	48.9	45.8	1027.9	0.00	0.00	0
11/06/09	5:45p	50.5	50.5	50.4	51	33.0	3.0	NE	0.75	8.0	NE	50.3	49.3	49.1	46.1	1028.0	0.00	0.00	0
11/06/09	6:00p	50.5	50.5	50.4	53	34.0	3.0	NE	0.75	8.0	NE	50.3	49.4	49.2	46.2	1028.2	0.00	0.00	0
11/06/09	6:15p	50.4	50.5	50.4	51	32.9	3.0	NE	0.75	9.0	E	50.1	49.2	48.9	45.8	1028.2	0.00	0.00	0
11/06/09	6:30p	50.5	50.5	50.4	51	33.0	3.0	NE	0.75	10.0	NNE	50.3	49.3	49.1	46.1	1028.3	0.00	0.00	0
11/06/09	6:45p	50.3	50.6	50.3	58	36.1	4.0	ENE	1.00	10.0	NE	49.2	49.4	48.3	45.4	1028.5	0.00	0.00	0
11/06/09	7:00p	49.7	50.3	49.7	59	35.9	3.0	ENE	0.75	8.0	NE	49.3	48.9	48.5	45.5	1028.7	0.00	0.00	0
11/06/09	7:15p	49.5	49.7	49.5	59	35.8	2.0	NE	0.50	5.0	ENE	49.5	48.7	48.7	45.7	1028.7	0.00	0.00	0
11/06/09	7:30p	49.3	49.5	49.3	61	36.4	1.0	E	0.25	5.0	ENE	49.3	48.5	48.5	45.6	1028.8	0.00	0.00	0
11/06/09	7:45p	49.2	49.3	49.1	61	36.3	2.0	NE	0.50	6.0	ENE	49.2	48.4	48.4	45.5	1028.7	0.00	0.00	0
11/06/09	8:00p	49.1	49.2	49.1	61	36.2	1.0	ENE	0.25	4.0	ENE	49.1	48.3	48.3	45.4	1028.7	0.00	0.00	0
11/06/09	8:15p	48.9	49.1	48.9	61	36.0	1.0	E	0.25	5.0	ESE	48.9	48.1	48.1	45.2	1028.8	0.00	0.00	0
11/06/09	8:30p	48.9	49.0	48.9	60	35.6	1.0	ESE	0.25	4.0	ESE	48.9	48.1	48.1	45.1	1028.8	0.00	0.00	0
11/06/09	8:45p	48.7	48.9	48.7	59	35.0	0.0	ESE	0.00	3.0	E	48.7	47.9	47.9	44.9	1028.9	0.00	0.00	0
11/06/09	9:00p	48.3	48.7	48.3	61	35.5	0.0	E	0.00	3.0	E	48.3	47.5	47.5	44.5	1028.9	0.00	0.00	0
11/06/09	9:15p	46.1	48.3	46.1	68	36.1	1.0	E	0.25	4.0	E	46.1	45.5	45.5	42.6	1028.9	0.00	0.00	0
11/06/09	9:30p	44.2	46.1	44.2	72	35.7	0.0	E	0.00	2.0	E	44.2	43.7	43.7	40.7	1028.9	0.00	0.00	0
11/06/09	9:45p	43.5	44.2	43.5	74	35.8	0.0	E	0.00	2.0	E	43.5	43.1	43.1	40.1	1028.9	0.00	0.00	0
11/06/09	10:00p	42.7	43.5	42.6	76	35.7	0.0	E	0.00	2.0	E	42.7	42.3	42.3	39.3	1029.0	0.00	0.00	0
11/06/09	10:15p	42.2	42.7	42.2	78	35.8	0.0	E	0.00	1.0	E	42.2	41.9	41.9	38.9	1028.9	0.00	0.00	0
11/06/09	10:30p	41.8	42.2	41.7	80	36.1	0.0	E	0.00	1.0	E	41.8	41.5	41.5	38.6	1028.9	0.00	0.00	0
11/06/09	10:45p	41.6	41.7	41.6	79	35.6	0.0	E	0.00	1.0	E	41.6	41.3	41.3	38.3	1028.8	0.00	0.00	0
11/06/09	11:00p	41.4	41.6	41.4	81	36.0	0.0	---	0.00	0.0	---	41.4	41.1	41.1	38.2	1028.7	0.00	0.00	0
11/06/09	11:15p	41.2	41.4	41.2	81	35.8	0.0	---	0.00	0.0	---	41.2	40.9	40.9	37.9	1028.7	0.00	0.00	0
11/06/09	11:30p	40.8	41.2	40.8	82	35.7	0.0	---	0.00	0.0	---	40.8	40.5	40.5	37.5	1028.9	0.00	0.00	0
11/06/09	11:45p	40.6	40.8	40.6	83	35.8	0.0	---	0.00	0.0	---	40.6	40.4	40.4	37.4	1028.8	0.00	0.00	0
11/07/09	12:00a	40.3	40.6	40.3	83	35.5	0.0	E	0.00	2.0	E	40.3	40.1	40.1	37.1	1028.8	0.00	0.00	0

JEB LC-FS Site 11a 11/07/09

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	THSW Index	Bar	Rain	Rain Rate	Solar Rad.
11/07/09	12:15a	39.9	40.3	39.8	85	35.8	0.0	---	0.00	0.0	---	39.9	39.7	39.7	36.7	1028.7	0.00	0.00	0
11/07/09	12:30a	40.0	40.0	39.9	84	35.6	0.0	E	0.00	1.0	E	40.0	39.8	39.8	36.8	1028.6	0.00	0.00	0
11/07/09	12:45a	39.8	40.0	39.8	85	35.7	0.0	E	0.00	2.0	E	39.8	39.6	39.6	36.6	1028.6	0.00	0.00	0
11/07/09	1:00a	39.6	39.8	39.5	86	35.8	0.0	---	0.00	0.0	---	39.6	39.4	39.4	36.4	1028.6	0.00	0.00	0
11/07/09	1:15a	39.6	39.6	39.6	85	35.5	0.0	---	0.00	0.0	---	39.6	39.4	39.4	36.4	1028.6	0.00	0.00	0
11/07/09	1:30a	39.6	39.6	39.5	85	35.5	0.0	E	0.00	1.0	E	39.6	39.4	39.4	36.4	1028.7	0.00	0.00	0
11/07/09	1:45a	39.5	39.6	39.5	85	35.4	0.0	E	0.00	1.0	E	39.5	39.3	39.3	36.3	1028.4	0.00	0.00	0
11/07/09	2:00a	39.3	39.5	39.3	85	35.2	0.0	E	0.00	1.0	E	39.3	39.1	39.1	36.1	1028.4	0.00	0.00	0
11/07/09	2:15a	39.1	39.3	39.1	85	35.0	0.0	E	0.00	6.0	E	39.1	38.9	38.9	35.9	1028.4	0.00	0.00	0
11/07/09	2:30a	38.9	39.1	38.9	85	34.8	0.0	E	0.00	1.0	E	38.9	38.7	38.7	35.7	1028.3	0.00	0.00	0
11/07/09	2:45a	38.7	38.9	38.7	85	34.6	0.0	E	0.00	1.0	E	38.7	38.5	38.5	35.5	1028.3	0.00	0.00	0
11/07/09	3:00a	38.7	38.7	38.6	85	34.6	0.0	E	0.00	1.0	E	38.7	38.5	38.5	35.5	1028.4	0.00	0.00	0
11/07/09	3:15a	38.5	38.7	38.5	86	34.7	0.0	---	0.00	0.0	---	38.5	38.3	38.3	35.3	1028.6	0.00	0.00	0
11/07/09	3:30a	38.7	38.7	38.5	86	34.9	0.0	---	0.00	0.0	---	38.7	38.5	38.5	35.5	1028.7	0.00	0.00	0
11/07/09	3:45a	38.8	38.8	38.7	86	35.0	0.0	---	0.00	0.0	---	38.8	38.6	38.6	35.6	1028.7	0.00	0.00	0
11/07/09	4:00a	38.8	38.8	38.7	87	35.3	0.0	---	0.00	0.0	---	38.8	38.6	38.6	35.6	1028.8	0.00	0.00	0
11/07/09	4:15a	38.7	38.9	38.7	86	34.9	0.0	---	0.00	0.0	---	38.7	38.5	38.5	35.5	1028.9	0.00	0.00	0
11/07/09	4:30a	38.6	38.7	38.6	87	35.1	0.0	---	0.00	0.0	---	38.6	38.4	38.4	35.4	1029.0	0.00	0.00	0
11/07/09	4:45a	38.6	38.6	38.5	87	35.1	0.0	---	0.00	0.0	---	38.6	38.4	38.4	35.4	1029.1	0.00	0.00	0
11/07/09	5:00a	38.7	38.7	38.6	87	35.2	0.0	---	0.00	0.0	---	38.7	38.5	38.5	35.5	1029.0	0.00	0.00	0
11/07/09	5:15a	38.7	38.8	38.7	87	35.2	0.0	E	0.00	1.0	E	38.7	38.5	38.5	35.5	1029.1	0.00	0.00	0
11/07/09	5:30a	38.7	38.8	38.7	87	35.2	0.0	E	0.00	1.0	E	38.7	38.5	38.5	35.5	1028.9	0.00	0.00	0
11/07/09	5:45a	38.7	38.8	38.7	86	34.9	0.0	---	0.00	0.0	---	38.7	38.5	38.5	35.5	1029.0	0.00	0.00	0
11/07/09	6:00a	38.1	38.7	38.1	87	34.6	0.0	E	0.00	2.0	E	38.1	37.9	37.9	34.9	1029.1	0.00	0.00	0
11/07/09	6:15a	38.0	38.1	38.0	88	34.8	0.0	E	0.00	2.0	E	38.0	37.9	37.9	34.9	1029.3	0.00	0.00	0
11/07/09	6:30a	37.8	38.0	37.7	88	34.6	0.0	E	0.00	1.0	E	37.8	37.7	37.7	34.7	1029.3	0.00	0.00	1
11/07/09	6:45a	37.9	38.0	37.8	88	34.7	0.0	E	0.00	2.0	E	37.9	37.8	37.8	35.0	1029.3	0.00	0.00	10
11/07/09	7:00a	38.2	38.2	37.9	88	35.0	0.0	E	0.00	2.0	E	38.2	38.1	38.1	35.6	1029.4	0.00	0.00	20
11/07/09	7:15a	38.5	38.5	38.2	88	35.3	0.0	---	0.00	0.0	---	38.5	38.4	38.4	36.1	1029.5	0.00	0.00	28
11/07/09	7:30a	39.3	39.3	38.5	88	36.0	0.0	---	0.00	0.0	---	39.3	39.2	39.2	38.2	1029.5	0.00	0.00	80
11/07/09	7:45a	41.4	41.4	39.3	87	37.8	0.0	E	0.00	2.0	E	41.4	41.3	41.3	44.9	1029.5	0.00	0.00	159
11/07/09	8:00a	43.8	43.8	41.5	83	39.0	1.0	E	0.25	2.0	E	43.8	43.7	43.7	49.2	1029.6	0.00	0.00	209
11/07/09	8:15a	46.6	46.6	43.8	76	39.4	1.0	ESE	0.25	4.0	E	46.6	46.3	46.3	53.0	1029.7	0.00	0.00	253
11/07/09	8:30a	48.7	48.7	46.6	72	40.1	2.0	SSW	0.50	6.0	SSW	48.7	48.3	48.3	56.0	1029.4	0.00	0.00	294
11/07/09	8:45a	49.9	49.9	48.7	65	38.6	3.0	SSW	0.75	8.0	SSW	49.6	49.3	49.0	57.5	1029.5	0.00	0.00	343
11/07/09	9:00a	50.6	50.6	49.9	62	38.1	4.0	SSW	1.00	8.0	SW	49.6	49.8	48.8	56.2	1029.3	0.00	0.00	294
11/07/09	9:15a	51.5	51.5	50.6	59	37.6	4.0	SSW	1.00	10.0	S	50.6	50.5	49.6	58.0	1029.4	0.00	0.00	362
11/07/09	9:30a	52.1	52.2	51.5	59	38.2	5.0	SSW	1.25	10.0	SW	50.7	51.0	49.6	56.3	1029.1	0.00	0.00	283
11/07/09	9:45a	53.1	53.1	52.1	60	39.6	3.0	SW	0.75	11.0	SSW	53.1	52.0	52.0	61.1	1029.2	0.00	0.00	466
11/07/09	10:00a	53.7	53.7	53.2	54	37.4	4.0	SSW	1.00	9.0	SSW	53.1	52.2	51.6	61.1	1029.2	0.00	0.00	480
11/07/09	10:15a	54.6	54.6	53.7	54	38.3	4.0	SSW	1.00	9.0	SSW	54.2	53.1	52.7	62.2	1029.0	0.00	0.00	527
11/07/09	10:30a	54.9	54.9	54.6	53	38.1	5.0	WSW	1.25	9.0	W	54.0	53.3	52.4	61.8	1028.9	0.00	0.00	558
11/07/09	10:45a	55.6	55.6	54.9	50	37.2	5.0	SW	1.25	10.0	SSW	54.8	53.7	52.9	62.3	1028.6	0.00	0.00	583
11/07/09	11:00a	56.2	56.2	55.5	49	37.3	4.0	SW	1.00	10.0	W	56.0	54.2	54.0	63.4	1028.3	0.00	0.00	607
11/07/09	11:15a	56.8	56.8	56.2	49	37.8	4.0	SSW	1.00	13.0	SSW	56.8	54.8	54.8	64.7	1028.0	0.00	0.00	603
11/07/09	11:30a	57.2	57.3	56.8	46	36.6	4.0	SSW	1.00	10.0	SSE	57.2	55.0	55.0	64.2	1027.8	0.00	0.00	499
11/07/09	11:45a	57.9	57.9	57.2	49	38.8	4.0	SSW	1.00	9.0	SSW	57.9	55.9	55.9	65.9	1027.4	0.00	0.00	583
11/07/09	12:00p	58.5	58.5	58.0	46	37.8	4.0	SSW	1.00	10.0	SSE	58.5	56.3	56.3	66.3	1027.0	0.00	0.00	599
11/07/09	12:15p	58.3	58.6	58.3	44	36.5	5.0	WSW	1.25	10.0	SSW	58.0	55.9	55.6	64.6	1027.0	0.00	0.00	491
11/07/09	12:30p	59.0	59.0	58.2	47	38.8	5.0	SW	1.25	12.0	WSW	58.8	56.8	56.6	66.6	1026.6	0.00	0.00	631
11/07/09	12:45p	59.3	59.3	59.0	48	39.6	5.0	WSW	1.25	14.0	W	59.2	57.2	57.1	67.2	1026.3	0.00	0.00	600
11/07/09	1:00p	60.6	60.6	59.3	44	38.6	4.0	SW	1.00	13.0	WSW	60.6	58.2	58.2	68.1	1026.2	0.00	0.00	561
11/07/09	1:15p	60.6	60.9	60.5	46	39.7	5.0	SW	1.25	12.0	W	60.6	58.4	58.4	68.5	1026.1	0.00	0.00	582

JEB LC-FS Site 11a 11/07/09

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	THSW Index	Bar	Rain	Rain Rate	Solar Rad.
11/07/09	1:30p	61.4	61.4	60.6	44	39.3	5.0	SW	1.25	10.0	SSW	61.4	59.0	59.0	68.9	1025.8	0.00	0.00	551
11/07/09	1:45p	61.8	61.8	61.4	42	38.4	5.0	SW	1.25	10.0	SSW	61.8	59.3	59.3	69.2	1025.5	0.00	0.00	538
11/07/09	2:00p	61.9	61.9	61.6	42	38.5	5.0	SSW	1.25	11.0	SSW	61.9	59.4	59.4	69.1	1025.2	0.00	0.00	509
11/07/09	2:15p	62.0	62.3	61.9	39	36.7	5.0	SSW	1.25	12.0	WSW	62.0	59.2	59.2	68.6	1025.1	0.00	0.00	478
11/07/09	2:30p	62.4	62.4	61.8	40	37.7	5.0	SW	1.25	11.0	WSW	62.4	59.7	59.7	68.9	1025.0	0.00	0.00	443
11/07/09	2:45p	62.7	62.7	62.2	40	38.0	4.0	SW	1.00	10.0	SSW	62.7	60.0	60.0	68.8	1025.0	0.00	0.00	403
11/07/09	3:00p	62.3	62.8	62.2	39	37.0	5.0	SW	1.25	13.0	WSW	62.3	59.5	59.5	67.7	1024.9	0.00	0.00	360
11/07/09	3:15p	62.6	62.6	62.3	40	37.9	4.0	SSW	1.00	10.0	SSW	62.6	59.9	59.9	67.5	1024.9	0.00	0.00	316
11/07/09	3:30p	62.4	62.7	62.4	38	36.4	4.0	SSW	1.00	9.0	SW	62.4	59.5	59.5	66.3	1024.7	0.00	0.00	272
11/07/09	3:45p	61.8	62.4	61.8	40	37.2	5.0	SSW	1.25	10.0	SW	61.8	59.1	59.1	64.9	1024.6	0.00	0.00	226
11/07/09	4:00p	61.5	61.8	61.5	41	37.6	5.0	SSW	1.25	11.0	SSW	61.5	58.9	58.9	63.0	1024.5	0.00	0.00	164
11/07/09	4:15p	61.2	61.5	61.2	42	37.9	3.0	SSW	0.75	9.0	SW	61.2	58.7	58.7	61.0	1024.4	0.00	0.00	110
11/07/09	4:30p	60.4	61.2	60.4	43	37.8	3.0	SSW	0.75	6.0	SW	60.4	57.9	57.9	58.5	1024.3	0.00	0.00	64
11/07/09	4:45p	59.3	60.4	59.3	45	37.9	3.0	SW	0.75	9.0	SW	59.3	57.0	57.0	56.1	1024.3	0.00	0.00	28
11/07/09	5:00p	58.1	59.3	58.1	46	37.4	1.0	SSW	0.25	7.0	SW	58.1	55.9	55.9	53.3	1024.3	0.00	0.00	12
11/07/09	5:15p	57.4	58.1	57.4	47	37.3	2.0	SSW	0.50	7.0	SW	57.4	55.3	55.3	52.4	1024.2	0.00	0.00	2
11/07/09	5:30p	56.8	57.3	56.8	48	37.3	2.0	SSW	0.50	6.0	SW	56.8	54.8	54.8	51.9	1024.3	0.00	0.00	0
11/07/09	5:45p	56.3	56.8	56.3	49	37.4	2.0	SSW	0.50	7.0	SSW	56.3	54.3	54.3	51.4	1024.3	0.00	0.00	0
11/07/09	6:00p	55.6	56.3	55.6	51	37.7	2.0	SSW	0.50	8.0	SSE	55.6	53.8	53.8	50.9	1024.5	0.00	0.00	0
11/07/09	6:15p	55.1	55.6	55.1	52	37.8	3.0	SSW	0.75	9.0	S	55.1	53.4	53.4	50.5	1024.5	0.00	0.00	0
11/07/09	6:30p	54.6	55.1	54.6	54	38.3	2.0	SSW	0.50	8.0	SSW	54.6	53.1	53.1	50.2	1024.6	0.00	0.00	0
11/07/09	6:45p	54.0	54.6	54.0	56	38.6	2.0	SSW	0.50	7.0	SSW	54.0	52.6	52.6	49.7	1024.6	0.00	0.00	0
11/07/09	7:00p	53.8	54.0	53.8	59	39.8	3.0	SSW	0.75	8.0	SSW	53.8	52.6	52.6	49.8	1024.8	0.00	0.00	0
11/07/09	7:15p	53.6	53.8	53.6	60	40.0	2.0	SSW	0.50	7.0	SW	53.6	52.4	52.4	49.6	1024.9	0.00	0.00	0
11/07/09	7:30p	53.3	53.6	53.3	61	40.2	3.0	SSW	0.75	6.0	SSW	53.3	52.2	52.2	49.4	1024.8	0.00	0.00	0
11/07/09	7:45p	53.2	53.4	53.2	62	40.5	2.0	SSW	0.50	8.0	WSW	53.2	52.2	52.2	49.4	1024.9	0.00	0.00	0
11/07/09	8:00p	53.0	53.2	53.0	61	39.9	3.0	SSW	0.75	11.0	S	53.0	51.9	51.9	49.1	1025.0	0.00	0.00	0
11/07/09	8:15p	52.6	53.1	52.6	63	40.4	1.0	SSW	0.25	5.0	SSW	52.6	51.7	51.7	48.9	1025.1	0.00	0.00	0
11/07/09	8:30p	52.0	52.6	52.0	65	40.6	1.0	SSW	0.25	5.0	SSW	52.0	51.2	51.2	48.4	1025.2	0.00	0.00	0
11/07/09	8:45p	51.6	52.0	51.6	65	40.2	3.0	SSW	0.75	8.0	SSW	51.5	50.8	50.7	47.9	1025.0	0.00	0.00	0
11/07/09	9:00p	51.3	51.7	51.3	66	40.3	2.0	SSW	0.50	8.0	SW	51.3	50.6	50.6	47.8	1025.2	0.00	0.00	0
11/07/09	9:15p	50.6	51.3	50.6	67	40.0	1.0	SSW	0.25	3.0	SSW	50.6	50.0	50.0	47.2	1025.2	0.00	0.00	0
11/07/09	9:30p	50.2	50.6	50.2	67	39.7	1.0	S	0.25	4.0	S	50.2	49.7	49.7	46.9	1025.1	0.00	0.00	0
11/07/09	9:45p	49.7	50.2	49.7	68	39.6	1.0	SW	0.25	3.0	SW	49.7	49.2	49.2	46.4	1025.2	0.00	0.00	0
11/07/09	10:00p	49.6	49.7	49.6	68	39.5	1.0	SSW	0.25	5.0	SSW	49.6	49.1	49.1	46.3	1025.1	0.00	0.00	0
11/07/09	10:15p	49.5	49.6	49.5	68	39.4	1.0	SSW	0.25	5.0	SSW	49.5	49.0	49.0	46.2	1025.1	0.00	0.00	0
11/07/09	10:30p	49.4	49.5	49.4	69	39.7	1.0	SSW	0.25	7.0	SSW	49.4	49.0	49.0	46.2	1025.0	0.00	0.00	0
11/07/09	10:45p	49.2	49.4	49.2	69	39.5	2.0	SSW	0.50	5.0	SW	49.2	48.8	48.8	46.0	1024.9	0.00	0.00	0
11/07/09	11:00p	48.8	49.2	48.8	71	39.8	1.0	SSW	0.25	5.0	SSW	48.8	48.4	48.4	45.6	1024.9	0.00	0.00	0
11/07/09	11:15p	48.8	48.8	48.7	71	39.8	2.0	SW	0.50	7.0	SW	48.8	48.4	48.4	45.6	1024.8	0.00	0.00	0
11/07/09	11:30p	48.9	49.0	48.8	71	39.9	2.0	SSW	0.50	6.0	SSW	48.9	48.5	48.5	45.7	1024.7	0.00	0.00	0
11/07/09	11:45p	48.7	48.9	48.7	72	40.1	2.0	SSW	0.50	9.0	SSW	48.7	48.3	48.3	45.5	1024.7	0.00	0.00	0
11/08/09	12:00a	48.9	48.9	48.7	73	40.6	3.0	SW	0.75	6.0	SW	48.4	48.6	48.1	45.3	1024.6	0.00	0.00	0

JEB LC-FS Site 11a 11/08/09

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	THSW Index	Bar	Rain	Rain Rate	Solar Rad.
11/08/09	12:15a	49.2	49.2	48.9	73	40.9	3.0	SW	0.75	9.0	SW	48.7	48.9	48.4	45.6	1024.7	0.00	0.00	0
11/08/09	12:30a	49.3	49.4	49.2	74	41.4	3.0	SW	0.75	8.0	SSW	48.9	49.0	48.6	45.8	1024.6	0.00	0.00	0
11/08/09	12:45a	49.0	49.3	49.0	75	41.4	3.0	SW	0.75	9.0	SW	48.5	48.7	48.2	45.4	1024.7	0.00	0.00	0
11/08/09	1:00a	48.8	49.0	48.7	76	41.6	3.0	SW	0.75	7.0	SW	48.3	48.5	48.0	45.2	1024.6	0.00	0.00	0
11/08/09	1:15a	48.6	48.8	48.6	77	41.7	3.0	SW	0.75	7.0	SW	48.1	48.4	47.9	45.1	1024.6	0.00	0.00	0
11/08/09	1:30a	48.3	48.6	48.3	78	41.8	3.0	SW	0.75	6.0	SW	47.7	48.1	47.5	44.7	1024.7	0.00	0.00	0
11/08/09	1:45a	48.2	48.3	48.2	83	43.3	3.0	SW	0.75	6.0	SSW	47.6	48.2	47.6	44.9	1024.7	0.00	0.00	0
11/08/09	2:00a	48.1	48.2	48.1	80	42.2	3.0	SSW	0.75	8.0	SSW	47.5	48.0	47.4	44.7	1024.6	0.00	0.00	0
11/08/09	2:15a	48.1	48.1	48.1	81	42.5	3.0	SW	0.75	6.0	SW	47.5	48.0	47.4	44.7	1024.6	0.00	0.00	0
11/08/09	2:30a	48.1	48.2	48.1	82	42.9	2.0	SW	0.50	6.0	SSW	48.1	48.0	48.0	45.3	1024.5	0.00	0.00	0
11/08/09	2:45a	48.0	48.2	48.0	83	43.1	2.0	SW	0.50	5.0	SW	48.0	48.0	48.0	45.3	1024.6	0.00	0.00	0
11/08/09	3:00a	48.2	48.2	48.0	83	43.3	2.0	SSW	0.50	5.0	SW	48.2	48.2	48.2	45.5	1024.5	0.00	0.00	0
11/08/09	3:15a	48.3	48.3	48.2	84	43.7	2.0	SSW	0.50	5.0	SSW	48.3	48.3	48.3	45.6	1024.4	0.00	0.00	0
11/08/09	3:30a	48.7	48.7	48.3	84	44.1	2.0	SW	0.50	6.0	SSW	48.7	48.7	48.7	46.0	1024.5	0.00	0.00	0
11/08/09	3:45a	48.8	48.8	48.7	85	44.5	2.0	SW	0.50	4.0	SW	48.8	48.9	48.9	46.2	1024.5	0.00	0.00	0
11/08/09	4:00a	48.8	48.9	48.8	85	44.5	1.0	SSW	0.25	4.0	SSW	48.8	48.9	48.9	46.2	1024.6	0.00	0.00	0
11/08/09	4:15a	49.1	49.1	48.8	85	44.8	1.0	SSW	0.25	4.0	SSW	49.1	49.2	49.2	46.5	1024.6	0.00	0.00	0
11/08/09	4:30a	49.9	49.9	49.1	84	45.3	1.0	SSW	0.25	5.0	SSW	49.9	50.0	50.0	47.4	1024.6	0.00	0.00	0
11/08/09	4:45a	50.4	50.4	49.9	83	45.4	2.0	SW	0.50	6.0	SSW	50.4	50.4	50.4	47.8	1024.6	0.00	0.00	0
11/08/09	5:00a	50.7	50.7	50.4	83	45.7	3.0	SW	0.75	7.0	SW	50.5	50.7	50.5	47.9	1024.7	0.00	0.00	0
11/08/09	5:15a	51.2	51.3	50.7	82	45.9	5.0	SW	1.25	11.0	WSW	49.6	51.1	49.5	46.9	1024.7	0.00	0.00	0
11/08/09	5:30a	51.2	51.3	51.1	82	45.9	4.0	SW	1.00	8.0	SW	50.2	51.1	50.1	47.5	1024.8	0.00	0.00	0
11/08/09	5:45a	50.8	51.1	50.8	83	45.8	4.0	SW	1.00	8.0	SSW	49.8	50.8	49.8	47.2	1024.9	0.00	0.00	0
11/08/09	6:00a	50.5	50.9	50.5	83	45.5	2.0	SSW	0.50	7.0	SSW	50.5	50.5	50.5	47.9	1025.0	0.00	0.00	0
11/08/09	6:15a	50.0	50.5	50.0	84	45.4	1.0	SSW	0.25	4.0	SW	50.0	50.1	50.1	47.5	1025.0	0.00	0.00	0
11/08/09	6:30a	49.5	50.0	49.5	85	45.2	1.0	SSW	0.25	4.0	SSW	49.5	49.6	49.6	47.0	1025.3	0.00	0.00	0
11/08/09	6:45a	49.2	49.5	49.2	85	44.9	0.0	SSW	0.00	5.0	SSW	49.2	49.3	49.3	46.8	1025.4	0.00	0.00	7
11/08/09	7:00a	49.7	49.7	49.2	85	45.4	1.0	SW	0.25	5.0	WSW	49.7	49.8	49.8	47.6	1025.8	0.00	0.00	17
11/08/09	7:15a	49.7	49.9	49.7	85	45.4	0.0	WSW	0.00	4.0	WSW	49.7	49.8	49.8	47.8	1025.9	0.00	0.00	26
11/08/09	7:30a	50.1	50.1	49.7	85	45.8	0.0	WSW	0.00	4.0	WSW	50.1	50.2	50.2	49.2	1026.0	0.00	0.00	68
11/08/09	7:45a	51.5	51.5	50.2	82	46.2	3.0	WSW	0.75	7.0	SW	51.4	51.4	51.3	54.5	1026.2	0.00	0.00	139
11/08/09	8:00a	52.7	52.7	51.5	80	46.7	4.0	SW	1.00	7.0	WSW	52.0	52.4	51.7	55.9	1026.3	0.00	0.00	173
11/08/09	8:15a	53.7	53.7	52.7	77	46.7	5.0	SW	1.25	10.0	WSW	52.5	53.3	52.1	57.6	1026.4	0.00	0.00	215
11/08/09	8:30a	54.6	54.6	53.7	76	47.2	5.0	WSW	1.25	10.0	SW	53.6	54.1	53.1	59.8	1026.6	0.00	0.00	258
11/08/09	8:45a	55.6	55.6	54.6	73	47.1	5.0	SW	1.25	13.0	SW	54.8	54.9	54.1	61.7	1026.6	0.00	0.00	300
11/08/09	9:00a	56.7	56.7	55.6	70	47.0	5.0	WSW	1.25	9.0	SW	56.1	55.9	55.3	63.2	1026.6	0.00	0.00	302
11/08/09	9:15a	57.8	57.8	56.7	69	47.7	6.0	WSW	1.50	10.0	WSW	57.0	57.0	56.2	64.8	1026.7	0.00	0.00	346
11/08/09	9:30a	58.9	58.9	57.8	66	47.6	5.0	WSW	1.25	9.0	W	58.7	58.0	57.8	64.8	1026.7	0.00	0.00	282
11/08/09	9:45a	59.5	59.5	58.9	62	46.5	6.0	W	1.50	9.0	WNW	59.0	58.3	57.8	67.4	1026.8	0.00	0.00	447
11/08/09	10:00a	60.6	60.6	59.4	62	47.5	4.0	SW	1.00	11.0	SW	60.6	59.5	59.5	69.3	1026.8	0.00	0.00	486
11/08/09	10:15a	61.6	61.6	60.6	59	47.1	4.0	W	1.00	8.0	WNW	61.6	60.3	60.3	70.3	1026.8	0.00	0.00	514
11/08/09	10:30a	61.9	61.9	61.6	58	47.0	6.0	W	1.50	9.0	WNW	61.9	60.6	60.6	70.7	1026.8	0.00	0.00	540
11/08/09	10:45a	62.3	62.3	61.9	58	47.3	5.0	W	1.25	7.0	WSW	62.3	61.0	61.0	71.2	1026.8	0.00	0.00	564
11/08/09	11:00a	63.4	63.4	62.3	59	48.8	4.0	WNW	1.00	7.0	W	63.4	62.3	62.3	72.6	1026.7	0.00	0.00	579
11/08/09	11:15a	64.0	64.0	63.4	56	48.0	4.0	W	1.00	7.0	W	64.0	62.8	62.8	73.2	1026.5	0.00	0.00	593
11/08/09	11:30a	64.9	64.9	64.0	55	48.3	2.0	W	0.50	6.0	W	64.9	63.7	63.7	74.1	1026.3	0.00	0.00	604
11/08/09	11:45a	64.9	65.3	64.9	60	50.7	3.0	W	0.75	6.0	W	64.9	64.1	64.1	74.7	1026.3	0.00	0.00	611
11/08/09	12:00p	64.8	64.9	64.7	59	50.1	2.0	WNW	0.50	7.0	WNW	64.8	63.9	63.9	74.5	1026.2	0.00	0.00	614
11/08/09	12:15p	65.2	65.2	64.6	59	50.5	1.0	N	0.25	6.0	ENE	65.2	64.3	64.3	74.9	1026.2	0.00	0.00	611
11/08/09	12:30p	65.2	65.4	65.2	59	50.5	2.0	WNW	0.50	8.0	WNW	65.2	64.3	64.3	74.9	1026.2	0.00	0.00	606
11/08/09	12:45p	65.1	65.2	64.8	61	51.3	2.0	W	0.50	7.0	W	65.1	64.4	64.4	75.0	1026.2	0.00	0.00	597
11/08/09	1:00p	66.2	66.2	65.1	56	50.0	1.0	E	0.25	7.0	WNW	66.2	65.2	65.2	75.7	1026.1	0.00	0.00	584
11/08/09	1:15p	67.4	67.4	66.2	50	48.1	1.0	NE	0.25	5.0	ENE	67.4	66.0	66.0	76.4	1026.2	0.00	0.00	568

JEB LC-FS Site 11a 11/08/09

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	THSW Index	Bar	Rain	Rain Rate	Solar Rad.
11/08/09	1:30p	67.4	67.5	67.4	46	45.9	2.0	W	0.50	5.0	W	67.4	65.6	65.6	75.8	1026.1	0.00	0.00	549
11/08/09	1:45p	66.5	67.3	66.5	53	48.8	2.0	NE	0.50	7.0	NE	66.5	65.3	65.3	75.5	1026.3	0.00	0.00	524
11/08/09	2:00p	65.5	66.5	65.5	58	50.3	2.0	NE	0.50	6.0	NE	65.5	64.6	64.6	74.7	1026.1	0.00	0.00	496
11/08/09	2:15p	64.6	65.5	64.6	56	48.5	3.0	NE	0.75	7.0	NE	64.6	63.4	63.4	73.2	1026.1	0.00	0.00	466
11/08/09	2:30p	65.1	65.1	64.4	58	50.0	1.0	NE	0.25	5.0	NE	65.1	64.1	64.1	73.6	1026.1	0.00	0.00	431
11/08/09	2:45p	64.5	65.1	64.5	62	51.2	3.0	NE	0.75	6.0	NE	64.5	63.8	63.8	73.0	1026.3	0.00	0.00	395
11/08/09	3:00p	64.2	64.5	64.1	66	52.6	2.0	NE	0.50	6.0	NE	64.2	63.8	63.8	72.5	1026.4	0.00	0.00	354
11/08/09	3:15p	64.6	64.6	64.3	65	52.6	1.0	E	0.25	4.0	E	64.6	64.2	64.2	72.2	1026.5	0.00	0.00	310
11/08/09	3:30p	64.6	64.7	64.5	65	52.6	1.0	E	0.25	4.0	E	64.6	64.2	64.2	71.4	1026.5	0.00	0.00	264
11/08/09	3:45p	63.8	64.7	63.8	68	53.0	1.0	E	0.25	5.0	E	63.8	63.5	63.5	69.6	1026.5	0.00	0.00	214
11/08/09	4:00p	63.5	63.8	63.5	68	52.7	0.0	E	0.00	2.0	E	63.5	63.1	63.1	67.4	1026.8	0.00	0.00	155
11/08/09	4:15p	63.4	63.7	63.4	68	52.7	0.0	E	0.00	2.0	E	63.4	63.0	63.0	65.6	1026.9	0.00	0.00	104
11/08/09	4:30p	62.8	63.4	62.8	68	52.1	0.0	E	0.00	2.0	E	62.8	62.3	62.3	63.2	1026.8	0.00	0.00	60
11/08/09	4:45p	62.0	62.8	62.0	69	51.7	0.0	ESE	0.00	1.0	E	62.0	61.5	61.5	60.9	1026.8	0.00	0.00	26
11/08/09	5:00p	61.1	62.0	61.1	72	52.0	0.0	ESE	0.00	1.0	ESE	61.1	60.6	60.6	58.5	1026.9	0.00	0.00	10
11/08/09	5:15p	60.2	61.1	60.2	74	51.9	0.0	---	0.00	0.0	---	60.2	59.8	59.8	57.4	1027.0	0.00	0.00	1
11/08/09	5:30p	59.3	60.2	59.3	75	51.4	0.0	---	0.00	0.0	---	59.3	58.8	58.8	56.4	1027.4	0.00	0.00	0
11/08/09	5:45p	58.3	59.3	58.3	76	50.8	0.0	---	0.00	0.0	---	58.3	57.9	57.9	55.5	1027.5	0.00	0.00	0
11/08/09	6:00p	57.6	58.2	57.6	77	50.4	0.0	---	0.00	0.0	---	57.6	57.2	57.2	54.8	1027.7	0.00	0.00	0
11/08/09	6:15p	56.9	57.6	56.9	77	49.8	0.0	---	0.00	0.0	---	56.9	56.5	56.5	54.0	1027.8	0.00	0.00	0
11/08/09	6:30p	56.5	56.9	56.5	79	50.1	0.0	ESE	0.00	1.0	ESE	56.5	56.2	56.2	53.8	1027.9	0.00	0.00	0
11/08/09	6:45p	55.9	56.5	55.9	80	49.8	0.0	---	0.00	0.0	---	55.9	55.6	55.6	53.1	1028.0	0.00	0.00	0
11/08/09	7:00p	55.5	55.9	55.5	80	49.4	0.0	---	0.00	0.0	---	55.5	55.2	55.2	52.7	1028.0	0.00	0.00	0
11/08/09	7:15p	55.3	55.5	55.3	80	49.2	0.0	---	0.00	0.0	---	55.3	55.0	55.0	52.5	1028.1	0.00	0.00	0
11/08/09	7:30p	54.8	55.3	54.8	81	49.1	0.0	---	0.00	0.0	---	54.8	54.5	54.5	52.0	1027.9	0.00	0.00	0
11/08/09	7:45p	54.4	54.8	54.4	83	49.3	0.0	---	0.00	0.0	---	54.4	54.2	54.2	51.7	1028.1	0.00	0.00	0
11/08/09	8:00p	54.1	54.4	54.1	84	49.4	0.0	---	0.00	0.0	---	54.1	54.0	54.0	51.5	1028.3	0.00	0.00	0
11/08/09	8:15p	53.6	54.1	53.6	85	49.2	0.0	---	0.00	0.0	---	53.6	53.5	53.5	51.0	1028.6	0.00	0.00	0
11/08/09	8:30p	53.5	53.6	53.5	85	49.1	0.0	ESE	0.00	1.0	ESE	53.5	53.4	53.4	50.9	1028.9	0.00	0.00	0
11/08/09	8:45p	53.2	53.5	53.2	85	48.8	0.0	---	0.00	0.0	---	53.2	53.1	53.1	50.6	1029.1	0.00	0.00	0
11/08/09	9:00p	52.7	53.1	52.7	86	48.6	0.0	---	0.00	0.0	---	52.7	52.7	52.7	50.2	1029.2	0.00	0.00	0
11/08/09	9:15p	52.3	52.7	52.3	87	48.5	0.0	---	0.00	0.0	---	52.3	52.3	52.3	49.8	1029.2	0.00	0.00	0
11/08/09	9:30p	51.9	52.3	51.9	87	48.2	0.0	---	0.00	0.0	---	51.9	52.0	52.0	49.5	1029.3	0.00	0.00	0
11/08/09	9:45p	51.7	51.9	51.7	88	48.3	0.0	---	0.00	0.0	---	51.7	51.8	51.8	49.3	1029.4	0.00	0.00	0
11/08/09	10:00p	51.4	51.7	51.4	88	48.0	0.0	ESE	0.00	1.0	ESE	51.4	51.5	51.5	49.0	1029.4	0.00	0.00	0
11/08/09	10:15p	50.9	51.4	50.9	88	47.5	0.0	---	0.00	0.0	---	50.9	51.0	51.0	48.5	1029.3	0.00	0.00	0
11/08/09	10:30p	50.6	50.9	50.6	89	47.5	0.0	---	0.00	0.0	---	50.6	50.8	50.8	48.3	1029.3	0.00	0.00	0
11/08/09	10:45p	50.6	50.6	50.5	89	47.5	0.0	---	0.00	0.0	---	50.6	50.8	50.8	48.3	1029.4	0.00	0.00	0
11/08/09	11:00p	50.6	50.6	50.5	89	47.5	0.0	---	0.00	0.0	---	50.6	50.8	50.8	48.3	1029.2	0.00	0.00	0
11/08/09	11:15p	50.5	50.6	50.5	89	47.4	0.0	---	0.00	0.0	---	50.5	50.7	50.7	48.2	1029.1	0.00	0.00	0
11/08/09	11:30p	50.3	50.5	50.3	89	47.2	0.0	---	0.00	0.0	---	50.3	50.5	50.5	48.0	1029.3	0.00	0.00	0
11/08/09	11:45p	50.2	50.3	50.2	89	47.1	0.0	---	0.00	0.0	---	50.2	50.4	50.4	47.9	1029.4	0.00	0.00	0
11/09/09	12:00a	50.1	50.2	50.1	90	47.3	0.0	---	0.00	0.0	---	50.1	50.4	50.4	47.9	1029.4	0.00	0.00	0

JEB LC-FS Site 11a 11/09/09

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	THSW Index	Bar	Rain	Rain Rate	Solar Rad.
11/09/09	12:15a	50.0	50.1	50.0	90	47.2	0.0	---	0.00	0.0	---	50.0	50.3	50.3	47.8	1029.5	0.00	0.00	0
11/09/09	12:30a	49.9	50.1	49.9	90	47.1	0.0	---	0.00	0.0	---	49.9	50.2	50.2	47.7	1029.6	0.00	0.00	0
11/09/09	12:45a	49.7	49.9	49.7	90	46.9	0.0	---	0.00	0.0	---	49.7	50.0	50.0	47.4	1029.5	0.00	0.00	0
11/09/09	1:00a	49.7	49.7	49.6	90	46.9	0.0	---	0.00	0.0	---	49.7	50.0	50.0	47.4	1029.4	0.00	0.00	0
11/09/09	1:15a	49.8	49.8	49.7	91	47.3	0.0	---	0.00	0.0	---	49.8	50.1	50.1	47.6	1029.4	0.00	0.00	0
11/09/09	1:30a	49.9	49.9	49.7	91	47.4	0.0	---	0.00	0.0	---	49.9	50.2	50.2	47.7	1029.4	0.00	0.00	0
11/09/09	1:45a	49.7	50.1	49.7	89	46.6	0.0	ESE	0.00	1.0	ESE	49.7	50.0	50.0	47.4	1029.5	0.00	0.00	0
11/09/09	2:00a	49.3	49.7	49.3	91	46.8	0.0	---	0.00	0.0	---	49.3	49.6	49.6	47.0	1029.5	0.00	0.00	0
11/09/09	2:15a	49.2	49.3	49.2	91	46.7	0.0	ESE	0.00	1.0	ESE	49.2	49.5	49.5	46.9	1029.6	0.00	0.00	0
11/09/09	2:30a	49.1	49.2	49.1	91	46.6	0.0	---	0.00	0.0	---	49.1	49.4	49.4	46.8	1029.6	0.00	0.00	0
11/09/09	2:45a	48.9	49.1	48.9	91	46.4	0.0	---	0.00	0.0	---	48.9	49.2	49.2	46.6	1029.6	0.00	0.00	0
11/09/09	3:00a	49.3	49.3	49.0	91	46.8	0.0	---	0.00	0.0	---	49.3	49.6	49.6	47.0	1029.4	0.00	0.00	0
11/09/09	3:15a	49.2	49.3	49.2	92	47.0	0.0	---	0.00	0.0	---	49.2	49.6	49.6	47.0	1029.4	0.00	0.00	0
11/09/09	3:30a	49.8	49.9	49.2	93	47.9	0.0	---	0.00	0.0	---	49.8	50.2	50.2	47.7	1029.5	0.00	0.00	0
11/09/09	3:45a	50.1	50.1	49.9	93	48.2	0.0	---	0.00	0.0	---	50.1	50.5	50.5	48.0	1029.5	0.00	0.00	0
11/09/09	4:00a	50.6	50.6	50.1	93	48.7	0.0	---	0.00	0.0	---	50.6	51.0	51.0	48.5	1029.6	0.00	0.00	0
11/09/09	4:15a	50.8	50.8	50.6	93	48.8	0.0	---	0.00	0.0	---	50.8	51.1	51.1	48.6	1029.9	0.00	0.00	0
11/09/09	4:30a	51.2	51.2	50.8	93	49.2	0.0	---	0.00	0.0	---	51.2	51.5	51.5	49.0	1029.9	0.00	0.00	0
11/09/09	4:45a	51.3	51.3	51.2	93	49.3	0.0	---	0.00	0.0	---	51.3	51.6	51.6	49.1	1029.9	0.00	0.00	0
11/09/09	5:00a	51.2	51.3	51.2	93	49.2	0.0	---	0.00	0.0	---	51.2	51.5	51.5	49.0	1029.9	0.00	0.00	0
11/09/09	5:15a	51.1	51.2	51.1	93	49.1	0.0	---	0.00	0.0	---	51.1	51.4	51.4	48.9	1029.9	0.00	0.00	0
11/09/09	5:30a	50.9	51.1	50.9	93	48.9	0.0	---	0.00	0.0	---	50.9	51.2	51.2	48.7	1030.0	0.00	0.00	0
11/09/09	5:45a	50.7	50.9	50.7	93	48.7	0.0	---	0.00	0.0	---	50.7	51.1	51.1	48.6	1030.3	0.00	0.00	0
11/09/09	6:00a	50.5	50.7	50.5	93	48.6	0.0	---	0.00	0.0	---	50.5	50.9	50.9	48.4	1030.4	0.00	0.00	0
11/09/09	6:15a	50.4	50.5	50.4	93	48.5	0.0	---	0.00	0.0	---	50.4	50.8	50.8	48.3	1030.6	0.00	0.00	0
11/09/09	6:30a	50.5	50.5	50.4	93	48.6	0.0	---	0.00	0.0	---	50.5	50.9	50.9	48.4	1030.7	0.00	0.00	0
11/09/09	6:45a	50.4	50.5	50.4	93	48.5	0.0	---	0.00	0.0	---	50.4	50.8	50.8	48.4	1030.7	0.00	0.00	5
11/09/09	7:00a	50.4	50.5	50.4	93	48.5	0.0	ESE	0.00	1.0	ESE	50.4	50.8	50.8	48.7	1030.8	0.00	0.00	17
11/09/09	7:15a	50.4	50.4	50.3	94	48.7	0.0	---	0.00	0.0	---	50.4	50.8	50.8	49.1	1031.1	0.00	0.00	33
11/09/09	7:30a	50.6	50.6	50.4	94	48.9	0.0	---	0.00	0.0	---	50.6	51.0	51.0	49.9	1031.3	0.00	0.00	59
11/09/09	7:45a	51.4	51.4	50.6	94	49.7	0.0	---	0.00	0.0	---	51.4	51.7	51.7	53.4	1031.5	0.00	0.00	92
11/09/09	8:00a	51.9	52.0	51.4	94	50.2	0.0	---	0.00	0.0	---	51.9	52.2	52.2	54.7	1031.8	0.00	0.00	101
11/09/09	8:15a	52.6	52.6	52.0	94	50.9	0.0	ESE	0.00	1.0	ESE	52.6	52.9	52.9	56.3	1031.9	0.00	0.00	126
11/09/09	8:30a	53.3	53.3	52.6	94	51.6	0.0	---	0.00	0.0	---	53.3	53.5	53.5	58.0	1031.8	0.00	0.00	158
11/09/09	8:45a	54.7	54.7	53.3	95	53.3	0.0	ESE	0.00	2.0	ESE	54.7	54.9	54.9	61.2	1031.7	0.00	0.00	218
11/09/09	9:00a	56.1	56.1	54.8	95	54.7	0.0	ESE	0.00	1.0	ESE	56.1	56.3	56.3	64.6	1031.6	0.00	0.00	302
11/09/09	9:15a	57.4	57.4	56.2	95	56.0	0.0	ESE	0.00	2.0	ESE	57.4	57.6	57.6	64.8	1031.5	0.00	0.00	266
11/09/09	9:30a	58.3	58.3	57.4	94	56.6	1.0	S	0.25	5.0	S	58.3	58.6	58.6	66.2	1031.6	0.00	0.00	290
11/09/09	9:45a	60.2	60.2	58.4	91	57.6	0.0	S	0.00	2.0	S	60.2	60.5	60.5	70.4	1031.7	0.00	0.00	419
11/09/09	10:00a	61.8	61.8	60.2	82	56.2	1.0	SSW	0.25	5.0	SW	61.8	62.0	62.0	72.2	1031.7	0.00	0.00	462
11/09/09	10:15a	64.2	64.2	61.8	78	57.2	1.0	SSW	0.25	6.0	SSW	64.2	64.6	64.6	75.1	1031.6	0.00	0.00	508
11/09/09	10:30a	65.5	65.5	64.2	72	56.2	3.0	WSW	0.75	6.0	SSW	65.5	65.7	65.7	76.2	1031.4	0.00	0.00	536
11/09/09	10:45a	66.7	66.7	65.6	68	55.8	2.0	WSW	0.50	6.0	WSW	66.7	66.9	66.9	77.4	1031.3	0.00	0.00	525
11/09/09	11:00a	67.8	67.8	66.6	64	55.2	2.0	SSW	0.50	7.0	SSW	67.8	67.9	67.9	78.6	1031.0	0.00	0.00	555
11/09/09	11:15a	68.9	68.9	67.8	64	56.2	1.0	W	0.25	6.0	W	68.9	68.7	68.7	79.5	1030.8	0.00	0.00	574
11/09/09	11:30a	66.7	69.1	66.7	72	57.4	3.0	NE	0.75	6.0	ENE	66.7	67.2	67.2	78.0	1030.4	0.00	0.00	575
11/09/09	11:45a	65.3	66.6	65.3	76	57.5	3.0	NE	0.75	6.0	NE	65.3	65.7	65.7	76.2	1030.2	0.00	0.00	542
11/09/09	12:00p	64.7	65.2	64.7	77	57.3	3.0	ENE	0.75	7.0	NNE	64.7	65.1	65.1	76.0	1029.8	0.00	0.00	592
11/09/09	12:15p	64.0	64.7	64.0	80	57.7	2.0	ENE	0.50	6.0	ENE	64.0	64.5	64.5	75.3	1029.7	0.00	0.00	582
11/09/09	12:30p	64.5	64.5	63.9	78	57.5	3.0	NE	0.75	7.0	NNE	64.5	64.9	64.9	75.8	1029.5	0.00	0.00	598
11/09/09	12:45p	64.3	64.6	64.3	78	57.3	4.0	NE	1.00	9.0	NNE	64.3	64.7	64.7	75.5	1029.2	0.00	0.00	571
11/09/09	1:00p	64.9	64.9	64.1	77	57.5	3.0	NE	0.75	7.0	NNE	64.9	65.3	65.3	76.1	1029.1	0.00	0.00	567
11/09/09	1:15p	65.9	65.9	65.0	75	57.7	3.0	NE	0.75	7.0	NE	65.9	66.4	66.4	77.1	1029.0	0.00	0.00	548

JEB LC-FS Site 11a 11/09/09

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	THSW Index	Bar	Rain	Rain Rate	Solar Rad.
11/09/09	1:30p	67.4	67.4	65.9	72	58.1	3.0	NE	0.75	5.0	NE	67.4	68.0	68.0	78.6	1029.0	0.00	0.00	524
11/09/09	1:45p	68.4	68.4	67.4	69	57.8	1.0	NE	0.25	5.0	NE	68.4	68.8	68.8	79.2	1028.8	0.00	0.00	503
11/09/09	2:00p	69.3	69.3	68.4	66	57.5	1.0	ENE	0.25	4.0	NE	69.3	69.2	69.2	79.4	1028.7	0.00	0.00	478
11/09/09	2:15p	70.5	70.5	69.3	63	57.3	1.0	NE	0.25	5.0	NE	70.5	70.1	70.1	80.2	1028.7	0.00	0.00	458
11/09/09	2:30p	70.8	70.8	70.5	61	56.7	1.0	ESE	0.25	5.0	E	70.8	70.3	70.3	79.9	1028.8	0.00	0.00	415

JEB LC-FS Site 11a 11/03/09

Date	Time	Solar Energy	Hi Solar Rad.	UV Index	UV Dose	Hi UV	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	Temp 2nd	Hum 2nd	ET	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
11/03/09	4:56p	---	---	---	---	---	---	---	---	---	---	---	---	---	0.000	0	1	0.0	15
11/03/09	5:00p	0.15	7	0.0	0.00	0.0	0.027	0.000	75.0	49	54.5	75.0	---	---	0.000	24	1	7.0	15
11/03/09	5:15p	0.02	7	0.0	0.00	0.0	0.040	0.000	74.5	49	54.1	74.3	---	---	0.000	348	1	100.0	15
11/03/09	5:30p	0.00	0	0.0	0.00	0.0	0.054	0.000	74.5	49	54.1	74.3	---	---	0.000	349	1	100.0	15
11/03/09	5:45p	0.00	0	0.0	0.00	0.0	0.068	0.000	74.7	49	54.3	74.6	---	---	0.000	349	1	100.0	15
11/03/09	6:00p	0.00	0	0.0	0.00	0.0	0.079	0.000	74.7	49	54.3	74.6	---	---	0.000	347	1	100.0	15
11/03/09	6:15p	0.00	0	0.0	0.00	0.0	0.088	0.000	74.9	49	54.4	74.9	---	---	0.000	348	1	100.0	15
11/03/09	6:30p	0.00	0	0.0	0.00	0.0	0.094	0.000	75.0	50	55.1	75.1	---	---	0.000	348	1	100.0	15
11/03/09	6:45p	0.00	0	0.0	0.00	0.0	0.097	0.000	75.0	50	55.1	75.1	---	---	0.000	348	1	100.0	15
11/03/09	7:00p	0.00	0	0.0	0.00	0.0	0.100	0.000	75.2	50	55.3	75.3	---	---	0.001	349	1	100.0	15
11/03/09	7:15p	0.00	0	0.0	0.00	0.0	0.102	0.000	75.2	50	55.3	75.3	---	---	0.000	348	1	100.0	15
11/03/09	7:30p	0.00	0	0.0	0.00	0.0	0.101	0.000	75.4	50	55.5	75.5	---	---	0.000	348	1	100.0	15
11/03/09	7:45p	0.00	0	0.0	0.00	0.0	0.100	0.000	75.4	50	55.5	75.5	---	---	0.000	350	1	100.0	15
11/03/09	8:00p	0.00	0	0.0	0.00	0.0	0.100	0.000	75.4	50	55.5	75.5	---	---	0.001	348	1	100.0	15
11/03/09	8:15p	0.00	0	0.0	0.00	0.0	0.102	0.000	75.4	50	55.5	75.5	---	---	0.000	350	1	100.0	15
11/03/09	8:30p	0.00	0	0.0	0.00	0.0	0.106	0.000	75.4	50	55.5	75.5	---	---	0.000	348	1	100.0	15
11/03/09	8:45p	0.00	0	0.0	0.00	0.0	0.109	0.000	75.4	50	55.5	75.5	---	---	0.000	349	1	100.0	15
11/03/09	9:00p	0.00	0	0.0	0.00	0.0	0.115	0.000	75.4	50	55.5	75.5	---	---	0.001	349	1	100.0	15
11/03/09	9:15p	0.00	0	0.0	0.00	0.0	0.119	0.000	75.4	50	55.5	75.5	---	---	0.000	348	1	100.0	15
11/03/09	9:30p	0.00	0	0.0	0.00	0.0	0.121	0.000	75.4	50	55.5	75.5	---	---	0.000	348	1	100.0	15
11/03/09	9:45p	0.00	0	0.0	0.00	0.0	0.122	0.000	75.6	50	55.6	75.6	---	---	0.000	349	1	100.0	15
11/03/09	10:00p	0.00	0	0.0	0.00	0.0	0.125	0.000	75.6	50	55.6	75.6	---	---	0.000	347	1	100.0	15
11/03/09	10:15p	0.00	0	0.0	0.00	0.0	0.128	0.000	75.6	50	55.6	75.6	---	---	0.000	349	1	100.0	15
11/03/09	10:30p	0.00	0	0.0	0.00	0.0	0.129	0.000	75.6	50	55.6	75.6	---	---	0.000	348	1	100.0	15
11/03/09	10:45p	0.00	0	0.0	0.00	0.0	0.123	0.000	75.6	50	55.6	75.6	---	---	0.000	351	1	100.0	15
11/03/09	11:00p	0.00	0	0.0	0.00	0.0	0.099	0.000	75.6	50	55.6	75.6	---	---	0.000	348	1	100.0	15
11/03/09	11:15p	0.00	0	0.0	0.00	0.0	0.089	0.000	75.6	50	55.6	75.6	---	---	0.000	349	1	100.0	15
11/03/09	11:30p	0.00	0	0.0	0.00	0.0	0.080	0.000	75.6	50	55.6	75.6	---	---	0.000	347	1	100.0	15
11/03/09	11:45p	0.00	0	0.0	0.00	0.0	0.061	0.000	75.6	50	55.6	75.6	---	---	0.000	349	1	100.0	15
11/04/09	12:00a	0.00	0	0.0	0.00	0.0	0.058	0.000	75.6	50	55.6	75.6	---	---	0.001	348	1	100.0	15

JEB LC-FS Site 11a 11/04/09

Date	Time	Solar Energy	Hi Solar Rad.	UV Index	UV Dose	Hi UV	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	Temp 2nd	Hum 2nd	ET	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
11/04/09	12:15a	0.00	0	0.0	0.00	0.0	0.061	0.000	75.6	50	55.6	75.6	---	---	0.000	345	1	100.0	15
11/04/09	12:30a	0.00	0	0.0	0.00	0.0	0.064	0.000	75.6	49	55.1	75.6	---	---	0.000	347	1	100.0	15
11/04/09	12:45a	0.00	0	0.0	0.00	0.0	0.064	0.000	75.6	49	55.1	75.6	---	---	0.000	347	1	100.0	15
11/04/09	1:00a	0.00	0	0.0	0.00	0.0	0.067	0.000	75.6	49	55.1	75.6	---	---	0.001	350	1	100.0	15
11/04/09	1:15a	0.00	0	0.0	0.00	0.0	0.071	0.000	75.6	49	55.1	75.6	---	---	0.000	349	1	100.0	15
11/04/09	1:30a	0.00	0	0.0	0.00	0.0	0.077	0.000	75.6	49	55.1	75.6	---	---	0.000	346	1	100.0	15
11/04/09	1:45a	0.00	0	0.0	0.00	0.0	0.080	0.000	75.6	49	55.1	75.6	---	---	0.000	348	1	100.0	15
11/04/09	2:00a	0.00	0	0.0	0.00	0.0	0.084	0.000	75.6	48	54.5	75.5	---	---	0.001	351	1	100.0	15
11/04/09	2:15a	0.00	0	0.0	0.00	0.0	0.086	0.000	75.6	48	54.5	75.5	---	---	0.000	349	1	100.0	15
11/04/09	2:30a	0.00	0	0.0	0.00	0.0	0.090	0.000	75.6	48	54.5	75.5	---	---	0.000	350	1	100.0	15
11/04/09	2:45a	0.00	0	0.0	0.00	0.0	0.096	0.000	75.6	48	54.5	75.5	---	---	0.000	349	1	100.0	15
11/04/09	3:00a	0.00	0	0.0	0.00	0.0	0.100	0.000	75.4	48	54.3	75.3	---	---	0.001	350	1	100.0	15
11/04/09	3:15a	0.00	0	0.0	0.00	0.0	0.104	0.000	75.4	48	54.3	75.3	---	---	0.000	348	1	100.0	15
11/04/09	3:30a	0.00	0	0.0	0.00	0.0	0.106	0.000	75.4	47	53.8	75.2	---	---	0.000	348	1	100.0	15
11/04/09	3:45a	0.00	0	0.0	0.00	0.0	0.111	0.000	75.4	47	53.8	75.2	---	---	0.000	348	1	100.0	15
11/04/09	4:00a	0.00	0	0.0	0.00	0.0	0.114	0.000	75.4	47	53.8	75.2	---	---	0.001	350	1	100.0	15
11/04/09	4:15a	0.00	0	0.0	0.00	0.0	0.118	0.000	75.4	47	53.8	75.2	---	---	0.000	349	1	100.0	15
11/04/09	4:30a	0.00	0	0.0	0.00	0.0	0.121	0.000	75.4	47	53.8	75.2	---	---	0.000	348	1	100.0	15
11/04/09	4:45a	0.00	0	0.0	0.00	0.0	0.123	0.000	75.4	46	53.2	75.1	---	---	0.000	349	1	100.0	15
11/04/09	5:00a	0.00	0	0.0	0.00	0.0	0.125	0.000	75.4	46	53.2	75.1	---	---	0.001	349	1	100.0	15
11/04/09	5:15a	0.00	0	0.0	0.00	0.0	0.126	0.000	75.4	46	53.2	75.1	---	---	0.000	345	1	100.0	15
11/04/09	5:30a	0.00	0	0.0	0.00	0.0	0.127	0.000	75.4	46	53.2	75.1	---	---	0.000	347	1	100.0	15
11/04/09	5:45a	0.00	0	0.0	0.00	0.0	0.131	0.000	75.4	46	53.2	75.1	---	---	0.000	349	1	100.0	15
11/04/09	6:00a	0.00	0	0.0	0.00	0.0	0.134	0.000	75.4	46	53.2	75.1	---	---	0.001	347	1	100.0	15
11/04/09	6:15a	0.00	0	0.0	0.00	0.0	0.139	0.000	75.4	45	52.6	75.1	---	---	0.000	347	1	100.0	15
11/04/09	6:30a	0.02	5	0.0	0.00	0.0	0.141	0.000	75.4	45	52.6	75.1	---	---	0.000	346	1	100.0	15
11/04/09	6:45a	0.22	14	0.0	0.00	0.0	0.143	0.000	75.2	45	52.4	74.9	---	---	0.000	348	1	100.0	15
11/04/09	7:00a	0.43	25	0.0	0.00	0.0	0.145	0.000	75.2	45	52.4	74.9	---	---	0.000	347	1	100.0	15
11/04/09	7:15a	0.65	35	0.0	0.00	0.0	0.145	0.000	75.2	45	52.4	74.9	---	---	0.000	349	1	100.0	15
11/04/09	7:30a	1.87	134	0.0	0.00	0.0	0.141	0.000	75.0	45	52.2	74.7	---	---	0.000	348	1	100.0	15
11/04/09	7:45a	2.54	144	0.0	0.00	0.0	0.136	0.000	75.0	45	52.2	74.7	---	---	0.000	346	1	100.0	15
11/04/09	8:00a	3.85	218	0.0	0.00	0.0	0.131	0.000	75.0	44	51.6	74.6	---	---	0.002	348	1	100.0	15
11/04/09	8:15a	4.60	255	0.0	0.00	0.0	0.127	0.000	75.0	44	51.6	74.6	---	---	0.000	348	1	100.0	15
11/04/09	8:30a	6.32	343	0.5	0.04	0.7	0.122	0.000	75.0	44	51.6	74.6	---	---	0.000	348	1	100.0	15
11/04/09	8:45a	7.01	346	0.9	0.07	1.0	0.116	0.000	75.0	44	51.6	74.6	---	---	0.000	346	1	100.0	15
11/04/09	9:00a	6.52	373	1.1	0.09	1.2	0.107	0.000	75.0	44	51.6	74.6	---	---	0.006	348	1	100.0	15
11/04/09	9:15a	4.26	329	1.2	0.10	1.5	0.116	0.000	75.2	44	51.8	74.8	---	---	0.000	347	1	100.0	15
11/04/09	9:30a	4.60	422	1.5	0.12	1.9	0.117	0.000	75.2	44	51.8	74.8	---	---	0.000	348	1	100.0	15
11/04/09	9:45a	10.06	483	2.2	0.18	2.3	0.102	0.000	75.2	44	51.8	74.8	---	---	0.000	348	1	100.0	15
11/04/09	10:00a	10.60	504	2.5	0.20	2.7	0.103	0.000	75.2	44	51.8	74.8	---	---	0.007	347	1	100.0	15
11/04/09	10:15a	11.42	550	2.8	0.22	3.0	0.097	0.000	75.2	44	51.8	74.8	---	---	0.000	349	1	100.0	15
11/04/09	10:30a	12.11	571	3.2	0.26	3.3	0.097	0.000	74.5	40	48.6	73.6	---	---	0.000	347	1	100.0	15
11/04/09	10:45a	12.51	603	3.4	0.27	3.5	0.098	0.000	73.8	41	48.6	72.9	---	---	0.000	348	1	100.0	15
11/04/09	11:00a	12.88	608	3.6	0.29	3.7	0.098	0.000	74.0	42	49.4	73.2	---	---	0.012	347	1	100.0	15
11/04/09	11:15a	13.18	617	3.8	0.31	3.8	0.094	0.000	74.2	42	49.6	73.5	---	---	0.000	349	1	100.0	15
11/04/09	11:30a	13.44	633	3.9	0.31	4.0	0.090	0.000	74.3	42	49.7	73.6	---	---	0.000	345	1	100.0	15
11/04/09	11:45a	13.70	652	3.9	0.31	4.0	0.089	0.000	74.2	42	49.6	73.5	---	---	0.000	346	1	100.0	15
11/04/09	12:00p	13.76	654	3.9	0.31	4.0	0.088	0.000	74.5	43	50.5	73.9	---	---	0.013	348	1	100.0	15
11/04/09	12:15p	12.86	698	3.7	0.30	4.0	0.088	0.000	74.7	43	50.7	74.1	---	---	0.000	350	1	100.0	15
11/04/09	12:30p	14.13	800	3.7	0.30	4.1	0.080	0.000	74.9	43	50.9	74.4	---	---	0.000	349	1	100.0	15
11/04/09	12:45p	14.13	731	3.7	0.30	3.9	0.078	0.000	74.9	43	50.9	74.4	---	---	0.000	348	1	100.0	15
11/04/09	1:00p	13.10	622	3.4	0.27	3.5	0.078	0.000	75.0	43	51.0	74.5	---	---	0.013	348	1	100.0	15
11/04/09	1:15p	12.73	599	3.1	0.25	3.3	0.079	0.000	75.2	44	51.8	74.8	---	---	0.000	347	1	100.0	15

JEB LC-FS Site 11a 11/04/09

Date	Time	Solar Energy	Hi Solar Rad.	UV Index	UV Dose	Hi UV	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	Temp 2nd	Hum 2nd	ET	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
11/04/09	1:30p	12.39	584	2.8	0.22	3.0	0.074	0.000	75.2	44	51.8	74.8	---	---	0.000	346	1	100.0	15
11/04/09	1:45p	11.83	564	2.5	0.20	2.7	0.075	0.000	75.4	44	52.0	75.0	---	---	0.000	349	1	100.0	15
11/04/09	2:00p	11.25	536	2.2	0.18	2.3	0.071	0.000	75.4	44	52.0	75.0	---	---	0.012	348	1	100.0	15
11/04/09	2:15p	10.49	508	1.8	0.14	2.0	0.071	0.000	75.6	44	52.1	75.1	---	---	0.000	348	1	100.0	15
11/04/09	2:30p	9.68	464	1.5	0.12	1.6	0.064	0.000	75.6	44	52.1	75.1	---	---	0.000	349	1	100.0	15
11/04/09	2:45p	8.88	432	1.2	0.10	1.3	0.055	0.000	75.7	44	52.2	75.2	---	---	0.000	347	1	100.0	15
11/04/09	3:00p	8.00	390	0.9	0.07	1.0	0.054	0.000	75.7	44	52.2	75.2	---	---	0.010	349	1	100.0	15
11/04/09	3:15p	6.58	346	0.6	0.05	0.7	0.059	0.000	75.7	44	52.2	75.2	---	---	0.000	348	1	100.0	15
11/04/09	3:30p	4.86	287	0.0	0.00	0.0	0.055	0.000	75.7	44	52.2	75.2	---	---	0.000	348	1	100.0	15
11/04/09	3:45p	3.96	227	0.0	0.00	0.0	0.060	0.000	75.7	44	52.2	75.2	---	---	0.000	349	1	100.0	15
11/04/09	4:00p	3.81	211	0.0	0.00	0.0	0.057	0.000	75.7	44	52.2	75.2	---	---	0.006	348	1	100.0	15
11/04/09	4:15p	2.56	142	0.0	0.00	0.0	0.056	0.000	75.7	44	52.2	75.2	---	---	0.000	349	1	100.0	15
11/04/09	4:30p	1.44	93	0.0	0.00	0.0	0.063	0.000	75.9	44	52.4	75.4	---	---	0.000	349	1	100.0	15
11/04/09	4:45p	0.49	39	0.0	0.00	0.0	0.072	0.000	75.9	44	52.4	75.4	---	---	0.000	348	1	100.0	15
11/04/09	5:00p	0.26	18	0.0	0.00	0.0	0.081	0.000	75.9	44	52.4	75.4	---	---	0.002	348	1	100.0	15
11/04/09	5:15p	0.02	7	0.0	0.00	0.0	0.088	0.000	75.9	44	52.4	75.4	---	---	0.000	348	1	100.0	15
11/04/09	5:30p	0.00	0	0.0	0.00	0.0	0.091	0.000	75.9	44	52.4	75.4	---	---	0.000	347	1	100.0	15
11/04/09	5:45p	0.00	0	0.0	0.00	0.0	0.094	0.000	75.9	44	52.4	75.4	---	---	0.000	346	1	100.0	15
11/04/09	6:00p	0.00	0	0.0	0.00	0.0	0.096	0.000	75.7	44	52.2	75.2	---	---	0.001	347	1	100.0	15
11/04/09	6:15p	0.00	0	0.0	0.00	0.0	0.099	0.000	75.7	44	52.2	75.2	---	---	0.000	347	1	100.0	15
11/04/09	6:30p	0.00	0	0.0	0.00	0.0	0.099	0.000	75.7	44	52.2	75.2	---	---	0.000	350	1	100.0	15
11/04/09	6:45p	0.00	0	0.0	0.00	0.0	0.098	0.000	75.7	44	52.2	75.2	---	---	0.000	347	1	100.0	15
11/04/09	7:00p	0.00	0	0.0	0.00	0.0	0.097	0.000	75.6	44	52.1	75.1	---	---	0.001	348	1	100.0	15
11/04/09	7:15p	0.00	0	0.0	0.00	0.0	0.097	0.000	75.6	44	52.1	75.1	---	---	0.000	348	1	100.0	15
11/04/09	7:30p	0.00	0	0.0	0.00	0.0	0.097	0.000	75.6	44	52.1	75.1	---	---	0.000	350	1	100.0	15
11/04/09	7:45p	0.00	0	0.0	0.00	0.0	0.097	0.000	75.6	44	52.1	75.1	---	---	0.000	348	1	100.0	15
11/04/09	8:00p	0.00	0	0.0	0.00	0.0	0.096	0.000	75.6	44	52.1	75.1	---	---	0.001	349	1	100.0	15
11/04/09	8:15p	0.00	0	0.0	0.00	0.0	0.098	0.000	75.6	44	52.1	75.1	---	---	0.000	348	1	100.0	15
11/04/09	8:30p	0.00	0	0.0	0.00	0.0	0.097	0.000	75.6	44	52.1	75.1	---	---	0.000	349	1	100.0	15
11/04/09	8:45p	0.00	0	0.0	0.00	0.0	0.096	0.000	75.6	44	52.1	75.1	---	---	0.000	348	1	100.0	15
11/04/09	9:00p	0.00	0	0.0	0.00	0.0	0.095	0.000	75.6	44	52.1	75.1	---	---	0.001	348	1	100.0	15
11/04/09	9:15p	0.00	0	0.0	0.00	0.0	0.094	0.000	75.6	45	52.8	75.2	---	---	0.000	349	1	100.0	15
11/04/09	9:30p	0.00	0	0.0	0.00	0.0	0.098	0.000	75.6	45	52.8	75.2	---	---	0.000	350	1	100.0	15
11/04/09	9:45p	0.00	0	0.0	0.00	0.0	0.104	0.000	75.6	45	52.8	75.2	---	---	0.000	349	1	100.0	15
11/04/09	10:00p	0.00	0	0.0	0.00	0.0	0.105	0.000	75.6	45	52.8	75.2	---	---	0.001	347	1	100.0	15
11/04/09	10:15p	0.00	0	0.0	0.00	0.0	0.111	0.000	75.6	45	52.8	75.2	---	---	0.000	347	1	100.0	15
11/04/09	10:30p	0.00	0	0.0	0.00	0.0	0.117	0.000	75.4	45	52.6	75.1	---	---	0.000	349	1	100.0	15
11/04/09	10:45p	0.00	0	0.0	0.00	0.0	0.120	0.000	75.4	45	52.6	75.1	---	---	0.000	348	1	100.0	15
11/04/09	11:00p	0.00	0	0.0	0.00	0.0	0.124	0.000	75.4	45	52.6	75.1	---	---	0.001	348	1	100.0	15
11/04/09	11:15p	0.00	0	0.0	0.00	0.0	0.119	0.000	75.4	45	52.6	75.1	---	---	0.000	348	1	100.0	15
11/04/09	11:30p	0.00	0	0.0	0.00	0.0	0.103	0.000	75.6	46	53.4	75.3	---	---	0.000	348	1	100.0	15
11/04/09	11:45p	0.00	0	0.0	0.00	0.0	0.092	0.000	75.6	46	53.4	75.3	---	---	0.000	349	1	100.0	15
11/05/09	12:00a	0.00	0	0.0	0.00	0.0	0.092	0.000	75.6	46	53.4	75.3	---	---	0.001	347	1	100.0	15

JEB LC-FS Site 11a 11/05/09

Date	Time	Solar Energy	Hi Solar Rad.	UV Index	UV Dose	Hi UV	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	Temp 2nd	Hum 2nd	ET	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
11/05/09	12:15a	0.00	0	0.0	0.00	0.0	0.090	0.000	75.6	46	53.4	75.3	---	---	0.000	347	1	100.0	15
11/05/09	12:30a	0.00	0	0.0	0.00	0.0	0.095	0.000	75.6	46	53.4	75.3	---	---	0.000	348	1	100.0	15
11/05/09	12:45a	0.00	0	0.0	0.00	0.0	0.098	0.000	75.6	46	53.4	75.3	---	---	0.000	348	1	100.0	15
11/05/09	1:00a	0.00	0	0.0	0.00	0.0	0.103	0.000	75.6	46	53.4	75.3	---	---	0.001	348	1	100.0	15
11/05/09	1:15a	0.00	0	0.0	0.00	0.0	0.108	0.000	75.4	46	53.2	75.1	---	---	0.000	348	1	100.0	15
11/05/09	1:30a	0.00	0	0.0	0.00	0.0	0.110	0.000	75.4	46	53.2	75.1	---	---	0.000	350	1	100.0	15
11/05/09	1:45a	0.00	0	0.0	0.00	0.0	0.114	0.000	75.4	47	53.8	75.2	---	---	0.000	348	1	100.0	15
11/05/09	2:00a	0.00	0	0.0	0.00	0.0	0.116	0.000	75.4	47	53.8	75.2	---	---	0.000	348	1	100.0	15
11/05/09	2:15a	0.00	0	0.0	0.00	0.0	0.117	0.000	75.4	47	53.8	75.2	---	---	0.000	347	1	100.0	15
11/05/09	2:30a	0.00	0	0.0	0.00	0.0	0.119	0.000	75.4	47	53.8	75.2	---	---	0.000	348	1	100.0	15
11/05/09	2:45a	0.00	0	0.0	0.00	0.0	0.119	0.000	75.4	47	53.8	75.2	---	---	0.000	348	1	100.0	15
11/05/09	3:00a	0.00	0	0.0	0.00	0.0	0.122	0.000	75.4	47	53.8	75.2	---	---	0.000	347	1	100.0	15
11/05/09	3:15a	0.00	0	0.0	0.00	0.0	0.123	0.000	75.4	47	53.8	75.2	---	---	0.000	348	1	100.0	15
11/05/09	3:30a	0.00	0	0.0	0.00	0.0	0.124	0.000	75.4	47	53.8	75.2	---	---	0.000	348	1	100.0	15
11/05/09	3:45a	0.00	0	0.0	0.00	0.0	0.124	0.000	75.4	47	53.8	75.2	---	---	0.000	348	1	100.0	15
11/05/09	4:00a	0.00	0	0.0	0.00	0.0	0.126	0.000	75.4	47	53.8	75.2	---	---	0.000	347	1	100.0	15
11/05/09	4:15a	0.00	0	0.0	0.00	0.0	0.131	0.000	75.4	47	53.8	75.2	---	---	0.000	348	1	100.0	15
11/05/09	4:30a	0.00	0	0.0	0.00	0.0	0.133	0.000	75.4	47	53.8	75.2	---	---	0.000	347	1	100.0	15
11/05/09	4:45a	0.00	0	0.0	0.00	0.0	0.127	0.000	75.4	47	53.8	75.2	---	---	0.000	348	1	100.0	15
11/05/09	5:00a	0.00	0	0.0	0.00	0.0	0.125	0.000	75.4	48	54.3	75.3	---	---	0.000	347	1	100.0	15
11/05/09	5:15a	0.00	0	0.0	0.00	0.0	0.124	0.000	75.2	48	54.2	75.1	---	---	0.000	348	1	100.0	15
11/05/09	5:30a	0.00	0	0.0	0.00	0.0	0.131	0.000	75.2	48	54.2	75.1	---	---	0.000	347	1	100.0	15
11/05/09	5:45a	0.00	0	0.0	0.00	0.0	0.141	0.000	75.4	48	54.3	75.3	---	---	0.000	346	1	100.0	15
11/05/09	6:00a	0.00	0	0.0	0.00	0.0	0.140	0.000	75.4	48	54.3	75.3	---	---	0.000	351	1	100.0	15
11/05/09	6:15a	0.00	0	0.0	0.00	0.0	0.133	0.000	75.4	48	54.3	75.3	---	---	0.000	349	1	100.0	15
11/05/09	6:30a	0.00	0	0.0	0.00	0.0	0.118	0.000	75.4	48	54.3	75.3	---	---	0.000	349	1	100.0	15
11/05/09	6:45a	0.19	14	0.0	0.00	0.0	0.112	0.000	75.4	48	54.3	75.3	---	---	0.000	348	1	100.0	15
11/05/09	7:00a	0.45	28	0.0	0.00	0.0	0.112	0.000	75.4	48	54.3	75.3	---	---	0.000	347	1	100.0	15
11/05/09	7:15a	0.75	46	0.0	0.00	0.0	0.114	0.000	75.4	47	53.8	75.2	---	---	0.000	347	1	100.0	15
11/05/09	7:30a	1.78	134	0.0	0.00	0.0	0.115	0.000	75.2	48	54.2	75.1	---	---	0.000	347	1	100.0	15
11/05/09	7:45a	2.84	176	0.0	0.00	0.0	0.111	0.000	75.4	48	54.3	75.3	---	---	0.000	347	1	100.0	15
11/05/09	8:00a	3.98	211	0.0	0.00	0.0	0.105	0.000	75.4	48	54.3	75.3	---	---	0.002	349	1	100.0	15
11/05/09	8:15a	4.97	258	0.0	0.00	0.0	0.099	0.000	75.4	48	54.3	75.3	---	---	0.000	346	1	100.0	15
11/05/09	8:30a	4.90	285	0.0	0.00	0.0	0.097	0.000	75.4	48	54.3	75.3	---	---	0.000	349	1	100.0	15
11/05/09	8:45a	6.02	313	0.3	0.02	0.6	0.095	0.000	75.4	48	54.3	75.3	---	---	0.000	347	1	100.0	15
11/05/09	9:00a	6.04	343	0.7	0.06	0.7	0.086	0.000	75.4	48	54.3	75.3	---	---	0.005	347	1	100.0	15
11/05/09	9:15a	7.03	373	1.0	0.08	1.1	0.085	0.000	75.4	48	54.3	75.3	---	---	0.000	347	1	100.0	15
11/05/09	9:30a	5.18	397	1.1	0.09	1.3	0.086	0.000	75.4	48	54.3	75.3	---	---	0.000	348	1	100.0	15
11/05/09	9:45a	9.12	443	1.5	0.12	1.7	0.079	0.000	75.6	47	53.9	75.4	---	---	0.000	349	1	100.0	15
11/05/09	10:00a	9.96	483	1.9	0.15	2.1	0.074	0.000	75.4	47	53.8	75.2	---	---	0.008	347	1	100.0	15
11/05/09	10:15a	10.69	524	2.2	0.18	2.4	0.073	0.000	75.6	48	54.5	75.5	---	---	0.000	348	1	100.0	15
11/05/09	10:30a	11.53	554	2.5	0.20	2.7	0.076	0.000	75.6	48	54.5	75.5	---	---	0.000	348	1	100.0	15
11/05/09	10:45a	12.26	585	2.8	0.22	2.9	0.082	0.000	75.6	47	53.9	75.4	---	---	0.000	349	1	100.0	15
11/05/09	11:00a	12.73	599	3.0	0.24	3.1	0.075	0.000	75.7	47	54.0	75.5	---	---	0.012	349	1	100.0	15
11/05/09	11:15a	13.07	615	3.1	0.25	3.2	0.077	0.000	75.7	47	54.0	75.5	---	---	0.000	349	1	100.0	15
11/05/09	11:30a	13.33	626	3.2	0.26	3.3	0.078	0.000	75.6	47	53.9	75.4	---	---	0.000	348	1	100.0	15
11/05/09	11:45a	13.55	652	3.3	0.27	3.3	0.078	0.000	75.4	46	53.2	75.1	---	---	0.000	347	1	100.0	15
11/05/09	12:00p	13.59	647	3.3	0.27	3.3	0.078	0.000	75.6	47	53.9	75.4	---	---	0.013	349	1	100.0	15
11/05/09	12:15p	13.53	633	3.3	0.27	3.3	0.076	0.000	75.6	47	53.9	75.4	---	---	0.000	348	1	100.0	15
11/05/09	12:30p	13.37	626	3.1	0.25	3.2	0.074	0.000	75.6	46	53.4	75.3	---	---	0.000	349	1	100.0	15
11/05/09	12:45p	13.12	617	3.0	0.24	3.1	0.069	0.000	75.7	46	53.4	75.4	---	---	0.000	348	1	100.0	15
11/05/09	1:00p	12.79	603	2.8	0.22	2.9	0.069	0.000	75.7	46	53.4	75.4	---	---	0.013	350	1	100.0	15
11/05/09	1:15p	12.45	585	2.6	0.21	2.7	0.067	0.000	75.9	46	53.6	75.6	---	---	0.000	348	1	100.0	15

JEB LC-FS Site 11a 11/05/09

Date	Time	Solar Energy	Hi Solar Rad.	UV Index	UV Dose	Hi UV	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	Temp 2nd	Hum 2nd	ET	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
11/05/09	1:30p	12.04	573	2.3	0.18	2.4	0.061	0.000	75.9	46	53.6	75.6	---	---	0.000	348	1	100.0	15
11/05/09	1:45p	11.50	547	2.0	0.16	2.2	0.059	0.000	76.1	46	53.8	75.8	---	---	0.000	348	1	100.0	15
11/05/09	2:00p	10.97	524	1.8	0.14	1.9	0.060	0.000	76.1	46	53.8	75.8	---	---	0.012	350	1	100.0	15
11/05/09	2:15p	10.28	497	1.5	0.12	1.6	0.057	0.000	76.1	46	53.8	75.8	---	---	0.000	349	1	100.0	15
11/05/09	2:30p	9.50	461	1.2	0.10	1.3	0.054	0.000	76.1	46	53.8	75.8	---	---	0.000	348	1	100.0	15
11/05/09	2:45p	8.62	418	0.9	0.07	1.1	0.053	0.000	75.4	42	50.7	74.8	---	---	0.000	349	1	100.0	15
11/05/09	3:00p	7.65	376	0.7	0.06	0.8	0.056	0.000	75.4	43	51.3	74.9	---	---	0.009	347	1	100.0	15
11/05/09	3:15p	6.82	334	0.2	0.02	0.5	0.060	0.000	75.4	44	52.0	75.0	---	---	0.000	349	1	100.0	15
11/05/09	3:30p	5.78	292	0.0	0.00	0.0	0.058	0.000	75.6	44	52.1	75.1	---	---	0.000	348	1	100.0	15
11/05/09	3:45p	4.69	244	0.0	0.00	0.0	0.060	0.000	75.6	44	52.1	75.1	---	---	0.000	347	1	100.0	15
11/05/09	4:00p	3.48	190	0.0	0.00	0.0	0.058	0.000	75.7	44	52.2	75.2	---	---	0.006	348	1	100.0	15
11/05/09	4:15p	2.34	137	0.0	0.00	0.0	0.064	0.000	75.7	44	52.2	75.2	---	---	0.000	349	1	100.0	15
11/05/09	4:30p	1.33	84	0.0	0.00	0.0	0.063	0.000	75.7	44	52.2	75.2	---	---	0.000	347	1	100.0	15
11/05/09	4:45p	0.67	46	0.0	0.00	0.0	0.068	0.000	75.7	44	52.2	75.2	---	---	0.000	347	1	100.0	15
11/05/09	5:00p	0.28	18	0.0	0.00	0.0	0.080	0.000	75.7	44	52.2	75.2	---	---	0.002	348	1	100.0	15
11/05/09	5:15p	0.04	7	0.0	0.00	0.0	0.092	0.000	75.7	44	52.2	75.2	---	---	0.000	348	1	100.0	15
11/05/09	5:30p	0.00	0	0.0	0.00	0.0	0.103	0.000	75.7	44	52.2	75.2	---	---	0.000	346	1	100.0	15
11/05/09	5:45p	0.00	0	0.0	0.00	0.0	0.112	0.000	75.7	44	52.2	75.2	---	---	0.000	349	1	100.0	15
11/05/09	6:00p	0.00	0	0.0	0.00	0.0	0.120	0.000	75.7	44	52.2	75.2	---	---	0.000	347	1	100.0	15
11/05/09	6:15p	0.00	0	0.0	0.00	0.0	0.128	0.000	75.7	44	52.2	75.2	---	---	0.000	351	1	100.0	15
11/05/09	6:30p	0.00	0	0.0	0.00	0.0	0.120	0.000	75.7	44	52.2	75.2	---	---	0.000	349	1	100.0	15
11/05/09	6:45p	0.00	0	0.0	0.00	0.0	0.124	0.000	75.7	44	52.2	75.2	---	---	0.000	347	1	100.0	15
11/05/09	7:00p	0.00	0	0.0	0.00	0.0	0.129	0.000	75.7	44	52.2	75.2	---	---	0.001	347	1	100.0	15
11/05/09	7:15p	0.00	0	0.0	0.00	0.0	0.132	0.000	75.7	44	52.2	75.2	---	---	0.000	347	1	100.0	15
11/05/09	7:30p	0.00	0	0.0	0.00	0.0	0.134	0.000	75.7	45	52.8	75.3	---	---	0.000	348	1	100.0	15
11/05/09	7:45p	0.00	0	0.0	0.00	0.0	0.131	0.000	75.6	45	52.8	75.2	---	---	0.000	348	1	100.0	15
11/05/09	8:00p	0.00	0	0.0	0.00	0.0	0.105	0.000	75.6	45	52.8	75.2	---	---	0.001	348	1	100.0	15
11/05/09	8:15p	0.00	0	0.0	0.00	0.0	0.077	0.000	75.6	45	52.8	75.2	---	---	0.000	349	1	100.0	15
11/05/09	8:30p	0.00	0	0.0	0.00	0.0	0.080	0.000	75.6	45	52.8	75.2	---	---	0.000	349	1	100.0	15
11/05/09	8:45p	0.00	0	0.0	0.00	0.0	0.080	0.000	75.6	45	52.8	75.2	---	---	0.000	350	1	100.0	15
11/05/09	9:00p	0.00	0	0.0	0.00	0.0	0.082	0.000	75.6	45	52.8	75.2	---	---	0.004	349	1	100.0	15
11/05/09	9:15p	0.00	0	0.0	0.00	0.0	0.084	0.000	75.6	45	52.8	75.2	---	---	0.000	348	1	100.0	15
11/05/09	9:30p	0.00	0	0.0	0.00	0.0	0.086	0.000	75.6	45	52.8	75.2	---	---	0.000	348	1	100.0	15
11/05/09	9:45p	0.00	0	0.0	0.00	0.0	0.088	0.000	75.6	45	52.8	75.2	---	---	0.000	346	1	100.0	15
11/05/09	10:00p	0.00	0	0.0	0.00	0.0	0.091	0.000	75.6	45	52.8	75.2	---	---	0.004	347	1	100.0	15
11/05/09	10:15p	0.00	0	0.0	0.00	0.0	0.094	0.000	75.6	44	52.1	75.1	---	---	0.000	349	1	100.0	15
11/05/09	10:30p	0.00	0	0.0	0.00	0.0	0.098	0.000	75.6	44	52.1	75.1	---	---	0.000	347	1	100.0	15
11/05/09	10:45p	0.00	0	0.0	0.00	0.0	0.101	0.000	75.6	44	52.1	75.1	---	---	0.000	348	1	100.0	15
11/05/09	11:00p	0.00	0	0.0	0.00	0.0	0.100	0.000	75.6	44	52.1	75.1	---	---	0.004	347	1	100.0	15
11/05/09	11:15p	0.00	0	0.0	0.00	0.0	0.100	0.000	75.6	44	52.1	75.1	---	---	0.000	349	1	100.0	15
11/05/09	11:30p	0.00	0	0.0	0.00	0.0	0.103	0.000	75.4	44	52.0	75.0	---	---	0.000	349	1	100.0	15
11/05/09	11:45p	0.00	0	0.0	0.00	0.0	0.106	0.000	75.4	44	52.0	75.0	---	---	0.000	348	1	100.0	15
11/06/09	12:00a	0.00	0	0.0	0.00	0.0	0.110	0.000	75.4	44	52.0	75.0	---	---	0.004	348	1	100.0	15

JEB LC-FS Site 11a 11/06/09

Date	Time	Solar Energy	Hi Solar Rad.	UV Index	UV Dose	Hi UV	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	Temp 2nd	Hum 2nd	ET	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
11/06/09	12:15a	0.00	0	0.0	0.00	0.0	0.112	0.000	75.4	44	52.0	75.0	---	---	0.000	345	1	100.0	15
11/06/09	12:30a	0.00	0	0.0	0.00	0.0	0.114	0.000	75.4	44	52.0	75.0	---	---	0.000	349	1	100.0	15
11/06/09	12:45a	0.00	0	0.0	0.00	0.0	0.116	0.000	75.4	43	51.3	74.9	---	---	0.000	348	1	100.0	15
11/06/09	1:00a	0.00	0	0.0	0.00	0.0	0.117	0.000	75.4	43	51.3	74.9	---	---	0.003	346	1	100.0	15
11/06/09	1:15a	0.00	0	0.0	0.00	0.0	0.120	0.000	75.4	43	51.3	74.9	---	---	0.000	345	1	100.0	15
11/06/09	1:30a	0.00	0	0.0	0.00	0.0	0.123	0.000	75.4	43	51.3	74.9	---	---	0.000	349	1	100.0	15
11/06/09	1:45a	0.00	0	0.0	0.00	0.0	0.123	0.000	75.4	43	51.3	74.9	---	---	0.000	348	1	100.0	15
11/06/09	2:00a	0.00	0	0.0	0.00	0.0	0.123	0.000	75.2	43	51.2	74.7	---	---	0.003	348	1	100.0	15
11/06/09	2:15a	0.00	0	0.0	0.00	0.0	0.123	0.000	75.2	43	51.2	74.7	---	---	0.000	350	1	100.0	15
11/06/09	2:30a	0.00	0	0.0	0.00	0.0	0.127	0.000	75.2	43	51.2	74.7	---	---	0.000	348	1	100.0	15
11/06/09	2:45a	0.00	0	0.0	0.00	0.0	0.130	0.000	75.2	43	51.2	74.7	---	---	0.000	348	1	100.0	15
11/06/09	3:00a	0.00	0	0.0	0.00	0.0	0.133	0.000	75.2	43	51.2	74.7	---	---	0.003	348	1	100.0	15
11/06/09	3:15a	0.00	0	0.0	0.00	0.0	0.132	0.000	75.2	43	51.2	74.7	---	---	0.000	347	1	100.0	15
11/06/09	3:30a	0.00	0	0.0	0.00	0.0	0.135	0.000	75.2	43	51.2	74.7	---	---	0.000	346	1	100.0	15
11/06/09	3:45a	0.00	0	0.0	0.00	0.0	0.135	0.000	75.2	43	51.2	74.7	---	---	0.000	348	1	100.0	15
11/06/09	4:00a	0.00	0	0.0	0.00	0.0	0.138	0.000	75.2	43	51.2	74.7	---	---	0.003	348	1	100.0	15
11/06/09	4:15a	0.00	0	0.0	0.00	0.0	0.141	0.000	75.2	43	51.2	74.7	---	---	0.000	347	1	100.0	15
11/06/09	4:30a	0.00	0	0.0	0.00	0.0	0.142	0.000	75.2	43	51.2	74.7	---	---	0.000	348	1	100.0	15
11/06/09	4:45a	0.00	0	0.0	0.00	0.0	0.143	0.000	75.2	42	50.5	74.6	---	---	0.000	350	1	100.0	15
11/06/09	5:00a	0.00	0	0.0	0.00	0.0	0.142	0.000	75.0	42	50.3	74.4	---	---	0.003	346	1	100.0	15
11/06/09	5:15a	0.00	0	0.0	0.00	0.0	0.143	0.000	75.0	42	50.3	74.4	---	---	0.000	349	1	100.0	15
11/06/09	5:30a	0.00	0	0.0	0.00	0.0	0.144	0.000	75.0	42	50.3	74.4	---	---	0.000	347	1	100.0	15
11/06/09	5:45a	0.00	0	0.0	0.00	0.0	0.147	0.000	75.0	42	50.3	74.4	---	---	0.000	348	1	100.0	15
11/06/09	6:00a	0.00	0	0.0	0.00	0.0	0.149	0.000	75.0	42	50.3	74.4	---	---	0.003	348	1	100.0	15
11/06/09	6:15a	0.00	0	0.0	0.00	0.0	0.152	0.000	75.0	42	50.3	74.4	---	---	0.000	347	1	100.0	15
11/06/09	6:30a	0.00	0	0.0	0.00	0.0	0.156	0.000	75.0	42	50.3	74.4	---	---	0.000	347	1	100.0	15
11/06/09	6:45a	0.19	14	0.0	0.00	0.0	0.159	0.000	74.9	42	50.3	74.3	---	---	0.000	351	1	100.0	15
11/06/09	7:00a	0.41	23	0.0	0.00	0.0	0.160	0.000	75.0	42	50.3	74.4	---	---	0.003	349	1	100.0	15
11/06/09	7:15a	0.62	32	0.0	0.00	0.0	0.160	0.000	75.0	42	50.3	74.4	---	---	0.000	349	1	100.0	15
11/06/09	7:30a	1.57	116	0.0	0.00	0.0	0.160	0.000	75.0	42	50.3	74.4	---	---	0.000	346	1	100.0	15
11/06/09	7:45a	3.05	165	0.0	0.00	0.0	0.159	0.000	75.0	42	50.3	74.4	---	---	0.000	349	1	100.0	15
11/06/09	8:00a	4.04	207	0.0	0.00	0.0	0.156	0.000	75.0	42	50.3	74.4	---	---	0.005	348	1	100.0	15
11/06/09	8:15a	4.99	255	0.0	0.00	0.0	0.157	0.000	75.0	42	50.3	74.4	---	---	0.000	347	1	100.0	15
11/06/09	8:30a	5.98	297	0.2	0.02	0.5	0.156	0.000	75.2	42	50.5	74.6	---	---	0.000	347	1	100.0	15
11/06/09	8:45a	6.90	343	0.7	0.06	0.8	0.153	0.000	75.2	42	50.5	74.6	---	---	0.000	350	1	100.0	15
11/06/09	9:00a	7.22	385	0.9	0.07	1.0	0.157	0.000	75.2	42	50.5	74.6	---	---	0.008	349	1	100.0	15
11/06/09	9:15a	8.04	422	1.2	0.10	1.3	0.154	0.000	75.2	41	49.9	74.5	---	---	0.000	348	1	100.0	15
11/06/09	9:30a	6.19	455	1.3	0.10	1.6	0.153	0.000	75.2	41	49.9	74.5	---	---	0.000	347	1	100.0	15
11/06/09	9:45a	10.19	494	1.7	0.14	1.9	0.152	0.000	75.2	41	49.9	74.5	---	---	0.000	348	1	100.0	15
11/06/09	10:00a	11.07	536	2.1	0.17	2.2	0.151	0.000	75.0	41	49.7	74.3	---	---	0.009	349	1	100.0	15
11/06/09	10:15a	11.65	554	2.4	0.19	2.5	0.149	0.000	75.0	41	49.7	74.3	---	---	0.000	347	1	100.0	15
11/06/09	10:30a	12.24	594	2.7	0.22	2.8	0.146	0.000	75.0	41	49.7	74.3	---	---	0.000	349	1	100.0	15
11/06/09	10:45a	12.75	613	2.9	0.23	3.0	0.146	0.000	75.0	41	49.7	74.3	---	---	0.000	349	1	100.0	15
11/06/09	11:00a	13.07	624	3.1	0.25	3.2	0.142	0.000	75.0	41	49.7	74.3	---	---	0.013	349	1	100.0	15
11/06/09	11:15a	13.48	647	3.2	0.26	3.3	0.142	0.000	75.2	41	49.9	74.5	---	---	0.000	349	1	100.0	15
11/06/09	11:30a	13.61	640	3.3	0.27	3.4	0.139	0.000	75.2	41	49.9	74.5	---	---	0.000	348	1	100.0	15
11/06/09	11:45a	13.83	666	3.4	0.27	3.4	0.133	0.000	75.2	41	49.9	74.5	---	---	0.000	349	1	100.0	15
11/06/09	12:00p	13.96	666	3.4	0.27	3.4	0.129	0.000	75.2	41	49.9	74.5	---	---	0.014	347	1	100.0	15
11/06/09	12:15p	13.83	647	3.4	0.27	3.4	0.129	0.000	75.2	41	49.9	74.5	---	---	0.000	348	1	100.0	15
11/06/09	12:30p	13.74	642	3.3	0.27	3.3	0.127	0.000	75.2	41	49.9	74.5	---	---	0.000	347	1	100.0	15
11/06/09	12:45p	13.57	636	3.1	0.25	3.2	0.124	0.000	75.4	41	50.1	74.7	---	---	0.000	347	1	100.0	15
11/06/09	1:00p	13.31	626	3.0	0.24	3.1	0.124	0.000	75.4	41	50.1	74.7	---	---	0.014	351	1	100.0	15
11/06/09	1:15p	12.92	612	2.8	0.22	2.9	0.122	0.000	75.4	41	50.1	74.7	---	---	0.000	348	1	100.0	15

JEB LC-FS Site 11a 11/06/09

Date	Time	Solar Energy	Hi Solar Rad.	UV Index	UV Dose	Hi UV	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	Temp 2nd	Hum 2nd	ET	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
11/06/09	1:30p	12.49	589	2.5	0.20	2.6	0.118	0.000	75.4	41	50.1	74.7	---	---	0.000	346	1	100.0	15
11/06/09	1:45p	12.00	570	2.2	0.18	2.4	0.122	0.000	75.6	40	49.6	74.7	---	---	0.000	348	1	100.0	15
11/06/09	2:00p	11.42	545	1.9	0.15	2.1	0.119	0.000	75.6	40	49.6	74.7	---	---	0.012	349	1	100.0	15
11/06/09	2:15p	10.73	515	1.6	0.13	1.8	0.122	0.000	75.6	40	49.6	74.7	---	---	0.000	349	1	100.0	15
11/06/09	2:30p	9.98	483	1.3	0.10	1.5	0.120	0.000	75.6	40	49.6	74.7	---	---	0.000	347	1	100.0	15
11/06/09	2:45p	9.16	445	1.1	0.09	1.2	0.122	0.000	75.6	40	49.6	74.7	---	---	0.000	347	1	100.0	15
11/06/09	3:00p	8.30	406	0.8	0.06	0.9	0.127	0.000	75.6	39	48.9	74.7	---	---	0.010	348	1	100.0	15
11/06/09	3:15p	7.35	364	0.4	0.03	0.6	0.130	0.000	75.6	39	48.9	74.7	---	---	0.000	348	1	100.0	15
11/06/09	3:30p	6.36	320	0.0	0.00	0.0	0.128	0.000	75.6	39	48.9	74.7	---	---	0.000	348	1	100.0	15
11/06/09	3:45p	5.14	267	0.0	0.00	0.0	0.129	0.000	75.4	39	48.7	74.5	---	---	0.000	349	1	100.0	15
11/06/09	4:00p	3.87	207	0.0	0.00	0.0	0.128	0.000	75.4	39	48.7	74.5	---	---	0.007	350	1	100.0	15
11/06/09	4:15p	2.67	153	0.0	0.00	0.0	0.129	0.000	75.4	39	48.7	74.5	---	---	0.000	349	1	100.0	15
11/06/09	4:30p	1.57	95	0.0	0.00	0.0	0.134	0.000	75.4	39	48.7	74.5	---	---	0.000	349	1	100.0	15
11/06/09	4:45p	0.62	51	0.0	0.00	0.0	0.144	0.000	75.4	39	48.7	74.5	---	---	0.000	347	1	100.0	15
11/06/09	5:00p	0.26	18	0.0	0.00	0.0	0.148	0.000	75.4	39	48.7	74.5	---	---	0.003	350	1	100.0	15
11/06/09	5:15p	0.06	7	0.0	0.00	0.0	0.151	0.000	75.4	39	48.7	74.5	---	---	0.000	348	1	100.0	15
11/06/09	5:30p	0.00	0	0.0	0.00	0.0	0.152	0.000	75.4	39	48.7	74.5	---	---	0.000	350	1	100.0	15
11/06/09	5:45p	0.00	0	0.0	0.00	0.0	0.151	0.000	75.2	39	48.5	74.3	---	---	0.000	347	1	100.0	15
11/06/09	6:00p	0.00	0	0.0	0.00	0.0	0.151	0.000	75.2	39	48.5	74.3	---	---	0.001	348	1	100.0	15
11/06/09	6:15p	0.00	0	0.0	0.00	0.0	0.152	0.000	75.2	39	48.5	74.3	---	---	0.000	348	1	100.0	15
11/06/09	6:30p	0.00	0	0.0	0.00	0.0	0.151	0.000	75.0	39	48.4	74.1	---	---	0.000	347	1	100.0	15
11/06/09	6:45p	0.00	0	0.0	0.00	0.0	0.153	0.000	75.0	39	48.4	74.1	---	---	0.000	348	1	100.0	15
11/06/09	7:00p	0.00	0	0.0	0.00	0.0	0.159	0.000	75.0	39	48.4	74.1	---	---	0.002	349	1	100.0	15
11/06/09	7:15p	0.00	0	0.0	0.00	0.0	0.161	0.000	75.0	39	48.4	74.1	---	---	0.000	348	1	100.0	15
11/06/09	7:30p	0.00	0	0.0	0.00	0.0	0.164	0.000	75.0	39	48.4	74.1	---	---	0.000	349	1	100.0	15
11/06/09	7:45p	0.00	0	0.0	0.00	0.0	0.165	0.000	75.0	39	48.4	74.1	---	---	0.000	348	1	100.0	15
11/06/09	8:00p	0.00	0	0.0	0.00	0.0	0.166	0.000	75.0	39	48.4	74.1	---	---	0.001	348	1	100.0	15
11/06/09	8:15p	0.00	0	0.0	0.00	0.0	0.168	0.000	75.0	39	48.4	74.1	---	---	0.000	348	1	100.0	15
11/06/09	8:30p	0.00	0	0.0	0.00	0.0	0.168	0.000	75.0	39	48.4	74.1	---	---	0.000	348	1	100.0	15
11/06/09	8:45p	0.00	0	0.0	0.00	0.0	0.170	0.000	75.0	39	48.4	74.1	---	---	0.000	348	1	100.0	15
11/06/09	9:00p	0.00	0	0.0	0.00	0.0	0.174	0.000	74.9	39	48.3	74.0	---	---	0.001	349	1	100.0	15
11/06/09	9:15p	0.00	0	0.0	0.00	0.0	0.197	0.000	74.9	39	48.3	74.0	---	---	0.000	349	1	100.0	15
11/06/09	9:30p	0.00	0	0.0	0.00	0.0	0.217	0.000	74.9	39	48.3	74.0	---	---	0.000	347	1	100.0	15
11/06/09	9:45p	0.00	0	0.0	0.00	0.0	0.224	0.000	74.7	39	48.1	73.8	---	---	0.000	348	1	100.0	15
11/06/09	10:00p	0.00	0	0.0	0.00	0.0	0.232	0.000	74.7	39	48.1	73.8	---	---	0.001	347	1	100.0	15
11/06/09	10:15p	0.00	0	0.0	0.00	0.0	0.237	0.000	74.7	39	48.1	73.8	---	---	0.000	350	1	100.0	15
11/06/09	10:30p	0.00	0	0.0	0.00	0.0	0.242	0.000	74.7	39	48.1	73.8	---	---	0.000	348	1	100.0	15
11/06/09	10:45p	0.00	0	0.0	0.00	0.0	0.244	0.000	74.7	39	48.1	73.8	---	---	0.000	348	1	100.0	15
11/06/09	11:00p	0.00	0	0.0	0.00	0.0	0.246	0.000	74.7	39	48.1	73.8	---	---	0.000	345	1	100.0	15
11/06/09	11:15p	0.00	0	0.0	0.00	0.0	0.248	0.000	74.7	39	48.1	73.8	---	---	0.000	350	1	100.0	15
11/06/09	11:30p	0.00	0	0.0	0.00	0.0	0.252	0.000	74.7	39	48.1	73.8	---	---	0.000	348	1	100.0	15
11/06/09	11:45p	0.00	0	0.0	0.00	0.0	0.254	0.000	74.5	39	47.9	73.6	---	---	0.000	346	1	100.0	15
11/07/09	12:00a	0.00	0	0.0	0.00	0.0	0.257	0.000	74.5	39	47.9	73.6	---	---	0.000	348	1	100.0	15

JEB LC-FS Site 11a 11/07/09

Date	Time	Solar Energy	Hi Solar Rad.	UV Index	UV Dose	Hi UV	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	Temp 2nd	Hum 2nd	ET	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
11/07/09	12:15a	0.00	0	0.0	0.00	0.0	0.261	0.000	74.5	39	47.9	73.6	---	---	0.000	347	1	100.0	15
11/07/09	12:30a	0.00	0	0.0	0.00	0.0	0.260	0.000	74.3	39	47.7	73.4	---	---	0.000	349	1	100.0	15
11/07/09	12:45a	0.00	0	0.0	0.00	0.0	0.263	0.000	74.3	39	47.7	73.4	---	---	0.000	347	1	100.0	15
11/07/09	1:00a	0.00	0	0.0	0.00	0.0	0.265	0.000	74.3	39	47.7	73.4	---	---	0.000	348	1	100.0	15
11/07/09	1:15a	0.00	0	0.0	0.00	0.0	0.265	0.000	74.3	39	47.7	73.4	---	---	0.000	350	1	100.0	15
11/07/09	1:30a	0.00	0	0.0	0.00	0.0	0.265	0.000	74.3	39	47.7	73.4	---	---	0.000	350	1	100.0	15
11/07/09	1:45a	0.00	0	0.0	0.00	0.0	0.266	0.000	74.3	39	47.7	73.4	---	---	0.000	347	1	100.0	15
11/07/09	2:00a	0.00	0	0.0	0.00	0.0	0.268	0.000	74.3	39	47.7	73.4	---	---	0.000	348	1	100.0	15
11/07/09	2:15a	0.00	0	0.0	0.00	0.0	0.270	0.000	74.3	39	47.7	73.4	---	---	0.000	351	1	100.0	15
11/07/09	2:30a	0.00	0	0.0	0.00	0.0	0.272	0.000	74.3	39	47.7	73.4	---	---	0.000	347	1	100.0	15
11/07/09	2:45a	0.00	0	0.0	0.00	0.0	0.274	0.000	74.2	39	47.6	73.2	---	---	0.000	347	1	100.0	15
11/07/09	3:00a	0.00	0	0.0	0.00	0.0	0.274	0.000	74.2	39	47.6	73.2	---	---	0.000	349	1	100.0	15
11/07/09	3:15a	0.00	0	0.0	0.00	0.0	0.276	0.000	74.2	39	47.6	73.2	---	---	0.000	349	1	100.0	15
11/07/09	3:30a	0.00	0	0.0	0.00	0.0	0.274	0.000	74.2	39	47.6	73.2	---	---	0.000	347	1	100.0	15
11/07/09	3:45a	0.00	0	0.0	0.00	0.0	0.273	0.000	74.0	39	47.5	73.0	---	---	0.000	347	1	100.0	15
11/07/09	4:00a	0.00	0	0.0	0.00	0.0	0.273	0.000	74.0	39	47.5	73.0	---	---	0.000	344	1	100.0	15
11/07/09	4:15a	0.00	0	0.0	0.00	0.0	0.274	0.000	74.0	39	47.5	73.0	---	---	0.000	348	1	100.0	15
11/07/09	4:30a	0.00	0	0.0	0.00	0.0	0.275	0.000	74.0	39	47.5	73.0	---	---	0.000	348	1	100.0	15
11/07/09	4:45a	0.00	0	0.0	0.00	0.0	0.275	0.000	74.0	39	47.5	73.0	---	---	0.000	347	1	100.0	15
11/07/09	5:00a	0.00	0	0.0	0.00	0.0	0.274	0.000	74.0	39	47.5	73.0	---	---	0.000	350	1	100.0	15
11/07/09	5:15a	0.00	0	0.0	0.00	0.0	0.274	0.000	74.0	39	47.5	73.0	---	---	0.000	348	1	100.0	15
11/07/09	5:30a	0.00	0	0.0	0.00	0.0	0.274	0.000	74.0	39	47.5	73.0	---	---	0.000	348	1	100.0	15
11/07/09	5:45a	0.00	0	0.0	0.00	0.0	0.274	0.000	74.0	39	47.5	73.0	---	---	0.000	348	1	100.0	15
11/07/09	6:00a	0.00	0	0.0	0.00	0.0	0.280	0.000	74.0	39	47.5	73.0	---	---	0.000	350	1	100.0	15
11/07/09	6:15a	0.00	0	0.0	0.00	0.0	0.281	0.000	73.8	39	47.3	72.7	---	---	0.000	348	1	100.0	15
11/07/09	6:30a	0.02	5	0.0	0.00	0.0	0.283	0.000	73.8	39	47.3	72.7	---	---	0.000	347	1	100.0	15
11/07/09	6:45a	0.22	14	0.0	0.00	0.0	0.282	0.000	73.8	39	47.3	72.7	---	---	0.000	350	1	100.0	15
11/07/09	7:00a	0.43	25	0.0	0.00	0.0	0.279	0.000	73.8	39	47.3	72.7	---	---	0.000	347	1	100.0	15
11/07/09	7:15a	0.60	32	0.0	0.00	0.0	0.276	0.000	73.8	39	47.3	72.7	---	---	0.000	345	1	100.0	15
11/07/09	7:30a	1.72	137	0.0	0.00	0.0	0.268	0.000	73.8	39	47.3	72.7	---	---	0.000	348	1	100.0	15
11/07/09	7:45a	3.42	190	0.0	0.00	0.0	0.246	0.000	73.8	39	47.3	72.7	---	---	0.000	349	1	100.0	15
11/07/09	8:00a	4.49	237	0.0	0.00	0.0	0.221	0.000	73.8	39	47.3	72.7	---	---	0.002	350	1	100.0	15
11/07/09	8:15a	5.44	281	0.0	0.00	0.0	0.192	0.000	73.8	39	47.3	72.7	---	---	0.000	347	1	100.0	15
11/07/09	8:30a	6.32	315	0.3	0.02	0.6	0.170	0.000	73.8	39	47.3	72.7	---	---	0.000	347	1	100.0	15
11/07/09	8:45a	7.38	362	0.8	0.06	0.8	0.157	0.000	73.8	39	47.3	72.7	---	---	0.000	349	1	100.0	15
11/07/09	9:00a	6.32	369	0.9	0.07	1.1	0.150	0.000	74.0	39	47.5	73.0	---	---	0.006	349	1	100.0	15
11/07/09	9:15a	7.78	422	1.2	0.10	1.4	0.141	0.000	74.0	38	46.8	72.9	---	---	0.000	349	1	100.0	15
11/07/09	9:30a	6.09	468	1.3	0.10	1.6	0.134	0.000	74.0	38	46.8	72.9	---	---	0.000	349	1	100.0	15
11/07/09	9:45a	10.02	504	1.8	0.14	2.0	0.124	0.000	74.0	38	46.8	72.9	---	---	0.000	350	1	100.0	15
11/07/09	10:00a	10.32	513	2.1	0.17	2.2	0.118	0.000	74.0	38	46.8	72.9	---	---	0.009	348	1	100.0	15
11/07/09	10:15a	11.33	545	2.4	0.19	2.6	0.108	0.000	74.0	38	46.8	72.9	---	---	0.000	347	1	100.0	15
11/07/09	10:30a	12.00	571	2.7	0.22	2.8	0.105	0.000	74.0	38	46.8	72.9	---	---	0.000	348	1	100.0	15
11/07/09	10:45a	12.54	598	3.0	0.24	3.1	0.098	0.000	74.0	38	46.8	72.9	---	---	0.000	348	1	100.0	15
11/07/09	11:00a	13.05	629	3.2	0.26	3.3	0.092	0.000	74.0	38	46.8	72.9	---	---	0.013	348	1	100.0	15
11/07/09	11:15a	12.97	638	3.3	0.27	3.4	0.085	0.000	74.0	38	46.8	72.9	---	---	0.000	349	1	100.0	15
11/07/09	11:30a	10.73	543	3.0	0.24	3.1	0.081	0.000	74.0	37	46.1	72.9	---	---	0.000	348	1	100.0	15
11/07/09	11:45a	12.54	666	3.3	0.27	3.6	0.074	0.000	74.0	37	46.1	72.9	---	---	0.000	348	1	100.0	15
11/07/09	12:00p	12.88	705	3.4	0.27	3.7	0.068	0.000	74.0	37	46.1	72.9	---	---	0.013	349	1	100.0	15
11/07/09	12:15p	10.56	599	3.0	0.24	3.3	0.070	0.000	74.0	37	46.1	72.9	---	---	0.000	348	1	100.0	15
11/07/09	12:30p	13.57	656	3.3	0.27	3.4	0.063	0.000	74.0	37	46.1	72.9	---	---	0.000	350	1	100.0	15
11/07/09	12:45p	12.90	659	3.1	0.25	3.3	0.059	0.000	74.2	37	46.2	73.1	---	---	0.000	349	1	100.0	15
11/07/09	1:00p	12.06	608	2.9	0.23	3.0	0.046	0.000	74.2	37	46.2	73.1	---	---	0.014	350	1	100.0	15
11/07/09	1:15p	12.51	598	2.8	0.22	2.9	0.046	0.000	74.3	37	46.3	73.2	---	---	0.000	349	1	100.0	15

JEB LC-FS Site 11a 11/07/09

Date	Time	Solar Energy	Hi Solar Rad.	UV Index	UV Dose	Hi UV	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	Temp 2nd	Hum 2nd	ET	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
11/07/09	1:30p	11.85	573	2.5	0.20	2.6	0.037	0.000	74.3	37	46.3	73.2	---	---	0.000	349	1	100.0	15
11/07/09	1:45p	11.57	550	2.2	0.18	2.4	0.033	0.000	74.3	37	46.3	73.2	---	---	0.000	348	1	100.0	15
11/07/09	2:00p	10.94	524	1.9	0.15	2.1	0.032	0.000	74.3	37	46.3	73.2	---	---	0.014	350	1	100.0	15
11/07/09	2:15p	10.28	492	1.7	0.14	1.8	0.031	0.000	74.3	37	46.3	73.2	---	---	0.000	347	1	100.0	15
11/07/09	2:30p	9.53	461	1.4	0.11	1.5	0.027	0.000	74.3	37	46.3	73.2	---	---	0.000	349	1	100.0	15
11/07/09	2:45p	8.67	422	1.1	0.09	1.2	0.024	0.000	74.3	37	46.3	73.2	---	---	0.000	348	1	100.0	15
11/07/09	3:00p	7.74	381	0.8	0.06	0.9	0.028	0.000	74.3	36	45.6	73.1	---	---	0.012	349	1	100.0	15
11/07/09	3:15p	6.79	338	0.5	0.04	0.6	0.025	0.000	74.3	36	45.6	73.1	---	---	0.000	349	1	100.0	15
11/07/09	3:30p	5.85	295	0.0	0.00	0.0	0.027	0.000	74.3	36	45.6	73.1	---	---	0.000	348	1	100.0	15
11/07/09	3:45p	4.86	250	0.0	0.00	0.0	0.033	0.000	74.5	36	45.8	73.3	---	---	0.000	349	1	100.0	15
11/07/09	4:00p	3.53	193	0.0	0.00	0.0	0.036	0.000	74.5	36	45.8	73.3	---	---	0.008	349	1	100.0	15
11/07/09	4:15p	2.37	135	0.0	0.00	0.0	0.040	0.000	74.3	36	45.6	73.1	---	---	0.000	348	1	100.0	15
11/07/09	4:30p	1.38	84	0.0	0.00	0.0	0.048	0.000	74.3	36	45.6	73.1	---	---	0.000	349	1	100.0	15
11/07/09	4:45p	0.60	44	0.0	0.00	0.0	0.059	0.000	74.3	36	45.6	73.1	---	---	0.000	349	1	100.0	15
11/07/09	5:00p	0.26	18	0.0	0.00	0.0	0.072	0.000	74.3	36	45.6	73.1	---	---	0.003	349	1	100.0	15
11/07/09	5:15p	0.04	7	0.0	0.00	0.0	0.079	0.000	74.3	36	45.6	73.1	---	---	0.000	348	1	100.0	15
11/07/09	5:30p	0.00	0	0.0	0.00	0.0	0.085	0.000	74.3	36	45.6	73.1	---	---	0.000	348	1	100.0	15
11/07/09	5:45p	0.00	0	0.0	0.00	0.0	0.091	0.000	74.3	36	45.6	73.1	---	---	0.000	347	1	100.0	15
11/07/09	6:00p	0.00	0	0.0	0.00	0.0	0.098	0.000	74.3	36	45.6	73.1	---	---	0.001	349	1	100.0	15
11/07/09	6:15p	0.00	0	0.0	0.00	0.0	0.103	0.000	74.3	36	45.6	73.1	---	---	0.000	348	1	100.0	15
11/07/09	6:30p	0.00	0	0.0	0.00	0.0	0.108	0.000	74.2	36	45.5	73.0	---	---	0.000	349	1	100.0	15
11/07/09	6:45p	0.00	0	0.0	0.00	0.0	0.115	0.000	74.2	36	45.5	73.0	---	---	0.000	349	1	100.0	15
11/07/09	7:00p	0.00	0	0.0	0.00	0.0	0.117	0.000	74.2	37	46.2	73.1	---	---	0.002	348	1	100.0	15
11/07/09	7:15p	0.00	0	0.0	0.00	0.0	0.119	0.000	74.2	37	46.2	73.1	---	---	0.000	349	1	100.0	15
11/07/09	7:30p	0.00	0	0.0	0.00	0.0	0.122	0.000	74.0	37	46.1	72.9	---	---	0.000	349	1	100.0	15
11/07/09	7:45p	0.00	0	0.0	0.00	0.0	0.123	0.000	74.0	37	46.1	72.9	---	---	0.000	350	1	100.0	15
11/07/09	8:00p	0.00	0	0.0	0.00	0.0	0.125	0.000	74.0	37	46.1	72.9	---	---	0.002	347	1	100.0	15
11/07/09	8:15p	0.00	0	0.0	0.00	0.0	0.129	0.000	74.0	37	46.1	72.9	---	---	0.000	343	1	100.0	15
11/07/09	8:30p	0.00	0	0.0	0.00	0.0	0.135	0.000	73.8	37	45.9	72.6	---	---	0.000	341	1	99.7	15
11/07/09	8:45p	0.00	0	0.0	0.00	0.0	0.140	0.000	73.8	37	45.9	72.6	---	---	0.000	346	1	100.0	15
11/07/09	9:00p	0.00	0	0.0	0.00	0.0	0.143	0.000	73.8	37	45.9	72.6	---	---	0.001	347	1	100.0	15
11/07/09	9:15p	0.00	0	0.0	0.00	0.0	0.150	0.000	73.8	37	45.9	72.6	---	---	0.000	349	1	100.0	15
11/07/09	9:30p	0.00	0	0.0	0.00	0.0	0.154	0.000	73.8	37	45.9	72.6	---	---	0.000	349	1	100.0	15
11/07/09	9:45p	0.00	0	0.0	0.00	0.0	0.159	0.000	73.8	38	46.6	72.7	---	---	0.000	349	1	100.0	15
11/07/09	10:00p	0.00	0	0.0	0.00	0.0	0.160	0.000	73.8	38	46.6	72.7	---	---	0.001	349	1	100.0	15
11/07/09	10:15p	0.00	0	0.0	0.00	0.0	0.161	0.000	73.8	38	46.6	72.7	---	---	0.000	349	1	100.0	15
11/07/09	10:30p	0.00	0	0.0	0.00	0.0	0.162	0.000	73.8	38	46.6	72.7	---	---	0.000	348	1	100.0	15
11/07/09	10:45p	0.00	0	0.0	0.00	0.0	0.165	0.000	73.8	38	46.6	72.7	---	---	0.000	346	1	100.0	15
11/07/09	11:00p	0.00	0	0.0	0.00	0.0	0.169	0.000	73.8	38	46.6	72.7	---	---	0.001	348	1	100.0	15
11/07/09	11:15p	0.00	0	0.0	0.00	0.0	0.169	0.000	73.8	38	46.6	72.7	---	---	0.000	350	1	100.0	15
11/07/09	11:30p	0.00	0	0.0	0.00	0.0	0.168	0.000	73.8	38	46.6	72.7	---	---	0.000	348	1	100.0	15
11/07/09	11:45p	0.00	0	0.0	0.00	0.0	0.170	0.000	73.8	38	46.6	72.7	---	---	0.000	348	1	100.0	15
11/08/09	12:00a	0.00	0	0.0	0.00	0.0	0.168	0.000	73.6	38	46.4	72.4	---	---	0.001	348	1	100.0	15

JEB LC-FS Site 11a 11/08/09

Date	Time	Solar Energy	Hi Solar Rad.	UV Index	UV Dose	Hi UV	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	Temp 2nd	Hum 2nd	ET	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
11/08/09	12:15a	0.00	0	0.0	0.00	0.0	0.165	0.000	73.6	38	46.4	72.4	---	---	0.000	347	1	100.0	15
11/08/09	12:30a	0.00	0	0.0	0.00	0.0	0.164	0.000	73.6	38	46.4	72.4	---	---	0.000	346	1	100.0	15
11/08/09	12:45a	0.00	0	0.0	0.00	0.0	0.167	0.000	73.5	38	46.3	72.2	---	---	0.000	346	1	100.0	15
11/08/09	1:00a	0.00	0	0.0	0.00	0.0	0.169	0.000	73.5	38	46.3	72.2	---	---	0.001	349	1	100.0	15
11/08/09	1:15a	0.00	0	0.0	0.00	0.0	0.171	0.000	73.5	38	46.3	72.2	---	---	0.000	350	1	100.0	15
11/08/09	1:30a	0.00	0	0.0	0.00	0.0	0.174	0.000	73.5	38	46.3	72.2	---	---	0.000	350	1	100.0	15
11/08/09	1:45a	0.00	0	0.0	0.00	0.0	0.175	0.000	73.5	38	46.3	72.2	---	---	0.000	346	1	100.0	15
11/08/09	2:00a	0.00	0	0.0	0.00	0.0	0.176	0.000	73.3	39	46.8	72.0	---	---	0.001	347	1	100.0	15
11/08/09	2:15a	0.00	0	0.0	0.00	0.0	0.176	0.000	73.3	39	46.8	72.0	---	---	0.000	348	1	100.0	15
11/08/09	2:30a	0.00	0	0.0	0.00	0.0	0.176	0.000	73.3	39	46.8	72.0	---	---	0.000	348	1	100.0	15
11/08/09	2:45a	0.00	0	0.0	0.00	0.0	0.177	0.000	73.3	39	46.8	72.0	---	---	0.000	349	1	100.0	15
11/08/09	3:00a	0.00	0	0.0	0.00	0.0	0.175	0.000	73.3	39	46.8	72.0	---	---	0.001	347	1	100.0	15
11/08/09	3:15a	0.00	0	0.0	0.00	0.0	0.174	0.000	73.3	39	46.8	72.0	---	---	0.000	349	1	100.0	15
11/08/09	3:30a	0.00	0	0.0	0.00	0.0	0.170	0.000	73.3	39	46.8	72.0	---	---	0.000	349	1	100.0	15
11/08/09	3:45a	0.00	0	0.0	0.00	0.0	0.169	0.000	73.3	40	47.5	72.1	---	---	0.000	347	1	100.0	15
11/08/09	4:00a	0.00	0	0.0	0.00	0.0	0.169	0.000	73.3	40	47.5	72.1	---	---	0.001	348	1	100.0	15
11/08/09	4:15a	0.00	0	0.0	0.00	0.0	0.166	0.000	73.3	40	47.5	72.1	---	---	0.000	348	1	100.0	15
11/08/09	4:30a	0.00	0	0.0	0.00	0.0	0.157	0.000	73.3	40	47.5	72.1	---	---	0.000	349	1	100.0	15
11/08/09	4:45a	0.00	0	0.0	0.00	0.0	0.152	0.000	73.3	40	47.5	72.1	---	---	0.000	349	1	100.0	15
11/08/09	5:00a	0.00	0	0.0	0.00	0.0	0.149	0.000	73.3	40	47.5	72.1	---	---	0.001	349	1	100.0	15
11/08/09	5:15a	0.00	0	0.0	0.00	0.0	0.144	0.000	73.3	40	47.5	72.1	---	---	0.000	349	1	100.0	15
11/08/09	5:30a	0.00	0	0.0	0.00	0.0	0.144	0.000	73.3	41	48.2	72.2	---	---	0.000	349	1	100.0	15
11/08/09	5:45a	0.00	0	0.0	0.00	0.0	0.148	0.000	73.3	41	48.2	72.2	---	---	0.000	349	1	100.0	15
11/08/09	6:00a	0.00	0	0.0	0.00	0.0	0.151	0.000	73.1	41	48.0	71.9	---	---	0.001	348	1	100.0	15
11/08/09	6:15a	0.00	0	0.0	0.00	0.0	0.156	0.000	73.1	41	48.0	71.9	---	---	0.000	348	1	100.0	15
11/08/09	6:30a	0.00	0	0.0	0.00	0.0	0.161	0.000	73.1	41	48.0	71.9	---	---	0.000	347	1	100.0	15
11/08/09	6:45a	0.15	11	0.0	0.00	0.0	0.165	0.000	73.1	41	48.0	71.9	---	---	0.000	350	1	100.0	15
11/08/09	7:00a	0.37	21	0.0	0.00	0.0	0.159	0.000	73.1	41	48.0	71.9	---	---	0.000	349	1	100.0	15
11/08/09	7:15a	0.56	30	0.0	0.00	0.0	0.159	0.000	73.1	41	48.0	71.9	---	---	0.000	347	1	100.0	15
11/08/09	7:30a	1.46	120	0.0	0.00	0.0	0.155	0.000	73.1	41	48.0	71.9	---	---	0.000	349	1	100.0	15
11/08/09	7:45a	2.99	151	0.0	0.00	0.0	0.141	0.000	73.1	41	48.0	71.9	---	---	0.000	347	1	100.0	15
11/08/09	8:00a	3.72	193	0.0	0.00	0.0	0.128	0.000	73.3	41	48.2	72.2	---	---	0.002	347	1	100.0	15
11/08/09	8:15a	4.62	236	0.0	0.00	0.0	0.118	0.000	73.3	41	48.2	72.2	---	---	0.000	347	1	100.0	15
11/08/09	8:30a	5.55	279	0.3	0.02	0.6	0.108	0.000	73.3	42	48.8	72.3	---	---	0.000	345	1	100.0	15
11/08/09	8:45a	6.45	322	0.7	0.06	0.8	0.098	0.000	73.3	42	48.8	72.3	---	---	0.000	348	1	100.0	15
11/08/09	9:00a	6.49	348	1.0	0.08	1.1	0.086	0.000	73.3	42	48.8	72.3	---	---	0.006	349	1	100.0	15
11/08/09	9:15a	7.44	394	1.2	0.10	1.4	0.075	0.000	73.5	42	49.0	72.5	---	---	0.000	349	1	100.0	15
11/08/09	9:30a	6.06	436	1.4	0.11	1.7	0.064	0.000	73.5	42	49.0	72.5	---	---	0.000	348	1	100.0	15
11/08/09	9:45a	9.61	469	1.9	0.15	2.1	0.057	0.000	73.5	42	49.0	72.5	---	---	0.000	348	1	100.0	15
11/08/09	10:00a	10.45	504	2.3	0.18	2.5	0.046	0.000	73.5	42	49.0	72.5	---	---	0.009	349	1	100.0	15
11/08/09	10:15a	11.05	526	2.6	0.21	2.8	0.035	0.000	73.5	42	49.0	72.5	---	---	0.000	347	1	100.0	15
11/08/09	10:30a	11.61	561	2.9	0.23	3.0	0.032	0.000	73.6	42	49.1	72.7	---	---	0.000	348	1	100.0	15
11/08/09	10:45a	12.13	584	3.1	0.25	3.2	0.028	0.000	73.6	42	49.1	72.7	---	---	0.000	350	1	100.0	15
11/08/09	11:00a	12.45	592	3.3	0.27	3.4	0.017	0.000	73.6	42	49.1	72.7	---	---	0.013	346	1	100.0	15
11/08/09	11:15a	12.75	606	3.5	0.28	3.5	0.010	0.000	73.8	42	49.3	72.9	---	---	0.000	348	1	100.0	15
11/08/09	11:30a	12.99	608	3.6	0.29	3.7	0.001	0.000	73.8	42	49.3	72.9	---	---	0.000	349	1	100.0	15
11/08/09	11:45a	13.14	624	3.7	0.30	3.7	0.001	0.000	73.8	42	49.3	72.9	---	---	0.000	348	1	100.0	15
11/08/09	12:00p	13.20	624	3.6	0.29	3.7	0.002	0.000	74.0	42	49.4	73.2	---	---	0.014	348	1	100.0	15
11/08/09	12:15p	13.14	615	3.6	0.29	3.6	0.000	0.002	74.2	42	49.6	73.5	---	---	0.000	349	1	100.0	15
11/08/09	12:30p	13.03	610	3.5	0.28	3.5	0.000	0.002	74.2	42	49.6	73.5	---	---	0.000	348	1	100.0	15
11/08/09	12:45p	12.84	603	3.3	0.27	3.4	0.000	0.001	74.3	43	50.4	73.6	---	---	0.000	349	1	100.0	15
11/08/09	1:00p	12.56	591	3.1	0.25	3.2	0.000	0.012	74.5	43	50.5	73.9	---	---	0.014	348	1	100.0	15
11/08/09	1:15p	12.21	575	2.9	0.23	3.0	0.000	0.025	74.5	43	50.5	73.9	---	---	0.000	349	1	100.0	15

JEB LC-FS Site 11a 11/08/09

Date	Time	Solar Energy	Hi Solar Rad.	UV Index	UV Dose	Hi UV	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	Temp 2nd	Hum 2nd	ET	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
11/08/09	1:30p	11.81	559	2.6	0.21	2.7	0.000	0.025	74.7	43	50.7	74.1	---	---	0.000	347	1	100.0	15
11/08/09	1:45p	11.27	538	2.3	0.18	2.5	0.000	0.016	74.7	43	50.7	74.1	---	---	0.000	349	1	100.0	15
11/08/09	2:00p	10.67	508	2.0	0.16	2.2	0.000	0.005	74.7	43	50.7	74.1	---	---	0.013	349	1	100.0	15
11/08/09	2:15p	10.02	482	1.7	0.14	1.9	0.004	0.000	74.7	43	50.7	74.1	---	---	0.000	347	1	100.0	15
11/08/09	2:30p	9.27	446	1.4	0.11	1.5	0.000	0.001	74.7	43	50.7	74.1	---	---	0.000	347	1	100.0	15
11/08/09	2:45p	8.49	413	1.1	0.09	1.2	0.005	0.000	74.7	43	50.7	74.1	---	---	0.000	350	1	100.0	15
11/08/09	3:00p	7.61	373	0.8	0.06	0.9	0.008	0.000	74.7	43	50.7	74.1	---	---	0.010	349	1	100.0	15
11/08/09	3:15p	6.67	330	0.5	0.04	0.7	0.004	0.000	74.9	43	50.9	74.4	---	---	0.000	346	1	100.0	15
11/08/09	3:30p	5.68	287	0.0	0.00	0.0	0.004	0.000	74.9	43	50.9	74.4	---	---	0.000	347	1	100.0	15
11/08/09	3:45p	4.60	236	0.0	0.00	0.0	0.013	0.000	74.9	44	51.5	74.5	---	---	0.000	349	1	100.0	15
11/08/09	4:00p	3.33	181	0.0	0.00	0.0	0.016	0.000	74.9	44	51.5	74.5	---	---	0.005	347	1	100.0	15
11/08/09	4:15p	2.24	127	0.0	0.00	0.0	0.017	0.000	74.9	44	51.5	74.5	---	---	0.000	348	1	100.0	15
11/08/09	4:30p	1.29	81	0.0	0.00	0.0	0.023	0.000	74.9	44	51.5	74.5	---	---	0.000	349	1	100.0	15
11/08/09	4:45p	0.56	40	0.0	0.00	0.0	0.031	0.000	74.9	44	51.5	74.5	---	---	0.000	350	1	100.0	15
11/08/09	5:00p	0.22	14	0.0	0.00	0.0	0.041	0.000	74.9	44	51.5	74.5	---	---	0.001	348	1	100.0	15
11/08/09	5:15p	0.02	5	0.0	0.00	0.0	0.050	0.000	74.9	44	51.5	74.5	---	---	0.000	348	1	100.0	15
11/08/09	5:30p	0.00	0	0.0	0.00	0.0	0.059	0.000	74.9	44	51.5	74.5	---	---	0.000	347	1	100.0	15
11/08/09	5:45p	0.00	0	0.0	0.00	0.0	0.070	0.000	74.7	45	51.9	74.3	---	---	0.000	349	1	100.0	15
11/08/09	6:00p	0.00	0	0.0	0.00	0.0	0.077	0.000	74.7	45	51.9	74.3	---	---	0.000	348	1	100.0	15
11/08/09	6:15p	0.00	0	0.0	0.00	0.0	0.084	0.000	74.7	45	51.9	74.3	---	---	0.000	346	1	100.0	15
11/08/09	6:30p	0.00	0	0.0	0.00	0.0	0.089	0.000	74.7	45	51.9	74.3	---	---	0.000	348	1	100.0	15
11/08/09	6:45p	0.00	0	0.0	0.00	0.0	0.095	0.000	74.7	45	51.9	74.3	---	---	0.000	348	1	100.0	15
11/08/09	7:00p	0.00	0	0.0	0.00	0.0	0.099	0.000	74.7	45	51.9	74.3	---	---	0.001	350	1	100.0	15
11/08/09	7:15p	0.00	0	0.0	0.00	0.0	0.101	0.000	74.5	45	51.8	74.0	---	---	0.000	347	1	100.0	15
11/08/09	7:30p	0.00	0	0.0	0.00	0.0	0.106	0.000	74.5	45	51.8	74.0	---	---	0.000	347	1	100.0	15
11/08/09	7:45p	0.00	0	0.0	0.00	0.0	0.110	0.000	74.5	45	51.8	74.0	---	---	0.000	349	1	100.0	15
11/08/09	8:00p	0.00	0	0.0	0.00	0.0	0.114	0.000	74.5	45	51.8	74.0	---	---	0.001	349	1	100.0	15
11/08/09	8:15p	0.00	0	0.0	0.00	0.0	0.119	0.000	74.5	45	51.8	74.0	---	---	0.000	346	1	100.0	15
11/08/09	8:30p	0.00	0	0.0	0.00	0.0	0.120	0.000	74.3	45	51.6	73.8	---	---	0.000	347	1	100.0	15
11/08/09	8:45p	0.00	0	0.0	0.00	0.0	0.123	0.000	74.3	45	51.6	73.8	---	---	0.000	349	1	100.0	15
11/08/09	9:00p	0.00	0	0.0	0.00	0.0	0.128	0.000	74.3	45	51.6	73.8	---	---	0.000	349	1	100.0	15
11/08/09	9:15p	0.00	0	0.0	0.00	0.0	0.132	0.000	74.3	45	51.6	73.8	---	---	0.000	348	1	100.0	15
11/08/09	9:30p	0.00	0	0.0	0.00	0.0	0.136	0.000	74.3	45	51.6	73.8	---	---	0.000	346	1	100.0	15
11/08/09	9:45p	0.00	0	0.0	0.00	0.0	0.139	0.000	74.3	45	51.6	73.8	---	---	0.000	349	1	100.0	15
11/08/09	10:00p	0.00	0	0.0	0.00	0.0	0.142	0.000	74.3	46	52.2	73.9	---	---	0.000	349	1	100.0	15
11/08/09	10:15p	0.00	0	0.0	0.00	0.0	0.147	0.000	74.2	46	52.1	73.7	---	---	0.000	348	1	100.0	15
11/08/09	10:30p	0.00	0	0.0	0.00	0.0	0.150	0.000	74.2	46	52.1	73.7	---	---	0.000	350	1	100.0	15
11/08/09	10:45p	0.00	0	0.0	0.00	0.0	0.150	0.000	74.2	46	52.1	73.7	---	---	0.000	347	1	100.0	15
11/08/09	11:00p	0.00	0	0.0	0.00	0.0	0.150	0.000	74.2	46	52.1	73.7	---	---	0.000	348	1	100.0	15
11/08/09	11:15p	0.00	0	0.0	0.00	0.0	0.151	0.000	74.2	46	52.1	73.7	---	---	0.000	348	1	100.0	15
11/08/09	11:30p	0.00	0	0.0	0.00	0.0	0.153	0.000	74.2	46	52.1	73.7	---	---	0.000	348	1	100.0	15
11/08/09	11:45p	0.00	0	0.0	0.00	0.0	0.154	0.000	74.0	46	51.9	73.5	---	---	0.000	347	1	100.0	15
11/09/09	12:00a	0.00	0	0.0	0.00	0.0	0.155	0.000	74.0	46	51.9	73.5	---	---	0.000	349	1	100.0	15

JEB LC-FS Site 11a 11/09/09

Date	Time	Solar Energy	Hi Solar Rad.	UV Index	UV Dose	Hi UV	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	Temp 2nd	Hum 2nd	ET	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
11/09/09	12:15a	0.00	0	0.0	0.00	0.0	0.156	0.000	74.0	46	51.9	73.5	---	---	0.000	348	1	100.0	15
11/09/09	12:30a	0.00	0	0.0	0.00	0.0	0.157	0.000	74.0	46	51.9	73.5	---	---	0.000	350	1	100.0	15
11/09/09	12:45a	0.00	0	0.0	0.00	0.0	0.159	0.000	74.0	46	51.9	73.5	---	---	0.000	347	1	100.0	15
11/09/09	1:00a	0.00	0	0.0	0.00	0.0	0.159	0.000	74.0	46	51.9	73.5	---	---	0.000	348	1	100.0	15
11/09/09	1:15a	0.00	0	0.0	0.00	0.0	0.158	0.000	74.0	46	51.9	73.5	---	---	0.000	348	1	100.0	15
11/09/09	1:30a	0.00	0	0.0	0.00	0.0	0.157	0.000	74.0	46	51.9	73.5	---	---	0.000	347	1	100.0	15
11/09/09	1:45a	0.00	0	0.0	0.00	0.0	0.159	0.000	74.0	46	51.9	73.5	---	---	0.000	348	1	100.0	15
11/09/09	2:00a	0.00	0	0.0	0.00	0.0	0.164	0.000	74.0	46	51.9	73.5	---	---	0.000	349	1	100.0	15
11/09/09	2:15a	0.00	0	0.0	0.00	0.0	0.165	0.000	74.0	46	51.9	73.5	---	---	0.000	351	1	100.0	15
11/09/09	2:30a	0.00	0	0.0	0.00	0.0	0.166	0.000	74.0	46	51.9	73.5	---	---	0.000	348	1	100.0	15
11/09/09	2:45a	0.00	0	0.0	0.00	0.0	0.168	0.000	74.0	46	51.9	73.5	---	---	0.000	349	1	100.0	15
11/09/09	3:00a	0.00	0	0.0	0.00	0.0	0.164	0.000	74.0	46	51.9	73.5	---	---	0.000	349	1	100.0	15
11/09/09	3:15a	0.00	0	0.0	0.00	0.0	0.165	0.000	74.0	46	51.9	73.5	---	---	0.000	349	1	100.0	15
11/09/09	3:30a	0.00	0	0.0	0.00	0.0	0.158	0.000	74.0	46	51.9	73.5	---	---	0.000	346	1	100.0	15
11/09/09	3:45a	0.00	0	0.0	0.00	0.0	0.155	0.000	74.0	46	51.9	73.5	---	---	0.000	350	1	100.0	15
11/09/09	4:00a	0.00	0	0.0	0.00	0.0	0.150	0.000	74.0	46	51.9	73.5	---	---	0.000	348	1	100.0	15
11/09/09	4:15a	0.00	0	0.0	0.00	0.0	0.148	0.000	73.8	46	51.7	73.2	---	---	0.000	349	1	100.0	15
11/09/09	4:30a	0.00	0	0.0	0.00	0.0	0.144	0.000	73.8	46	51.7	73.2	---	---	0.000	349	1	100.0	15
11/09/09	4:45a	0.00	0	0.0	0.00	0.0	0.143	0.000	73.8	46	51.7	73.2	---	---	0.000	346	1	100.0	15
11/09/09	5:00a	0.00	0	0.0	0.00	0.0	0.144	0.000	73.8	46	51.7	73.2	---	---	0.000	349	1	100.0	15
11/09/09	5:15a	0.00	0	0.0	0.00	0.0	0.145	0.000	73.8	46	51.7	73.2	---	---	0.000	348	1	100.0	15
11/09/09	5:30a	0.00	0	0.0	0.00	0.0	0.147	0.000	73.8	46	51.7	73.2	---	---	0.000	348	1	100.0	15
11/09/09	5:45a	0.00	0	0.0	0.00	0.0	0.149	0.000	73.8	46	51.7	73.2	---	---	0.000	349	1	100.0	15
11/09/09	6:00a	0.00	0	0.0	0.00	0.0	0.151	0.000	73.8	46	51.7	73.2	---	---	0.000	348	1	100.0	15
11/09/09	6:15a	0.00	0	0.0	0.00	0.0	0.152	0.000	73.8	46	51.7	73.2	---	---	0.000	351	1	100.0	15
11/09/09	6:30a	0.00	0	0.0	0.00	0.0	0.151	0.000	73.8	47	52.3	73.3	---	---	0.000	347	1	100.0	15
11/09/09	6:45a	0.11	11	0.0	0.00	0.0	0.152	0.000	73.8	47	52.3	73.3	---	---	0.000	349	1	100.0	15
11/09/09	7:00a	0.37	23	0.0	0.00	0.0	0.152	0.000	73.8	47	52.3	73.3	---	---	0.000	347	1	100.0	15
11/09/09	7:15a	0.71	44	0.0	0.00	0.0	0.152	0.000	73.8	47	52.3	73.3	---	---	0.000	345	1	100.0	15
11/09/09	7:30a	1.27	76	0.0	0.00	0.0	0.150	0.000	73.8	47	52.3	73.3	---	---	0.000	346	1	100.0	15
11/09/09	7:45a	1.98	111	0.0	0.00	0.0	0.142	0.000	73.8	47	52.3	73.3	---	---	0.000	349	1	100.0	15
11/09/09	8:00a	2.17	113	0.0	0.00	0.0	0.136	0.000	73.8	47	52.3	73.3	---	---	0.001	349	1	100.0	15
11/09/09	8:15a	2.71	139	0.0	0.00	0.0	0.129	0.000	73.8	47	52.3	73.3	---	---	0.000	349	1	100.0	15
11/09/09	8:30a	3.40	239	0.0	0.00	0.0	0.122	0.000	73.8	47	52.3	73.3	---	---	0.000	348	1	100.0	15
11/09/09	8:45a	4.69	264	0.3	0.02	0.6	0.107	0.000	73.8	47	52.3	73.3	---	---	0.000	349	1	100.0	15
11/09/09	9:00a	6.49	336	0.8	0.06	1.0	0.093	0.000	74.0	47	52.5	73.5	---	---	0.004	348	1	100.0	15
11/09/09	9:15a	5.72	348	1.0	0.08	1.2	0.079	0.000	74.0	47	52.5	73.5	---	---	0.000	348	1	100.0	15
11/09/09	9:30a	6.24	403	1.2	0.10	1.5	0.070	0.000	74.0	47	52.5	73.5	---	---	0.000	350	1	100.0	15
11/09/09	9:45a	9.01	441	1.7	0.14	2.0	0.050	0.000	74.0	48	53.1	73.6	---	---	0.000	348	1	100.0	15
11/09/09	10:00a	9.93	480	2.2	0.18	2.4	0.033	0.000	74.0	48	53.1	73.6	---	---	0.007	348	1	100.0	15
11/09/09	10:15a	10.92	522	2.5	0.20	2.6	0.008	0.000	74.2	48	53.2	73.9	---	---	0.000	348	1	100.0	15
11/09/09	10:30a	11.53	559	2.8	0.22	2.9	0.000	0.005	74.2	48	53.2	73.9	---	---	0.000	349	1	100.0	15
11/09/09	10:45a	11.29	561	2.9	0.23	3.0	0.000	0.018	74.2	48	53.2	73.9	---	---	0.000	348	1	100.0	15
11/09/09	11:00a	11.93	591	3.1	0.25	3.3	0.000	0.029	74.2	48	53.2	73.9	---	---	0.012	349	1	100.0	15
11/09/09	11:15a	12.34	603	3.3	0.27	3.4	0.000	0.041	74.3	48	53.3	74.0	---	---	0.000	348	1	100.0	15
11/09/09	11:30a	12.36	603	3.3	0.27	3.4	0.000	0.018	74.3	48	53.3	74.0	---	---	0.000	349	1	100.0	15
11/09/09	11:45a	11.65	598	3.3	0.27	3.4	0.000	0.003	74.5	48	53.5	74.3	---	---	0.000	348	1	100.0	15
11/09/09	12:00p	12.73	615	3.4	0.27	3.5	0.003	0.000	74.5	48	53.5	74.3	---	---	0.013	348	1	100.0	15
11/09/09	12:15p	12.51	603	3.4	0.27	3.4	0.010	0.000	74.5	48	53.5	74.3	---	---	0.000	348	1	100.0	15
11/09/09	12:30p	12.86	615	3.3	0.27	3.4	0.005	0.000	74.7	48	53.7	74.5	---	---	0.000	350	1	100.0	15
11/09/09	12:45p	12.28	592	3.1	0.25	3.2	0.007	0.000	74.7	48	53.7	74.5	---	---	0.000	348	1	100.0	15
11/09/09	1:00p	12.19	592	3.0	0.24	3.1	0.001	0.000	74.7	48	53.7	74.5	---	---	0.013	348	1	100.0	15
11/09/09	1:15p	11.78	570	2.7	0.22	2.8	0.000	0.009	74.9	49	54.4	74.9	---	---	0.000	349	1	100.0	15

JEB LC-FS Site 11a 11/09/09

Date	Time	Solar Energy	Hi Solar Rad.	UV Index	UV Dose	Hi UV	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	Temp 2nd	Hum 2nd	ET	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
11/09/09	1:30p	11.27	545	2.5	0.20	2.6	0.000	0.025	74.9	49	54.4	74.9	---	---	0.000	350	1	100.0	15
11/09/09	1:45p	10.82	517	2.2	0.18	2.3	0.000	0.035	74.9	49	54.4	74.9	---	---	0.000	347	1	100.0	15
11/09/09	2:00p	10.28	506	1.9	0.15	2.1	0.000	0.045	75.0	49	54.5	75.0	---	---	0.012	347	1	100.0	15
11/09/09	2:15p	9.85	478	1.6	0.13	1.8	0.000	0.057	75.0	49	54.5	75.0	---	---	0.000	349	1	100.0	15
11/09/09	2:30p	8.92	439	1.3	0.10	1.4	0.000	0.060	75.0	49	54.5	75.0	---	---	0.000	346	1	100.0	15

Room 133 3/02/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/02/10	4:45p	---	---	---	79	---	0.0	---	0.00	0.0	---	---	---	---	29.840	0.00	0.00	---	---	53.0	48	33.8	51.3	9.15	.0767	0	4	0.0	15
3/02/10	5:00p	40.4	40.5	40.4	80	34.7	5.0	SW	1.25	12.0	WSW	36.9	40.1	36.6	29.831	0.00	0.00	0.256	0.000	59.3	46	38.5	57.1	8.85	.0756	174	4	54.9	15
3/02/10	5:15p	40.1	40.4	40.1	83	35.4	5.0	SW	1.25	12.0	SSW	36.6	39.9	36.4	29.811	0.00	0.00	0.259	0.000	68.5	38	41.9	65.9	7.55	.0742	326	4	100.0	15
3/02/10	5:30p	40.0	40.1	40.0	83	35.3	5.0	SW	1.25	11.0	SSW	36.5	39.8	36.3	29.800	0.00	0.00	0.260	0.000	70.4	36	42.2	67.5	7.23	.0739	327	4	100.0	15
3/02/10	5:45p	40.0	40.0	39.9	84	35.6	6.0	SW	1.50	13.0	SW	35.8	39.8	35.6	29.801	0.00	0.00	0.260	0.000	70.1	36	41.9	67.1	7.25	.0739	325	4	100.0	15
3/02/10	6:00p	40.1	40.1	39.9	83	35.4	6.0	SW	1.50	14.0	SSW	35.9	39.9	35.7	29.798	0.00	0.00	0.259	0.000	69.6	36	41.5	66.6	7.24	.0740	326	4	100.0	15
3/02/10	6:15p	40.2	40.2	40.1	83	35.4	6.0	SW	1.50	14.0	SSW	36.0	40.0	35.8	29.792	0.00	0.00	0.258	0.000	69.2	36	41.1	66.3	7.23	.0741	327	4	100.0	15
3/02/10	6:30p	40.1	40.3	40.1	81	34.7	8.0	SW	2.00	14.0	S	34.7	39.8	34.4	29.769	0.01	0.00	0.259	0.000	69.0	37	41.6	66.2	7.35	.0740	327	4	100.0	15
3/02/10	6:45p	39.3	40.1	39.3	82	34.3	9.0	SW	2.25	23.0	S	33.2	39.0	32.9	29.752	0.00	0.00	0.268	0.000	68.9	36	40.8	66.0	7.23	.0740	325	4	100.0	15
3/02/10	7:00p	38.8	39.3	38.8	84	34.4	9.0	SW	2.25	20.0	SSW	32.6	38.6	32.4	29.745	0.00	0.00	0.273	0.000	68.7	36	40.7	65.8	7.22	.0740	325	4	100.0	15
3/02/10	7:15p	38.8	38.8	38.7	84	34.4	10.0	SW	2.50	20.0	SSW	32.2	38.6	32.0	29.757	0.00	0.00	0.273	0.000	68.7	36	40.7	65.8	7.22	.0741	325	4	100.0	15
3/02/10	7:30p	38.8	38.9	38.8	85	34.7	10.0	SW	2.50	19.0	SSW	32.2	38.6	32.0	29.739	0.00	0.00	0.273	0.000	68.5	36	40.5	65.6	7.22	.0740	325	4	100.0	15
3/02/10	7:45p	38.6	38.9	38.6	86	34.8	8.0	SW	2.00	18.0	S	32.9	38.4	32.7	29.736	0.00	0.00	0.275	0.000	68.5	36	40.5	65.6	7.22	.0740	327	4	100.0	15
3/02/10	8:00p	37.7	38.6	37.7	87	34.2	10.0	SW	2.50	22.0	S	30.8	37.5	30.6	29.725	0.00	0.00	0.284	0.000	68.5	36	40.5	65.6	7.22	.0740	327	4	100.0	15
3/02/10	8:15p	37.0	37.7	37.0	88	33.8	10.0	SW	2.50	20.0	SW	29.9	36.9	29.8	29.713	0.00	0.00	0.292	0.000	68.4	36	40.4	65.5	7.22	.0740	325	4	100.0	15
3/02/10	8:30p	36.2	37.1	36.2	89	33.3	10.0	SW	2.50	19.0	SSW	28.9	36.1	28.8	29.719	0.00	0.00	0.300	0.000	68.2	36	40.2	65.3	7.21	.0740	326	4	100.0	15
3/02/10	8:45p	35.9	36.3	35.9	90	33.3	9.0	SW	2.25	19.0	S	29.1	35.8	29.0	29.710	0.00	0.00	0.303	0.000	68.0	37	40.7	65.2	7.35	.0740	327	4	100.0	15
3/02/10	9:00p	35.5	36.0	35.5	90	32.9	10.0	SSW	2.50	21.0	SSW	28.1	35.4	28.0	29.684	0.00	0.00	0.307	0.000	68.0	37	40.7	65.2	7.35	.0740	326	4	100.0	15
3/02/10	9:15p	35.6	35.7	35.5	91	33.2	12.0	SSW	3.00	22.0	SSE	27.3	35.5	27.2	29.668	0.00	0.00	0.306	0.000	67.9	37	40.7	65.1	7.35	.0739	326	4	100.0	15
3/02/10	9:30p	35.5	35.6	35.4	91	33.1	11.0	S	2.75	20.0	SSE	27.6	35.4	27.5	29.657	0.00	0.00	0.307	0.000	67.7	37	40.5	64.9	7.35	.0740	326	4	100.0	15
3/02/10	9:45p	35.9	35.9	35.4	91	33.5	10.0	ESE	2.50	20.0	E	28.6	35.8	28.5	29.640	0.03	0.18	0.303	0.000	67.7	37	40.5	64.9	7.35	.0739	322	4	100.0	15
3/02/10	10:00p	36.6	36.6	35.9	92	34.5	11.0	ESE	2.75	19.0	E	29.0	36.5	28.9	29.617	0.05	0.30	0.296	0.000	67.7	37	40.5	64.9	7.35	.0739	327	4	100.0	15
3/02/10	10:15p	37.2	37.2	36.6	92	35.1	11.0	ENE	2.75	23.0	ENE	29.7	37.1	29.6	29.596	0.04	0.24	0.290	0.000	67.7	37	40.5	64.9	7.35	.0738	323	4	100.0	15
3/02/10	10:30p	37.9	37.9	37.2	92	35.8	11.0	NE	2.75	23.0	NNE	30.6	37.8	30.5	29.584	0.04	0.26	0.282	0.000	67.7	37	40.5	64.9	7.35	.0738	326	4	100.0	15
3/02/10	10:45p	38.0	38.1	37.9	92	35.9	10.0	NE	2.50	21.0	N	31.2	37.9	31.1	29.573	0.03	0.27	0.281	0.000	67.9	37	40.7	65.1	7.35	.0737	325	4	100.0	15
3/02/10	11:00p	38.5	38.5	38.0	92	36.4	10.0	NE	2.50	25.0	NNE	31.8	38.4	31.7	29.557	0.03	0.17	0.276	0.000	67.9	37	40.7	65.1	7.35	.0737	327	4	100.0	15
3/02/10	11:15p	38.8	38.8	38.5	92	36.7	10.0	NNE	2.50	19.0	N	32.2	38.7	32.1	29.555	0.01	0.16	0.273	0.000	67.9	38	41.3	65.3	7.55	.0736	325	4	100.0	15
3/02/10	11:30p	38.8	38.9	38.8	92	36.7	10.0	NNE	2.50	20.0	NE	32.2	38.7	32.1	29.550	0.02	0.06	0.273	0.000	67.9	39	42.0	65.4	7.69	.0736	328	4	100.0	15
3/02/10	11:45p	38.4	38.8	38.4	91	36.0	11.0	NNE	2.75	21.0	NNE	31.2	38.3	31.1	29.532	0.01	0.06	0.277	0.000	67.9	39	42.0	65.4	7.69	.0736	326	4	100.0	15
3/03/10	12:00a	38.5	38.5	38.3	92	36.4	11.0	NNE	2.75	21.0	NE	31.4	38.4	31.3	29.528	0.03	0.14	0.276	0.000	67.9	39	42.0	65.4	7.69	.0736	326	4	100.0	15

Room 133 3/03/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/03/10	12:15a	38.5	38.6	38.4	92	36.4	11.0	NNE	2.75	22.0	NNE	31.4	38.4	31.3	29.523	0.02	0.10	0.276	0.000	67.9	39	42.0	65.4	7.69	.0735	323	4	100.0	15
3/03/10	12:30a	38.6	38.6	38.5	92	36.5	11.0	NNE	2.75	23.0	NNE	31.5	38.5	31.4	29.512	0.04	0.18	0.275	0.000	68.0	39	42.1	65.5	7.69	.0735	325	4	100.0	15
3/03/10	12:45a	38.6	38.6	38.6	92	36.5	12.0	NNE	3.00	23.0	NNE	31.1	38.5	31.0	29.505	0.03	0.16	0.275	0.000	68.0	39	42.1	65.5	7.69	.0735	325	4	100.0	15
3/03/10	1:00a	38.5	38.6	38.5	92	36.4	11.0	NNE	2.75	18.0	N	31.4	38.4	31.3	29.501	0.04	0.23	0.276	0.000	68.0	38	41.4	65.4	7.55	.0735	326	4	100.0	15
3/03/10	1:15a	37.7	38.5	37.7	92	35.6	9.0	NNE	2.25	24.0	NE	31.3	37.6	31.2	29.493	0.04	0.15	0.284	0.000	68.0	38	41.4	65.4	7.55	.0735	327	4	100.0	15
3/03/10	1:30a	37.7	37.7	37.6	92	35.6	8.0	NNE	2.00	22.0	NNE	31.8	37.6	31.7	29.487	0.03	0.14	0.284	0.000	68.2	38	41.6	65.6	7.55	.0734	325	4	100.0	15
3/03/10	1:45a	37.8	37.9	37.6	93	36.0	7.0	NE	1.75	19.0	N	32.5	37.8	32.5	29.478	0.03	0.12	0.283	0.000	67.7	38	41.2	65.0	7.55	.0735	323	4	100.0	15
3/03/10	2:00a	37.9	38.0	37.8	93	36.1	7.0	NE	1.75	20.0	NE	32.6	37.9	32.6	29.469	0.03	0.14	0.282	0.000	67.0	39	41.2	64.4	7.71	.0736	326	4	100.0	15
3/03/10	2:15a	37.8	37.9	37.8	93	36.0	7.0	ESE	1.75	22.0	NNE	32.5	37.8	32.5	29.465	0.02	0.14	0.283	0.000	66.6	39	40.9	63.9	7.72	.0736	323	4	100.0	15
3/03/10	2:30a	37.5	37.8	37.5	93	35.7	7.0	NW	1.75	21.0	NW	32.1	37.5	32.1	29.456	0.02	0.16	0.286	0.000	66.4	39	40.7	63.7	7.72	.0736	325	4	100.0	15
3/03/10	2:45a	37.4	37.5	37.4	93	35.6	8.0	WSW	2.00	19.0	ESE	31.4	37.4	31.4	29.451	0.03	0.24	0.287	0.000	66.1	40	41.1	63.5	7.83	.0736	324	4	100.0	15
3/03/10	3:00a	37.3	37.4	37.3	93	35.5	8.0	WNW	2.00	19.0	SE	31.3	37.3	31.3	29.440	0.01	0.33	0.289	0.000	65.9	40	40.9	63.3	7.83	.0736	324	4	100.0	15
3/03/10	3:15a	36.8	37.3	36.8	93	35.0	10.0	NNW	2.50	24.0	WNW	29.7	36.8	29.7	29.436	0.02	0.40	0.294	0.000	65.9	40	40.9	63.3	7.83	.0736	325	4	100.0	15
3/03/10	3:30a	36.7	36.9	36.7	93	34.9	11.0	N	2.75	27.0	NW	29.1	36.7	29.1	29.433	0.02	0.28	0.295	0.000	65.8	40	40.8	63.2	7.83	.0736	324	4	100.0	15
3/03/10	3:45a	36.8	36.8	36.6	93	35.0	13.0	N	3.25	28.0	N	28.4	36.8	28.4	29.426	0.02	0.34	0.294	0.000	65.8	39	40.1	63.1	7.73	.0736	326	4	100.0	15
3/03/10	4:00a	37.0	37.0	36.8	93	35.2	13.0	NNW	3.25	35.0	ENE	28.7	37.0	28.7	29.429	0.00	0.00	0.292	0.000	65.6	39	40.0	62.9	7.74	.0737	325	4	100.0	15
3/03/10	4:15a	37.0	37.0	36.9	93	35.2	12.0	NNE	3.00	25.0	ENE	29.1	37.0	29.1	29.431	0.02	0.34	0.292	0.000	65.4	39	39.8	62.7	7.74	.0737	324	4	100.0	15
3/03/10	4:30a	37.3	37.3	37.0	93	35.5	12.0	NNE	3.00	29.0	NNW	29.4	37.3	29.4	29.435	0.00	0.00	0.289	0.000	65.3	40	40.3	62.7	7.84	.0737	327	4	100.0	15
3/03/10	4:45a	36.9	37.5	36.9	93	35.1	12.0	N	3.00	26.0	N	28.9	36.9	28.9	29.447	0.00	0.00	0.293	0.000	65.3	40	40.3	62.7	7.84	.0738	324	4	100.0	15
3/03/10	5:00a	37.3	37.3	36.9	93	35.5	12.0	N	3.00	33.0	N	29.4	37.3	29.4	29.450	0.02	0.12	0.289	0.000	65.1	40	40.2	62.5	7.85	.0738	327	4	100.0	15
3/03/10	5:15a	36.1	37.3	36.1	92	34.0	12.0	N	3.00	24.0	NNW	27.9	36.0	27.8	29.463	0.00	0.00	0.301	0.000	65.1	40	40.2	62.5	7.85	.0738	325	4	100.0	15
3/03/10	5:30a	35.4	36.1	35.4	92	33.3	12.0	N	3.00	24.0	NNE	27.1	35.3	27.0	29.477	0.00	0.00	0.308	0.000	64.9	40	40.0	62.3	7.85	.0739	325	4	100.0	15
3/03/10	5:45a	34.9	35.4	34.8	93	33.1	11.0	N	2.75	21.0	NE	26.9	34.9	26.9	29.490	0.00	0.00	0.314	0.000	64.9	40	40.0	62.3	7.85	.0739	325	4	100.0	15
3/03/10	6:00a	34.5	34.9	34.5	93	32.7	10.0	N	2.50	19.0	NNE	26.8	34.4	26.7	29.501	0.00	0.00	0.318	0.000	64.9	40	40.0	62.3	7.85	.0740	324	4	100.0	15
3/03/10	6:15a	34.4	34.4	34.4	93	32.6	10.0	N	2.50	19.0	N	26.7	34.3	26.6	29.507	0.00	0.00	0.319	0.000	64.9	40	40.0	62.3	7.85	.0740	327	4	100.0	15
3/03/10	6:30a	34.5	34.5	34.4	93	32.7	9.0	N	2.25	18.0	NNE	27.3	34.4	27.2	29.505	0.00	0.00	0.318	0.000	64.9	40	40.0	62.3	7.85	.0740	326	4	100.0	15
3/03/10	6:45a	34.8	34.8	34.5	93	33.0	8.0	N	2.00	18.0	NNE	28.3	34.7	28.2	29.507	0.00	0.00	0.315	0.000	64.8	40	39.9	62.2	7.85	.0740	325	4	100.0	15
3/03/10	7:00a	35.3	35.3	34.8	94	33.7	10.0	N	2.50	23.0	NNW	27.8	35.3	27.8	29.505	0.00	0.00	0.309	0.000	64.8	40	39.9	62.2	7.85	.0740	326	4	100.0	15
3/03/10	7:15a	35.6	35.6	35.3	94	34.0	10.0	N	2.50	19.0	NNW	28.2	35.6	28.2	29.512	0.00	0.00	0.306	0.000	64.6	40	39.7	62.0	7.85	.0740	326	4	100.0	15
3/03/10	7:30a	35.9	35.9	35.6	94	34.3	8.0	N	2.00	20.0	SSE	29.6	35.9	29.6	29.516	0.00	0.00	0.303	0.000	64.6	40	39.7	62.0	7.85	.0741	327	4	100.0	15
3/03/10	7:45a	36.2	36.2	35.8	94	34.6	6.0	NW	1.50	18.0	E	31.2	36.2	31.2	29.518	0.00	0.00	0.300	0.000	64.6	40	39.7	62.0	7.85	.0741	326	4	100.0	15
3/03/10	8:00a	36.6	36.6	36.2	93	34.8	7.0	N	1.75	18.0	NNE	31.0	36.6	31.0	29.521	0.00	0.00	0.296	0.000	64.5	40	39.6	61.8	7.85	.0741	328	4	100.0	15
3/03/10	8:15a	36.9	36.9	36.6	93	35.1	7.0	NW	1.75	18.0	NNE	31.4	36.9	31.4	29.525	0.00	0.00	0.293	0.000	64.5	41	40.3	61.9	7.96	.0741	325	4	100.0	15
3/03/10	8:30a	37.2	37.2	37.0	93	35.4	7.0	N	1.75	20.0	SE	31.8	37.2	31.8	29.530	0.00	0.00	0.290	0.000	64.6	41	40.4	62.0	7.96	.0741	325	4	100.0	15
3/03/10	8:45a	37.3	37.3	37.2	93	35.5	7.0	N	1.75	23.0	N	31.9	37.3	31.9	29.528	0.00	0.00	0.289	0.000	64.9	41	40.6	62.4	7.95	.0740	326	4	100.0	15
3/03/10	9:00a	37.5	37.5	37.3	93	35.7	7.0	NNE	1.75	19.0	NE	32.1	37.5	32.1	29.529	0.00	0.00	0.286	0.000	65.3	41	41.0	62.8	7.95	.0740	326	4	100.0	15
3/03/10	9:15a	37.5	37.6	37.4	92	35.4	11.0	N	2.75	21.0	NNE	30.1	37.4	30.0	29.536	0.00	0.00	0.286	0.000	65.4	41	41.1	62.9	7.95	.0740	326	4	100.0	15
3/03/10	9:30a	37.5	37.5	37.4	92	35.4	11.0	N	2.75	23.0	N	30.1	37.4	30.0	29.544	0.00	0.00	0.286	0.000	65.6	41	41.3	63.1	7.95	.0739	327	4	100.0	15
3/03/10	9:45a	37.7	37.7	37.5	92	35.6	11.0	N	2.75	23.0	N	30.4	37.6	30.3	29.548	0.00	0.00	0.284	0.000	65.6	41	41.3	63.1	7.95	.0740	326	4	100.0	15
3/03/10	10:00a	37.9	38.0	37.6	91	35.5	11.0	N	2.75	20.0	NNE	30.6	37.8	30.5	29.552	0.00	0.00	0.282	0.000	65.8	40	40.8	63.2	7.83	.0739	326	4	100.0	15
3/03/10	10:15a	38.2	38.2	37.9	91	35.8	11.0	N	2.75	19.0	NNE	31.0	38.1	30.9	29.564	0.00	0.00	0.279	0.000	65.8	40	40.8	63.2	7.83	.0740	325	4	100.0	15
3/03/10	10:30a	38.4	38.4	38.2	90	35.7	10.0	N	2.50	19.0	NE	31.7	38.3	31.6	29.570	0.00	0.00	0.277	0.000	65.8	40	40.8	63.2	7.83	.0740	326	4	100.0	15
3/03/10	10:45a	38.7	38.8	38.4	89	35.7	9.0	N	2.25	22.0	NW	32.5	38.6	32.4	29.575	0.00	0.00	0.274	0.000	65.9	40	40.9	63.3	7.83	.0740	326	4	100.0	15
3/03/10	11:00a	38.9	38.9	38.7	88	35.6	9.0	N	2.25	20.0	NNE	32.7	38.8	32.6	29.575	0.00	0.00	0.272	0.000	65.9	40	40.9	63.3	7.83	.0740	326	4	100.0	15
3/03/10	11:15a	39.1	39.1	38.9	88	35.8	8.0	N	2.00	20.0	NNW	33.5	39.0	33.4	29.577	0.00	0.00	0.270	0.000	65.9	39	40.2	63.2	7.73	.0740	327	4	100.0	15
3/03/10	11:30a	39.3	39.3	39.1	86	35.5	7.0	NNE	1.75	19.0	N	34.3	39.1	34.1	29.580	0.00	0.00	0.268	0.000	66.1	39	40.4	63.4	7.73	.0740	327	4	100.0	15
3/03/10	11:45a	39.3	39.4	39.2	85	35.2	8.0	N	2.00	23.0	NNW	33.7	39.1	33.5	29.590	0.00	0.00	0.268	0.000	66.1	39	40.4	63.4	7.73	.0740	326	4	100.0	15
3/03/10	12:00p	39.3	39.3	39.3	85	35.2	10.0	N	2.50	21.0	E	32.8	39.1	32.6	29.600	0.00	0.00	0.268	0.000	66.1	39	40.4	63.4	7.73	.0740	324	4	100.0	15
3/03/10	12:15p	39.5	39.5	39.3	84	35.1	9.0	N	2.25	20.0	N	33.5	39.3	33.3	29.604	0.00	0.00	0.266	0.000	66.1	39	40.4	63.4	7.73	.0740	327	4	100.0	15
3/03/10	12:30p	39.5	39.6	39.5	84	35.1	8.0	N	2.00	21.0	N	34.0	39.3	33.8	29.604	0.00	0.00	0.266	0.000	66.1	39	40.4	63.4	7.73	.0740	327	4	100.0	15
3/03/10	12:45p	39.6	39.6	39.6	83	34.9	10.0	N	2.50	19.0	NNE	33.1	39.4	32.9	29.604	0.00	0.00	0.265	0.000	66.2	38	39.8	63.4	7.55	.0740	327	4	100.0	15
3/03/10	1:00p	39.5	39.6	39.5	83	34.8	10.0	N	2.50	20.0	N	33.0	39.3	32.8	29.601	0.00	0.00	0.266	0.000	66.2	38	39.8	63.4	7.55	.0740	326	4	100.0	15
3/03/10	1:15p	39.3	39.6	39.3	84	34.9	11.0	N	2.75	20.0	N	32.4	39.1	32.2	29.603	0.00	0.00	0.268	0.000	66.1	38	39.7	63.3	7.55	.0741	327	4	100.0	15
3/03/10	1:30p	39.0	39.3	39.0	86	35.2	11.0	N	2.75	23.0	NE	32.0	38.8	31.8	29.611	0.00	0.00	0.271	0.000	66.2	38	39.8	63.4	7.55	.0741	325	4	100.0	15
3/03/10	1:45p	38.9	39.1	38.9	87	35.4	11.0	NNE	2.75	21.0	N	31.9	38.7	31.7	29.611	0.00	0.00	0.272	0.000	66.2	38	39.8	63.4	7.55	.0741	327	4	100.0	15
3/03/10	2:00p	38.8	38.9	38.8	87	35.3	11.0	NNE	2.75	18.0	NNE	31.7	38.6	31.5	29.620	0.00	0.00	0.273	0.000	66.1	38	39.7	63.3	7.55	.0741	328	4	100.0	15
3/03/10	2:15p	38.8	38.9	38.8	87	35.3	11.0	NNE	2.75	17.0	ENE	31.7	38.6	31.5	29.626	0.00	0.00	0.273	0.000	65.9	38	39.6	63.1	7.55	.0741	326	4	100.0	15
3/03/10	2:30p	38.9	39.0	38.8	87	35.4	10.0	N	2.50	19.0	NE	32.3	38.7	32.1	29.625	0.00	0.00	0.272	0.000	65.9	38	39.6	63.1	7.55	.0741	324	4	100.0	15
3/03/10	2:45p	39.2	39.2	38.9	86	35.4	10.0	N	2.50	18.0	NNE	32.7	39.0	32.5	29.632	0.00	0.00	0.269	0.000	66.2	38	39.8	63.4	7.55	.0741	326	4	100.0	15
3/03/10	3:00p	39.3	39.3	39.2	86	35.5	10.0	NNE	2.50	20.0	NE	32.8	39.1	32.6	29.637	0.00	0.00	0.268	0.000	66.2	39	40.5	63.5	7.73	.0741	328	4	100.0	15
3/03/10	3:15p	39.3	39.3	39.2	85	35.2	11.0	NNE	2.75	22.0	N	32.4	39.1	32.2	29.637	0.00	0.00	0.268	0.000	66.2	39	40.5	63.5	7.73	.0741	325	4	100.0	15
3/03/10	3:30p	39.4	39.4	39.3	84	35.0	10.0	NNE	2.50	19.0	NE	32.9	39.2	32.7	29.641	0.00	0.00	0.267	0.000	66.1	39	40.4	63.4	7.73	.0741	325	4	100.0	15
3/03/10	3:45p	39.5	39.5	39.4	84	35.1	10.0	NNE	2.50	18.0	NNE	33.0	39.3	32.8	29.645	0.00	0.00	0.266	0.000	66.1	39	40.4	63.4	7.73	.0741	327	4	100.0	15
3/03/10	4:00p	39.4	39.5	39.4	84	35.0	10.0	NNE	2.50	21.0	NNE	32.9	39.2	32.7	29.652	0.00	0.00	0.267	0.000	65.9	39	40.2	63.2	7.73	.0742	325	4	100.0	15
3/03/10	4:15p	39.6	39.6	39.5	83	34.9	11.0	NNE	2.75	20.0	NNE	32.7	39.4	32.5	29.657	0.00	0.00	0.265	0.000	65.8	39	40.1	63.1	7.73	.0742	326	4	100.0	15
3/03/10	4:30p	39.7	39.7	39.6	83	35.0	10.0	NNE	2.50	18.0	NNE	33.3	39.5	33.1	29.664	0.00	0.00	0.264	0.000	65.9	39	40.2	63.2	7.73	.0742	327	4	100.0	15
3/03/10	4:45p	39.9	39.9	39.7	83	35.2	10.0	NNE	2.50	18.0	NNE	33.5	39.7	33.3	29.669	0.00	0.00	0.261	0.000	65.9	39	40.2	63.2	7.73	.0742	328	4	100.0	15
3/03/10	5:00p	39.8	39.9	39.8	83	35.1	9.0	NNE	2.25	21.0	NNE	33.8	39.6	33.6	29.674	0.00	0.00	0.263	0.000	65.9	39	40.2	63.2	7.73	.0743	326	4	100.0	15
3/03/10	5:15p	40.0	40.0	39.8	83	35.3	9.0	NNE	2.25	17.0	NNE	34.1	39.8	33.9	29.679	0.00	0.00	0.260	0.000	65.9	39	40.2	63.2	7.73	.0743	325	4	100.0	15
3/03/10	5:30p	40.1	40.1	39.9	83	35.4	11.0	NNE	2.75	20.0	NE	33.3	39.9	33.1	29.686	0.00	0.00	0.259	0.000	65.8	39	40.1	63.1	7.73	.0743	326	4	100.0	15

Room 133 3/03/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/03/10	5:45p	40.1	40.1	40.0	83	35.4	10.0	NNE	2.50	18.0	N	33.7	39.9	33.5	29.692	0.00	0.00	0.259	0.000	65.6	39	40.0	62.9	7.74	.0743	326	4	100.0	15
3/03/10	6:00p	40.1	40.1	40.1	83	35.4	10.0	NNE	2.50	19.0	NE	33.7	39.9	33.5	29.699	0.00	0.00	0.259	0.000	65.4	40	40.4	62.8	7.84	.0744	327	4	100.0	15
3/03/10	6:15p	40.0	40.1	40.0	83	35.3	10.0	NNE	2.50	20.0	ENE	33.6	39.8	33.4	29.706	0.00	0.00	0.260	0.000	65.4	40	40.4	62.8	7.84	.0744	326	4	100.0	15
3/03/10	6:30p	40.0	40.1	40.0	84	35.6	10.0	NNE	2.50	20.0	NE	33.6	39.8	33.4	29.711	0.00	0.00	0.260	0.000	65.1	40	40.2	62.5	7.85	.0745	326	4	100.0	15
3/03/10	6:45p	40.0	40.1	40.0	84	35.6	8.0	NNE	2.00	16.0	NE	34.6	39.8	34.4	29.718	0.00	0.00	0.260	0.000	64.9	40	40.0	62.3	7.85	.0745	325	4	100.0	15
3/03/10	7:00p	40.0	40.1	39.9	85	35.9	8.0	NNE	2.00	18.0	NNE	34.6	39.8	34.4	29.725	0.00	0.00	0.260	0.000	64.9	40	40.0	62.3	7.85	.0745	327	4	100.0	15
3/03/10	7:15p	39.7	40.0	39.7	87	36.1	9.0	NNE	2.25	15.0	NE	33.7	39.5	33.5	29.732	0.00	0.00	0.264	0.000	64.9	40	40.0	62.3	7.85	.0745	328	4	100.0	15
3/03/10	7:30p	39.3	39.7	39.3	88	36.0	8.0	NNE	2.00	15.0	NNE	33.7	39.2	33.6	29.737	0.00	0.00	0.268	0.000	64.9	40	40.0	62.3	7.85	.0746	327	4	100.0	15
3/03/10	7:45p	39.6	39.6	39.3	89	36.6	9.0	NNE	2.25	16.0	NNE	33.6	39.5	33.5	29.739	0.00	0.00	0.265	0.000	64.9	40	40.0	62.3	7.85	.0746	325	4	100.0	15
3/03/10	8:00p	39.5	39.6	39.5	88	36.2	9.0	NNE	2.25	16.0	NE	33.5	39.4	33.4	29.740	0.00	0.00	0.266	0.000	65.1	40	40.2	62.5	7.85	.0745	323	4	100.0	15
3/03/10	8:15p	39.4	39.6	39.4	88	36.1	9.0	NNE	2.25	17.0	ENE	33.4	39.3	33.3	29.740	0.00	0.00	0.267	0.000	65.3	40	40.3	62.7	7.84	.0745	326	4	100.0	15
3/03/10	8:30p	39.4	39.5	39.4	89	36.4	9.0	NNE	2.25	17.0	NE	33.4	39.3	33.3	29.742	0.00	0.00	0.267	0.000	65.3	40	40.3	62.7	7.84	.0745	326	4	100.0	15
3/03/10	8:45p	39.3	39.4	39.3	90	36.6	8.0	NE	2.00	15.0	N	33.7	39.2	33.6	29.746	0.00	0.00	0.268	0.000	65.3	41	41.0	62.8	7.95	.0745	326	4	100.0	15
3/03/10	9:00p	39.2	39.3	39.2	90	36.5	7.0	NE	1.75	14.0	NE	34.2	39.1	34.1	29.748	0.00	0.00	0.269	0.000	65.1	41	40.8	62.6	7.95	.0745	328	4	100.0	15
3/03/10	9:15p	39.4	39.5	39.2	90	36.7	9.0	NE	2.25	18.0	NE	33.4	39.3	33.3	29.747	0.00	0.00	0.267	0.000	65.1	41	40.8	62.6	7.95	.0745	326	4	100.0	15
3/03/10	9:30p	39.6	39.7	39.4	89	36.6	10.0	NNE	2.50	20.0	NE	33.1	39.5	33.0	29.749	0.00	0.00	0.265	0.000	65.1	41	40.8	62.6	7.95	.0745	325	4	100.0	15
3/03/10	9:45p	39.9	39.9	39.7	88	36.6	10.0	NNE	2.50	23.0	NE	33.5	39.8	33.4	29.751	0.00	0.00	0.261	0.000	65.1	41	40.8	62.6	7.95	.0745	326	4	100.0	15
3/03/10	10:00p	39.7	39.9	39.7	88	36.4	10.0	NE	2.50	17.0	NE	33.3	39.6	33.2	29.752	0.00	0.00	0.264	0.000	65.1	41	40.8	62.6	7.95	.0746	327	4	100.0	15
3/03/10	10:15p	39.7	39.7	39.6	89	36.7	10.0	NE	2.50	19.0	NE	33.3	39.6	33.2	29.753	0.00	0.00	0.264	0.000	65.1	41	40.8	62.6	7.95	.0746	327	4	100.0	15
3/03/10	10:30p	39.7	39.7	39.7	88	36.4	10.0	NE	2.50	17.0	NE	33.3	39.6	33.2	29.757	0.00	0.00	0.264	0.000	65.3	41	41.0	62.8	7.95	.0745	325	4	100.0	15
3/03/10	10:45p	39.9	39.9	39.7	88	36.6	11.0	NNE	2.75	20.0	NNE	33.1	39.8	33.0	29.758	0.00	0.00	0.261	0.000	65.4	41	41.1	62.9	7.95	.0745	327	4	100.0	15
3/03/10	11:00p	39.9	39.9	39.8	88	36.6	11.0	NNE	2.75	21.0	NE	33.1	39.8	33.0	29.762	0.00	0.00	0.261	0.000	65.4	40	40.4	62.8	7.84	.0745	325	4	100.0	15
3/03/10	11:15p	39.7	39.8	39.7	88	36.4	10.0	NNE	2.50	19.0	NNE	33.3	39.6	33.2	29.761	0.00	0.00	0.264	0.000	65.6	40	40.6	63.0	7.84	.0745	325	4	100.0	15
3/03/10	11:30p	39.5	39.7	39.5	89	36.5	10.0	NNE	2.50	17.0	NNE	33.0	39.4	32.9	29.763	0.00	0.00	0.266	0.000	65.8	40	40.8	63.2	7.83	.0745	325	4	100.0	15
3/03/10	11:45p	39.5	39.6	39.5	89	36.5	10.0	NNE	2.50	18.0	NE	33.0	39.4	32.9	29.761	0.00	0.00	0.266	0.000	65.6	40	40.6	63.0	7.84	.0745	326	4	100.0	15
3/04/10	12:00a	39.5	39.5	39.5	89	36.5	10.0	NNE	2.50	18.0	NE	33.0	39.4	32.9	29.763	0.00	0.00	0.266	0.000	65.6	41	41.3	63.1	7.95	.0745	327	4	100.0	15

Room 133 3/04/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/04/10	12:15a	39.5	39.5	39.5	89	36.5	11.0	NE	2.75	20.0	NNE	32.6	39.4	32.5	29.764	0.00	0.00	0.266	0.000	65.4	41	41.1	62.9	7.95	.0745	325	4	100.0	15
3/04/10	12:30a	39.6	39.6	39.5	89	36.6	11.0	NNE	2.75	19.0	NE	32.7	39.5	32.6	29.767	0.00	0.00	0.265	0.000	65.4	41	41.1	62.9	7.95	.0745	326	4	100.0	15
3/04/10	12:45a	39.6	39.7	39.6	89	36.6	11.0	NNE	2.75	18.0	NE	32.7	39.5	32.6	29.771	0.00	0.00	0.265	0.000	65.3	41	41.0	62.8	7.95	.0746	325	4	100.0	15
3/04/10	1:00a	39.6	39.7	39.6	89	36.6	10.0	NE	2.50	20.0	NNE	33.1	39.5	33.0	29.773	0.00	0.00	0.265	0.000	65.3	41	41.0	62.8	7.95	.0746	326	4	100.0	15
3/04/10	1:15a	39.3	39.6	39.3	89	36.3	9.0	NE	2.25	17.0	NE	33.2	39.2	33.1	29.775	0.00	0.00	0.268	0.000	65.3	41	41.0	62.8	7.95	.0746	325	4	100.0	15
3/04/10	1:30a	39.3	39.4	39.3	89	36.3	11.0	NE	2.75	18.0	NE	32.4	39.2	32.3	29.778	0.00	0.00	0.268	0.000	65.4	41	41.1	62.9	7.95	.0746	325	4	100.0	15
3/04/10	1:45a	39.3	39.4	39.3	88	36.0	11.0	NE	2.75	17.0	NE	32.4	39.2	32.3	29.781	0.00	0.00	0.268	0.000	65.4	41	41.1	62.9	7.95	.0746	327	4	100.0	15
3/04/10	2:00a	39.6	39.6	39.3	86	35.8	11.0	NNE	2.75	17.0	NE	32.7	39.4	32.5	29.780	0.00	0.00	0.265	0.000	65.6	41	41.3	63.1	7.95	.0745	327	4	100.0	15
3/04/10	2:15a	39.6	39.6	39.5	84	35.2	10.0	NE	2.50	17.0	N	33.1	39.4	32.9	29.780	0.00	0.00	0.265	0.000	64.5	41	40.3	61.9	7.96	.0747	326	4	100.0	15
3/04/10	2:30a	39.4	39.6	39.4	83	34.7	8.0	NE	2.00	18.0	NE	33.9	39.2	33.7	29.778	0.00	0.00	0.267	0.000	62.9	42	39.4	60.4	8.15	.0750	327	4	100.0	15
3/04/10	2:45a	39.1	39.4	39.1	83	34.4	7.0	NE	1.75	13.0	ENE	34.1	38.9	33.9	29.773	0.00	0.00	0.270	0.000	61.8	42	38.4	59.3	8.15	.0751	325	4	100.0	15
3/04/10	3:00a	39.0	39.1	39.0	82	34.0	7.0	NE	1.75	13.0	NE	33.9	38.7	33.6	29.774	0.00	0.00	0.271	0.000	61.0	43	38.3	58.5	8.33	.0753	327	4	100.0	15
3/04/10	3:15a	39.1	39.2	38.9	82	34.1	7.0	NE	1.75	13.0	NE	34.1	38.8	33.8	29.780	0.00	0.00	0.270	0.000	60.5	44	38.5	58.1	8.53	.0753	327	4	100.0	15
3/04/10	3:30a	39.1	39.2	39.1	81	33.8	6.0	NE	1.50	11.0	NNE	34.7	38.8	34.4	29.782	0.00	0.00	0.270	0.000	60.0	44	38.0	57.6	8.55	.0754	326	4	100.0	15
3/04/10	3:45a	39.1	39.2	39.1	80	33.5	6.0	NE	1.50	16.0	NNE	34.7	38.8	34.4	29.785	0.00	0.00	0.270	0.000	59.7	44	37.7	57.3	8.54	.0755	326	4	100.0	15
3/04/10	4:00a	38.8	39.1	38.8	81	33.5	5.0	NE	1.25	14.0	ENE	35.1	38.5	34.8	29.789	0.00	0.00	0.273	0.000	59.6	45	38.2	57.3	8.65	.0755	324	4	100.0	15
3/04/10	4:15a	38.8	38.8	38.7	81	33.5	5.0	NE	1.25	13.0	ENE	35.1	38.5	34.8	29.791	0.00	0.00	0.273	0.000	59.4	45	38.0	57.1	8.65	.0755	327	4	100.0	15
3/04/10	4:30a	38.9	38.9	38.8	81	33.6	5.0	NE	1.25	10.0	NNE	35.2	38.6	34.9	29.793	0.00	0.00	0.272	0.000	59.3	45	37.9	57.0	8.65	.0756	327	4	100.0	15
3/04/10	4:45a	38.8	38.9	38.8	80	33.2	5.0	NE	1.25	12.0	NNE	35.1	38.5	34.8	29.796	0.00	0.00	0.273	0.000	59.3	45	37.9	57.0	8.65	.0756	325	4	100.0	15
3/04/10	5:00a	38.8	38.8	38.8	80	33.2	6.0	NE	1.50	14.0	NE	34.3	38.5	34.0	29.802	0.00	0.00	0.273	0.000	59.1	45	37.8	56.8	8.65	.0756	326	4	100.0	15
3/04/10	5:15a	38.9	38.9	38.8	79	32.9	6.0	NE	1.50	13.0	NE	34.4	38.6	34.1	29.803	0.00	0.00	0.272	0.000	59.0	45	37.7	56.7	8.65	.0756	324	4	100.0	15
3/04/10	5:30a	38.8	38.9	38.8	78	32.5	8.0	NE	2.00	17.0	NE	33.1	38.5	32.8	29.803	0.00	0.00	0.273	0.000	58.8	45	37.5	56.5	8.65	.0757	327	4	100.0	15
3/04/10	5:45a	38.7	38.8	38.6	78	32.4	9.0	NE	2.25	15.0	NE	32.5	38.4	32.2	29.804	0.00	0.00	0.274	0.000	58.8	45	37.5	56.5	8.65	.0757	325	4	100.0	15
3/04/10	6:00a	38.5	38.6	38.5	78	32.2	9.0	NE	2.25	19.0	NE	32.2	38.2	31.9	29.808	0.00	0.00	0.276	0.000	58.8	45	37.5	56.5	8.65	.0757	324	4	100.0	15
3/04/10	6:15a	38.4	38.6	38.4	78	32.1	9.0	NE	2.25	17.0	NE	32.1	38.1	31.8	29.810	0.00	0.00	0.277	0.000	59.0	45	37.7	56.7	8.65	.0757	327	4	100.0	15
3/04/10	6:30a	38.2	38.4	38.2	78	31.9	9.0	NE	2.25	18.0	NE	31.9	37.9	31.6	29.815	0.00	0.00	0.279	0.000	59.0	45	37.7	56.7	8.65	.0757	326	4	100.0	15
3/04/10	6:45a	38.2	38.3	38.2	78	31.9	9.0	NE	2.25	15.0	NNE	31.9	37.9	31.6	29.820	0.00	0.00	0.279	0.000	59.1	45	37.8	56.8	8.65	.0757	325	4	100.0	15
3/04/10	7:00a	38.4	38.4	38.2	77	31.8	11.0	NE	2.75	20.0	NE	31.2	38.0	30.8	29.822	0.00	0.00	0.277	0.000	59.3	45	37.9	57.0	8.65	.0756	326	4	100.0	15
3/04/10	7:15a	38.6	38.6	38.4	75	31.4	10.0	NE	2.50	20.0	NE	31.9	38.2	31.5	29.831	0.00	0.00	0.275	0.000	59.7	45	38.3	57.4	8.65	.0756	324	4	100.0	15
3/04/10	7:30a	38.7	38.7	38.6	75	31.5	10.0	NE	2.50	17.0	NNE	32.0	38.3	31.6	29.837	0.00	0.00	0.274	0.000	60.2	44	38.2	57.8	8.54	.0755	326	4	100.0	15
3/04/10	7:45a	38.9	38.9	38.7	74	31.3	9.0	NE	2.25	16.0	NE	32.7	38.5	32.3	29.841	0.00	0.00	0.272	0.000	60.7	44	38.6	58.3	8.52	.0755	322	4	100.0	15
3/04/10	8:00a	39.2	39.2	38.9	73	31.3	10.0	NE	2.50	18.0	NE	32.7	38.7	32.2	29.846	0.00	0.00	0.269	0.000	61.1	43	38.4	58.6	8.33	.0754	328	4	100.0	15
3/04/10	8:15a	39.5	39.5	39.2	72	31.2	11.0	NE	2.75	21.0	NNE	32.6	39.0	32.1	29.847	0.00	0.00	0.266	0.000	61.6	43	38.9	59.1	8.32	.0753	327	4	100.0	15
3/04/10	8:30a	39.7	39.8	39.5	70	30.7	12.0	NNE	3.00	20.0	NE	32.5	39.1	31.9	29.850	0.00	0.00	0.264	0.000	62.1	42	38.7	59.6	8.15	.0753	326	4	100.0	15
3/04/10	8:45a	39.7	39.8	39.7	68	30.0	12.0	NNE	3.00	24.0	NE	32.5	39.1	31.9	29.851	0.00	0.00	0.264	0.000	62.7	42	39.3	60.2	8.15	.0752	326	4	100.0	15
3/04/10	9:00a	39.8	39.8	39.7	67	29.7	11.0	NNE	2.75	22.0	NNE	33.0	39.1	32.3	29.850	0.00	0.00	0.263	0.000	63.2	41	39.1	60.6	7.99	.0751	327	4	100.0	15
3/04/10	9:15a	40.0	40.0	39.8	65	29.2	12.0	NNE	3.00	24.0	NE	32.8	39.3	32.1	29.853	0.00	0.00	0.260	0.000	63.6	41	39.5	61.0	7.98	.0751	327	4	100.0	15
3/04/10	9:30a	40.2	40.2	39.9	66	29.7	11.0	NNE	2.75	21.0	NNE	33.4	39.5	32.7	29.857	0.00	0.00	0.258	0.000	64.3	40	39.4	61.6	7.85	.0750	326	4	100.0	15
3/04/10	9:45a	40.4	40.5	40.2	64	29.2	10.0	NNE	2.50	20.0	NNE	34.1	39.7	33.4	29.860	0.00	0.00	0.256	0.000	64.8	40	39.9	62.2	7.85	.0749	326	4	100.0	15
3/04/10	10:00a	40.7	40.7	40.4	64	29.5	9.0	NNE	2.25	18.0	NE	34.9	40.0	34.2	29.862	0.00	0.00	0.253	0.000	65.1	39	39.5	62.4	7.75	.0749	326	4	100.0	15
3/04/10	10:15a	40.9	40.9	40.7	64	29.7	9.0	NNE	2.25	20.0	NNW	35.2	40.2	34.5	29.864	0.00	0.00	0.251	0.000	65.4	39	39.8	62.7	7.74	.0748	327	4	100.0	15
3/04/10	10:30a	41.1	41.1	40.8	63	29.5	8.0	NNE	2.00	15.0	NNE	35.9	40.4	35.2	29.864	0.00	0.00	0.249	0.000	65.8	38	39.5	63.0	7.55	.0748	327	4	100.0	15
3/04/10	10:45a	41.4	41.4	41.1	63	29.7	8.0	NNE	2.00	16.0	NNE	36.3	40.7	35.6	29.866	0.00	0.00	0.246	0.000	65.9	38	39.6	63.1	7.55	.0748	328	4	100.0	15
3/04/10	11:00a	41.9	41.9	41.5	64	30.6	7.0	NNE	1.75	16.0	NNE	37.4	41.2	36.7	29.870	0.00	0.00	0.241	0.000	66.2	37	39.1	63.3	7.35	.0747	327	4	100.0	15
3/04/10	11:15a	42.3	42.3	41.9	62	30.2	6.0	NNE	1.50	14.0	NNE	38.5	41.5	37.7	29.870	0.00	0.00	0.236	0.000	66.4	37	39.3	63.5	7.35	.0747	327	4	100.0	15
3/04/10	11:30a	42.3	42.5	42.3	63	30.6	7.0	NNE	1.75	16.0	N	37.9	41.6	37.2	29.868	0.00	0.00	0.236	0.000	66.9	37	39.8	64.0	7.35	.0746	327	4	100.0	15
3/04/10	11:45a	42.8	42.9	42.3	60	29.9	7.0	NNE	1.75	14.0	NNE	38.5	42.0	37.7	29.865	0.00	0.00	0.231	0.000	67.0	36	39.1	64.0	7.19	.0746	326	4	100.0	15
3/04/10	12:00p	43.0	43.1	42.8	59	29.6	8.0	NNE	2.00	14.0	NE	38.2	42.2	37.4	29.862	0.00	0.00	0.229	0.000	67.4	36	39.5	64.5	7.20	.0745	326	4	100.0	15
3/04/10	12:15p	43.2	43.2	43.0	57	29.0	8.0	NNE	2.00	16.0	NNE	38.4	42.3	37.5	29.858	0.00	0.00	0.227	0.000	67.9	36	39.9	65.0	7.21	.0744	325	4	100.0	15
3/04/10	12:30p	43.7	43.9	43.2	58	29.9	6.0	NNE	1.50	16.0	NE	40.1	42.8	39.2	29.853	0.00	0.00	0.222	0.000	68.2	35	39.5	65.2	7.05	.0744	327	4	100.0	15
3/04/10	12:45p	44.5	44.5	43.7	58	30.6	6.0	NNE	1.50	13.0	NNE	41.1	43.6	40.2	29.853	0.00	0.00	0.214	0.000	68.9	35	40.1	65.9	7.05	.0743	327	4	100.0	15
3/04/10	1:00p	44.6	44.6	44.3	59	31.1	8.0	NNE	2.00	15.0	NE	40.1	43.8	39.3	29.847	0.00	0.00	0.213	0.000	69.6	35	40.7	66.5	7.05	.0742	327	4	100.0	15
3/04/10	1:15p	45.2	45.2	44.6	59	31.7	7.0	NNE	1.75	16.0	NNE	41.4	44.4	40.6	29.841	0.00	0.00	0.206	0.000	71.2	35	42.1	68.5	7.03	.0739	325	4	100.0	15
3/04/10	1:30p	45.6	45.6	45.2	58	31.7	6.0	NNE	1.50	13.0	N	42.4	44.7	41.5	29.836	0.00	0.00	0.202	0.000	74.3	33	43.3	72.9	6.56	.0734	326	4	100.0	15
3/04/10	1:45p	45.8	45.8	45.5	57	31.4	6.0	NNE	1.50	14.0	NNW	42.7	44.9	41.8	29.834	0.00	0.00	0.200	0.000	77.5	30	43.6	76.1	6.05	.0730	327	4	100.0	15
3/04/10	2:00p	46.0	46.0	45.8	55	30.7	7.0	N	1.75	16.0	NNE	42.4	45.0	41.4	29.831	0.00	0.00	0.198	0.000	80.1	29	45.0	78.0	5.85	.0726	327	4	100.0	15
3/04/10	2:15p	46.0	46.3	46.0	52	29.3	8.0	NNE	2.00	13.0	NNE	41.8	44.9	40.7	29.830	0.00	0.00	0.198	0.000	82.0	28	45.7	79.9	5.71	.0723	323	4	100.0	15
3/04/10	2:30p	46.7	46.7	46.0	50	29.0	7.0	NNE	1.75	16.0	NNE	43.2	45.5	42.0	29.832	0.00	0.00	0.191	0.000	82.7	27	45.3	80.4	5.55	.0722	325	4	100.0	15
3/04/10	2:45p	46.7	46.9	46.7	50	29.0	7.0	NNE	1.75	16.0	N	43.2	45.5	42.0	29.837	0.00	0.00	0.191	0.000	82.0	27	44.7	79.7	5.55	.0723	327	4	100.0	15
3/04/10	3:00p	46.6	46.7	46.2	51	29.4	7.0	NNE	1.75	15.0	NE	43.1	45.5	42.0	29.839	0.00	0.00	0.192	0.000	80.1	27	43.1	77.8	5.55	.0726	324	4	100.0	15
3/04/10	3:15p	46.9	47.0	46.7	52	30.2	6.0	NNE	1.50	14.0	NNE	44.0	45.8	42.9	29.843	0.00	0.00	0.189	0.000	79.2	27	42.3	77.1	5.55	.0728	326	4	100.0	15
3/04/10	3:30p	46.8	46.9	46.5	51	29.6	8.0	NNE	2.00	16.0	NNE	42.7	45.7	41.6	29.845	0.00	0.00	0.190	0.000	76.8	28	41.2	75.5	5.69	.0731	326	4	100.0	15
3/04/10	3:45p	46.7	46.9	46.6	51	29.5	7.0	NNE	1.75	15.0	NE	43.2	45.6	42.1	29.848	0.00	0.00	0.191	0.000	76.3	28	40.8	74.8	5.68	.0732	328	4	100.0	15
3/04/10	4:00p	46.9	46.9	46.7	51	29.7	6.0	NNE	1.50	14.0	NE	44.0	45.7	42.8	29.851	0.00	0.00	0.189	0.000	77.0	28	41.4	75.8	5.69	.0731	327	4	100.0	15
3/04/10	4:15p	46.8	46.9	46.6	49	28.6	8.0	NNE	2.00	15.0	NNE	42.7	45.6	41.5	29.855	0.00	0.00	0.190	0.000	75.9	28	40.4	74.3	5.67	.0733	326	4	100.0	15
3/04/10	4:30p	46.8	46.8	46.6	49	28.6	6.0	NNE	1.50	14.0	N	43.9	45.6	42.7	29.860	0.00	0.00	0.190	0.000	75.2	29	40.7	73.5	5.85	.0734	327	4	100.0	15
3/04/10	4:45p	46.7	47.0	46.7	51	29.5	6.0	NNE	1.50	14.0	NE	43.7	45.6	42.6	29.864	0.00	0.00	0.191	0.000	74.5	29	40.1	72.7	5.87	.0735	328	4	100.0	15
3/04/10	5:00p	46.4	46.7	46.3	51	29.2	6.0	NNE	1.50	15.0	NNE	43.4	45.3	42.3	29.872	0.00	0.00	0.194	0.000	73.8	29	39.5	71.9	5.90	.0737	327	4	100.0	15
3/04/10	5:15p	46.1	46.4	46.1	53	29.9	5.0	NNE	1.25	12.0	NNE	43.6	45.1	42.6	29.880	0.00	0.00	0.197	0.000	72.4	30	39.2	69.7	6.15	.0739	327	4	100.0	15
3/04/10	5:30p	45.5	46.1	45.5	56	30.7	5.0	NNE	1.25	10.0	NNE	42.9	44.5	41.9	29.887	0.00	0.00	0.203	0.000	71.4	31	39.2	68.4	6.32	.0740	327	4	100.0	15

Room 133 3/04/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/04/10	5:45p	45.2	45.5	45.2	54	29.5	5.0	N	1.25	11.0	N	42.5	44.2	41.5	29.895	0.00	0.00	0.206	0.000	70.4	32	39.1	67.1	6.54	.0742	326	4	100.0	15
3/04/10	6:00p	44.4	45.2	44.4	60	31.4	3.0	N	0.75	10.0	N	43.3	43.6	42.5	29.902	0.00	0.00	0.215	0.000	69.0	32	37.9	65.6	6.55	.0744	326	4	100.0	15
3/04/10	6:15p	43.4	44.4	43.4	63	31.6	2.0	NE	0.50	6.0	S	43.4	42.7	42.7	29.909	0.00	0.00	0.225	0.000	67.7	33	37.5	64.4	6.70	.0747	325	4	100.0	15
3/04/10	6:30p	43.3	43.4	43.2	61	30.7	3.0	N	0.75	7.0	NNW	42.1	42.5	41.3	29.915	0.00	0.00	0.226	0.000	66.7	34	37.4	63.5	6.85	.0748	327	4	100.0	15
3/04/10	6:45p	43.3	43.3	43.2	60	30.3	3.0	N	0.75	9.0	N	42.1	42.5	41.3	29.923	0.00	0.00	0.226	0.000	65.8	35	37.4	62.7	7.05	.0750	325	4	100.0	15
3/04/10	7:00p	43.0	43.4	43.0	62	30.9	5.0	NNE	1.25	11.0	NNE	40.0	42.2	39.2	29.930	0.00	0.00	0.229	0.000	65.1	35	36.8	61.9	7.05	.0751	326	4	100.0	15
3/04/10	7:15p	43.1	43.2	43.0	62	31.0	5.0	NNE	1.25	11.0	NNE	40.1	42.3	39.3	29.935	0.00	0.00	0.228	0.000	64.5	36	36.9	61.4	7.16	.0752	328	4	100.0	15
3/04/10	7:30p	42.9	43.1	42.9	62	30.8	5.0	NNE	1.25	10.0	N	39.9	42.1	39.1	29.940	0.00	0.00	0.230	0.000	64.0	36	36.5	60.9	7.17	.0753	325	4	100.0	15
3/04/10	7:45p	42.6	42.9	42.6	65	31.7	4.0	NNE	1.00	11.0	N	40.3	41.9	39.6	29.941	0.00	0.00	0.233	0.000	63.5	37	36.7	60.5	7.35	.0754	326	4	100.0	15
3/04/10	8:00p	42.5	42.6	42.4	66	31.9	4.0	NNE	1.00	9.0	NNE	40.2	41.8	39.5	29.944	0.00	0.00	0.234	0.000	63.2	37	36.5	60.2	7.35	.0754	327	4	100.0	15
3/04/10	8:15p	42.1	42.4	42.1	67	31.9	3.0	NNE	0.75	6.0	NNE	40.7	41.4	40.0	29.951	0.00	0.00	0.239	0.000	63.0	37	36.3	60.0	7.35	.0755	324	4	100.0	15
3/04/10	8:30p	42.0	42.1	41.9	65	31.1	4.0	NNE	1.00	7.0	NNE	39.6	41.3	38.9	29.954	0.00	0.00	0.240	0.000	62.9	38	36.9	60.0	7.55	.0755	325	4	100.0	15
3/04/10	8:45p	41.8	42.1	41.8	68	32.0	2.0	NE	0.50	7.0	NNE	41.8	41.2	41.2	29.961	0.00	0.00	0.242	0.000	63.0	38	37.0	60.1	7.55	.0755	327	4	100.0	15
3/04/10	9:00p	41.5	41.8	41.5	69	32.1	4.0	NNE	1.00	6.0	NNE	39.1	40.9	38.5	29.965	0.00	0.00	0.245	0.000	63.0	38	37.0	60.1	7.55	.0755	328	4	100.0	15
3/04/10	9:15p	41.5	41.6	41.5	66	31.0	4.0	NNE	1.00	7.0	NNE	39.1	40.8	38.4	29.968	0.00	0.00	0.245	0.000	63.0	38	37.0	60.1	7.55	.0755	324	4	100.0	15
3/04/10	9:30p	41.9	41.9	41.5	60	29.0	5.0	NNE	1.25	9.0	NNE	38.7	41.1	37.9	29.971	0.00	0.00	0.241	0.000	63.0	38	37.0	60.1	7.55	.0755	325	4	100.0	15
3/04/10	9:45p	42.2	42.2	41.9	56	27.6	6.0	NNE	1.50	15.0	NNE	38.3	41.2	37.3	29.973	0.00	0.00	0.237	0.000	63.0	38	37.0	60.1	7.55	.0755	327	4	100.0	15
3/04/10	10:00p	41.9	42.2	41.9	56	27.3	7.0	NNE	1.75	13.0	NE	37.4	40.9	36.4	29.975	0.00	0.00	0.241	0.000	63.0	38	37.0	60.1	7.55	.0755	326	4	100.0	15
3/04/10	10:15p	41.8	41.9	41.8	55	26.8	7.0	NNE	1.75	15.0	NNE	37.3	40.8	36.3	29.976	0.00	0.00	0.242	0.000	62.9	39	37.5	60.1	7.71	.0755	327	4	100.0	15
3/04/10	10:30p	41.7	41.8	41.7	57	27.6	7.0	NNE	1.75	13.0	NE	37.1	40.8	36.2	29.979	0.00	0.00	0.243	0.000	62.2	39	36.9	59.4	7.69	.0756	326	4	100.0	15
3/04/10	10:45p	41.9	41.9	41.7	55	26.9	7.0	NNE	1.75	13.0	NE	37.4	40.9	36.4	29.979	0.00	0.00	0.241	0.000	61.9	38	36.0	59.0	7.55	.0757	328	4	100.0	15
3/04/10	11:00p	41.7	41.9	41.7	56	27.1	8.0	NNE	2.00	15.0	NNE	36.6	40.7	35.6	29.979	0.00	0.00	0.243	0.000	61.8	38	35.9	58.9	7.55	.0757	327	4	100.0	15
3/04/10	11:15p	41.4	41.7	41.4	56	26.9	7.0	NNE	1.75	14.0	NNE	36.8	40.4	35.8	29.981	0.00	0.00	0.246	0.000	61.6	38	35.7	58.7	7.55	.0758	327	4	100.0	15
3/04/10	11:30p	41.2	41.5	41.2	55	26.2	8.0	NE	2.00	15.0	NNE	36.0	40.2	35.0	29.984	0.00	0.00	0.248	0.000	61.3	38	35.5	58.4	7.55	.0758	327	4	100.0	15
3/04/10	11:45p	40.8	41.2	40.8	56	26.3	7.0	NE	1.75	12.0	NE	36.1	39.8	35.1	29.986	0.00	0.00	0.252	0.000	61.1	38	35.3	58.2	7.55	.0758	326	4	100.0	15
3/05/10	12:00a	40.7	40.8	40.7	56	26.2	8.0	NE	2.00	15.0	NNE	35.4	39.7	34.4	29.988	0.00	0.00	0.253	0.000	60.8	38	35.0	57.9	7.55	.0759	323	4	100.0	15

Room 133 3/05/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/05/10	12:15a	40.6	40.7	40.5	56	26.1	9.0	NE	2.25	16.0	NE	34.8	39.6	33.8	29.990	0.00	0.00	0.254	0.000	60.7	38	34.9	57.8	7.55	.0759	325	4	100.0	15
3/05/10	12:30a	40.5	40.6	40.5	56	26.0	8.0	NE	2.00	16.0	NE	35.2	39.5	34.2	29.991	0.00	0.00	0.255	0.000	60.7	38	34.9	57.8	7.55	.0759	327	4	100.0	15
3/05/10	12:45a	40.6	40.6	40.5	56	26.1	9.0	NNE	2.25	16.0	NNE	34.8	39.6	33.8	29.994	0.00	0.00	0.254	0.000	60.7	38	34.9	57.8	7.55	.0759	327	4	100.0	15
3/05/10	1:00a	40.7	40.7	40.6	56	26.2	9.0	NNE	2.25	16.0	NE	34.9	39.7	33.9	29.995	0.00	0.00	0.253	0.000	60.7	38	34.9	57.8	7.55	.0759	328	4	100.0	15
3/05/10	1:15a	40.5	40.7	40.5	55	25.6	11.0	NE	2.75	18.0	NE	33.8	39.5	32.8	29.995	0.00	0.00	0.255	0.000	60.7	38	34.9	57.8	7.55	.0759	325	4	100.0	15
3/05/10	1:30a	40.6	40.7	40.5	55	25.7	10.0	NNE	2.50	20.0	NE	34.3	39.6	33.3	29.994	0.00	0.00	0.254	0.000	60.7	38	34.9	57.8	7.55	.0759	326	4	100.0	15
3/05/10	1:45a	40.4	40.6	40.4	55	25.5	10.0	NNE	2.50	18.0	NE	34.1	39.4	33.1	29.994	0.00	0.00	0.256	0.000	60.5	38	34.7	57.6	7.55	.0760	326	4	100.0	15
3/05/10	2:00a	40.0	40.3	40.0	55	25.1	9.0	NNE	2.25	17.0	NE	34.1	39.0	33.1	29.992	0.00	0.00	0.260	0.000	60.5	38	34.7	57.6	7.55	.0760	327	4	100.0	15
3/05/10	2:15a	39.9	40.1	39.9	56	25.5	10.0	NNE	2.50	19.0	NNE	33.5	38.9	32.5	29.990	0.00	0.00	0.261	0.000	60.3	38	34.6	57.4	7.55	.0760	326	4	100.0	15
3/05/10	2:30a	39.9	39.9	39.8	55	25.0	12.0	NNE	3.00	24.0	NE	32.7	38.9	31.7	29.989	0.00	0.00	0.261	0.000	60.3	38	34.6	57.4	7.55	.0760	325	4	100.0	15
3/05/10	2:45a	39.7	39.9	39.7	56	25.3	11.0	NNE	2.75	22.0	NNE	32.9	38.8	32.0	29.991	0.00	0.00	0.264	0.000	60.3	38	34.6	57.4	7.55	.0760	325	4	100.0	15
3/05/10	3:00a	39.5	39.7	39.5	56	25.1	10.0	NNE	2.50	18.0	NE	33.0	38.6	32.1	29.991	0.00	0.00	0.266	0.000	60.3	38	34.6	57.4	7.55	.0760	327	4	100.0	15
3/05/10	3:15a	39.3	39.5	39.3	57	25.3	9.0	NNE	2.25	17.0	NE	33.2	38.4	32.3	29.990	0.00	0.00	0.268	0.000	60.5	38	34.7	57.6	7.55	.0760	326	4	100.0	15
3/05/10	3:30a	39.1	39.3	39.1	57	25.1	10.0	NNE	2.50	19.0	NNE	32.5	38.2	31.6	29.991	0.00	0.00	0.270	0.000	60.5	38	34.7	57.6	7.55	.0760	326	4	100.0	15
3/05/10	3:45a	38.9	39.1	38.9	59	25.8	9.0	NNE	2.25	17.0	NE	32.7	38.1	31.9	29.995	0.00	0.00	0.272	0.000	60.5	38	34.7	57.6	7.55	.0760	326	4	100.0	15
3/05/10	4:00a	38.8	38.9	38.8	59	25.7	9.0	NNE	2.25	17.0	NNE	32.6	38.0	31.8	30.001	0.00	0.00	0.273	0.000	60.5	38	34.7	57.6	7.55	.0760	326	4	100.0	15
3/05/10	4:15a	38.5	38.8	38.5	60	25.8	9.0	NNE	2.25	16.0	N	32.2	37.7	31.4	30.003	0.00	0.00	0.276	0.000	60.7	38	34.9	57.8	7.55	.0760	324	4	100.0	15
3/05/10	4:30a	38.3	38.5	38.3	60	25.6	10.0	NNE	2.50	19.0	N	31.5	37.5	30.7	30.006	0.00	0.00	0.278	0.000	60.7	38	34.9	57.8	7.55	.0760	328	4	100.0	15
3/05/10	4:45a	38.2	38.4	38.2	60	25.5	10.0	NNE	2.50	18.0	NE	31.4	37.4	30.6	30.012	0.00	0.00	0.279	0.000	60.7	38	34.9	57.8	7.55	.0760	326	4	100.0	15
3/05/10	5:00a	38.1	38.2	38.1	62	26.2	9.0	NNE	2.25	16.0	NNE	31.8	37.3	31.0	30.016	0.00	0.00	0.280	0.000	60.7	38	34.9	57.8	7.55	.0760	325	4	100.0	15
3/05/10	5:15a	37.9	38.0	37.8	62	26.0	9.0	NNE	2.25	16.0	NNE	31.5	37.1	30.7	30.016	0.00	0.00	0.282	0.000	60.5	38	34.7	57.6	7.55	.0760	326	4	100.0	15
3/05/10	5:30a	37.7	37.9	37.7	63	26.2	7.0	NNE	1.75	14.0	NNE	32.4	37.0	31.7	30.021	0.00	0.00	0.284	0.000	60.5	37	34.1	57.5	7.35	.0760	328	4	100.0	15
3/05/10	5:45a	37.6	37.7	37.6	64	26.5	8.0	NNE	2.00	17.0	NE	31.7	36.9	31.0	30.022	0.00	0.00	0.285	0.000	60.3	37	33.9	57.3	7.35	.0761	326	4	100.0	15
3/05/10	6:00a	37.5	37.6	37.5	63	26.0	8.0	NNE	2.00	16.0	NE	31.5	36.8	30.8	30.029	0.00	0.00	0.286	0.000	60.3	37	33.9	57.3	7.35	.0761	323	4	100.0	15
3/05/10	6:15a	37.4	37.5	37.4	63	25.9	8.0	NNE	2.00	16.0	NNE	31.4	36.7	30.7	30.034	0.00	0.00	0.287	0.000	60.2	37	33.8	57.2	7.35	.0761	327	4	100.0	15
3/05/10	6:30a	37.5	37.5	37.4	64	26.4	9.0	NNE	2.25	17.0	NNE	31.0	36.8	30.3	30.036	0.00	0.00	0.286	0.000	60.2	38	34.5	57.3	7.55	.0761	324	4	100.0	15
3/05/10	6:45a	37.5	37.5	37.5	63	26.0	9.0	NNE	2.25	16.0	NNE	31.0	36.8	30.3	30.043	0.00	0.00	0.286	0.000	60.3	38	34.6	57.4	7.55	.0761	325	4	100.0	15
3/05/10	7:00a	37.3	37.5	37.3	63	25.8	8.0	NNE	2.00	16.0	NNE	31.3	36.6	30.6	30.047	0.00	0.00	0.289	0.000	60.7	38	34.9	57.8	7.55	.0761	323	4	100.0	15
3/05/10	7:15a	37.3	37.4	37.3	61	25.1	7.0	NNE	1.75	16.0	N	31.9	36.5	31.1	30.052	0.00	0.00	0.289	0.000	61.1	38	35.3	58.2	7.55	.0760	327	4	100.0	15
3/05/10	7:30a	37.6	37.6	37.4	62	25.7	8.0	NNE	2.00	15.0	NE	31.7	36.8	30.9	30.055	0.00	0.00	0.285	0.000	61.6	37	35.1	58.6	7.35	.0760	325	4	100.0	15
3/05/10	7:45a	37.9	37.9	37.6	60	25.2	9.0	NNE	2.25	17.0	NNE	31.5	37.1	30.7	30.061	0.00	0.00	0.282	0.000	61.9	37	35.3	58.9	7.35	.0759	325	4	100.0	15
3/05/10	8:00a	37.9	38.0	37.9	59	24.8	9.0	NNE	2.25	16.0	NNE	31.5	37.1	30.7	30.064	0.00	0.00	0.282	0.000	62.2	37	35.6	59.2	7.35	.0759	326	4	100.0	15
3/05/10	8:15a	38.1	38.1	37.9	60	25.4	9.0	NNE	2.25	18.0	NNE	31.8	37.3	31.0	30.067	0.00	0.00	0.280	0.000	62.4	36	35.1	59.3	7.20	.0759	325	4	100.0	15
3/05/10	8:30a	38.3	38.3	38.1	59	25.2	9.0	NNE	2.25	17.0	NE	32.0	37.5	31.2	30.066	0.00	0.00	0.278	0.000	62.7	36	35.3	59.6	7.20	.0758	326	4	100.0	15
3/05/10	8:45a	38.5	38.5	38.2	59	25.4	9.0	NNE	2.25	19.0	NNE	32.2	37.7	31.4	30.070	0.00	0.00	0.276	0.000	63.2	36	35.8	60.1	7.19	.0757	326	4	100.0	15
3/05/10	9:00a	38.8	38.8	38.5	58	25.3	8.0	NNE	2.00	15.0	NNE	33.1	38.0	32.3	30.070	0.00	0.00	0.273	0.000	63.6	35	35.4	60.4	7.05	.0757	327	4	100.0	15
3/05/10	9:15a	39.2	39.2	38.7	58	25.6	8.0	N	2.00	16.0	N	33.6	38.4	32.8	30.074	0.00	0.00	0.269	0.000	64.1	35	35.9	60.9	7.05	.0756	327	4	100.0	15
3/05/10	9:30a	39.3	39.3	39.1	57	25.3	8.0	N	2.00	14.0	NNE	33.7	38.4	32.8	30.077	0.00	0.00	0.268	0.000	64.6	34	35.6	61.3	6.86	.0756	327	4	100.0	15
3/05/10	9:45a	39.7	39.7	39.3	57	25.7	8.0	NNE	2.00	15.0	NNE	34.2	38.8	33.3	30.080	0.00	0.00	0.264	0.000	65.1	34	36.0	61.8	6.85	.0755	327	4	100.0	15
3/05/10	10:00a	39.8	39.8	39.5	58	26.2	8.0	NNE	2.00	16.0	NNE	34.3	38.9	33.4	30.083	0.00	0.00	0.263	0.000	65.6	34	36.5	62.4	6.85	.0754	326	4	100.0	15
3/05/10	10:15a	40.1	40.2	39.8	58	26.5	8.0	N	2.00	18.0	NE	34.7	39.2	33.8	30.087	0.00	0.00	0.259	0.000	66.1	34	36.9	62.9	6.85	.0753	325	4	100.0	15
3/05/10	10:30a	40.2	40.3	40.1	57	26.2	7.0	NNE	1.75	15.0	NE	35.3	39.3	34.4	30.089	0.00	0.00	0.258	0.000	66.4	33	36.4	63.1	6.72	.0753	328	4	100.0	15
3/05/10	10:45a	40.5	40.6	40.2	58	26.9	7.0	NNE	1.75	14.0	NNE	35.7	39.6	34.8	30.089	0.00	0.00	0.255	0.000	66.6	33	36.6	63.3	6.72	.0753	326	4	100.0	15
3/05/10	11:00a	40.7	40.7	40.4	58	27.1	7.0	NNE	1.75	14.0	NNE	35.9	39.8	35.0	30.089	0.00	0.00	0.253	0.000	66.7	33	36.7	63.4	6.72	.0753	326	4	100.0	15
3/05/10	11:15a	41.1	41.1	40.7	58	27.4	7.0	N	1.75	13.0	N	36.4	40.2	35.5	30.091	0.00	0.00	0.249	0.000	66.9	33	36.8	63.6	6.71	.0752	325	4	100.0	15
3/05/10	11:30a	41.1	41.3	41.0	56	26.6	6.0	N	1.50	14.0	ENE	37.0	40.1	36.0	30.091	0.00	0.00	0.249	0.000	67.2	32	36.3	63.8	6.55	.0752	325	4	100.0	15
3/05/10	11:45a	41.8	41.8	41.1	57	27.7	5.0	NNE	1.25	11.0	NE	38.6	40.9	37.7	30.091	0.00	0.00	0.242	0.000	67.4	32	36.5	64.0	6.55	.0752	324	4	100.0	15
3/05/10	12:00p	42.1	42.1	41.8	56	27.5	5.0	NNE	1.25	13.0	N	38.9	41.1	37.9	30.088	0.00	0.00	0.239	0.000	67.7	32	36.8	64.3	6.55	.0751	327	4	100.0	15
3/05/10	12:15p	42.2	42.4	42.1	57	28.0	5.0	NNE	1.25	12.0	NNE	39.0	41.3	38.1	30.086	0.00	0.00	0.237	0.000	68.0	32	37.0	64.6	6.55	.0751	326	4	100.0	15
3/05/10	12:30p	42.7	42.8	42.2	55	27.6	3.0	NNE	0.75	11.0	N	41.4	41.7	40.4	30.082	0.00	0.00	0.232	0.000	68.4	32	37.4	65.0	6.55	.0750	326	4	100.0	15
3/05/10	12:45p	43.3	43.3	42.8	57	29.1	3.0	N	0.75	9.0	N	42.1	42.4	41.2	30.078	0.00	0.00	0.226	0.000	68.9	32	37.8	65.5	6.55	.0749	326	4	100.0	15
3/05/10	1:00p	42.9	43.3	42.8	57	28.7	3.0	SSE	0.75	10.0	SSE	41.7	42.0	40.8	30.073	0.00	0.00	0.230	0.000	69.6	31	37.6	66.1	6.36	.0748	327	4	100.0	15
3/05/10	1:15p	42.1	43.1	42.0	61	29.6	7.0	SE	1.75	13.0	SE	37.6	41.3	36.8	30.069	0.00	0.00	0.239	0.000	70.6	31	38.5	67.3	6.34	.0746	326	4	100.0	15
3/05/10	1:30p	42.9	42.9	42.1	60	30.0	5.0	SSE	1.25	13.0	SE	39.9	42.1	39.1	30.066	0.00	0.00	0.230	0.000	72.8	31	40.4	70.5	6.29	.0743	327	4	100.0	15
3/05/10	1:45p	42.5	42.9	42.0	60	29.6	8.0	SE	2.00	15.0	SE	37.6	41.7	36.8	30.066	0.00	0.00	0.234	0.000	75.2	29	40.7	73.5	5.85	.0739	327	4	100.0	15
3/05/10	2:00p	42.8	43.0	42.5	60	29.9	6.0	SE	1.50	17.0	SE	39.1	42.0	38.3	30.062	0.00	0.00	0.231	0.000	77.3	28	41.6	75.9	5.70	.0736	326	4	100.0	15
3/05/10	2:15p	42.5	43.1	42.5	58	28.8	7.0	SE	1.75	15.0	SSE	38.2	41.6	37.3	30.059	0.00	0.00	0.234	0.000	80.6	27	43.5	78.3	5.55	.0731	327	4	100.0	15
3/05/10	2:30p	42.7	42.7	42.1	62	30.6	8.0	SSE	2.00	14.0	SSE	37.8	41.9	37.0	30.060	0.00	0.00	0.232	0.000	81.0	26	42.9	78.5	5.43	.0731	327	4	100.0	15
3/05/10	2:45p	42.5	42.7	42.4	62	30.4	6.0	SSE	1.50	14.0	SE	38.7	41.7	37.9	30.067	0.00	0.00	0.234	0.000	80.3	26	42.3	77.9	5.44	.0732	325	4	100.0	15
3/05/10	3:00p	42.9	42.9	42.5	62	30.8	6.0	SSE	1.50	14.0	SSE	39.2	42.1	38.4	30.069	0.00	0.00	0.230	0.000	79.9	26	41.9	77.5	5.45	.0733	328	4	100.0	15
3/05/10	3:15p	42.3	43.0	42.3	65	31.4	7.0	SE	1.75	15.0	SE	37.9	41.6	37.2	30.073	0.00	0.00	0.236	0.000	78.4	26	40.7	76.5	5.45	.0735	326	4	100.0	15
3/05/10	3:30p	41.8	42.5	41.8	67	31.6	7.0	SE	1.75	13.0	SSE	37.3	41.1	36.6	30.077	0.00	0.00	0.242	0.000	76.4	27	39.9	74.9	5.55	.0738	322	4	100.0	15
3/05/10	3:45p	42.6	42.6	41.7	67	32.4	5.0	SE	1.25	11.0	SE	39.5	41.9	38.8	30.081	0.00	0.00	0.233	0.000	75.0	27	38.7	73.1	5.55	.0740	327	4	100.0	15
3/05/10	4:00p	42.4	42.7	42.3	67	32.2	3.0	SSE	0.75	12.0	SE	41.1	41.7	40.4	30.079	0.00	0.00	0.235	0.000	73.8	28	38.6	71.7	5.72	.0742	326	4	100.0	15
3/05/10	4:15p	42.2	42.6	42.2	69	32.8	4.0	SE	1.00	14.0	SSE	39.8	41.6	39.2	30.081	0.00	0.00	0.237	0.000	72.3	29	38.2	69.5	5.96	.0744	327	4	100.0	15
3/05/10	4:30p	41.6	42.3	41.6	70	32.5	7.0	SE	1.75	14.0	SE	37.0	41.0	36.4	30.082	0.00	0.00	0.244	0.000	70.6	30	37.6	67.2	6.23	.0747	327	4	100.0	15
3/05/10	4:45p	41.4	41.6	41.4	70	32.3	6.0	SE	1.50	14.0	SE	37.4	40.8	36.8	30.090	0.00	0.00	0.246	0.000	69.0	31	37.1	65.5	6.37	.0749	328	4	100.0	15
3/05/10	5:00p	41.5	41.5	41.4	71	32.8	6.0	SE	1.50	13.0	SE	37.5	40.9	36.9	30.095	0.00	0.00	0.245	0.000	67.7	32	36.8	64.3	6.55	.0751	326	4	100.0	15
3/05/10	5:15p	41.3	41.6	41.3	70	32.2	5.0	SE	1.25	12.0	SE	38.0	40.7	37.4	30.097	0.00	0.00	0.247	0.000	66.7	33	36.7	63.4	6.72	.0753	326	4	100.0	15
3/05/10	5:30p	41.5	41.5	41.3	71	32.8	3.0	SSE	0.75	9.0	SE	40.1	40.9	39.5	30.104	0.00	0.00	0.245	0.000	65.8	33	35.9	62.5	6.73	.0755	328	4	100.0	15

Room 133 3/05/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/05/10	5:45p	41.5	41.5	41.4	71	32.8	3.0	SE	0.75	9.0	SSE	40.1	40.9	39.5	30.110	0.00	0.00	0.245	0.000	65.1	34	36.0	61.8	6.85	.0756	326	4	100.0	15
3/05/10	6:00p	41.4	41.5	41.4	71	32.7	3.0	SSE	0.75	11.0	SE	39.9	40.8	39.3	30.118	0.00	0.00	0.246	0.000	64.6	35	36.3	61.4	7.05	.0757	325	4	100.0	15
3/05/10	6:15p	41.3	41.4	41.3	71	32.6	5.0	SE	1.25	10.0	SE	38.0	40.7	37.4	30.122	0.00	0.00	0.247	0.000	64.1	35	35.9	60.9	7.05	.0757	328	4	100.0	15
3/05/10	6:30p	41.6	41.6	41.3	70	32.5	3.0	SE	0.75	10.0	SSE	40.2	41.0	39.6	30.120	0.00	0.00	0.244	0.000	63.6	35	35.4	60.4	7.05	.0758	325	4	100.0	15
3/05/10	6:45p	41.6	41.8	41.6	71	32.9	1.0	SE	0.25	5.0	SE	41.6	41.0	41.0	30.123	0.00	0.00	0.244	0.000	63.3	36	35.9	60.2	7.18	.0759	326	4	100.0	15
3/05/10	7:00p	41.7	41.8	41.6	72	33.3	1.0	SE	0.25	5.0	SE	41.7	41.2	41.2	30.125	0.00	0.00	0.243	0.000	63.2	36	35.8	60.1	7.19	.0759	327	4	100.0	15
3/05/10	7:15p	41.7	41.8	41.7	71	33.0	2.0	NNE	0.50	5.0	NNE	41.7	41.1	41.1	30.128	0.00	0.00	0.243	0.000	63.0	37	36.3	60.0	7.35	.0759	324	4	100.0	15
3/05/10	7:30p	41.9	41.9	41.7	68	32.1	2.0	NE	0.50	5.0	NE	41.9	41.3	41.3	30.130	0.00	0.00	0.241	0.000	62.7	37	36.0	59.7	7.35	.0760	327	4	100.0	15
3/05/10	7:45p	42.0	42.0	41.9	68	32.2	1.0	NE	0.25	4.0	NE	42.0	41.4	41.4	30.132	0.00	0.00	0.240	0.000	62.5	37	35.9	59.5	7.35	.0760	327	4	100.0	15
3/05/10	8:00p	42.1	42.2	42.0	69	32.7	1.0	NE	0.25	3.0	NE	42.1	41.5	41.5	30.137	0.00	0.00	0.239	0.000	62.4	37	35.8	59.4	7.35	.0760	328	4	100.0	15
3/05/10	8:15p	41.9	42.2	41.9	72	33.5	1.0	E	0.25	3.0	ENE	41.9	41.4	41.4	30.142	0.00	0.00	0.241	0.000	62.4	38	36.4	59.5	7.55	.0760	327	4	100.0	15
3/05/10	8:30p	41.6	41.9	41.6	78	35.2	2.0	ENE	0.50	4.0	ENE	41.6	41.3	41.3	30.145	0.00	0.00	0.244	0.000	62.4	38	36.4	59.5	7.55	.0760	326	4	100.0	15
3/05/10	8:45p	41.2	41.6	41.2	79	35.2	1.0	ENE	0.25	2.0	ENE	41.2	40.9	40.9	30.146	0.00	0.00	0.248	0.000	62.4	38	36.4	59.5	7.55	.0760	327	4	100.0	15
3/05/10	9:00p	41.3	41.3	41.1	77	34.6	1.0	ENE	0.25	2.0	ENE	41.3	40.9	40.9	30.146	0.00	0.00	0.247	0.000	62.4	38	36.4	59.5	7.55	.0760	327	4	100.0	15
3/05/10	9:15p	41.6	41.6	41.3	75	34.3	1.0	ENE	0.25	4.0	ENE	41.6	41.2	41.2	30.150	0.00	0.00	0.244	0.000	62.2	38	36.3	59.3	7.55	.0761	327	4	100.0	15
3/05/10	9:30p	42.3	42.3	41.6	68	32.5	2.0	ENE	0.50	7.0	NNE	42.3	41.7	41.7	30.150	0.00	0.00	0.236	0.000	62.1	38	36.2	59.2	7.55	.0761	327	4	100.0	15
3/05/10	9:45p	42.5	42.5	42.3	67	32.3	3.0	NNE	0.75	6.0	NNE	41.2	41.8	40.5	30.149	0.00	0.00	0.234	0.000	62.1	38	36.2	59.2	7.55	.0761	327	4	100.0	15
3/05/10	10:00p	42.6	42.6	42.5	69	33.1	4.0	NNE	1.00	7.0	NNE	40.3	42.0	39.7	30.150	0.00	0.00	0.233	0.000	61.9	38	36.0	59.0	7.55	.0761	323	4	100.0	15
3/05/10	10:15p	42.9	42.9	42.6	66	32.3	4.0	NNE	1.00	7.0	NNE	40.7	42.2	40.0	30.152	0.00	0.00	0.230	0.000	61.9	38	36.0	59.0	7.55	.0761	326	4	100.0	15
3/05/10	10:30p	43.2	43.2	42.9	65	32.2	3.0	NNE	0.75	6.0	NNE	42.0	42.5	41.3	30.152	0.00	0.00	0.227	0.000	61.9	39	36.7	59.1	7.69	.0761	327	4	100.0	15
3/05/10	10:45p	43.2	43.3	43.1	66	32.6	4.0	NNE	1.00	7.0	NNE	41.0	42.5	40.3	30.154	0.00	0.00	0.227	0.000	61.9	39	36.7	59.1	7.69	.0761	327	4	100.0	15
3/05/10	11:00p	43.0	43.2	43.0	67	32.8	4.0	NNE	1.00	7.0	NNE	40.8	42.3	40.1	30.153	0.00	0.00	0.229	0.000	62.1	39	36.8	59.3	7.69	.0761	327	4	100.0	15
3/05/10	11:15p	43.0	43.1	43.0	68	33.2	4.0	N	1.00	9.0	NE	40.8	42.4	40.2	30.157	0.00	0.00	0.229	0.000	62.1	39	36.8	59.3	7.69	.0761	327	4	100.0	15
3/05/10	11:30p	42.6	43.0	42.6	71	33.9	4.0	NNE	1.00	7.0	N	40.3	42.0	39.7	30.159	0.00	0.00	0.233	0.000	62.2	39	36.9	59.4	7.69	.0761	328	4	100.0	15
3/05/10	11:45p	42.7	42.7	42.6	71	33.9	4.0	NNE	1.00	7.0	NNE	40.4	42.1	39.8	30.158	0.00	0.00	0.232	0.000	62.4	40	37.7	59.7	7.85	.0760	327	4	100.0	15
3/06/10	12:00a	43.2	43.2	42.7	66	32.6	4.0	NNE	1.00	10.0	ENE	41.0	42.5	40.3	30.160	0.00	0.00	0.227	0.000	62.4	40	37.7	59.7	7.85	.0760	326	4	100.0	15

Room 133 3/06/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/06/10	12:15a	43.4	43.5	43.2	64	32.0	4.0	NNE	1.00	9.0	NNE	41.2	42.7	40.5	30.159	0.00	0.00	0.225	0.000	62.4	40	37.7	59.7	7.85	.0760	323	4	100.0	15
3/06/10	12:30a	43.5	43.6	43.4	66	32.9	3.0	NNE	0.75	9.0	NNE	42.3	42.8	41.6	30.165	0.00	0.00	0.224	0.000	62.4	39	37.1	59.6	7.70	.0761	326	4	100.0	15
3/06/10	12:45a	43.4	43.6	43.4	64	32.0	5.0	NNE	1.25	11.0	NNE	40.5	42.7	39.8	30.166	0.00	0.00	0.225	0.000	62.4	39	37.1	59.6	7.70	.0761	326	4	100.0	15
3/06/10	1:00a	42.9	43.4	42.9	65	31.9	5.0	NNE	1.25	11.0	NNE	39.9	42.2	39.2	30.166	0.00	0.00	0.230	0.000	62.2	39	36.9	59.4	7.69	.0761	327	4	100.0	15
3/06/10	1:15a	42.8	42.9	42.8	65	31.8	5.0	N	1.25	11.0	NNE	39.8	42.1	39.1	30.168	0.00	0.00	0.231	0.000	62.2	39	36.9	59.4	7.69	.0761	326	4	100.0	15
3/06/10	1:30a	42.5	42.8	42.5	67	32.3	6.0	N	1.50	12.0	NNE	38.7	41.8	38.0	30.172	0.00	0.00	0.234	0.000	62.1	39	36.8	59.3	7.69	.0761	327	4	100.0	15
3/06/10	1:45a	42.3	42.5	42.3	68	32.5	5.0	NNE	1.25	11.0	N	39.2	41.7	38.6	30.174	0.00	0.00	0.236	0.000	61.9	39	36.7	59.1	7.69	.0762	325	4	100.0	15
3/06/10	2:00a	42.2	42.3	42.2	66	31.6	5.0	N	1.25	11.0	N	39.0	41.5	38.3	30.178	0.00	0.00	0.237	0.000	61.9	39	36.7	59.1	7.69	.0762	328	4	100.0	15
3/06/10	2:15a	42.2	42.3	42.2	64	30.9	3.0	N	0.75	10.0	N	40.8	41.5	40.1	30.178	0.00	0.00	0.237	0.000	61.8	39	36.6	59.0	7.69	.0762	323	4	100.0	15
3/06/10	2:30a	41.9	42.2	41.9	65	31.0	3.0	N	0.75	9.0	WSW	40.5	41.2	39.8	30.178	0.00	0.00	0.241	0.000	61.8	39	36.6	59.0	7.69	.0762	326	4	100.0	15
3/06/10	2:45a	41.6	41.9	41.6	65	30.7	3.0	NNW	0.75	14.0	WSW	40.2	40.9	39.5	30.177	0.00	0.00	0.244	0.000	61.8	39	36.6	59.0	7.69	.0762	327	4	100.0	15
3/06/10	3:00a	41.5	41.6	41.5	63	29.8	4.0	NNW	1.00	17.0	ENE	39.1	40.8	38.4	30.176	0.00	0.00	0.245	0.000	61.6	39	36.4	58.8	7.68	.0762	327	4	100.0	15
3/06/10	3:15a	41.2	41.5	41.2	67	31.1	4.0	S	1.00	17.0	NE	38.7	40.5	38.0	30.182	0.00	0.00	0.248	0.000	61.4	39	36.2	58.6	7.68	.0763	326	4	100.0	15
3/06/10	3:30a	41.0	41.2	41.0	71	32.3	4.0	NNW	1.00	11.0	N	38.5	40.4	37.9	30.183	0.00	0.00	0.250	0.000	61.3	39	36.1	58.5	7.68	.0763	325	4	100.0	15
3/06/10	3:45a	40.8	41.0	40.7	67	30.7	4.0	NNW	1.00	14.0	ENE	38.3	40.1	37.6	30.186	0.00	0.00	0.252	0.000	61.3	39	36.1	58.5	7.68	.0763	323	4	100.0	15
3/06/10	4:00a	40.6	40.7	40.6	65	29.7	4.0	WNW	1.00	12.0	ENE	38.0	39.9	37.3	30.190	0.00	0.00	0.254	0.000	61.1	39	35.9	58.3	7.67	.0764	326	4	100.0	15
3/06/10	4:15a	40.5	40.6	40.5	66	30.0	5.0	S	1.25	15.0	NNW	37.1	39.8	36.4	30.194	0.00	0.00	0.255	0.000	61.1	39	35.9	58.3	7.67	.0764	325	4	100.0	15
3/06/10	4:30a	40.4	40.5	40.4	66	29.9	5.0	SSE	1.25	16.0	S	36.9	39.7	36.2	30.197	0.00	0.00	0.256	0.000	61.0	39	35.8	58.2	7.67	.0764	324	4	100.0	15
3/06/10	4:45a	40.2	40.4	40.2	67	30.1	4.0	S	1.00	14.0	WSW	37.5	39.5	36.8	30.199	0.00	0.00	0.258	0.000	61.0	39	35.8	58.2	7.67	.0764	327	4	100.0	15
3/06/10	5:00a	40.1	40.2	40.0	67	30.0	4.0	SSE	1.00	12.0	SE	37.4	39.4	36.7	30.204	0.00	0.00	0.259	0.000	61.0	39	35.8	58.2	7.67	.0764	327	4	100.0	15
3/06/10	5:15a	39.9	40.1	39.9	66	29.5	5.0	SSE	1.25	12.0	ESE	36.4	39.2	35.7	30.211	0.00	0.00	0.261	0.000	61.0	39	35.8	58.2	7.67	.0764	327	4	100.0	15
3/06/10	5:30a	39.6	39.9	39.6	66	29.2	4.0	SW	1.00	11.0	WNW	36.9	38.9	36.2	30.216	0.00	0.00	0.265	0.000	61.0	39	35.8	58.2	7.67	.0764	326	4	100.0	15
3/06/10	5:45a	39.6	39.6	39.6	63	28.0	5.0	S	1.25	14.0	S	36.0	38.9	35.3	30.218	0.00	0.00	0.265	0.000	61.1	39	35.9	58.3	7.67	.0764	326	4	100.0	15
3/06/10	6:00a	39.5	39.6	39.5	63	27.9	5.0	SE	1.25	15.0	SSE	35.9	38.8	35.2	30.222	0.00	0.00	0.266	0.000	61.0	38	35.2	58.1	7.55	.0765	325	4	100.0	15
3/06/10	6:15a	39.3	39.5	39.3	64	28.1	5.0	SSE	1.25	13.0	ESE	35.7	38.6	35.0	30.226	0.00	0.00	0.268	0.000	60.8	38	35.0	57.9	7.55	.0765	325	4	100.0	15
3/06/10	6:30a	39.1	39.3	39.1	68	29.4	5.0	S	1.25	14.0	SSE	35.4	38.5	34.8	30.230	0.00	0.00	0.270	0.000	60.8	38	35.0	57.9	7.55	.0765	324	4	100.0	15
3/06/10	6:45a	38.9	39.2	38.9	65	28.1	5.0	NW	1.25	15.0	ESE	35.2	38.2	34.5	30.235	0.00	0.00	0.272	0.000	60.8	38	35.0	57.9	7.55	.0765	325	4	100.0	15
3/06/10	7:00a	39.1	39.1	38.9	67	29.1	5.0	S	1.25	12.0	SE	35.4	38.4	34.7	30.242	0.00	0.00	0.270	0.000	61.0	38	35.2	58.1	7.55	.0765	325	4	100.0	15
3/06/10	7:15a	38.9	39.1	38.9	64	27.8	5.0	S	1.25	14.0	SE	35.2	38.2	34.5	30.246	0.00	0.00	0.272	0.000	61.1	38	35.3	58.2	7.55	.0765	325	4	100.0	15
3/06/10	7:30a	39.4	39.4	38.9	64	28.2	5.0	SSE	1.25	14.0	SE	35.8	38.7	35.1	30.246	0.00	0.00	0.267	0.000	61.3	38	35.5	58.4	7.55	.0765	326	4	100.0	15
3/06/10	7:45a	39.6	39.6	39.4	64	28.4	5.0	SSE	1.25	17.0	SE	36.0	38.9	35.3	30.252	0.00	0.00	0.265	0.000	61.8	38	35.9	58.9	7.55	.0764	327	4	100.0	15
3/06/10	8:00a	39.3	39.6	39.3	66	28.9	5.0	N	1.25	13.0	N	35.7	38.6	35.0	30.253	0.00	0.00	0.268	0.000	62.1	38	36.2	59.2	7.55	.0764	326	4	100.0	15
3/06/10	8:15a	39.4	39.4	39.2	67	29.3	4.0	N	1.00	13.0	N	36.6	38.7	35.9	30.257	0.00	0.00	0.267	0.000	62.4	38	36.4	59.5	7.55	.0763	326	4	100.0	15
3/06/10	8:30a	39.6	39.6	39.4	67	29.5	5.0	N	1.25	13.0	N	36.0	38.9	35.3	30.262	0.00	0.00	0.265	0.000	62.7	37	36.0	59.7	7.35	.0763	324	4	100.0	15
3/06/10	8:45a	39.5	39.7	39.4	65	28.7	5.0	NNW	1.25	12.0	NE	35.9	38.8	35.2	30.265	0.00	0.00	0.266	0.000	63.2	37	36.5	60.2	7.35	.0762	327	4	100.0	15
3/06/10	9:00a	39.6	39.7	39.5	65	28.8	5.0	N	1.25	12.0	N	36.0	38.9	35.3	30.270	0.00	0.00	0.265	0.000	63.8	37	37.0	60.8	7.35	.0761	327	4	100.0	15
3/06/10	9:15a	39.9	39.9	39.6	63	28.3	4.0	NNW	1.00	12.0	N	37.2	39.2	36.5	30.271	0.00	0.00	0.261	0.000	64.5	36	36.9	61.4	7.16	.0760	326	4	100.0	15
3/06/10	9:30a	39.9	40.0	39.9	63	28.3	4.0	N	1.00	13.0	NNE	37.2	39.2	36.5	30.275	0.00	0.00	0.261	0.000	65.1	36	37.5	62.0	7.15	.0760	325	4	100.0	15
3/06/10	9:45a	40.4	40.5	39.9	61	28.0	4.0	NNW	1.00	12.0	S	37.8	39.6	37.0	30.277	0.00	0.00	0.256	0.000	65.6	35	37.2	62.5	7.05	.0759	327	4	100.0	15
3/06/10	10:00a	40.3	40.4	40.2	61	27.9	4.0	N	1.00	13.0	NE	37.7	39.5	36.9	30.280	0.00	0.00	0.257	0.000	66.1	35	37.6	63.0	7.05	.0758	327	4	100.0	15
3/06/10	10:15a	40.5	40.5	40.3	61	28.1	4.0	S	1.00	14.0	SE	37.9	39.7	37.1	30.282	0.00	0.00	0.255	0.000	66.2	34	37.0	63.0	6.85	.0758	326	4	100.0	15
3/06/10	10:30a	40.9	41.0	40.5	60	28.1	4.0	W	1.00	11.0	SSE	38.4	40.1	37.6	30.279	0.00	0.00	0.251	0.000	66.4	34	37.2	63.2	6.85	.0758	327	4	100.0	15
3/06/10	10:45a	40.6	40.8	40.4	60	27.8	5.0	N	1.25	12.0	NNE	37.2	39.8	36.4	30.282	0.00	0.00	0.254	0.000	66.6	34	37.3	63.4	6.85	.0758	325	4	100.0	15
3/06/10	11:00a	40.7	40.9	40.5	59	27.5	4.0	SSE	1.00	18.0	SE	38.1	39.9	37.3	30.278	0.00	0.00	0.253	0.000	66.9	34	37.6	63.7	6.85	.0757	325	4	100.0	15
3/06/10	11:15a	41.5	41.5	40.6	60	28.6	3.0	SSE	0.75	12.0	SE	40.1	40.7	39.3	30.278	0.00	0.00	0.245	0.000	67.0	34	37.7	63.8	6.85	.0757	327	4	100.0	15
3/06/10	11:30a	41.4	41.7	41.3	60	28.5	4.0	SSE	1.00	14.0	SE	38.9	40.6	38.1	30.274	0.00	0.00	0.246	0.000	67.2	33	37.1	63.9	6.71	.0757	326	4	100.0	15
3/06/10	11:45a	41.1	41.5	41.1	59	27.9	4.0	SSE	1.00	14.0	SE	38.6	40.3	37.8	30.272	0.00	0.00	0.249	0.000	67.5	33	37.4	64.2	6.70	.0756	325	4	100.0	15
3/06/10	12:00p	41.8	41.8	41.1	59	28.5	4.0	SE	1.00	13.0	SE	39.4	41.0	38.6	30.270	0.00	0.00	0.242	0.000	67.9	33	37.7	64.7	6.69	.0755	327	4	100.0	15
3/06/10	12:15p	41.5	41.7	41.0	60	28.6	7.0	SE	1.75	15.0	SSE	36.9	40.7	36.1	30.264	0.00	0.00	0.245	0.000	68.4	33	38.2	65.2	6.68	.0754	327	4	100.0	15
3/06/10	12:30p	41.8	41.8	41.0	61	29.3	6.0	SE	1.50	13.0	SSE	37.9	41.0	37.1	30.259	0.00	0.00	0.242	0.000	68.7	33	38.4	65.5	6.68	.0754	326	4	100.0	15
3/06/10	12:45p	41.0	41.8	40.9	60	28.2	8.0	SE	2.00	17.0	SE	35.8	40.2	35.0	30.251	0.00	0.00	0.250	0.000	69.2	33	38.9	65.9	6.67	.0753	324	4	100.0	15
3/06/10	1:00p	41.3	41.6	40.9	58	27.6	8.0	SE	2.00	16.0	SSE	36.2	40.4	35.3	30.244	0.00	0.00	0.247	0.000	69.7	33	39.3	66.4	6.66	.0752	327	4	100.0	15
3/06/10	1:15p	41.8	41.8	40.9	60	28.9	8.0	SE	2.00	15.0	SE	36.8	41.0	36.0	30.239	0.00	0.00	0.242	0.000	70.2	32	38.9	66.9	6.55	.0751	328	4	100.0	15
3/06/10	1:30p	42.0	42.3	41.6	60	29.1	7.0	SE	1.75	14.0	SE	37.5	41.2	36.7	30.237	0.00	0.00	0.240	0.000	71.8	32	40.3	69.0	6.51	.0748	326	4	100.0	15
3/06/10	1:45p	41.8	42.1	41.3	61	29.3	8.0	SE	2.00	14.0	SE	36.8	41.0	36.0	30.235	0.00	0.00	0.242	0.000	74.0	31	41.4	72.4	6.27	.0745	327	4	100.0	15
3/06/10	2:00p	42.0	42.7	41.7	57	27.9	7.0	SE	1.75	12.0	SE	37.5	41.1	36.6	30.228	0.00	0.00	0.240	0.000	75.4	29	40.9	73.7	5.85	.0743	328	4	100.0	15
3/06/10	2:15p	42.0	42.7	42.0	57	27.9	7.0	SE	1.75	13.0	SE	37.5	41.1	36.6	30.222	0.00	0.00	0.240	0.000	79.5	28	43.5	77.4	5.74	.0736	327	4	100.0	15
3/06/10	2:30p	42.3	42.5	41.5	58	28.6	7.0	SE	1.75	13.0	SE	37.9	41.4	37.0	30.222	0.00	0.00	0.236	0.000	80.8	27	43.7	78.5	5.55	.0735	326	4	100.0	15
3/06/10	2:45p	42.5	42.6	42.0	59	29.2	6.0	SE	1.50	13.0	SE	38.7	41.7	37.9	30.224	0.00	0.00	0.234	0.000	81.2	26	43.0	78.7	5.43	.0734	326	4	100.0	15
3/06/10	3:00p	42.4	42.9	42.1	58	28.7	6.0	SE	1.50	12.0	SE	38.6	41.5	37.7	30.222	0.00	0.00	0.235	0.000	80.6	26	42.5	78.2	5.44	.0735	327	4	100.0	15
3/06/10	3:15p	42.2	42.5	42.0	58	28.5	7.0	SE	1.75	13.0	ESE	37.8	41.3	36.9	30.218	0.00	0.00	0.237	0.000	78.4	26	40.7	76.5	5.45	.0739	327	4	100.0	15
3/06/10	3:30p	42.3	42.5	42.1	57	28.1	7.0	SE	1.75	12.0	SSE	37.9	41.4	37.0	30.223	0.00	0.00	0.236	0.000	76.4	27	39.9	74.9	5.55	.0742	325	4	100.0	15
3/06/10	3:45p	42.5	42.5	42.3	60	29.6	6.0	SE	1.50	12.0	ESE	38.7	41.7	37.9	30.219	0.00	0.00	0.234	0.000	78.2	27	41.5	76.4	5.55	.0739	328	4	100.0	15
3/06/10	4:00p	42.7	42.8	42.5	61	30.2	4.0	SE	1.00	11.0	SE	40.4	41.9	39.6	30.222	0.00	0.00	0.232	0.000	77.5	27	40.9	76.0	5.55	.0740	326	4	100.0	15
3/06/10	4:15p	42.2	43.2	42.2	59	28.9	5.0	SE	1.25	13.0	SE	39.0	41.4	38.2	30.224	0.00	0.00	0.237	0.000	76.4	27	39.9	74.9	5.55	.0742	325	4	100.0	15
3/06/10	4:30p	42.5	42.5	42.0	60	29.6	4.0	SE	1.00	10.0	SE	40.2	41.7	39.4	30.227	0.00	0.00	0.234	0.000	75.0	27	38.7	73.1	5.55	.0744	328	4	100.0	15
3/06/10	4:45p	42.3	42.8	42.2	61	29.8	4.0	SE	1.00	10.0	SE	40.0	41.5	39.2	30.228	0.00	0.00	0.236	0.000	73.6	28	38.5	71.4	5.73	.0746	325	4	100.0	15
3/06/10	5:00p	43.2	43.2	42.3	61	30.6	1.0	SE	0.25	7.0	SE	43.2	42.4	42.4	30.228	0.00	0.00	0.227	0.000	72.8	28	37.8	70.2	5.78	.0747	327	4	100.0	15
3/06/10	5:15p	43.5	43.5	43.2	60	30.5	1.0	ESE	0.25	5.0	N	43.5	42.7	42.7	30.233	0.00	0.00	0.224	0.000	71.6	29	37.6	68.4	5.99	.0749	327	4	100.0	15
3/06/10	5:30p	42.8	43.5	42.8	60	29.9	1.0	NE	0.25	5.0	N	42.8	42.0	42.0	30.233	0.00	0.00	0.231	0.000	70.4	30	37.5	66.9	6.23	.0751	327	4	100.0	15

Room 133 3/06/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/06/10	5:45p	42.5	42.9	42.5	60	29.6	1.0	NE	0.25	4.0	NE	42.5	41.7	41.7	30.235	0.00	0.00	0.234	0.000	69.4	30	36.6	65.8	6.25	.0753	325	4	100.0	15
3/06/10	6:00p	42.0	42.5	42.0	59	28.7	1.0	NE	0.25	3.0	NE	42.0	41.2	41.2	30.236	0.00	0.00	0.240	0.000	68.0	31	36.2	64.5	6.39	.0755	325	4	100.0	15
3/06/10	6:15p	41.2	42.0	41.2	62	29.2	1.0	NE	0.25	2.0	NE	41.2	40.4	40.4	30.240	0.00	0.00	0.248	0.000	66.7	31	35.1	63.2	6.42	.0757	326	4	100.0	15
3/06/10	6:30p	40.6	41.2	40.6	64	29.4	0.0	NE	0.00	2.0	NE	40.6	39.9	39.9	30.242	0.00	0.00	0.254	0.000	65.8	32	35.1	62.4	6.55	.0758	326	4	100.0	15
3/06/10	6:45p	39.8	40.6	39.8	65	29.0	0.0	NE	0.00	1.0	NE	39.8	39.1	39.1	30.247	0.00	0.00	0.263	0.000	64.9	33	35.1	61.5	6.75	.0760	322	4	100.0	15
3/06/10	7:00p	38.9	39.8	38.9	67	28.9	0.0	NE	0.00	1.0	NE	38.9	38.2	38.2	30.251	0.00	0.00	0.272	0.000	64.3	33	34.6	60.9	6.76	.0761	323	4	100.0	15
3/06/10	7:15p	38.8	38.8	38.7	67	28.8	0.0	---	0.00	0.0	---	38.8	38.1	38.1	30.250	0.00	0.00	0.273	0.000	63.6	33	33.9	60.2	6.78	.0762	327	4	100.0	15
3/06/10	7:30p	38.7	38.9	38.7	68	29.0	0.0	---	0.00	0.0	---	38.7	38.1	38.1	30.249	0.00	0.00	0.274	0.000	63.3	34	34.4	60.0	6.88	.0762	323	4	100.0	15
3/06/10	7:45p	38.4	38.7	38.4	69	29.1	0.0	---	0.00	0.0	---	38.4	37.8	37.8	30.254	0.00	0.00	0.277	0.000	62.9	34	34.1	59.6	6.89	.0763	326	4	100.0	15
3/06/10	8:00p	38.0	38.4	38.0	69	28.7	0.0	NE	0.00	2.0	NE	38.0	37.4	37.4	30.258	0.00	0.00	0.281	0.000	62.5	35	34.5	59.3	7.05	.0764	327	4	100.0	15
3/06/10	8:15p	37.5	38.0	37.5	69	28.2	0.0	---	0.00	0.0	---	37.5	36.9	36.9	30.254	0.00	0.00	0.286	0.000	62.2	35	34.2	59.0	7.05	.0764	325	4	100.0	15
3/06/10	8:30p	37.5	37.6	37.5	69	28.2	0.0	---	0.00	0.0	---	37.5	36.9	36.9	30.257	0.00	0.00	0.286	0.000	62.1	36	34.8	59.0	7.21	.0764	325	4	100.0	15
3/06/10	8:45p	37.1	37.5	37.1	70	28.2	0.0	NE	0.00	1.0	NE	37.1	36.5	36.5	30.259	0.00	0.00	0.291	0.000	62.1	36	34.8	59.0	7.21	.0764	326	4	100.0	15
3/06/10	9:00p	36.6	37.1	36.6	71	28.1	0.0	---	0.00	0.0	---	36.6	36.0	36.0	30.256	0.00	0.00	0.296	0.000	61.9	36	34.6	58.8	7.21	.0764	327	4	100.0	15
3/06/10	9:15p	36.3	36.6	36.3	72	28.1	0.0	---	0.00	0.0	---	36.3	35.8	35.8	30.256	0.00	0.00	0.299	0.000	61.9	36	34.6	58.8	7.21	.0764	325	4	100.0	15
3/06/10	9:30p	35.8	36.3	35.8	73	28.0	0.0	NE	0.00	1.0	NE	35.8	35.3	35.3	30.255	0.00	0.00	0.304	0.000	61.9	36	34.6	58.8	7.21	.0764	322	4	100.0	15
3/06/10	9:45p	35.5	35.8	35.5	75	28.4	0.0	---	0.00	0.0	---	35.5	35.1	35.1	30.255	0.00	0.00	0.307	0.000	61.9	36	34.6	58.8	7.21	.0764	325	4	100.0	15
3/06/10	10:00p	35.5	35.5	35.4	75	28.4	0.0	NE	0.00	1.0	NE	35.5	35.1	35.1	30.257	0.00	0.00	0.307	0.000	61.9	36	34.6	58.8	7.21	.0764	325	4	100.0	15
3/06/10	10:15p	35.1	35.4	35.1	75	28.0	0.0	NE	0.00	1.0	NE	35.1	34.7	34.7	30.254	0.00	0.00	0.311	0.000	61.9	37	35.3	58.9	7.35	.0764	321	4	100.0	15
3/06/10	10:30p	34.9	35.2	34.8	76	28.1	0.0	NE	0.00	1.0	NE	34.9	34.5	34.5	30.253	0.00	0.00	0.314	0.000	61.8	37	35.2	58.8	7.35	.0764	324	4	100.0	15
3/06/10	10:45p	34.7	34.8	34.7	76	27.9	0.0	NE	0.00	1.0	NE	34.7	34.3	34.3	30.251	0.00	0.00	0.316	0.000	61.8	37	35.2	58.8	7.35	.0764	326	4	100.0	15
3/06/10	11:00p	34.4	34.7	34.4	76	27.6	0.0	NE	0.00	1.0	NE	34.4	34.0	34.0	30.254	0.00	0.00	0.319	0.000	61.6	37	35.1	58.6	7.35	.0765	324	4	100.0	15
3/06/10	11:15p	34.2	34.4	34.2	78	28.1	0.0	NE	0.00	1.0	NE	34.2	33.8	33.8	30.254	0.00	0.00	0.321	0.000	61.4	36	34.2	58.3	7.22	.0765	326	4	100.0	15
3/06/10	11:30p	33.9	34.2	33.9	80	28.4	1.0	NE	0.25	2.0	NE	33.9	33.5	33.5	30.253	0.00	0.00	0.324	0.000	61.3	36	34.1	58.2	7.22	.0765	326	4	100.0	15
3/06/10	11:45p	33.5	33.9	33.5	81	28.3	0.0	NE	0.00	2.0	NE	33.5	33.2	33.2	30.253	0.00	0.00	0.328	0.000	61.3	37	34.8	58.3	7.35	.0765	323	4	100.0	15
3/07/10	12:00a	33.4	33.5	33.4	81	28.2	0.0	NE	0.00	1.0	NE	33.4	33.1	33.1	30.252	0.00	0.00	0.329	0.000	61.1	37	34.6	58.1	7.35	.0765	324	4	100.0	15

Room 133 3/07/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/07/10	12:15a	33.6	33.6	33.4	80	28.1	0.0	NE	0.00	1.0	NE	33.6	33.2	33.2	30.248	0.00	0.00	0.327	0.000	61.1	37	34.6	58.1	7.35	.0765	323	4	100.0	15
3/07/10	12:30a	33.7	33.8	33.6	81	28.5	0.0	NE	0.00	1.0	NE	33.7	33.3	33.3	30.245	0.00	0.00	0.326	0.000	61.1	37	34.6	58.1	7.35	.0765	326	4	100.0	15
3/07/10	12:45a	34.4	34.4	33.7	80	28.9	0.0	---	0.00	0.0	---	34.4	34.0	34.0	30.245	0.00	0.00	0.319	0.000	61.0	37	34.5	58.0	7.35	.0765	324	4	100.0	15
3/07/10	1:00a	34.4	34.7	34.4	79	28.6	0.0	NE	0.00	1.0	NE	34.4	34.0	34.0	30.243	0.00	0.00	0.319	0.000	61.0	37	34.5	58.0	7.35	.0765	325	4	100.0	15
3/07/10	1:15a	34.4	34.4	34.4	80	28.9	0.0	---	0.00	0.0	---	34.4	34.0	34.0	30.240	0.00	0.00	0.319	0.000	61.1	38	35.3	58.2	7.55	.0765	326	4	100.0	15
3/07/10	1:30a	35.2	35.2	34.4	79	29.3	0.0	NE	0.00	2.0	NE	35.2	34.9	34.9	30.240	0.00	0.00	0.310	0.000	61.1	37	34.6	58.1	7.35	.0765	322	4	100.0	15
3/07/10	1:45a	35.7	35.7	35.2	76	28.9	0.0	NE	0.00	2.0	NE	35.7	35.3	35.3	30.238	0.00	0.00	0.305	0.000	61.1	37	34.6	58.1	7.35	.0765	324	4	100.0	15
3/07/10	2:00a	36.4	36.4	35.7	73	28.6	0.0	NE	0.00	1.0	NE	36.4	35.9	35.9	30.234	0.00	0.00	0.298	0.000	61.0	37	34.5	58.0	7.35	.0765	325	4	100.0	15
3/07/10	2:15a	36.6	36.6	36.4	72	28.4	0.0	NE	0.00	2.0	NE	36.6	36.1	36.1	30.232	0.00	0.00	0.296	0.000	61.0	37	34.5	58.0	7.35	.0765	324	4	100.0	15
3/07/10	2:30a	36.9	36.9	36.6	71	28.4	1.0	NE	0.25	3.0	NE	36.9	36.3	36.3	30.228	0.00	0.00	0.293	0.000	61.1	37	34.6	58.1	7.35	.0765	324	4	100.0	15
3/07/10	2:45a	37.4	37.4	36.9	70	28.5	2.0	NE	0.50	5.0	NE	36.9	36.8	36.3	30.227	0.00	0.00	0.287	0.000	61.1	37	34.6	58.1	7.35	.0765	328	4	100.0	15
3/07/10	3:00a	36.7	37.5	36.7	71	28.2	1.0	NE	0.25	3.0	NE	36.7	36.1	36.1	30.225	0.00	0.00	0.295	0.000	61.0	37	34.5	58.0	7.35	.0765	320	4	100.0	15
3/07/10	3:15a	36.9	36.9	36.6	69	27.7	0.0	NE	0.00	2.0	NE	36.9	36.3	36.3	30.226	0.00	0.00	0.293	0.000	61.0	37	34.5	58.0	7.35	.0765	324	4	100.0	15
3/07/10	3:30a	37.2	37.2	36.9	67	27.2	1.0	NE	0.25	2.0	NE	37.2	36.5	36.5	30.227	0.00	0.00	0.290	0.000	61.0	37	34.5	58.0	7.35	.0765	324	4	100.0	15
3/07/10	3:45a	37.4	37.6	37.2	66	27.1	1.0	NE	0.25	3.0	NE	37.4	36.7	36.7	30.228	0.00	0.00	0.287	0.000	61.0	37	34.5	58.0	7.35	.0765	324	4	100.0	15
3/07/10	4:00a	37.5	37.5	37.4	66	27.2	1.0	NE	0.25	3.0	NE	37.5	36.8	36.8	30.228	0.00	0.00	0.286	0.000	60.8	37	34.3	57.8	7.35	.0765	324	4	100.0	15
3/07/10	4:15a	37.6	37.6	37.1	65	26.9	1.0	NE	0.25	4.0	NE	37.6	36.9	36.9	30.231	0.00	0.00	0.285	0.000	60.8	37	34.3	57.8	7.35	.0765	326	4	100.0	15
3/07/10	4:30a	38.7	39.0	37.6	61	26.4	1.0	NE	0.25	5.0	NE	38.7	37.9	37.9	30.235	0.00	0.00	0.274	0.000	61.0	37	34.5	58.0	7.35	.0765	324	4	100.0	15
3/07/10	4:45a	39.3	39.3	38.6	59	26.2	2.0	NE	0.50	6.0	NE	39.0	38.5	38.2	30.242	0.00	0.00	0.268	0.000	61.1	37	34.6	58.1	7.35	.0765	325	4	100.0	15
3/07/10	5:00a	39.5	39.8	39.3	59	26.3	2.0	NE	0.50	5.0	NE	39.2	38.7	38.4	30.243	0.00	0.00	0.266	0.000	61.3	37	34.8	58.3	7.35	.0765	324	4	100.0	15
3/07/10	5:15a	37.9	39.5	37.9	60	25.2	1.0	NE	0.25	3.0	NE	37.9	37.1	37.1	30.251	0.00	0.00	0.282	0.000	61.3	37	34.8	58.3	7.35	.0765	327	4	100.0	15
3/07/10	5:30a	37.3	38.0	37.3	61	25.1	1.0	NE	0.25	3.0	NE	37.3	36.5	36.5	30.255	0.00	0.00	0.289	0.000	61.3	36	34.1	58.2	7.22	.0765	326	4	100.0	15
3/07/10	5:45a	37.9	37.9	37.1	60	25.2	1.0	NE	0.25	4.0	NE	37.9	37.1	37.1	30.261	0.00	0.00	0.282	0.000	61.1	36	33.9	58.0	7.23	.0766	323	4	100.0	15
3/07/10	6:00a	38.1	38.1	37.9	60	25.4	1.0	NE	0.25	4.0	NE	38.1	37.3	37.3	30.265	0.00	0.00	0.280	0.000	61.1	36	33.9	58.0	7.23	.0766	324	4	100.0	15
3/07/10	6:15a	38.9	38.9	38.1	58	25.4	2.0	NE	0.50	5.0	NE	38.6	38.1	37.8	30.267	0.00	0.00	0.272	0.000	61.0	36	33.8	57.9	7.23	.0766	324	4	100.0	15
3/07/10	6:30a	39.7	39.7	39.0	57	25.7	3.0	NE	0.75	6.0	NE	38.0	38.8	37.1	30.272	0.00	0.00	0.264	0.000	61.0	36	33.8	57.9	7.23	.0766	326	4	100.0	15
3/07/10	6:45a	39.4	39.7	39.4	58	25.8	2.0	NE	0.50	5.0	NE	39.1	38.5	38.2	30.279	0.00	0.00	0.267	0.000	61.1	36	33.9	58.0	7.23	.0766	327	4	100.0	15
3/07/10	7:00a	39.0	39.4	38.8	59	25.9	2.0	NE	0.50	4.0	NE	38.7	38.2	37.9	30.285	0.00	0.00	0.271	0.000	61.3	36	34.1	58.2	7.22	.0766	328	4	100.0	15
3/07/10	7:15a	39.8	39.8	39.0	58	26.2	2.0	NE	0.50	6.0	NE	39.5	38.9	38.6	30.292	0.00	0.00	0.263	0.000	61.6	36	34.4	58.5	7.22	.0766	324	4	100.0	15
3/07/10	7:30a	40.4	40.4	39.8	56	25.9	3.0	NE	0.75	6.0	NE	38.8	39.4	37.8	30.297	0.00	0.00	0.256	0.000	62.1	36	34.8	59.0	7.21	.0765	325	4	100.0	15
3/07/10	7:45a	41.1	41.1	40.4	55	26.1	3.0	NE	0.75	7.0	NNE	39.6	40.1	38.6	30.298	0.00	0.00	0.249	0.000	62.5	35	34.5	59.3	7.05	.0765	327	4	100.0	15
3/07/10	8:00a	41.6	41.6	41.1	54	26.2	5.0	NE	1.25	12.0	NE	38.3	40.6	37.3	30.297	0.00	0.00	0.244	0.000	63.0	35	34.9	59.8	7.05	.0764	326	4	100.0	15
3/07/10	8:15a	42.2	42.2	41.6	55	27.2	5.0	NE	1.25	11.0	NE	39.0	41.2	38.0	30.295	0.00	0.00	0.237	0.000	63.3	35	35.2	60.1	7.05	.0763	326	4	100.0	15
3/07/10	8:30a	43.0	43.0	42.2	53	27.0	5.0	NNE	1.25	11.0	NNE	40.0	42.0	39.0	30.289	0.00	0.00	0.229	0.000	63.8	35	35.6	60.6	7.05	.0762	326	4	100.0	15
3/07/10	8:45a	43.4	43.4	43.0	52	26.9	5.0	NNE	1.25	12.0	NE	40.5	42.3	39.4	30.286	0.00	0.00	0.225	0.000	64.3	34	35.3	61.0	6.86	.0761	327	4	100.0	15
3/07/10	9:00a	43.6	43.6	43.3	52	27.1	6.0	NNE	1.50	12.0	NE	40.0	42.5	38.9	30.291	0.00	0.00	0.223	0.000	64.8	34	35.8	61.5	6.85	.0761	325	4	100.0	15
3/07/10	9:15a	44.2	44.2	43.6	53	28.1	5.0	NNE	1.25	11.0	NNE	41.4	43.2	40.4	30.284	0.00	0.00	0.217	0.000	65.4	34	36.3	62.1	6.85	.0760	327	4	100.0	15
3/07/10	9:30a	44.4	44.4	44.1	53	28.3	5.0	NNE	1.25	13.0	NE	41.6	43.4	40.6	30.281	0.00	0.00	0.215	0.000	66.2	33	36.2	62.9	6.73	.0758	326	4	100.0	15
3/07/10	9:45a	45.0	45.0	44.4	53	28.9	4.0	NNE	1.00	11.0	ENE	43.1	44.0	42.1	30.276	0.00	0.00	0.208	0.000	66.7	33	36.7	63.4	6.72	.0757	328	4	100.0	15
3/07/10	10:00a	45.0	45.4	45.0	49	27.0	5.0	NNE	1.25	12.0	NE	42.3	43.9	41.2	30.272	0.00	0.00	0.208	0.000	67.2	33	37.1	63.9	6.71	.0756	327	4	100.0	15
3/07/10	10:15a	45.2	45.2	44.9	50	27.6	6.0	NNE	1.50	13.0	NE	41.9	44.1	40.8	30.270	0.00	0.00	0.206	0.000	67.5	32	36.6	64.1	6.55	.0756	326	4	100.0	15
3/07/10	10:30a	46.0	46.0	45.2	48	27.4	6.0	NNE	1.50	13.0	NE	42.9	44.8	41.7	30.269	0.00	0.00	0.198	0.000	67.9	32	36.9	64.5	6.55	.0755	326	4	100.0	15
3/07/10	10:45a	46.8	46.8	46.0	46	27.1	6.0	NNE	1.50	12.0	NE	43.9	45.5	42.6	30.273	0.00	0.00	0.190	0.000	68.2	32	37.2	64.8	6.55	.0755	324	4	100.0	15
3/07/10	11:00a	47.4	47.4	46.7	45	27.1	8.0	NE	2.00	17.0	NNE	43.4	46.1	42.1	30.267	0.00	0.00	0.183	0.000	68.4	32	37.4	65.0	6.55	.0755	327	4	100.0	15
3/07/10	11:15a	48.3	48.4	47.4	41	25.7	5.0	NNE	1.25	11.0	NE	46.2	46.8	44.7	30.265	0.00	0.00	0.174	0.000	68.4	32	37.4	65.0	6.55	.0755	326	4	100.0	15
3/07/10	11:30a	49.1	49.1	48.3	38	24.6	5.0	NNE	1.25	11.0	NNE	47.1	47.5	45.5	30.256	0.00	0.00	0.166	0.000	68.5	32	37.5	65.1	6.55	.0754	326	4	100.0	15
3/07/10	11:45a	49.9	49.9	49.1	37	24.6	4.0	NNE	1.00	9.0	NNE	48.8	48.3	47.2	30.253	0.00	0.00	0.157	0.000	69.0	32	37.9	65.6	6.55	.0753	326	4	100.0	15
3/07/10	12:00p	50.5	51.0	49.9	32	21.7	2.0	NNE	0.50	9.0	S	50.5	48.6	48.6	30.241	0.00	0.00	0.151	0.000	69.4	31	37.4	65.9	6.36	.0752	325	4	100.0	15
3/07/10	12:15p	50.7	50.8	50.3	31	21.1	3.0	N	0.75	7.0	N	50.5	48.7	48.5	30.235	0.00	0.00	0.149	0.000	69.9	31	37.9	66.4	6.35	.0752	327	4	100.0	15
3/07/10	12:30p	50.6	50.7	50.4	32	21.8	3.0	SSE	0.75	9.0	N	50.4	48.7	48.5	30.225	0.00	0.00	0.150	0.000	70.4	31	38.3	67.0	6.34	.0750	327	4	100.0	15
3/07/10	12:45p	50.6	50.9	50.4	33	22.5	3.0	SSE	0.75	6.0	SSW	50.4	48.7	48.5	30.216	0.00	0.00	0.150	0.000	70.9	30	37.9	67.6	6.21	.0750	325	4	100.0	15
3/07/10	1:00p	49.7	50.8	49.7	31	20.2	3.0	SSE	0.75	7.0	SE	49.3	47.8	47.4	30.210	0.00	0.00	0.159	0.000	71.6	30	38.5	68.5	6.19	.0748	327	4	100.0	15
3/07/10	1:15p	50.5	50.5	49.4	31	20.9	3.0	SE	0.75	7.0	SE	50.3	48.5	48.3	30.198	0.00	0.00	0.151	0.000	72.1	29	38.1	69.2	5.97	.0747	328	4	100.0	15
3/07/10	1:30p	51.2	51.2	50.5	30	20.8	3.0	SSE	0.75	5.0	SSE	51.0	49.0	48.8	30.188	0.00	0.00	0.144	0.000	73.3	28	38.2	71.0	5.75	.0745	327	4	100.0	15
3/07/10	1:45p	50.9	51.2	50.4	31	21.3	3.0	SE	0.75	7.0	SE	50.7	48.9	48.7	30.181	0.00	0.00	0.147	0.000	75.6	27	39.2	73.9	5.55	.0742	326	4	100.0	15
3/07/10	2:00p	50.6	51.1	50.5	31	21.0	3.0	SE	0.75	5.0	SE	50.4	48.6	48.4	30.171	0.00	0.00	0.150	0.000	77.2	26	39.6	75.8	5.45	.0739	328	4	100.0	15
3/07/10	2:15p	51.9	51.9	50.6	32	22.9	2.0	SE	0.50	5.0	SE	51.9	49.6	49.6	30.164	0.00	0.00	0.136	0.000	79.7	25	40.8	77.3	5.34	.0735	327	4	100.0	15
3/07/10	2:30p	52.8	52.9	51.9	33	24.5	2.0	S	0.50	4.0	S	52.8	50.4	50.4	30.160	0.00	0.00	0.127	0.000	80.8	24	40.6	78.1	5.13	.0734	327	4	100.0	15
3/07/10	2:45p	53.3	53.3	52.8	32	24.2	1.0	SSW	0.25	3.0	SSW	53.3	50.8	50.8	30.156	0.00	0.00	0.122	0.000	80.5	24	40.4	77.9	5.14	.0734	328	4	100.0	15
3/07/10	3:00p	54.6	54.6	53.3	32	25.3	1.0	SSW	0.25	4.0	SSW	54.6	51.9	51.9	30.150	0.00	0.00	0.108	0.000	79.7	24	39.7	77.2	5.15	.0735	326	4	100.0	15
3/07/10	3:15p	56.3	56.3	54.6	33	27.5	1.0	NNE	0.25	4.0	N	56.3	53.4	53.4	30.148	0.00	0.00	0.091	0.000	78.2	24	38.4	76.2	5.15	.0738	327	4	100.0	15
3/07/10	3:30p	57.0	57.0	56.3	28	24.2	2.0	NE	0.50	9.0	NNE	57.0	53.6	53.6	30.139	0.00	0.00	0.083	0.000	77.2	24	37.6	75.8	5.15	.0739	326	4	100.0	15
3/07/10	3:45p	57.3	57.4	57.0	29	25.3	5.0	NNE	1.25	9.0	NNE	56.8	54.0	53.5	30.134	0.00	0.00	0.080	0.000	77.0	24	37.4	75.7	5.15	.0739	326	4	100.0	15
3/07/10	4:00p	57.6	57.7	57.3	31	27.2	5.0	NNE	1.25	10.0	NNE	57.1	54.4	53.9	30.131	0.00	0.00	0.077	0.000	76.4	24	36.9	74.8	5.15	.0740	325	4	100.0	15
3/07/10	4:15p	57.6	57.7	57.5	29	25.5	5.0	NNE	1.25	9.0	N	57.1	54.2	53.7	30.130	0.00	0.00	0.077	0.000	75.7	24	36.3	73.8	5.15	.0741	327	4	100.0	15
3/07/10	4:30p	57.2	57.6	57.2	28	24.3	4.0	NNE	1.00	7.0	N	57.2	53.7	53.7	30.129	0.00	0.00	0.081	0.000	74.5	25	36.4	72.3	5.28	.0743	328	4	100.0	15
3/07/10	4:45p	57.3	57.3	57.2	29	25.3	3.0	NNE	0.75	5.0	NNW	57.3	54.0	54.0	30.130	0.00	0.00	0.080	0.000	73.6	25	35.6	71.1	5.33	.0744	324	4	100.0	15
3/07/10	5:00p	56.9	57.3	56.9	29	24.9	3.0	NNE	0.75	5.0	NNE	56.9	53.6	53.6	30.132	0.00	0.00	0.084	0.000	72.8	25	34.9	69.9	5.38	.0746	327	4	100.0	15
3/07/10	5:15p	56.7	57.0	56.7	32	27.1	1.0	NNE	0.25	5.0	NNE	56.7	53.6	53.6	30.131	0.00	0.00	0.086	0.000	71.8	27	36.0	68.5	5.74	.0747	327	4	100.0	15
3/07/10	5:30p	56.4	56.7	56.4	31	26.1	0.0	---	0.00	0.0	---	56.4	53.3	53.3	30.128	0.00	0.00	0.090	0.000	70.9	27	35.2	67.3	5.80	.0748	328	4	100.0	15

Room 133 3/07/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/07/10	5:45p	55.7	56.4	55.7	33	27.0	0.0	---	0.00	0.0	---	55.7	52.8	52.8	30.134	0.00	0.00	0.097	0.000	70.1	28	35.5	66.3	5.94	.0749	327	4	100.0	15
3/07/10	6:00p	54.4	55.7	54.4	39	29.9	0.0	---	0.00	0.0	---	54.4	52.1	52.1	30.137	0.00	0.00	0.110	0.000	69.4	28	34.9	65.6	5.95	.0750	326	4	100.0	15
3/07/10	6:15p	53.0	54.4	53.0	43	31.1	0.0	---	0.00	0.0	---	53.0	51.1	51.1	30.139	0.00	0.00	0.125	0.000	68.7	29	35.1	65.0	6.08	.0751	327	4	100.0	15
3/07/10	6:30p	51.7	53.0	51.7	41	28.7	0.0	NNE	0.00	1.0	NNE	51.7	49.9	49.9	30.138	0.00	0.00	0.139	0.000	68.0	29	34.5	64.3	6.09	.0753	326	4	100.0	15
3/07/10	6:45p	51.1	51.7	51.1	39	27.0	0.0	NNE	0.00	2.0	NNE	51.1	49.3	49.3	30.137	0.00	0.00	0.145	0.000	67.5	30	35.0	63.9	6.25	.0753	327	4	100.0	15
3/07/10	7:00p	51.0	51.2	51.0	44	29.8	1.0	NNE	0.25	4.0	W	51.0	49.5	49.5	30.136	0.00	0.00	0.146	0.000	67.0	30	34.5	63.4	6.25	.0754	327	4	100.0	15
3/07/10	7:15p	49.8	51.0	49.8	47	30.4	0.0	W	0.00	3.0	W	49.8	48.5	48.5	30.138	0.00	0.00	0.158	0.000	66.6	30	34.2	63.0	6.25	.0755	326	4	100.0	15
3/07/10	7:30p	48.8	49.7	48.8	47	29.4	0.0	W	0.00	2.0	W	48.8	47.5	47.5	30.136	0.00	0.00	0.169	0.000	66.1	30	33.7	62.5	6.25	.0755	327	4	100.0	15
3/07/10	7:45p	48.4	48.8	48.4	47	29.1	0.0	W	0.00	2.0	W	48.4	47.1	47.1	30.138	0.00	0.00	0.173	0.000	65.6	31	34.1	62.1	6.44	.0756	326	4	100.0	15
3/07/10	8:00p	47.8	48.4	47.8	48	29.0	0.0	W	0.00	1.0	W	47.8	46.6	46.6	30.137	0.00	0.00	0.179	0.000	65.3	31	33.9	61.7	6.44	.0756	328	4	100.0	15
3/07/10	8:15p	46.9	47.8	46.9	51	29.7	0.0	W	0.00	3.0	W	46.9	45.7	45.7	30.137	0.00	0.00	0.189	0.000	64.9	31	33.5	61.3	6.45	.0757	326	4	100.0	15
3/07/10	8:30p	45.8	46.8	45.8	54	30.1	0.0	W	0.00	3.0	W	45.8	44.8	44.8	30.134	0.00	0.00	0.200	0.000	64.6	31	33.3	61.0	6.46	.0758	327	4	100.0	15
3/07/10	8:45p	46.0	46.0	45.6	54	30.3	1.0	W	0.25	3.0	W	46.0	45.0	45.0	30.135	0.00	0.00	0.198	0.000	64.3	32	33.8	60.8	6.56	.0758	327	4	100.0	15
3/07/10	9:00p	45.4	46.0	45.4	57	31.0	1.0	W	0.25	3.0	W	45.4	44.5	44.5	30.133	0.00	0.00	0.204	0.000	64.1	32	33.6	60.6	6.57	.0758	325	4	100.0	15
3/07/10	9:15p	45.2	45.4	45.2	57	30.9	0.0	W	0.00	2.0	W	45.2	44.3	44.3	30.134	0.00	0.00	0.206	0.000	64.0	32	33.5	60.5	6.57	.0758	326	4	100.0	15
3/07/10	9:30p	44.9	45.2	44.9	59	31.4	0.0	W	0.00	1.0	W	44.9	44.1	44.1	30.133	0.00	0.00	0.209	0.000	63.8	33	34.1	60.4	6.77	.0759	326	4	100.0	15
3/07/10	9:45p	44.5	44.9	44.5	60	31.5	1.0	W	0.25	3.0	W	44.5	43.7	43.7	30.127	0.00	0.00	0.214	0.000	63.6	33	33.9	60.2	6.78	.0759	328	4	100.0	15
3/07/10	10:00p	44.3	44.5	44.3	61	31.7	1.0	W	0.25	3.0	W	44.3	43.5	43.5	30.126	0.00	0.00	0.216	0.000	63.5	33	33.9	60.1	6.78	.0759	327	4	100.0	15
3/07/10	10:15p	44.3	44.3	44.1	60	31.3	1.0	W	0.25	3.0	W	44.3	43.5	43.5	30.124	0.00	0.00	0.216	0.000	63.3	33	33.7	59.9	6.78	.0759	324	4	100.0	15
3/07/10	10:30p	44.3	44.3	44.3	60	31.3	0.0	W	0.00	1.0	W	44.3	43.5	43.5	30.121	0.00	0.00	0.216	0.000	63.2	33	33.6	59.8	6.79	.0759	325	4	100.0	15
3/07/10	10:45p	44.4	44.5	44.3	59	31.0	0.0	W	0.00	2.0	W	44.4	43.6	43.6	30.120	0.00	0.00	0.215	0.000	63.0	33	33.4	59.6	6.79	.0759	327	4	100.0	15
3/07/10	11:00p	44.2	44.5	44.2	60	31.2	0.0	W	0.00	1.0	W	44.2	43.4	43.4	30.118	0.00	0.00	0.217	0.000	63.0	34	34.2	59.7	6.89	.0759	325	4	100.0	15
3/07/10	11:15p	43.8	44.2	43.8	60	30.8	0.0	W	0.00	3.0	W	43.8	43.0	43.0	30.117	0.00	0.00	0.221	0.000	62.9	34	34.1	59.6	6.89	.0759	327	4	100.0	15
3/07/10	11:30p	43.6	43.8	43.6	61	31.0	0.0	W	0.00	1.0	W	43.6	42.8	42.8	30.114	0.00	0.00	0.223	0.000	62.9	34	34.1	59.6	6.89	.0759	327	4	100.0	15
3/07/10	11:45p	43.1	43.5	43.1	61	30.6	0.0	W	0.00	3.0	W	43.1	42.3	42.3	30.110	0.00	0.00	0.228	0.000	62.9	34	34.1	59.6	6.89	.0759	325	4	100.0	15
3/08/10	12:00a	42.7	43.1	42.7	61	30.2	0.0	W	0.00	2.0	W	42.7	41.9	41.9	30.106	0.00	0.00	0.232	0.000	62.7	34	33.9	59.4	6.90	.0759	327	4	100.0	15

Room 133 3/08/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/08/10	12:15a	42.2	42.7	42.2	62	30.1	0.0	W	0.00	3.0	W	42.2	41.4	41.4	30.103	0.00	0.00	0.237	0.000	62.5	34	33.7	59.2	6.90	.0760	322	4	100.0	15
3/08/10	12:30a	42.4	42.4	42.2	61	29.9	0.0	W	0.00	3.0	W	42.4	41.6	41.6	30.104	0.00	0.00	0.235	0.000	62.4	34	33.6	59.1	6.90	.0760	326	4	100.0	15
3/08/10	12:45a	42.7	42.7	42.4	59	29.4	0.0	W	0.00	2.0	W	42.7	41.9	41.9	30.101	0.00	0.00	0.232	0.000	62.2	34	33.5	58.9	6.91	.0760	326	4	100.0	15
3/08/10	1:00a	43.9	43.9	42.7	55	28.8	1.0	W	0.25	4.0	W	43.9	42.9	42.9	30.101	0.00	0.00	0.220	0.000	62.1	34	33.4	58.8	6.91	.0760	328	4	100.0	15
3/08/10	1:15a	45.2	45.2	44.0	52	28.6	2.0	WNW	0.50	5.0	WNW	45.2	44.1	44.1	30.100	0.00	0.00	0.206	0.000	62.1	34	33.4	58.8	6.91	.0760	324	4	100.0	15
3/08/10	1:30a	45.9	45.9	45.2	50	28.3	3.0	NW	0.75	6.0	NW	45.1	44.8	44.0	30.098	0.00	0.00	0.199	0.000	62.1	34	33.4	58.8	6.91	.0760	326	4	100.0	15
3/08/10	1:45a	46.0	46.0	45.8	50	28.4	3.0	NW	0.75	6.0	NW	45.2	44.9	44.1	30.094	0.00	0.00	0.198	0.000	61.9	34	33.2	58.6	6.91	.0760	324	4	100.0	15
3/08/10	2:00a	45.9	46.0	45.9	49	27.8	3.0	NNW	0.75	6.0	NNW	45.1	44.8	44.0	30.090	0.00	0.00	0.199	0.000	61.9	34	33.2	58.6	6.91	.0760	326	4	100.0	15
3/08/10	2:15a	45.8	45.9	45.7	49	27.7	2.0	NW	0.50	5.0	NW	45.8	44.7	44.7	30.080	0.00	0.00	0.200	0.000	61.9	34	33.2	58.6	6.91	.0760	327	4	100.0	15
3/08/10	2:30a	46.0	46.0	45.7	49	27.9	3.0	NNW	0.75	7.0	N	45.2	44.9	44.1	30.073	0.00	0.00	0.198	0.000	62.1	34	33.4	58.8	6.91	.0760	327	4	100.0	15
3/08/10	2:45a	45.5	46.0	45.5	49	27.4	2.0	NNW	0.50	5.0	NW	45.5	44.4	44.4	30.069	0.00	0.00	0.203	0.000	62.4	34	33.6	59.1	6.90	.0759	328	4	100.0	15
3/08/10	3:00a	45.6	45.6	45.4	49	27.5	2.0	NNW	0.50	6.0	NNW	45.6	44.5	44.5	30.064	0.00	0.00	0.202	0.000	62.5	34	33.7	59.2	6.90	.0759	325	4	100.0	15
3/08/10	3:15a	45.4	45.6	45.4	49	27.3	3.0	NW	0.75	5.0	NW	44.5	44.3	43.4	30.062	0.00	0.00	0.204	0.000	62.5	34	33.7	59.2	6.90	.0759	327	4	100.0	15
3/08/10	3:30a	45.3	45.4	45.3	49	27.2	2.0	NW	0.50	4.0	NW	45.3	44.2	44.2	30.060	0.00	0.00	0.205	0.000	62.5	34	33.7	59.2	6.90	.0759	327	4	100.0	15
3/08/10	3:45a	44.6	45.3	44.6	51	27.6	2.0	NW	0.50	5.0	NW	44.6	43.5	43.5	30.064	0.00	0.00	0.213	0.000	62.5	34	33.7	59.2	6.90	.0759	326	4	100.0	15
3/08/10	4:00a	44.1	44.6	44.1	52	27.6	1.0	NW	0.25	4.0	NW	44.1	43.0	43.0	30.067	0.00	0.00	0.218	0.000	62.5	34	33.7	59.2	6.90	.0759	324	4	100.0	15
3/08/10	4:15a	43.7	44.0	43.7	53	27.7	1.0	NW	0.25	3.0	NW	43.7	42.7	42.7	30.072	0.00	0.00	0.222	0.000	62.4	34	33.6	59.1	6.90	.0759	327	4	100.0	15
3/08/10	4:30a	43.1	43.7	43.1	57	28.9	0.0	NW	0.00	2.0	NW	43.1	42.2	42.2	30.072	0.00	0.00	0.228	0.000	62.4	34	33.6	59.1	6.90	.0759	326	4	100.0	15
3/08/10	4:45a	41.5	43.0	41.5	60	28.6	0.0	---	0.00	0.0	---	41.5	40.7	40.7	30.076	0.00	0.00	0.245	0.000	62.4	34	33.6	59.1	6.90	.0759	325	4	100.0	15
3/08/10	5:00a	40.8	41.4	40.8	70	31.8	0.0	NW	0.00	1.0	NW	40.8	40.2	40.2	30.081	0.00	0.00	0.252	0.000	62.2	34	33.5	58.9	6.91	.0760	327	4	100.0	15
3/08/10	5:15a	39.2	40.8	39.2	66	28.8	1.0	NW	0.25	2.0	NW	39.2	38.5	38.5	30.077	0.00	0.00	0.269	0.000	62.2	35	34.2	59.0	7.05	.0759	325	4	100.0	15
3/08/10	5:30a	38.0	39.1	38.0	69	28.7	0.0	NW	0.00	1.0	NW	38.0	37.4	37.4	30.082	0.00	0.00	0.281	0.000	62.2	35	34.2	59.0	7.05	.0760	324	4	100.0	15
3/08/10	5:45a	37.8	38.0	37.8	71	29.2	0.0	---	0.00	0.0	---	37.8	37.2	37.2	30.091	0.00	0.00	0.283	0.000	62.2	35	34.2	59.0	7.05	.0760	326	4	100.0	15
3/08/10	6:00a	37.5	37.8	37.5	72	29.3	0.0	---	0.00	0.0	---	37.5	37.0	37.0	30.091	0.00	0.00	0.286	0.000	62.2	35	34.2	59.0	7.05	.0760	325	4	100.0	15
3/08/10	6:15a	37.4	37.5	37.3	75	30.2	0.0	---	0.00	0.0	---	37.4	37.0	37.0	30.099	0.00	0.00	0.287	0.000	62.2	36	34.9	59.1	7.21	.0760	323	4	100.0	15
3/08/10	6:30a	37.4	37.5	37.4	76	30.5	0.0	NW	0.00	1.0	NW	37.4	37.0	37.0	30.101	0.00	0.00	0.287	0.000	62.1	36	34.8	59.0	7.21	.0760	326	4	100.0	15
3/08/10	6:45a	37.6	37.6	37.3	76	30.7	0.0	---	0.00	0.0	---	37.6	37.2	37.2	30.105	0.00	0.00	0.285	0.000	62.1	36	34.8	59.0	7.21	.0760	324	4	100.0	15
3/08/10	7:00a	40.7	40.7	37.7	78	34.4	1.0	NW	0.25	4.0	NW	40.7	40.3	40.3	30.107	0.00	0.00	0.253	0.000	62.4	36	35.1	59.3	7.20	.0760	328	4	100.0	15
3/08/10	7:15a	41.4	41.4	40.7	80	35.7	0.0	NW	0.00	3.0	NW	41.4	41.1	41.1	30.103	0.00	0.00	0.246	0.000	62.7	36	35.3	59.6	7.20	.0759	326	4	100.0	15
3/08/10	7:30a	43.1	43.1	41.4	78	36.7	1.0	WSW	0.25	4.0	SW	43.1	42.8	42.8	30.109	0.00	0.00	0.228	0.000	63.0	36	35.6	59.9	7.19	.0759	327	4	100.0	15
3/08/10	7:45a	44.1	44.2	43.1	75	36.7	1.0	SSE	0.25	5.0	SE	44.1	43.7	43.7	30.112	0.00	0.00	0.218	0.000	63.5	36	36.0	60.4	7.18	.0758	327	4	100.0	15
3/08/10	8:00a	44.6	44.6	44.0	71	35.8	2.0	SE	0.50	6.0	SE	44.6	44.1	44.1	30.116	0.00	0.00	0.213	0.000	64.0	36	36.5	60.9	7.17	.0757	325	4	100.0	15
3/08/10	8:15a	45.6	45.6	44.7	71	36.7	1.0	SE	0.25	5.0	SE	45.6	45.1	45.1	30.112	0.00	0.00	0.202	0.000	64.6	36	37.0	61.5	7.16	.0756	327	4	100.0	15
3/08/10	8:30a	45.0	45.6	45.0	69	35.4	1.0	NNE	0.25	5.0	N	45.0	44.5	44.5	30.115	0.00	0.00	0.208	0.000	65.3	36	37.6	62.2	7.16	.0755	324	4	100.0	15
3/08/10	8:45a	45.4	45.4	45.0	69	35.8	1.0	NNE	0.25	5.0	NNE	45.4	44.9	44.9	30.116	0.00	0.00	0.204	0.000	66.1	36	38.4	63.1	7.17	.0754	325	4	100.0	15
3/08/10	9:00a	46.0	46.0	45.4	65	34.9	2.0	NNE	0.50	5.0	NE	46.0	45.3	45.3	30.120	0.00	0.00	0.198	0.000	66.7	36	38.9	63.7	7.18	.0753	324	4	100.0	15
3/08/10	9:15a	46.2	46.3	46.0	58	32.2	3.0	NNE	0.75	9.0	N	45.4	45.3	44.5	30.122	0.00	0.00	0.196	0.000	67.4	35	38.8	64.3	7.05	.0752	325	4	100.0	15
3/08/10	9:30a	46.9	46.9	46.2	56	32.0	3.0	NNE	0.75	9.0	ENE	46.2	45.9	45.2	30.123	0.00	0.00	0.189	0.000	67.9	35	39.2	64.9	7.05	.0751	328	4	100.0	15
3/08/10	9:45a	47.4	47.5	46.9	51	30.2	3.0	N	0.75	10.0	N	46.7	46.2	45.5	30.123	0.00	0.00	0.183	0.000	68.4	34	38.9	65.3	6.85	.0751	327	4	100.0	15
3/08/10	10:00a	48.1	48.2	47.4	49	29.8	3.0	NNE	0.75	7.0	NE	47.5	46.9	46.3	30.121	0.00	0.00	0.176	0.000	68.5	34	39.0	65.4	6.85	.0750	325	4	100.0	15
3/08/10	10:15a	48.1	48.1	47.9	50	30.3	4.0	NNE	1.00	10.0	NE	46.7	46.9	45.5	30.121	0.00	0.00	0.176	0.000	68.7	33	38.4	65.5	6.68	.0750	327	4	100.0	15
3/08/10	10:30a	48.9	48.9	48.1	48	30.1	3.0	NNE	0.75	9.0	NNE	48.4	47.7	47.2	30.120	0.00	0.00	0.168	0.000	68.7	33	38.4	65.5	6.68	.0750	327	4	100.0	15
3/08/10	10:45a	49.1	49.2	48.9	48	30.2	2.0	NNE	0.50	9.0	ENE	49.1	47.9	47.9	30.117	0.00	0.00	0.166	0.000	68.9	33	38.6	65.7	6.67	.0750	325	4	100.0	15
3/08/10	11:00a	48.5	49.4	48.5	50	30.7	3.0	N	0.75	9.0	NNE	48.0	47.3	46.8	30.108	0.00	0.00	0.172	0.000	68.9	32	37.8	65.5	6.55	.0750	325	4	100.0	15
3/08/10	11:15a	49.3	49.3	48.5	47	29.9	2.0	NNE	0.50	7.0	N	49.3	48.0	48.0	30.106	0.00	0.00	0.164	0.000	69.0	32	37.9	65.6	6.55	.0750	325	4	100.0	15
3/08/10	11:30a	49.8	49.9	49.3	43	28.2	3.0	SSE	0.75	11.0	SE	49.5	48.4	48.1	30.097	0.00	0.00	0.158	0.000	69.2	32	38.1	65.8	6.55	.0749	324	4	100.0	15
3/08/10	11:45a	50.0	50.0	49.7	42	27.8	4.0	SSE	1.00	10.0	SSE	48.9	48.6	47.5	30.095	0.00	0.00	0.156	0.000	69.4	31	37.4	65.9	6.36	.0749	327	4	100.0	15
3/08/10	12:00p	50.6	50.6	49.6	41	27.7	3.0	SSE	0.75	11.0	SE	50.4	49.0	48.8	30.092	0.00	0.00	0.150	0.000	69.7	31	37.7	66.2	6.36	.0748	326	4	100.0	15
3/08/10	12:15p	50.5	50.7	50.4	43	28.8	3.0	SSE	0.75	10.0	SSE	50.3	49.0	48.8	30.090	0.00	0.00	0.151	0.000	70.1	30	37.2	66.5	6.25	.0748	326	4	100.0	15
3/08/10	12:30p	50.9	51.2	50.4	42	28.6	2.0	N	0.50	8.0	NNE	50.9	49.3	49.3	30.085	0.00	0.00	0.147	0.000	70.6	30	37.6	67.2	6.23	.0747	326	4	100.0	15
3/08/10	12:45p	51.7	51.8	50.9	38	26.9	2.0	N	0.50	7.0	SE	51.7	49.8	49.8	30.074	0.00	0.00	0.139	0.000	70.9	30	37.9	67.6	6.21	.0746	327	4	100.0	15
3/08/10	1:00p	51.0	52.2	51.0	37	25.6	4.0	SE	1.00	9.0	SSE	50.0	49.2	48.2	30.069	0.00	0.00	0.146	0.000	71.4	29	37.5	68.2	5.99	.0745	328	4	100.0	15
3/08/10	1:15p	51.7	51.7	50.9	35	24.9	3.0	SSE	0.75	10.0	SE	51.6	49.7	49.6	30.062	0.00	0.00	0.139	0.000	71.9	29	37.9	68.9	5.97	.0744	327	4	100.0	15
3/08/10	1:30p	51.7	51.7	51.4	34	24.2	3.0	SE	0.75	9.0	SE	51.6	49.6	49.5	30.058	0.00	0.00	0.139	0.000	72.6	28	37.6	69.9	5.79	.0743	327	4	100.0	15
3/08/10	1:45p	52.9	52.9	51.7	35	26.0	2.0	SE	0.50	6.0	SSE	52.9	50.6	50.6	30.053	0.00	0.00	0.126	0.000	73.6	27	37.5	71.3	5.63	.0742	327	4	100.0	15
3/08/10	2:00p	52.1	53.3	52.1	34	24.6	3.0	SE	0.75	7.0	SSE	52.0	49.9	49.8	30.046	0.00	0.00	0.134	0.000	74.7	27	38.5	72.7	5.57	.0740	325	4	100.0	15
3/08/10	2:15p	52.4	52.7	52.1	32	23.4	3.0	SE	0.75	7.0	SE	52.3	50.0	49.9	30.040	0.00	0.00	0.131	0.000	76.6	26	39.1	75.2	5.45	.0737	327	4	100.0	15
3/08/10	2:30p	53.8	53.8	52.4	30	23.1	2.0	SE	0.50	6.0	SE	53.8	51.0	51.0	30.035	0.00	0.00	0.117	0.000	78.4	25	39.7	76.4	5.32	.0734	325	4	100.0	15
3/08/10	2:45p	53.6	54.0	53.6	28	21.2	3.0	SE	0.75	7.0	SE	53.6	50.8	50.8	30.032	0.00	0.00	0.119	0.000	80.5	24	40.4	77.9	5.14	.0731	328	4	100.0	15
3/08/10	3:00p	54.3	54.4	53.5	31	24.3	3.0	S	0.75	6.0	SE	54.3	51.5	51.5	30.028	0.00	0.00	0.111	0.000	79.0	23	38.0	76.5	5.05	.0734	327	4	100.0	15
3/08/10	3:15p	53.9	54.4	53.9	30	23.1	2.0	S	0.50	5.0	SSE	53.9	51.1	51.1	30.028	0.00	0.00	0.116	0.000	77.2	24	37.6	75.8	5.15	.0736	324	4	100.0	15
3/08/10	3:30p	53.8	53.9	53.6	30	23.1	3.0	SSE	0.75	7.0	SE	53.8	51.0	51.0	30.022	0.00	0.00	0.117	0.000	77.0	24	37.4	75.7	5.15	.0736	327	4	100.0	15
3/08/10	3:45p	53.7	53.8	53.4	28	21.3	4.0	SSE	1.00	7.0	SSE	53.1	50.8	50.2	30.020	0.00	0.00	0.118	0.000	78.2	23	37.4	76.2	5.05	.0735	326	4	100.0	15
3/08/10	4:00p	53.7	53.7	53.5	31	23.7	3.0	S	0.75	5.0	S	53.7	51.0	51.0	30.018	0.00	0.00	0.118	0.000	77.9	23	37.1	76.0	5.05	.0735	326	4	100.0	15
3/08/10	4:15p	54.0	54.0	53.7	30	23.2	2.0	S	0.50	4.0	S	54.0	51.2	51.2	30.020	0.00	0.00	0.115	0.000	77.0	23	36.3	75.6	5.05	.0737	326	4	100.0	15
3/08/10	4:30p	54.1	54.3	54.0	30	23.3	2.0	S	0.50	5.0	S	54.1	51.3	51.3	30.020	0.00	0.00	0.114	0.000	75.9	24	36.5	74.1	5.15	.0738	328	4	100.0	15
3/08/10	4:45p	54.6	54.6	54.1	33	26.0	1.0	S	0.25	3.0	S	54.6	51.9	51.9	30.021	0.00	0.00	0.108	0.000	74.9	24	35.7	72.7	5.15	.0740	326	4	100.0	15
3/08/10	5:00p	55.3	55.3	54.6	33	26.7	1.0	S	0.25	3.0	S	55.3	52.5	52.5	30.020	0.00	0.00	0.101	0.000	74.3	24	35.2	71.9	5.18	.0741	325	4	100.0	15
3/08/10	5:15p	55.5	55.6	55.3	33	26.8	1.0	S	0.25	2.0	S	55.5	52.7	52.7	30.022	0.00	0.00	0.099	0.000	73.5	25	35.5	70.9	5.34	.0742	327	4	100.0	15
3/08/10	5:30p	55.1	55.6	55.1	36	28.6	1.0	S	0.25	2.0	S	55.1	52.5	52.5	30.021	0.00	0.00	0.103	0.000	72.8	25	34.9	69.9	5.38	.0743	326	4	100.0	15

Room 133 3/08/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/08/10	5:45p	53.8	55.1	53.8	38	28.8	1.0	S	0.25	3.0	S	53.8	51.5	51.5	30.024	0.00	0.00	0.117	0.000	72.1	25	34.3	68.8	5.42	.0744	326	4	100.0	15
3/08/10	6:00p	52.1	53.7	52.1	39	27.9	1.0	S	0.25	3.0	S	52.1	50.1	50.1	30.027	0.00	0.00	0.134	0.000	71.1	26	34.5	67.5	5.61	.0745	326	4	100.0	15
3/08/10	6:15p	51.0	52.1	51.0	43	29.3	0.0	S	0.00	2.0	S	51.0	49.4	49.4	30.031	0.00	0.00	0.146	0.000	69.7	26	33.3	65.7	5.65	.0748	323	4	100.0	15
3/08/10	6:30p	50.5	51.0	50.5	39	26.4	0.0	S	0.00	1.0	S	50.5	48.9	48.9	30.033	0.00	0.00	0.151	0.000	68.7	27	33.3	64.7	5.85	.0749	325	4	100.0	15
3/08/10	6:45p	49.8	50.5	49.8	39	25.8	0.0	S	0.00	1.0	S	49.8	48.3	48.3	30.036	0.00	0.00	0.158	0.000	67.9	28	33.6	64.0	5.95	.0750	326	4	100.0	15
3/08/10	7:00p	49.0	49.7	49.0	42	26.9	0.0	S	0.00	1.0	S	49.0	47.6	47.6	30.039	0.00	0.00	0.167	0.000	67.0	28	32.8	63.0	5.95	.0752	328	4	100.0	15
3/08/10	7:15p	48.5	49.0	48.5	45	28.1	0.0	S	0.00	2.0	S	48.5	47.2	47.2	30.040	0.00	0.00	0.172	0.000	66.6	29	33.3	62.8	6.12	.0752	327	4	100.0	15
3/08/10	7:30p	48.0	48.5	48.0	47	28.7	0.0	S	0.00	3.0	S	48.0	46.7	46.7	30.045	0.00	0.00	0.177	0.000	65.9	29	32.7	62.1	6.13	.0754	326	4	100.0	15
3/08/10	7:45p	47.3	48.0	47.3	48	28.6	1.0	W	0.25	3.0	W	47.3	46.1	46.1	30.046	0.00	0.00	0.184	0.000	65.6	29	32.5	61.8	6.14	.0754	327	4	100.0	15
3/08/10	8:00p	46.2	47.3	46.2	50	28.6	1.0	W	0.25	3.0	W	46.2	45.1	45.1	30.048	0.00	0.00	0.196	0.000	65.1	30	32.9	61.4	6.25	.0755	327	4	100.0	15
3/08/10	8:15p	46.1	46.3	46.1	48	27.5	1.0	W	0.25	4.0	W	46.1	44.9	44.9	30.049	0.00	0.00	0.197	0.000	64.6	30	32.4	60.9	6.26	.0756	326	4	100.0	15
3/08/10	8:30p	46.0	46.1	46.0	48	27.4	1.0	W	0.25	2.0	W	46.0	44.8	44.8	30.054	0.00	0.00	0.198	0.000	64.3	30	32.2	60.6	6.26	.0756	325	4	100.0	15
3/08/10	8:45p	45.5	46.0	45.5	49	27.4	0.0	W	0.00	2.0	W	45.5	44.4	44.4	30.055	0.00	0.00	0.203	0.000	64.1	30	32.0	60.4	6.27	.0757	327	4	100.0	15
3/08/10	9:00p	45.4	45.5	45.3	48	26.8	0.0	W	0.00	2.0	W	45.4	44.2	44.2	30.051	0.00	0.00	0.204	0.000	64.0	31	32.7	60.4	6.47	.0756	326	4	100.0	15
3/08/10	9:15p	45.2	45.3	45.2	48	26.7	0.0	W	0.00	2.0	W	45.2	44.0	44.0	30.055	0.00	0.00	0.206	0.000	63.8	31	32.6	60.2	6.47	.0757	326	4	100.0	15
3/08/10	9:30p	44.6	45.2	44.6	50	27.1	0.0	W	0.00	1.0	W	44.6	43.5	43.5	30.057	0.00	0.00	0.213	0.000	63.8	31	32.6	60.2	6.47	.0757	327	4	100.0	15
3/08/10	9:45p	44.2	44.6	44.2	50	26.7	0.0	W	0.00	1.0	W	44.2	43.1	43.1	30.057	0.00	0.00	0.217	0.000	63.8	32	33.4	60.3	6.57	.0757	326	4	100.0	15
3/08/10	10:00p	44.0	44.2	44.0	50	26.5	0.0	W	0.00	1.0	W	44.0	42.9	42.9	30.056	0.00	0.00	0.219	0.000	64.0	32	33.5	60.5	6.57	.0756	327	4	100.0	15
3/08/10	10:15p	44.0	44.0	43.9	51	27.0	0.0	W	0.00	2.0	W	44.0	42.9	42.9	30.060	0.00	0.00	0.219	0.000	63.8	32	33.4	60.3	6.57	.0757	327	4	100.0	15
3/08/10	10:30p	44.0	44.1	44.0	52	27.5	0.0	W	0.00	2.0	W	44.0	42.9	42.9	30.061	0.00	0.00	0.219	0.000	63.8	33	34.1	60.4	6.77	.0757	328	4	100.0	15
3/08/10	10:45p	43.8	44.1	43.8	52	27.3	0.0	W	0.00	1.0	W	43.8	42.7	42.7	30.059	0.00	0.00	0.221	0.000	63.8	33	34.1	60.4	6.77	.0757	327	4	100.0	15
3/08/10	11:00p	43.5	43.8	43.5	53	27.5	0.0	W	0.00	1.0	W	43.5	42.5	42.5	30.061	0.00	0.00	0.224	0.000	63.6	33	33.9	60.2	6.78	.0757	326	4	100.0	15
3/08/10	11:15p	43.6	43.6	43.4	54	28.0	0.0	W	0.00	2.0	W	43.6	42.6	42.6	30.063	0.00	0.00	0.223	0.000	63.5	33	33.9	60.1	6.78	.0757	325	4	100.0	15
3/08/10	11:30p	43.6	43.7	43.5	54	28.0	0.0	W	0.00	2.0	W	43.6	42.6	42.6	30.061	0.00	0.00	0.223	0.000	63.5	33	33.9	60.1	6.78	.0757	327	4	100.0	15
3/08/10	11:45p	43.0	43.7	43.0	56	28.4	0.0	W	0.00	2.0	W	43.0	42.0	42.0	30.061	0.00	0.00	0.229	0.000	63.5	33	33.9	60.1	6.78	.0757	326	4	100.0	15
3/09/10	12:00a	42.6	43.0	42.5	57	28.4	0.0	---	0.00	0.0	---	42.6	41.7	41.7	30.063	0.00	0.00	0.233	0.000	63.3	33	33.7	59.9	6.78	.0758	326	4	100.0	15

Room 133 3/09/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/09/10	12:15a	42.7	42.7	42.6	56	28.1	0.0	---	0.00	0.0	---	42.7	41.7	41.7	30.060	0.00	0.00	0.232	0.000	63.3	33	33.7	59.9	6.78	.0757	325	4	100.0	15
3/09/10	12:30a	42.4	42.7	42.4	58	28.7	0.0	---	0.00	0.0	---	42.4	41.5	41.5	30.057	0.00	0.00	0.235	0.000	63.3	34	34.4	60.0	6.88	.0757	327	4	100.0	15
3/09/10	12:45a	41.6	42.4	41.6	60	28.7	0.0	---	0.00	0.0	---	41.6	40.8	40.8	30.062	0.00	0.00	0.244	0.000	63.3	34	34.4	60.0	6.88	.0757	328	4	100.0	15
3/09/10	1:00a	41.0	41.6	40.9	60	28.2	0.0	---	0.00	0.0	---	41.0	40.2	40.2	30.065	0.00	0.00	0.250	0.000	63.3	34	34.4	60.0	6.88	.0757	327	4	100.0	15
3/09/10	1:15a	41.3	41.4	41.0	60	28.4	0.0	---	0.00	0.0	---	41.3	40.5	40.5	30.065	0.00	0.00	0.247	0.000	63.2	34	34.3	59.9	6.89	.0758	325	4	100.0	15
3/09/10	1:30a	41.9	41.9	41.3	59	28.6	0.0	---	0.00	0.0	---	41.9	41.1	41.1	30.061	0.00	0.00	0.241	0.000	63.2	34	34.3	59.9	6.89	.0758	326	4	100.0	15
3/09/10	1:45a	41.8	42.0	41.8	60	28.9	0.0	---	0.00	0.0	---	41.8	41.0	41.0	30.064	0.00	0.00	0.242	0.000	63.0	34	34.2	59.7	6.89	.0758	327	4	100.0	15
3/09/10	2:00a	42.3	42.3	41.8	60	29.4	0.0	W	0.00	1.0	W	42.3	41.5	41.5	30.068	0.00	0.00	0.236	0.000	63.0	34	34.2	59.7	6.89	.0758	326	4	100.0	15
3/09/10	2:15a	41.8	42.4	41.8	62	29.7	0.0	W	0.00	2.0	W	41.8	41.0	41.0	30.071	0.00	0.00	0.242	0.000	62.9	34	34.1	59.6	6.89	.0758	325	4	100.0	15
3/09/10	2:30a	40.1	41.8	40.1	64	28.9	0.0	W	0.00	2.0	W	40.1	39.4	39.4	30.066	0.00	0.00	0.259	0.000	62.7	34	33.9	59.4	6.90	.0758	328	4	100.0	15
3/09/10	2:45a	39.3	40.1	39.3	66	28.9	0.0	W	0.00	2.0	W	39.3	38.6	38.6	30.065	0.00	0.00	0.268	0.000	62.5	35	34.5	59.3	7.05	.0759	326	4	100.0	15
3/09/10	3:00a	39.5	39.5	39.3	67	29.4	0.0	W	0.00	1.0	W	39.5	38.8	38.8	30.067	0.00	0.00	0.266	0.000	62.4	35	34.4	59.2	7.05	.0759	326	4	100.0	15
3/09/10	3:15a	39.5	39.7	39.4	67	29.4	0.0	W	0.00	1.0	W	39.5	38.8	38.8	30.070	0.00	0.00	0.266	0.000	62.4	35	34.4	59.2	7.05	.0759	327	4	100.0	15
3/09/10	3:30a	39.5	39.5	39.4	67	29.4	0.0	W	0.00	2.0	W	39.5	38.8	38.8	30.073	0.00	0.00	0.266	0.000	62.2	35	34.2	59.0	7.05	.0759	326	4	100.0	15
3/09/10	3:45a	41.1	41.1	39.5	64	29.8	1.0	W	0.25	2.0	W	41.1	40.4	40.4	30.073	0.00	0.00	0.249	0.000	62.1	35	34.1	58.9	7.05	.0759	327	4	100.0	15
3/09/10	4:00a	40.9	41.5	40.9	64	29.7	0.0	W	0.00	1.0	W	40.9	40.2	40.2	30.078	0.00	0.00	0.251	0.000	61.9	35	33.9	58.7	7.05	.0760	325	4	100.0	15
3/09/10	4:15a	39.5	40.9	39.5	67	29.4	0.0	W	0.00	1.0	W	39.5	38.8	38.8	30.083	0.00	0.00	0.266	0.000	61.9	35	33.9	58.7	7.05	.0760	327	4	100.0	15
3/09/10	4:30a	38.6	39.5	38.6	69	29.3	0.0	W	0.00	1.0	W	38.6	38.0	38.0	30.086	0.00	0.00	0.275	0.000	61.8	35	33.8	58.6	7.05	.0760	325	4	100.0	15
3/09/10	4:45a	37.6	38.5	37.6	73	29.7	0.0	W	0.00	2.0	W	37.6	37.1	37.1	30.088	0.00	0.00	0.285	0.000	61.8	35	33.8	58.6	7.05	.0760	325	4	100.0	15
3/09/10	5:00a	36.8	37.6	36.8	74	29.3	0.0	W	0.00	1.0	W	36.8	36.4	36.4	30.086	0.00	0.00	0.294	0.000	61.6	36	34.4	58.5	7.22	.0760	327	4	100.0	15
3/09/10	5:15a	36.6	36.8	36.6	75	29.4	0.0	---	0.00	0.0	---	36.6	36.2	36.2	30.080	0.00	0.00	0.296	0.000	61.6	36	34.4	58.5	7.22	.0760	328	4	100.0	15
3/09/10	5:30a	36.5	36.6	36.5	75	29.3	0.0	---	0.00	0.0	---	36.5	36.1	36.1	30.082	0.00	0.00	0.297	0.000	61.6	36	34.4	58.5	7.22	.0760	327	4	100.0	15
3/09/10	5:45a	36.3	36.5	36.3	76	29.5	0.0	W	0.00	1.0	W	36.3	35.9	35.9	30.086	0.00	0.00	0.299	0.000	61.6	36	34.4	58.5	7.22	.0760	327	4	100.0	15
3/09/10	6:00a	36.5	36.5	36.1	76	29.7	0.0	W	0.00	1.0	W	36.5	36.1	36.1	30.088	0.00	0.00	0.297	0.000	61.6	36	34.4	58.5	7.22	.0761	325	4	100.0	15
3/09/10	6:15a	36.2	36.6	36.2	77	29.7	0.0	W	0.00	1.0	W	36.2	35.8	35.8	30.088	0.00	0.00	0.300	0.000	61.4	36	34.2	58.3	7.22	.0761	327	4	100.0	15
3/09/10	6:30a	35.9	36.2	35.9	78	29.7	0.0	W	0.00	1.0	W	35.9	35.6	35.6	30.093	0.00	0.00	0.303	0.000	61.4	36	34.2	58.3	7.22	.0761	327	4	100.0	15
3/09/10	6:45a	36.0	36.0	35.8	78	29.8	0.0	---	0.00	0.0	---	36.0	35.7	35.7	30.094	0.00	0.00	0.302	0.000	61.4	36	34.2	58.3	7.22	.0761	324	4	100.0	15
3/09/10	7:00a	36.5	36.6	36.0	77	30.0	0.0	W	0.00	2.0	W	36.5	36.1	36.1	30.097	0.00	0.00	0.297	0.000	61.6	36	34.4	58.5	7.22	.0761	326	4	100.0	15
3/09/10	7:15a	37.3	37.3	36.5	77	30.7	0.0	---	0.00	0.0	---	37.3	36.9	36.9	30.107	0.00	0.00	0.289	0.000	61.8	36	34.5	58.7	7.21	.0761	324	4	100.0	15
3/09/10	7:30a	39.7	39.7	37.3	75	32.4	0.0	W	0.00	1.0	W	39.7	39.2	39.2	30.102	0.00	0.00	0.264	0.000	61.9	36	34.6	58.8	7.21	.0760	327	4	100.0	15
3/09/10	7:45a	42.0	42.0	39.7	73	34.0	0.0	---	0.00	0.0	---	42.0	41.5	41.5	30.108	0.00	0.00	0.240	0.000	62.4	36	35.1	59.3	7.20	.0760	328	4	100.0	15
3/09/10	8:00a	45.1	45.1	42.0	66	34.4	0.0	W	0.00	2.0	W	45.1	44.4	44.4	30.112	0.00	0.00	0.207	0.000	63.0	36	35.6	59.9	7.19	.0759	327	4	100.0	15
3/09/10	8:15a	47.3	47.3	45.1	61	34.5	0.0	W	0.00	2.0	W	47.3	46.5	46.5	30.116	0.00	0.00	0.184	0.000	63.6	36	36.1	60.5	7.18	.0758	326	4	100.0	15
3/09/10	8:30a	50.0	50.0	47.3	48	31.1	0.0	W	0.00	3.0	W	50.0	48.8	48.8	30.114	0.00	0.00	0.156	0.000	64.3	36	36.8	61.2	7.16	.0757	328	4	100.0	15
3/09/10	8:45a	51.9	52.0	50.0	39	27.7	0.0	W	0.00	4.0	W	51.9	50.0	50.0	30.114	0.00	0.00	0.136	0.000	65.3	35	36.9	62.1	7.05	.0755	326	4	100.0	15
3/09/10	9:00a	52.9	52.9	51.9	38	28.0	0.0	W	0.00	3.0	W	52.9	50.7	50.7	30.113	0.00	0.00	0.126	0.000	66.1	34	36.9	62.9	6.85	.0754	326	4	100.0	15
3/09/10	9:15a	52.2	53.0	52.2	38	27.3	1.0	NNE	0.25	4.0	NNE	52.2	50.2	50.2	30.116	0.00	0.00	0.133	0.000	66.9	33	36.8	63.6	6.71	.0753	326	4	100.0	15
3/09/10	9:30a	52.5	52.5	52.1	37	26.9	1.0	SE	0.25	5.0	SE	52.5	50.4	50.4	30.120	0.00	0.00	0.130	0.000	67.5	33	37.4	64.2	6.70	.0752	328	4	100.0	15
3/09/10	9:45a	53.1	53.2	52.5	37	27.5	1.0	SSE	0.25	6.0	SSE	53.1	50.9	50.9	30.125	0.00	0.00	0.124	0.000	68.2	32	37.2	64.8	6.55	.0751	327	4	100.0	15
3/09/10	10:00a	53.0	53.1	52.5	36	26.7	1.0	NNE	0.25	4.0	NNE	53.0	50.7	50.7	30.125	0.00	0.00	0.125	0.000	68.7	32	37.6	65.3	6.55	.0751	325	4	100.0	15
3/09/10	10:15a	53.4	53.4	52.2	37	27.8	2.0	NNE	0.50	6.0	SE	53.4	51.1	51.1	30.124	0.00	0.00	0.121	0.000	69.2	31	37.3	65.7	6.37	.0750	328	4	100.0	15
3/09/10	10:30a	52.9	53.5	52.9	37	27.3	2.0	NE	0.50	6.0	SE	52.9	50.7	50.7	30.124	0.00	0.00	0.126	0.000	69.6	31	37.6	66.1	6.36	.0749	327	4	100.0	15
3/09/10	10:45a	52.6	53.0	52.6	40	28.9	2.0	SSE	0.50	7.0	SSE	52.6	50.6	50.6	30.122	0.00	0.00	0.129	0.000	69.9	30	37.0	66.3	6.25	.0749	326	4	100.0	15
3/09/10	11:00a	52.4	52.9	52.4	39	28.1	2.0	SSE	0.50	7.0	SE	52.4	50.4	50.4	30.121	0.00	0.00	0.131	0.000	70.4	30	37.5	66.9	6.23	.0748	327	4	100.0	15
3/09/10	11:15a	50.9	52.6	50.9	39	26.8	4.0	SE	1.00	7.0	SE	49.9	49.2	48.2	30.118	0.00	0.00	0.147	0.000	70.7	30	37.7	67.3	6.22	.0748	326	4	100.0	15
3/09/10	11:30a	51.5	51.8	50.9	40	27.9	4.0	SE	1.00	7.0	SE	50.6	49.7	48.8	30.112	0.00	0.00	0.141	0.000	71.1	30	38.1	67.8	6.21	.0747	325	4	100.0	15
3/09/10	11:45a	51.5	51.5	50.7	47	31.9	4.0	SE	1.00	7.0	SE	50.6	50.0	49.1	30.112	0.00	0.00	0.141	0.000	71.4	29	37.5	68.2	5.99	.0746	326	4	100.0	15
3/09/10	12:00p	51.4	51.9	51.4	48	32.3	4.0	SE	1.00	8.0	SE	50.5	49.9	49.0	30.109	0.00	0.00	0.142	0.000	71.9	29	37.9	68.9	5.97	.0746	327	4	100.0	15
3/09/10	12:15p	51.4	51.4	50.9	51	33.9	4.0	SSE	1.00	7.0	SE	50.5	50.1	49.2	30.107	0.00	0.00	0.142	0.000	72.3	29	38.2	69.5	5.96	.0745	327	4	100.0	15
3/09/10	12:30p	52.2	52.2	51.3	49	33.6	3.0	SE	0.75	7.0	SE	52.1	50.6	50.5	30.106	0.00	0.00	0.133	0.000	72.6	29	38.5	70.0	5.95	.0744	327	4	100.0	15
3/09/10	12:45p	53.0	53.0	52.3	50	34.8	3.0	SSE	0.75	7.0	SE	53.0	51.4	51.4	30.100	0.00	0.00	0.125	0.000	73.1	29	38.9	70.8	5.93	.0743	326	4	100.0	15
3/09/10	1:00p	52.5	53.1	52.5	49	33.9	3.0	SE	0.75	6.0	SE	52.5	50.9	50.9	30.094	0.00	0.00	0.130	0.000	73.5	29	39.3	71.4	5.91	.0743	325	4	100.0	15
3/09/10	1:15p	53.0	53.0	52.2	51	35.3	4.0	SE	1.00	7.0	SE	52.3	51.4	50.7	30.088	0.00	0.00	0.125	0.000	73.8	29	39.5	71.9	5.90	.0742	327	4	100.0	15
3/09/10	1:30p	53.8	54.0	53.1	45	32.9	4.0	S	1.00	7.0	SSE	53.3	51.8	51.3	30.078	0.00	0.00	0.117	0.000	74.2	29	39.9	72.4	5.88	.0741	326	4	100.0	15
3/09/10	1:45p	53.7	53.8	53.6	46	33.4	4.0	SSE	1.00	7.0	S	53.1	51.8	51.2	30.075	0.00	0.00	0.118	0.000	74.7	28	39.4	72.8	5.67	.0740	328	4	100.0	15
3/09/10	2:00p	54.3	54.3	53.6	46	33.9	3.0	SSE	0.75	6.0	SSW	54.3	52.3	52.3	30.071	0.00	0.00	0.111	0.000	75.4	28	40.0	73.7	5.66	.0739	326	4	100.0	15
3/09/10	2:15p	54.5	54.8	54.3	46	34.1	4.0	SSE	1.00	6.0	SSW	54.1	52.5	52.1	30.069	0.00	0.00	0.109	0.000	77.0	27	40.4	75.7	5.55	.0737	327	4	100.0	15
3/09/10	2:30p	54.1	54.5	54.0	47	34.3	4.0	SSE	1.00	9.0	SSE	53.6	52.2	51.7	30.065	0.00	0.00	0.114	0.000	78.8	27	42.0	76.8	5.55	.0734	327	4	100.0	15
3/09/10	2:45p	54.3	54.4	54.1	46	33.9	4.0	SSE	1.00	6.0	SSE	53.8	52.3	51.8	30.058	0.00	0.00	0.111	0.000	80.3	26	42.3	77.9	5.44	.0732	326	4	100.0	15
3/09/10	3:00p	55.0	55.0	54.1	46	34.6	4.0	SSE	1.00	9.0	SSE	54.6	53.0	52.6	30.056	0.00	0.00	0.104	0.000	79.5	26	41.6	77.2	5.45	.0733	326	4	100.0	15
3/09/10	3:15p	55.3	55.4	55.0	45	34.3	4.0	SSE	1.00	6.0	SSE	55.0	53.2	52.9	30.053	0.00	0.00	0.101	0.000	78.4	26	40.7	76.5	5.45	.0735	326	4	100.0	15
3/09/10	3:30p	56.5	56.6	55.3	45	35.4	3.0	SSE	0.75	6.0	SSE	56.5	54.3	54.3	30.049	0.00	0.00	0.089	0.000	78.8	26	41.0	76.7	5.45	.0734	327	4	100.0	15
3/09/10	3:45p	57.0	57.0	56.5	45	35.9	3.0	SSE	0.75	6.0	SW	57.0	54.8	54.8	30.046	0.00	0.00	0.083	0.000	79.0	26	41.2	76.8	5.45	.0733	322	4	100.0	15
3/09/10	4:00p	57.9	57.9	57.1	42	34.9	3.0	SSE	0.75	6.0	SSE	57.9	55.4	55.4	30.044	0.00	0.00	0.074	0.000	78.4	26	40.7	76.5	5.45	.0734	326	4	100.0	15
3/09/10	4:15p	59.0	59.0	57.9	37	32.7	4.0	SSE	1.00	9.0	SSW	59.0	56.1	56.1	30.046	0.00	0.00	0.063	0.000	77.9	26	40.2	76.2	5.45	.0735	326	4	100.0	15
3/09/10	4:30p	58.7	59.0	58.7	35	31.1	3.0	S	0.75	9.0	S	58.7	55.6	55.6	30.046	0.00	0.00	0.066	0.000	76.8	26	39.3	75.4	5.45	.0737	327	4	100.0	15
3/09/10	4:45p	58.0	58.7	58.0	36	31.2	3.0	WSW	0.75	7.0	SSW	58.0	55.1	55.1	30.048	0.00	0.00	0.073	0.000	75.6	26	38.3	73.8	5.45	.0739	327	4	100.0	15
3/09/10	5:00p	57.6	58.0	57.6	35	30.1	2.0	WSW	0.50	6.0	WSW	57.6	54.6	54.6	30.049	0.00	0.00	0.077	0.000	74.9	26	37.7	72.9	5.45	.0740	327	4	100.0	15
3/09/10	5:15p	57.0	57.6	57.0	37	31.0	3.0	WSW	0.75	7.0	WSW	57.0	54.3	54.3	30.054	0.00	0.00	0.083	0.000	73.8	26	36.8	71.5	5.50	.0742	327	4	100.0	15
3/09/10	5:30p	56.6	57.0	56.6	38	31.3	2.0	SSW	0.50	5.0	WSW	56.6	54.0	54.0	30.056	0.00	0.00	0.088	0.000	73.0	27	37.0	70.4	5.67	.0743	327	4	100.0	15

Room 133 3/09/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/09/10	5:45p	55.9	56.6	55.9	36	29.3	2.0	WSW	0.50	6.0	WSW	55.9	53.2	53.2	30.058	0.00	0.00	0.095	0.000	71.9	27	36.1	68.7	5.74	.0745	325	4	100.0	15
3/09/10	6:00p	54.8	55.8	54.8	38	29.7	2.0	S	0.50	6.0	WSW	54.8	52.4	52.4	30.064	0.00	0.00	0.106	0.000	70.9	27	35.2	67.3	5.80	.0746	327	4	100.0	15
3/09/10	6:15p	53.6	54.7	53.6	40	29.8	3.0	WSW	0.75	7.0	SW	53.6	51.4	51.4	30.066	0.00	0.00	0.119	0.000	69.9	28	35.3	66.1	5.95	.0748	326	4	100.0	15
3/09/10	6:30p	52.6	53.6	52.6	41	29.5	3.0	WSW	0.75	5.0	WSW	52.6	50.6	50.6	30.065	0.00	0.00	0.129	0.000	68.9	28	34.4	65.1	5.95	.0749	327	4	100.0	15
3/09/10	6:45p	51.9	52.6	51.9	43	30.1	2.0	WSW	0.50	5.0	WSW	51.9	50.1	50.1	30.062	0.00	0.00	0.136	0.000	68.0	28	33.7	64.2	5.95	.0751	328	4	100.0	15
3/09/10	7:00p	51.5	51.9	51.5	43	29.7	1.0	WSW	0.25	6.0	WSW	51.5	49.8	49.8	30.066	0.00	0.00	0.141	0.000	67.4	29	34.0	63.6	6.10	.0752	325	4	100.0	15
3/09/10	7:15p	51.2	51.5	51.2	44	30.0	2.0	WSW	0.50	5.0	SW	51.2	49.6	49.6	30.071	0.00	0.00	0.144	0.000	66.7	29	33.4	62.9	6.12	.0753	327	4	100.0	15
3/09/10	7:30p	50.7	51.2	50.7	46	30.7	2.0	WSW	0.50	6.0	WSW	50.7	49.3	49.3	30.073	0.00	0.00	0.149	0.000	66.2	29	33.0	62.4	6.13	.0754	326	4	100.0	15
3/09/10	7:45p	50.0	50.7	50.0	47	30.5	2.0	WSW	0.50	5.0	WSW	50.0	48.7	48.7	30.076	0.00	0.00	0.156	0.000	65.8	30	33.5	62.2	6.25	.0754	324	4	100.0	15
3/09/10	8:00p	49.7	50.0	49.7	49	31.3	2.0	WSW	0.50	6.0	WSW	49.7	48.5	48.5	30.075	0.00	0.00	0.159	0.000	65.3	30	33.0	61.6	6.25	.0755	327	4	100.0	15
3/09/10	8:15p	49.3	49.7	49.3	51	31.9	2.0	WSW	0.50	6.0	WSW	49.3	48.1	48.1	30.075	0.00	0.00	0.164	0.000	64.8	30	32.6	61.1	6.25	.0756	326	4	100.0	15
3/09/10	8:30p	49.2	49.3	49.1	52	32.3	1.0	WSW	0.25	5.0	WSW	49.2	48.1	48.1	30.077	0.00	0.00	0.165	0.000	64.5	31	33.2	60.9	6.46	.0756	327	4	100.0	15
3/09/10	8:45p	49.2	49.2	49.2	53	32.8	1.0	WSW	0.25	5.0	WSW	49.2	48.1	48.1	30.073	0.00	0.00	0.165	0.000	64.3	31	33.0	60.7	6.46	.0756	325	4	100.0	15
3/09/10	9:00p	49.1	49.2	49.1	54	33.2	1.0	WSW	0.25	5.0	WSW	49.1	48.1	48.1	30.075	0.00	0.00	0.166	0.000	64.1	32	33.6	60.6	6.57	.0757	324	4	100.0	15
3/09/10	9:15p	49.2	49.2	49.1	54	33.3	1.0	WSW	0.25	6.0	WSW	49.2	48.2	48.2	30.072	0.00	0.00	0.165	0.000	64.1	32	33.6	60.6	6.57	.0757	326	4	100.0	15
3/09/10	9:30p	49.3	49.4	49.2	55	33.8	2.0	WSW	0.50	6.0	W	49.3	48.3	48.3	30.073	0.00	0.00	0.164	0.000	64.1	33	34.4	60.7	6.77	.0757	325	4	100.0	15
3/09/10	9:45p	49.1	49.3	49.1	56	34.1	2.0	WSW	0.50	6.0	WSW	49.1	48.1	48.1	30.071	0.00	0.00	0.166	0.000	64.1	33	34.4	60.7	6.77	.0756	327	4	100.0	15
3/09/10	10:00p	48.7	49.1	48.7	59	35.0	3.0	W	0.75	7.0	WSW	48.2	47.9	47.4	30.069	0.00	0.00	0.170	0.000	64.1	33	34.4	60.7	6.77	.0756	324	4	100.0	15
3/09/10	10:15p	48.4	48.7	48.4	61	35.6	1.0	W	0.25	5.0	W	48.4	47.6	47.6	30.070	0.00	0.00	0.173	0.000	64.0	34	35.0	60.7	6.87	.0756	328	4	100.0	15
3/09/10	10:30p	48.0	48.4	48.0	63	36.0	0.0	W	0.00	2.0	W	48.0	47.3	47.3	30.068	0.00	0.00	0.177	0.000	64.0	34	35.0	60.7	6.87	.0756	327	4	100.0	15
3/09/10	10:45p	47.8	48.0	47.8	66	37.0	1.0	W	0.25	4.0	W	47.8	47.1	47.1	30.068	0.00	0.00	0.179	0.000	64.0	34	35.0	60.7	6.87	.0756	326	4	100.0	15
3/09/10	11:00p	47.6	47.8	47.6	67	37.2	1.0	SW	0.25	5.0	W	47.6	47.0	47.0	30.063	0.00	0.00	0.181	0.000	63.8	35	35.6	60.6	7.05	.0756	325	4	100.0	15
3/09/10	11:15p	47.5	47.6	47.5	68	37.5	1.0	WSW	0.25	4.0	WSW	47.5	46.9	46.9	30.061	0.00	0.00	0.182	0.000	63.8	35	35.6	60.6	7.05	.0756	328	4	100.0	15
3/09/10	11:30p	47.1	47.5	47.1	69	37.4	1.0	W	0.25	5.0	W	47.1	46.6	46.6	30.059	0.00	0.00	0.186	0.000	63.8	36	36.3	60.7	7.17	.0756	326	4	100.0	15
3/09/10	11:45p	47.1	47.2	47.1	71	38.2	1.0	WSW	0.25	5.0	WSW	47.1	46.6	46.6	30.051	0.00	0.00	0.186	0.000	63.6	36	36.1	60.5	7.18	.0756	324	4	100.0	15
3/10/10	12:00a	47.0	47.1	47.0	71	38.1	1.0	WSW	0.25	4.0	WSW	47.0	46.5	46.5	30.046	0.00	0.00	0.188	0.000	63.6	37	36.8	60.6	7.35	.0756	327	4	100.0	15

Room 133 3/10/10

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run	Hi Speed	Hi Dir	Wind Chill	Heat Index	THW Index	Bar	Rain	Rain Rate	Heat D-D	Cool D-D	In Temp	In Hum	In Dew	In Heat	In EMC	In Air Density	Wind Samp	Wind Tx	ISS Recept	Arc. Int.
3/10/10	12:15a	46.9	47.0	46.9	72	38.3	1.0	WSW	0.25	3.0	WSW	46.9	46.5	46.5	30.041	0.00	0.00	0.189	0.000	63.6	37	36.8	60.6	7.35	.0756	324	4	100.0	15
3/10/10	12:30a	46.7	46.9	46.7	73	38.5	0.0	WSW	0.00	2.0	WSW	46.7	46.3	46.3	30.037	0.00	0.00	0.191	0.000	63.8	37	37.0	60.8	7.35	.0755	325	4	100.0	15
3/10/10	12:45a	46.7	46.8	46.7	74	38.9	0.0	WSW	0.00	3.0	WSW	46.7	46.3	46.3	30.032	0.00	0.00	0.191	0.000	63.8	37	37.0	60.8	7.35	.0755	328	4	100.0	15
3/10/10	1:00a	46.6	46.8	46.6	74	38.8	0.0	WSW	0.00	2.0	WSW	46.6	46.2	46.2	30.030	0.00	0.00	0.192	0.000	64.0	38	37.9	61.1	7.55	.0755	327	4	100.0	15
3/10/10	1:15a	46.1	46.6	46.1	76	39.0	0.0	WSW	0.00	2.0	WSW	46.1	45.7	45.7	30.031	0.00	0.00	0.197	0.000	64.0	38	37.9	61.1	7.55	.0755	325	4	100.0	15
3/10/10	1:30a	45.9	46.1	45.9	77	39.1	0.0	WSW	0.00	2.0	WSW	45.9	45.6	45.6	30.031	0.00	0.00	0.199	0.000	63.8	38	37.7	60.9	7.55	.0755	328	4	100.0	15
3/10/10	1:45a	45.3	45.9	45.3	77	38.5	0.0	WSW	0.00	1.0	WSW	45.3	45.0	45.0	30.033	0.00	0.00	0.205	0.000	63.6	38	37.5	60.7	7.55	.0756	327	4	100.0	15
3/10/10	2:00a	45.0	45.3	45.0	78	38.6	0.0	WSW	0.00	1.0	WSW	45.0	44.7	44.7	30.033	0.00	0.00	0.208	0.000	63.5	38	37.4	60.6	7.55	.0756	323	4	100.0	15
3/10/10	2:15a	44.8	45.0	44.8	79	38.7	0.0	WSW	0.00	1.0	WSW	44.8	44.6	44.6	30.032	0.00	0.00	0.210	0.000	63.5	38	37.4	60.6	7.55	.0756	327	4	100.0	15
3/10/10	2:30a	44.4	44.8	44.4	80	38.6	0.0	---	0.00	0.0	---	44.4	44.2	44.2	30.024	0.00	0.00	0.215	0.000	63.3	39	37.9	60.5	7.72	.0756	328	4	100.0	15
3/10/10	2:45a	44.9	44.9	44.4	81	39.4	0.0	WSW	0.00	1.0	WSW	44.9	44.7	44.7	30.021	0.00	0.00	0.209	0.000	63.3	39	37.9	60.5	7.72	.0756	327	4	100.0	15
3/10/10	3:00a	44.8	45.0	44.8	80	39.0	0.0	---	0.00	0.0	---	44.8	44.6	44.6	30.018	0.00	0.00	0.210	0.000	63.3	39	37.9	60.5	7.72	.0756	326	4	100.0	15
3/10/10	3:15a	44.3	44.8	44.3	81	38.8	0.0	---	0.00	0.0	---	44.3	44.1	44.1	30.013	0.00	0.00	0.216	0.000	63.5	40	38.7	60.8	7.85	.0755	326	4	100.0	15
3/10/10	3:30a	44.5	44.6	44.3	83	39.7	0.0	WSW	0.00	1.0	WSW	44.5	44.4	44.4	30.006	0.00	0.00	0.214	0.000	63.6	40	38.8	60.9	7.85	.0755	325	4	100.0	15
3/10/10	3:45a	44.1	44.5	44.1	82	39.0	0.0	WSW	0.00	1.0	WSW	44.1	43.9	43.9	30.009	0.00	0.00	0.218	0.000	63.6	40	38.8	60.9	7.85	.0755	327	4	100.0	15
3/10/10	4:00a	43.8	44.1	43.8	83	39.0	0.0	WSW	0.00	1.0	WSW	43.8	43.7	43.7	30.011	0.00	0.00	0.221	0.000	63.6	40	38.8	60.9	7.85	.0755	326	4	100.0	15
3/10/10	4:15a	43.7	43.8	43.7	84	39.2	0.0	---	0.00	0.0	---	43.7	43.6	43.6	30.014	0.00	0.00	0.222	0.000	63.6	40	38.8	60.9	7.85	.0755	326	4	100.0	15
3/10/10	4:30a	43.3	43.7	43.3	85	39.1	0.0	WSW	0.00	2.0	WSW	43.3	43.2	43.2	30.016	0.00	0.00	0.226	0.000	63.6	40	38.8	60.9	7.85	.0755	325	4	100.0	15
3/10/10	4:45a	43.7	43.7	43.3	85	39.5	0.0	WSW	0.00	2.0	WSW	43.7	43.6	43.6	30.018	0.00	0.00	0.222	0.000	63.5	40	38.7	60.8	7.85	.0755	327	4	100.0	15
3/10/10	5:00a	44.1	44.1	43.7	86	40.2	0.0	WSW	0.00	1.0	WSW	44.1	44.0	44.0	30.018	0.00	0.00	0.218	0.000	63.5	40	38.7	60.8	7.85	.0755	327	4	100.0	15
3/10/10	5:15a	44.9	44.9	44.1	86	41.0	0.0	WSW	0.00	2.0	WSW	44.9	44.8	44.8	30.015	0.00	0.00	0.209	0.000	63.5	40	38.7	60.8	7.85	.0755	326	4	100.0	15
3/10/10	5:30a	45.9	45.9	44.9	85	41.6	1.0	W	0.25	4.0	WSW	45.9	45.9	45.9	30.014	0.00	0.00	0.199	0.000	63.5	41	39.4	60.9	7.98	.0755	327	4	100.0	15
3/10/10	5:45a	46.5	46.5	45.9	85	42.2	1.0	W	0.25	3.0	W	46.5	46.5	46.5	30.019	0.00	0.00	0.193	0.000	63.5	41	39.4	60.9	7.98	.0755	327	4	100.0	15
3/10/10	6:00a	47.4	47.4	46.5	84	42.8	1.0	W	0.25	3.0	W	47.4	47.4	47.4	30.024	0.00	0.00	0.183	0.000	63.5	42	40.0	61.0	8.15	.0755	324	4	100.0	15
3/10/10	6:15a	47.7	47.7	47.4	83	42.8	0.0	W	0.00	3.0	W	47.7	47.6	47.6	30.029	0.00	0.00	0.180	0.000	63.6	42	40.1	61.1	8.15	.0755	327	4	100.0	15
3/10/10	6:30a	47.8	47.8	47.7	82	42.6	1.0	WNW	0.25	3.0	W	47.8	47.7	47.7	30.028	0.00	0.00	0.179	0.000	63.8	42	40.3	61.3	8.15	.0754	327	4	100.0	15
3/10/10	6:45a	47.9	47.9	47.8	83	43.0	0.0	WNW	0.00	2.0	WNW	47.9	47.9	47.9	30.028	0.00	0.00	0.178	0.000	63.8	42	40.3	61.3	8.15	.0754	324	4	100.0	15
3/10/10	7:00a	48.3	48.3	47.9	83	43.4	1.0	WNW	0.25	3.0	WNW	48.3	48.3	48.3	30.027	0.00	0.00	0.174	0.000	63.8	42	40.3	61.3	8.15	.0754	327	4	100.0	15
3/10/10	7:15a	48.8	48.8	48.3	82	43.5	1.0	WNW	0.25	3.0	WNW	48.8	48.8	48.8	30.028	0.00	0.00	0.169	0.000	63.8	42	40.3	61.3	8.15	.0754	327	4	100.0	15
3/10/10	7:30a	49.6	49.6	48.8	81	44.0	1.0	WNW	0.25	4.0	WNW	49.6	49.6	49.6	30.033	0.00	0.00	0.160	0.000	64.1	42	40.5	61.6	8.15	.0754	328	4	100.0	15
3/10/10	7:45a	50.8	50.8	49.7	80	44.9	2.0	WNW	0.50	5.0	WNW	50.8	50.7	50.7	30.031	0.00	0.00	0.148	0.000	64.3	42	40.7	61.8	8.15	.0754	326	4	100.0	15
3/10/10	8:00a	51.5	51.5	50.8	77	44.5	3.0	WNW	0.75	6.0	NW	51.4	51.2	51.1	30.034	0.00	0.00	0.141	0.000	64.5	42	40.9	62.0	8.15	.0753	327	4	100.0	15
3/10/10	8:15a	51.9	51.9	51.5	77	44.9	2.0	WNW	0.50	5.0	WNW	51.9	51.6	51.6	30.038	0.00	0.00	0.136	0.000	64.6	42	41.0	62.1	8.15	.0753	327	4	100.0	15
3/10/10	8:30a	52.7	52.7	51.9	74	44.6	1.0	WNW	0.25	5.0	WNW	52.7	52.2	52.2	30.041	0.00	0.00	0.128	0.000	64.9	42	41.2	62.5	8.15	.0753	327	4	100.0	15
3/10/10	8:45a	53.7	53.7	52.7	73	45.2	2.0	WNW	0.50	5.0	WNW	53.7	53.1	53.1	30.041	0.00	0.00	0.118	0.000	65.6	42	41.9	63.2	8.14	.0752	326	4	100.0	15
3/10/10	9:00a	54.5	54.5	53.7	71	45.3	3.0	WNW	0.75	6.0	WNW	54.5	53.8	53.8	30.039	0.00	0.00	0.109	0.000	66.6	42	42.8	64.3	8.12	.0750	324	4	100.0	15
3/10/10	9:15a	56.0	56.0	54.5	68	45.6	1.0	N	0.25	6.0	NW	56.0	55.1	55.1	30.039	0.00	0.00	0.094	0.000	67.5	41	43.0	65.2	7.95	.0749	327	4	100.0	15
3/10/10	9:30a	57.2	57.2	56.0	66	45.9	3.0	NNW	0.75	7.0	N	57.2	56.2	56.2	30.044	0.00	0.00	0.081	0.000	68.4	40	43.1	66.0	7.78	.0748	326	4	100.0	15
3/10/10	9:45a	58.8	58.8	57.2	63	46.2	2.0	NW	0.50	7.0	WNW	58.8	57.7	57.7	30.042	0.00	0.00	0.065	0.000	69.2	40	43.8	66.7	7.77	.0746	327	4	100.0	15
3/10/10	10:00a	59.2	59.2	58.8	60	45.3	3.0	NW	0.75	7.0	NW	59.2	57.9	57.9	30.041	0.00	0.00	0.060	0.000	70.1	41	45.3	67.5	7.95	.0745	328	4	100.0	15
3/10/10	10:15a	59.8	59.8	59.2	59	45.4	4.0	NW	1.00	9.0	NW	59.8	58.4	58.4	30.042	0.00	0.00	0.054	0.000	71.6	41	46.6	69.6	7.89	.0742	325	4	100.0	15

Appendix C
ARARs

TABLE C-1
Federal Chemical-Specific ARARs and TBCs
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Media	Requirement	Prerequisite	Citation	Alternative	ARAR Determination	Comment
Safe Drinking Water Act (SDWA)						
Groundwater	SDWA standards serve to protect public water systems. Primary drinking water standards consist of federally enforceable Maximum Contaminant Levels (MCLs). MCLs are the highest level of a contaminant that is allowed in drinking water.	Groundwater contamination exceeds MCLs. CERCLA requires the return of usable waters to their beneficial use whenever practicable. Virginia's expectation for beneficial use of groundwater requires cleanup to MCLs for the contaminants presenting human health risk.	40 CFR 141.61 (a) (1) and (5)	2,3,4	Relevant and Appropriate	This remedial action is being implemented with a target goal of achieving MCLs. However, the aquifer is not currently, nor reasonably anticipated in the future to be used as a potable water supply.
Groundwater	SDWA standards serve to protect public water systems. The MCLG is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals.	Cleanup standards for on-site ground or surface waters that are current or potential sources of drinking water.	40 CFR 141.50 to 141.55	2,3,4	TBC	MCLGs are non-enforceable standards. This remedial action is being implemented with a target goal of achieving MCLs. The aquifer is not currently, nor reasonably anticipated in the future to be used as a potable water supply.
Groundwater	National Secondary Drinking Water Regulations (NSDWRs or secondary standards) are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.	Cleanup standards for on-site groundwater that are potential sources of drinking water.	40 CFR 143	2,3,4	TBC	Secondary MCLs are non-enforceable standards. This remedial action is being implemented with a target goal of achieving MCLs. The aquifer is not currently, nor reasonably anticipated in the future to be used as a potable water supply.
Clean Air Act						
Air	National Ambient Air Quality Standards (NAAQS) specify the maximum concentration of each criteria pollutant (carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, sulfur dioxide) which can be permitted in the ambient air, as averaged over a period of time (http://www.epa.gov/air/criteria.html). Requirements differ for new sources of air pollutant emissions and existing sources. Requirements also differ based on the air quality designation of the site's location (i.e., attainment, non-attainment, unclassified, or transport) (*see Federal Location-Specific ARARs*).	Emissions of criteria pollutants during the response action, or during the operation and maintenance of the response action. NAAQS are not enforceable in and of themselves. Any substantive standards contained within the State Implementation Plan are, however, federally enforceable.	40 CFR 50.4 to 50.12	4	TBC	AS/SVE is targeted to treat the volatile contaminants included on the list of hazardous air pollutants. Vapors generated during the implementation of this remedy will be treated.
USEPA Regional Screening Levels (RSLs) Tables						
Water, air, fish tissue, soil	Chemical concentrations corresponding to fixed levels of human health risk (i.e., a hazard quotient of 1, or lifetime cancer risk of 10^{-6}, whichever occurs at a lower concentration).	Assessment of potential human health risks.	USEPA RSL Tables	2,3,4	TBC	The RSLs present generic chemical concentrations for individual contaminants to determine the need for further investigation or site cleanup. A baseline human health risk assessment has been performed to calculate site specific risks and was used in the development of preliminary remediation goals. This remedial action is being implemented to reduce concentrations in shallow groundwater to the maximum extent practicable with a goal of achieving UU/UE for the site.

Notes:
2 - ERD
3 - ISCO & ERD
4 - AS/SVE

TABLE C-2
Virginia Chemical-Specific ARARs and TBCs
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Media	Requirement	Prerequisite	Citation	Alternative	ARAR Determination	Comment
Air Pollution Control Board **[VA Code Ann. §§ 10.1-1300 to 1326 (1998)]**						
Air	Establishes standards for the emissions of toxic pollutants that could cause or contribute to the endangerment of human health. The article applies to stationary sources that have the potential to emit toxic pollutants above emission rates which are based on Threshold Limit Values; exemption determinations are set forth as well.	Emissions of toxic pollutants from a point source.	*Emissions Standards for Toxic Pollutants from New and Modified Sources (Rule 6-5),* 9 VAC 5-60-300(A), 300(C), 320, 330, and 350	4	Applicable	AS/SVE is targeted to treat the volatile contaminants included on the list of hazardous air pollutants. Vapors generated during the implementation of this remedy will be treated. If the emissions of TCE or PCE are above the exemption rates then the emissions standards specified will be met. For TCE, the exemption rate is 22.8 lb/hr and 39.0 ton/yr; For PCE, the exemption rate is 22.8 lb/hr and 49.16 ton/yr.
State Water Control Law **[VA Code Ann. §§ 62.1-44.2 to 62.1-44.34:28 (2003)]**						
Groundwater	Establishes groundwater quality standards to protect the public health or welfare and enhance the quality of water.	Standards are used when no MCL is available.	*Groundwater Quality Standards*, 9 VAC 25-280	2,3,4	TBC	This remedial action is being implemented with a target goal of achieving MCLs.
Environmental Health Services **[VA Code Ann. §§ 32.1-163 to 248.2]**						
Groundwater	SMCLs are guidelines pertaining to aesthetic qualities of drinking water (i.e., color, odor, and taste).	Potential drinking water source.	*Waterworks Regulations*, 12 VAC 5-590-10 to 1280	2,3,4	TBC	SMCLs are non-enforceable guidelines. The aquifer is not currently, nor reasonably anticipated in the future to be used as a potable water supply. The remedial action is being implemented with a target goal of achieving MCLs.

Notes:
2 - ERD
3 - ISCO & ERD
4 - AS/SVE

TABLE C-3
Federal Location-Specific ARARs and TBCs
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Location	Requirement	Prerequisite	Citation	Alternative	ARAR Determination	Comment
Endangered Species Act						
Critical habitat of/or presence of an endangered or threatened species	Identify activities that may affect listed species. Actions must not threaten the continued existence of a listed species. Actions must not destroy critical habitat.	Presence of species or habitat listed as endangered or threatened.	*Endangered Species Act*, 16 USC 1531 et. seq.; 50 CFR 200; 50 CFR 402; *Fish and Wildlife Coordination Act* (16 USC 661 et seq.); 33 CFR 320 to 330	2,3,4	TBC	The Navy intends to follow the installation (JEBLC) Integrated Natural Resources Management Plan (INRMP) with respect to any state listed threatened and endangered species.
Migratory Bird Treaty Act						
Migratory bird area	Protects almost all species of native birds in the United States from unregulated taking.	Presence of migratory birds.	*Migratory Bird Treaty Act*, 16 USC 703	2,3,4	Applicable	JEBLC is located in the Atlantic Migratory Flyway.
Coastal Zone Management Act						
Coastal zone or area that will affect the coastal zone	Federal activities must be consistent with, to the area that will affect maximum extent practicable, State coastal zone management programs. Federal agencies must supply the State with a consistency determination.	Wetland, flood plain, estuary, beach, dune, barrier island, coral reef, and fish and wildlife and their habitat, within the coastal zone.	15 CFR 930.33(a)(1), (a)(2), (b); .35(a), (b); .36(a)	2,3,4	Applicable	JEBLC is located within the coastal zone.

Notes:

2 - ERD

3 - ISCO & ERD

4 - AS/SVE

TABLE C-4
Virginia Location-Specific ARARs and TBCs
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Location	Requirement	Prerequisite	Citation	Alternative	ARAR Determination	Comment
No Virginia Location-Specific ARARs apply						

Notes:
2 - ERD
3 - ISCO & ERD
4 - AS/SVE

TABLE C-5
Federal Action-Specific ARARs and TBCs
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Action	Requirement	Prerequisite	Citation	Alternative	ARAR Determination	Comment
Safe Drinking Water Act						
Underground injection	Regulates the subsurface emplacement of fluids through the Underground Injection Control program, which governs the design and operation of five classes of injection wells in order to prevent contamination of underground sources of drinking water. The Underground Injection Control program regulates well construction, well operation, and monitoring.	Any dug hole or well that is deeper than its largest surface dimension, where the principal function of the hole is in subsurface emplacement of fluids.	40 CFR 144.1(g)(1)(ii), 144.6, 144.12(a) and (c), 144.24(a), 144.82, 144.83, 146.8, 146.10(c)	2, 3, 4	Applicable	These remedial actions will include subsurface injections of fluids using Class V injection wells. Fluids include any material or substance which flows or moves whether in a semisolid, liquid, sludge, gas, or any other form or state. Permits are not applicable to onsite CERCLA injection wells; however, this remedial action will comply with the substantive requirements of the regulation.

Notes:
2 - ERD
3 - ISCO & ERD
4 - AS/SVE

TABLE C-6
Virginia Action-Specific ARARs and TBCs
Site 11a Feasibility Study Report
Joint Expeditionary Base Little Creek
Virginia Beach, Virginia

Action	Requirement	Prerequisite	Citation	Alternative	ARAR Determination	Comment
Virginia Waste Management Act						
Staging of solid waste onsite in containers	Establishes criteria for the proper management of solid wastes.	Management of solid wastes onsite in containers.	9 VAC 20-81-40(B) and 45(B) only as it incorporates 40 CFR 257.3	2,3,4	Applicable	The on-site actions will be conducted in accordance with those substantive provisions of the chapter that are applicable, or relevant and appropriate to implementation of the remedy identified in the ROD, including those provisions identified herein. These remedial actions will generate wastes which will be characterized for offsite disposal. Based on site history, all wastes are expected to be characterized as non-hazardous.
State Board of Health **[VA Code Ann. §§ 32.1-12 and 21.1-176 (1992)]**						
Monitoring Well Installation and Abandonment	Establishes requirements for the installation and abandonment of observation and monitoring wells, governed jointly by the State Board of Health and Department of Environmental Quality.	Observation and monitoring wells must be properly installed and abandoned in accordance with Virginia regulations to prevent contamination from reaching groundwater resources via the well.	12 VAC 5-630-420(B),(C), 440, and 450(C)(1),(2),(4),(5), and (7) to (9)	2,3,4	Applicable	Monitoring wells will be installed and abandoned in accordance with the Virginia regulations.
Air Pollution Control Board **[VA Code Ann. §§ 10.1-1300 to 1326 (1998)]**						
Generation of fugitive dust	Regulations regarding reasonable precautions to prevent particulate matter from becoming airborne.	Conducting any activity which may cause particulate matter to become airborne.	*Standard for Fugitive Dust Emissions* , 9 VAC 5-50-90	2,3,4	Applicable	Dust control measures will be implemented during activities at the site.
State Water Control Law **[VA Code Ann. §§ 62.1-44.2 to 62.1-44.34:28 (2003)]**						
Staging of chemicals onsite where stormwater conveyances are present.	Discharge of pollutants to state waters is prohibitied.	Activities such as dredging, filling, or discharging any pollutant into or adjacent to surface waters, or otherwise altering the physical, chemical or biological properties of surface waters, excavating in wetlands, or conducting the following activities in a wetland: 1. New activities to cause draining that significantly alters or degrades existing wetland acreage or functions. 2. Filling or dumping. 3. Permanent flooding or impounding. 4. New activities that cause significant alteration or degradation of existing wetland acreage or functions.	9 VAC 25-210-50(A)	2,3	Applicable	Stormwater inlets are present at the site which drain directly to surface water bodies. These inlets will be protected to prevent accidential discharges of treatment chemicals to surface water.

3 - ISCO & ERD
4 - AS/SVE

Acronyms and Abbreviations

ARAR	Applicable or relevant and appropriate requirement
AS/SVE	Air sparge/soil vapor extraction
BTAG	Biological Technical Assistance Group
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
ERD	Enhanced reductive dechlorination
ISCO	In-situ chemical oxidation
MCL	Maximum Contaminant Level
NAAQS	National Ambient Air Quality Standards
PCB	Polychlorinated biphenyls
ppm	Parts per Million
RCRA	Resource Conservation and Recovery Act
SDWA	Safe Drinking Water Act
TBC	To Be considered
TCLP	Toxicity Characteristic Leaching Procedure
TSCA	Toxic Substance Control Act
USACE	US Army Corps of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
VA	Virginia
VAC	Virginia Administrative Code
VMRC	Virginia Marine Resource Commission
VPDES	Virginia Pollutant Discharge Elimination System

References

Commonwealth of Virginia, 2004. Preliminary Identification, Applicable or Relevant and Appropriate Requirements.

USEPA, 1998. *CERCLA Compliance with Other Laws Manual: Interim Final* . Office of Emergency and Remedial Response. EPA/540/G-89/006.

USEPA, 1998. *CERCLA Compliance with Other Laws Manual: Part II. Clean Air Act and Other Environmental Statutes.* Office of Emergency and Remedial Response.

USEPA, 1998. RCRA, Superfund & EPCRA Hotline Training Manual. Introduction to Applicable or Relevant and Appropriate Requirements. EPA540-R-98-020.

Appendix D
Cost Estimates

COMPARISON OF TOTAL COST OF DIFFERENT OPTIONS

Site:	Site 11a - JEB Little Creek	Base Year:	2010
Location:	Virginia Beach, Virginia	Date:	3/24/2010
Phase:	Feasibility Study - Remediation Cost Estimates		

Option/Component :	All Alternatives	Alternative 2	Alternative 3	Alternative 4
	LUCs	ERD	ISCO and ERD	AS/SVE
Capital Cost	$10,400	$401,199	$582,392	$665,884
Total Annual O&M Cost Year 1	$1,541	$269,523	$279,659	$380,951
Total Annual O&M Cost Year 2	$1,474	$131,219	$543,039	$370,936
Total Annual O&M Cost Year (3)	$1,411	$564,897	$405,519	$361,184
Total Annual O&M Cost Year (4-5)	$2,642	$245,549	$247,329	$474,039
Total Annual O&M Cost Year (6-9)	$4,635	$453,535	$442,684	$458,072
Total Annual O&M Cost Year (10-30)	$14,522	$917,094	$895,153	$926,268
Total Present Value of Alternative (30 yrs)	$36,625	$2,983,014	$3,395,775	$3,637,332

Option: All Alternatives
Name: LUCs
Scope: Feasibility Study - Remediation Cost Estimates

Site: Site 11a - JEB Little Creek
Location: Virginia Beach, Virginia
Date: 3/24/2010

Conceptual Design: Access and use restrictions via land use controls

CAPITAL COSTS

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Deed Restriction					
Deed Restriction Filing Fees	1	LS	$500.00	$500	Engineer's Estimate
Deed Restriction Filing Labor hours	70	hr	$110.00	$7,700	Engineer's Estimate
SUBTOTAL				**$8,200**	
Contingency	15%	of	$8,200	$1,230	Engineer's Estimate
SUBTOTAL				**$9,430**	
Project Management	10%	of	$9,430	$943	Engineer's Estimate
TOTAL CAPITAL COST				**$10,400**	

OPERATIONS AND MAINTENANCE COST

DESCRIPTION	YEAR	QTY	UNIT	COST	TOTAL	NOTES
Inspections include a survey of the site to ensure that there are no violations of the LUCs and that the remedial system (monitoring wells, etc.) remain in good condition						
Inspections						
Annual Inspections		1	EA	$1,400	$1,400	Engineer's Estimate
SUBTOTAL					**$1,400**	
Contingency		15%	of	$1,400	$210	Engineer's Estimate
TOTAL ANNUAL O&M COST					**$1,610**	

Option: All Alternatives
Name: LUCs
Scope: Feasibility Study - Remediation Cost Estimates

PRESENT VALUE ANALYSIS (30-year) Discount Rate = 4.5%

End Year	COST TYPE	TOTAL COST	TOTAL COST/YEAR	DISCOUNT FACTOR	PRESENT VALUE
0	CAPITAL COST	$10,400	$10,400	1.000	$10,400
1	ANNUAL COST - O&M	$1,610	$1,610	0.957	$1,541
2	ANNUAL COST - O&M	$1,610	$1,610	0.916	$1,474
3	ANNUAL COST - O&M	$1,610	$1,610	0.876	$1,411
4	ANNUAL COST - O&M	$1,610	$1,610	0.839	$1,350
5	ANNUAL COST - O&M	$1,610	$1,610	0.802	$1,292
6	ANNUAL COST - O&M	$1,610	$1,610	0.768	$1,236
7	ANNUAL COST - O&M	$1,610	$1,610	0.735	$1,183
8	ANNUAL COST - O&M	$1,610	$1,610	0.703	$1,132
9	ANNUAL COST - O&M	$1,610	$1,610	0.673	$1,083
10	ANNUAL COST - O&M	$1,610	$1,610	0.644	$1,037
11	ANNUAL COST - O&M	$1,610	$1,610	0.616	$992
12	ANNUAL COST - O&M	$1,610	$1,610	0.590	$949
13	ANNUAL COST - O&M	$1,610	$1,610	0.564	$908
14	ANNUAL COST - O&M	$1,610	$1,610	0.540	$869
15	ANNUAL COST - O&M	$1,610	$1,610	0.517	$832
16	ANNUAL COST - O&M	$1,610	$1,610	0.494	$796
17	ANNUAL COST - O&M	$1,610	$1,610	0.473	$762
18	ANNUAL COST - O&M	$1,610	$1,610	0.453	$729
19	ANNUAL COST - O&M	$1,610	$1,610	0.433	$698
20	ANNUAL COST - O&M	$1,610	$1,610	0.415	$668
21	ANNUAL COST - O&M	$1,610	$1,610	0.397	$639
22	ANNUAL COST - O&M	$1,610	$1,610	0.380	$611
23	ANNUAL COST - O&M	$1,610	$1,610	0.363	$585
24	ANNUAL COST - O&M	$1,610	$1,610	0.348	$560
25	ANNUAL COST - O&M	$1,610	$1,610	0.333	$536
26	ANNUAL COST - O&M	$1,610	$1,610	0.318	$513
27	ANNUAL COST - O&M	$1,610	$1,610	0.305	$491
28	ANNUAL COST - O&M	$1,610	$1,610	0.292	$469
29	ANNUAL COST - O&M	$1,610	$1,610	0.279	$449
30	ANNUAL COST - O&M	$1,610	$1,610	0.267	$430

TOTAL PRESENT VALUE OF ALTERNATIVE **$36,625**

Option: Alternative 2
Name: ERD
Scope: Feasibility Study - Remediation Cost Estimates

Site: Site 11a - JEB Little Creek
Location: Virginia Beach, Virginia
Date: 3/24/2010

CAPITAL COSTS

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Work Planning						
	Work Planning, and QA/QC plans	1	LS	$30,000	$30,000	Assumption: One work plan/sampling and analysis plan/QAPP will be developed.
	Permits and H&S Requirements	1	LS	$10,000	$10,000	Assumption: This will also include acquiring the necessary permits for injections, and developing the health and safety plan.
	SUBTOTAL				**$40,000**	
Installation of New Monitoring Wells	Mobilize Equipment	1	LS	$950	$950	2009 Navy CLEAN BOA Rate
	Well components	2	per well	$2,000	$4,000	Recent similar project
	Vaults, bollards, etc.	2	per well	$450	$900	2009 Navy CLEAN BOA Rate
	Well development	2	per well	$325	$650	Recent similar project
	Disposal of generated wastes	4	LS	$2,000	$8,000	CLEAN P2 Rate
	Surveying	1	LS	$1,500	$1,500	Recent similar project
	SUBTOTAL				**$16,000**	
Baseline Sampling						Assume 15 monitoring wells and 6 QA/QC samples
	Fieldwork (2 persons)	80	HRS	$110	$8,800	Unit cost estimated assuming 2 people for an 8 hour work day
	Equipment	1	LS	$1,000	$1,000	2009 Navy CLEAN BOA Rate; Analyses include VOCs, nitrate, sulfate, ferrous iron, sulfate,
	Analytical	21	Per Well	$537	$11,277	methane , ethene, ethane (MEE), total organic carbon, chloride, total dissolved solids.
	Per Diem (2 Person Crew)	5	DY	$145	$725	DOD Per Diem Rates
	Data Analysis	42	HRS	$120	$5,040	
	SUBTOTAL				**$26,842**	
ERD Injection						
	Mobilization/Demobilization	1	LS	$9,400	$9,400	Vendor estimate, similar project
	Planning by Subcontractor	1	LS	$21,400	$21,400	Vendor estimate, similar project
	Equipment	1	LS	$9,000	$9,000	Vendor estimate, similar project
	Substrate for Source Area	1	LS	$23,535	$23,535	Vendor estimate, ERD Substrate Worksheet
	Substrate for Downgradient Barrier Lines	1	LS	$16,335	$16,335	Vendor estimate, ERD Substrate Worksheet
	DPT well point installation and injection	50	Per Well	$1,240	$62,000	Vendor estimate, similar project
	Labor (2 people)	130	HRS	$110	$14,300	Engineer estimate, ERD Substrate Worksheet
	Report	1	LS	$25,000	$25,000	Engineer's Estimate
	Site Clean-Up and Restoration	1	LS	$2,500	$2,500	Recent similar project
	SUBTOTAL				**$183,470**	
	CAPITAL COST SUBTOTAL				**$266,312**	
	Contingency	15%	of	$266,312	$39,947	Engineer's Estimate
	SUBTOTAL				**$306,259**	
	Project Management	10%	of	$306,259	$30,626	Engineer's Estimate
	Remedial Design	6%	of	$306,259	$18,376	Engineer's Estimate
	Construction Management	15%	of	$306,259	$45,939	Engineer's Estimate
	TOTAL CAPITAL COST				**$401,199**	

Option: Alternative 2
Name: ERD
Scope: Feasibility Study - Remediation Cost Estimates

Site: Site 11a - JEB Little Creek
Location: Virginia Beach, Virginia
Date: 3/24/2010

OPERATIONS AND MAINTENANCE COST

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Periodic Monitoring	Fieldwork (2 persons)	80	HRS	$110	$8,800	Assume 15 monitoring wells and 6 QA/QC samples. Unit cost estimated assuming 2 people for an 8 hour work day
Years 1 through 30	Equipment	1	LS	$1,000	$1,000	
(Per Event)	Analytical	21	Per Well	$537	$11,277	2009 Navy CLEAN BOA Rate; Analyses include VOCs, nitrate, sulfate, ferrous iron, sulfate, methane , ethene, ethane (MEE), total organic carbon, chloride, total dissolved solids.
	Per Diem (2 Person Crew)	5	DY	$145	$725	DOD Per Diem Rates
	Data Analysis	42	HRS	$120	$5,040	
	Report	1	LS	$25,000	$25,000	
	SUBTOTAL				**$51,842**	
	Contingency	15%	of	$51,842	$7,776	
	SUBTOTAL				**$59,618**	
	Project Management	10%	of	$59,618	$5,962	
	Remedial Design	6%	of	$59,618	$3,577	
	O&M Cost Per Event				**$69,200**	
ERD Injection	Cost per Injection Event					
(Per Event)	Substrate + Injection	**1**	LS	$183,470	$183,470	See above for source of cost information
	SUBTOTAL				**$183,470**	
	Contingency	15%	of	$183,470	$27,521	
	SUBTOTAL				**$210,991**	
	Project Management	10%	of	$210,991	$21,099	
	Remedial Design	6%	of	$210,991	$12,659	
	Construction Management	10%	of	$210,991	$21,099	
	SUBTOTAL				**$265,848**	
	O&M Cost Per Event				**$335,100**	

Option: Alternative 2
Name: ERD
Scope: Feasibility Study - Remediation Cost Estimates

Site: Site 11a - JEB Little Creek
Location: Virginia Beach, Virginia
Date: 3/24/2010

PRESENT VALUE ANALYSIS (30-year) Discount Rate = 2.7%

End Year	COST TYPE	TOTAL COST	TOTAL COST/YEAR	DISCOUNT FACTOR	PRESENT VALUE	
1	CAPITAL COST	$401,199	$401,199	1.000	$401,199	Includes the cost for initial ERD injection
1	ANNUAL COST - O&M	$276,800	$276,800	0.974	$269,523	Includes the cost for quarterly monitoring
2	ANNUAL COST - O&M	$138,400	$138,400	0.948	$131,219	Includes the cost for semiannual monitoring
3	ANNUAL COST - O&M	$611,900	$611,900	0.923	$564,897	Includes cost for reinjection and quarterly monitoring
4	ANNUAL COST - O&M	$138,400	$138,400	0.899	$124,410	Includes the cost for semiannual monitoring
5	ANNUAL COST - O&M	$138,400	$138,400	0.875	$121,139	Includes the cost for semiannual monitoring
6	ANNUAL COST - O&M	$138,400	$138,400	0.852	$117,954	Includes the cost for semiannual monitoring
7	ANNUAL COST - O&M	$138,400	$138,400	0.830	$114,853	Includes the cost for semiannual monitoring
8	ANNUAL COST - O&M	$138,400	$138,400	0.808	$111,834	Includes the cost for semiannual monitoring
9	ANNUAL COST - O&M	$138,400	$138,400	0.787	$108,894	Includes the cost for semiannual monitoring
10	ANNUAL COST - O&M	$138,400	$138,400	0.766	$106,031	Includes the cost for semiannual monitoring
11	ANNUAL COST - O&M	$69,200	$69,200	0.746	$51,622	Includes the cost for annual monitoring
12	ANNUAL COST - O&M	$69,200	$69,200	0.726	$50,264	Includes the cost for annual monitoring
13	ANNUAL COST - O&M	$69,200	$69,200	0.707	$48,943	Includes the cost for annual monitoring
14	ANNUAL COST - O&M	$69,200	$69,200	0.689	$47,656	Includes the cost for annual monitoring
15	ANNUAL COST - O&M	$69,200	$69,200	0.671	$46,403	Includes the cost for annual monitoring
16	ANNUAL COST - O&M	$69,200	$69,200	0.653	$45,183	Includes the cost for annual monitoring
17	ANNUAL COST - O&M	$69,200	$69,200	0.636	$43,996	Includes the cost for annual monitoring
18	ANNUAL COST - O&M	$69,200	$69,200	0.619	$42,839	Includes the cost for annual monitoring
19	ANNUAL COST - O&M	$69,200	$69,200	0.603	$41,713	Includes the cost for annual monitoring
20	ANNUAL COST - O&M	$69,200	$69,200	0.587	$40,616	Includes the cost for annual monitoring
21	ANNUAL COST - O&M	$69,200	$69,200	0.572	$39,548	Includes the cost for annual monitoring
22	ANNUAL COST - O&M	$69,200	$69,200	0.556	$38,508	Includes the cost for annual monitoring
23	ANNUAL COST - O&M	$69,200	$69,200	0.542	$37,496	Includes the cost for annual monitoring
24	ANNUAL COST - O&M	$69,200	$69,200	0.528	$36,510	Includes the cost for annual monitoring
25	ANNUAL COST - O&M	$69,200	$69,200	0.514	$35,550	Includes the cost for annual monitoring
26	ANNUAL COST - O&M	$69,200	$69,200	0.500	$34,616	Includes the cost for annual monitoring
27	ANNUAL COST - O&M	$69,200	$69,200	0.487	$33,706	Includes the cost for annual monitoring
28	ANNUAL COST - O&M	$69,200	$69,200	0.474	$32,820	Includes the cost for annual monitoring
29	ANNUAL COST - O&M	$69,200	$69,200	0.462	$31,957	Includes the cost for annual monitoring
30	ANNUAL COST - O&M	$69,200	$69,200	0.450	$31,117	Includes the cost for annual monitoring

TOTAL PRESENT VALUE OF ALTERNATIVE **$2,983,014**

Option: Alternative 3
Name: ISCO and ERD
Scope: Feasibility Study - Remediation Cost Estimates

Site: Site 11a - JEB Little Creek
Location: Virginia Beach, Virginia
Date: 3/24/2010

CAPITAL COSTS

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Work Planning						
	Work Planning, and QA/QC plans	1	LS	$30,000	$30,000	Assumption: One work plan/sampling and analysis plan/QAPP will be developed.
	Permits and H&S Requirements	1	LS	$10,000	$10,000	Assumption: This will also include acquiring the necessary permits for injections, and developing the health and safety plan.
	SUBTOTAL				**$40,000**	
Installation of New Monitoring Wells						
	Mobilize Equipment	1	LS	$950	$950	2009 Navy CLEAN BOA Rate
	Well components	2	per well	$2,000	$4,000	Recent similar project
	Vaults, bollards, etc.	2	per well	$450	$900	2009 Navy CLEAN BOA Rate
	Well development	2	per well	$325	$650	Recent similar project
	Disposal of generated wastes	4	LS	$2,000	$8,000	CLEAN P2 Rate
	Surveying	1	LS	$1,500	$1,500	Recent similar project
	SUBTOTAL				**$16,000**	
Baseline Sampling						Assume 15 monitoring wells and 6 QA/QC samples. Unit cost estimated assuming 2 people for an 8 hour work day
	Fieldwork (2 persons)	80	HRS	$110	$8,800	Baseline sampling will be conducted and will include collection of groundwater
	Equipment	1	LS	$1,000	$1,000	samples for analysis of VOCs, nitrate, sulfate, ferrous iron, sulfate, methane , ethene,
	Analytical	21	Per Well	$620	$13,020	ethane (MEE), total organic carbon, chloride, total dissolved solids, COD, and total
	Per Diem (2 Person Crew)	5	DY	$145	$725	metals (chromium, lead, arsenic, manganese, cadmium). Costs of sampling are
	Data Analysis	42	HRS	$120	$5,040	based on CLEAN P2 and Navy CLEAN BOA rates assuming an 8 hour work day.
	SUBTOTAL				**$28,585**	
Oxidant Injections for Source Area						Costing done assuming permanganate injection solution, estimate provided by vendor.
	Mobilization/demobilization	1	LS	$7,600	$7,600	Vendor estimate, similar project
	Planning by Subcontractor	1	LS	$17,000	$17,000	Vendor estimate, similar project
	DPT well point installation and injection	34	Per Well	$1,274	$43,316	Recent similar project
	Injection Crew Per Diem	14	DY	$500	$7,000	Recent similar project
	Material and Supplies Cost (other than oxidants)	1	LS	$10,000	$10,000	Based on cost estimate provided by vendors
	Cost of Oxidants	1	LS	$96,750	$96,750	Based on cost estimate provided by vendors
	Labor Cost	140	hr	$110	$15,400	Unit cost estimated assuming 2 people for an 10 hour work day
	SUBTOTAL				**$197,066**	
ERD Injections for Downgradient						
	Mobilization/Demobilization	1	LS	$9,400	$9,400	Vendor estimate, similar project
	Planning by Subcontractor	1	LS	$21,400	$21,400	Based on cost estimate provided by vendors
	Substrate for Downgradient Barrier Lines	1	LS	$16,335	$16,335	Vendor estimate, ERD Substrate Worksheet
	DPT well point installation and injection	20	Per Well	$1,240	$24,800	Vendor estimate, similar project
	Labor (2 people)	50	HRS	$110	$5,500	Unit cost estimated assuming 2 people for an 10 hour work day
	Report	1	LS	$25,000	$25,000	Engineer's Estimate
	Site Clean-Up and Restoration	1	LS	$2,500	$2,500	Recent similar project
	SUBTOTAL				**$104,935**	
	CAPITAL COST SUBTOTAL				**$386,586**	
	Contingency	15%	of	$386,586	$57,988	Engineer's Estimate
	SUBTOTAL				**$444,574**	
	Project Management	10%	of	$444,574	$44,457	Engineer's Estimate
	Remedial Design	6%	of	$444,574	$26,674	Engineer's Estimate
	Construction Management	15%	of	$444,574	$66,686	Engineer's Estimate
	TOTAL CAPITAL COST				**$582,392**	

Option: Alternative 3
Name: ISCO and ERD
Scope: Feasibility Study - Remediation Cost Estimates

Site: Site 11a - JEB Little Creek
Location: Virginia Beach, Virginia
Date: 3/24/2010

OPERATIONS AND MAINTENANCE COST

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Periodic Monitoring	Fieldwork (2 persons)	80	HRS	$110	$8,800	Assume 15 monitoring wells and 6 QA/QC samples. Unit cost estimated assuming 2 people for an 8 hour work day
Years 1 through 4	Equipment	1	LS	$1,000	$1,000	
(Per Event)	Analytical	21	Per Well	$620	$13,020	Analyses include VOCs, nitrate, sulfate, ferrous iron, sulfate, methane , ethene, ethane (MEE), total organic carbon, chloride, total dissolved solids, COD, and total metals (chromium, lead, arsenic, manganese, cadmium). Costs of sampling are based on CLEAN P2 and Navy CLEAN BOA rates.
	Per Diem (2 Person Crew)	5	DY	$145	$725	
	Data Analysis	44	HRS	$120	$5,280	
	Report	1	LS	$25,000	$25,000	
	SUBTOTAL				**$53,825**	
	Contingency	15%	of	$53,825	$8,074	
	SUBTOTAL				**$61,899**	
	Project Management	10%	of	$61,899	$6,190	
	Remedial Design	6%	of	$61,899	$3,714	
	Annual O&M Cost Per Event				**$71,803**	
Additional Oxidant	Cost per Injection Event					
Injections	Substrate + Injection	1	LS	$197,066	$197,066	See above for source of cost information
(Per Event)	**SUBTOTAL**				**$197,066**	
	Contingency	15%	of	$197,066	$29,560	
	SUBTOTAL				**$226,626**	
	Project Management	10%	of	$226,626	$22,663	
	Remedial Design	6%	of	$226,626	$13,598	
	Construction Management	10%	of	$226,626	$22,663	
	Annual O&M Per Event				**$285,549**	
Additional ERD	Cost per Injection Event					
Injections	Substrate + Injection	1	LS	$104,935	$104,935	See above for source of cost information
(Per Event)	**SUBTOTAL**				**$104,935**	
	Contingency	15%	of	$104,935	$15,740	
	SUBTOTAL				**$120,675**	
	Project Management	10%	of	$120,675	$12,068	
	Remedial Design	6%	of	$120,675	$7,241	
	Construction Management	10%	of	$120,675	$12,068	
	Annual O&M Per Event				**$152,051**	
Periodic Monitoring	Fieldwork (2 persons)	80	HRS	$110	$8,800	Assume 15 monitoring wells and 6 QA/QC samples. Unit cost estimated assuming 2 people for an 8 hour work day
Years 5 through 30	Equipment	1	LS	$1,000	$1,000	Costs of sampling are based on CLEAN P2 and Navy CLEAN BOA rates.
(Per Event)	Analytical	21	Per Well	$468	$9,828	Analyses include collection of groundwater samples for analysis of VOCs, nitrate, sulfate, ferrous iron, sulfate, methane , ethene, ethane (MEE), total organic carbon, chloride
	Per Diem (2 Person Crew)	5	DY	$145	$725	
	Data Analysis	44	HRS	$120	$5,280	
	Report	1	LS	$25,000	$25,000	
	SUBTOTAL				**$50,633**	
	Contingency	15%	of	$50,633	$7,595	
	SUBTOTAL				**$58,228**	
	Project Management	10%	of	$58,228	$5,823	
	Remedial Design	6%	of	$58,228	$3,494	
	Annual O&M Cost Yrs 6 through 30				**$67,544**	

Option: Alternative 3
Name: ISCO and ERD
Scope: Feasibility Study - Remediation Cost Estimates

Site: Site 11a - JEB Little Creek
Location: Virginia Beach, Virginia
Date: 3/24/2010

PRESENT VALUE ANALYSIS (10-year) Discount Rate = 2.7%

End Year	COST TYPE	TOTAL COST	TOTAL COST/YEAR	DISCOUNT FACTOR	PRESENT VALUE	
1	CAPITAL COST	$582,392	$582,392	1.000	$582,392	Includes the cost for initial ISCO and ERD injection
1	ANNUAL COST - O&M	$287,210	$287,210	0.974	$279,659	Includes the cost for quarterly monitoring
2	ANNUAL COST - O&M	$572,759	$572,759	0.948	$543,039	Includes the cost for ISCO reinjection and quarterly monitoring
3	ANNUAL COST - O&M	$439,261	$439,261	0.923	$405,519	Includes the cost for ERD reinjection and quarterly monitoring
4	ANNUAL COST - O&M	$143,605	$143,605	0.899	$129,089	Includes the cost for semiannual monitoring
5	ANNUAL COST - O&M	$135,089	$135,089	0.875	$118,241	Includes the cost for semiannual monitoring
6	ANNUAL COST - O&M	$135,089	$135,089	0.852	$115,132	Includes the cost for semiannual monitoring
7	ANNUAL COST - O&M	$135,089	$135,089	0.830	$112,105	Includes the cost for semiannual monitoring
8	ANNUAL COST - O&M	$135,089	$135,089	0.808	$109,158	Includes the cost for semiannual monitoring
9	ANNUAL COST - O&M	$135,089	$135,089	0.787	$106,288	Includes the cost for semiannual monitoring
10	ANNUAL COST - O&M	$135,089	$135,089	0.766	$103,494	Includes the cost for semiannual monitoring
11	ANNUAL COST - O&M	$67,544	$67,544	0.746	$50,387	Includes the cost for annual monitoring
12	ANNUAL COST - O&M	$67,544	$67,544	0.726	$49,062	Includes the cost for annual monitoring
13	ANNUAL COST - O&M	$67,544	$67,544	0.707	$47,772	Includes the cost for annual monitoring
14	ANNUAL COST - O&M	$67,544	$67,544	0.689	$46,516	Includes the cost for annual monitoring
15	ANNUAL COST - O&M	$67,544	$67,544	0.671	$45,293	Includes the cost for annual monitoring
16	ANNUAL COST - O&M	$67,544	$67,544	0.653	$44,102	Includes the cost for annual monitoring
17	ANNUAL COST - O&M	$67,544	$67,544	0.636	$42,943	Includes the cost for annual monitoring
18	ANNUAL COST - O&M	$67,544	$67,544	0.619	$41,814	Includes the cost for annual monitoring
19	ANNUAL COST - O&M	$67,544	$67,544	0.603	$40,715	Includes the cost for annual monitoring
20	ANNUAL COST - O&M	$67,544	$67,544	0.587	$39,644	Includes the cost for annual monitoring
21	ANNUAL COST - O&M	$67,544	$67,544	0.572	$38,602	Includes the cost for annual monitoring
22	ANNUAL COST - O&M	$67,544	$67,544	0.556	$37,587	Includes the cost for annual monitoring
23	ANNUAL COST - O&M	$67,544	$67,544	0.542	$36,599	Includes the cost for annual monitoring
24	ANNUAL COST - O&M	$67,544	$67,544	0.528	$35,637	Includes the cost for annual monitoring
25	ANNUAL COST - O&M	$67,544	$67,544	0.514	$34,700	Includes the cost for annual monitoring
26	ANNUAL COST - O&M	$67,544	$67,544	0.500	$33,788	Includes the cost for annual monitoring
27	ANNUAL COST - O&M	$67,544	$67,544	0.487	$32,899	Includes the cost for annual monitoring
28	ANNUAL COST - O&M	$67,544	$67,544	0.474	$32,034	Includes the cost for annual monitoring
29	ANNUAL COST - O&M	$67,544	$67,544	0.462	$31,192	Includes the cost for annual monitoring
30	ANNUAL COST - O&M	$67,544	$67,544	0.450	$30,372	Includes the cost for annual monitoring

TOTAL PRESENT VALUE OF ALTERNATIVE **$3,395,775**

Option: Alternative 4
Name: AS/SVE
Scope: Feasibility Study - Remediation Cost Estimates

Site: Site 11a - JEB Little Creek
Location: Virginia Beach, Virginia
Date: 3/24/2010

CAPITAL COSTS

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Work Planning						
	Work Planning, and QA/QC plans	1	LS	$40,000	$40,000	Assumption: One work plan/sampling and analysis plan/QAPP will be developed.
	Permits and H&S Requirements	1	LS	$10,000	$10,000	Assumption: This will also include acquiring the necessary permits for injections, and developing the health and safety plan.
	SUBTOTAL				**$50,000**	
Installation of New Monitoring Wells						
	Mobilize Equipment	1	LS	$950	$950	2009 Navy CLEAN BOA Rate
	Well components	2	per well	$2,000	$4,000	Recent similar project
	Vaults, bollards, etc.	2	per well	$450	$900	2009 Navy CLEAN BOA Rate
	Well development	2	per well	$325	$650	Recent similar project
	Disposal of generated wastes	4	LS	$2,000	$8,000	CLEAN P2 Rate
	Surveying	1	LS	$1,500	$1,500	Recent similar project
	SUBTOTAL				**$16,000**	
Baseline Sampling						Assume 15 monitoring wells and 6 QA/QC samples. Unit cost estimated assuming 2 people for an 8 hour work day
	Fieldwork (2 persons)	80	HRS	$110	$8,800	
	Equipment	1	LS	$1,000	$1,000	Baseline sampling will be conducted and will include collection of groundwater samples for analysis of VOCs. Costs of sampling are based on CLEAN P2 and Navy CLEAN BOA rates.
	Analytical	21	Per Well	$127	$2,667	
	Per Diem (2 Person Crew)	5	DY	$145	$725	
	Data Analysis	42	HRS	$120	$5,040	
	SUBTOTAL				**$18,232**	
AS and VMP and Conveyance Pipe Construction						
	Labor	280	HRS	$110	$30,800	Unit cost estimated assuming 2 people for an 10 hour work day
	Mobilization/demobilization	1	LS	$10,000	$10,000	CH2M HILL estimate
	AS wells (28 wells)	840	FT	$85	$71,400	30-feet deep
	VMP (7 wells)	175	FT	$85	$14,875	25-feet deep
	Installation of vault boxes/well completion	35	LS	$500	$17,500	CH2M HILL estimate
	Conveyance Pipes	1	LS	$105,000	$105,000	Similar project quote
	AS Equipment and Buildings	1	LS	$110,000	$110,000	Previous system fabrication quote (Bisco Environmental)
	Site restoration	1	LS	$4,000	$4,000	
	Reporting	1	LS	$25,000	$25,000	
	SUBTOTAL				**$357,775**	
	CAPITAL COST SUBTOTAL				**$442,007**	
	Contingency	15%	of	$442,007	$66,301	Engineer's Estimate
	SUBTOTAL				**$508,308**	
	Project Management	10%	of	$508,308	$50,831	Engineer's Estimate
	Remedial Design	6%	of	$508,308	$30,498	Engineer's Estimate
	Construction Management	15%	of	$508,308	$76,246	Engineer's Estimate
	TOTAL CAPITAL COST				**$665,884**	

Option: Alternative 4
Name: AS/SVE
Scope: Feasibility Study - Remediation Cost Estimates

Site: Site 11a - JEB Little Creek
Location: Virginia Beach, Virginia
Date: 3/24/2010

OPERATION AND MAINTENANCE COSTS

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Periodic Monitoring						
Years 1 through 4	Fieldwork (2 persons)	80	HRS	$110	$8,800	Assume 15 monitoring wells and 6 QA/QC samples. Unit cost estimated assuming 2 people for an 8 hour work day
(Per event)	Equipment	1	LS	$3,000	$3,000	Costs of sampling are based on CLEAN P2 and Navy CLEAN BOA rates.
	Analytical (Groundwater Monitoring)	21	Per Well	$127	$2,667	Sampling will be conducted and will include collection of groundwater samples for analysis of VOCs and vapor samples for VOCs.
	Analytical (Vapor Monitoring)	7	Per Well	$425	$2,975	
	Per Diem (2 Person Crew)	5	DY	$145	$725	
	Data Analysis	56	HRS	$120	$6,720	
	Reporting	1	LS	$25,000	$25,000	
	SUBTOTAL				**$49,887**	
	Contingency	15%	of	$49,887	$7,483	
	SUBTOTAL				**$57,370**	
	Project Management	10%	of	$57,370	$5,737	
	Remedial Design	6%	of	$57,370	$3,442	
	O&M Cost Per Event				**$66,549**	
AS/SVE O&M						
Year 1 through 4	Monthly O&M labor (OMI)	12	events	$4,000	$48,000	Engineer's Estimate
(Per Year)	Quarterly "heavy" maintenance	4	events	$2,500	$10,000	Engineer's Estimate
	O&M Supplies	4	events	$1,000	$4,000	Engineer's Estimate
	Utilities (electrical, telephone)	12	month	$1,750	$21,000	Engineer's Estimate
	SUBTOTAL				**$83,000**	
	Contingency	15%	of	$83,000	$12,450	
	SUBTOTAL				**$95,450**	
	Project Management	10%	of	$95,450	$9,545	
	Remedial Design	6%	of	$95,450	$5,727	
	Construction Management	15%	of	$95,450	$14,318	
	O&M Cost Per Year				**$125,040**	
Periodic Monitoring						
Year 5 through 30						
(Per event)	Fieldwork (2 persons)	80	HRS	$110	$8,800	Assume 15 monitoring wells and 6 QA/QC samples. Unit cost estimated assuming 2 people for an 8 hour work day
	Equipment	1	LS	$3,000	$3,000	Costs of sampling are based on CLEAN P2 and Navy CLEAN BOA rates.
	Analytical (Groundwater Monitoring)	21	Per Well	$468	$9,828	Analyses include collection of groundwater samples for analysis of VOCs, nitrate, sulfate, ferrous iron, sulfate, methane , ethene, ethane (MEE), total organic carbon, chloride
	Per Diem (2 Person Crew)	5	DY	$145	$725	
	Data Analysis	42	HRS	$120	$5,040	
	Reporting	1	LS	$25,000	$25,000	
	SUBTOTAL				**$52,393**	
	Contingency	15%	of	$52,393	$7,859	
	SUBTOTAL				**$60,252**	
	Project Management	10%	of	$60,252	$6,025	
	Remedial Design	6%	of	$60,252	$3,615	
	O&M Cost Per Event				**$69,892**	

Option: Alternative 4
Name: AS/SVE
Scope: Feasibility Study - Remediation Cost Estimates

Site: Site 11a - JEB Little Creek
Location: Virginia Beach, Virginia
Date: 3/24/2010

PRESENT VALUE ANALYSIS (10-year) Discount Rate = 2.7%

End Year	COST TYPE	TOTAL COST	TOTAL COST/YEAR	DISCOUNT FACTOR	PRESENT VALUE	
1	CAPITAL COST	$665,884	$665,884	1.000	$665,884	Includes the cost for system construction and startup
1	ANNUAL COST - O&M	$391,237	$391,237	0.974	$380,951	Includes the cost for system O&M and quarterly monitoring
2	ANNUAL COST - O&M	$391,237	$391,237	0.948	$370,936	Includes the cost for system O&M and quarterly monitoring
3	ANNUAL COST - O&M	$391,237	$391,237	0.923	$361,184	Includes the cost for system O&M and quarterly monitoring
4	ANNUAL COST - O&M	$391,237	$391,237	0.899	$351,688	Includes the cost for system O&M and quarterly monitoring
5	ANNUAL COST - O&M	$139,785	$139,785	0.875	$122,351	Includes the cost for semiannual monitoring
6	ANNUAL COST - O&M	$139,785	$139,785	0.852	$119,134	Includes the cost for semiannual monitoring
7	ANNUAL COST - O&M	$139,785	$139,785	0.830	$116,002	Includes the cost for semiannual monitoring
8	ANNUAL COST - O&M	$139,785	$139,785	0.808	$112,952	Includes the cost for semiannual monitoring
9	ANNUAL COST - O&M	$139,785	$139,785	0.787	$109,983	Includes the cost for semiannual monitoring
10	ANNUAL COST - O&M	$139,785	$139,785	0.766	$107,091	Includes the cost for semiannual monitoring
11	ANNUAL COST - O&M	$69,892	$69,892	0.746	$52,138	Includes the cost for annual monitoring
12	ANNUAL COST - O&M	$69,892	$69,892	0.726	$50,767	Includes the cost for annual monitoring
13	ANNUAL COST - O&M	$69,892	$69,892	0.707	$49,433	Includes the cost for annual monitoring
14	ANNUAL COST - O&M	$69,892	$69,892	0.689	$48,133	Includes the cost for annual monitoring
15	ANNUAL COST - O&M	$69,892	$69,892	0.671	$46,868	Includes the cost for annual monitoring
16	ANNUAL COST - O&M	$69,892	$69,892	0.653	$45,635	Includes the cost for annual monitoring
17	ANNUAL COST - O&M	$69,892	$69,892	0.636	$44,436	Includes the cost for annual monitoring
18	ANNUAL COST - O&M	$69,892	$69,892	0.619	$43,267	Includes the cost for annual monitoring
19	ANNUAL COST - O&M	$69,892	$69,892	0.603	$42,130	Includes the cost for annual monitoring
20	ANNUAL COST - O&M	$69,892	$69,892	0.587	$41,022	Includes the cost for annual monitoring
21	ANNUAL COST - O&M	$69,892	$69,892	0.572	$39,944	Includes the cost for annual monitoring
22	ANNUAL COST - O&M	$69,892	$69,892	0.556	$38,894	Includes the cost for annual monitoring
23	ANNUAL COST - O&M	$69,892	$69,892	0.542	$37,871	Includes the cost for annual monitoring
24	ANNUAL COST - O&M	$69,892	$69,892	0.528	$36,876	Includes the cost for annual monitoring
25	ANNUAL COST - O&M	$69,892	$69,892	0.514	$35,906	Includes the cost for annual monitoring
26	ANNUAL COST - O&M	$69,892	$69,892	0.500	$34,962	Includes the cost for annual monitoring
27	ANNUAL COST - O&M	$69,892	$69,892	0.487	$34,043	Includes the cost for annual monitoring
28	ANNUAL COST - O&M	$69,892	$69,892	0.474	$33,148	Includes the cost for annual monitoring
29	ANNUAL COST - O&M	$69,892	$69,892	0.462	$32,276	Includes the cost for annual monitoring
30	ANNUAL COST - O&M	$69,892	$69,892	0.450	$31,428	Includes the cost for annual monitoring

TOTAL PRESENT VALUE OF ALTERNATIVE $3,637,332

Element: **AquabupH™ Injection Duration and Quantity Requirements**

Site: Site 11a - JEB Little Creek
Location: Virginia Beach, Virginia - Groundwater
Phase: FS
Base Year: 2010

WORK STATEMENT

Determination of the amount of emulsified vegetable oil to be purchased and the amount of time required to inject the bio amendment. Quantities and time are based on a single injection event.

Source Area

Injection Time Requirements:				
Estimated Injection Rate:		3	GPM	
Number of concurrent injection points:		4		
Estimated Total Injection Volume:		37,800	GAL	Assume 1260 gallons/point based on estimated injection rate and hours of injection/day
EOS Vol:		960	GAL	32 gallons of EVO/point
Hours of Injection per Day:		7	HR	
Time to Complete Injection:		8	DAY	
Price of AquabupH+B12:	$	1,200.00	per DRUM	EOS Remediation, LLC quote (July 2009)
Amount AquabupH to be purchased:		18	DRUM	
AquabupH shipping:	$	1,935	LS	EOS Remediation, LLC quote (July 2009)
AqubupH cost:	**$**	**23,535**		

Downgradient Barriers

Injection Time Requirements:				
Estimated Injection Rate:		3	GPM	
Number of concurrent injection points:		4		
Estimated Total Injection Volume:		25,200	GAL	Assume 1260 gallons/point based on estimated injection rate and hours of injection/day
EOS Vol:		640	GAL	32 gallons of EVO/point
Hours of Injection per Day:		7	HR	
Time to Complete Injection:		5	DAY	
Price of AquabupH+B12:	$	1,200.00	per DRUM	EOS Remediation, LLC quote (July 2009)
Amount EOS to be purchased:		12	DRUM	
EOS shipping:	$	1,935	LS	EOS Remediation, LLC quote (July 2009)
EOS cost:	**$**	**16,335**		