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Simulating and explaining passive air sampling rates and analyte air concentrations for semi-volatile compounds on polyurethane foam disks

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SIMULATING AND EXPLAINING PASSIVE AIR SAMPLING RATES AND ANALYTE AIR CONCENTRATIONS FOR SEMI-VOLATILE COMPOUNDS ON POLYURETHANE FOAM DISKS

by

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CERTIFICATE OF APPROVAL

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MASTER'S THESIS

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This is to certify that the Master's thesis of

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To my family

Adhere to your purpose and you will soon feel as well as you ever did. On the contrary, if you falter, and give up, you will lose the power of keeping any resolution, and will regret it all your life.

Abraham Lincoln
Letter to Quintin Campbell

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CHAPTER 1 INTRODUCTION

Passive air samplers (PASs) collect atmospheric trace compounds under ambient conditions onto polyurethane foam (PUF), semi-permeable membranes, and polymer resin sampling media [1-8]. This versatile, low-cost technique proves useful for establishing spatial gradients in air toxics and emerging contaminants of concern, and in sampling semi-volatile organic compounds (SVOCs) for which real-time observations remain challenging and costly. Among the SVOCs, polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons are potential human carcinogens, toxic, bio-accumulative, and subject to long-range chemical transport [6]. Passive air sampling is also routinely used in atmospheric monitoring for mercury, ammonia, aerosols, and nitrogen dioxide [9, 10].

In passive air sampling, ambient air flows through the PAS chamber and the compound's mass accumulates onto the sampling media throughout the sampler's deployment period. The PAS process only directly measures accumulated mass from each sampling period. Without the controlled flow rates of active methods, concentrations must be calculated from estimated passive sampling rates. Traditionally, PAS has been described as the uptake of a chemical on to the sampling media (e.g. a PUF-PAS) as a function of sampling rate (R), the concentration gradient between the ambient air and the PUF disk, with the uptake onto the disk defined as [1, 2, 4, 7]:

Equation 1-1

$$\frac{dM_{PUF}}{dt} = k_v \cdot A_s \cdot (C_{Air} - \frac{C_{PUF}}{K_{PUF}})$$

Where M_{PUF} represents the mass of a gaseous or semi-volatile compound on the PUF (ng), k_v the empirical constant mass transfer coefficient (m/s), A_s the surface area of the PUF (m^2), C_{Air} the analyte concentration in the air (ng/m), C_{PUF} the compound's concentration on the PUF (ng/m), and K_{PUF} the PUF/air equilibrium partition coefficient (m^3/g). The product of k_v and A_s is, R, which is often determined experimentally from loss of depuration compounds or uptake of native compounds [2]. For estimation by loss of depuration compounds the PUF disk is spiked with a known amount of chemical prior to exposure and then the mass transfer coefficient is calculated based on its first order elimination rate during the entire deployment [2, 11]. Alternatively, the uptake of native compounds entails deploying a series of clean PUF disks in a setting with a known concentration and deriving a linear uptake curve to calculate R [2].

These two approaches in determining R lead to a range of issues and open questions on the process of passive sampling and observations gathered using this method. As with the analyzed mass from a PAS, these techniques result in only one R for the entire sampling period, with unquantified uncertainties and unknown variability. Beyond the unquantified errors in the analytical approach to calculating R, empirical R values are often used for different periods and different locations from those in which they were originally determined, leading to even greater uncertainties in analyte air concentrations.

Empirical and theoretical studies suggest that much of the uncertainty stems from the effects of meteorology on R, primarily with a focus on isolating how individual meteorological parameters such as wind speed [11], and ambient PAS chamber temperature differences [12] affect observed variability. Klanova et al. found that R for gas-phase compounds, including PCBs, features a strong linear correlation to wind speed and inverse correlation to temperature [13]. The angle at which the ambient air enters the passive sampling chamber also strongly affects flow within the PAS chamber, with positive angles of 15° and 30° increasing R by 30% and 50%, respectively and a negative

angle 10° leading to the largest reduction in R of 40% [14]. While studies to date have attempted to address these issues through computational fluid dynamic modeling [14, 15], and a theoretical model of the PAS uptake process has been developed [2], no comprehensive process model to date has directly simulated and quantified the comprehensive effects of atmospheric boundary layer dynamics on observed PAS flow rates.

In addition to uncertainty in R and its meteorological drivers, the temporal variability in mass transfer (equation 1) has yet to be quantified, and thus results in just a single experimentally determined C_{Air} that is calculated from R using this analytical approach, shown in Equation 1-2:

Equation 1-2

$$C_{Air} = \frac{M_{PCB}}{R * t}$$

In which M_{PCB} is the total accumulated mass on the PUF (ng) and t is the total deployment time (d). This approach assumes that C_{Air} is constant over the entire sampling period. However, daily observations in urban areas consistently invalidate this assumption. Hsu, et al. showed that variability in ambient air concentration for ΣPCBs in 22 samples taken in a 50-day period near Chicago (0.22 to 1.80 ng/m^3) was larger than the average concentration (1.0 ± 0.5 ng/m^3) [16]. High short-term variability in PCB analyte air concentration can be explained by correlation with meteorology; in that study, concentration was highly correlated with daily time series of temperature (r^2 = 0.46) and slightly correlated with wind speed (0.19) and wind direction (0.17). Not only is C_{Air} assumed constant over the PAS PUF deployment period, but the assumptions of negligible concentration uptake onto the PUF (C_{PUF}/K_{PUF}) at linear uptake rates

throughout the deployment period are necessary preconditions for this reduced-form expression of the fundamental PAS relationships.

In this study, a numerical model estimates hourly sampling rates (R), analyte air concentrations (C_{Air}), and PUF uptake (C_{PUF}) from first principle chemistry, physics, mass transfer, and computational fluid dynamics using hourly observed and simulated meteorology along with PUF analyzed congener-level mass from 7 samples taken in Chicago, Illinois. Results are compared to those from empirical depuration approaches to evaluate the model and process contributions to uncertainties estimated for each sample. In addition, C_{Air} were compared to passive and active sampler concentrations from canonical methods and temperature-independent PCB concentrations at 298 K were determined for spatial and temporal analysis.

CHAPTER 2 DATA AND METHODS

2.1 Meteorology

For the purpose of this investigation, local scale meteorology was warranted to capture hourly and daily variability that urban meteorology has on passive air sampling. Since local observational meteorology was not available for each PAS-PUF deployment site, the Weather Research and Forecasting (WRF) model was used to simulate local meteorology. The WRF model is a mesoscale meteorology model designed to serve both operational forecasting and atmospheric research. Its development was coordinated by National Center of Atmospheric Research (NCAR) and is now the basis of the National Oceanic and Atmospheric Administration National Weather Service rapid forecast model (RAP) [17, 18]. WRF was chosen for simulating the hourly meteorology that was used as input data for the method development and numerical modeling in this study, since it is a state-of-the-science open source numerical weather prediction model and is the meteorological model of choice for regulatory air quality studies by the United States Environmental Protection Agency (EPA) and throughout the public and private sectors.

WRF version 3.3 [19] was used to simulate hourly meteorology for 2008 over three horizontal domains (Figure 2-1), each with 35 vertical layers from the surface to the lower stratosphere (1000 Pa).

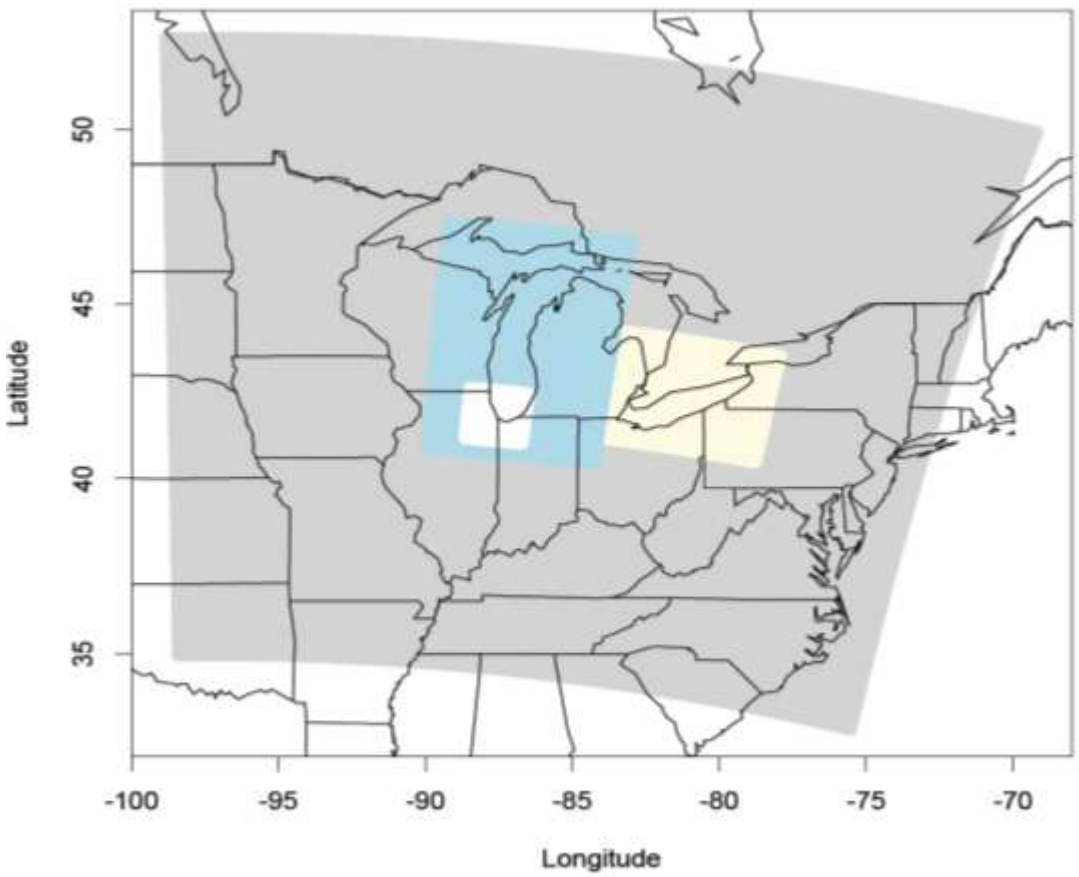


Figure 2-1: Depicts the 12 km outer domain with two 4 km regional domains nested inside over Lake Michigan and Lake Erie and a high resolution 1.33 km domain nested within the Lake Michigan domain over the urban complex of Chicago.

The WRF simulation horizontal resolutions consisted of a 12 x 12 km regional coarse domain, with 12 km spacing between each grid, located over the upper Midwest and Northeast United States, which included all sites in the Integrated Atmospheric Deposition Network (IADN). Nested inside the regional domain were two finer resolution 4 x 4 km domains over Lake Michigan and Lake Erie, and nested further inside the Lake Michigan domain was a high resolution 1.33 x 1.33 km domain over the urban complex of Chicago. WRF operates by integrating the atmospheric primitive equations

with physics parameterizations, which are sub-models used to simulate land surface, surface layer, boundary layer dynamics, convection, microphysics and radiation [20]. These parameterization are used to represent the different interactions that occur in the atmosphere, for example they help simulate clouds, rain, ice formation, boundary layer height, and many others. The physics parameterizations used in this WRF simulation are as follows: the Lin scheme, used for real-data high resolution simulations for snow, ice and graupel process was for chosen for microphysics [21]; RRTM scheme longwave radiation [22]; Goddard scheme for shortwave radiation [23]; MM5 similarity scheme based on Monin-Obukhov scheme for surface layer; Noah land surface model incorporating soil temperature and moisture in four layer [24], fractional snow cover and frozen soil physics; Yonsei University scheme for planetary boundary layer closure [25]; and the Kain-Fritsch scheme for the 12 km domain and the Grell 3D scheme for the 4 km and 1.33 km domains for cumulus convection [17, 26]. These options were chosen to resolve the Great Lakes region's complex meteorology and to maintain consistent performance at regional down to urban scales. Experimental urban surface physics and canopy models were not used. Additionally, the meteorological boundary conditions were based on the North American Regional Reanaylsis (NARR), which included to the use of gridded analysis and observational nudging.[20, 27]. Gridded analysis and observational nudging was used to minimize WRF model error. More specifically, nudging for horizontal wind vectors, temperature, and water vapor mixing ratio was done on NARR every three hours above the planetary boundary layer, to reduce large-scale errors in these atmospheric variables [20].

WRF meteorology evaluation for 2008 was conducted using METSTAT, a meteorological statistical evaluation program developed by Environ Corporation[28]. METSTAT operates by comparing the hourly meteorology simulated by WRF to observations from automated weather observing systems (AWOS) stations at airports located in each domain and calculates descriptive statistics for meteorology of

importance for chemical transport: biases, root mean square error (RMSE), and correlation coefficient (R^2), for wind speed (WS), wind direction (WD), and temperature (T) [28]. METSTAT was used for all the WRF domains and the evaluation of the high resolution 1.33 km domain is show in Table 2-1.

Table 2-1: METSTAT statistical evaluation for the 1.33 km high resolution meteorology simulation for hourly R^2 and average bias and RMSE.

1.33 km								
Month	**Bias WS**	**RMSE WS**	**R^2 WS**	**Bias WD**	**R^2 WD**	**Bias T**	**RMSE T**	**R^2 T**
January	-0.08	1.72	0.72	-1.01	0.69	-1.75	3.30	0.90
February	-0.19	1.66	0.79	-2.20	0.55	2.91	0.04	0.91
March	0.08	1.71	0.70	-1.60	0.62	1.56	2.63	0.87
April	0.34	1.88	0.80	0.34	0.45	2.86	3.31	0.89
May	0.20	1.77	0.74	-3.05	0.67	2.71	3.17	0.87
June	0.44	1.94	0.62	1.07	0.46	3.13	3.43	0.83
July	2.03	2.70	0.16	14.22	0.02	-1.37	3.38	0.58
August	1.19	2.35	0.06	21.47	0.00	-3.35	4.84	0.77
September	-0.80	2.32	0.06	46.27	0.01	-4.83	7.39	0.36
October	-2.85	3.37	0.03	-5.53	0.00	9.33	7.03	0.42
November	-3.30	3.87	0.01	-8.32	0.02	-3.76	6.25	0.21
December	-0.25	1.85	0.76	0.20	0.79	-0.18	2.56	0.91
Year Average	-0.27	2.26	0.45	5.15	0.36	0.61	3.94	0.71

Through this analysis it was determined that the WRF simulations meet or exceed community standards for scientific and regulatory air quality modeling studies. More specifically, the average and range of the performance statistics are similar to established statistical benchmarks for meteorological modeling determined by Environ Corporation in a report for the Texas Natural Resources Conservation Commission [29]. For example, the high resolution simulation had an average RMSE for WS of 2.26 m/s and had an average bias T of 0.61 K. The average performance statistics for RMSE WS and bias T were only slightly higher than the set statistical goals in the study by Envrion, which reported an average RMSE WS of 2.0 m/s and an average bias T of ± 0.5K [29]. In

addition, the evaluation showed that the WRF simulation performed better than the statistical goals in the Envrion Study for winter thru early summer, in which the average RMSE for WS was 1.79 m/s, however, the WRF simulation performed worse in late summer thru autumn were the average RMSE for WS was 2.92. Even though, the WRF simulation performance statistics had slightly higher error than the Environ study, the statistic evaluation showed that simulated meteorological data from WRF was of sufficient skill for use in model development for determining R and analyte air concentrations (C_{Air}).

2.2 Modeling Approach

This model reconsiders the theoretical PAS relationship in Equation 1-1 to incorporate temporal variability in PAS mass transfer, sampling rate, and PUF concentration based on discrete temporal information on ambient air concentrations and meteorology (Equation 2-1).

Equation 2-1

$$\frac{dM_{PUF}}{dt} = k_v(T, WS, WD, P, t) * A_s * \left(C_{AIR}(T,t) - \frac{C_{PUF}(t)}{K_{PUF}} \right)$$

The mass transfer coefficient can then be modeled as a combination of advective and diffusive processes collectively expressed as functions of time-variant ambient temperature (T), wind speed (WS), wind direction (WD), and atmospheric pressure (P). The advective process is then dependent on air velocity and diffusivity, in which diffusitivity can be modeled by ideal gas diffusion onto a surface. Hourly variability in analyte air concentration can then be considered exclusively dependent on local ambient temperature, as PAS cannot resolve contributions to ambient air from local emissions and

transport. From Equation 2-1 a dynamic numerical model was developed to calculate compound-specific PUF uptake incorporating a computational fluid dynamic approach that attributes R to the process of advection and molecular diffusion:

Equation 2-2

$$\frac{dM_{PUF}}{dt} = C_{Fac} * (\gamma * D_{PCB\ a}^{1-\beta} * \nu^{\beta-\alpha} * V_A^{\alpha} * L^{\alpha-1}) * A_s * \left(C_{AIR} - \frac{C_{PUF}}{K_{PUF}} \right)$$

Where C_{Fac} is the fraction of ambient analyte air concentration inside the PUF boundary layer, γ is a static advective mass transfer coefficient specific to the PAS housing and media (dimensionless), D_{PCBa} is the molecular diffusivity for each PCB congener (m/s), ν is the kinematic viscosity (m^2/s), V_A is the air velocity (m/s), L is the diameter of the PUF disk (m), β represents the differences between momentum transport and mass transport (dimensionless), and α represents the flow regime (laminar or turbulent) as a function of air velocity.

Molecular diffusivity of a gas-phase compound in the atmosphere was calculated using water vapor as a reference compound and is a function of the molecular weights (MW) and molar volumes (V) of air and water, temperature (T), pressure (P), and the molecular weight ratio of the compound and water, as shown in Equation 2-3 [30, 31]:

Equation 2-3

$$D_{PCBa} = \frac{(10^{-3} * T^{1.75} * [(1/MW_{Air}) + (1/MW_{water})]^{.5})}{(P * (1/101325) * [V_{Air}^{(1/3)} + V_{water}^{(1/3)}]^2)} * \left(\frac{MW_{PCB}}{MW_{water}}\right)^{-(0.5)}$$

Where T is the ambient air temperature (K), MW_{Air} is the molecular weight of air (28.97 g/mole), MW_{Water} is the molecular weight of water (18.015 g/mole), P is the

atmospheric pressure (atm), V_{Air} is the molecular volume of air (20.1 cm^3/mole), V_{water} is the molecular volume of water (9.5 cm^3/mole), and MW_{PCB} is the molecular weight of the PCB congener being analyzed (g/mole).

The advective contribution to k_v considers gas-phase compounds within moist air as the product of *v*, V_A, and L, where L is diameter of the PUF disk (0.14 m). To compute kinematic viscosity (*v*) the dynamic viscosity of moist air (η_m) and air density (ρ) are calculated as a function of the viscosity of air and water and the molar fraction of air and water, as indicated in Equation 2-4:

Equation 2-4

$$\eta_m = (X_a * \eta_a + X_w * \eta_w) * (1 + \frac{X_w - X_w^2}{a})$$

In which X_a is the molar fraction of air in an atmospheric parcel, η_a is the viscosity of air (kg/m-s), X_w is the molar fraction of water in a an air parcel, η_w is the viscosity of water (kg/m-s), and a is an empirical factor dependent on temperature [32]. Air and water viscosity are calculated as:

Equation 2-5

$$\eta_a = \frac{17.78*(4.58T_r - 1.67)^{5/8} * 10^{-7}}{\zeta_a}$$

Equation 2-6

$$\eta_w = \frac{(7.55T_r - 0.55)Z_c^{-5/4} * 10^{-7}}{\zeta_w}$$

Where T_r is the ratio of the critical temperature for air (132.206) to absolute temperature and is dimensionless, ζ_a is the pseudocritical constant for air (0.038474) (dimensionless), ζ_w is the pseudocritical constant for water (0.0192) (dimensionless), and Z_c is critical compressibility factor for water (0.231) (dimensionless) [33]. Equation 2-5 and Equation 2-6 are used alongside the molar fractions of air and water of an air parcel to compute η_m:

Equation 2-7

$$X_a = \frac{\frac{1}{Q_V} * \frac{1}{MW_a}}{(Q_v \frac{1}{MW_w} * \frac{P}{R_d T}) + \frac{1}{Q_V} * \frac{1}{MW_a}}$$

Equation 2-8

$$X_w = \frac{(Q_v \frac{1}{MW_w} * \frac{P}{R_d T})}{(Q_v \frac{1}{MW_w} * \frac{P}{R_d T}) + \frac{1}{Q_V} * \frac{1}{MW_a}}$$

In which Q_v is the water vapor mixing ratio (kg kg^{-1}) and R_d is the specific gas constant of dry air (287.05 J/Kg-K).Moist air density was used instead of dry air density, since the atmosphere is approximately 4% water vapor and the molecular weight of water is less than the molecular weight or air:

Equation 2-9

$$\rho_m = \frac{P_d}{R_d * T} + \frac{P_v}{R_v * T}$$

Where P_d is the partial pressure of dry air (Pa) which is the product of X_a and P, P_v is the partial pressure of water vapor (Pa) determined as the product of X_v and P, and R_v is the specific gas constant for water vapor (461.495 J/Kg-K) [34]. The kinematic viscosity (ν, m/s^2) is the ratio of measured internal resistance (η_m) around the PUF disk and ρ_m, indicated in Equation 2-10:

Equation 2-10

$$\nu = \frac{\eta_m}{\rho_m}$$

Two methods for estimating temperature within the PAS housing were used to calculate molecular diffusivity and kinematic viscosity. Temperature method 0 used ambient air temperature (T) in the determining diffusivity and viscosity. Temperature method 1 uses the simulated surface temperature (T_{skin}) rather ambient air temperature (T) for all calculations involving T in diffusivity and kinematic viscosity. This method is based on a study conducted by Kennedy et al., which showed the PAS chamber temperature differs from ambient air temperature due to solar heating during the day and cooling at night[12], and is more similar to the surface temperature of the built environment than the ambient air temperature.

Three different approaches considered the impacts of air velocity on the modeled advective component of k_v. The first method used the empirical linear relationship determined from wind tunnel experiments by Tuduri et al., relating V_A (external air velocity) to the internal air velocity inside the PAS chamber[11]. This relationship shows

a damping effect the PAS chamber has on the air flowing through it, which reduces advection and in turn R. The second method used a polynomial regression on the empirical results reported by May et al. from wind tunnel studies, where sampling rate (R) depends on the angle between the 3D wind and the PAS apparatus [14].

Using the dynamic model, the concentration gradient between potential gain onto the PUF from C_{Air} and potential loss of PCBs back into the atmosphere (C_{PUF}/K_{PUF}) can then be assessed. The concentration of PCBs in the atmosphere was computed using Equation 2-11:

Equation 2-11

$$C_{Air} = C_{Converted} * e^{\frac{\Delta U_{OA}}{R}\left(\frac{1}{T}-\frac{1}{T_{298}}\right)} * \frac{T}{T_{skin}}$$

Where $C_{converted}$ is the converted static PCB concentration (ng/m^3), ΔU_{OA} is octanol-air enthalpy for PCBs (J/mol), R is the gas constant (J/mol-K), T_{298} is the temperature at 298 K, and T_{skin} is the surface temperature (K). Since, C_{Air} varies predictably with temperature for SVOCs, the Van't Hoff relationship was used to simulate this variability between T and a reference temperature (298 K). The ratio of T to T_{Skin} considers volatility of PCBs in the conditions within PAS chamber, based on the finding by Kennedy et al. that temperature within the PAS is consistent with the temperature of the built environment [12]. Thus, the ratio of T/T_{Skin} ensures that the computed C_{Air} reflects ambient air concentrations rather than the concentration in the PAS to which the PUF disk was directly exposed.

It is known that analyte air concentrations of gas-phase SVOCs (PCBs) are affected by fluctuations in atmospheric temperature and that temperature adjustment using a reference temperature can eliminate these variations [5, 35, 36]. Temperature was adjusted to 298 K to allow for spatial and temporal trend analysis on SVOC

concentrations. First, the estimated analyte air concentration was converted to partial pressure (P_{air}) using the ideal gas law, as shown in Equation 2-12:

Equation 2-12

$$P_{air} = C_{air} * MW_{SVOC} * R * T$$

Where R is the gas constant (82.06 atm-cm^3/mol-K). Then the partial pressure was then adjusted to a reference temperature at 298 K using the Clausius-Claypeyron relationship using Equation 2-13:

Equation 2-13

$$P_{298} = P_{air} * e^{[\frac{-\Delta H}{R}*(\frac{1}{T}-\frac{1}{298})]}$$

Where P_{298} is the partial pressure at 298 k, $\Delta H/R$ is the heat surface-air partitioning (kJ/mol)[5, 35, 36]. The value of $\Delta H/R$ (-6246 ± -405 kJ/mol) for total PCBs was used for all PCB congeners/co-eluting groups of congeners for Chicago, IL [36]. Basu et al. quantified $\Delta H/R$ as the relationship between partial pressure for all PCB congeners and the inverse of temperature at the Chicago Integrated Deposition Network (IADN) [36]. Lastly, the ideal gas law was applied to P_{298} to convert it to an analyte air concentration at 298 K (C_{298}).

Uptake of PCBs on the PAS is function of accumulation of mass on the PUF over time and the mass of the PUF, as indicated in Equation 2-14:

Equation 2-14

$$C_{PUF} = \int_{t-1}^{t} \frac{dm/dt}{m_{PUF}}$$

Where the C_{PUF} is analyzed from the previous hour (t-1) to the current hour (t), dm/dt is the accumulation of mass onto the PUF for that time period (ng), and m_{PUF} is mass of the PUF (g). To calculate the ratio of C_{PUF} to K_{PUF}, K_{PUF} was computed using a logarithmic relationship between the octanol-air partition coefficient and K_{PUF} from Shoeib & Harner [1] (Equation 2-15):

Equation 2-15

$$K_{PUF} = 10^{(0.6366*\log(K_{OA})-3.1774}$$

Where K_{OA} is the octanol-air partition coefficient. This relationship is used to assess each PAS PUF deployment and evaluate if the assumption of linear uptake onto the PUF disk holds throughout the entire deployment period.

The fraction of ambient analyte air concentration over the PUF disk, C_{FAC}, determines the mass capable of transfer to the PUF. As shown in computational fluid dynamics modeling by Thomas et al. (2006), the concentration in the turbulent boundary layer around the PUF disk[15] is lower than that in free flowing air in the PAS chamber, with C_{FAC} during turbulent flow (internal air velocities $\geq$ 0.5 m/s) of approximately 0.5. At lower air velocities, laminar flow prevails, with C_{FAC} =1.

Implementing Equations 2-3 through 2-15 in MATLAB [37], the uptake of gas-phase SVOCs onto a PUF disk were modeled to calculate hourly R and C_{Air}. More specifically, this done for PCB congeners and co-eluting groups of congeners, over Chicago during 2008 and for PCBs, polyaromatic hydrocarbons (PAHs), pesticides, and brominated flame retardants (BFRs) in 2011. The programming code for the numerical model developed in MATLAB can be found in Appendix A. The physical properties used in Equations 2-3 through 2-15 are listed in Appendix B. In addition, this analysis

incorporated the use PAS observations from the Hornbuckle Chicago passive air sampling network (Figure 2-2)[38].

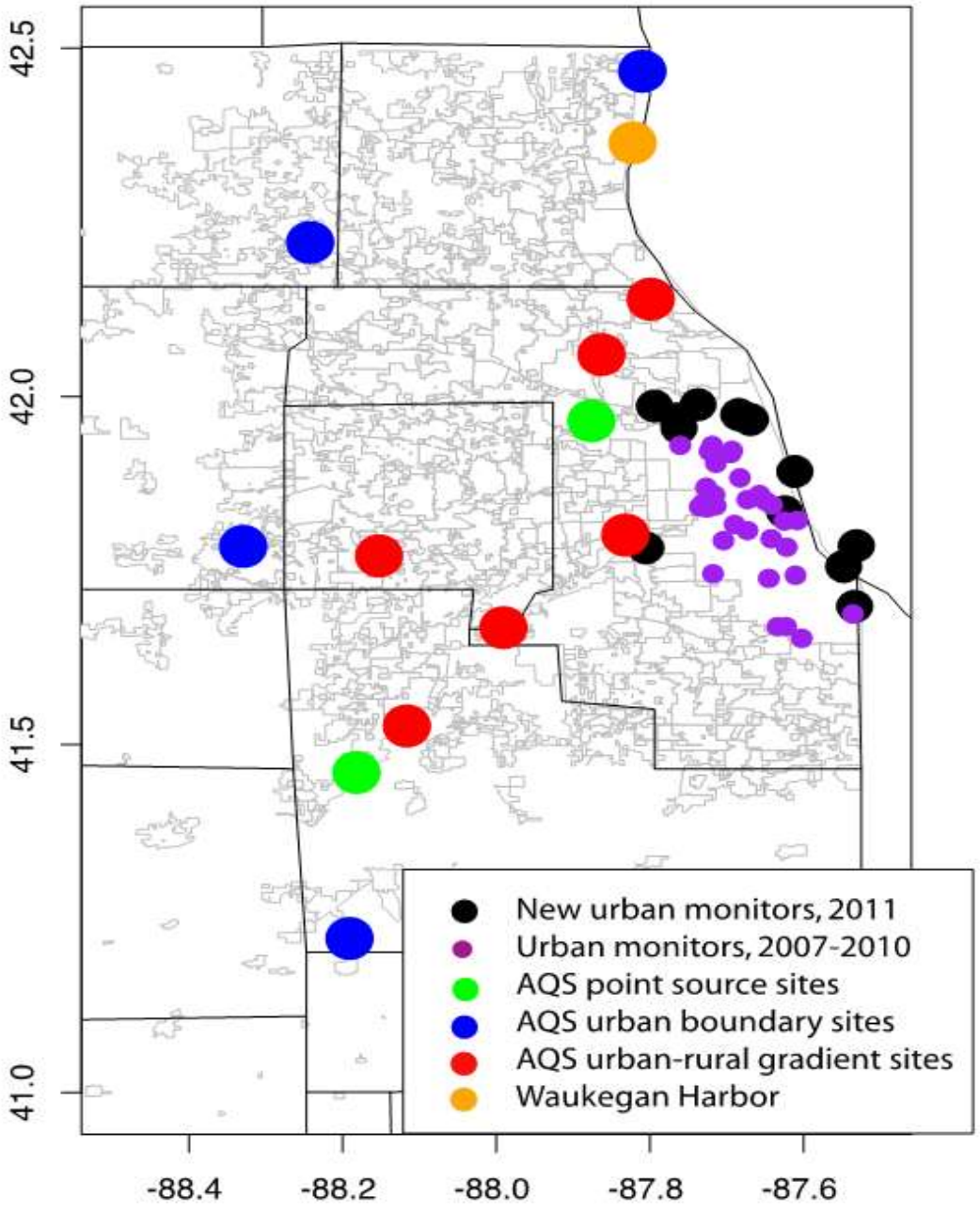


Figure 2-2 : The Hornbuckle Chicago passive air sampling Network from 2007 – 2011.

More specifically, the PAS observations used in this methodology are from the urban monitors in 2008 (purple) and 2011(black) in Figure 2-2.

CHAPTER 3 RESULTS AND DISCUSSION

3.1 Static Advective Mass Transfer Coefficient (γ)

Values for γ were fitted from the PCB 28 depuration compound R and the numerical model at seven sampling sites in Chicago. The combination of these PAS PUF deployments covered most of 2008, with complete seasonal coverage except for eight week periods in mid-September to mid-November and late December-early January. At each site, γ was constrained using both advective methods, temperature method 1, and by initially using three meteorology source method, hourly simulated WRF meteorology, hourly average debiased WRF meteorology (essentailly observational meteorology), and average WRF meteorology. The hourly debiased meteorology was calculated by subtracting the hourly bias temperature and wind speed from the WRF simulated temperature and wind speed, while average WRF meteorology was calculated by using the average V_A and average T_{Skin} for each deployment period. There was no significant difference in using hourly simulated WRF meteorology and hourly average debiased WRF meteorology, but hourly debiased meteorology was chosen as the basis of the γ fitting process, since it is the most similar meteorology to observation. It was hypothesized that γ would be a constant value for passive air sampling, since it is specific to the design of the PAS chamber and PUF media. However, through fitting γ for PCB 28 at these seven sites it was determined that γ was not constant and that it ranged from as low as 0.059 (0.025) to as high as 0.194 (0.077) for advective method 1 (advective method 2). Since, it was hypothesized that γ would be constant, the median γ value for the seven sites was used to calculate the modeled R and was compared to the depuration R by determining the normalized mean error and normalized mean bias Table 3-1.

Table 3-1: Median fitted γ for PCB 28 and comparison between average modeled R and depuration compound R, including percent normalized mean error and mean bias for each sampling site using hourly de-biased WRF meteorology (a) advective method 1 (b) advective method 2.

(a)

Site	Gamma	Depuration R (m^3/d)	Avgerage Model R (m^3/d)	Nomalized Mean Error (%)	Normalized Mean Bias (%)
Dewey	0.076	5.00	6.43	28.60	28.60
Dawes	0.076	5.53	5.55	0.43	0.43
Corkery	0.076	5.94	5.13	13.70	-13.70
Gresham	0.076	3.84	3.87	0.70	0.70
Chase	0.076	6.79	2.66	60.84	-60.84
St. Elizabeth	0.076	5.67	4.55	19.74	-19.74
Webster	0.076	5.06	6.51	28.77	28.77

(b)

Site	Gamma	Depuration R (m^3/d)	Avgerage Model R (m^3/d)	Nomalized Mean Error (%)	Normalized Mean Bias (%)
Dewey	0.033	5.00	6.49	29.78	29.78
Dawes	0.033	5.53	5.58	0.90	0.90
Corkery	0.033	5.94	5.21	12.35	-12.35
Gresham	0.033	3.84	4.02	4.61	4.61
Chase	0.033	6.79	2.89	57.45	-57.45
St. Elizabeth	0.033	5.67	4.67	17.62	-17.62
Webster	0.033	5.06	6.55	29.54	29.54

Using the median fitted γ resulted in an average normalized mean error of 21.83% (21.75%) and an average normalized mean bias of -5.11% (-3.25%), which is greater than the estimated analytical error of 20% for the analysis of the PCB 28 depuration compounds. To attempt to understand the source of error and negative bias that was seen using the constant median γ, the site specific γ values were analyzed. Though the γ fitting process it was determined that γ is congener specific and was correlated to V_A and T_{Skin}. It was no surprise to see this correlation between meteorology and γ, since Klanova et al. reported correlations between equivalent volume (R) with temperature and wind speed [13].

Linear regression was computed to see the direct relationship between γ with V_A and T_{Skin}, as well as to see if the numerical model has a scalar relationship with V_A and T_{Skin}. Additionally, linear regression was looked at to see if the residual bias that was

seen using the median constant γ could be explained by this potential scalar relationship between γ and V_A and T_{Skin}. Figure 3-1 shows that V_A explains 76% of the variability in γ, while T can explain 46% of the variability, with no noticeable difference between the advective methods. Multiple linear regression (MLR) from average hourly V_A and T_{Skin} explained >99% of observed variability in γ for PCB 28, and was used to calculate R for each of the seven sites.

To determine the accuracy of this method, the normalized mean error and normalized mean bias between the average modeled R using the MLR γ for PCB 28 and the depuration compound R for PCB 28 for the two advective methods at each site was computed. The normalized mean error using advective method 1 ranged from 2.66% to 46.47% at St. Elizabeth and Dewey respectively, with an overall average percent difference of 16.39%, while the normalized mean error using advective method 2 ranged from 3.06% to 45.16% at St. Elizabeth and Dewey respectively, with an overall average percent difference of 15.65%. In addition, the average normalized mean bias for advective method 1was determined to be 2.95 and for advective method 2 was 2.83. Using the observed scalar relationship decreased the normalized mean error by approximately 6% for both advective methods and reduced the residual bias from a negative bias of 5.11 (3.23) to a positive bias 2.95 (2.83), significantly decreaseing the total bias for advective method 1 (advective method 2). This analysis shows that there was a scalar relationship between V_A and T_{Skin} and it does explain a significant portion of the error and residual bias in γ. Additionally, the multiple linear regression relationship between V_A and T_{Skin} with γ can be used to more accurately calculate R for PCB 28 compared to using the median constant γ.

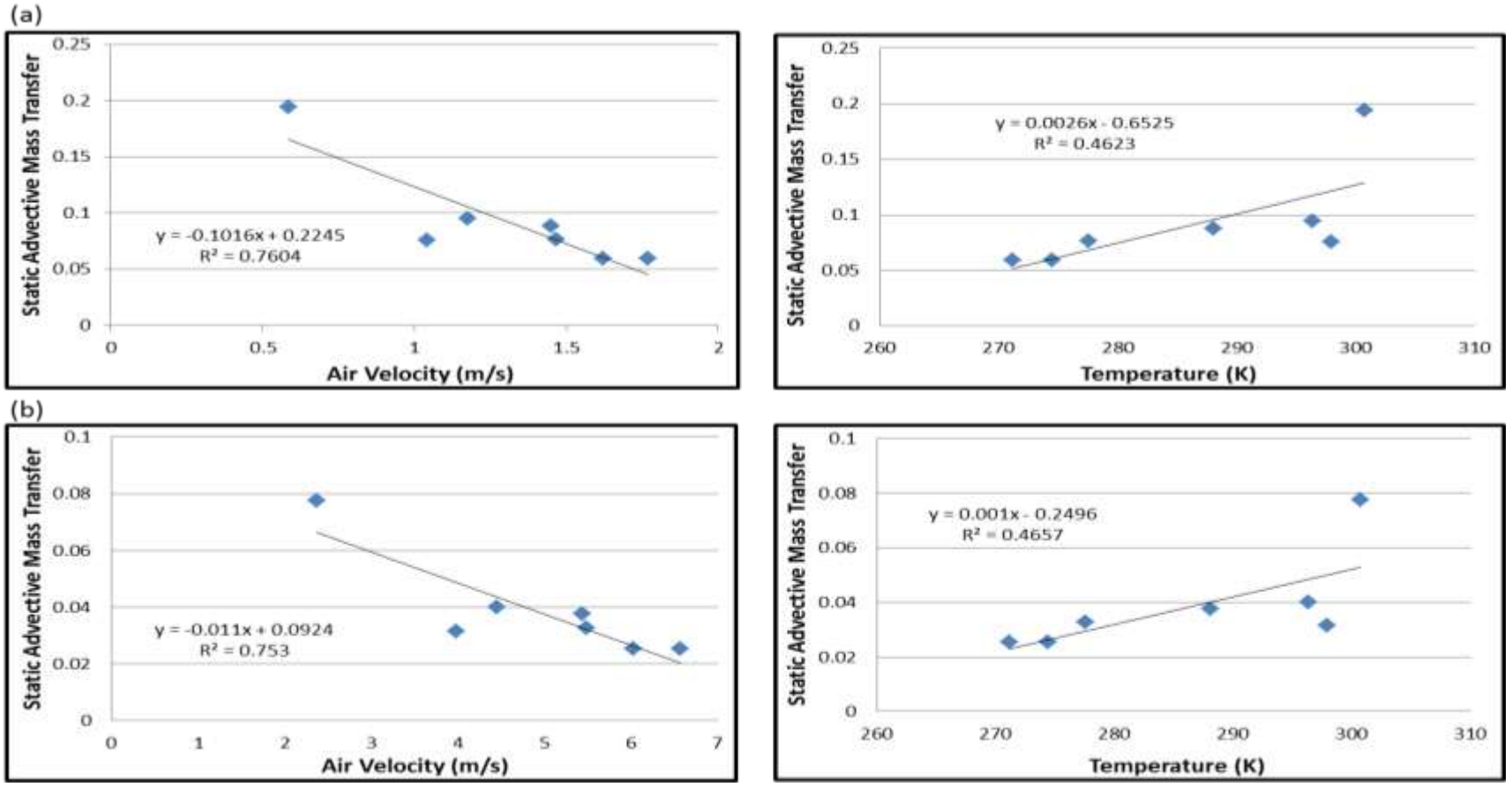


Figure 3-1: The correlation between γ for PCB 28 with V_A on the left and with T_{skin} on the right: (a) advective method 1 (b) advective method 2.

The fitting processed determined that γ is congener specific, which lead to the question of how can this relationship for PCB 28 be used to quantify γ across all the other congeners and co-eluting groups of congeners. Knowing the mass transfer is a function of volatility it was hypothesized that Log K_{OA} could explain the relationship based on an observed linear dependence seen on Log K_{OA} in depuration compounding R between congeners. The approach involved scaling γ of PCB 28 to other congeners based on the congener ratio in Log K_{OA}, as indicated in Equation 3-1.

Equation 3-1

$$\gamma_{PCB} = \gamma_{MLR\ 28} * \frac{Lo \quad K_{OA\ PCB}}{Log\ K_{OA\ 28}}$$

Similar to the analysis that was completed for γ MLR for PCB 28, the scaling approach for γ_{PCB} was computed for PCB congener 111 and the average modeled R using this approach and was compared to the depuration compound R using both advective methods. This was done by calculating the normalized mean error and the normalized mean bias for each site (Table: 3-2). The overall normalized mean error was 18.49 ± 18.26 % and 18.14 ± 17.26 % for advective methods 1 and 2, respectively. The normalized mean error was less than 15% for four of the seven samples, and higher during periods of high V_A and low T_{Skin} and periods with low V_A and high T_{Skin} (Table 3-2). In addition, the average normalized mean bias were calculated for PCB 111 and were -0.75% and -0.82% for advective method 1 and 2, which shows that there is virtually no residual bias by scaling γ using the congener Log K_{OA} ratio.

Table 3-2: Fitted γ for PCB 28, MLR γ for PCB 28, and comparison between average modeled depuration compound R, including percent error for each sampling site using hourly de-biased WRF meteorology (a) advective method 1 (b) advective method 2.

Site	Gamma	MLR γ	Depuration R (m^3/d)	Avgerage Model R (m^3/d)	Nomalized Mean Error (%)	Normalized Mean Bias (%)
Dewey	0.059	0.072	5.00	6.06	21.20	21.20
Dawes	0.076	0.073	5.53	5.31	3.99	-3.99
Corkery	0.088	0.063	5.94	4.28	28.07	-28.07
Gresham	0.076	0.111	3.84	5.63	46.47	46.47
Chase	0.194	0.179	6.79	6.28	7.46	-7.46
St. Elizabeth	0.095	0.092	5.67	5.52	2.66	-2.66
Webster	0.059	0.056	5.06	4.81	4.86	-4.86

(b)

Site	Gamma	MLR γ	Depuration R (m^3/d)	Avgerage Model R (m^3/d)	Nomalized Mean Error (%)	Normalized Mean Bias (%)
Dewey	0.025	0.030	5.00	5.98	19.54	19.54
Dawes	0.033	0.031	5.53	5.32	3.79	-3.79
Corkery	0.038	0.028	5.94	4.39	26.13	-26.13
Gresham	0.032	0.046	3.84	5.58	45.16	45.16
Chase	0.077	0.072	6.79	6.28	7.54	-7.54
St. Elizabeth	0.040	0.039	5.67	5.50	3.06	-3.06
Webster	0.025	0.024	5.06	4.84	4.38	-4.38

However, an increase is sample size is warranted to increase the accuracy of this method and support a complete analysis of the seasonal cycle. An increase in depuration compound analysis at duplicate time periods would help optimize this methods correlation with V_A and T_{Skin}, which would lead to a more accurate MLR γ for PCB 28 and thus, increase the accuracy and confidence in the scaling approach across congeners. Furthermore, this analysis does show how γ for any PCB congener can be determined accurately and with confidence using the MLR γ for PCB 28 and scaling by congener Log K_{OA} ratio, since the average normalized mean error in R for PCB 28 and PCB 111 are extremely similar with a total average normalized mean error in R of 17.44 ±16.72 % for advective method 1 and 16.90 ±16.00 % for advective method 2.

Table 3-3: Shows the scaled γ for PCB 111 and the comparison of the average modeled R from scaling and the depuration compound R, including percent difference for each sampling site using the hourly average de-biased WRF meteorology source: (a) advective method 1 (b) advective method 2.

(a)

Site	Scaling γ	Depuration R (m^3/d)	Avgerage Model R (m^3/d)	Nomalized Mean Error (%)	Normalized Mean Bias (%)
Dewey	0.082	4.30	6.55	52.38	52.38
Dawes	0.084	5.84	5.74	1.83	-1.83
Corkery	0.073	6.52	4.62	29.10	-29.10
Gresham	0.127	7.90	6.09	22.95	-22.95
Chase	0.206	7.85	6.80	13.41	-13.41
St. Elizabeth	0.106	5.97	5.97	0.07	-0.07
Webster	0.064	4.74	5.20	9.71	9.71

(b)

Site	Scaling γ	Depuration R (m^3/d)	Avgerage Model R (m^3/d)	Nomalized Mean Error (%)	Normalized Mean Bias (%)
Dewey	0.035	4.30	6.46	50.33	50.33
Dawes	0.036	5.84	5.75	1.62	-1.62
Corkery	0.032	6.52	4.75	27.20	-27.20
Gresham	0.053	7.90	6.03	23.64	-23.64
Chase	0.082	7.85	6.79	13.47	-13.47
St. Elizabeth	0.045	5.97	5.95	0.42	-0.42
Webster	0.028	4.74	5.23	10.29	10.29

3.2 Sampling Rate (R)

Using this methodology, hourly sampling rates (R) can be determined anywhere and at any time for all SVOCs in a PAS PUF deployment, including each PCB congener and co-eluting group of congeners. Here rates are summarized for low (PCB 11 & 28), mid- (111), and high (201) molecular weight PCB congeners. Congeners 28 and 111 were chosen for comparison to depuration compounds; PCB 11 was chosen due to its known high concentrations in Chicago air [39]; and PCB 201 as a high molecular weight congener consistently observed in Chicago. The base case model configuration consisted of using either advective method options (1 or 2), along with hourly debiased meteorology and temperature method 1.

3.2.1 Comparison between Modeled and Measured Sampling Rate (R)

A time series was analyzed for four PCB congeners using the base case at the Dawes sampling site, 22 February - 11 April 2008. Figure 3-2 depicts these time series for advective method. Time series were compared for PCB congeners 28 and 111 to show how modeled R varied from those determined through the loss of depuration compounds (Figure 3-2 (a) and (b)).

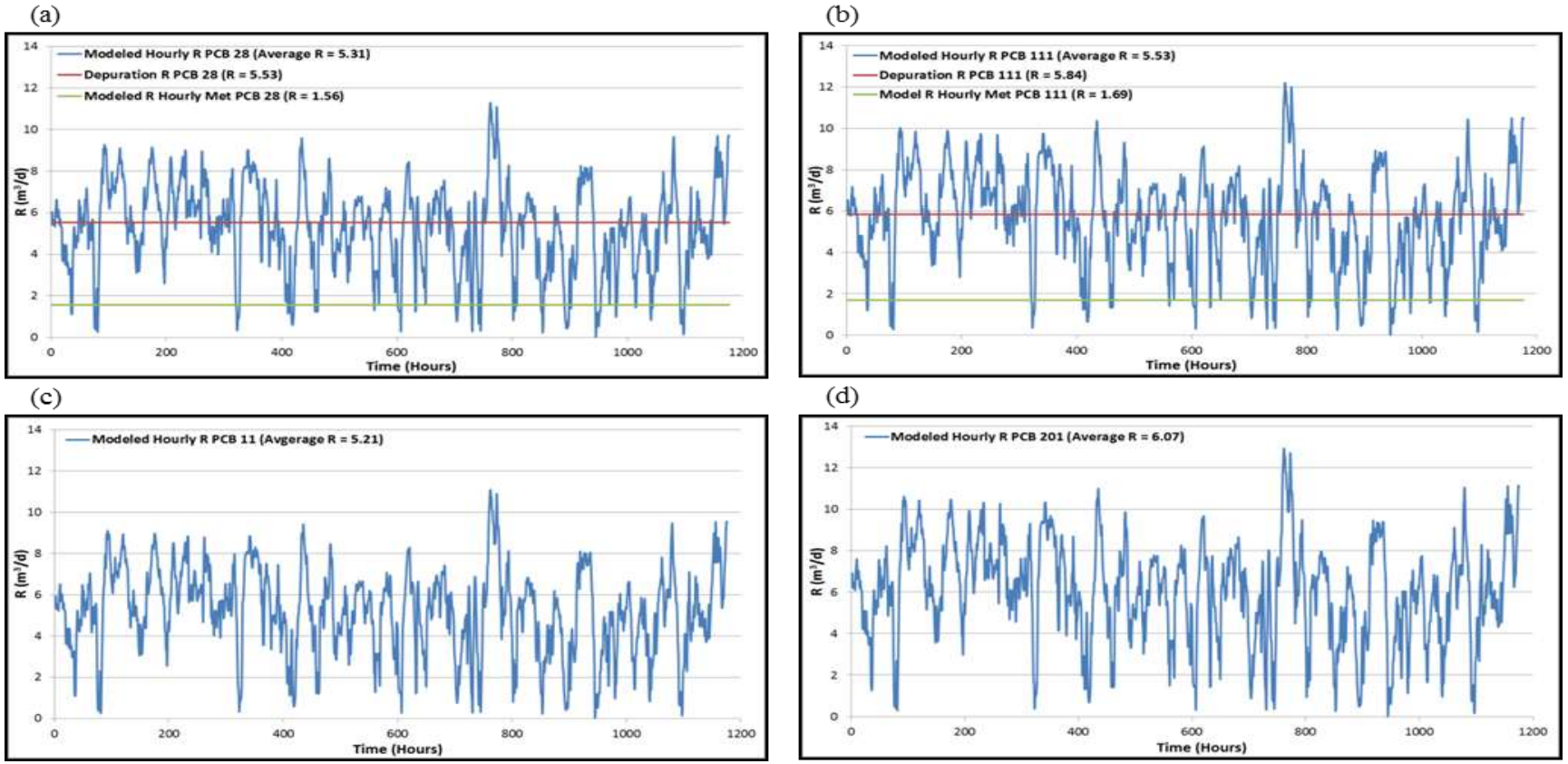


Figure 3-2: Time series of Rs at Dawes sampling site using advective method 1. (a) PCB congener 28 modeled R, loss of depuration R and Modeled R using average meteorology. (b) PCB congener 111 modeled R, loss of depuration R and Modeled R using average meteorology. (c) PCB congener 11 modeled R. (d) PCB Congener 201 modeled R.

The average modeled Rs for these congeners were approximately the same as those calculated the loss of depuration compounds, although the modeled Rs vary considerably over the PAS PUF deployment period due to meteorology. The model resolves diurnal and synoptic weather cycles, seen as the small and large amplitude peaks in modeled R, respectively. The diurnal changes in temperature and wind speed explain the daily variability in R; while the synoptic changes meteorology occur when there are drastic changes in weather patterns, such as large storming coming in or leaving the area. Thus, R is not constant during a deployment period, and is highly dependent on hourly local meteorology. In contrast to using hourly meteorology, R was computed using averaged hourly simulated meteorology to see if R could just be adjusted based on meteorology. As shown in Figure 3-2, average meteorology greatly under predicted R. This under prediction was a result of average meteorology not including the diurnal and synoptic changes in weather, which led to consistently lower advective and diffusive sampling rates. In fact, the average V_A and T_{Skin} were approximately 40% and 21% of the hourly variability seen in V_A and T_{Skin} during the deployment period.

A statistical analysis was performed on PCB 11 at the Dawes site to examine the average, standard deviation, and range in R over the deployment period for both advective methods. The average R was 5.21 ± 2.12 m^3/d (5.22 ± 1.96 m^3/d), while the minimum and maximum were 0.060 m^3/d (0.083 m^3/d) and 11.29 m^3/d (10.96 m^3/d) respectively for advective method 1 (2). The minimal sensitivity in R to the two advective models suggests that either method can be used with confidence to obtain R.

Time series for modeled R across four PCB congeners show the contribution of molecular diffusion to total sampling rate. Figure 3-2 captures this increase in molecular diffusivity as the PCBs become more chlorinated, where both the average and maximum sampling rate during the deployment period (hour 703) increase along with molecular weight. More specifically, this analysis shows that R is highly variable at hourly and

daily scales, strongly congener dependent, and predictable based on congener molecular weight and volatility (K_{OA}), as depicted in Figure 3-3.

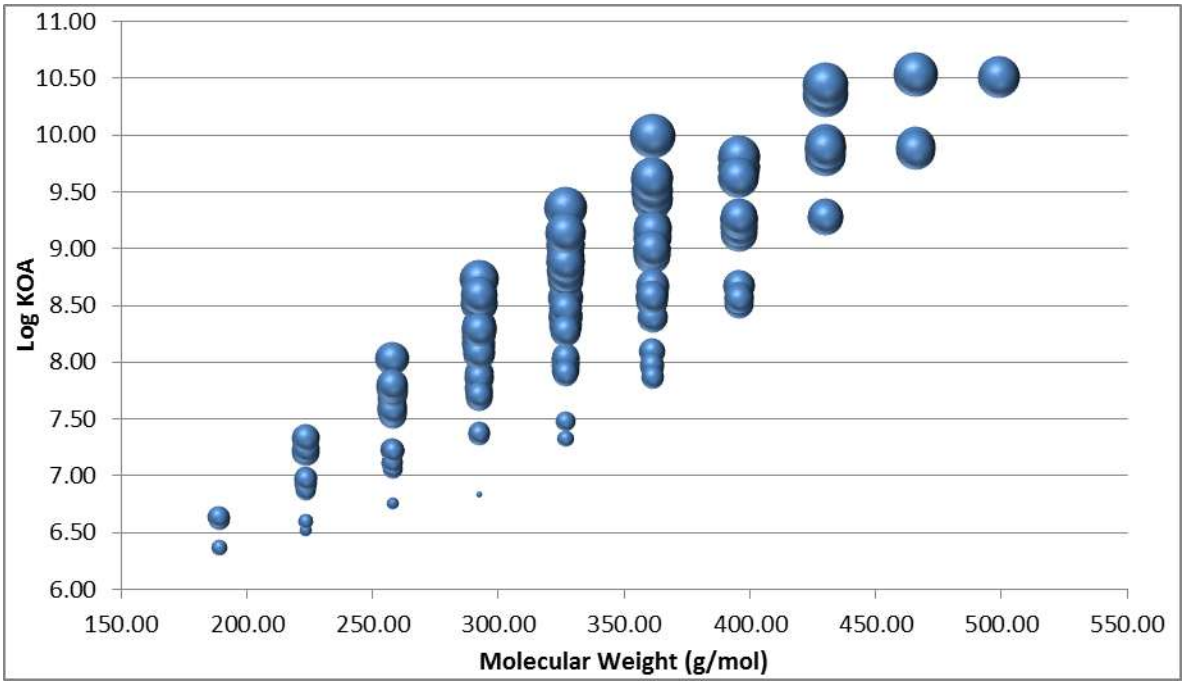


Figure 3-3: Sampling rate is predictable based on congener molecular weight and volatility (K_{OA}) and is strongly congener specific.

Figure 3-3 shows that R increases as a function K_{OA} and molecular weight. As molecular weight and K_{OA} increase R – size of the blue bubble (circle) – increases. However, when K_{OA} is approximately the same and molecular weight increases (have a more chlorinated congener), R decreases, which shows that the impaction of K_{OA} on γ has a greater influence on total R than the molecular weight. Although, molecular weight influence only diffusions contribution to R, while K_{OA} has equal influence on both advection and diffusions contributions to R. Therefore, accurate estimation of semi-volatile concentrations from PUF samples requires more specific sampling rates than the

averaging of an arbitrary group of depurations compounds, a major source of uncertainty in contemporary concentration estimates from PAS.

3.2.2 Advection and Diffusion Role on Sampling Rate (R)

R was disaggregated to total diffusion and total advection to quantify their roles in the net sampling rate, using PCB 11 as an example (Figure 3-4).

Figure 3-4 indicates that diffusion plays a greater role in total R for advective method 1 and advection plays a greater role in total R for advective method 2. This is expected, as advective method 1 takes into consideration the relationship between internal and external air velocity and thus the air velocity inside the PAS chamber is slower. With slower internal air velocities, the boundary layer around the PUF disk is weaker, so mass transfer from molecular diffusion occurs more easily. At the lower air velocities the PAS experiences more laminar flow and transitional flow, while at high air velocities flow is predominately turbulent, which creates a stronger boundary layer and mass transfer from diffusion decreases, but advective mass transfer increases. This is exactly what is seen in Figure 3-4 (b), where external air velocities and wind angle result in advection responsible for the majority of the total mass transfer. Higher velocity lead to a stronger boundary layer forming around the PUF disk inside the chamber and forces total sampling rate to be more dependent on the amount of air that is following through the PAS rather than mass transfer from diffusion.

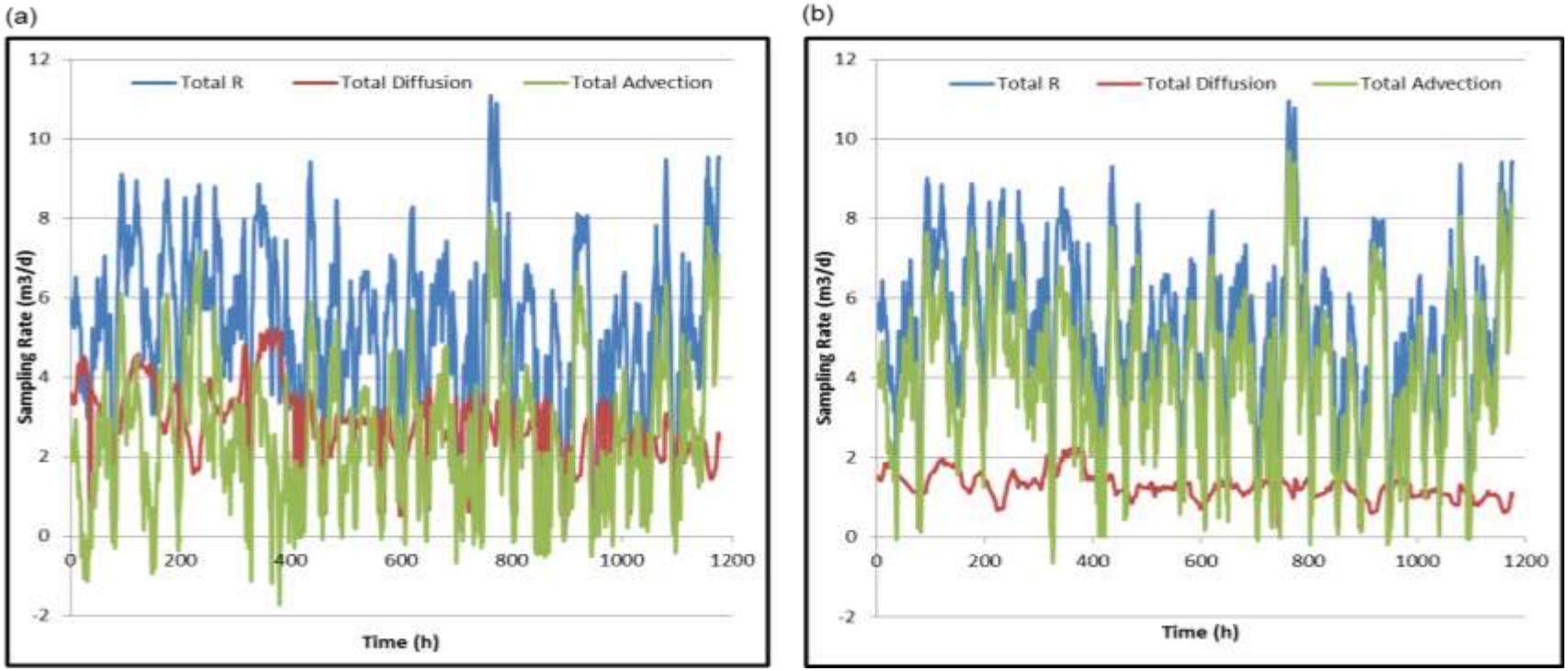


Figure 3-4: Total Diffusion and advection effect on R. (a) Advective method 1. (b) Advective method (2)

An artifact of the multiple linear regression on the empirical wind tunnel studies shows that when air velocity approaches zero, advective R becomes negative, as seen in Figure 3-3. Thus, R becomes predominately dependent on diffusion, with no effect from advection at hours with negligible free-stream air velocities. Advective method 1 seems to more accurately portray the contributions to R from both processes, although an ideal approach would incorporate both advective methods. The average R from diffusion for PCB 11 shown here from the Dawes sampling site was 2.71 ± 1.07 m^3/d, very similar to reported indoor R values of 3.1 and 2.8 m^3/d for dichlorinated PCBs calculated by uptake of native compounds [2]. By using the internal V_A relationship, Advective method 1, better captures the effect of diffusion on total R. The model can also resolve indoor R, due primarily to diffusion, from indoor temperature and ventilation load, using this advective method.

3.2.3 Seasonal and Spatial Variability in Sampling Rate (R)

To evaluate seasonal and spatial variability in R analysis was conducted using both the regional and urban scale simulated meteorology for PCB 11 and using the base case configuration for advective method 1. Regional simulated meteorology from the coarse domain (12 x 12 km) showed strong regional, congener-specific gradients (Figure 3-5).

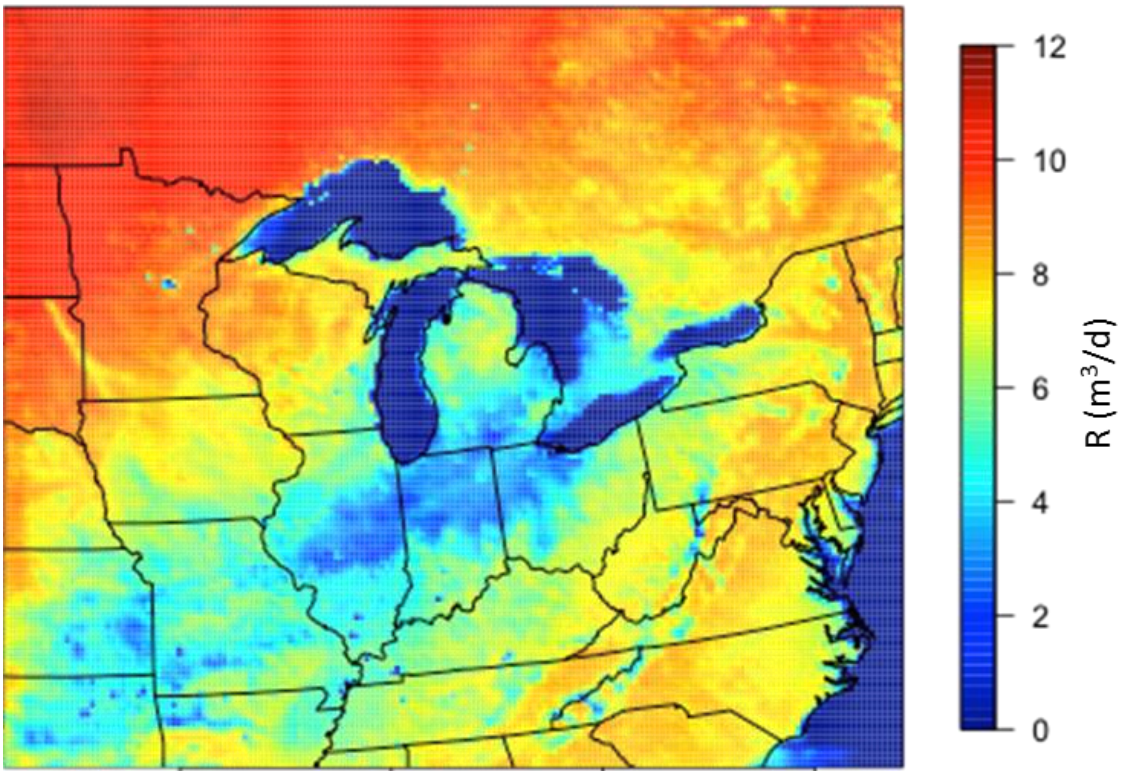


Figure 3-5: Regional map of PCB 11 R in January of 2008, showing that there was an observed strong regional congener-specific gradient in R.

R varies across the Great Lakes region in the month of January, with average sampling rate ranging from as low as 1 – 2 m^3/d to as high as 11 – 12 m^3/d. Figure 3-4 suggest R approaching zero over water. R is not actually zero over Great Lakes and the Atlantic Ocean; rather, two limitations of the current model implementation are that it does not include a static mass transfer constraint for the extremely high air velocities found over open water, and the assumption that the temperature inside the metal PAS is similar to surface temperature does not hold over water. Additionally, there were no depuration compound Rs measured over Great Lakes. Thus, the relationship between modeled R and depuration R from the static advective mass transfer coefficient is currently only useful over land, and not water. To determine whether regional

meteorology could be used to determine congener-specific R for an urban scale environment, a comparison was conducted between the regional map and the local scale map using the high resolution simulated meteorology over Chicago for PCB 11 in January (Figure 3-6).

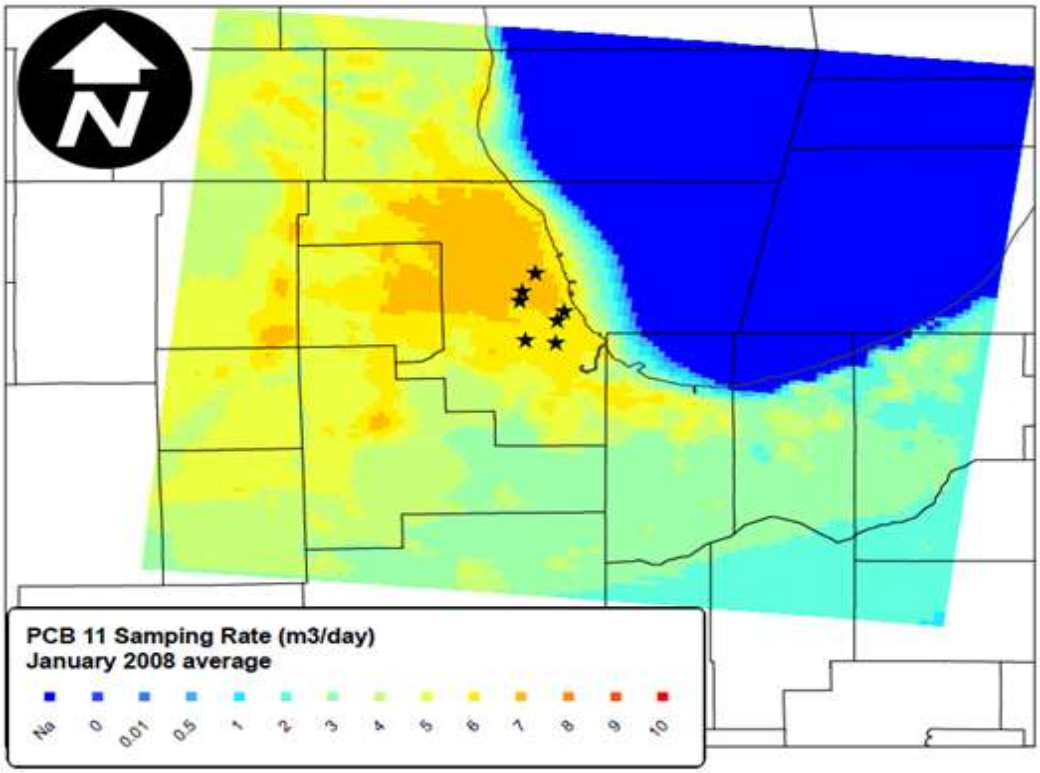


Figure 3-6: Local map of PCB 11 R in January of 2008 using high resolution local meteorology, showing that urban land cover impacts R through surface roughness and temperature.

The estimated PCB 11 Rs for the city of Chicago using regional meteorology for January (Figure 3-5) ranged from 3 – 6 m^3/d, while the R using local meteorology was predicted to be in the range of 2 – 8 m^3/d. The use of regional meteorology for a specific location, especially an urban environment, under predicts the upper range in R. Urban

land cover impacts total R through surface roughness and temperature, which is only captured using the high resolution meteorology. Thus, predicting local urban scale Rs with regional meteorology reduces the range in R and underestimates spatial variability. This suggests the importance of using local meteorology for accurately predicting R. Not only is there strong-congener specific variability in R between using regional versus local scale meteorology, but there is also seasonal variability in sampling. To evaluate seasonal variability in R, analysis was conducted at all PAS PUF deployments in Chicago for 2008. Average R was computed for PCB 3 and the sum of PCBs (ΣPCBs) at each PUF using the model. The PUFs were then separated by month based on the month is which they were deployed. For example, if the deployment date was January 18, 2008 then the sample was put into month of January category. The average monthly R and standard deviation of R amongst the PUFs was computed for each month (Figure 3-7).

Figure 3-7 shows that there is no significant difference in average monthly R for both PCB 3 and ∑PCBs in summer (July and August) the warmest month of the year compared to winter (January and February) the coldest month of the year in Chicago. More specifically, the average R for the ∑PCBs was 6.93 m^3/d in July and August and 6.57 m^3/d in January and February, which was only different by approximately 4.6%. However, the limited seasonal variability in total R is due to the seasonality of the individual contributions from both advection and molecular diffusion. During the coldest months of the year, advection contributes approximately 54.5% and diffusion 45.5%. Conversely, during the warmest months diffusion plays a larger role in R, with a contribution of 55.8% from molecular diffusion and 44.2% from advection. It was expected that advection would play a larger role in winter, since ambient air velocities are higher than in the summer (Table 2-1). Additionally, temperatures are much higher in the summer, leading to a greater R dependence on molecular diffusion.

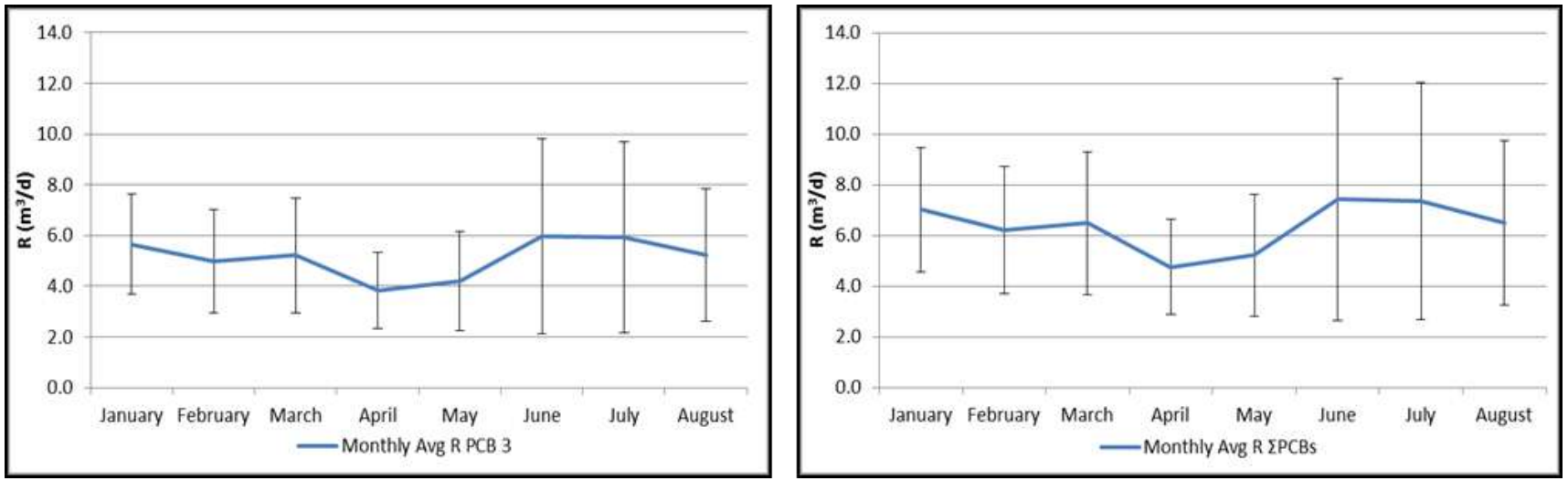


Figure 3-7: Annual time series analysis of model estimated average monthly R from all PUFs in 2008, for PCB 3 on the left and ΣPCBs on the right, along with the associated variability.

Figure 3-7 not only shows seasonal variability, but confirms that R is congener specific. The average R for PCB 3 is consistently 19.5% lower than the average R for ∑PCBs. The ∑PCB profile has an average molecular weight of 326.9 g/mole, and represents a hexachlorinated PCB congener. Scaling between PCB 3 and ∑PCBs to a higher molecular weight PCB (i.e decachlorinated) leads to a 30.0% difference in R between low and high molecular weight congeners, showing the importance of not only congener specific R for PCBs, but compound specific R for all SVOCs. The average R for each PCB congener and co-eluting groups for each PAS PUF deployment in 2008 are shown in Appendix C, each PAS PUF deployment in 2011 are shown in Appendix D for PCBs and PAHs, pesticides, and BFRs are shown in Appendix E.

3.2.4 Process Uncertainty in Sampling Rate (R)

A sensitivity analysis was performed using the model to analyze the individual impact of each combination of model methods on total R. There were a total of eight combinations of investigations conducted in this sensitivity analysis though the use of the three main methods: advection, meteorology source, and temperature. The smallest range in R was seen when either advective method was used with WRF simulated meteorology and ambient air temperature. The base case configurations for each advective method had the largest range in total R, as well as the highest average and largest standard deviation. Using hourly debiased simulated meteorology slightly increased the range, average, and standard deviation in R, and in fact it lead to approximately a 1.8 % increase average R. However, this change in R by switching meteorology methods is minimal, shows there is no significant difference in using co-located hourly simulated debiased meteorology (essentially observational meteorology) compared to WRF simulated hourly meteorology. In contrast, the temperature method plays an important role in variation in R and especially in average R over the deployment period. Through comparison of

sensitivity combinations that used temperature method 1 to those that used temperature method 0, there was approximately a 7.8% change in total R. The change in R from using T_{skin} compared to T is important; however, it may not even capture the entire story. As stated by Kennedy et al., the internal PAS chamber temperature is needed to resolve sampling, and the best way to approximate chamber temperature in this initial model study was to use simulated T_{skin} from WRF, since internal chamber temperatures were unavailable for all of the PAS and deployment periods. It's expected that using internal chamber temperatures would result in even higher variability than quantified in this experiment, since temperatures in the metal chamber would likely be warmer than surface temperatures during the day and cooler than the surface temperatures at night, with internal temperatures at night potentially more similar to ambient temperatures. Heating and cooling rates also would be more rapid for a small metal PAS than for the surface of the built environment.

Sampling rate profiles over time for the hourly minimum, hourly maximum and the base case configuration for advective method 1 from hour 675 to 775 of the February-April PAS PUF deployment at Dawes are shown in Figure 3-8. The base case configuration for advective method 1—the best guess at resolving the processes involved, total R, and total diffusion—has times at which it follows hourly maximum (upper bound) and hourly minimum (lower bound) time series, and times when it falls between these time series. It was expected that this configuration would follow the upper bound at peaks with high sampling rate, due to it using surface temperature along with hourly debiased meteorology.

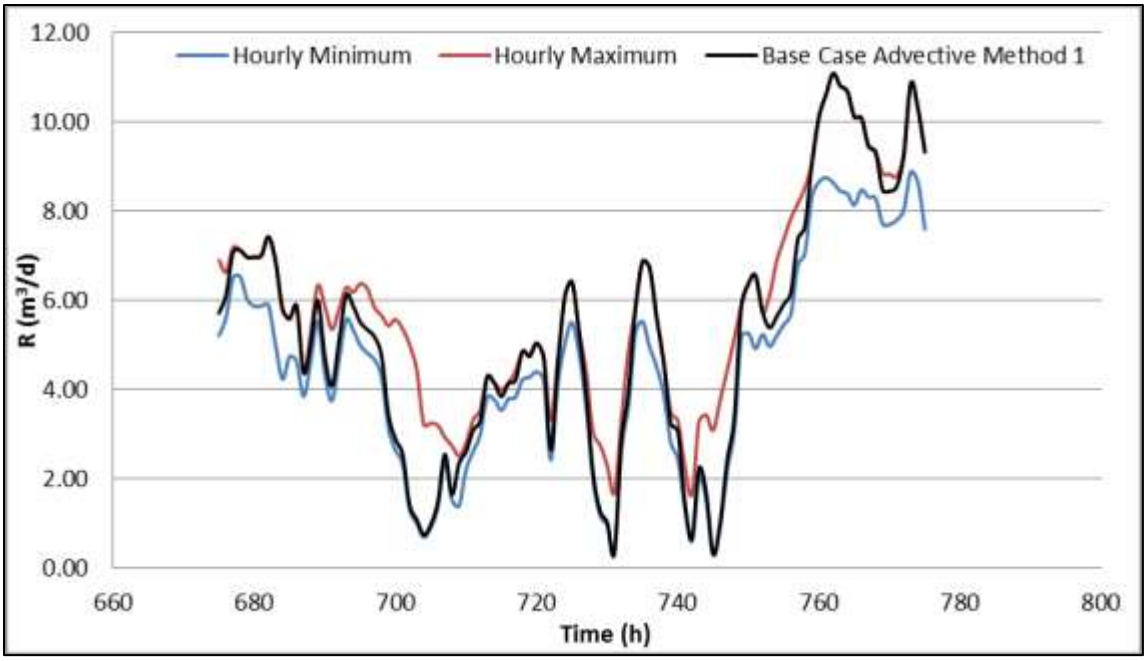


Figure 3-8: Hundred hour snap shot of hourly minimum, maximum, and base case Rs for advective method 1.

However, it was unexpected to see this configuration follow the lower bound, which it does around lower peaks. This was not expected since this configuration uses T_{Skin}, which should be higher than ambient air temperature at all times throughout the deployment, and should lead to increased total R compared to combinations that use ambient air temperature. Diffusion's impact on total R is expected to increase at higher temperature, and is why it was expected that R for this configuration would fall in between the upper and lower bounds when it was not following the upper bound. The average hourly difference in sampling rate between the upper bound and lower bound of the Dawes time series was calculated to be 1.15 ± 0.56 m^3/d and the minimum and maximum difference were 0.28 and 3.70 m^3/d, respectively. This shows that there is uncertainty and variability in R between the different combinations and highlights the importance of articulating a best guess configuration for resolving R from the multiple

modeled processes. However, this uncertainty and variability between the combinations has been quantified and explained through first principles and hourly meteorology and ultimately this methodology allows for the quantification and explanation of the observed effects of meteorology on spatial and seasonal variability in congener-specific R. The quantification of process-based uncertainty allows R to be calculated with confidence in understanding the effects of PAS-PUF chamber temperature (as T_{Skin}) versus ambient air temperature, the advection processes, and simulated versus observational meteorology. Thus, allowing the R process to be truly understood.

3.3 PUF Uptake

Hourly PCB mass uptake onto the PUF disk was analyzed to assess the assumptions that the PUF:air transfer (C_{PUF}/K_{PUF}) is negligible and mass uptake is linear, as in the theoretical understanding of PAS [1, 2, 7] . Figure 3-9 depicts mass uptake for PCB congeners 11 and 206 on to the PUF disk as the mass fraction of PCBs on the PUF disk. Mass uptake onto the PUF disk for both low and high molecular weight congeners is approximately linear for both advective methods over a ~1200 hour period [7 weeks] (Figure 3-9). However, hourly uptake follows a staircase pattern, with spikes in Figure 3-9 corresponding to large episodic increases in ambient wind speed and PAS sampling rate during synoptic frontal passages, and higher linear uptake rates during sustained periods of high winds. Correlation coefficients (0.97 for PCB 11, 0.96 for PCB 206) confirm linear uptake during a typical PAS 7-week deployment period for both high and low molecular weight congeners in the winter.

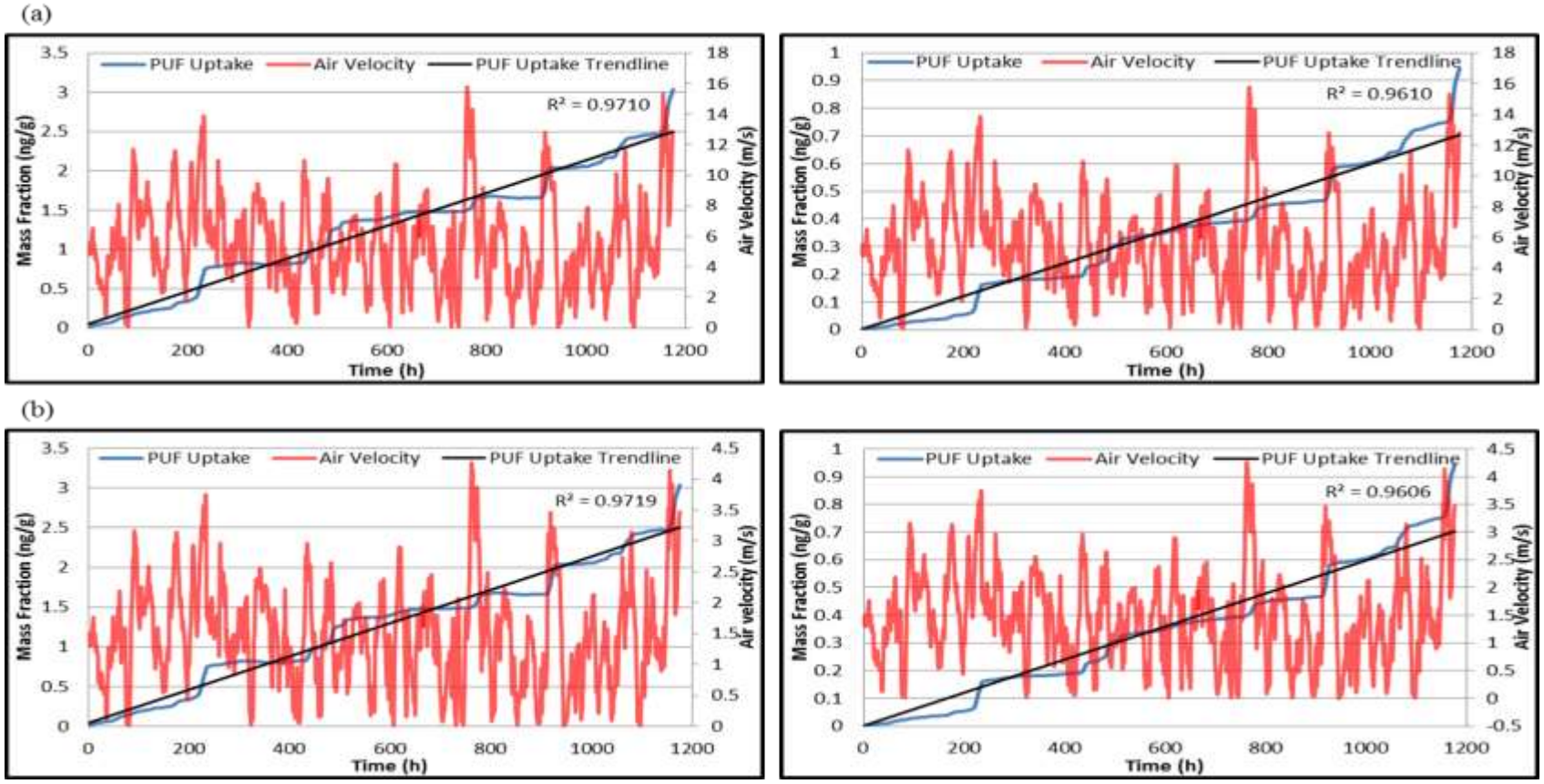


Figure 3-9: Mass uptake of PCB 11 on the left and PCB 206 on the right over the deployment period at the Dawes sampling site using the base case configuration for both advection methods. (a) Advective method 1. (b) Advective method 2.

In addition, it should be noted that PUF uptake follows this quasi-linear trend throughout the winter (12 - 13 week period). However, this is not the case for the summer. As expected, for low molecular weight congeners (or compounds) saturation begins to occur after 6 weeks of deployment in the summer, followed by loss of mass from the PUF into the atmosphere, which occurs around the 10^{th} week (Figure 3-10). This is only the case for low molecular weight congeners and compounds, as shown in Figure 3-10 congener 153 (middle-high molecular weight congener) linear uptake occurs throughout the entire summer. This is due to high molecular weight congeners being less volatile then low molecular weight congener, which results in less mass being in the gas phase and in turn constant linear uptake. Modeled mass uptake onto the PUF shows that it is highly possible that canonical methods used for determining C_{Air} have under predicted concentrations for low molecular weight compounds, since in the traditional PAS concept assumes constant linear uptake throughout as PAS PUF deployment. In turn, the quantified analyzed mass is likely to be non-representative of the true mass from PAS PUF deployment period, since PUF saturates and mass is lost back into the atmosphere. However, nonlinear uptake is no longer a concern using the numerical model, since C_{Air} can be quantified from the linear portion of uptake curve. Figure 3-10 shows that during the summer linear uptake occurs for first 6 weeks of the deployment period ($R^2 = 0.99$ for both advective methods), which suggests that PAS should only be deployed for approximately a month and half during the summer.

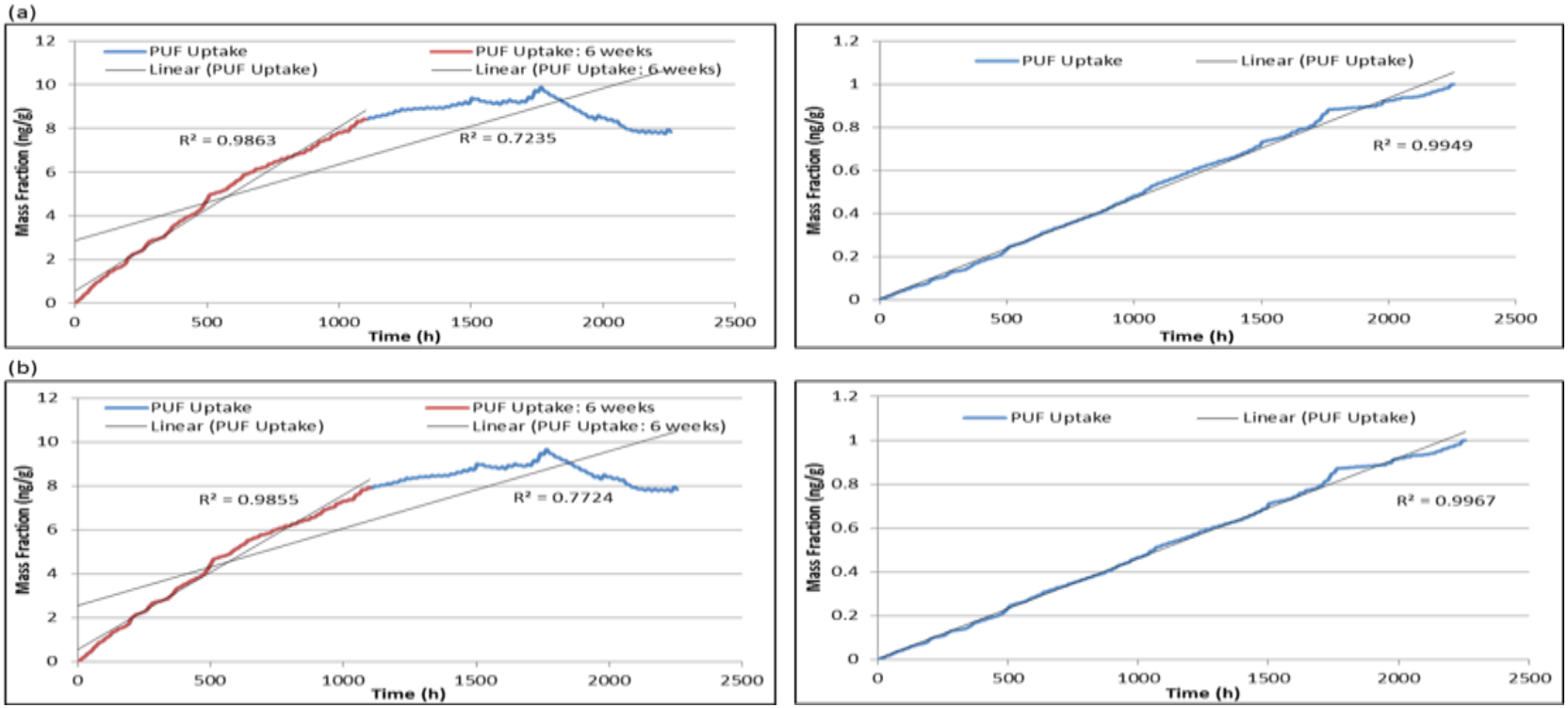


Figure 3-10: Mass uptake of PCB 11 on the left and PCB 153 on the right over the deployment period at the Dawes sampling site for the summer of 2008 using the base case configuration for both advection methods. (a) Advective method 1. (b) Advective method 2. Mass uptake gradually reaches saturation starting after 6 weeks, followed by mass loss (week 10) from the PUF for low molecular weight congeners, but not for high molecular weight congeners.

3.4 Analyte Air Concentration

A pilot study was conducted using modeled hourly and daily analyte air concentration (C_{Air}) for comparison to high-volume (Hi-Vol) active air sampling to XAD polymeric resin was further assessed at a reference temperature (C_{298}). This investigation was conducted to determine the models capability to accurately predict PCB variability in C_{Air}, effects of local PCB transport, seasonal effects, and spatial signals in PCB concentrations. This methodology allows C_{Air} to be directly calculated on an hourly basis as a function of the compound-specific volatilization using Octanol-air enthalpy and temperature effects on local emissions. The pilot scale study was based on using the base case configuration for advective method 1.

3.4.1 Model – XAD Comparison

A comparison of hourly and daily modeled C_{Air} with daily Hi-Vol C_{Air} were analyzed for four PAS PUF deployment sites in Chicago in which there were at least two Hi-Vol daily concentrations. This was conducted to assess whether modeled C_{Air} were capturing the daily variability as seen by Hi-Vol sampling, even though the modeled C_{Air} did not take into account chemical transport [16]. Hi-Vol samplers are electronic and allow for the flow rate to be set at a constant intake speed using a vacuum pump, in which ambient air is then sucked into the sampler and flows through a sampling media that is spiked with a hydrophobic polyaromatic resin in which the SVOCs stick to the medium [8, 40]. Since, the flow rate (R) is a known constant for active sampling, the C_{Air} can be easily quantified and calculated from the analyzed mass and the sampling time. Hi-Vol sampling is normally conducted to obtain daily C_{Air}, and the typical sampling period is between 6-12 hours of real time. The model and Hi-Vol investigation involved four PAS sites where two daily Hi-Vol samples were taken on different days during each

of the four PAS PUF deployment periods at each site [38]. The four sampling sites, PAS PUF deployment period and Hi-Vol sampling period are shown in Table 3-4.

Table 3-4: The sampling site and deployment periods for the PAS and the Hi-Vol sampler for analyte air concentration comparison.

Sampling Site	PUF Deployment Date	PUF Collection Date	First Hi-Vol Sampling Date	Second Hi-Vol Sampling Date
St. Procopius	2/25/2008	4/11/2008	2/27/2008	3/17/2008
Motzart	3/5/2008	4/11/2008	3/11/2008	4/7/2008
Metcalfe	5/16/2008	6/27/2008	5/23/2008	6/3/2008
Shields	7/15/2008	9/3/2008	7/17/2008	7/31/2008

As previously stated, the comparison between the two sampling methods was done to see if modeled C_{Air} captured the variability seen in daily Hi-Vol C_{Air}. Figure 3-11 shows a snapshot of this comparison at the Shields sampling site. As shown in the Figure 3-11, the modeled C_{Air} from the integration of one analyzed mass does capture the variability that is seen in Hi-Vol sampling, despite using different sampling media and methods. More specifically, the average Hi-Vol C_{Air} at Shields sampling site on July 31, 2008 was 2.21 ng/m^3 and during the same sampling period the hourly modeled concentration peaked at 2.01 ng m^{-3}, only 9.0% lower than the Hi-Vol value. However, the model may be overestimating the hourly variability in C_{Air}. The modeled C_{Air} are highly dependent on temperature, and a slight change in temperature has an instantaneous effect on local modeled C_{Air} and potentially on emissions from the built environment; however, this instant response is not as realistic for atmospheric concentrations, which also integrate prior emissions.

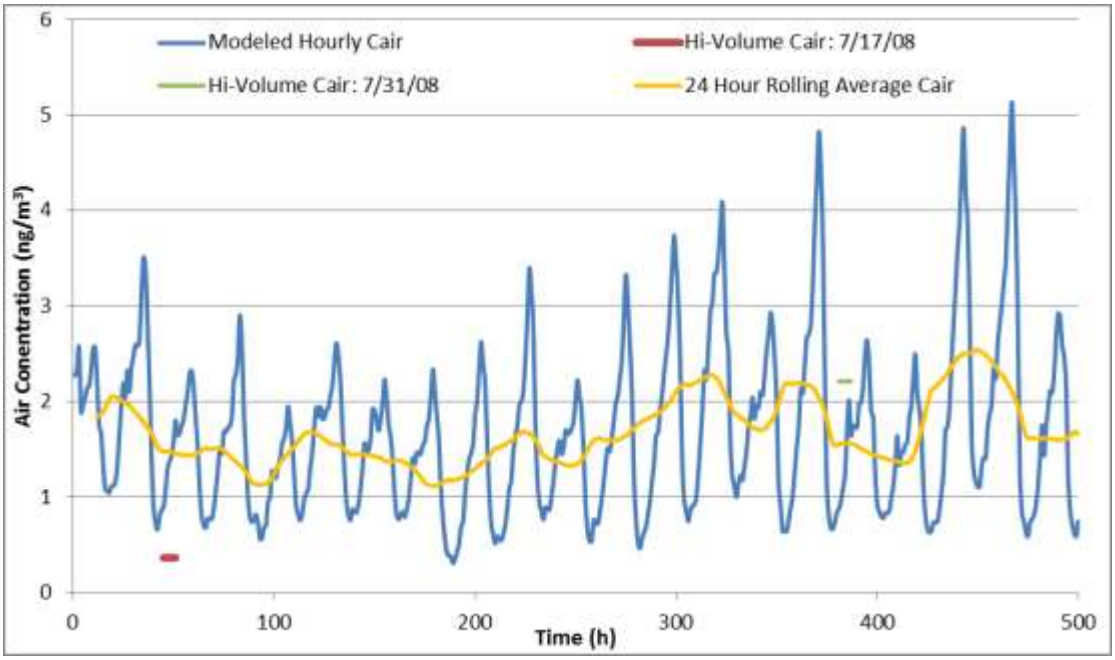


Figure 3-11: Comparison between modeled hourly, Hi-volume, and twenty-four hour rolling average analyte air concentration at the Shields sampling site in July 2008.

To account for this, twenty-four hour average rolling average C_{Air} was calculated from the hourly modeled C_{Air}. The twenty-four hour rolling average C_{Air} captured daily C_{Air} variability, ranging from 1.12 ± 0.46 ng m^{-3} to 2.54 ± 0.46 ng/m^3. It should also be noted that the variability in the range of both hourly and daily C_{Air} may be underestimated due to using a single concentration fraction (C_{Fac}) from Thomas et al.; from using simulated surface temperature instead of actual PAS chamber temperature; and by not accounting for chemical transport [12, 15]. Since, C_{Fac} determines the mass capable of transfer from the ambient air to the PUF using an approximate value instead of the actual value would directly affect the air concentration. A more detailed computational fluid dynamic study should be conducted to see the true effect of ambient air velocity and wind direction on concentration fraction. It is highly probable that C_{Fac} is

site specific and time dependent, since it has a known correlation with flow around the PUF disk (laminar or turbulent), as shown by Thomas et al. [15]. Laminar and turbulent flow around the PUF disk is a function of the air velocity which changes over time, and the turbulent nature of local air flow may further vary from site to site. Using simulated surface temperature (T_{Skin}) in the PAS chamber may have also led to under predicting the variability in the range of modeled air concentration. It is highly probable that the metal housing of the PAS chamber gets hotter during the day and cooler during the night then the built environment. This would result in an increase in the daily peak air concentrations, meaning concentrations would be higher than the predicted value during the day and lower than the predicted value at night. As previously mentioned, the modeled air concentrations do not account for transport and are only a function of temperature and compound volatility. By not accounting for transport, the model C_{Air} will be over predicting or under predicting air concentrations at different times. The ability to calculate hourly and daily continuous C_{Air} allows for better estimates of seasonality compared to obtaining one discrete C_{Air} from a PAS PUF deployment. Comparisons of Hi-Vol to modeled C_{Air} for St. Procopius, Motzart, and Metcalfe can be seen in Appendix F.

3.4.2 Local Transport

Local SVOC transport was evaluated by analyzing a mass uptake (or pollution) rose. A mass uptake rose displays the frequency at which mass is deposited onto the PUF disk from each wind direction. Figure 3-12 depicts a mass uptake rose for total PCBs at the Dawes school sampling site.

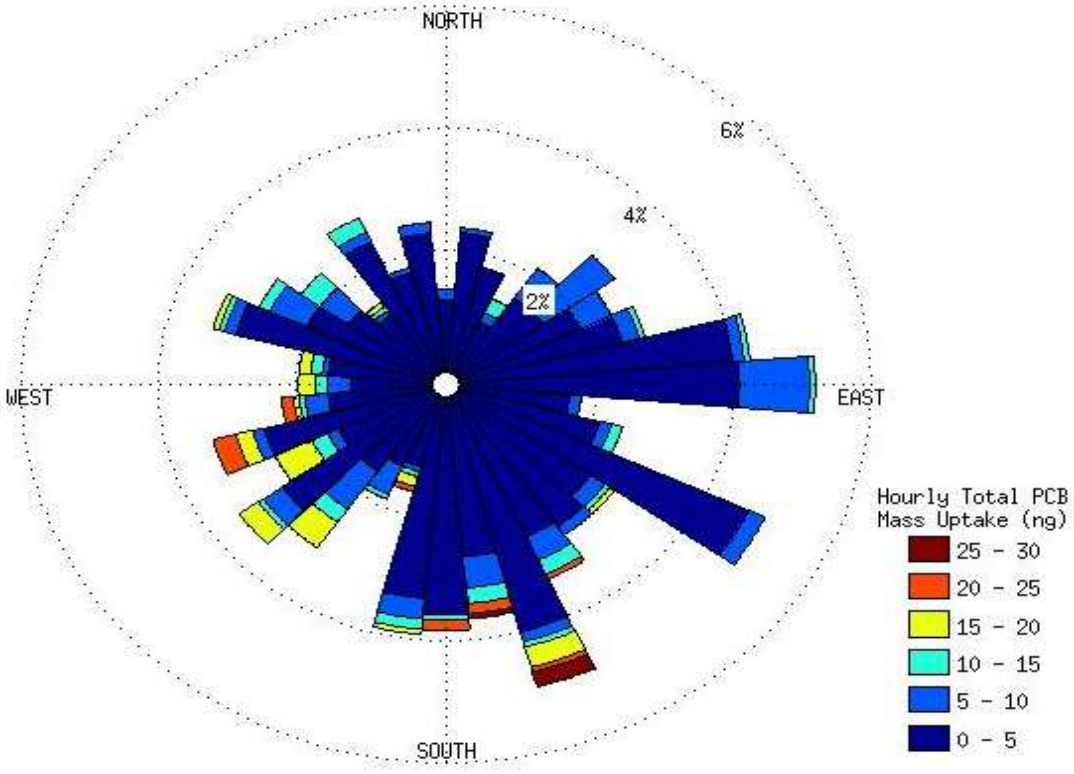


Figure 3-12: Total PCB mass uptake rose at the Dawes school sampling site showing the percent of time the mass uptake is coming from a specific wind direction (stem length and angle). The amount of mass deposited per hour on to the PUF which is represented by color.

As shown in Figure 3-12, the majority of the mass uptake occurs consistently from all directions at low wind speeds. More specifically, about 75% of the deposited mass occurred at a rate of 0-5 ng PCBs/h onto the PUF. At the Dawes school sampling site, larger episodic mass uptake occurs under westerly, southwesterly, southerly, and southeasterly winds. Large mass uptake at rate of 15 – 30 ng PCBs/h was simulated infrequently, during hour with sustained high ambient air velocities. The low and consistent depositing of mass on to the PUF and sporadic periods of large mass deposition shown in the mass uptake rose provide further explanation for the mechanism behind the linear mass uptake shown in Figure 3-9.

The mass uptake rose allows for possible local transport to be assessed based on the site representative direction from which large mass uptake occurs onto the PUF. As previously stated, periods when large mass deposition occurs due to high ambient air velocities are possibly correlated with non-local emissions sources. Mass uptake roses can be used together with chemical transport modeling to increase the accuracy of source identification at both urban and regional scales, including the transport resolved by a transport model as well as localized transport at unresolved scales.

3.4.3 Seasonal and Spatial Variability in Air Concentration

To evaluate seasonal variability in SVOC C_{Air}, analysis was conducted using all analyzed PAS PUFs from 2008. Average C_{Air} were computed for PCB 3 and for ΣPCBs from each PUF. Similar to the R analysis for seasonal variability, the PUFs were then separated by month based on the month is which they were deployed. After the PUFs were separated into month based on deployment, the average C_{Air} and standard deviation for all PUFs were calculated for each month. An annual time series analysis of C_{Air} for 2008 is shown in Figure 3-13. As shown in Figure 3-13, there is strong distinct seasonality in individual and sum of PCB C_{Air}. Average PCB C_{Air} are lower during the winter and early spring months (February, March, and April) and higher during the later spring and summer (Mary, June, and July). This was expected since PCBs are volatile and respond to changes in temperature. As temperature increases, emissions from the local environment increase due to volatilization; this is especially true for low molecular weight PCBs, as shown for PCB 3 in the plot on the left in Figure 3-13.

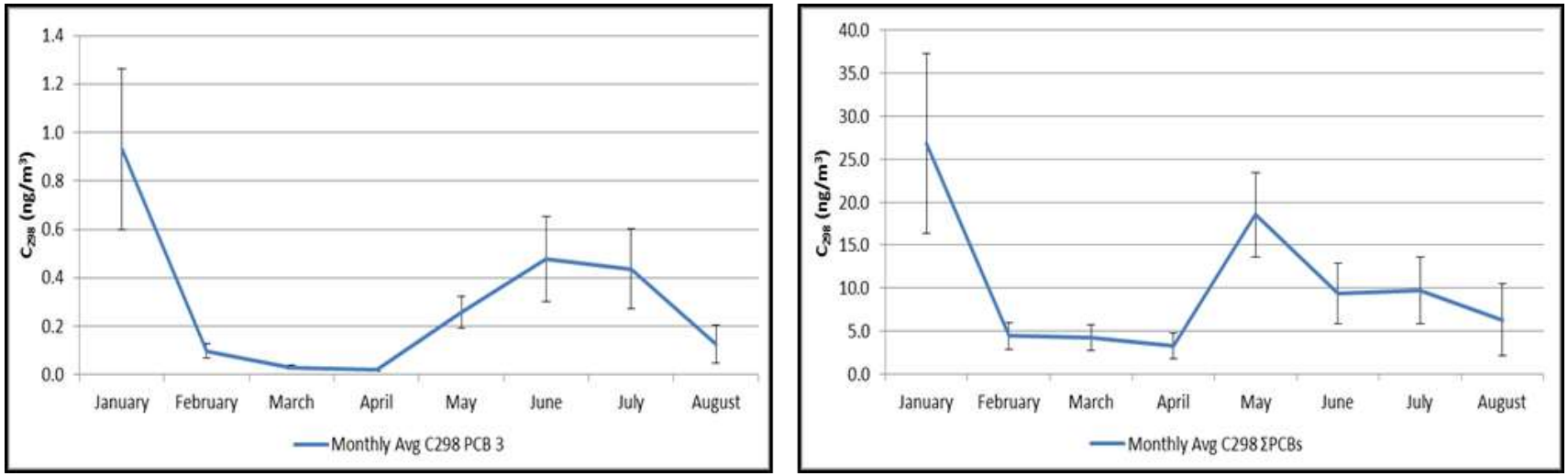
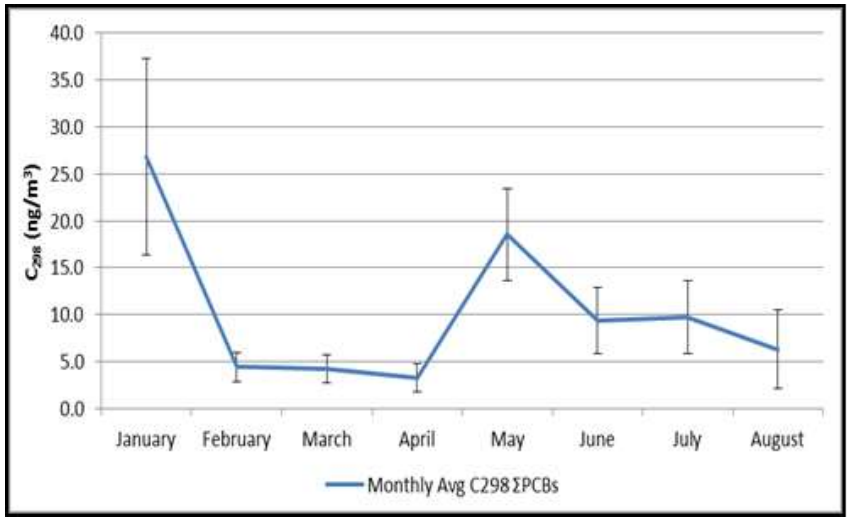


Figure 3-13: Annual time series analysis of model estimated average monthly air concentration from all PUFs in 2008, for PCB 3 on the left and ΣPCBs on the right, along with the associated variability.

PCB 3 had a more pronounced seasonal pattern than ∑PCBs, as there were more distinct and sustained higher C_{Air} in May, June, and July when temperatures are consistently warmer. Additionally, there is large variability in monthly C_{Air}, although there was no distinct pattern in monthly variability in C_{Air}. The average monthly variability was 0.68 ng/m^3 and 0.64 with a range of 0.41 in June to 0.90 in January and 0.39 in May and June to 0.88 in January for the ∑PCBs and PCB 3, respectively. This large variability shows that C_{Air} are spatially dependent and site specific, further supporting the hypothesis that sampling rates derived from local meteorology can contribute to accurate C_{Air}.

To further assess seasonal and spatial variability in air concentrations, C_{Air} were normalized to a reference temperature of 298 K (C_{298}) using Equations 13 – 15 (Figure 3-14). Temperature adjustment dampens seasonality and site to site variability in air concentrations. The average monthly variability for C_{298} decreased to 0.41 ng/m^3 for the ∑PCBs and 0.37 ng m^{-3} for PCB 3.



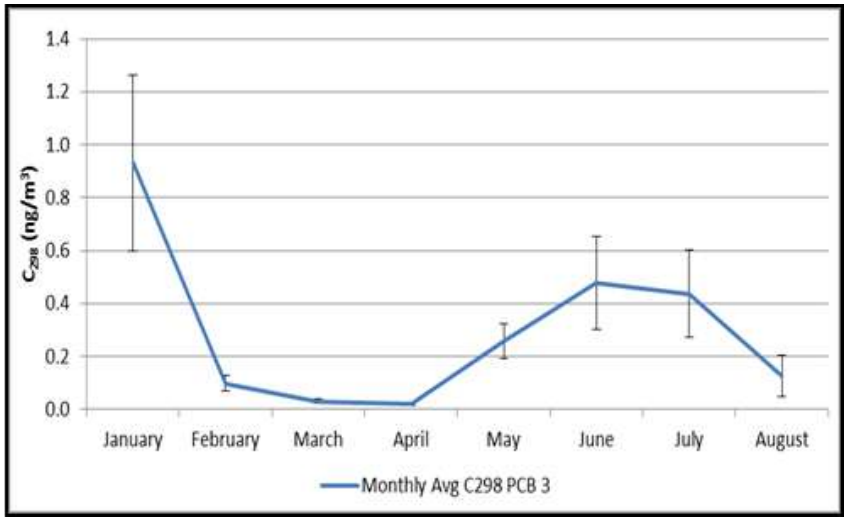


Figure 3-14: Annual time series analysis of model estimated average monthly temperature adjusted C_{298} from all PUFs in 2008, for PCB 3 on the left and ΣPCBs on the right, along with the associated variability.

CHAPTER 4 SUMMARY AND CONCLUSIONS

Polyurethane foam (PUF) passive air samplers are widely deployed as an inexpensive and practical way to sample semi-volatile pollutants. However, concentration estimates from passive sampling to date have relied on estimating constant empirical mass transfer rates, which add unquantified uncertainties to concentrations and to any spatial and temporal information they may contain. Here a method was presented for modeling hourly sampling rates, mass transfer, and analyte air concentrations from hourly meteorology using first principle chemistry, physics, and fluid dynamics. This approach provides a new and accurate way to quantify and explain the observed effects of meteorology on spatial and seasonal variability in congener-specific sampling rates and analyte concentrations; to assess PUF saturation; and to recover average concentration at a reference temperature. Modeled sampling rates were evaluated for gas-phase PCBs at an urban network of seven PAS-PUF samplers in Chicago, Illinois during 2008 using local meteorological observations and those simulated by the Weather Research and Forecasting model at urban to regional scales. Modeled sampling rates were compared with results from depuration compounds, and temporal trends in analyte concentrations evaluated through comparison with active samplers. The model simulated average sampling rates within 17.2 (±16.4) % of those determined from depuration compounds. Results highlight that sampling rates are highly variable at hourly and daily scales, sensitive to spatial and temporal resolution in meteorology, and strongly congener-dependent, with predictable relationships between congeners. Both averaged modeled and depuration-based sampling rates for low molecular weight congeners differed from high molecular high congers by approximately 30% consistently throughout the year, indicating the need to use congener-specific sampling rates when determining concentrations from passive samplers. The importance of each simulated process in

sampling rate and mass transfer were quantified, and the contribution of uncertainty in each process was assessed, including advection, molecular diffusion, volatilization, and turbulent and laminar flow regimes within the sampler housing, finding T versus T_{skin} contributing the greatest variability to total process uncertainty (7.8%). The pilot study showed that simulated PAS PUF analyte air concentration captured the daily variability observed in Hi-Vol sampling. In addition, the modeled estimated seasonality and site to site variability from continuous hourly and daily concentration compared to discrete PUF deployments, showing that air concentrations are spatially dependent, site specific, and dependent on local scale meteorology. Using this methodology and numerical model, hourly congener-specific sampling rates, analyte concentrations, and PUF uptake can be simulated anywhere, at any time, from observed or modeled hourly meteorology.

CHAPTER 5 LIMITATIONS AND FUTURE WORK

Although this methodology can simulate compound-specific hourly R for any SVOC anywhere and at any time directly from hourly meteorology future applications are still warranted to enhance the model outputs. In particular, the numerical model and methodology are limited by: the small number of depuration sample used for fitting γ; two separate advective methods; using T_{Skin} as an uncertain proxy for the temperature of the PAS housing; and using $\Delta H/R$ determined empirically from observations at the Chicago IADN site.

Using 2011 PAS observations alongside 2008 PAS observations will allow the development of a larger γ database. This can be done by quantifying depuration compound Rs for PCB 28 from the 2011 Chicago network samples and determining their correlation with V_A and T_{Skin}. This will then allow more sampling points to be used in the multiple linear regression relationship between γ and V_A and T_{Skin}. The larger sample size will lead to higher accuracy in the modeled γ for PCB 28 and in turn an increased confidence in γ for all PCBs.

Additional computational fluid dynamics is warranted to determine an advective relationship that combines the two advective methods employed. An empirical relationship between wind angle and V_A would lead a complete understanding of advection on passive air sampling and lead to increased accuracy and more complete process simulation in process-based R estimates.

Surface temperature (T_{skin}) is used throughout the numerical model to account for the PAS chamber temperature since it more accurately reflects this internal temperature better than ambient air temperature. However, surface temperature may lead to underestimating the true range in modeled C_{Air}. It would be beneficial to put temperature probes in the PASs when they are deployed to record the hourly temperature inside the

samplers [12]. Recording hourly PAS chamber temperatures and ambient temperatures would support a simple empirical relationship. Then, this empirical relationship could be used to determine the PAS chamber temperatures from simulated T_A. It would be suggested that temperature probes be used at multiple mid-latitudes sites and for an entire year to increase the confidence determine an empirical relationship and for capturing all potential ranges in chamber temperature.

This numerical model and methodology will hopefully lead to much advancement in the field of passive air sampling in the future. This numerical model can be adjusted to determine indoor sampling rates by using HVAC air flow for advection inside a building or home, although the model can accurately estimate indoor R using just diffusion effects and not considering advection. It can allow historical PAS networks and records to be unlocked using hourly meteorology from anytime period. In addition, it would be warranted to learn how this methodology can be adjusted: to determine particle-phase SVOC Rs and C_{Air}, for passive water sampling of SVOCs using Octanol-water partition coefficient (K_{OW}), and for other sampling media to accurately determine Rs and C_{Air} for other air pollutants that are routinely sampled using passive air sampling, but do not use a PUF disk for sampling media and have a different chamber design

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APPENDIX A: MATLAB PROGRAMMING CODE FOR THE PAS NUMERICAL MODEL

Main Driver Function

```
function[PAS_Array] =
PAS_CALC_Mon_Thesis(wrf_file,PUF_ID,Site_ID,diff_method,Temp_method,Debiase
d,Advect_method,Wind_method,Percent_method,R_method)

%Read in CSV Tables to MATLAB
PCB_Properties = csvread('PCB_Properties.csv',1,0); % CSV table that reads in PCB
properties dU,  molar   mass, and Koa. (1,0) is used b/c matlab csv tables stats at 0,0 (aka
1,1 = 0,0) an we want to start at 2,2 which is 1,1 in matlab
Site_Info = csvread('Site_info1.csv',1,0);  % CSV table that reads in the specific site info
(lat, lon, height)
Real_Data = csvread('Real_Data1.csv',1,0);
Hourly_Bias_WS_T = csvread('Hourly_Bias_WS.csv',1,0); % command reads in the
hourly biased wind speed table for 2008

PUF_Row = find(Real_Data(:,1) == PUF_ID);
Site_Row = find(Site_Info(:,1) == Site_ID);

%Declarations: Known Variables that will be used through the scriptyou
 mH2O = 18.015;          % Molar mass of water in g/mol used for diffusivity
 mAir = 28.97;           % Molar mass of air in g/mol used for diffusivity
 VH2O = 9.5;             % Molecular volume of water in cm3/mol
 VAir = 20.1;            % Molecular volume of air in cm3/mol
 Rg = 8.3144;            % Gas constant in J/mol*K
 VPUF = 207.8*1e-06;     % Volume of the PUF in m3
 mPUF = 4.4091;          % Mass of the PUF in g
 g = 9.81;               % gravity in m/s2
 As = .0365;             % Surface Area of the PUF m^2
 delta = VPUF/As;        % PUF boundary layer height (m)
 l = 0.14;               %Length of PUF disk (m)
 Beta = (1/3);           % Beta is 1/3, difference between momentum & mass transport
 Za = 0.038474;          % Za is the pseudocritical constant for air (unitless)
 Tca = 132.206;          % Critical temperature for air (K)
 Zcw = 0.231;            % Critical compressibility factor for water (unitless)
 Zw = 0.0192;            % Pseudocritical constant for water (unitless)
 Tcw = 647.4;            % Critical temperature for water (K)
 Rd = 287.058;           % Specific gas constant for dry air in J/kg*K
 Rv = 461.495;           % Specific gas constant for water vapor J/kg*K
 r = .0254;              % Radius/length of string im m
```

```
%Function to Read in WRF File Containing Time, LAT, LON, PHB
% Opens wrf netcdf file that is called from function input

ncid = netcdf.open(wrf_file,'nowrite');

 %Read WRF data for XLAT, XLONG, PHB, and Time

 TIME = netcdf.getVar(ncid,0);
  %Convert time into MATLAB readable vector format
    % Transposes TIME
    TIME = TIME';
    %Extract year from TIME
    YY = TIME(:,1:4);
    %Extract month from TIME
    MM = TIME(:,6:7);
    %Extract day from TIME
    DD = TIME(:,9:10);
    %Extract hour from TIME
    HH = TIME(:,12:13);
    %Horizontally concatenate the date and time (YY,MM,DD,HH) together
    TimeDate = horzcat(YY,MM,DD,HH);
    TimeDate = str2num(TimeDate);

 LAT = netcdf.getVar(ncid,10,[0,0,0],[119,119,1]);
 % Calculate latitude at time step 1

 LON = netcdf.getVar(ncid,11,[0,0,0],[119,119,1]);
 % Calculate longitude at time step 1

 HEI = netcdf.getVar(ncid,4,[0,0,0,0],[119,119,2,1]);
 %Calculate height at x & y coordinates [i,j] and at time step 1 using PHB

%Determines the WRF Grid Cell for Site based on latitude, longitude, and height
% Read in the observation lat, lon, and height from site table
 Lat_obs = Site_Info(Site_Row,2);
 Lon_obs = Site_Info(Site_Row,3);
 Height_obs = Site_Info(Site_Row,4);

%Calculates the lat and lon x,y coordinates
L_L = Lat_Lon(LAT,LON,Lat_obs,Lon_obs);

[y,idx] = min(L_L(:));
[i,j] = ind2sub(size(L_L),idx);

%Calculates the PAS height at vector [i,j]
H = Height(Height_obs,HEI,i,j,g);
```

```
%Read in WRF Variales for Correct Grid Cell and Time Step and then Concatenate them
into a Matrix


%Determine the start time for the PAS deployment
date_in = Real_Data(PUF_Row,3);
StartTime = find(TimeDate == date_in);

%Determine the end time for the PAS deployment
date_fin = Real_Data(PUF_Row,4);
EndTime = find(TimeDate == date_fin);

%Determine time/Date series in index format,  t1: number of time steps
t1= (StartTime:EndTime);
L = EndTime-StartTime;

% Read in WRF Variables for the above time step/series
V = netcdf.getVar(ncid,2,[i-1,j-1,H-1,StartTime-1],[1,1,1,L]);  %V wind vector
U = netcdf.getVar(ncid,1,[i-1,j-1,H-1,StartTime-1],[1,1,1,L]);  %U wind vector
P = netcdf.getVar(ncid,6,[i-1,j-1,H-1,StartTime-1],[1,1,1,L]);  %Vector of perturbation P
W = netcdf.getVar(ncid,3,[i-1,j-1,H,StartTime-1],[1,1,1,L]);  %W wind vector
Qvap = netcdf.getVar(ncid,8,[i-1,j-1,H-1,StartTime-1],[1,1,1,L]); %Vector of water
vapor mixing ratio
T2 = netcdf.getVar(ncid,12,[i-1,j-1,StartTime-1],[1,1,L]);  %Vector for T at 2 m
T = T2;
TSK = netcdf.getVar(ncid,9,[i-1,j-1,StartTime-1],[1,1,L]);  %Vector of surface T
PB = netcdf.getVar(ncid,7,[i-1,j-1,H-1,StartTime-1],[1,1,1,L]);  %Vector of base state P
P = P + PB;  %adds the base state P to the perturbation P, calculating the air P
TA = T;  %Vector of ambient temperature

if Temp_method == 1
   T = TSK;
   %T = T;
end

if Debiased == 0
   TDB = 0;
End

if Debiased == 1
    %If statement used to determine the correct hourly wind bias values
    %from Hourly_Bias_WS_T csv table for the correct site/time period
    TDStart = find(Hourly_Bias_WS_T(:,1) == date_in);
    TDEnd = find(Hourly_Bias_WS_T(:,1) == date_fin);
    TDB = Hourly_Bias_WS_T(TDStart:TDEnd,3);
```

```
end

%Creating Empty Array of Zeros
%Set  n and p for empty array (t is set above)
c = PCB_Properties(:,1);
n = length(c);          % n: # of congeners from PCB property file
p = 17;                 % p: number of variables
t = length(t1)-1;       % t: Finds the length of a vector t1

%Creates an m by n by p matrix to save selected hourly values for each time step
PAS_Array = zeros(t,n,p);

%Make empty vectors for hourly surface temperaure and air velocity for gamma
T_Hr = zeros(length(t1)-1);
VaG = zeros(length(t1)-1);

for t = 1:length(t1)-1
   if Debiased == 0
    TDB(t) = 0;
    %TDB = T-T;
   end

  %Fills in vectors for surface temperature and air velocity
  T_Hr(t) = T_Hr = abs(TSK-TDB);
  VaG(t)  = WSgamma(Debiased,Advect_method,Hourly_Bias_WS_T,date_in,date_fin,
  U(t),V(t),W(t),t);

end

%Calcualte average surface temperature and air velocity for gamma
T_Hr = sum(mean(T_Hr));
VaGamma = sum(mean(VaG));

%dm for Loop
%Creates a for loop over each congener/groups of congeners
for C = PCB_Properties(1,1):size(c)

   % Creates a for loop over each hour of the time series
   for t = 1:length(t1)-1

    %Set mm, dU, KOA from PCB_Properties csv file and analyzed mass from real_data
csv file

    mm = PCB_Properties(C,2);          %Molecular weight
    dU = PCB_Properties(C,3);          %Octonal-air enthalpy
    LKOA = PCB_Properties(C,4);        %Log of Octanol air partition coefficient
```

```
%Calculates each subroutine based on the specified congener and time

    %Subroutine used to calculate the air velocity in m/s, Advect_method == 1
    %calculates the internal velocity, Advect_method == 2 calculates external
    Va = flow_rate(U(t),V(t),W(t),Debiased,Advect_method,t,Hourly_Bias_WS_T,
    date_in,date_fin);

    if Va < 0.5
      CFac = 1;
    else
      CFac = 0.5;
    end

    %Subroutine for gamma
    GammaPCB  = gamma1(Advect_method,T_Hr,VaGamma,LKOA);

    %Subroutine that calculated diffusivity in m^2/s
    D = PCB_Diffusivity(T(t),P(t),mm,diff_method,TDB(t));

    %Subroutine that calculates the viscosity of air
    MuAir = Visc_Air(T(t),Za,Tca,TDB(t));

    %Subroutine that calculates the viscosity of water
    MuWater = Visc_Water(T(t),Tcw,Zw,Zcw,TDB(t));

    %Subroutine that calculates the dynamic viscosity of moist air in kg/m-s
    DynamicMu = Dynamic_Visc(T(t),P(t),Qvap(t),MuAir,MuWater,Rd,TDB(t));

    %Subroutine to calculate the density of moist air in kg/m^3
    Density = Density_Air(T(t),P(t),Qvap(t),Rd,Rv,TDB(t));

    %Subroutine to calculate the kinematic viscosity in m^2/s
    Kinematic = DynamicMu/Density;

    %Subroutine that calculates the mass transfer coefficent in m/s
    kv = Mass_Trans(GammaPCB,Va,D,l,Beta,Kinematic);


    %Equation that calculates the diffusive sampling rate m^3/d
    %R_Diff = R_Diffusion(GammaPCB,Va,D,l,Beta,Kinematic);
    if Va < 0.5;          % Va in m/s
        alpha = 0.5;
    else
        alpha = 0.9;
```

```
end

%Calculates diffusions contribution on sampling rate
R_Diff = (GammaPCB*(D.^(1-Beta))*(Kinematic.^(Beta-alpha))*(l.^(alpha-
1)))*As*86400;

%Subroutine that calculates the net wind angle in degress
WA = Net_WindAngle(Va,g,r,U(t),V(t),W(t),Wind_method);

%Subroutine that calculates the percent difference in sampling rate (R)
PDR = Perc_DiffR(WA,Percent_method);

%Subroutine that calculates total sampling rate (R) in m^3/d
R = R_Total(kv,As,PDR,R_method);

%Equation that Calculates advective sampling rate in m^3/d
R_Advect = R - R_Diff;

%Subroutine that calculates PCB air concentration variability
CA = Air_Conc(dU,TA(t),TSK(t),TDB(t));

%Subroutine that calculates the PCB concentration on the PUF based on dm at t-1
CPUF = PUF_Concentration(t,C,PAS_Array,mPUF);
if (t == 1)
 CPUF = 0;
end
if (t > 1)
CPUF = PAS_Array((t-1),C,13)/mPUF;
end

%Subroutine that calculates PUF/Air equilibrium partition coefficient
KPUF = PUFAIR_EQU(LKOA);

%Calculates hourly dm based on variables calculated above

dm = (CFac*(kv*As*(CA-(CPUF/(KPUF)))))*3600;

% Fill in PAS_Array  for variables (p)

PAS_Array(t,C,1) = kv;
PAS_Array(t,C,2) = D;
PAS_Array(t,C,3) = Kinematic;
PAS_Array(t,C,4) = WA;
PAS_Array(t,C,5) = PDR;
PAS_Array(t,C,6) = R;
PAS_Array(t,C,7) = R_Diff;
```

```
 PAS_Array(t,C,8) = R_Advect;
 PAS_Array(t,C,9) = CA;
 PAS_Array(t,C,10) = CPUF;
 PAS_Array(t,C,11) =  KPUF;
 PAS_Array(t,C,15) = Va;
 PAS_Array(t,C,12) = dm;

 if t == 1
 PAS_Array(t,C,13) = dm;
 end
 if t > 1
    PAS_Array(t,C,13) = dm  + PAS_Array((t-1),C,13);
 end
 end

%Obtain Analyzed mass from AnaMass_mass csv file in ng
Analyzed_mass = Real_Data(PUF_Row,C+4);

% Solve for concentration factor
MassFactor = Analyzed_mass/PAS_Array(max(t),C,13);

% Re-calculate dm with concentration factor
PAS_Array(:,C,13) = (PAS_Array(:,C,13)*MassFactor);

%Calculate houlry air concentration using concentration factor
PAS_Array(:,C,9) = PAS_Array(:,C,9)*MassFactor;

for t = 1:length(t1)-1
   %TA(t) = abs(TA(t)-TDB(t));

   % Calculate hourly partial pressure for gas phase PCBs and ideal gas
   % in atm, R = 82.05 atm-cm3/mol-K
   PAS_Array(t,C,16) = PAS_Array(t,C,9)*(10.^9)*(1/mm)*82.0575*(1/100.^3)*TA(t);

   % dH/R as dH
   dH = -6246;

   %Calculate the partial pressure at T=298 using the clausius-clapeyron
   %in atm and R = 8.3144 J/mol-K
   PAS_Array(t,C,17) = PAS_Array(t,C,16)*exp((-dH)*((1/TA(t))-(1/298)));

   %Calcuate C298 using the partial pressure at 298 and ideas gas law in
   %ng/m3, R = 82.05 atm-cm3/mol-K
   PAS_Array(t,C,14) = (PAS_Array(t,C,17)/(82.0575*298))*mm*(1/10.^-9)*(100.^3);
end
end
```

```
%For loop that creates a useable matrix of all variable for each congener at each time step
from the 3D PAS_Array
z = 1+n*p;

PAS_Final = zeros(length(t1)-1,z);

%Set parameter t for all rows in column 1 from transposed time (Time) of t1

PAS_Final(:,1) = TimeDate(t);

for C = PCB_Properties(1,1):size(c)       %
    %Sets n parameter based on congener and variable from PAS_Array
    P1 = PAS_Array(:,C,:);

    PAS_Final(:,(C-1)*p+2:C*p+1) = reshape(P1,length(t1)-1,p);

end

csvwrite('PAS_CALC.csv',PAS_Final);


end
```

Subroutine Functions

Latitude and Longitude

```
function [L_L] = Lat_Lon(lat,lon,Lat_obs,Lon_obs)
% Subroutine that calculates the least squares value for latitude and longitutde
% Equation that calculates method of least squares (L_L)

L_L = sqrt((lon - Lon_obs).^2 + (lat - Lat_obs).^2);

end
```

Height

```
function [H] = Height(Height_obs,HEI,i,j,g)
%Subroutine that calculates the height of the PAS PUF at a specifies location
%Divides HEI by g(gravity)=9.81 m/s^2 to get PHB into meters
HEI = HEI(i,j,:)/g;
```

```
HEI = HEI - HEI(1);
%Calculates the difference in height of HEI and the observed heigh (change)
dH = HEI - Height_obs;

%Calculates the actual height based on the boundary layer at which the PUF
%is located (shortest positive height)
H = min(dH(dH>0));
H = find(H == dH);
H = H-1;

end
```

Wind Speed for Static Advective Mass Transfer Coefficient

and Air Velocity

```
function [ VaG ] = WSgamma(
Debiased,Advect_method,Hourly_Bias_WS_T,date_in,date_fin,U,V,W,t )
if Debiased == 0
   WDB = 0;

 if Advect_method == 1

 %Calculates external wind speed based on horizontal wind vectors U and V
 WSg = sqrt(U.^2 + V.^2 + W.^2);
 WSg = abs(WSg-WDB);

  %Calculates the internal velocity inside the PAS chamber Vi
  %Determine which equation should be used

  if WSg <= 1.5

     Vi = 0.1608*WSg;

  elseif WSg < 3.0

     Vi = 0.2385*WSg;

  else WSg >= 3.0;

     Vi = 0.2703*WSg;

  end
```

```
    VaG = Vi;

  end

  if Advect_method == 2

  % Calculates the external air velocity using the  horizontal wind vectors

  WSg = sqrt(U.^2 + V.^2 + W.^2);
  VaG = abs(WSg - WDB);
  end
end


if Debiased == 1
     %If statement used to determine the correct hourly wind bias values
     %from Hourly_Bias_WS_T csv table for the correct site/time period
     WDStart = find(Hourly_Bias_WS_T(:,1) == date_in);
     WDEnd = find(Hourly_Bias_WS_T(:,1) == date_fin);

     WDB = Hourly_Bias_WS_T(WDStart:WDEnd,2);

  if Advect_method == 1

  %Calculates external wind speed based on horizontal wind vectors U and V
  WSg = sqrt(U.^2 + V.^2 + W.^2);
  WSg = abs(WSg-WDB(t));

    %Calculates the internal velocity inside the PAS chamber Vi
    %determine which equation should be used

    if WSg <= 1.5

       Vi = 0.1608*WSg;

    elseif WSg < 3.0

       Vi = 0.2385*WSg;

    else WSg >= 3.0;

       Vi = 0.2703*WSg;

    end

    VaG = Vi;
```

```
 end

 if Advect_method == 2

  % Calculates the external air velocity using the horizontal wind vectors
 WSg = sqrt(U.^2 + V.^2 + W.^2);
 VaG = abs(WSg - WDB(t));
 end

end
end
```

Static Advective Mass Transfer Coefficient

```
function [ GammaPCB ] = gamma1(Advect_method,T_Hr,VaGamma,LKOA)
%Function that calculates static advective mass transfer coefficient for PCB28 based on
average WS and surface T and then uses the volatility ratio (log Koa's) to calculate static
advective mass transfer coefficient for the specified congener

LKOA28 = 7.60255;

if Advect_method == 1

%   Equation that calculates gamma of PCB 28
Gamma28 = -0.754768 + 0.777187*VaGamma + 0.0033982*(T_Hr) -
0.0030828*VaGamma*(T_Hr);

% Equation calculates gamma for specific congener
GammaPCB = Gamma28*(LKOA/LKOA28);

end

if Advect_method == 2

%Equation that calculates gamma of PCB 28
Gamma28 = -0.278053 + 0.0770746*VaGamma + 0.0012877*(T_Hr) -
0.00030914*VaGamma*(T_Hr);

%Equation that calculates gamma for specific congener
GammaPCB = Gamma28*(LKOA/LKOA28);

end
end
```

Molecular Diffusion

```
function [D] = PCB_Diffusivity(T,P,mm,diff_method,TDB)
%Subroutine that calculates the individual PCB diffusivty for each time step
%based on the PCB molar mass, air temperature, and air pressure

 mH2O = 18.015;          %Molar mass of water in g/mol used for diffusivity
 mAir = 28.97;           %Molar mass of air in g/mol used for diffusivity
 VH2O = 9.5;             %Molecular volume of water in cm^3/mol
 VAir = 20.1;            %Molecular volume of air in cm^3/mol
 T = abs(T-TDB);         %Temperature from debiased temperature calculation

if diff_method == 1

% Equation that calculates diffusivity in m^2/sec with T in K, P in atm, and m in g/mol
% P atm =101325.53 Pa
Di = ((10.^-3*T.^1.75*((1/mAir) + (1/mH2O)).^.5)/(P*(1/101325)*(VAir.^(1/3) +
VH2O.^(1/3)).^2))*((mm/mH2O).^-.5);

%Converts units to m^2/s
D = Di/(100.^2);
end

if diff_method == 2
   % Equation that calculates diffusivity equal to 1 if diffusivity is not needed
   D = 1;
end
end
```

Dynamic Viscosity of Air

```
function [ MuAir ] = Visc_Air( T,Za,Tca,TDB)
%Calculates the viscosity of air based on the reduced temperature Tra

T = abs(T-TDB);         %Temperature from debiased temperature calculation

%Calculates Tra
Tra = T/Tca;

%Calculates the viscosity of air after determining Tra
MuAir = (17.78*((4.58*Tra - 1.67).^0.625)*10.^-7)/Za;
end
```

Dynamic Viscosity of Water

```
function [ MuWater ] = Visc_Water( T,Zcw,Zw,Tcw,TDB)
%Calculates the viscosity of water based on the reduced temperature(Trw),

T = abs(T-TDB);          %Temperature from debiased temperature calculation %
%Calculates Trw
Trw = T/Tcw;

%Calculates viscosity of water (hydrogen bonding type)
MuWater = ((7.55*Trw-0.55)*(Zcw.^-1.25)*10.^-7)/Zw;
end
```

Dynamic Viscosity of Moist Air

```
function [ DynamicMu ] = Dynamic_Visc(T,P,MuAir,MuWater,Qvap,Rd,TDB)
%Calculates the dynamic viscosity of moist air using the dynamic viscosity of air and
water, alongside the molar fractions of air and water.

T = abs(T-TDB);              %Temperature from debiased temperature calculation

%Set a, which is an empirical factor based on Temperature in K
if T >= 293.15
   a = 2.5;
else
   a =3.5;
end

%Calculates the moles of water vapor in moles/m^3, using the density of air in kg/m^3
% R = 287.058;     % Specific gas constant for dry air in J/kg*K
Mw = Qvap*(1/18.015)*1000*(P/(Rd*T));

%Calculates the moles of air in moles/m^3, using the density of water as 1000kg/m^3
Ma = (1/Qvap)*(1/28.97)*(1000)*(1000);

%Calculates the mole fraction of water
Xw = Mw/(Mw+Ma);

%Calculates the mole fraction of air
Xa = Ma/(Mw+Ma);

%Calculates the dynamic viscosity of moist air in kg/m-s
DynamicMu = (Xa*MuAir + Xw*MuWater)*(1+((Xw-Xw.^2)/a));
end
```

Density of Moist Air

```
function [ Density ] = Density_Air( T,P,Qvap,Rd,Rv,TDB)
%Calculates the density of moist air using temperature, pressure, water vapor mixing
ratio (Qvap) and the specific gas constants for dry air and water vapor
T = abs(T-TDB);                % Temperature fromdebiased temperature calculation

%Calculates the moles of water vapor in moles/m^3, using the density of air in kg/m^3
% R = 287.058;     % Specific gas constant for dry air in J/kg*K
Mw = Qvap*(1/18.015)*1000*(P/(Rd*T));

%Calculates the moles of air in moles/m^3, using the density of water as 1000kg/m^3
Ma = (1/Qvap)*(1/28.97)*(1000)*(1000);

%Calculates the mole fraction of water vapor
Xw = Mw/(Mw+Ma);
%Calculates the mole fraction of air
Xa = Ma/(Mw+Ma);

%Calculates the partial pressure of water vapor air (Pv)
Pv = Xw*P;
%Calculates the patrial pressure of dry air (Pd)
Pd = Xa*P;

%Calculates the density of moist air in kg/m^3
Density = (Pd/(Rd*T)) + (Pv/(Rv*T));
end
```

Mass Transfer Coefficient

```
function [kv] = Mass_Trans(GammaPCB,D,Va,l,Beta,Kinematic)
%Calculates kv based on the constant gamma, molecular diffusivity, air velocity, PUF
disk length, kinematic viscosity, alpha (laminar or turbulent flow), and beta

%Calculate alpha based on laminar or turbulent flow from air velocity (Va)
if Va < 0.5;
   alpha = 0.5;
else
   alpha = 0.9;
end

%Calculates Nu, which is the kinematic viscosity of moist air raised to Beta-alpha
Nu = Kinematic.^(Beta-alpha);
```

```
%Calculates the mass transfer rate (kv) based on laminar or turbulent flow
kv = GammaPCB*D.^(1-Beta)*Va.^(alpha)*Nu*l.^(alpha-1);
end
```

Net Wind Angle

```
function [WA] = Net_WindAngle(Va,g,r,U,V,W,Wind_method)
%Determines the net wind angle effect on the PAS

if Wind_method == 0
   WA = 0;
end
if Wind_method == 1

%Subroutine that calculates the string angle in radians
Theta = StrAngle(Va,g,r);

%Subroutine that calculates the vertical angle of the wind on direction in radians
Phi = Vangle(U,V,W);

%Determines net wind angle based on angle Phi and Theta
if Phi > 0
  WAradian = abs(atan((sin(Theta)+sin(Phi))/(cos(Theta)+cos(Phi))));
else
  WAradian = abs(atan((sin(Theta)-sin(Phi))/(cos(Theta)+cos(Phi))))*-1;
end

WA = WAradian*(180/pi);
end
end
```

Percent Difference in R from Wind Angle

```
function [PDR] = Perc_DiffR(WA,Percent_method)
%Calculates the percent difference in R based on the calculated wind angle, if
if Percent_method == 0
   PDR = 0;
end

% Calculate the percent difference in sampling rate using the best fit line relationship
if Percent_method == 1
PDR = -4.0604*10.^-8*WA.^6 + 2.9112*10.^-6*WA.^5 + 5.1500*10.^-5*WA.^4 -
5.7005*10.^-3*WA.^3 + 2.3972*10.^-2*WA.^2 + 2.7326*WA - 3.5541;
end
```

Air Concentration

```
function [CA] = Air_Conc(dU,TA,TSK,TDB)
% Subroutine that calculates the PCB air concentration based on variability with
reference temperature (298K)
Rg = 8.3144;                    % Gas constant for J/mol*K
TA = abs(TA-TDB);               % Temperature from debiased temperature calculation

CA = (1/(exp((-dU/Rg)*((1/TA) - (1/298)))))*(TA/TSK);
end
```

PUF-Air Equilibrium Partition Coefficient

```
function [KPUF] = PUFAIR_EQU(LKOA)
%Subroutine that calculates the PUF-Air equilibrium partition coefficient
%Calculates log of KPUF
logKPUF = 0.6366*LKOA - 3.1774;

%Calculates KPUF (dimensionless)
KPUF = 10.^logKPUF;
end
```

Total Sampling Rate

```
function [R] = R_Total(kv,As,PDR,R_method)
%Calculates the total sampling rate (R) in m^3/d

if R_method == 1
%Calculates the total sampling (R) based on the external to internal velocity relationship,
where 86400 is conversion from seconds to day
  R = kv*As*86400;
end

if R_method == 2
%Calculates the total sampling rate (R) based on the wind angle relationship
%Calculates Ro (sampling rate for external Va) based on the external velocity
Ro = kv*As*86400;

%Calculates R using percent difference equation
R = Ro*((PDR/100)+1);
end
end
```

APPENDIX B: PHYSICAL PROPERTIES

Table B-1: Physical properties of polychlorinated biphenyls.

PCB Congener List	Molecular Weight (g/mol)	ΔUoa (J/mol)	LogKoa
1	188.64	-69423.72	6.37
2	188.64	-72323.72	6.62
3	188.64	-72323.72	6.64
4	223.09	-71001.44	6.52
5	223.09	-73901.44	6.98
6	223.09	-73901.44	6.93
7	223.09	-73901.44	6.88
8	223.09	-73901.44	6.98
9	223.09	-73901.44	6.60
10	223.09	-71001.44	6.60
11	223.09	-76801.44	7.21
12/13	223.09	-76801.44	7.24
15	223.09	-76801.44	7.34
16	257.53	-75479.16	7.22
17	257.53	-75479.16	7.07
18/30	257.53	-75479.16	7.12
19	257.53	-72579.16	6.76
21	257.53	-78379.16	7.54
22	257.53	-78379.16	7.69
23	257.53	-78379.16	7.12
24	257.53	-75479.16	7.24
25	257.53	-78379.16	7.56
26	257.53	-78379.16	7.57
27	257.53	-75479.16	7.22
28/20	257.53	-78379.16	7.60
31	257.53	-78379.16	7.62
32	257.53	-75479.16	7.22
33	257.53	-78379.16	7.61
34	257.53	-78379.16	7.22
35	257.53	-81279.16	7.58
36	257.53	-81279.16	7.74
37	257.53	-81279.16	8.04

Table B-1 continued

PCB Congener List	Molecular Weight (g/mol)	ΔUoa (J/mol)	LogKoa
38	257.53	-81279.16	7.78
39	257.53	-81279.16	7.80
42	291.98	-79956.88	7.74
43	291.98	-79956.88	7.74
44/47/65	291.98	-79956.88	7.78
45/51	291.98	-77056.88	7.37
46	291.98	-77056.88	7.39
48	291.98	-79956.88	7.69
49/69	291.98	-79956.88	7.69
52	291.98	-79956.88	7.72
53/50	291.98	-77056.88	7.37
54	291.98	-74156.88	6.84
55	291.98	-82856.88	8.24
56	291.98	-82856.88	8.32
57	291.98	-82856.88	8.13
58	291.98	-82856.88	8.16
59/62/75	291.98	-79956.88	7.86
60	291.98	-82856.88	8.31
63	291.98	-82856.88	8.17
64	291.98	-79956.88	7.90
66	291.98	-82856.88	8.28
67	291.98	-82856.88	8.22
68	291.98	-82856.88	8.07
70	291.98	-82856.88	8.28
71/40/41	291.98	-79956.88	7.87
72	291.98	-82856.88	8.09
73	291.98	-79956.88	7.71
77	291.98	-85756.88	8.74
78	291.98	-85756.88	8.53
79	291.98	-85756.88	8.51
80	291.98	-85756.88	8.29
81	291.98	-85756.88	8.59
82	326.42	-84434.60	8.42
84	326.42	-81534.60	8.03
85/116/117	326.42	-84434.60	8.40
87/86/97/108/109/125	326.42	-84434.60	8.41
89	326.42	-81534.60	7.98

Table B-1 continued

PCB Congener List	Molecular Weight (g/mol)	ΔUoa (J/mol)	LogKoa
91/88	326.42	-81534.60	7.98
92	326.42	-84434.60	8.32
94	326.42	-81534.60	7.93
95/93/98/100/102	326.42	-81534.60	8.04
96	326.42	-78634.60	7.49
99/83	326.42	-84434.60	8.38
101/90/113	326.42	-84434.60	8.38
103	326.42	-81534.60	7.91
104	326.42	-78634.60	7.33
105	326.42	-87334.60	9.04
106	326.42	-84434.60	8.81
109	326.42	-84434.60	8.42
110/115	326.42	-84434.60	8.58
111	326.42	-87334.60	8.72
112	326.42	-84434.60	8.41
114	326.42	-87334.60	8.88
118	326.42	-87334.60	9.03
119	326.42	-84434.60	8.48
120	326.42	-87334.60	8.79
121	326.42	-84434.60	8.28
122	326.42	-87334.60	8.93
123	326.42	-87334.60	8.89
124/107	326.42	-87334.60	8.89
126	326.42	-90234.60	9.37
127	326.42	-90234.60	9.15
130	360.86	-88912.32	9.01
131	360.86	-86012.32	8.58
132	360.86	-86012.32	8.66
133	360.86	-88912.32	8.94
134/143	360.86	-86012.32	8.58
136	360.86	-83112.32	8.10
137	360.86	-88912.32	8.95
138/129/160/163	360.86	-88912.32	9.10
139/140	360.86	-86012.32	8.54
141	360.86	-88912.32	8.97
142	360.86	-86012.32	8.40

Table B-1 continued

PCB Congener List	Molecular Weight (g/mol)	ΔUoa (J/mol)	LogKoa
144	360.86	-86012.32	8.59
145	360.86	-83112.32	7.97
146	360.86	-88912.32	9.01
148	360.86	-86012.32	8.59
149/147	360.86	-86012.32	8.68
150	360.86	-83112.32	9.01
151/135/154	360.86	-86012.32	8.58
152	360.86	-83112.32	7.98
153/168	360.86	-88912.32	9.09
155	360.86	-83112.32	7.87
156/157	360.86	-91812.32	9.62
158	360.86	-88912.32	9.19
159	360.86	-91812.32	9.44
161	360.86	-88912.32	9.01
162	360.86	-91812.32	9.51
164	360.86	-88912.32	9.16
165	360.86	-88912.32	9.00
167	360.86	-91812.32	9.62
169	360.86	-94712.32	9.99
170	395.31	-93390.04	9.72
171/173	395.31	-90490.04	9.26
172/192	395.31	-93390.04	9.64
174	395.31	-90490.04	9.27
175	395.31	-90490.04	9.21
176	395.31	-87590.04	8.68
177	395.31	-90490.04	9.26
178	395.31	-90490.04	9.20
179	395.31	-87590.04	8.68
180/193	395.31	-93390.04	9.72
181	395.31	-90490.04	9.14
182	395.31	-90490.04	9.18
183/185	395.31	-90490.04	9.28
184	395.31	-87590.04	8.58
186	395.31	-87590.04	8.51
187	395.31	-90490.04	9.25
188	395.31	-87590.04	8.56

Table B-1 continued

PCB Congener List	Molecular Weight (g/mol)	ΔUoa (J/mol)	LogKoa
189	395.31	-96290.04	9.28
190	395.31	-93390.04	9.80
191	395.31	-93390.04	9.81
192	395.31	-93390.04	9.63
194	429.75	-100767.76	10.36
195	429.75	-94967.76	9.87
196	429.75	-94967.76	9.92
197/200	429.75	-92067.76	9.28
198/199	429.75	-94967.76	9.82
201	429.75	-92067.76	9.89
202	429.75	-92067.76	9.28
203	429.75	-94967.76	9.89
205	429.75	-97867.76	10.45
206	465.74	-99646.27	10.54
207	465.74	-96746.27	9.90
208	465.74	-96746.27	9.88
209	498.64	-101023.20	10.52

Table B-2: Physical properties of polyaromatic hydrocarbons.

PAH Compound List	Molecular Weight (g/mol)	ΔUoa (J/mol)	LogKoa
Fluorene	166		6.79
Phenanthrene	178		7.57
Anthracene	178		7.09
Fluoranthene	202		8.88
Pyrene	202		8.8
Retene	234		8.7
Benz[a]anthracene	228		9.07
Chrysene	228		9.48
Benzo[b]fluoranthene	252		10.35
Benzo[k]fluoranthene	252		10.73
Benzo[e]pyrene	252		11.35
Benzo[a]pyrene	252		10.86
Indeno[1,2,3-cd]pyrene	276		11.55
Dibenz[a,h]anthracene	278		11.78
Benzo[ghi]perylene	276		11.5
Coronene	300		13.7

Table B-3: Physical properties of pesticides.

Pesticide Compound List	Molecular Weight (g/mol)	ΔUoa (J/mol)	LogKoa
A-HCH	291		7.61
B-HCH	291		8.88
G-HCH	291		7.85
D-HCH	291		8.84
Heptachlor Epoxide	388		8.05
Oxychlordane	240		8.39
G-Chlordane	410		9.54
Endosulfan I	407		8.64
A-Chlordane	410		8.92
T-Nona	444		9.34
Dieldrin	381		8.9
O,P'-DDD	320		9.35
Endrin	381		8.13
Endosulfan II	407		6.41
O,P'-DDT	355		9.45
P,P'-DDD	320		10.1
Endosulfan Sulfate	423		8.54
P,P'-DDT	355		9.82
Methoxychlor	346		10.16
p,p-DDE	318		9.68
HCB	285		6.89
Aldrin	365		8.08
Octachlorostyrene	380		9.49

Table B-4: Physical properties of brominated flame retardants (BFR).

BFR Compound List	Molecular Weight (g/mol)	ΔUoa (J/mol)	LogKoa
BDE-10	328		8.11
BDE-7	328		8.11
BDE-15	328		8.11
pTBX	422		8.82
PBBZ	473		9.1
BDE-30	407		9.4
BDE-17	407		9.3
BDE-28	407		9.5
PBEB	501		9.9
HBB	551		9.9
BDE-49	486		10.69
BDE-71	486		10.69
BDE-47	486		10.53
BDE-66	486		10.82
BDE-100	565		11.13
BDE-119	565		11.98
BDE-99	565		11.31
EHTBB	550		7.8
BDE-85	565		11.66
BDE-126	565		11.97
BDE-153	644		11.82
BDE-154	644		11.92
BDE-139	644		13.27
HBCD	642		11.89
BDE-140	644		13.27
BDE-138	644		13.27
BDE-156	644		11.97
BDE-183	722		11.96
BDE-191	722		14.55
TBE	688		15
BEHTBP	706		17.7
DP	654		14.79
BDE-203	801		11.17
BDE209	959		16
DBDPE	971		18.8

APPENDIX C: 2008 CONGENER SEPCIFIC PCB SAMPLING RATES

Table C-1: Average sampling rate for all congeners for the 2008 PUF-PAS deployments.

Site ID	pv0250	pv0251	pv0252	pv0259	pv0262	pv0265	pv0266
Deployment Date	1/10/2008	1/11/2008	1/17/2008	1/16/2008	1/12/2008	1/11/2008	1/16/2008
Collection Date	2/22/2008	2/22/2008	2/26/2008	3/5/2008	2/28/2008	2/22/2008	2/28/2008
1	5.28	5.53	5.49	5.37	5.52	5.43	5.49
2	5.49	5.75	5.71	5.58	5.74	5.64	5.70
3	5.50	5.76	5.72	5.60	5.75	5.66	5.72
4	5.18	5.43	5.39	5.27	5.42	5.33	5.39
5	5.55	5.81	5.77	5.64	5.80	5.70	5.77
6	5.51	5.77	5.73	5.61	5.76	5.66	5.73
7	5.47	5.73	5.69	5.56	5.72	5.62	5.69
8	5.54	5.81	5.76	5.64	5.80	5.70	5.76
9	5.24	5.50	5.45	5.34	5.48	5.39	5.45
10	5.24	5.50	5.45	5.34	5.48	5.39	5.45
11	5.72	6.00	5.95	5.83	5.99	5.89	5.95
12/13	5.75	6.03	5.98	5.85	6.02	5.91	5.98
15	5.83	6.11	6.06	5.93	6.10	5.99	6.06
16	5.54	5.80	5.76	5.63	5.79	5.69	5.75
17	5.42	5.68	5.63	5.51	5.66	5.57	5.63
18/30	5.46	5.72	5.68	5.56	5.71	5.61	5.68
19	5.18	5.43	5.39	5.28	5.42	5.33	5.39
21	5.78	6.06	6.01	5.88	6.05	5.94	6.01
22	5.89	6.17	6.13	6.00	6.16	6.06	6.13
23	5.46	5.72	5.68	5.56	5.71	5.61	5.68
24	5.55	5.81	5.77	5.65	5.80	5.70	5.77
25	5.79	6.07	6.02	5.90	6.06	5.96	6.02
26	5.81	6.08	6.04	5.91	6.07	5.97	6.04
27	5.54	5.80	5.76	5.63	5.79	5.69	5.75
28/20	5.83	6.11	6.06	5.93	6.09	5.99	6.06
31	5.84	6.12	6.07	5.94	6.11	6.01	6.07
32	5.54	5.80	5.76	5.63	5.79	5.69	5.75
33	5.83	6.11	6.06	5.93	6.10	6.00	6.06
34	5.54	5.80	5.76	5.63	5.79	5.69	5.75
35	5.81	6.09	6.04	5.91	6.08	5.98	6.04
36	5.93	6.22	6.17	6.04	6.21	6.10	6.17
37	6.16	6.45	6.41	6.27	6.44	6.33	6.40
38	5.96	6.25	6.20	6.07	6.24	6.13	6.20
39	5.98	6.27	6.22	6.09	6.25	6.15	6.22
42	5.75	6.02	5.98	5.85	6.01	5.91	5.98
43	5.75	6.02	5.98	5.85	6.01	5.91	5.98
44/47/65	5.78	6.05	6.01	5.88	6.04	5.94	6.01
45/51	5.47	5.73	5.69	5.57	5.72	5.63	5.69
46	5.49	5.75	5.71	5.58	5.74	5.64	5.71
48	5.71	5.98	5.94	5.81	5.97	5.87	5.94
49/69	5.71	5.99	5.94	5.81	5.97	5.87	5.94
52	5.74	6.01	5.97	5.84	6.00	5.90	5.97
53/50	5.48	5.74	5.70	5.57	5.73	5.63	5.70
54	5.08	5.32	5.28	5.17	5.31	5.22	5.28
55	6.12	6.41	6.36	6.23	6.40	6.29	6.36
56	6.18	6.47	6.43	6.29	6.46	6.35	6.42
57	6.04	6.32	6.28	6.14	6.31	6.21	6.28
58	6.06	6.35	6.30	6.17	6.34	6.23	6.30
59/62/75	5.83	6.11	6.07	5.94	6.10	6.00	6.07

Table C-1 continued

Site ID	pv0250	pv0251	pv0252	pv0259	pv0262	pv0265	pv0266
Deployment Date	1/10/2008	1/11/2008	1/17/2008	1/16/2008	1/12/2008	1/11/2008	1/16/2008
Collection Date	2/22/2008	2/22/2008	2/26/2008	3/5/2008	2/28/2008	2/22/2008	2/28/2008
60	6.18	6.47	6.42	6.28	6.46	6.35	6.42
63	6.07	6.36	6.31	6.18	6.35	6.24	6.31
64	5.87	6.15	6.11	5.97	6.14	6.04	6.10
66	6.15	6.45	6.40	6.26	6.43	6.32	6.40
67	6.11	6.40	6.35	6.21	6.38	6.28	6.35
68	6.00	6.28	6.24	6.10	6.27	6.17	6.23
70	6.15	6.45	6.40	6.26	6.43	6.33	6.40
71/40/41	5.85	6.13	6.08	5.95	6.11	6.01	6.08
72	6.01	6.30	6.25	6.11	6.28	6.18	6.25
73	5.73	6.00	5.96	5.83	5.99	5.89	5.96
77	6.49	6.80	6.75	6.60	6.79	6.67	6.75
78	6.33	6.64	6.59	6.44	6.62	6.51	6.58
79	6.32	6.63	6.58	6.43	6.61	6.50	6.57
80	6.16	6.46	6.41	6.27	6.44	6.33	6.41
81	6.38	6.69	6.64	6.49	6.67	6.56	6.64
82	6.08	6.38	6.33	6.19	6.36	6.26	6.33
84	5.80	6.08	6.03	5.90	6.07	5.96	6.03
85/116/117	6.07	6.36	6.31	6.18	6.35	6.24	6.31
87/86/97/108/109/125	6.08	6.37	6.32	6.19	6.36	6.25	6.32
89	5.77	6.04	6.00	5.87	6.03	5.93	6.00
91/88	5.76	6.04	5.99	5.87	6.03	5.93	5.99
92	6.01	6.30	6.25	6.12	6.29	6.18	6.25
94	5.73	6.00	5.95	5.83	5.99	5.89	5.95
95/93/98/100/102	5.81	6.09	6.04	5.91	6.07	5.97	6.04
96	5.41	5.67	5.62	5.50	5.65	5.56	5.62
99/83	6.05	6.34	6.30	6.16	6.33	6.23	6.29
101/90/113	6.05	6.34	6.29	6.16	6.33	6.22	6.29
103	5.71	5.98	5.94	5.81	5.97	5.87	5.94
104	5.29	5.55	5.51	5.39	5.54	5.44	5.50
105	6.53	6.84	6.79	6.65	6.83	6.72	6.79
106	6.37	6.67	6.62	6.48	6.66	6.54	6.62
109	6.08	6.37	6.32	6.19	6.36	6.25	6.32
110/115	6.19	6.49	6.44	6.30	6.48	6.37	6.44
111	6.30	6.60	6.55	6.41	6.59	6.48	6.55
112	6.08	6.37	6.32	6.18	6.36	6.25	6.32
114	6.42	6.72	6.67	6.53	6.71	6.60	6.67
118	6.52	6.83	6.78	6.64	6.82	6.71	6.78
119	6.12	6.42	6.37	6.23	6.40	6.30	6.37
120	6.35	6.65	6.60	6.46	6.64	6.53	6.60
121	5.98	6.27	6.22	6.09	6.26	6.15	6.22
122	6.45	6.76	6.71	6.56	6.75	6.63	6.71
123	6.42	6.73	6.68	6.53	6.71	6.60	6.67
124/107	6.42	6.73	6.68	6.53	6.71	6.60	6.67
126	6.77	7.09	7.04	6.88	7.08	6.96	7.03
127	6.61	6.92	6.87	6.72	6.91	6.79	6.87
130	6.34	6.65	6.60	6.46	6.63	6.52	6.60
131	6.05	6.34	6.29	6.15	6.32	6.22	6.29
132	6.10	6.39	6.35	6.21	6.38	6.27	6.34
133	6.30	6.60	6.55	6.41	6.59	6.48	6.55
134/143	6.04	6.33	6.28	6.15	6.32	6.21	6.28
136	5.71	5.98	5.93	5.81	5.97	5.87	5.93
137	6.30	6.61	6.56	6.42	6.59	6.48	6.55
138/129/160/163	6.41	6.72	6.67	6.53	6.71	6.59	6.67
139/140	6.02	6.30	6.26	6.12	6.29	6.19	6.26
141	6.32	6.62	6.57	6.43	6.61	6.50	6.57
142	5.92	6.20	6.15	6.02	6.19	6.08	6.15

Table C-1 continued

Site ID	pv0250	pv0251	pv0252	pv0259	pv0262	pv0265	pv0266
Deployment Date	1/10/2008	1/11/2008	1/17/2008	1/16/2008	1/12/2008	1/11/2008	1/16/2008
Collection Date	2/22/2008	2/22/2008	2/26/2008	3/5/2008	2/28/2008	2/22/2008	2/28/2008
144	6.05	6.34	6.29	6.16	6.33	6.22	6.29
145	5.61	5.88	5.84	5.71	5.87	5.77	5.83
146	6.34	6.65	6.60	6.46	6.63	6.52	6.60
148	6.05	6.34	6.29	6.16	6.33	6.22	6.29
149/147	6.12	6.41	6.36	6.22	6.40	6.29	6.36
150	6.34	6.65	6.60	6.46	6.63	6.52	6.60
151/135/154	6.04	6.33	6.28	6.15	6.32	6.21	6.28
152	5.62	5.89	5.84	5.72	5.88	5.78	5.84
153/168	6.40	6.71	6.66	6.52	6.70	6.59	6.66
155	5.55	5.81	5.77	5.64	5.80	5.70	5.77
156/157	6.78	7.10	7.05	6.90	7.09	6.97	7.05
158	6.47	6.78	6.73	6.59	6.77	6.66	6.73
159	6.65	6.97	6.91	6.76	6.95	6.84	6.91
161	6.35	6.65	6.60	6.46	6.64	6.53	6.60
162	6.70	7.02	6.97	6.82	7.01	6.89	6.97
164	6.45	6.76	6.71	6.57	6.75	6.64	6.71
165	6.34	6.64	6.59	6.45	6.63	6.52	6.59
167	6.78	7.10	7.05	6.89	7.09	6.97	7.04
169	7.04	7.38	7.32	7.16	7.36	7.24	7.32
170	6.69	7.01	6.96	6.81	7.00	6.88	6.96
171/173	6.38	6.68	6.63	6.49	6.67	6.56	6.63
172/192	6.64	6.96	6.91	6.76	6.94	6.83	6.90
174	6.38	6.69	6.64	6.50	6.68	6.56	6.64
175	6.34	6.64	6.60	6.45	6.63	6.52	6.59
176	5.97	6.26	6.21	6.08	6.25	6.14	6.21
177	6.37	6.68	6.63	6.49	6.67	6.55	6.63
178	6.33	6.64	6.59	6.45	6.62	6.51	6.59
179	5.98	6.26	6.21	6.08	6.25	6.14	6.21
180/193	6.69	7.01	6.96	6.81	7.00	6.88	6.96
181	6.29	6.59	6.54	6.40	6.58	6.47	6.54
182	6.32	6.62	6.57	6.43	6.61	6.50	6.57
183/185	6.39	6.70	6.65	6.51	6.69	6.57	6.65
184	5.91	6.19	6.14	6.01	6.18	6.07	6.14
186	5.86	6.14	6.10	5.96	6.13	6.03	6.09
187	6.37	6.68	6.63	6.48	6.66	6.55	6.62
188	5.90	6.18	6.13	6.00	6.17	6.06	6.13
189	6.39	6.69	6.64	6.50	6.68	6.57	6.64
190	6.75	7.07	7.02	6.87	7.06	6.94	7.02
191	6.76	7.08	7.03	6.88	7.07	6.95	7.03
192	6.63	6.95	6.89	6.75	6.93	6.82	6.89
194	6.99	7.32	7.27	7.11	7.31	7.19	7.27
195	6.66	6.98	6.93	6.78	6.96	6.85	6.92
196	6.69	7.01	6.96	6.81	7.00	6.88	6.96
197/200	6.26	6.56	6.51	6.37	6.55	6.44	6.51
198/199	6.62	6.94	6.89	6.74	6.93	6.81	6.89
201	6.67	6.99	6.94	6.79	6.98	6.86	6.94
202	6.26	6.56	6.51	6.37	6.54	6.43	6.51
203	6.67	6.99	6.94	6.79	6.98	6.86	6.94
205	7.05	7.38	7.33	7.17	7.37	7.24	7.33
206	6.96	7.30	7.24	7.09	7.28	7.16	7.24
207	6.54	6.86	6.81	6.66	6.84	6.73	6.80
208	6.53	6.84	6.79	6.64	6.83	6.71	6.79
209	6.83	7.16	7.11	6.95	7.15	7.03	7.10

Table C-1 continued

Site ID	pv0267	pv0272	pv0274	pv0275	pv0277	pv0281	pv0283
Deployment Date	1/11/2008	1/28/2008	1/10/2008	1/17/2008	1/8/2008	1/17/2008	2/22/2008
Collection Date	3/5/2008	2/26/2008	2/25/2008	2/25/2008	2/25/2008	3/17/2008	4/15/2008
1	5.38	5.19	5.42	5.52	5.42	5.34	4.61
2	5.59	5.39	5.63	5.74	5.63	5.54	4.79
3	5.60	5.40	5.65	5.75	5.64	5.56	4.80
4	5.27	5.09	5.32	5.42	5.31	5.23	4.52
5	5.65	5.45	5.69	5.80	5.69	5.60	4.84
6	5.61	5.41	5.65	5.76	5.65	5.57	4.81
7	5.57	5.37	5.61	5.72	5.61	5.52	4.77
8	5.64	5.45	5.69	5.80	5.68	5.60	4.84
9	5.34	5.15	5.38	5.49	5.38	5.30	4.58
10	5.34	5.15	5.38	5.49	5.38	5.30	4.58
11	5.83	5.62	5.88	5.99	5.87	5.78	4.99
12/13	5.86	5.65	5.90	6.02	5.90	5.81	5.02
15	5.93	5.73	5.98	6.10	5.98	5.89	5.09
16	5.63	5.44	5.68	5.79	5.68	5.59	4.83
17	5.51	5.32	5.56	5.67	5.55	5.47	4.73
18/30	5.56	5.36	5.60	5.71	5.60	5.52	4.76
19	5.28	5.09	5.32	5.42	5.32	5.24	4.52
21	5.89	5.68	5.93	6.05	5.93	5.84	5.04
22	6.00	5.79	6.05	6.16	6.04	5.95	5.14
23	5.56	5.36	5.60	5.71	5.60	5.52	4.76
24	5.65	5.45	5.69	5.80	5.69	5.61	4.84
25	5.90	5.69	5.95	6.06	5.94	5.85	5.05
26	5.91	5.70	5.96	6.07	5.95	5.87	5.07
27	5.63	5.44	5.68	5.79	5.68	5.59	4.83
28/20	5.93	5.72	5.98	6.10	5.98	5.89	5.08
31	5.95	5.74	5.99	6.11	5.99	5.90	5.10
32	5.63	5.44	5.68	5.79	5.68	5.59	4.83
33	5.94	5.73	5.99	6.10	5.98	5.89	5.09
34	5.63	5.44	5.68	5.79	5.68	5.59	4.83
35	5.92	5.71	5.97	6.08	5.96	5.87	5.07
36	6.04	5.83	6.09	6.21	6.09	5.99	5.18
37	6.27	6.05	6.32	6.44	6.32	6.22	5.37
38	6.07	5.86	6.12	6.24	6.12	6.03	5.20
39	6.09	5.88	6.14	6.26	6.13	6.04	5.22
42	5.85	5.65	5.90	6.01	5.90	5.81	5.02
43	5.85	5.65	5.90	6.01	5.90	5.81	5.02
44/47/65	5.88	5.67	5.93	6.04	5.92	5.84	5.04
45/51	5.57	5.38	5.62	5.73	5.61	5.53	4.78
46	5.59	5.39	5.63	5.74	5.63	5.54	4.79
48	5.81	5.61	5.86	5.97	5.86	5.77	4.98
49/69	5.82	5.61	5.86	5.98	5.86	5.77	4.98
52	5.84	5.64	5.89	6.00	5.88	5.80	5.01
53/50	5.58	5.38	5.62	5.73	5.62	5.53	4.78
54	5.17	4.99	5.22	5.32	5.21	5.13	4.43
55	6.23	6.01	6.28	6.40	6.27	6.18	5.34
56	6.29	6.07	6.34	6.46	6.34	6.24	5.39
57	6.15	5.93	6.20	6.31	6.19	6.10	5.27
58	6.17	5.95	6.22	6.34	6.22	6.12	5.29
59/62/75	5.94	5.73	5.99	6.10	5.98	5.90	5.09
60	6.29	6.07	6.34	6.46	6.33	6.24	5.39
63	6.18	5.96	6.23	6.35	6.23	6.13	5.30
64	5.98	5.77	6.03	6.14	6.02	5.93	5.12
66	6.26	6.04	6.31	6.43	6.31	6.21	5.37
67	6.22	6.00	6.27	6.39	6.26	6.17	5.33
68	6.10	5.89	6.15	6.27	6.15	6.06	5.23

Table C-1 continued

Site ID	pv0267	pv0272	pv0274	pv0275	pv0277	pv0281	pv0283
Deployment Date	1/11/2008	1/28/2008	1/10/2008	1/17/2008	1/8/2008	1/17/2008	2/22/2008
Collection Date	3/5/2008	2/26/2008	2/25/2008	2/25/2008	2/25/2008	3/17/2008	4/15/2008
70	6.26	6.04	6.31	6.44	6.31	6.22	5.37
71/40/41	5.95	5.74	6.00	6.12	6.00	5.91	5.10
72	6.12	5.90	6.17	6.29	6.16	6.07	5.24
73	5.83	5.63	5.88	5.99	5.88	5.79	5.00
77	6.61	6.38	6.66	6.79	6.66	6.56	5.66
78	6.45	6.22	6.50	6.62	6.49	6.40	5.52
79	6.44	6.21	6.49	6.61	6.49	6.39	5.52
80	6.27	6.05	6.32	6.44	6.32	6.22	5.38
81	6.50	6.27	6.55	6.68	6.55	6.45	5.57
82	6.19	5.98	6.25	6.37	6.24	6.15	5.31
84	5.90	5.70	5.95	6.07	5.95	5.86	5.06
85/116/117	6.18	5.96	6.23	6.35	6.23	6.13	5.30
87/86/97/108/109/125	6.19	5.97	6.24	6.36	6.23	6.14	5.30
89	5.87	5.67	5.92	6.03	5.92	5.83	5.03
91/88	5.87	5.66	5.92	6.03	5.91	5.82	5.03
92	6.12	5.91	6.17	6.29	6.17	6.07	5.25
94	5.83	5.62	5.88	5.99	5.87	5.78	4.99
95/93/98/100/102	5.91	5.71	5.96	6.08	5.96	5.87	5.07
96	5.50	5.31	5.55	5.66	5.55	5.46	4.72
99/83	6.16	5.95	6.21	6.33	6.21	6.12	5.28
101/90/113	6.16	5.95	6.21	6.33	6.21	6.11	5.28
103	5.81	5.61	5.86	5.97	5.86	5.77	4.98
104	5.39	5.20	5.43	5.54	5.43	5.35	4.62
105	6.65	6.42	6.70	6.83	6.70	6.60	5.70
106	6.48	6.25	6.53	6.66	6.53	6.43	5.55
109	6.19	5.97	6.24	6.36	6.24	6.14	5.31
110/115	6.31	6.09	6.36	6.48	6.35	6.26	5.40
111	6.41	6.19	6.47	6.59	6.46	6.37	5.50
112	6.19	5.97	6.24	6.36	6.23	6.14	5.30
114	6.53	6.30	6.59	6.71	6.58	6.48	5.60
118	6.64	6.41	6.69	6.82	6.69	6.59	5.69
119	6.23	6.02	6.28	6.41	6.28	6.19	5.34
120	6.46	6.24	6.52	6.64	6.51	6.41	5.54
121	6.09	5.88	6.14	6.26	6.14	6.04	5.22
122	6.57	6.34	6.62	6.75	6.62	6.52	5.63
123	6.54	6.31	6.59	6.72	6.58	6.49	5.60
124/107	6.54	6.31	6.59	6.71	6.58	6.49	5.60
126	6.89	6.65	6.94	7.08	6.94	6.83	5.90
127	6.73	6.49	6.78	6.91	6.78	6.67	5.76
130	6.46	6.23	6.51	6.64	6.51	6.41	5.54
131	6.16	5.94	6.21	6.33	6.20	6.11	5.28
132	6.21	5.99	6.26	6.38	6.26	6.16	5.32
133	6.41	6.19	6.46	6.59	6.46	6.36	5.49
134/143	6.15	5.94	6.20	6.32	6.20	6.10	5.27
136	5.81	5.61	5.86	5.97	5.85	5.77	4.98
137	6.42	6.19	6.47	6.60	6.47	6.37	5.50
138/129/160/163	6.53	6.30	6.58	6.71	6.58	6.48	5.60
139/140	6.13	5.91	6.18	6.29	6.17	6.08	5.25
141	6.43	6.21	6.48	6.61	6.48	6.38	5.51
142	6.02	5.81	6.07	6.19	6.07	5.98	5.16
144	6.16	5.94	6.21	6.33	6.20	6.11	5.28
145	5.71	5.51	5.76	5.87	5.76	5.67	4.90
146	6.46	6.23	6.51	6.64	6.51	6.41	5.54
148	6.16	5.94	6.21	6.33	6.20	6.11	5.28
149/147	6.23	6.01	6.28	6.40	6.27	6.18	5.34

Table C-1 continued

Site ID	pv0267	pv0272	pv0274	pv0275	pv0277	pv0281	pv0283
Deployment Date	1/11/2008	1/28/2008	1/10/2008	1/17/2008	1/8/2008	1/17/2008	2/22/2008
Collection Date	3/5/2008	2/26/2008	2/25/2008	2/25/2008	2/25/2008	3/17/2008	4/15/2008
150	6.46	6.23	6.51	6.64	6.51	6.41	5.54
151/135/154	6.15	5.94	6.20	6.32	6.20	6.10	5.27
152	5.72	5.52	5.77	5.88	5.76	5.68	4.90
153/168	6.52	6.29	6.57	6.70	6.57	6.47	5.59
155	5.65	5.45	5.69	5.80	5.69	5.60	4.84
156/157	6.90	6.66	6.96	7.09	6.95	6.85	5.91
158	6.59	6.36	6.65	6.77	6.64	6.54	5.65
159	6.77	6.53	6.82	6.95	6.82	6.72	5.80
161	6.46	6.24	6.52	6.64	6.51	6.42	5.54
162	6.82	6.58	6.88	7.01	6.87	6.77	5.84
164	6.57	6.34	6.63	6.75	6.62	6.52	5.63
165	6.45	6.23	6.51	6.63	6.50	6.40	5.53
167	6.90	6.66	6.95	7.09	6.95	6.85	5.91
169	7.17	6.92	7.23	7.37	7.22	7.11	6.14
170	6.81	6.57	6.87	7.00	6.86	6.76	5.84
171/173	6.49	6.27	6.55	6.67	6.54	6.44	5.56
172/192	6.76	6.52	6.82	6.95	6.81	6.71	5.79
174	6.50	6.27	6.55	6.68	6.55	6.45	5.57
175	6.46	6.23	6.51	6.63	6.50	6.41	5.53
176	6.08	5.87	6.13	6.25	6.13	6.04	5.21
177	6.49	6.26	6.54	6.67	6.54	6.44	5.56
178	6.45	6.22	6.50	6.63	6.50	6.40	5.53
179	6.08	5.87	6.13	6.25	6.13	6.04	5.21
180/193	6.81	6.57	6.87	7.00	6.86	6.76	5.84
181	6.40	6.18	6.46	6.58	6.45	6.36	5.49
182	6.43	6.21	6.49	6.61	6.48	6.39	5.51
183/185	6.51	6.28	6.56	6.69	6.56	6.46	5.58
184	6.01	5.80	6.06	6.18	6.06	5.97	5.15
186	5.97	5.76	6.02	6.13	6.01	5.92	5.11
187	6.49	6.26	6.54	6.66	6.53	6.44	5.56
188	6.00	5.79	6.05	6.17	6.05	5.96	5.14
189	6.50	6.27	6.56	6.68	6.55	6.45	5.57
190	6.87	6.63	6.93	7.06	6.92	6.82	5.89
191	6.88	6.64	6.94	7.07	6.93	6.83	5.90
192	6.75	6.51	6.80	6.93	6.80	6.70	5.78
194	7.11	6.87	7.17	7.31	7.17	7.06	6.10
195	6.78	6.54	6.83	6.97	6.83	6.73	5.81
196	6.81	6.57	6.87	7.00	6.86	6.76	5.84
197/200	6.37	6.15	6.43	6.55	6.42	6.33	5.46
198/199	6.74	6.51	6.80	6.93	6.79	6.69	5.78
201	6.79	6.55	6.85	6.98	6.84	6.74	5.82
202	6.37	6.15	6.42	6.55	6.42	6.32	5.46
203	6.79	6.55	6.85	6.98	6.84	6.74	5.82
205	7.17	6.92	7.23	7.37	7.23	7.12	6.15
206	7.09	6.84	7.15	7.29	7.14	7.04	6.08
207	6.66	6.43	6.72	6.84	6.71	6.61	5.71
208	6.64	6.41	6.70	6.83	6.69	6.59	5.69
209	6.96	6.71	7.01	7.15	7.01	6.90	5.96

Table C-1 continued

Site ID	pv0284	pv0285	pv0286	pv0288	pv0291	pv0293	pv0295
Deployment Date	2/26/2008	2/26/2008	2/22/2008	2/22/2008	2/22/2008	2/22/2008	2/28/2008
Collection Date	4/15/2008	4/15/2008	4/18/2008	4/11/2008	4/11/2008	4/11/2008	4/11/2008
1	4.69	4.69	4.68	4.86	4.99	4.81	4.89
2	4.88	4.88	4.87	5.05	5.18	5.00	5.08
3	4.89	4.89	4.88	5.06	5.20	5.01	5.09
4	4.61	4.61	4.59	4.76	4.90	4.72	4.79
5	4.93	4.93	4.92	5.10	5.24	5.05	5.13
6	4.90	4.90	4.89	5.07	5.21	5.02	5.10
7	4.86	4.86	4.85	5.03	5.17	4.98	5.06
8	4.93	4.93	4.91	5.10	5.24	5.05	5.13
9	4.66	4.66	4.65	4.82	4.96	4.78	4.85
10	4.66	4.66	4.65	4.82	4.96	4.78	4.85
11	5.09	5.09	5.08	5.26	5.41	5.21	5.30
12/13	5.11	5.11	5.10	5.29	5.43	5.24	5.32
15	5.18	5.18	5.17	5.36	5.51	5.31	5.39
16	4.92	4.92	4.91	5.09	5.23	5.04	5.12
17	4.81	4.81	4.80	4.98	5.12	4.93	5.01
18/30	4.85	4.85	4.84	5.02	5.16	4.97	5.05
19	4.61	4.61	4.60	4.77	4.90	4.72	4.80
21	5.14	5.14	5.13	5.32	5.46	5.26	5.35
22	5.24	5.24	5.22	5.42	5.57	5.37	5.45
23	4.85	4.85	4.84	5.02	5.16	4.97	5.05
24	4.93	4.93	4.92	5.10	5.24	5.05	5.13
25	5.15	5.15	5.14	5.33	5.47	5.28	5.36
26	5.16	5.16	5.15	5.34	5.49	5.29	5.37
27	4.92	4.92	4.91	5.09	5.23	5.04	5.12
28/20	5.18	5.18	5.17	5.36	5.51	5.31	5.39
31	5.19	5.19	5.18	5.37	5.52	5.32	5.40
32	4.92	4.92	4.91	5.09	5.23	5.04	5.12
33	5.18	5.18	5.17	5.36	5.51	5.31	5.40
34	4.92	4.92	4.91	5.09	5.23	5.04	5.12
35	5.17	5.17	5.15	5.34	5.49	5.29	5.38
36	5.27	5.27	5.26	5.46	5.61	5.40	5.49
37	5.48	5.48	5.46	5.66	5.82	5.61	5.70
38	5.30	5.30	5.29	5.49	5.64	5.43	5.52
39	5.32	5.32	5.30	5.50	5.65	5.45	5.53
42	5.11	5.11	5.10	5.29	5.43	5.24	5.32
43	5.11	5.11	5.10	5.29	5.43	5.24	5.32
44/47/65	5.13	5.13	5.12	5.31	5.46	5.26	5.34
45/51	4.87	4.87	4.85	5.03	5.17	4.98	5.06
46	4.88	4.88	4.87	5.05	5.19	5.00	5.08
48	5.08	5.08	5.06	5.25	5.40	5.20	5.28
49/69	5.08	5.08	5.07	5.25	5.40	5.20	5.28
52	5.10	5.10	5.09	5.28	5.42	5.22	5.31
53/50	4.87	4.87	4.86	5.04	5.18	4.99	5.07
54	4.52	4.52	4.51	4.67	4.80	4.63	4.70
55	5.44	5.44	5.43	5.63	5.78	5.57	5.66
56	5.49	5.49	5.48	5.68	5.84	5.63	5.72
57	5.37	5.37	5.35	5.55	5.70	5.50	5.58
58	5.39	5.39	5.37	5.57	5.73	5.52	5.61
59/62/75	5.19	5.19	5.17	5.37	5.51	5.31	5.40
60	5.49	5.49	5.48	5.68	5.84	5.62	5.71
63	5.40	5.40	5.38	5.58	5.74	5.53	5.62
64	5.22	5.22	5.21	5.40	5.55	5.35	5.43
66	5.47	5.47	5.45	5.66	5.81	5.60	5.69
67	5.43	5.43	5.41	5.61	5.77	5.56	5.65
68	5.33	5.33	5.32	5.51	5.67	5.46	5.55

Table C-1 continued

Site ID	pv0284	pv0285	pv0286	pv0288	pv0291	pv0293	pv0295
Deployment Date	2/26/2008	2/26/2008	2/22/2008	2/22/2008	2/22/2008	2/22/2008	2/28/2008
Collection Date	4/15/2008	4/15/2008	4/18/2008	4/11/2008	4/11/2008	4/11/2008	4/11/2008
70	5.47	5.47	5.46	5.66	5.81	5.60	5.69
71/40/41	5.20	5.20	5.18	5.38	5.52	5.32	5.41
72	5.34	5.34	5.33	5.53	5.68	5.47	5.56
73	5.09	5.09	5.08	5.27	5.41	5.22	5.30
77	5.77	5.77	5.75	5.97	6.13	5.91	6.00
78	5.63	5.63	5.62	5.82	5.98	5.77	5.86
79	5.62	5.62	5.61	5.82	5.98	5.76	5.85
80	5.48	5.48	5.46	5.67	5.82	5.61	5.70
81	5.67	5.67	5.66	5.87	6.03	5.81	5.90
82	5.41	5.41	5.40	5.60	5.75	5.54	5.63
84	5.16	5.16	5.14	5.33	5.48	5.28	5.37
85/116/117	5.40	5.40	5.38	5.58	5.74	5.53	5.62
87/86/97/108/109/125	5.40	5.40	5.39	5.59	5.74	5.53	5.62
89	5.13	5.13	5.11	5.30	5.45	5.25	5.34
91/88	5.12	5.12	5.11	5.30	5.45	5.25	5.33
92	5.34	5.34	5.33	5.53	5.68	5.47	5.56
94	5.09	5.09	5.08	5.26	5.41	5.21	5.30
95/93/98/100/102	5.16	5.16	5.15	5.34	5.49	5.29	5.37
96	4.81	4.81	4.79	4.97	5.11	4.92	5.00
99/83	5.38	5.38	5.37	5.57	5.72	5.51	5.60
101/90/113	5.38	5.38	5.37	5.57	5.72	5.51	5.60
103	5.08	5.08	5.06	5.25	5.40	5.20	5.28
104	4.71	4.71	4.69	4.87	5.00	4.82	4.90
105	5.81	5.81	5.79	6.01	6.17	5.95	6.04
106	5.66	5.66	5.64	5.85	6.01	5.80	5.89
109	5.41	5.41	5.39	5.59	5.75	5.54	5.63
110/115	5.51	5.51	5.49	5.70	5.85	5.64	5.73
111	5.60	5.60	5.59	5.79	5.95	5.74	5.83
112	5.40	5.40	5.39	5.59	5.74	5.53	5.62
114	5.70	5.70	5.69	5.90	6.06	5.84	5.94
118	5.80	5.80	5.78	6.00	6.16	5.94	6.03
119	5.44	5.44	5.43	5.63	5.79	5.58	5.66
120	5.64	5.64	5.63	5.84	6.00	5.78	5.87
121	5.32	5.32	5.30	5.50	5.65	5.45	5.53
122	5.73	5.73	5.72	5.93	6.09	5.87	5.97
123	5.71	5.71	5.69	5.90	6.07	5.85	5.94
124/107	5.71	5.71	5.69	5.90	6.07	5.85	5.94
126	6.01	6.01	6.00	6.22	6.39	6.16	6.26
127	5.87	5.87	5.86	6.08	6.24	6.02	6.11
130	5.64	5.64	5.63	5.83	5.99	5.78	5.87
131	5.38	5.38	5.36	5.56	5.71	5.51	5.59
132	5.42	5.42	5.41	5.61	5.77	5.56	5.64
133	5.60	5.60	5.58	5.79	5.95	5.73	5.83
134/143	5.37	5.37	5.36	5.56	5.71	5.50	5.59
136	5.07	5.07	5.06	5.25	5.39	5.20	5.28
137	5.60	5.60	5.59	5.80	5.96	5.74	5.83
138/129/160/163	5.70	5.70	5.69	5.90	6.06	5.84	5.93
139/140	5.35	5.35	5.34	5.53	5.69	5.48	5.57
141	5.62	5.62	5.60	5.81	5.97	5.75	5.85
142	5.26	5.26	5.25	5.44	5.59	5.39	5.47
144	5.38	5.38	5.36	5.56	5.72	5.51	5.60
145	4.99	4.99	4.98	5.16	5.30	5.11	5.19
146	5.64	5.64	5.63	5.83	5.99	5.78	5.87
148	5.38	5.38	5.36	5.56	5.72	5.51	5.60
149/147	5.44	5.44	5.42	5.63	5.78	5.57	5.66

Table C-1 continued

Site ID	pv0284	pv0285	pv0286	pv0288	pv0291	pv0293	pv0295
Deployment Date	2/26/2008	2/26/2008	2/22/2008	2/22/2008	2/22/2008	2/22/2008	2/28/2008
Collection Date	4/15/2008	4/15/2008	4/18/2008	4/11/2008	4/11/2008	4/11/2008	4/11/2008
150	5.64	5.64	5.63	5.83	5.99	5.78	5.87
151/135/154	5.37	5.37	5.36	5.56	5.71	5.50	5.59
152	5.00	5.00	4.98	5.17	5.31	5.12	5.20
153/168	5.69	5.69	5.68	5.89	6.05	5.83	5.93
155	4.93	4.93	4.92	5.10	5.24	5.05	5.13
156/157	6.03	6.03	6.01	6.23	6.40	6.17	6.27
158	5.76	5.76	5.74	5.95	6.12	5.90	5.99
159	5.91	5.91	5.89	6.11	6.28	6.05	6.15
161	5.64	5.64	5.63	5.84	6.00	5.78	5.87
162	5.96	5.96	5.94	6.16	6.33	6.10	6.20
164	5.74	5.74	5.72	5.94	6.10	5.88	5.97
165	5.64	5.64	5.62	5.83	5.99	5.77	5.86
167	6.02	6.02	6.01	6.23	6.40	6.17	6.27
169	6.26	6.26	6.24	6.47	6.65	6.41	6.51
170	5.95	5.95	5.93	6.15	6.32	6.09	6.19
171/173	5.67	5.67	5.65	5.86	6.03	5.81	5.90
172/192	5.90	5.90	5.89	6.11	6.27	6.05	6.14
174	5.67	5.67	5.66	5.87	6.03	5.81	5.91
175	5.64	5.64	5.62	5.83	5.99	5.77	5.87
176	5.31	5.31	5.30	5.49	5.64	5.44	5.53
177	5.67	5.67	5.65	5.86	6.02	5.80	5.90
178	5.63	5.63	5.62	5.83	5.99	5.77	5.86
179	5.31	5.31	5.30	5.50	5.65	5.44	5.53
180/193	5.95	5.95	5.93	6.15	6.32	6.09	6.19
181	5.59	5.59	5.58	5.79	5.94	5.73	5.82
182	5.62	5.62	5.60	5.81	5.97	5.76	5.85
183/185	5.68	5.68	5.67	5.88	6.04	5.82	5.91
184	5.25	5.25	5.24	5.43	5.58	5.38	5.46
186	5.21	5.21	5.20	5.39	5.54	5.34	5.42
187	5.66	5.66	5.65	5.86	6.02	5.80	5.89
188	5.24	5.24	5.23	5.42	5.57	5.37	5.45
189	5.68	5.68	5.66	5.87	6.04	5.82	5.91
190	6.00	6.00	5.98	6.20	6.38	6.14	6.24
191	6.01	6.01	5.99	6.21	6.39	6.15	6.25
192	5.89	5.89	5.88	6.10	6.26	6.04	6.13
194	6.21	6.21	6.20	6.43	6.60	6.36	6.46
195	5.92	5.92	5.90	6.12	6.29	6.06	6.16
196	5.95	5.95	5.93	6.15	6.32	6.09	6.19
197/200	5.57	5.57	5.55	5.76	5.92	5.70	5.79
198/199	5.89	5.89	5.87	6.09	6.26	6.03	6.13
201	5.93	5.93	5.92	6.13	6.30	6.07	6.17
202	5.56	5.56	5.55	5.75	5.91	5.70	5.79
203	5.93	5.93	5.91	6.13	6.30	6.07	6.17
205	6.26	6.26	6.25	6.48	6.66	6.42	6.52
206	6.19	6.19	6.18	6.40	6.58	6.34	6.44
207	5.82	5.82	5.80	6.02	6.18	5.96	6.05
208	5.80	5.80	5.79	6.00	6.17	5.94	6.04
209	6.07	6.07	6.06	6.28	6.46	6.22	6.32

Table C-1 continued

Site ID	pv0299	pv0300	pv0301	pv0302	pv0303	pv0306	pv0308
Deployment Date	2/28/2008	3/5/2008	2/22/2008	2/22/2008	2/22/2008	2/25/2008	2/25/2008
Collection Date	4/11/2008	4/11/2008	4/11/2008	4/11/2008	4/11/2008	4/11/2008	4/11/2008
1	4.82	5.01	4.84	4.82	4.95	4.86	4.87
2	5.01	5.21	5.03	5.01	5.15	5.05	5.06
3	5.02	5.22	5.04	5.02	5.16	5.06	5.08
4	4.73	4.92	4.75	4.73	4.86	4.76	4.78
5	5.06	5.26	5.08	5.06	5.20	5.10	5.12
6	5.03	5.23	5.05	5.03	5.17	5.07	5.08
7	4.99	5.19	5.01	4.99	5.13	5.03	5.05
8	5.06	5.26	5.08	5.06	5.20	5.10	5.11
9	4.79	4.98	4.81	4.79	4.92	4.82	4.84
10	4.79	4.98	4.81	4.79	4.92	4.82	4.84
11	5.23	5.43	5.25	5.23	5.37	5.26	5.28
12/13	5.25	5.46	5.27	5.25	5.39	5.29	5.31
15	5.32	5.53	5.34	5.32	5.47	5.36	5.38
16	5.05	5.25	5.07	5.05	5.19	5.09	5.11
17	4.95	5.14	4.96	4.94	5.08	4.98	5.00
18/30	4.99	5.18	5.00	4.98	5.12	5.02	5.04
19	4.73	4.92	4.75	4.73	4.86	4.77	4.78
21	5.28	5.49	5.30	5.28	5.42	5.32	5.33
22	5.38	5.59	5.40	5.38	5.53	5.42	5.44
23	4.99	5.18	5.00	4.98	5.12	5.02	5.04
24	5.07	5.27	5.08	5.07	5.20	5.10	5.12
25	5.29	5.50	5.31	5.29	5.43	5.33	5.35
26	5.30	5.51	5.32	5.30	5.45	5.34	5.36
27	5.05	5.25	5.07	5.05	5.19	5.09	5.11
28/20	5.32	5.53	5.34	5.32	5.47	5.36	5.38
31	5.33	5.54	5.35	5.33	5.48	5.37	5.39
32	5.05	5.25	5.07	5.05	5.19	5.09	5.11
33	5.32	5.54	5.34	5.32	5.47	5.36	5.38
34	5.05	5.25	5.07	5.05	5.19	5.09	5.11
35	5.31	5.52	5.33	5.31	5.45	5.34	5.36
36	5.42	5.63	5.44	5.42	5.57	5.46	5.47
37	5.62	5.85	5.65	5.62	5.78	5.66	5.68
38	5.45	5.66	5.47	5.45	5.59	5.49	5.50
39	5.46	5.68	5.48	5.46	5.61	5.50	5.52
42	5.25	5.46	5.27	5.25	5.39	5.29	5.31
43	5.25	5.46	5.27	5.25	5.39	5.29	5.31
44/47/65	5.27	5.48	5.29	5.27	5.42	5.31	5.33
45/51	5.00	5.20	5.02	5.00	5.13	5.03	5.05
46	5.01	5.21	5.03	5.01	5.15	5.05	5.06
48	5.21	5.42	5.23	5.21	5.36	5.25	5.27
49/69	5.22	5.42	5.24	5.22	5.36	5.25	5.27
52	5.24	5.45	5.26	5.24	5.38	5.28	5.29
53/50	5.00	5.20	5.02	5.00	5.14	5.04	5.05
54	4.64	4.82	4.66	4.64	4.77	4.67	4.69
55	5.59	5.81	5.61	5.59	5.74	5.63	5.65
56	5.64	5.87	5.66	5.64	5.80	5.68	5.70
57	5.51	5.73	5.53	5.51	5.66	5.55	5.57
58	5.53	5.75	5.56	5.53	5.69	5.57	5.59
59/62/75	5.33	5.54	5.35	5.33	5.47	5.37	5.38
60	5.64	5.86	5.66	5.64	5.79	5.68	5.70
63	5.54	5.76	5.56	5.54	5.69	5.58	5.60
64	5.36	5.57	5.38	5.36	5.51	5.40	5.42
66	5.62	5.84	5.64	5.62	5.77	5.66	5.68
67	5.57	5.80	5.60	5.57	5.73	5.61	5.63
68	5.48	5.69	5.50	5.47	5.62	5.51	5.53

Table C-1 continued

Site ID	pv0299	pv0300	pv0301	pv0302	pv0303	pv0306	pv0308
Deployment Date	2/28/2008	3/5/2008	2/22/2008	2/22/2008	2/22/2008	2/25/2008	2/25/2008
Collection Date	4/11/2008	4/11/2008	4/11/2008	4/11/2008	4/11/2008	4/11/2008	4/11/2008
70	5.62	5.84	5.64	5.62	5.77	5.66	5.68
71/40/41	5.34	5.55	5.36	5.34	5.48	5.38	5.39
72	5.49	5.70	5.51	5.49	5.64	5.53	5.54
73	5.23	5.44	5.25	5.23	5.37	5.27	5.29
77	5.93	6.16	5.95	5.93	6.09	5.97	5.99
78	5.78	6.01	5.80	5.78	5.94	5.82	5.84
79	5.77	6.00	5.80	5.77	5.93	5.82	5.83
80	5.63	5.85	5.65	5.62	5.78	5.67	5.68
81	5.83	6.06	5.85	5.83	5.99	5.87	5.89
82	5.56	5.78	5.58	5.56	5.71	5.60	5.61
84	5.30	5.51	5.32	5.29	5.44	5.33	5.35
85/116/117	5.54	5.76	5.56	5.54	5.69	5.58	5.60
87/86/97/108/109/125	5.55	5.77	5.57	5.55	5.70	5.59	5.61
89	5.27	5.48	5.29	5.27	5.41	5.30	5.32
91/88	5.26	5.47	5.28	5.26	5.41	5.30	5.32
92	5.49	5.71	5.51	5.49	5.64	5.53	5.55
94	5.23	5.43	5.25	5.23	5.37	5.26	5.28
95/93/98/100/102	5.30	5.51	5.32	5.30	5.45	5.34	5.36
96	4.94	5.13	4.96	4.94	5.07	4.97	4.99
99/83	5.53	5.75	5.55	5.53	5.68	5.57	5.59
101/90/113	5.53	5.75	5.55	5.53	5.68	5.57	5.58
103	5.22	5.42	5.23	5.21	5.36	5.25	5.27
104	4.83	5.03	4.85	4.83	4.97	4.87	4.88
105	5.96	6.20	5.99	5.96	6.13	6.01	6.03
106	5.81	6.04	5.83	5.81	5.97	5.85	5.87
109	5.55	5.77	5.57	5.55	5.70	5.59	5.61
110/115	5.66	5.88	5.68	5.66	5.81	5.70	5.72
111	5.75	5.98	5.77	5.75	5.91	5.79	5.81
112	5.55	5.77	5.57	5.55	5.70	5.59	5.61
114	5.86	6.09	5.88	5.86	6.02	5.90	5.92
118	5.96	6.19	5.98	5.96	6.12	6.00	6.02
119	5.59	5.81	5.61	5.59	5.74	5.63	5.65
120	5.80	6.03	5.82	5.80	5.95	5.84	5.86
121	5.46	5.68	5.48	5.46	5.61	5.50	5.52
122	5.89	6.12	5.91	5.89	6.05	5.93	5.95
123	5.86	6.09	5.88	5.86	6.02	5.90	5.92
124/107	5.86	6.09	5.88	5.86	6.02	5.90	5.92
126	6.18	6.42	6.20	6.18	6.35	6.22	6.24
127	6.03	6.27	6.05	6.03	6.20	6.07	6.10
130	5.79	6.02	5.81	5.79	5.95	5.83	5.85
131	5.52	5.74	5.54	5.52	5.67	5.56	5.58
132	5.57	5.79	5.59	5.57	5.72	5.61	5.63
133	5.75	5.98	5.77	5.75	5.91	5.79	5.81
134/143	5.52	5.74	5.54	5.52	5.67	5.56	5.58
136	5.21	5.42	5.23	5.21	5.35	5.25	5.27
137	5.76	5.99	5.78	5.76	5.91	5.80	5.82
138/129/160/163	5.86	6.09	5.88	5.86	6.02	5.90	5.92
139/140	5.49	5.71	5.51	5.49	5.64	5.53	5.55
141	5.77	6.00	5.79	5.77	5.93	5.81	5.83
142	5.40	5.62	5.42	5.40	5.55	5.44	5.46
144	5.52	5.74	5.54	5.52	5.67	5.56	5.58
145	5.12	5.33	5.14	5.12	5.26	5.16	5.18
146	5.79	6.02	5.81	5.79	5.95	5.83	5.85
148	5.52	5.74	5.54	5.52	5.67	5.56	5.58
149/147	5.59	5.81	5.61	5.59	5.74	5.63	5.64

Table C-1 continued

Site ID	pv0299	pv0300	pv0301	pv0302	pv0303	pv0306	pv0308
Deployment Date	2/28/2008	3/5/2008	2/22/2008	2/22/2008	2/22/2008	2/25/2008	2/25/2008
Collection Date	4/11/2008	4/11/2008	4/11/2008	4/11/2008	4/11/2008	4/11/2008	4/11/2008
150	5.79	6.02	5.81	5.79	5.95	5.83	5.85
151/135/154	5.52	5.74	5.54	5.52	5.67	5.56	5.57
152	5.13	5.33	5.15	5.13	5.27	5.17	5.19
153/168	5.85	6.08	5.87	5.85	6.01	5.89	5.91
155	5.06	5.27	5.08	5.06	5.20	5.10	5.12
156/157	6.19	6.43	6.21	6.19	6.36	6.23	6.25
158	5.91	6.15	5.93	5.91	6.07	5.95	5.97
159	6.07	6.31	6.09	6.07	6.24	6.11	6.13
161	5.80	6.03	5.82	5.80	5.96	5.84	5.86
162	6.12	6.36	6.14	6.12	6.28	6.16	6.18
164	5.89	6.13	5.92	5.89	6.05	5.94	5.96
165	5.79	6.02	5.81	5.79	5.95	5.83	5.85
167	6.19	6.43	6.21	6.19	6.35	6.23	6.25
169	6.43	6.68	6.45	6.43	6.60	6.47	6.50
170	6.11	6.35	6.13	6.11	6.28	6.15	6.17
171/173	5.82	6.05	5.84	5.82	5.98	5.86	5.88
172/192	6.06	6.30	6.09	6.06	6.23	6.11	6.13
174	5.83	6.06	5.85	5.83	5.99	5.87	5.89
175	5.79	6.02	5.81	5.79	5.95	5.83	5.85
176	5.45	5.67	5.47	5.45	5.60	5.49	5.51
177	5.82	6.05	5.84	5.82	5.98	5.86	5.88
178	5.78	6.01	5.81	5.78	5.94	5.83	5.85
179	5.46	5.67	5.48	5.46	5.61	5.50	5.51
180/193	6.11	6.35	6.13	6.11	6.28	6.15	6.17
181	5.74	5.97	5.77	5.74	5.90	5.79	5.81
182	5.77	6.00	5.79	5.77	5.93	5.81	5.83
183/185	5.84	6.07	5.86	5.84	6.00	5.88	5.90
184	5.39	5.61	5.41	5.39	5.54	5.43	5.45
186	5.35	5.56	5.37	5.35	5.50	5.39	5.41
187	5.82	6.05	5.84	5.82	5.98	5.86	5.88
188	5.38	5.60	5.40	5.38	5.53	5.42	5.44
189	5.83	6.06	5.85	5.83	5.99	5.87	5.89
190	6.16	6.41	6.18	6.16	6.33	6.20	6.23
191	6.17	6.42	6.19	6.17	6.34	6.21	6.24
192	6.05	6.29	6.08	6.05	6.22	6.10	6.12
194	6.38	6.63	6.40	6.38	6.55	6.43	6.45
195	6.08	6.32	6.10	6.08	6.25	6.12	6.14
196	6.11	6.35	6.13	6.11	6.28	6.15	6.17
197/200	5.72	5.94	5.74	5.72	5.87	5.76	5.78
198/199	6.05	6.29	6.07	6.05	6.21	6.09	6.11
201	6.09	6.33	6.11	6.09	6.26	6.13	6.16
202	5.71	5.94	5.74	5.71	5.87	5.75	5.77
203	6.09	6.33	6.11	6.09	6.26	6.13	6.15
205	6.43	6.69	6.46	6.43	6.61	6.48	6.50
206	6.36	6.61	6.38	6.36	6.53	6.40	6.43
207	5.97	6.21	6.00	5.97	6.14	6.02	6.04
208	5.96	6.20	5.98	5.96	6.12	6.00	6.02
209	6.24	6.49	6.26	6.24	6.41	6.28	6.31

Table C-1 continued

Site ID	pv0309	pv0311	pv0312	pv0313	pv0319	pv0320	pv0326
Deployment Date	2/25/2008	2/25/2008	2/25/2008	2/27/2008	4/18/2008	4/11/2008	4/11/2008
Collection Date	4/16/2008	4/11/2008	4/11/2008	4/16/2008	5/16/2008	5/16/2008	5/16/2008
1	4.66	4.93	4.78	4.53	3.88	3.86	3.29
2	4.84	5.12	4.96	4.71	4.03	4.01	3.42
3	4.86	5.13	4.98	4.72	4.04	4.02	3.43
4	4.57	4.83	4.69	4.45	3.80	3.79	3.23
5	4.90	5.17	5.02	4.76	4.07	4.06	3.46
6	4.86	5.14	4.98	4.73	4.04	4.03	3.44
7	4.83	5.10	4.94	4.69	4.01	4.00	3.41
8	4.89	5.17	5.01	4.76	4.07	4.05	3.46
9	4.63	4.89	4.74	4.50	3.85	3.84	3.27
10	4.63	4.89	4.74	4.50	3.85	3.84	3.27
11	5.05	5.34	5.18	4.91	4.20	4.19	3.57
12/13	5.08	5.36	5.20	4.94	4.22	4.21	3.59
15	5.15	5.44	5.27	5.00	4.28	4.26	3.64
16	4.89	5.16	5.01	4.75	4.06	4.05	3.45
17	4.78	5.05	4.90	4.65	3.97	3.96	3.38
18/30	4.82	5.09	4.94	4.69	4.01	3.99	3.41
19	4.58	4.83	4.69	4.45	3.80	3.79	3.23
21	5.10	5.39	5.23	4.96	4.24	4.23	3.61
22	5.20	5.50	5.33	5.06	4.32	4.31	3.68
23	4.82	5.09	4.94	4.69	4.01	3.99	3.41
24	4.90	5.17	5.02	4.76	4.07	4.06	3.46
25	5.12	5.40	5.24	4.97	4.25	4.24	3.61
26	5.13	5.41	5.25	4.98	4.26	4.25	3.62
27	4.89	5.16	5.01	4.75	4.06	4.05	3.45
28/20	5.15	5.43	5.27	5.00	4.28	4.26	3.63
31	5.16	5.45	5.28	5.01	4.29	4.27	3.64
32	4.89	5.16	5.01	4.75	4.06	4.05	3.45
33	5.15	5.44	5.27	5.01	4.28	4.26	3.64
34	4.89	5.16	5.01	4.75	4.06	4.05	3.45
35	5.13	5.42	5.26	4.99	4.27	4.25	3.63
36	5.24	5.53	5.37	5.09	4.35	4.34	3.70
37	5.44	5.74	5.57	5.29	4.52	4.50	3.84
38	5.27	5.56	5.39	5.12	4.38	4.36	3.72
39	5.28	5.58	5.41	5.13	4.39	4.37	3.73
42	5.08	5.36	5.20	4.94	4.22	4.20	3.59
43	5.08	5.36	5.20	4.94	4.22	4.20	3.59
44/47/65	5.10	5.39	5.22	4.96	4.24	4.22	3.60
45/51	4.83	5.10	4.95	4.70	4.02	4.00	3.41
46	4.85	5.12	4.96	4.71	4.03	4.01	3.42
48	5.04	5.33	5.16	4.90	4.19	4.18	3.56
49/69	5.04	5.33	5.17	4.90	4.19	4.18	3.56
52	5.07	5.35	5.19	4.93	4.21	4.20	3.58
53/50	4.84	5.11	4.95	4.70	4.02	4.01	3.42
54	4.49	4.74	4.60	4.36	3.73	3.72	3.17
55	5.40	5.71	5.53	5.25	4.49	4.47	3.82
56	5.46	5.76	5.59	5.30	4.53	4.52	3.85
57	5.33	5.63	5.46	5.18	4.43	4.41	3.77
58	5.35	5.65	5.48	5.20	4.45	4.43	3.78
59/62/75	5.15	5.44	5.28	5.01	4.28	4.27	3.64
60	5.45	5.76	5.59	5.30	4.53	4.52	3.85
63	5.36	5.66	5.49	5.21	4.46	4.44	3.79
64	5.18	5.47	5.31	5.04	4.31	4.29	3.66
66	5.43	5.74	5.56	5.28	4.51	4.50	3.84
67	5.39	5.69	5.52	5.24	4.48	4.46	3.81
68	5.29	5.59	5.42	5.15	4.40	4.38	3.74

Table C-1 continued

Site ID	pv0309	pv0311	pv0312	pv0313	pv0319	pv0320	pv0326
Deployment Date	2/25/2008	2/25/2008	2/25/2008	2/27/2008	4/18/2008	4/11/2008	4/11/2008
Collection Date	4/16/2008	4/11/2008	4/11/2008	4/16/2008	5/16/2008	5/16/2008	5/16/2008
70	5.43	5.74	5.56	5.28	4.51	4.50	3.84
71/40/41	5.16	5.45	5.29	5.02	4.29	4.28	3.65
72	5.31	5.60	5.43	5.16	4.41	4.39	3.75
73	5.06	5.34	5.18	4.92	4.20	4.19	3.57
77	5.73	6.05	5.87	5.57	4.76	4.75	4.05
78	5.59	5.91	5.73	5.44	4.65	4.63	3.95
79	5.58	5.90	5.72	5.43	4.64	4.62	3.94
80	5.44	5.75	5.57	5.29	4.52	4.51	3.84
81	5.64	5.95	5.77	5.48	4.68	4.67	3.98
82	5.37	5.67	5.50	5.22	4.47	4.45	3.80
84	5.12	5.41	5.24	4.98	4.26	4.24	3.62
85/116/117	5.36	5.66	5.49	5.21	4.46	4.44	3.79
87/86/97/108/109/125	5.37	5.67	5.50	5.22	4.46	4.44	3.79
89	5.09	5.38	5.22	4.95	4.23	4.22	3.60
91/88	5.09	5.38	5.21	4.95	4.23	4.21	3.60
92	5.31	5.61	5.44	5.16	4.41	4.40	3.75
94	5.06	5.34	5.18	4.91	4.20	4.19	3.57
95/93/98/100/102	5.13	5.42	5.25	4.99	4.26	4.25	3.62
96	4.77	5.04	4.89	4.64	3.97	3.95	3.37
99/83	5.35	5.65	5.48	5.20	4.44	4.43	3.78
101/90/113	5.34	5.64	5.47	5.20	4.44	4.43	3.78
103	5.04	5.33	5.17	4.90	4.19	4.18	3.56
104	4.67	4.94	4.79	4.54	3.88	3.87	3.30
105	5.77	6.09	5.91	5.61	4.79	4.78	4.07
106	5.62	5.94	5.76	5.46	4.67	4.65	3.97
109	5.37	5.67	5.50	5.22	4.46	4.45	3.79
110/115	5.47	5.78	5.60	5.32	4.55	4.53	3.86
111	5.56	5.88	5.70	5.41	4.62	4.61	3.93
112	5.37	5.67	5.50	5.22	4.46	4.44	3.79
114	5.67	5.98	5.80	5.51	4.71	4.69	4.00
118	5.76	6.08	5.90	5.60	4.79	4.77	4.07
119	5.41	5.71	5.54	5.26	4.49	4.48	3.82
120	5.61	5.92	5.74	5.45	4.66	4.64	3.96
121	5.28	5.58	5.41	5.13	4.39	4.37	3.73
122	5.70	6.02	5.83	5.54	4.73	4.72	4.02
123	5.67	5.99	5.81	5.51	4.71	4.69	4.00
124/107	5.67	5.99	5.81	5.51	4.71	4.69	4.00
126	5.97	6.31	6.12	5.81	4.96	4.95	4.22
127	5.83	6.16	5.97	5.67	4.85	4.83	4.12
130	5.60	5.92	5.74	5.45	4.66	4.64	3.96
131	5.34	5.64	5.47	5.19	4.44	4.42	3.77
132	5.39	5.69	5.52	5.24	4.48	4.46	3.81
133	5.56	5.87	5.70	5.41	4.62	4.60	3.93
134/143	5.34	5.64	5.46	5.19	4.43	4.42	3.77
136	5.04	5.32	5.16	4.90	4.19	4.17	3.56
137	5.57	5.88	5.70	5.41	4.63	4.61	3.93
138/129/160/163	5.66	5.98	5.80	5.51	4.71	4.69	4.00
139/140	5.31	5.61	5.44	5.17	4.42	4.40	3.75
141	5.58	5.89	5.71	5.42	4.64	4.62	3.94
142	5.23	5.52	5.35	5.08	4.34	4.33	3.69
144	5.34	5.64	5.47	5.19	4.44	4.42	3.77
145	4.96	5.23	5.08	4.82	4.12	4.10	3.50
146	5.60	5.92	5.74	5.45	4.66	4.64	3.96
148	5.34	5.64	5.47	5.19	4.44	4.42	3.77
149/147	5.40	5.70	5.53	5.25	4.49	4.47	3.82

Table C-1 continued

Site ID	pv0309	pv0311	pv0312	pv0313	pv0319	pv0320	pv0326
Deployment Date	2/25/2008	2/25/2008	2/25/2008	2/27/2008	4/18/2008	4/11/2008	4/11/2008
Collection Date	4/16/2008	4/11/2008	4/11/2008	4/16/2008	5/16/2008	5/16/2008	5/16/2008
150	5.60	5.92	5.74	5.45	4.66	4.64	3.96
151/135/154	5.33	5.63	5.46	5.19	4.43	4.42	3.77
152	4.96	5.24	5.08	4.82	4.12	4.11	3.51
153/168	5.66	5.97	5.79	5.50	4.70	4.68	4.00
155	4.90	5.17	5.02	4.76	4.07	4.06	3.46
156/157	5.98	6.32	6.13	5.82	4.97	4.96	4.23
158	5.72	6.04	5.86	5.56	4.75	4.73	4.04
159	5.87	6.20	6.01	5.71	4.88	4.86	4.15
161	5.61	5.92	5.74	5.45	4.66	4.64	3.96
162	5.92	6.25	6.06	5.75	4.92	4.90	4.18
164	5.70	6.02	5.84	5.54	4.74	4.72	4.03
165	5.60	5.91	5.73	5.44	4.65	4.64	3.95
167	5.98	6.32	6.13	5.82	4.97	4.95	4.23
169	6.22	6.57	6.37	6.04	5.17	5.15	4.39
170	5.91	6.24	6.05	5.74	4.91	4.89	4.17
171/173	5.63	5.95	5.77	5.47	4.68	4.66	3.98
172/192	5.86	6.19	6.00	5.70	4.87	4.86	4.14
174	5.64	5.95	5.77	5.48	4.68	4.67	3.98
175	5.60	5.91	5.74	5.44	4.65	4.64	3.96
176	5.27	5.57	5.40	5.13	4.38	4.37	3.73
177	5.63	5.94	5.76	5.47	4.68	4.66	3.98
178	5.59	5.91	5.73	5.44	4.65	4.63	3.95
179	5.28	5.57	5.40	5.13	4.39	4.37	3.73
180/193	5.91	6.24	6.05	5.74	4.91	4.89	4.17
181	5.56	5.87	5.69	5.40	4.62	4.60	3.92
182	5.58	5.89	5.72	5.43	4.64	4.62	3.94
183/185	5.65	5.96	5.78	5.49	4.69	4.67	3.99
184	5.22	5.51	5.34	5.07	4.33	4.32	3.68
186	5.18	5.47	5.30	5.03	4.30	4.29	3.66
187	5.62	5.94	5.76	5.47	4.67	4.66	3.97
188	5.21	5.50	5.33	5.06	4.33	4.31	3.68
189	5.64	5.96	5.78	5.48	4.69	4.67	3.98
190	5.96	6.29	6.10	5.79	4.95	4.93	4.21
191	5.97	6.30	6.11	5.80	4.96	4.94	4.22
192	5.85	6.18	5.99	5.69	4.86	4.85	4.13
194	6.17	6.52	6.32	6.00	5.13	5.11	4.36
195	5.88	6.21	6.02	5.72	4.89	4.87	4.15
196	5.91	6.24	6.05	5.74	4.91	4.89	4.17
197/200	5.53	5.84	5.66	5.37	4.59	4.58	3.91
198/199	5.85	6.18	5.99	5.68	4.86	4.84	4.13
201	5.89	6.22	6.03	5.73	4.90	4.88	4.16
202	5.53	5.84	5.66	5.37	4.59	4.58	3.90
203	5.89	6.22	6.03	5.73	4.90	4.88	4.16
205	6.22	6.57	6.37	6.05	5.17	5.15	4.39
206	6.15	6.50	6.30	5.98	5.11	5.09	4.34
207	5.78	6.10	5.92	5.62	4.80	4.78	4.08
208	5.76	6.09	5.90	5.60	4.79	4.77	4.07
209	6.03	6.37	6.18	5.87	5.01	5.00	4.26

Table C-1 continued

Site ID	pv0334	pv0337	pv0338	pv0339	pv0340	pv0341	pv0343
Deployment Date	4/11/2008	4/16/2008	4/16/2008	4/11/2008	4/11/2008	4/11/2008	4/16/2008
Collection Date	5/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008
1	3.48	3.74	3.74	3.75	3.26	3.73	3.74
2	3.62	3.89	3.89	3.90	3.39	3.88	3.89
3	3.63	3.90	3.90	3.91	3.40	3.89	3.90
4	3.42	3.67	3.67	3.68	3.20	3.66	3.67
5	3.66	3.93	3.93	3.94	3.42	3.92	3.93
6	3.63	3.90	3.90	3.91	3.40	3.89	3.91
7	3.60	3.87	3.87	3.88	3.38	3.87	3.88
8	3.65	3.93	3.93	3.94	3.42	3.92	3.93
9	3.46	3.72	3.72	3.72	3.24	3.71	3.72
10	3.46	3.72	3.72	3.72	3.24	3.71	3.72
11	3.77	4.05	4.05	4.06	3.53	4.05	4.06
12/13	3.79	4.07	4.07	4.08	3.55	4.07	4.08
15	3.84	4.13	4.13	4.14	3.60	4.12	4.13
16	3.65	3.92	3.92	3.93	3.42	3.91	3.92
17	3.57	3.84	3.84	3.85	3.34	3.83	3.84
18/30	3.60	3.87	3.87	3.88	3.37	3.86	3.87
19	3.42	3.67	3.67	3.68	3.20	3.66	3.68
21	3.81	4.09	4.09	4.10	3.57	4.09	4.10
22	3.88	4.17	4.17	4.18	3.64	4.17	4.18
23	3.60	3.87	3.87	3.88	3.37	3.86	3.87
24	3.66	3.93	3.93	3.94	3.43	3.92	3.93
25	3.82	4.10	4.10	4.11	3.58	4.10	4.11
26	3.83	4.11	4.11	4.12	3.58	4.10	4.12
27	3.65	3.92	3.92	3.93	3.42	3.91	3.92
28/20	3.84	4.13	4.13	4.14	3.60	4.12	4.13
31	3.85	4.14	4.14	4.15	3.61	4.13	4.14
32	3.65	3.92	3.92	3.93	3.42	3.91	3.92
33	3.84	4.13	4.13	4.14	3.60	4.12	4.14
34	3.65	3.92	3.92	3.93	3.42	3.91	3.92
35	3.83	4.12	4.12	4.13	3.59	4.11	4.12
36	3.91	4.20	4.20	4.21	3.66	4.19	4.21
37	4.06	4.36	4.36	4.37	3.80	4.35	4.37
38	3.93	4.23	4.23	4.24	3.68	4.22	4.23
39	3.94	4.24	4.24	4.25	3.69	4.23	4.24
42	3.79	4.07	4.07	4.08	3.55	4.06	4.08
43	3.79	4.07	4.07	4.08	3.55	4.06	4.08
44/47/65	3.81	4.09	4.09	4.10	3.57	4.08	4.10
45/51	3.61	3.88	3.88	3.89	3.38	3.87	3.88
46	3.62	3.89	3.89	3.90	3.39	3.88	3.89
48	3.76	4.04	4.04	4.05	3.53	4.04	4.05
49/69	3.77	4.05	4.05	4.06	3.53	4.04	4.05
52	3.78	4.06	4.06	4.07	3.54	4.06	4.07
53/50	3.61	3.88	3.88	3.89	3.38	3.87	3.88
54	3.35	3.60	3.60	3.61	3.14	3.59	3.60
55	4.03	4.33	4.33	4.34	3.78	4.33	4.34
56	4.07	4.38	4.38	4.39	3.82	4.37	4.38
57	3.98	4.28	4.28	4.29	3.73	4.27	4.28
58	4.00	4.29	4.29	4.30	3.74	4.29	4.30
59/62/75	3.85	4.13	4.13	4.14	3.60	4.13	4.14
60	4.07	4.37	4.37	4.39	3.81	4.37	4.38
63	4.00	4.30	4.30	4.31	3.75	4.29	4.31
64	3.87	4.16	4.16	4.17	3.62	4.15	4.16
66	4.06	4.36	4.36	4.37	3.80	4.35	4.36
67	4.03	4.32	4.32	4.33	3.77	4.32	4.33
68	3.95	4.25	4.25	4.26	3.70	4.24	4.25

Table C-1 continued

Site ID	pv0334	pv0337	pv0338	pv0339	pv0340	pv0341	pv0343
Deployment Date	4/11/2008	4/16/2008	4/16/2008	4/11/2008	4/11/2008	4/11/2008	4/16/2008
Collection Date	5/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008
70	4.06	4.36	4.36	4.37	3.80	4.35	4.36
71/40/41	3.85	4.14	4.14	4.15	3.61	4.13	4.15
72	3.96	4.26	4.26	4.27	3.71	4.25	4.26
73	3.78	4.06	4.06	4.07	3.54	4.05	4.06
77	4.28	4.60	4.60	4.61	4.01	4.59	4.60
78	4.17	4.49	4.49	4.50	3.91	4.48	4.49
79	4.17	4.48	4.48	4.49	3.90	4.47	4.48
80	4.06	4.36	4.36	4.37	3.80	4.36	4.37
81	4.21	4.52	4.52	4.53	3.94	4.51	4.53
82	4.01	4.31	4.31	4.32	3.76	4.30	4.31
84	3.82	4.11	4.11	4.12	3.58	4.10	4.11
85/116/117	4.00	4.30	4.30	4.31	3.75	4.29	4.30
87/86/97/108/109/125	4.01	4.31	4.31	4.32	3.75	4.30	4.31
89	3.80	4.09	4.09	4.10	3.56	4.08	4.09
91/88	3.80	4.08	4.08	4.09	3.56	4.07	4.09
92	3.96	4.26	4.26	4.27	3.71	4.25	4.26
94	3.77	4.06	4.06	4.07	3.54	4.05	4.06
95/93/98/100/102	3.83	4.11	4.11	4.12	3.59	4.11	4.12
96	3.56	3.83	3.83	3.84	3.34	3.82	3.83
99/83	3.99	4.29	4.29	4.30	3.74	4.28	4.29
101/90/113	3.99	4.29	4.29	4.30	3.74	4.28	4.29
103	3.77	4.05	4.05	4.06	3.53	4.04	4.05
104	3.49	3.75	3.75	3.76	3.27	3.74	3.75
105	4.31	4.63	4.63	4.64	4.03	4.62	4.63
106	4.20	4.51	4.51	4.52	3.93	4.50	4.51
109	4.01	4.31	4.31	4.32	3.75	4.30	4.31
110/115	4.08	4.39	4.39	4.40	3.82	4.38	4.39
111	4.15	4.46	4.46	4.47	3.89	4.45	4.47
112	4.01	4.30	4.30	4.31	3.75	4.30	4.31
114	4.23	4.55	4.55	4.56	3.96	4.54	4.55
118	4.30	4.62	4.62	4.63	4.03	4.61	4.63
119	4.04	4.34	4.34	4.35	3.78	4.33	4.34
120	4.19	4.50	4.50	4.51	3.92	4.49	4.50
121	3.94	4.24	4.24	4.25	3.69	4.23	4.24
122	4.25	4.57	4.57	4.58	3.98	4.56	4.57
123	4.23	4.55	4.55	4.56	3.96	4.54	4.55
124/107	4.23	4.55	4.55	4.56	3.96	4.54	4.55
126	4.46	4.79	4.79	4.80	4.18	4.78	4.80
127	4.36	4.68	4.68	4.69	4.08	4.67	4.68
130	4.18	4.49	4.49	4.50	3.92	4.48	4.50
131	3.99	4.28	4.28	4.29	3.73	4.28	4.29
132	4.02	4.32	4.32	4.33	3.77	4.31	4.33
133	4.15	4.46	4.46	4.47	3.89	4.45	4.47
134/143	3.98	4.28	4.28	4.29	3.73	4.27	4.28
136	3.76	4.04	4.04	4.05	3.52	4.03	4.05
137	4.16	4.47	4.47	4.48	3.89	4.46	4.47
138/129/160/163	4.23	4.54	4.54	4.55	3.96	4.53	4.55
139/140	3.97	4.26	4.26	4.27	3.72	4.25	4.27
141	4.17	4.48	4.48	4.49	3.90	4.47	4.48
142	3.90	4.19	4.19	4.20	3.65	4.18	4.20
144	3.99	4.29	4.29	4.30	3.74	4.28	4.29
145	3.70	3.98	3.98	3.98	3.47	3.97	3.98
146	4.18	4.49	4.49	4.50	3.92	4.48	4.50
148	3.99	4.29	4.29	4.30	3.74	4.28	4.29
149/147	4.03	4.33	4.33	4.34	3.78	4.32	4.34

Table C-1 continued

Site ID	pv0334	pv0337	pv0338	pv0339	pv0340	pv0341	pv0343
Deployment Date	4/11/2008	4/16/2008	4/16/2008	4/11/2008	4/11/2008	4/11/2008	4/16/2008
Collection Date	5/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008
150	4.18	4.49	4.49	4.50	3.92	4.48	4.50
151/135/154	3.98	4.28	4.28	4.29	3.73	4.27	4.28
152	3.71	3.98	3.98	3.99	3.47	3.97	3.99
153/168	4.22	4.54	4.54	4.55	3.95	4.53	4.54
155	3.66	3.93	3.93	3.94	3.42	3.92	3.93
156/157	4.47	4.80	4.80	4.81	4.19	4.79	4.81
158	4.27	4.59	4.59	4.60	4.00	4.58	4.59
159	4.38	4.71	4.71	4.72	4.10	4.70	4.71
161	4.19	4.50	4.50	4.51	3.92	4.49	4.50
162	4.42	4.75	4.75	4.76	4.14	4.74	4.75
164	4.26	4.57	4.57	4.58	3.99	4.56	4.58
165	4.18	4.49	4.49	4.50	3.91	4.48	4.50
167	4.47	4.80	4.80	4.81	4.18	4.79	4.80
169	4.64	4.99	4.99	5.00	4.35	4.98	4.99
170	4.41	4.74	4.74	4.75	4.13	4.73	4.74
171/173	4.20	4.52	4.52	4.53	3.94	4.51	4.52
172/192	4.38	4.70	4.70	4.71	4.10	4.69	4.71
174	4.21	4.52	4.52	4.53	3.94	4.51	4.53
175	4.18	4.49	4.49	4.50	3.92	4.48	4.50
176	3.94	4.23	4.23	4.24	3.69	4.22	4.24
177	4.20	4.51	4.51	4.53	3.94	4.51	4.52
178	4.18	4.49	4.49	4.50	3.91	4.48	4.49
179	3.94	4.23	4.23	4.24	3.69	4.22	4.24
180/193	4.41	4.74	4.74	4.75	4.13	4.73	4.74
181	4.15	4.46	4.46	4.47	3.88	4.45	4.46
182	4.17	4.48	4.48	4.49	3.90	4.47	4.48
183/185	4.21	4.53	4.53	4.54	3.95	4.52	4.53
184	3.89	4.18	4.18	4.19	3.65	4.18	4.19
186	3.86	4.15	4.15	4.16	3.62	4.14	4.16
187	4.20	4.51	4.51	4.52	3.93	4.50	4.52
188	3.89	4.18	4.18	4.19	3.64	4.17	4.18
189	4.21	4.52	4.52	4.54	3.94	4.52	4.53
190	4.45	4.78	4.78	4.79	4.17	4.77	4.78
191	4.46	4.79	4.79	4.80	4.17	4.78	4.79
192	4.37	4.70	4.70	4.71	4.09	4.69	4.70
194	4.61	4.95	4.95	4.96	4.31	4.94	4.96
195	4.39	4.72	4.72	4.73	4.11	4.71	4.72
196	4.41	4.74	4.74	4.75	4.13	4.73	4.74
197/200	4.13	4.44	4.44	4.45	3.87	4.43	4.44
198/199	4.37	4.69	4.69	4.70	4.09	4.68	4.70
201	4.40	4.73	4.73	4.74	4.12	4.72	4.73
202	4.13	4.43	4.43	4.44	3.86	4.42	4.44
203	4.40	4.72	4.72	4.74	4.12	4.72	4.73
205	4.64	4.99	4.99	5.00	4.35	4.98	5.00
206	4.59	4.93	4.93	4.95	4.30	4.92	4.94
207	4.31	4.64	4.64	4.65	4.04	4.63	4.64
208	4.30	4.62	4.62	4.63	4.03	4.61	4.63
209	4.51	4.84	4.84	4.85	4.22	4.83	4.85

Table C-1 continued

Site ID	pv0347	pv0352	pv0354	pv0359	pv0364	pv0373	pv0374
Deployment Date	4/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008
Collection Date	5/13/2008	7/15/2008	6/27/2008	7/2/2008	7/15/2008	7/3/2008	6/27/2008
1	3.96	4.53	3.31	3.65	4.56	3.68	3.75
2	4.12	4.71	3.44	3.80	4.73	3.82	3.90
3	4.13	4.72	3.45	3.81	4.75	3.83	3.91
4	3.89	4.44	3.25	3.59	4.47	3.61	3.68
5	4.16	4.76	3.48	3.84	4.78	3.87	3.94
6	4.13	4.73	3.45	3.81	4.75	3.84	3.91
7	4.10	4.69	3.43	3.78	4.72	3.81	3.88
8	4.16	4.75	3.47	3.84	4.78	3.86	3.94
9	3.93	4.50	3.29	3.63	4.52	3.66	3.72
10	3.93	4.50	3.29	3.63	4.52	3.66	3.72
11	4.29	4.91	3.59	3.96	4.94	3.99	4.07
12/13	4.31	4.93	3.61	3.98	4.96	4.01	4.08
15	4.37	5.00	3.65	4.03	5.03	4.06	4.14
16	4.15	4.75	3.47	3.83	4.78	3.86	3.93
17	4.06	4.65	3.40	3.75	4.67	3.78	3.85
18/30	4.10	4.68	3.42	3.78	4.71	3.81	3.88
19	3.89	4.45	3.25	3.59	4.47	3.61	3.68
21	4.34	4.96	3.62	4.00	4.99	4.03	4.11
22	4.42	5.05	3.69	4.08	5.08	4.11	4.18
23	4.10	4.68	3.42	3.78	4.71	3.81	3.88
24	4.16	4.76	3.48	3.84	4.79	3.87	3.94
25	4.35	4.97	3.63	4.01	5.00	4.04	4.11
26	4.35	4.98	3.64	4.02	5.01	4.05	4.12
27	4.15	4.75	3.47	3.83	4.78	3.86	3.93
28/20	4.37	5.00	3.65	4.03	5.03	4.06	4.14
31	4.38	5.01	3.66	4.04	5.04	4.07	4.15
32	4.15	4.75	3.47	3.83	4.78	3.86	3.93
33	4.37	5.00	3.66	4.04	5.03	4.06	4.14
34	4.15	4.75	3.47	3.83	4.78	3.86	3.93
35	4.36	4.99	3.64	4.02	5.01	4.05	4.13
36	4.45	5.09	3.72	4.11	5.12	4.14	4.21
37	4.62	5.28	3.86	4.26	5.31	4.29	4.37
38	4.47	5.12	3.74	4.13	5.15	4.16	4.24
39	4.49	5.13	3.75	4.14	5.16	4.17	4.25
42	4.31	4.93	3.60	3.98	4.96	4.01	4.08
43	4.31	4.93	3.60	3.98	4.96	4.01	4.08
44/47/65	4.33	4.95	3.62	4.00	4.98	4.03	4.10
45/51	4.11	4.69	3.43	3.79	4.72	3.82	3.89
46	4.12	4.71	3.44	3.80	4.73	3.83	3.90
48	4.28	4.90	3.58	3.95	4.93	3.98	4.05
49/69	4.28	4.90	3.58	3.95	4.93	3.98	4.06
52	4.30	4.92	3.60	3.97	4.95	4.00	4.07
53/50	4.11	4.70	3.43	3.79	4.73	3.82	3.89
54	3.81	4.36	3.19	3.52	4.38	3.54	3.61
55	4.59	5.25	3.84	4.23	5.28	4.27	4.34
56	4.63	5.30	3.87	4.28	5.33	4.31	4.39
57	4.53	5.18	3.78	4.18	5.21	4.21	4.29
58	4.55	5.20	3.80	4.19	5.23	4.23	4.30
59/62/75	4.38	5.01	3.66	4.04	5.03	4.07	4.14
60	4.63	5.30	3.87	4.27	5.33	4.30	4.39
63	4.55	5.21	3.81	4.20	5.24	4.23	4.31
64	4.40	5.04	3.68	4.06	5.06	4.09	4.17
66	4.61	5.28	3.86	4.26	5.31	4.29	4.37
67	4.58	5.24	3.83	4.22	5.27	4.26	4.34
68	4.50	5.14	3.76	4.15	5.17	4.18	4.26

Table C-1 continued

Site ID	pv0347	pv0352	pv0354	pv0359	pv0364	pv0373	pv0374
Deployment Date	4/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008
Collection Date	5/13/2008	7/15/2008	6/27/2008	7/2/2008	7/15/2008	7/3/2008	6/27/2008
70	4.61	5.28	3.86	4.26	5.31	4.29	4.37
71/40/41	4.39	5.02	3.67	4.05	5.04	4.08	4.15
72	4.51	5.15	3.77	4.16	5.18	4.19	4.27
73	4.30	4.91	3.59	3.96	4.94	3.99	4.07
77	4.87	5.57	4.07	4.49	5.60	4.52	4.61
78	4.75	5.43	3.97	4.38	5.46	4.41	4.50
79	4.74	5.42	3.96	4.38	5.46	4.41	4.49
80	4.62	5.28	3.86	4.26	5.32	4.29	4.37
81	4.79	5.47	4.00	4.42	5.51	4.45	4.53
82	4.56	5.22	3.81	4.21	5.25	4.24	4.32
84	4.35	4.97	3.64	4.01	5.00	4.04	4.12
85/116/117	4.55	5.21	3.81	4.20	5.24	4.23	4.31
87/86/97/108/109/125	4.56	5.21	3.81	4.21	5.24	4.24	4.32
89	4.33	4.95	3.62	3.99	4.98	4.02	4.10
91/88	4.32	4.94	3.61	3.99	4.97	4.02	4.09
92	4.51	5.16	3.77	4.16	5.19	4.19	4.27
94	4.29	4.91	3.59	3.96	4.94	3.99	4.07
95/93/98/100/102	4.36	4.98	3.64	4.02	5.01	4.05	4.12
96	4.06	4.64	3.39	3.74	4.67	3.77	3.84
99/83	4.54	5.19	3.80	4.19	5.22	4.22	4.30
101/90/113	4.54	5.19	3.79	4.19	5.22	4.22	4.30
103	4.28	4.90	3.58	3.95	4.93	3.98	4.06
104	3.97	4.54	3.32	3.66	4.57	3.69	3.76
105	4.90	5.60	4.09	4.52	5.63	4.55	4.64
106	4.77	5.46	3.99	4.40	5.49	4.44	4.52
109	4.56	5.22	3.81	4.21	5.25	4.24	4.32
110/115	4.65	5.31	3.88	4.29	5.34	4.32	4.40
111	4.73	5.40	3.95	4.36	5.44	4.39	4.47
112	4.56	5.21	3.81	4.20	5.24	4.24	4.32
114	4.81	5.50	4.02	4.44	5.54	4.47	4.56
118	4.89	5.59	4.09	4.51	5.63	4.55	4.63
119	4.59	5.25	3.84	4.24	5.28	4.27	4.35
120	4.76	5.45	3.98	4.39	5.48	4.43	4.51
121	4.49	5.13	3.75	4.14	5.16	4.17	4.25
122	4.84	5.53	4.04	4.46	5.57	4.50	4.58
123	4.82	5.51	4.02	4.44	5.54	4.48	4.56
124/107	4.81	5.51	4.02	4.44	5.54	4.47	4.56
126	5.07	5.80	4.24	4.68	5.84	4.72	4.80
127	4.96	5.67	4.14	4.57	5.70	4.60	4.69
130	4.76	5.44	3.98	4.39	5.47	4.42	4.51
131	4.54	5.19	3.79	4.18	5.22	4.22	4.29
132	4.58	5.23	3.82	4.22	5.26	4.25	4.33
133	4.72	5.40	3.95	4.36	5.43	4.39	4.47
134/143	4.53	5.18	3.79	4.18	5.21	4.21	4.29
136	4.28	4.90	3.58	3.95	4.92	3.98	4.05
137	4.73	5.41	3.95	4.36	5.44	4.39	4.48
138/129/160/163	4.81	5.50	4.02	4.44	5.53	4.47	4.55
139/140	4.51	5.16	3.77	4.16	5.19	4.19	4.27
141	4.74	5.42	3.96	4.37	5.45	4.40	4.49
142	4.44	5.08	3.71	4.09	5.11	4.13	4.20
144	4.54	5.19	3.79	4.19	5.22	4.22	4.30
145	4.21	4.81	3.52	3.88	4.84	3.91	3.99
146	4.76	5.44	3.98	4.39	5.47	4.42	4.51
148	4.54	5.19	3.79	4.19	5.22	4.22	4.30
149/147	4.59	5.25	3.83	4.23	5.28	4.26	4.34

Table C-1 continued

Site ID	pv0347	pv0352	pv0354	pv0359	pv0364	pv0373	pv0374
Deployment Date	4/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008	5/16/2008
Collection Date	5/13/2008	7/15/2008	6/27/2008	7/2/2008	7/15/2008	7/3/2008	6/27/2008
150	4.76	5.44	3.98	4.39	5.47	4.42	4.51
151/135/154	4.53	5.18	3.79	4.18	5.21	4.21	4.29
152	4.22	4.82	3.52	3.89	4.85	3.92	3.99
153/168	4.80	5.49	4.01	4.43	5.53	4.46	4.55
155	4.16	4.76	3.48	3.84	4.79	3.87	3.94
156/157	5.08	5.81	4.25	4.69	5.85	4.72	4.81
158	4.86	5.55	4.06	4.48	5.59	4.51	4.60
159	4.99	5.70	4.17	4.60	5.74	4.63	4.72
161	4.76	5.45	3.98	4.39	5.48	4.43	4.51
162	5.02	5.75	4.20	4.64	5.78	4.67	4.76
164	4.84	5.54	4.05	4.47	5.57	4.50	4.58
165	4.75	5.44	3.97	4.39	5.47	4.42	4.50
167	5.08	5.81	4.25	4.69	5.85	4.72	4.81
169	5.28	6.04	4.41	4.87	6.07	4.91	5.00
170	5.02	5.74	4.19	4.63	5.77	4.66	4.75
171/173	4.78	5.47	4.00	4.41	5.50	4.45	4.53
172/192	4.98	5.70	4.16	4.59	5.73	4.63	4.71
174	4.79	5.48	4.00	4.42	5.51	4.45	4.53
175	4.76	5.44	3.98	4.39	5.47	4.42	4.50
176	4.48	5.12	3.74	4.13	5.15	4.16	4.24
177	4.78	5.47	4.00	4.41	5.50	4.44	4.53
178	4.75	5.43	3.97	4.38	5.47	4.42	4.50
179	4.48	5.13	3.75	4.13	5.16	4.17	4.24
180/193	5.02	5.74	4.19	4.63	5.77	4.66	4.75
181	4.72	5.40	3.94	4.35	5.43	4.39	4.47
182	4.74	5.42	3.96	4.37	5.45	4.41	4.49
183/185	4.80	5.48	4.01	4.42	5.52	4.46	4.54
184	4.43	5.07	3.70	4.09	5.10	4.12	4.19
186	4.40	5.03	3.67	4.06	5.06	4.09	4.16
187	4.78	5.46	3.99	4.41	5.50	4.44	4.52
188	4.42	5.06	3.70	4.08	5.09	4.11	4.19
189	4.79	5.48	4.00	4.42	5.51	4.45	4.54
190	5.06	5.79	4.23	4.67	5.82	4.70	4.79
191	5.07	5.80	4.24	4.68	5.83	4.71	4.80
192	4.97	5.69	4.16	4.59	5.72	4.62	4.71
194	5.24	5.99	4.38	4.84	6.03	4.87	4.96
195	4.99	5.71	4.17	4.61	5.75	4.64	4.73
196	5.02	5.74	4.19	4.63	5.77	4.66	4.75
197/200	4.70	5.37	3.92	4.33	5.40	4.36	4.45
198/199	4.97	5.68	4.15	4.58	5.71	4.62	4.70
201	5.00	5.72	4.18	4.62	5.76	4.65	4.74
202	4.69	5.37	3.92	4.33	5.40	4.36	4.44
203	5.00	5.72	4.18	4.62	5.75	4.65	4.74
205	5.28	6.04	4.42	4.87	6.08	4.91	5.00
206	5.22	5.97	4.37	4.82	6.01	4.85	4.95
207	4.91	5.61	4.10	4.53	5.65	4.56	4.65
208	4.90	5.60	4.09	4.52	5.63	4.55	4.63
209	5.13	5.86	4.28	4.73	5.90	4.76	4.85

Table C-1 continued

Site ID	pv0379	pv0385	pv0394	pv0395	pv0396	pv0397	pv0400
Deployment Date	5/16/2008	7/15/2008	7/1/2008	6/27/2008	7/15/2008	7/15/2008	6/28/2008
Collection Date	6/27/2008	8/8/2008	8/13/2008	8/15/2008	9/1/2008	9/3/2008	8/8/2008
1	3.65	5.81	5.69	5.75	5.31	5.88	5.73
2	3.79	6.04	5.91	5.97	5.52	6.11	5.95
3	3.80	6.05	5.93	5.99	5.53	6.12	5.97
4	3.58	5.70	5.58	5.64	5.21	5.77	5.62
5	3.83	6.10	5.97	6.04	5.58	6.17	6.01
6	3.80	6.06	5.94	6.00	5.54	6.13	5.97
7	3.77	6.02	5.89	5.95	5.50	6.09	5.93
8	3.83	6.10	5.97	6.03	5.58	6.17	6.01
9	3.62	5.77	5.65	5.71	5.28	5.84	5.69
10	3.62	5.77	5.65	5.71	5.28	5.84	5.69
11	3.95	6.30	6.17	6.23	5.76	6.37	6.21
12/13	3.97	6.33	6.20	6.26	5.79	6.40	6.24
15	4.02	6.41	6.28	6.34	5.86	6.49	6.32
16	3.82	6.09	5.96	6.02	5.57	6.16	6.00
17	3.74	5.96	5.83	5.89	5.45	6.03	5.87
18/30	3.77	6.01	5.88	5.94	5.49	6.08	5.92
19	3.58	5.70	5.58	5.64	5.21	5.77	5.62
21	3.99	6.36	6.23	6.29	5.82	6.44	6.27
22	4.07	6.48	6.35	6.41	5.93	6.56	6.39
23	3.77	6.01	5.88	5.94	5.49	6.08	5.92
24	3.83	6.10	5.98	6.04	5.58	6.18	6.02
25	4.00	6.37	6.24	6.30	5.83	6.45	6.28
26	4.01	6.39	6.25	6.32	5.84	6.46	6.29
27	3.82	6.09	5.96	6.02	5.57	6.16	6.00
28/20	4.02	6.41	6.28	6.34	5.86	6.49	6.32
31	4.03	6.43	6.29	6.36	5.88	6.50	6.33
32	3.82	6.09	5.96	6.02	5.57	6.16	6.00
33	4.03	6.42	6.28	6.35	5.87	6.49	6.32
34	3.82	6.09	5.96	6.02	5.57	6.16	6.00
35	4.01	6.39	6.26	6.33	5.85	6.47	6.30
36	4.10	6.53	6.39	6.46	5.97	6.61	6.43
37	4.25	6.78	6.64	6.70	6.20	6.86	6.68
38	4.12	6.56	6.43	6.49	6.00	6.64	6.47
39	4.13	6.58	6.44	6.51	6.02	6.66	6.48
42	3.97	6.33	6.19	6.26	5.78	6.40	6.23
43	3.97	6.33	6.19	6.26	5.78	6.40	6.23
44/47/65	3.99	6.36	6.22	6.29	5.81	6.43	6.26
45/51	3.78	6.02	5.90	5.96	5.51	6.09	5.93
46	3.79	6.04	5.91	5.97	5.52	6.11	5.95
48	3.94	6.28	6.15	6.21	5.74	6.36	6.19
49/69	3.94	6.28	6.15	6.22	5.75	6.36	6.19
52	3.96	6.31	6.18	6.24	5.77	6.39	6.22
53/50	3.78	6.03	5.90	5.96	5.51	6.10	5.94
54	3.51	5.59	5.47	5.53	5.11	5.66	5.51
55	4.22	6.73	6.59	6.66	6.15	6.81	6.63
56	4.27	6.80	6.66	6.72	6.22	6.88	6.70
57	4.17	6.64	6.50	6.57	6.07	6.72	6.54
58	4.18	6.67	6.53	6.60	6.10	6.75	6.57
59/62/75	4.03	6.42	6.29	6.35	5.87	6.50	6.33
60	4.26	6.79	6.65	6.72	6.21	6.87	6.70
63	4.19	6.68	6.54	6.61	6.11	6.76	6.58
64	4.05	6.46	6.32	6.39	5.91	6.54	6.37
66	4.25	6.77	6.63	6.69	6.19	6.85	6.67
67	4.21	6.72	6.58	6.64	6.14	6.80	6.62
68	4.14	6.60	6.46	6.53	6.03	6.67	6.50

Table C-1 continued

Site ID	pv0379	pv0385	pv0394	pv0395	pv0396	pv0397	pv0400
Deployment Date	5/16/2008	7/15/2008	7/1/2008	6/27/2008	7/15/2008	7/15/2008	6/28/2008
Collection Date	6/27/2008	8/8/2008	8/13/2008	8/15/2008	9/1/2008	9/3/2008	8/8/2008
70	4.25	6.77	6.63	6.70	6.19	6.85	6.67
71/40/41	4.04	6.43	6.30	6.36	5.88	6.51	6.34
72	4.15	6.61	6.47	6.54	6.04	6.69	6.51
73	3.95	6.30	6.17	6.23	5.76	6.38	6.21
77	4.48	7.14	6.99	7.06	6.53	7.22	7.04
78	4.37	6.97	6.82	6.89	6.37	7.05	6.87
79	4.37	6.96	6.81	6.88	6.36	7.04	6.86
80	4.25	6.78	6.64	6.70	6.20	6.86	6.68
81	4.41	7.02	6.88	6.95	6.42	7.10	6.92
82	4.20	6.69	6.56	6.62	6.12	6.77	6.60
84	4.00	6.38	6.25	6.31	5.83	6.46	6.29
85/116/117	4.19	6.68	6.54	6.61	6.11	6.76	6.58
87/86/97/108/109/125	4.20	6.69	6.55	6.61	6.11	6.77	6.59
89	3.98	6.35	6.21	6.28	5.80	6.42	6.25
91/88	3.98	6.34	6.21	6.27	5.80	6.42	6.25
92	4.15	6.62	6.48	6.54	6.05	6.69	6.52
94	3.95	6.30	6.17	6.23	5.76	6.37	6.21
95/93/98/100/102	4.01	6.39	6.26	6.32	5.84	6.47	6.30
96	3.73	5.95	5.83	5.88	5.44	6.02	5.86
99/83	4.18	6.66	6.52	6.59	6.09	6.74	6.56
101/90/113	4.18	6.66	6.52	6.59	6.09	6.74	6.56
103	3.94	6.28	6.15	6.22	5.74	6.36	6.19
104	3.65	5.82	5.70	5.76	5.32	5.89	5.74
105	4.51	7.19	7.04	7.11	6.57	7.27	7.08
106	4.39	7.00	6.86	6.93	6.40	7.09	6.90
109	4.20	6.69	6.55	6.62	6.12	6.77	6.59
110/115	4.28	6.82	6.67	6.74	6.23	6.90	6.72
111	4.35	6.93	6.79	6.86	6.34	7.01	6.83
112	4.19	6.69	6.55	6.61	6.11	6.76	6.59
114	4.43	7.06	6.91	6.98	6.45	7.14	6.96
118	4.50	7.18	7.03	7.10	6.56	7.26	7.07
119	4.23	6.74	6.60	6.66	6.16	6.82	6.64
120	4.38	6.98	6.84	6.91	6.39	7.07	6.88
121	4.13	6.58	6.44	6.51	6.02	6.66	6.49
122	4.45	7.10	6.95	7.02	6.49	7.18	6.99
123	4.43	7.06	6.92	6.99	6.46	7.15	6.96
124/107	4.43	7.06	6.92	6.99	6.46	7.15	6.96
126	4.67	7.44	7.29	7.36	6.81	7.53	7.34
127	4.56	7.27	7.12	7.19	6.65	7.35	7.16
130	4.38	6.98	6.83	6.90	6.38	7.06	6.88
131	4.17	6.65	6.52	6.58	6.08	6.73	6.56
132	4.21	6.71	6.57	6.64	6.14	6.79	6.62
133	4.35	6.93	6.78	6.85	6.33	7.01	6.83
134/143	4.17	6.65	6.51	6.58	6.08	6.73	6.55
136	3.94	6.28	6.15	6.21	5.74	6.35	6.19
137	4.35	6.94	6.79	6.86	6.34	7.02	6.84
138/129/160/163	4.43	7.06	6.91	6.98	6.45	7.14	6.95
139/140	4.15	6.62	6.48	6.55	6.05	6.70	6.52
141	4.36	6.95	6.81	6.88	6.36	7.03	6.85
142	4.09	6.51	6.38	6.44	5.95	6.59	6.42
144	4.18	6.66	6.52	6.58	6.09	6.73	6.56
145	3.87	6.17	6.05	6.11	5.65	6.25	6.08
146	4.38	6.98	6.83	6.90	6.38	7.06	6.88
148	4.18	6.66	6.52	6.58	6.09	6.73	6.56
149/147	4.22	6.73	6.59	6.66	6.15	6.81	6.63

Table C-1 continued

Site ID	pv0379	pv0385	pv0394	pv0395	pv0396	pv0397	pv0400
Deployment Date	5/16/2008	7/15/2008	7/1/2008	6/27/2008	7/15/2008	7/15/2008	6/28/2008
Collection Date	6/27/2008	8/8/2008	8/13/2008	8/15/2008	9/1/2008	9/3/2008	8/8/2008
150	4.38	6.98	6.83	6.90	6.38	7.06	6.88
151/135/154	4.17	6.65	6.51	6.58	6.08	6.73	6.55
152	3.88	6.18	6.05	6.12	5.65	6.26	6.09
153/168	4.42	7.05	6.90	6.97	6.44	7.13	6.94
155	3.83	6.10	5.98	6.04	5.58	6.17	6.01
156/157	4.68	7.46	7.30	7.38	6.82	7.55	7.35
158	4.47	7.12	6.97	7.05	6.51	7.21	7.02
159	4.59	7.31	7.16	7.23	6.69	7.40	7.21
161	4.38	6.99	6.84	6.91	6.39	7.07	6.88
162	4.62	7.37	7.22	7.29	6.74	7.46	7.26
164	4.46	7.10	6.95	7.02	6.49	7.19	7.00
165	4.38	6.97	6.83	6.90	6.38	7.06	6.87
167	4.68	7.45	7.30	7.37	6.82	7.54	7.35
169	4.86	7.75	7.59	7.66	7.08	7.84	7.63
170	4.62	7.36	7.21	7.28	6.73	7.45	7.26
171/173	4.40	7.02	6.87	6.94	6.41	7.10	6.91
172/192	4.58	7.31	7.15	7.23	6.68	7.39	7.20
174	4.41	7.02	6.88	6.95	6.42	7.11	6.92
175	4.38	6.98	6.83	6.90	6.38	7.06	6.88
176	4.12	6.57	6.44	6.50	6.01	6.65	6.48
177	4.40	7.01	6.87	6.94	6.41	7.09	6.91
178	4.37	6.97	6.82	6.89	6.37	7.05	6.87
179	4.13	6.57	6.44	6.50	6.01	6.65	6.48
180/193	4.62	7.36	7.21	7.28	6.73	7.45	7.26
181	4.34	6.92	6.78	6.85	6.33	7.00	6.82
182	4.36	6.95	6.81	6.88	6.36	7.04	6.85
183/185	4.41	7.03	6.89	6.96	6.43	7.12	6.93
184	4.08	6.50	6.36	6.43	5.94	6.57	6.40
186	4.05	6.45	6.31	6.38	5.90	6.53	6.36
187	4.40	7.01	6.86	6.93	6.41	7.09	6.91
188	4.07	6.49	6.35	6.42	5.93	6.56	6.39
189	4.41	7.03	6.88	6.95	6.42	7.11	6.93
190	4.66	7.42	7.27	7.34	6.79	7.51	7.32
191	4.67	7.44	7.28	7.35	6.80	7.52	7.33
192	4.58	7.29	7.14	7.21	6.67	7.38	7.19
194	4.82	7.69	7.53	7.61	7.03	7.78	7.58
195	4.60	7.33	7.17	7.25	6.70	7.41	7.22
196	4.62	7.36	7.21	7.28	6.73	7.45	7.26
197/200	4.32	6.89	6.75	6.81	6.30	6.97	6.79
198/199	4.57	7.29	7.13	7.21	6.66	7.37	7.18
201	4.61	7.34	7.19	7.26	6.71	7.43	7.23
202	4.32	6.88	6.74	6.81	6.29	6.97	6.78
203	4.60	7.34	7.19	7.26	6.71	7.43	7.23
205	4.86	7.75	7.59	7.67	7.09	7.84	7.64
206	4.81	7.66	7.50	7.58	7.01	7.75	7.55
207	4.52	7.20	7.05	7.12	6.58	7.28	7.09
208	4.51	7.18	7.03	7.10	6.57	7.27	7.08
209	4.72	7.52	7.36	7.44	6.87	7.61	7.41

Table C-1 continued

Site ID	pv0405	pv0406	pv0407	pv0408	pv0409	pv0410	pv0411
Deployment Date	6/27/2008	7/3/2008	6/27/2008	6/27/2008	6/27/2008	7/3/2008	6/27/2008
Collection Date	8/8/2008	8/11/2008	8/8/2008	8/11/2008	8/8/2008	8/8/2008	8/11/2008
1	5.71	5.77	5.74	5.76	5.76	5.67	5.67
2	5.93	6.00	5.97	5.98	5.98	5.89	5.89
3	5.95	6.01	5.98	6.00	6.00	5.91	5.90
4	5.60	5.66	5.63	5.65	5.65	5.56	5.56
5	6.00	6.06	6.03	6.04	6.04	5.95	5.95
6	5.96	6.02	5.99	6.00	6.00	5.91	5.91
7	5.91	5.98	5.94	5.96	5.96	5.87	5.87
8	5.99	6.06	6.03	6.04	6.04	5.95	5.95
9	5.67	5.73	5.70	5.72	5.72	5.63	5.63
10	5.67	5.73	5.70	5.72	5.72	5.63	5.63
11	6.19	6.26	6.22	6.24	6.24	6.15	6.14
12/13	6.22	6.29	6.25	6.27	6.27	6.18	6.17
15	6.30	6.37	6.34	6.35	6.35	6.26	6.26
16	5.98	6.05	6.02	6.03	6.03	5.94	5.94
17	5.86	5.92	5.89	5.90	5.90	5.81	5.81
18/30	5.90	5.97	5.94	5.95	5.95	5.86	5.86
19	5.60	5.67	5.64	5.65	5.65	5.57	5.56
21	6.25	6.32	6.29	6.30	6.30	6.21	6.20
22	6.37	6.44	6.41	6.42	6.42	6.33	6.32
23	5.90	5.97	5.94	5.95	5.95	5.86	5.86
24	6.00	6.06	6.03	6.05	6.05	5.96	5.95
25	6.26	6.33	6.30	6.31	6.31	6.22	6.22
26	6.28	6.35	6.31	6.33	6.33	6.23	6.23
27	5.98	6.05	6.02	6.03	6.03	5.94	5.94
28/20	6.30	6.37	6.34	6.35	6.35	6.26	6.25
31	6.31	6.38	6.35	6.37	6.37	6.27	6.27
32	5.98	6.05	6.02	6.03	6.03	5.94	5.94
33	6.30	6.37	6.34	6.36	6.36	6.26	6.26
34	5.98	6.05	6.02	6.03	6.03	5.94	5.94
35	6.28	6.35	6.32	6.33	6.33	6.24	6.24
36	6.41	6.49	6.45	6.47	6.47	6.37	6.37
37	6.66	6.73	6.70	6.71	6.71	6.61	6.61
38	6.45	6.52	6.49	6.50	6.50	6.40	6.40
39	6.46	6.54	6.50	6.52	6.52	6.42	6.42
42	6.22	6.28	6.25	6.27	6.27	6.17	6.17
43	6.22	6.28	6.25	6.27	6.27	6.17	6.17
44/47/65	6.24	6.31	6.28	6.30	6.30	6.20	6.20
45/51	5.92	5.98	5.95	5.97	5.97	5.88	5.87
46	5.93	6.00	5.97	5.98	5.98	5.89	5.89
48	6.17	6.24	6.21	6.22	6.22	6.13	6.13
49/69	6.18	6.24	6.21	6.23	6.23	6.13	6.13
52	6.20	6.27	6.24	6.25	6.25	6.16	6.16
53/50	5.92	5.99	5.96	5.97	5.97	5.88	5.88
54	5.49	5.55	5.52	5.54	5.54	5.46	5.45
55	6.61	6.69	6.65	6.67	6.67	6.57	6.57
56	6.68	6.75	6.72	6.73	6.73	6.63	6.63
57	6.53	6.60	6.56	6.58	6.58	6.48	6.48
58	6.55	6.63	6.59	6.61	6.61	6.51	6.50
59/62/75	6.31	6.38	6.34	6.36	6.36	6.26	6.26
60	6.68	6.75	6.71	6.73	6.73	6.63	6.63
63	6.56	6.64	6.60	6.62	6.62	6.52	6.51
64	6.35	6.42	6.38	6.40	6.40	6.30	6.30
66	6.65	6.72	6.69	6.70	6.70	6.60	6.60
67	6.60	6.67	6.64	6.65	6.65	6.55	6.55
68	6.48	6.55	6.52	6.53	6.54	6.44	6.43

Table C-1 continued

Site ID	pv0405	pv0406	pv0407	pv0408	pv0409	pv0410	pv0411
Deployment Date	6/27/2008	7/3/2008	6/27/2008	6/27/2008	6/27/2008	7/3/2008	6/27/2008
Collection Date	8/8/2008	8/11/2008	8/8/2008	8/11/2008	8/8/2008	8/8/2008	8/11/2008
70	6.65	6.72	6.69	6.70	6.71	6.61	6.60
71/40/41	6.32	6.39	6.36	6.37	6.37	6.28	6.27
72	6.50	6.57	6.53	6.55	6.55	6.45	6.45
73	6.19	6.26	6.23	6.24	6.24	6.15	6.15
77	7.02	7.09	7.06	7.07	7.07	6.97	6.96
78	6.85	6.92	6.88	6.90	6.90	6.80	6.79
79	6.84	6.91	6.88	6.89	6.89	6.79	6.79
80	6.66	6.73	6.70	6.71	6.72	6.61	6.61
81	6.90	6.98	6.94	6.96	6.96	6.85	6.85
82	6.58	6.65	6.62	6.63	6.63	6.53	6.53
84	6.27	6.34	6.31	6.32	6.32	6.23	6.22
85/116/117	6.56	6.64	6.60	6.62	6.62	6.52	6.51
87/86/97/108/109/125	6.57	6.64	6.61	6.62	6.63	6.53	6.52
89	6.24	6.30	6.27	6.29	6.29	6.19	6.19
91/88	6.23	6.30	6.27	6.28	6.28	6.19	6.18
92	6.50	6.57	6.54	6.55	6.55	6.46	6.45
94	6.19	6.26	6.22	6.24	6.24	6.15	6.14
95/93/98/100/102	6.28	6.35	6.32	6.33	6.33	6.24	6.23
96	5.85	5.91	5.88	5.89	5.89	5.81	5.80
99/83	6.55	6.62	6.58	6.60	6.60	6.50	6.50
101/90/113	6.54	6.62	6.58	6.60	6.60	6.50	6.49
103	6.17	6.24	6.21	6.22	6.23	6.13	6.13
104	5.72	5.79	5.76	5.77	5.77	5.68	5.68
105	7.06	7.14	7.10	7.12	7.12	7.01	7.01
106	6.88	6.96	6.92	6.94	6.94	6.83	6.83
109	6.57	6.65	6.61	6.63	6.63	6.53	6.53
110/115	6.70	6.77	6.73	6.75	6.75	6.65	6.65
111	6.81	6.89	6.85	6.87	6.87	6.76	6.76
112	6.57	6.64	6.61	6.62	6.62	6.52	6.52
114	6.94	7.01	6.98	6.99	6.99	6.89	6.89
118	7.05	7.13	7.09	7.11	7.11	7.00	7.00
119	6.62	6.69	6.66	6.67	6.67	6.57	6.57
120	6.86	6.94	6.90	6.92	6.92	6.82	6.81
121	6.47	6.54	6.50	6.52	6.52	6.42	6.42
122	6.97	7.05	7.01	7.03	7.03	6.93	6.92
123	6.94	7.02	6.98	7.00	7.00	6.89	6.89
124/107	6.94	7.02	6.98	7.00	7.00	6.89	6.89
126	7.31	7.39	7.36	7.37	7.37	7.26	7.26
127	7.14	7.22	7.18	7.20	7.20	7.09	7.09
130	6.86	6.93	6.90	6.91	6.91	6.81	6.81
131	6.54	6.61	6.57	6.59	6.59	6.49	6.49
132	6.60	6.67	6.63	6.65	6.65	6.55	6.55
133	6.81	6.88	6.85	6.86	6.86	6.76	6.76
134/143	6.53	6.61	6.57	6.59	6.59	6.49	6.48
136	6.17	6.24	6.20	6.22	6.22	6.13	6.12
137	6.82	6.89	6.85	6.87	6.87	6.77	6.76
138/129/160/163	6.93	7.01	6.97	6.99	6.99	6.89	6.88
139/140	6.50	6.58	6.54	6.56	6.56	6.46	6.46
141	6.83	6.91	6.87	6.89	6.89	6.78	6.78
142	6.40	6.47	6.43	6.45	6.45	6.35	6.35
144	6.54	6.61	6.58	6.59	6.59	6.50	6.49
145	6.07	6.13	6.10	6.12	6.12	6.03	6.02
146	6.86	6.93	6.90	6.91	6.91	6.81	6.81
148	6.54	6.61	6.58	6.59	6.59	6.50	6.49
149/147	6.61	6.69	6.65	6.67	6.67	6.57	6.56

Table C-1 continued

Site ID	pv0405	pv0406	pv0407	pv0408	pv0409	pv0410	pv0411
Deployment Date	6/27/2008	7/3/2008	6/27/2008	6/27/2008	6/27/2008	7/3/2008	6/27/2008
Collection Date	8/8/2008	8/11/2008	8/8/2008	8/11/2008	8/8/2008	8/8/2008	8/11/2008
150	6.86	6.93	6.90	6.91	6.91	6.81	6.81
151/135/154	6.53	6.60	6.57	6.58	6.59	6.49	6.48
152	6.08	6.14	6.11	6.12	6.13	6.03	6.03
153/168	6.92	7.00	6.96	6.98	6.98	6.88	6.87
155	6.00	6.06	6.03	6.05	6.05	5.96	5.95
156/157	7.33	7.41	7.37	7.39	7.39	7.28	7.27
158	7.00	7.08	7.04	7.06	7.06	6.95	6.95
159	7.19	7.27	7.23	7.25	7.25	7.14	7.13
161	6.86	6.94	6.90	6.92	6.92	6.82	6.81
162	7.24	7.32	7.28	7.30	7.30	7.19	7.19
164	6.98	7.06	7.02	7.03	7.04	6.93	6.93
165	6.85	6.93	6.89	6.91	6.91	6.81	6.80
167	7.32	7.41	7.37	7.38	7.38	7.27	7.27
169	7.61	7.70	7.65	7.67	7.67	7.56	7.55
170	7.23	7.31	7.27	7.29	7.29	7.18	7.18
171/173	6.89	6.97	6.93	6.95	6.95	6.85	6.84
172/192	7.18	7.26	7.22	7.24	7.24	7.13	7.12
174	6.90	6.98	6.94	6.96	6.96	6.85	6.85
175	6.86	6.93	6.89	6.91	6.91	6.81	6.80
176	6.46	6.53	6.49	6.51	6.51	6.41	6.41
177	6.89	6.97	6.93	6.95	6.95	6.84	6.84
178	6.85	6.92	6.89	6.90	6.90	6.80	6.80
179	6.46	6.53	6.50	6.51	6.51	6.42	6.41
180/193	7.23	7.31	7.27	7.29	7.29	7.18	7.18
181	6.80	6.88	6.84	6.86	6.86	6.75	6.75
182	6.83	6.91	6.87	6.89	6.89	6.79	6.78
183/185	6.91	6.99	6.95	6.97	6.97	6.86	6.86
184	6.39	6.46	6.42	6.44	6.44	6.34	6.34
186	6.34	6.41	6.37	6.39	6.39	6.29	6.29
187	6.89	6.96	6.93	6.94	6.94	6.84	6.84
188	6.37	6.44	6.41	6.43	6.43	6.33	6.33
189	6.90	6.98	6.94	6.96	6.96	6.86	6.85
190	7.29	7.38	7.34	7.35	7.35	7.24	7.24
191	7.31	7.39	7.35	7.37	7.37	7.26	7.25
192	7.17	7.25	7.21	7.22	7.23	7.12	7.11
194	7.55	7.64	7.60	7.62	7.62	7.50	7.50
195	7.20	7.28	7.24	7.26	7.26	7.15	7.15
196	7.23	7.31	7.27	7.29	7.29	7.18	7.18
197/200	6.77	6.84	6.81	6.82	6.82	6.72	6.72
198/199	7.16	7.24	7.20	7.22	7.22	7.11	7.11
201	7.21	7.29	7.25	7.27	7.27	7.16	7.16
202	6.76	6.84	6.80	6.82	6.82	6.72	6.71
203	7.21	7.29	7.25	7.27	7.27	7.16	7.16
205	7.62	7.70	7.66	7.68	7.68	7.56	7.56
206	7.53	7.61	7.57	7.59	7.59	7.48	7.47
207	7.07	7.15	7.11	7.13	7.13	7.03	7.02
208	7.06	7.13	7.10	7.11	7.11	7.01	7.00
209	7.39	7.47	7.43	7.45	7.45	7.34	7.33

Table C-1 continued

Site ID	pv0412	pv0417	pv0419	pv0420	pv0428	pv0432	pv0433
Deployment Date	6/27/2008	8/8/2008	8/8/2008	8/8/2008	8/15/2008	8/11/2008	8/8/2008
Collection Date	8/11/2008	9/16/2008	9/19/2008	9/18/2008	9/19/2008	9/19/2008	9/19/2008
1	5.79	5.27	5.13	5.28	4.84	5.04	5.31
2	6.02	5.48	5.33	5.48	5.02	5.23	5.51
3	6.04	5.49	5.35	5.50	5.04	5.25	5.53
4	5.68	5.17	5.04	5.18	4.74	4.94	5.21
5	6.08	5.54	5.39	5.54	5.08	5.29	5.57
6	6.04	5.50	5.36	5.51	5.04	5.25	5.54
7	6.00	5.46	5.32	5.46	5.01	5.21	5.50
8	6.08	5.53	5.39	5.54	5.08	5.29	5.57
9	5.75	5.24	5.10	5.24	4.80	5.00	5.27
10	5.75	5.24	5.10	5.24	4.80	5.00	5.27
11	6.28	5.71	5.57	5.72	5.24	5.46	5.75
12/13	6.31	5.74	5.59	5.75	5.27	5.48	5.78
15	6.40	5.82	5.67	5.83	5.34	5.56	5.86
16	6.07	5.52	5.38	5.53	5.07	5.28	5.56
17	5.94	5.41	5.27	5.41	4.96	5.16	5.44
18/30	5.99	5.45	5.31	5.46	5.00	5.21	5.49
19	5.69	5.17	5.04	5.18	4.75	4.94	5.21
21	6.34	5.77	5.62	5.78	5.29	5.51	5.81
22	6.46	5.88	5.73	5.89	5.40	5.62	5.92
23	5.99	5.45	5.31	5.46	5.00	5.21	5.49
24	6.09	5.54	5.39	5.54	5.08	5.29	5.58
25	6.36	5.78	5.63	5.79	5.30	5.52	5.82
26	6.37	5.80	5.64	5.80	5.32	5.54	5.83
27	6.07	5.52	5.38	5.53	5.07	5.28	5.56
28/20	6.39	5.82	5.67	5.82	5.34	5.56	5.86
31	6.41	5.83	5.68	5.84	5.35	5.57	5.87
32	6.07	5.52	5.38	5.53	5.07	5.28	5.56
33	6.40	5.82	5.67	5.83	5.34	5.56	5.86
34	6.07	5.52	5.38	5.53	5.07	5.28	5.56
35	6.38	5.80	5.65	5.81	5.32	5.54	5.84
36	6.51	5.92	5.77	5.93	5.43	5.66	5.96
37	6.76	6.15	5.99	6.16	5.64	5.87	6.19
38	6.54	5.95	5.80	5.96	5.46	5.69	6.00
39	6.56	5.97	5.81	5.98	5.48	5.70	6.01
42	6.31	5.74	5.59	5.75	5.26	5.48	5.78
43	6.31	5.74	5.59	5.75	5.26	5.48	5.78
44/47/65	6.34	5.77	5.62	5.77	5.29	5.51	5.81
45/51	6.00	5.46	5.32	5.47	5.01	5.22	5.50
46	6.02	5.48	5.34	5.48	5.03	5.23	5.52
48	6.26	5.70	5.55	5.71	5.23	5.45	5.74
49/69	6.27	5.70	5.55	5.71	5.23	5.45	5.74
52	6.29	5.73	5.58	5.73	5.25	5.47	5.77
53/50	6.01	5.47	5.33	5.47	5.02	5.22	5.51
54	5.57	5.07	4.94	5.08	4.65	4.85	5.11
55	6.71	6.11	5.95	6.11	5.60	5.83	6.15
56	6.78	6.17	6.01	6.17	5.66	5.89	6.21
57	6.62	6.03	5.87	6.03	5.53	5.76	6.07
58	6.65	6.05	5.89	6.06	5.55	5.78	6.09
59/62/75	6.40	5.82	5.67	5.83	5.34	5.56	5.86
60	6.78	6.16	6.00	6.17	5.66	5.89	6.21
63	6.66	6.06	5.90	6.07	5.56	5.79	6.10
64	6.44	5.86	5.71	5.87	5.38	5.60	5.90
66	6.75	6.14	5.98	6.15	5.63	5.87	6.18
67	6.70	6.09	5.94	6.10	5.59	5.82	6.14
68	6.58	5.99	5.83	5.99	5.49	5.72	6.03

Table C-1 continued

Site ID	pv0412	pv0417	pv0419	pv0420	pv0428	pv0432	pv0433
Deployment Date	6/27/2008	8/8/2008	8/8/2008	8/8/2008	8/15/2008	8/11/2008	8/8/2008
Collection Date	8/11/2008	9/16/2008	9/19/2008	9/18/2008	9/19/2008	9/19/2008	9/19/2008
70	6.75	6.14	5.98	6.15	5.63	5.87	6.18
71/40/41	6.41	5.84	5.68	5.84	5.35	5.58	5.88
72	6.59	6.00	5.84	6.00	5.50	5.73	6.04
73	6.28	5.72	5.57	5.72	5.25	5.46	5.76
77	7.12	6.48	6.31	6.49	5.94	6.19	6.52
78	6.95	6.32	6.16	6.33	5.80	6.04	6.36
79	6.94	6.31	6.15	6.32	5.79	6.03	6.36
80	6.76	6.15	5.99	6.16	5.64	5.88	6.19
81	7.00	6.37	6.21	6.38	5.84	6.09	6.41
82	6.68	6.07	5.92	6.08	5.57	5.80	6.12
84	6.36	5.79	5.64	5.80	5.31	5.53	5.83
85/116/117	6.66	6.06	5.90	6.07	5.56	5.79	6.10
87/86/97/108/109/125	6.67	6.07	5.91	6.07	5.57	5.80	6.11
89	6.33	5.76	5.61	5.76	5.28	5.50	5.80
91/88	6.32	5.75	5.60	5.76	5.28	5.50	5.79
92	6.60	6.00	5.85	6.01	5.51	5.73	6.04
94	6.28	5.71	5.57	5.72	5.24	5.46	5.75
95/93/98/100/102	6.37	5.80	5.65	5.80	5.32	5.54	5.84
96	5.93	5.40	5.26	5.40	4.95	5.16	5.43
99/83	6.64	6.04	5.89	6.05	5.54	5.77	6.09
101/90/113	6.64	6.04	5.88	6.05	5.54	5.77	6.08
103	6.27	5.70	5.55	5.71	5.23	5.45	5.74
104	5.81	5.28	5.15	5.29	4.85	5.05	5.32
105	7.17	6.52	6.35	6.53	5.98	6.23	6.56
106	6.98	6.35	6.19	6.36	5.83	6.07	6.40
109	6.67	6.07	5.91	6.08	5.57	5.80	6.11
110/115	6.80	6.18	6.02	6.19	5.67	5.91	6.23
111	6.91	6.29	6.13	6.30	5.77	6.01	6.33
112	6.67	6.07	5.91	6.07	5.56	5.79	6.11
114	7.04	6.41	6.24	6.41	5.88	6.12	6.45
118	7.16	6.51	6.34	6.52	5.97	6.22	6.56
119	6.72	6.11	5.95	6.12	5.61	5.84	6.15
120	6.96	6.34	6.17	6.34	5.81	6.05	6.38
121	6.56	5.97	5.82	5.98	5.48	5.70	6.01
122	7.08	6.44	6.27	6.45	5.91	6.15	6.48
123	7.04	6.41	6.24	6.42	5.88	6.12	6.45
124/107	7.04	6.41	6.24	6.41	5.88	6.12	6.45
126	7.42	6.75	6.58	6.76	6.19	6.45	6.80
127	7.25	6.59	6.42	6.60	6.05	6.30	6.64
130	6.96	6.33	6.17	6.34	5.81	6.05	6.38
131	6.63	6.04	5.88	6.04	5.54	5.77	6.08
132	6.69	6.09	5.93	6.10	5.59	5.82	6.13
133	6.91	6.29	6.12	6.29	5.77	6.01	6.33
134/143	6.63	6.03	5.88	6.04	5.53	5.76	6.07
136	6.26	5.70	5.55	5.70	5.23	5.44	5.74
137	6.92	6.29	6.13	6.30	5.77	6.01	6.34
138/129/160/163	7.04	6.40	6.24	6.41	5.87	6.12	6.45
139/140	6.60	6.01	5.85	6.01	5.51	5.74	6.05
141	6.93	6.31	6.14	6.31	5.79	6.02	6.35
142	6.49	5.91	5.75	5.91	5.42	5.64	5.95
144	6.64	6.04	5.88	6.05	5.54	5.77	6.08
145	6.16	5.60	5.46	5.61	5.14	5.35	5.64
146	6.96	6.33	6.17	6.34	5.81	6.05	6.38
148	6.64	6.04	5.88	6.05	5.54	5.77	6.08
149/147	6.71	6.11	5.95	6.11	5.60	5.83	6.15

Table C-1 continued

Site ID	pv0412	pv0417	pv0419	pv0420	pv0428	pv0432	pv0433
Deployment Date	6/27/2008	8/8/2008	8/8/2008	8/8/2008	8/15/2008	8/11/2008	8/8/2008
Collection Date	8/11/2008	9/16/2008	9/19/2008	9/18/2008	9/19/2008	9/19/2008	9/19/2008
150	6.96	6.33	6.17	6.34	5.81	6.05	6.38
151/135/154	6.63	6.03	5.87	6.04	5.53	5.76	6.07
152	6.17	5.61	5.46	5.62	5.15	5.36	5.65
153/168	7.03	6.39	6.23	6.40	5.86	6.11	6.44
155	6.08	5.54	5.39	5.54	5.08	5.29	5.57
156/157	7.44	6.77	6.59	6.77	6.21	6.46	6.81
158	7.10	6.46	6.29	6.47	5.93	6.17	6.51
159	7.29	6.64	6.46	6.64	6.09	6.34	6.68
161	6.97	6.34	6.17	6.35	5.81	6.06	6.38
162	7.35	6.69	6.51	6.69	6.13	6.39	6.73
164	7.08	6.44	6.28	6.45	5.91	6.16	6.49
165	6.95	6.33	6.16	6.33	5.80	6.05	6.37
167	7.43	6.76	6.59	6.77	6.20	6.46	6.81
169	7.72	7.03	6.85	7.04	6.45	6.71	7.08
170	7.34	6.68	6.51	6.69	6.13	6.38	6.73
171/173	7.00	6.37	6.20	6.37	5.84	6.08	6.41
172/192	7.28	6.63	6.46	6.63	6.08	6.33	6.67
174	7.00	6.37	6.21	6.38	5.85	6.09	6.42
175	6.96	6.33	6.17	6.34	5.81	6.05	6.37
176	6.55	5.96	5.81	5.97	5.47	5.70	6.00
177	6.99	6.36	6.20	6.37	5.84	6.08	6.41
178	6.95	6.32	6.16	6.33	5.80	6.04	6.37
179	6.56	5.97	5.81	5.97	5.47	5.70	6.01
180/193	7.34	6.68	6.51	6.69	6.13	6.38	6.73
181	6.90	6.28	6.12	6.29	5.76	6.00	6.32
182	6.93	6.31	6.14	6.32	5.79	6.03	6.35
183/185	7.01	6.38	6.22	6.39	5.85	6.10	6.43
184	6.48	5.90	5.74	5.90	5.41	5.63	5.94
186	6.43	5.85	5.70	5.86	5.37	5.59	5.89
187	6.99	6.36	6.19	6.37	5.83	6.07	6.40
188	6.47	5.88	5.73	5.89	5.40	5.62	5.93
189	7.01	6.38	6.21	6.38	5.85	6.09	6.42
190	7.40	6.73	6.56	6.74	6.18	6.43	6.78
191	7.41	6.75	6.57	6.75	6.19	6.44	6.79
192	7.27	6.62	6.44	6.62	6.07	6.32	6.66
194	7.67	6.98	6.79	6.98	6.40	6.66	7.02
195	7.31	6.65	6.47	6.65	6.10	6.35	6.69
196	7.34	6.68	6.51	6.69	6.13	6.38	6.73
197/200	6.87	6.25	6.09	6.26	5.73	5.97	6.29
198/199	7.27	6.61	6.44	6.62	6.06	6.32	6.66
201	7.32	6.66	6.49	6.67	6.11	6.36	6.70
202	6.87	6.25	6.08	6.25	5.73	5.97	6.29
203	7.32	6.66	6.49	6.67	6.11	6.36	6.70
205	7.73	7.03	6.85	7.04	6.45	6.72	7.08
206	7.64	6.95	6.77	6.96	6.38	6.64	7.00
207	7.18	6.53	6.36	6.54	5.99	6.24	6.58
208	7.16	6.52	6.35	6.52	5.98	6.22	6.56
209	7.50	6.82	6.64	6.83	6.26	6.52	6.87

Table C-1 continued

Site ID	pv0435	pv0436	pv0438	pv0439	pv0441	pv0442	pv0443
Deployment Date	8/11/2008	8/8/2008	8/8/2008	8/11/2008	8/11/2008	8/8/2008	8/8/2008
Collection Date	9/19/2008	9/19/2008	9/19/2008	9/19/2008	9/24/2008	9/24/2008	9/19/2008
1	5.00	5.26	5.17	5.11	4.86	5.04	5.20
2	5.20	5.47	5.37	5.31	5.05	5.23	5.40
3	5.21	5.48	5.39	5.32	5.07	5.25	5.42
4	4.91	5.17	5.07	5.01	4.77	4.94	5.10
5	5.25	5.53	5.43	5.36	5.11	5.29	5.46
6	5.22	5.49	5.39	5.33	5.07	5.25	5.43
7	5.18	5.45	5.35	5.29	5.03	5.21	5.38
8	5.25	5.53	5.43	5.36	5.10	5.28	5.46
9	4.97	5.23	5.13	5.07	4.83	5.00	5.16
10	4.97	5.23	5.13	5.07	4.83	5.00	5.16
11	5.42	5.71	5.60	5.54	5.27	5.46	5.64
12/13	5.45	5.73	5.63	5.56	5.30	5.48	5.66
15	5.52	5.81	5.71	5.64	5.37	5.56	5.74
16	5.24	5.52	5.42	5.35	5.10	5.28	5.45
17	5.13	5.40	5.30	5.24	4.99	5.16	5.33
18/30	5.17	5.44	5.34	5.28	5.03	5.21	5.38
19	4.91	5.17	5.07	5.01	4.77	4.94	5.10
21	5.47	5.76	5.66	5.59	5.32	5.51	5.69
22	5.58	5.87	5.77	5.70	5.42	5.62	5.80
23	5.17	5.44	5.34	5.28	5.03	5.21	5.38
24	5.25	5.53	5.43	5.37	5.11	5.29	5.46
25	5.49	5.78	5.67	5.60	5.33	5.52	5.70
26	5.50	5.79	5.68	5.62	5.34	5.54	5.72
27	5.24	5.52	5.42	5.35	5.10	5.28	5.45
28/20	5.52	5.81	5.70	5.64	5.36	5.56	5.74
31	5.53	5.82	5.72	5.65	5.38	5.57	5.75
32	5.24	5.52	5.42	5.35	5.10	5.28	5.45
33	5.52	5.81	5.71	5.64	5.37	5.56	5.74
34	5.24	5.52	5.42	5.35	5.10	5.28	5.45
35	5.50	5.79	5.69	5.62	5.35	5.54	5.72
36	5.62	5.92	5.81	5.74	5.46	5.66	5.84
37	5.83	6.14	6.03	5.96	5.67	5.87	6.07
38	5.65	5.95	5.84	5.77	5.49	5.69	5.87
39	5.66	5.96	5.85	5.78	5.51	5.70	5.89
42	5.44	5.73	5.63	5.56	5.29	5.48	5.66
43	5.44	5.73	5.63	5.56	5.29	5.48	5.66
44/47/65	5.47	5.76	5.65	5.59	5.32	5.51	5.69
45/51	5.18	5.46	5.36	5.29	5.04	5.22	5.39
46	5.20	5.47	5.37	5.31	5.05	5.23	5.40
48	5.41	5.69	5.59	5.52	5.26	5.44	5.62
49/69	5.41	5.69	5.59	5.53	5.26	5.45	5.63
52	5.43	5.72	5.62	5.55	5.28	5.47	5.65
53/50	5.19	5.46	5.36	5.30	5.04	5.22	5.39
54	4.81	5.07	4.97	4.91	4.68	4.84	5.00
55	5.79	6.10	5.99	5.92	5.63	5.83	6.03
56	5.85	6.16	6.05	5.98	5.69	5.89	6.08
57	5.72	6.02	5.91	5.84	5.56	5.76	5.94
58	5.74	6.04	5.93	5.86	5.58	5.78	5.97
59/62/75	5.53	5.82	5.71	5.64	5.37	5.56	5.75
60	5.85	6.16	6.05	5.97	5.69	5.89	6.08
63	5.75	6.05	5.94	5.87	5.59	5.79	5.98
64	5.56	5.85	5.75	5.68	5.40	5.60	5.78
66	5.82	6.13	6.02	5.95	5.66	5.87	6.06
67	5.78	6.09	5.98	5.91	5.62	5.82	6.01
68	5.68	5.98	5.87	5.80	5.52	5.72	5.90

Table C-1 continued

Site ID	pv0435	pv0436	pv0438	pv0439	pv0441	pv0442	pv0443
Deployment Date	8/11/2008	8/8/2008	8/8/2008	8/11/2008	8/11/2008	8/8/2008	8/8/2008
Collection Date	9/19/2008	9/19/2008	9/19/2008	9/19/2008	9/24/2008	9/24/2008	9/19/2008
70	5.83	6.13	6.02	5.95	5.66	5.87	6.06
71/40/41	5.54	5.83	5.72	5.66	5.38	5.57	5.76
72	5.69	5.99	5.88	5.81	5.53	5.73	5.92
73	5.42	5.71	5.61	5.54	5.27	5.46	5.64
77	6.15	6.47	6.35	6.28	5.98	6.19	6.39
78	6.00	6.31	6.20	6.13	5.83	6.04	6.24
79	5.99	6.30	6.19	6.12	5.82	6.03	6.23
80	5.83	6.14	6.03	5.96	5.67	5.87	6.07
81	6.04	6.36	6.25	6.17	5.88	6.09	6.28
82	5.76	6.07	5.96	5.89	5.60	5.80	5.99
84	5.49	5.78	5.68	5.61	5.34	5.53	5.71
85/116/117	5.75	6.05	5.94	5.87	5.59	5.79	5.98
87/86/97/108/109/125	5.76	6.06	5.95	5.88	5.60	5.80	5.99
89	5.46	5.75	5.65	5.58	5.31	5.50	5.68
91/88	5.46	5.75	5.64	5.58	5.31	5.50	5.68
92	5.69	5.99	5.89	5.82	5.54	5.73	5.92
94	5.42	5.71	5.60	5.54	5.27	5.46	5.64
95/93/98/100/102	5.50	5.79	5.69	5.62	5.35	5.54	5.72
96	5.12	5.39	5.29	5.23	4.98	5.16	5.32
99/83	5.73	6.04	5.93	5.86	5.57	5.77	5.96
101/90/113	5.73	6.03	5.92	5.85	5.57	5.77	5.96
103	5.41	5.69	5.59	5.52	5.26	5.45	5.62
104	5.01	5.28	5.18	5.12	4.87	5.05	5.21
105	6.18	6.51	6.39	6.32	6.01	6.23	6.43
106	6.03	6.35	6.23	6.16	5.86	6.07	6.27
109	5.76	6.06	5.95	5.88	5.60	5.80	5.99
110/115	5.87	6.18	6.06	5.99	5.70	5.91	6.10
111	5.97	6.28	6.17	6.09	5.80	6.01	6.20
112	5.75	6.06	5.95	5.88	5.59	5.79	5.98
114	6.08	6.40	6.28	6.21	5.91	6.12	6.32
118	6.18	6.50	6.39	6.31	6.01	6.22	6.42
119	5.80	6.10	5.99	5.92	5.64	5.84	6.03
120	6.01	6.33	6.21	6.14	5.84	6.05	6.25
121	5.66	5.96	5.86	5.79	5.51	5.70	5.89
122	6.11	6.43	6.31	6.24	5.94	6.15	6.35
123	6.08	6.40	6.28	6.21	5.91	6.12	6.32
124/107	6.08	6.40	6.28	6.21	5.91	6.12	6.32
126	6.41	6.74	6.62	6.54	6.23	6.45	6.66
127	6.26	6.59	6.47	6.39	6.08	6.30	6.51
130	6.01	6.32	6.21	6.14	5.84	6.05	6.25
131	5.73	6.03	5.92	5.85	5.57	5.77	5.96
132	5.78	6.08	5.97	5.90	5.62	5.82	6.01
133	5.96	6.28	6.17	6.09	5.80	6.00	6.20
134/143	5.72	6.02	5.92	5.85	5.56	5.76	5.95
136	5.40	5.69	5.59	5.52	5.25	5.44	5.62
137	5.97	6.28	6.17	6.10	5.80	6.01	6.21
138/129/160/163	6.07	6.39	6.28	6.20	5.90	6.12	6.32
139/140	5.70	6.00	5.89	5.82	5.54	5.74	5.93
141	5.98	6.30	6.19	6.11	5.82	6.02	6.22
142	5.60	5.90	5.79	5.72	5.45	5.64	5.83
144	5.73	6.03	5.92	5.85	5.57	5.77	5.96
145	5.31	5.59	5.49	5.43	5.17	5.35	5.53
146	6.01	6.32	6.21	6.14	5.84	6.05	6.25
148	5.73	6.03	5.92	5.85	5.57	5.77	5.96
149/147	5.79	6.10	5.99	5.92	5.63	5.83	6.02

Table C-1 continued

Site ID	pv0435	pv0436	pv0438	pv0439	pv0441	pv0442	pv0443
Deployment Date	8/11/2008	8/8/2008	8/8/2008	8/11/2008	8/11/2008	8/8/2008	8/8/2008
Collection Date	9/19/2008	9/19/2008	9/19/2008	9/19/2008	9/24/2008	9/24/2008	9/19/2008
150	6.01	6.32	6.21	6.14	5.84	6.05	6.25
151/135/154	5.72	6.02	5.91	5.84	5.56	5.76	5.95
152	5.32	5.60	5.50	5.44	5.17	5.36	5.53
153/168	6.06	6.38	6.27	6.20	5.90	6.11	6.31
155	5.25	5.53	5.43	5.37	5.11	5.29	5.46
156/157	6.42	6.76	6.64	6.56	6.24	6.46	6.67
158	6.13	6.45	6.34	6.26	5.96	6.17	6.38
159	6.29	6.63	6.51	6.43	6.12	6.34	6.55
161	6.01	6.33	6.22	6.14	5.85	6.05	6.25
162	6.34	6.68	6.56	6.48	6.17	6.39	6.60
164	6.11	6.43	6.32	6.24	5.94	6.15	6.36
165	6.00	6.32	6.21	6.13	5.84	6.04	6.24
167	6.42	6.75	6.63	6.55	6.24	6.46	6.67
169	6.67	7.02	6.89	6.81	6.48	6.71	6.93
170	6.34	6.67	6.55	6.47	6.16	6.38	6.59
171/173	6.04	6.36	6.24	6.17	5.87	6.08	6.28
172/192	6.29	6.62	6.50	6.42	6.11	6.33	6.54
174	6.04	6.36	6.25	6.17	5.88	6.09	6.29
175	6.01	6.32	6.21	6.13	5.84	6.05	6.24
176	5.66	5.96	5.85	5.78	5.50	5.70	5.88
177	6.04	6.35	6.24	6.16	5.87	6.08	6.28
178	6.00	6.31	6.20	6.13	5.83	6.04	6.24
179	5.66	5.96	5.85	5.78	5.50	5.70	5.88
180/193	6.34	6.67	6.55	6.47	6.16	6.38	6.59
181	5.96	6.27	6.16	6.09	5.79	6.00	6.20
182	5.98	6.30	6.19	6.11	5.82	6.03	6.22
183/185	6.05	6.37	6.26	6.18	5.89	6.10	6.30
184	5.59	5.89	5.78	5.71	5.44	5.63	5.82
186	5.55	5.84	5.74	5.67	5.40	5.59	5.77
187	6.03	6.35	6.24	6.16	5.87	6.07	6.27
188	5.58	5.88	5.77	5.70	5.43	5.62	5.81
189	6.05	6.37	6.25	6.18	5.88	6.09	6.29
190	6.39	6.73	6.61	6.53	6.21	6.43	6.64
191	6.40	6.74	6.62	6.54	6.22	6.44	6.66
192	6.28	6.61	6.49	6.41	6.10	6.32	6.53
194	6.62	6.97	6.84	6.76	6.43	6.66	6.88
195	6.31	6.64	6.52	6.44	6.13	6.35	6.56
196	6.34	6.67	6.55	6.47	6.16	6.38	6.59
197/200	5.93	6.24	6.13	6.06	5.76	5.97	6.17
198/199	6.27	6.60	6.48	6.41	6.10	6.31	6.52
201	6.32	6.65	6.53	6.45	6.14	6.36	6.57
202	5.93	6.24	6.13	6.05	5.76	5.97	6.16
203	6.32	6.65	6.53	6.45	6.14	6.36	6.57
205	6.67	7.02	6.90	6.82	6.49	6.72	6.94
206	6.60	6.94	6.82	6.74	6.41	6.64	6.86
207	6.20	6.52	6.41	6.33	6.02	6.24	6.44
208	6.18	6.51	6.39	6.31	6.01	6.22	6.43
209	6.47	6.81	6.69	6.61	6.29	6.52	6.73

Table C-1 continued

Site ID	pv0444	pv0445	pv0446	pv0101	pv0103	pv0105
Deployment Date	8/11/2008	8/11/2008	8/11/2008	5/16/2008	6/30/2008	11/13/2008
Collection Date	9/19/2008	9/24/2008	9/23/2008	7/31/2008	8/11/2008	12/19/2008
1	5.00	4.94	4.77	5.10	5.70	4.36
2	5.20	5.13	4.96	5.30	5.92	4.53
3	5.21	5.14	4.97	5.31	5.93	4.54
4	4.91	4.84	4.68	5.01	5.59	4.28
5	5.25	5.18	5.01	5.36	5.98	4.58
6	5.22	5.15	4.98	5.32	5.94	4.55
7	5.18	5.11	4.94	5.28	5.90	4.51
8	5.25	5.18	5.01	5.35	5.98	4.57
9	4.97	4.90	4.74	5.07	5.66	4.33
10	4.97	4.90	4.74	5.07	5.66	4.33
11	5.42	5.35	5.17	5.53	6.17	4.73
12/13	5.45	5.38	5.20	5.56	6.20	4.75
15	5.52	5.45	5.27	5.63	6.29	4.81
16	5.24	5.17	5.00	5.35	5.97	4.57
17	5.13	5.06	4.89	5.23	5.84	4.47
18/30	5.17	5.10	4.93	5.27	5.89	4.51
19	4.91	4.85	4.68	5.01	5.59	4.28
21	5.47	5.40	5.22	5.58	6.24	4.77
22	5.58	5.51	5.32	5.69	6.35	4.86
23	5.17	5.10	4.93	5.27	5.89	4.51
24	5.25	5.19	5.01	5.36	5.98	4.58
25	5.49	5.41	5.23	5.60	6.25	4.78
26	5.50	5.43	5.25	5.61	6.26	4.79
27	5.24	5.17	5.00	5.35	5.97	4.57
28/20	5.52	5.45	5.27	5.63	6.28	4.81
31	5.53	5.46	5.28	5.64	6.30	4.82
32	5.24	5.17	5.00	5.35	5.97	4.57
33	5.52	5.45	5.27	5.63	6.29	4.81
34	5.24	5.17	5.00	5.35	5.97	4.57
35	5.50	5.43	5.25	5.61	6.27	4.80
36	5.62	5.55	5.36	5.73	6.40	4.90
37	5.83	5.76	5.57	5.95	6.64	5.08
38	5.65	5.58	5.39	5.76	6.43	4.92
39	5.66	5.59	5.40	5.78	6.45	4.94
42	5.44	5.37	5.20	5.55	6.20	4.75
43	5.44	5.37	5.20	5.55	6.20	4.75
44/47/65	5.47	5.40	5.22	5.58	6.23	4.77
45/51	5.18	5.12	4.95	5.29	5.90	4.52
46	5.20	5.13	4.96	5.30	5.92	4.53
48	5.41	5.34	5.16	5.52	6.16	4.71
49/69	5.41	5.34	5.16	5.52	6.16	4.72
52	5.43	5.36	5.18	5.54	6.19	4.74
53/50	5.19	5.12	4.95	5.29	5.91	4.52
54	4.81	4.75	4.59	4.91	5.48	4.19
55	5.79	5.72	5.53	5.91	6.60	5.05
56	5.85	5.78	5.58	5.97	6.66	5.10
57	5.72	5.64	5.45	5.83	6.51	4.98
58	5.74	5.67	5.48	5.86	6.54	5.00
59/62/75	5.53	5.45	5.27	5.64	6.29	4.82
60	5.85	5.77	5.58	5.97	6.66	5.10
63	5.75	5.67	5.49	5.86	6.55	5.01
64	5.56	5.49	5.30	5.67	6.33	4.85
66	5.83	5.75	5.56	5.94	6.63	5.08
67	5.78	5.71	5.52	5.90	6.58	5.04
68	5.68	5.60	5.42	5.79	6.47	4.95

Table C-1 continued

Site ID	pv0444	pv0445	pv0446	pv0101	pv0103	pv0105
Deployment Date	**8/11/2008**	**8/11/2008**	**8/11/2008**	**5/16/2008**	**6/30/2008**	**11/13/2008**
Collection Date	**9/19/2008**	**9/24/2008**	**9/23/2008**	**7/31/2008**	**8/11/2008**	**12/19/2008**
70	5.83	5.75	5.56	5.94	6.64	5.08
71/40/41	5.54	5.46	5.28	5.65	6.31	4.83
72	5.69	5.62	5.43	5.80	6.48	4.96
73	5.43	5.35	5.18	5.53	6.18	4.73
77	6.15	6.07	5.86	6.27	7.00	5.36
78	6.00	5.92	5.72	6.12	6.83	5.23
79	5.99	5.91	5.71	6.11	6.82	5.22
80	5.83	5.76	5.57	5.95	6.64	5.09
81	6.04	5.97	5.77	6.17	6.88	5.27
82	5.76	5.69	5.50	5.88	6.56	5.02
84	5.49	5.42	5.24	5.60	6.26	4.79
85/116/117	5.75	5.67	5.49	5.86	6.55	5.01
87/86/97/108/109/125	5.76	5.68	5.49	5.87	6.56	5.02
89	5.46	5.39	5.21	5.57	6.22	4.76
91/88	5.46	5.39	5.21	5.57	6.22	4.76
92	5.69	5.62	5.43	5.81	6.48	4.96
94	5.42	5.35	5.17	5.53	6.17	4.73
95/93/98/100/102	5.50	5.43	5.25	5.61	6.27	4.79
96	5.12	5.05	4.89	5.22	5.83	4.46
99/83	5.73	5.66	5.47	5.85	6.53	5.00
101/90/113	5.73	5.66	5.47	5.85	6.53	5.00
103	5.41	5.34	5.16	5.52	6.16	4.71
104	5.01	4.95	4.78	5.11	5.71	4.37
105	6.19	6.10	5.90	6.31	7.04	5.39
106	6.03	5.95	5.75	6.15	6.87	5.25
109	5.76	5.68	5.49	5.87	6.56	5.02
110/115	5.87	5.79	5.60	5.98	6.68	5.11
111	5.97	5.89	5.69	6.09	6.80	5.20
112	5.75	5.68	5.49	5.87	6.55	5.02
114	6.08	6.00	5.80	6.20	6.92	5.30
118	6.18	6.10	5.89	6.30	7.03	5.38
119	5.80	5.72	5.53	5.92	6.60	5.05
120	6.01	5.93	5.74	6.13	6.85	5.24
121	5.67	5.59	5.41	5.78	6.45	4.94
122	6.11	6.03	5.83	6.23	6.96	5.32
123	6.08	6.00	5.80	6.20	6.92	5.30
124/107	6.08	6.00	5.80	6.20	6.92	5.30
126	6.41	6.32	6.11	6.54	7.30	5.58
127	6.26	6.17	5.97	6.38	7.13	5.45
130	6.01	5.93	5.73	6.13	6.84	5.24
131	5.73	5.65	5.46	5.84	6.52	4.99
132	5.78	5.70	5.51	5.89	6.58	5.04
133	5.96	5.89	5.69	6.08	6.79	5.20
134/143	5.72	5.65	5.46	5.84	6.52	4.99
136	5.40	5.33	5.16	5.51	6.15	4.71
137	5.97	5.89	5.70	6.09	6.80	5.20
138/129/160/163	6.07	5.99	5.80	6.20	6.92	5.29
139/140	5.70	5.62	5.44	5.81	6.49	4.97
141	5.98	5.91	5.71	6.10	6.81	5.21
142	5.60	5.53	5.35	5.72	6.38	4.88
144	5.73	5.65	5.47	5.84	6.52	4.99
145	5.31	5.25	5.07	5.42	6.05	4.63
146	6.01	5.93	5.73	6.13	6.84	5.24
148	5.73	5.65	5.47	5.84	6.52	4.99
149/147	5.79	5.72	5.53	5.91	6.60	5.05

Table C-1 continued

Site ID	pv0444	pv0445	pv0446	pv0101	pv0103	pv0105
Deployment Date	**8/11/2008**	**8/11/2008**	**8/11/2008**	**5/16/2008**	**6/30/2008**	**11/13/2008**
Collection Date	**9/19/2008**	**9/24/2008**	**9/23/2008**	**7/31/2008**	**8/11/2008**	**12/19/2008**
150	6.01	5.93	5.73	6.13	6.84	5.24
151/135/154	5.72	5.65	5.46	5.84	6.52	4.99
152	5.32	5.25	5.08	5.43	6.06	4.64
153/168	6.07	5.99	5.79	6.19	6.91	5.29
155	5.25	5.18	5.01	5.36	5.98	4.58
156/157	6.42	6.34	6.12	6.55	7.31	5.59
158	6.13	6.05	5.85	6.25	6.98	5.34
159	6.30	6.21	6.01	6.42	7.17	5.49
161	6.01	5.93	5.74	6.13	6.85	5.24
162	6.34	6.26	6.05	6.47	7.23	5.53
164	6.11	6.03	5.83	6.24	6.96	5.33
165	6.00	5.92	5.73	6.12	6.84	5.23
167	6.42	6.33	6.12	6.55	7.31	5.59
169	6.67	6.58	6.36	6.80	7.59	5.81
170	6.34	6.25	6.05	6.46	7.22	5.52
171/173	6.04	5.96	5.76	6.16	6.88	5.26
172/192	6.29	6.21	6.00	6.41	7.16	5.48
174	6.05	5.97	5.77	6.17	6.89	5.27
175	6.01	5.93	5.73	6.13	6.84	5.23
176	5.66	5.58	5.40	5.77	6.44	4.93
177	6.04	5.96	5.76	6.16	6.87	5.26
178	6.00	5.92	5.72	6.12	6.83	5.23
179	5.66	5.59	5.40	5.77	6.45	4.93
180/193	6.34	6.25	6.05	6.46	7.22	5.52
181	5.96	5.88	5.68	6.08	6.79	5.19
182	5.99	5.91	5.71	6.11	6.82	5.22
183/185	6.05	5.98	5.78	6.18	6.90	5.28
184	5.59	5.52	5.34	5.71	6.37	4.88
186	5.55	5.48	5.30	5.66	6.32	4.84
187	6.03	5.95	5.76	6.15	6.87	5.26
188	5.58	5.51	5.33	5.70	6.36	4.87
189	6.05	5.97	5.77	6.17	6.89	5.27
190	6.39	6.31	6.10	6.52	7.28	5.57
191	6.40	6.32	6.11	6.53	7.29	5.58
192	6.28	6.20	5.99	6.40	7.15	5.47
194	6.62	6.53	6.31	6.75	7.54	5.77
195	6.31	6.22	6.02	6.43	7.18	5.50
196	6.34	6.25	6.05	6.46	7.22	5.52
197/200	5.93	5.85	5.66	6.05	6.75	5.17
198/199	6.27	6.19	5.98	6.40	7.14	5.47
201	6.32	6.24	6.03	6.44	7.20	5.51
202	5.93	5.85	5.65	6.05	6.75	5.17
203	6.32	6.23	6.03	6.44	7.19	5.51
205	6.67	6.59	6.37	6.81	7.60	5.82
206	6.60	6.51	6.29	6.73	7.51	5.75
207	6.20	6.12	5.91	6.32	7.06	5.40
208	6.18	6.10	5.90	6.31	7.04	5.39
209	6.47	6.39	6.17	6.60	7.37	5.64

APPENDIX D: 2011CONGENER SPECIFIC PCB SAMPLING RATES

Table D-1: Average sampling rate for all congeners for the 2011 PUF-PAS deployments.

Sample ID	GL-DC2-P-032911	GL-HC2-P-032911	GL-JP2-P-033111	GL-NP2-P-033111	GL-PP2-P-033111	GL-SP2-P-033111
Deployment Date	**2/9/2011**	**2/9/2011**	**2/10/2011**	**2/10/2011**	**2/10/2011**	**2/10/2011**
Collection Date	**3/29/2011**	**3/29/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**
1	4.90	4.90	4.96	4.96	4.96	4.96
2	5.10	5.10	5.16	5.16	5.16	5.16
3	5.11	5.11	5.17	5.17	5.17	5.17
4	4.81	4.81	4.87	4.87	4.87	4.87
5	5.15	5.15	5.21	5.21	5.21	5.21
6	5.12	5.12	5.18	5.18	5.18	5.18
7	5.08	5.08	5.14	5.14	5.14	5.14
8	5.15	5.15	5.21	5.21	5.21	5.21
9	4.87	4.87	4.93	4.93	4.93	4.93
10	4.87	4.87	4.93	4.93	4.93	4.93
11	5.32	5.32	5.38	5.38	5.38	5.38
12/13	5.34	5.34	5.41	5.41	5.41	5.41
15	5.41	5.41	5.48	5.48	5.48	5.48
16	5.14	5.14	5.20	5.20	5.20	5.20
17	5.03	5.03	5.09	5.09	5.09	5.09
18/30	5.07	5.07	5.13	5.13	5.13	5.13
19	4.81	4.81	4.87	4.87	4.87	4.87
21	5.37	5.37	5.43	5.43	5.43	5.43
22	5.47	5.47	5.54	5.54	5.54	5.54
23	5.07	5.07	5.13	5.13	5.13	5.13
24	5.15	5.15	5.21	5.21	5.21	5.21
25	5.38	5.38	5.45	5.45	5.45	5.45
26	5.39	5.39	5.46	5.46	5.46	5.46
27	5.14	5.14	5.20	5.20	5.20	5.20
28/20	5.41	5.41	5.48	5.48	5.48	5.48
31	5.42	5.42	5.49	5.49	5.49	5.49
32	5.14	5.14	5.20	5.20	5.20	5.20
33	5.42	5.42	5.48	5.48	5.48	5.48
34	5.14	5.14	5.20	5.20	5.20	5.20
35	5.40	5.40	5.46	5.46	5.46	5.46
36	5.51	5.51	5.58	5.58	5.58	5.58
37	5.72	5.72	5.79	5.79	5.79	5.79
38	5.54	5.54	5.61	5.61	5.61	5.61
39	5.55	5.55	5.62	5.62	5.62	5.62
42	5.34	5.34	5.40	5.40	5.40	5.40
43	5.34	5.34	5.40	5.40	5.40	5.40
44/47/65	5.36	5.36	5.43	5.43	5.43	5.43
45/51	5.08	5.08	5.14	5.14	5.14	5.14
46	5.10	5.10	5.16	5.16	5.16	5.16
48	5.30	5.30	5.37	5.37	5.37	5.37
49/69	5.31	5.31	5.37	5.37	5.37	5.37
52	5.33	5.33	5.39	5.39	5.39	5.39
53/50	5.09	5.09	5.15	5.15	5.15	5.15
54	4.72	4.72	4.78	4.78	4.78	4.78
55	5.68	5.68	5.75	5.75	5.75	5.75
56	5.74	5.74	5.81	5.81	5.81	5.81
57	5.61	5.61	5.67	5.67	5.67	5.67
58	5.63	5.63	5.70	5.70	5.70	5.70
59/62/75	5.42	5.42	5.48	5.48	5.48	5.48

Table D-1 continued

Sample ID	GL-DC2-P-032911	GL-HC2-P-032911	GL-JP2-P-033111	GL-NP2-P-033111	GL-PP2-P-033111	GL-SP2-P-033111
Deployment Date	**2/9/2011**	**2/9/2011**	**2/10/2011**	**2/10/2011**	**2/10/2011**	**2/10/2011**
Collection Date	**3/29/2011**	**3/29/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**
60	5.74	5.74	5.80	5.80	5.80	5.80
63	5.64	5.64	5.71	5.71	5.71	5.71
64	5.45	5.45	5.52	5.52	5.52	5.52
66	5.71	5.71	5.78	5.78	5.78	5.78
67	5.67	5.67	5.74	5.74	5.74	5.74
68	5.57	5.57	5.64	5.64	5.64	5.64
70	5.71	5.71	5.78	5.78	5.78	5.78
71/40/41	5.43	5.43	5.50	5.50	5.50	5.50
72	5.58	5.58	5.65	5.65	5.65	5.65
73	5.32	5.32	5.38	5.38	5.38	5.38
77	6.03	6.03	6.10	6.10	6.10	6.10
78	5.88	5.88	5.95	5.95	5.95	5.95
79	5.87	5.87	5.94	5.94	5.94	5.94
80	5.72	5.72	5.79	5.79	5.79	5.79
81	5.93	5.93	6.00	6.00	6.00	6.00
82	5.65	5.65	5.72	5.72	5.72	5.72
84	5.39	5.39	5.45	5.45	5.45	5.45
85/116/117	5.64	5.64	5.71	5.71	5.71	5.71
87/86/97/108/109/125	5.65	5.65	5.71	5.71	5.71	5.71
89	5.36	5.36	5.42	5.42	5.42	5.42
91/88	5.35	5.35	5.42	5.42	5.42	5.42
92	5.58	5.58	5.65	5.65	5.65	5.65
94	5.32	5.32	5.38	5.38	5.38	5.38
95/93/98/100/102	5.40	5.40	5.46	5.46	5.46	5.46
96	5.02	5.02	5.08	5.08	5.08	5.08
99/83	5.62	5.62	5.69	5.69	5.69	5.69
101/90/113	5.62	5.62	5.69	5.69	5.69	5.69
103	5.30	5.30	5.37	5.37	5.37	5.37
104	4.92	4.92	4.98	4.98	4.98	4.98
105	6.07	6.07	6.14	6.14	6.14	6.14
106	5.91	5.91	5.98	5.98	5.98	5.98
109	5.65	5.65	5.72	5.72	5.72	5.72
110/115	5.75	5.75	5.82	5.82	5.82	5.82
111	5.85	5.85	5.92	5.92	5.92	5.92
112	5.64	5.64	5.71	5.71	5.71	5.71
114	5.96	5.96	6.03	6.03	6.03	6.03
118	6.06	6.06	6.13	6.13	6.13	6.13
119	5.69	5.69	5.75	5.75	5.75	5.75
120	5.90	5.90	5.97	5.97	5.97	5.97
121	5.56	5.56	5.62	5.62	5.62	5.62
122	5.99	5.99	6.06	6.06	6.06	6.06
123	5.96	5.96	6.03	6.03	6.03	6.03
124/107	5.96	5.96	6.03	6.03	6.03	6.03
126	6.28	6.28	6.36	6.36	6.36	6.36
127	6.14	6.14	6.21	6.21	6.21	6.21
130	5.89	5.89	5.96	5.96	5.96	5.96
131	5.62	5.62	5.68	5.68	5.68	5.68
132	5.67	5.67	5.73	5.73	5.73	5.73
133	5.85	5.85	5.92	5.92	5.92	5.92
134/143	5.61	5.61	5.68	5.68	5.68	5.68
136	5.30	5.30	5.36	5.36	5.36	5.36
137	5.86	5.86	5.93	5.93	5.93	5.93
138/129/160/163	5.96	5.96	6.03	6.03	6.03	6.03
139/140	5.59	5.59	5.66	5.66	5.66	5.66
141	5.87	5.87	5.94	5.94	5.94	5.94
142	5.50	5.50	5.56	5.56	5.56	5.56

Table D-1 continued

Sample ID	GL-DC2-P-032911	GL-HC2-P-032911	GL-JP2-P-033111	GL-NP2-P-033111	GL-PP2-P-033111	GL-SP2-P-033111
Deployment Date	**2/9/2011**	**2/9/2011**	**2/10/2011**	**2/10/2011**	**2/10/2011**	**2/10/2011**
Collection Date	**3/29/2011**	**3/29/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**
144	5.62	5.62	5.69	5.69	5.69	5.69
145	5.21	5.21	5.27	5.27	5.27	5.27
146	5.89	5.89	5.96	5.96	5.96	5.96
148	5.62	5.62	5.69	5.69	5.69	5.69
149/147	5.68	5.68	5.75	5.75	5.75	5.75
150	5.89	5.89	5.96	5.96	5.96	5.96
151/135/154	5.61	5.61	5.68	5.68	5.68	5.68
152	5.22	5.22	5.28	5.28	5.28	5.28
153/168	5.95	5.95	6.02	6.02	6.02	6.02
155	5.15	5.15	5.21	5.21	5.21	5.21
156/157	6.30	6.30	6.37	6.37	6.37	6.37
158	6.01	6.01	6.09	6.09	6.09	6.09
159	6.17	6.17	6.25	6.25	6.25	6.25
161	5.90	5.90	5.97	5.97	5.97	5.97
162	6.22	6.22	6.30	6.30	6.30	6.30
164	5.99	5.99	6.07	6.07	6.07	6.07
165	5.89	5.89	5.96	5.96	5.96	5.96
167	6.29	6.29	6.37	6.37	6.37	6.37
169	6.54	6.54	6.62	6.62	6.62	6.62
170	6.21	6.21	6.29	6.29	6.29	6.29
171/173	5.92	5.92	5.99	5.99	5.99	5.99
172/192	6.17	6.17	6.24	6.24	6.24	6.24
174	5.93	5.93	6.00	6.00	6.00	6.00
175	5.89	5.89	5.96	5.96	5.96	5.96
176	5.55	5.55	5.61	5.61	5.61	5.61
177	5.92	5.92	5.99	5.99	5.99	5.99
178	5.88	5.88	5.95	5.95	5.95	5.95
179	5.55	5.55	5.62	5.62	5.62	5.62
180/193	6.21	6.21	6.29	6.29	6.29	6.29
181	5.84	5.84	5.91	5.91	5.91	5.91
182	5.87	5.87	5.94	5.94	5.94	5.94
183/185	5.94	5.94	6.01	6.01	6.01	6.01
184	5.49	5.49	5.55	5.55	5.55	5.55
186	5.44	5.44	5.51	5.51	5.51	5.51
187	5.92	5.92	5.99	5.99	5.99	5.99
188	5.48	5.48	5.54	5.54	5.54	5.54
189	5.93	5.93	6.00	6.00	6.00	6.00
190	6.27	6.27	6.34	6.34	6.34	6.34
191	6.28	6.28	6.35	6.35	6.35	6.35
192	6.16	6.16	6.23	6.23	6.23	6.23
194	6.49	6.49	6.57	6.57	6.57	6.57
195	6.18	6.18	6.26	6.26	6.26	6.26
196	6.21	6.21	6.29	6.29	6.29	6.29
197/200	5.82	5.82	5.88	5.88	5.88	5.88
198/199	6.15	6.15	6.22	6.22	6.22	6.22
201	6.20	6.20	6.27	6.27	6.27	6.27
202	5.81	5.81	5.88	5.88	5.88	5.88
203	6.20	6.20	6.27	6.27	6.27	6.27
205	6.54	6.54	6.62	6.62	6.62	6.62
206	6.47	6.47	6.55	6.55	6.55	6.55
207	6.08	6.08	6.15	6.15	6.15	6.15
208	6.06	6.06	6.13	6.13	6.13	6.13
209	6.35	6.35	6.42	6.42	6.42	6.42

Table D-1 continued

Sample ID	GL-CP2-P-033111	GL-WP2-P-033111	GL-CP2-P-051911	GL-JP2-P-051911	GL-NP2-P-051911	GL-PP2-P-051911
Deployment Date	**2/18/2011**	**2/18/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**
Collection Date	**3/31/2011**	**3/31/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**
1	5.24	5.24	4.00	4.00	4.00	4.00
2	5.44	5.44	4.15	4.15	4.15	4.15
3	5.45	5.45	4.16	4.16	4.16	4.16
4	5.14	5.14	3.92	3.92	3.92	3.92
5	5.50	5.50	4.20	4.20	4.20	4.20
6	5.46	5.46	4.17	4.17	4.17	4.17
7	5.42	5.42	4.14	4.14	4.14	4.14
8	5.49	5.49	4.20	4.20	4.20	4.20
9	5.20	5.20	3.97	3.97	3.97	3.97
10	5.20	5.20	3.97	3.97	3.97	3.97
11	5.68	5.68	4.33	4.33	4.33	4.33
12/13	5.70	5.70	4.35	4.35	4.35	4.35
15	5.78	5.78	4.41	4.41	4.41	4.41
16	5.49	5.49	4.19	4.19	4.19	4.19
17	5.37	5.37	4.10	4.10	4.10	4.10
18/30	5.41	5.41	4.13	4.13	4.13	4.13
19	5.14	5.14	3.92	3.92	3.92	3.92
21	5.73	5.73	4.38	4.38	4.38	4.38
22	5.84	5.84	4.46	4.46	4.46	4.46
23	5.41	5.41	4.13	4.13	4.13	4.13
24	5.50	5.50	4.20	4.20	4.20	4.20
25	5.74	5.74	4.39	4.39	4.39	4.39
26	5.76	5.76	4.39	4.39	4.39	4.39
27	5.49	5.49	4.19	4.19	4.19	4.19
28/20	5.78	5.78	4.41	4.41	4.41	4.41
31	5.79	5.79	4.42	4.42	4.42	4.42
32	5.49	5.49	4.19	4.19	4.19	4.19
33	5.78	5.78	4.41	4.41	4.41	4.41
34	5.49	5.49	4.19	4.19	4.19	4.19
35	5.76	5.76	4.40	4.40	4.40	4.40
36	5.88	5.88	4.49	4.49	4.49	4.49
37	6.11	6.11	4.66	4.66	4.66	4.66
38	5.91	5.91	4.52	4.52	4.52	4.52
39	5.93	5.93	4.53	4.53	4.53	4.53
42	5.70	5.70	4.35	4.35	4.35	4.35
43	5.70	5.70	4.35	4.35	4.35	4.35
44/47/65	5.73	5.73	4.37	4.37	4.37	4.37
45/51	5.43	5.43	4.14	4.14	4.14	4.14
46	5.44	5.44	4.15	4.15	4.15	4.15
48	5.66	5.66	4.32	4.32	4.32	4.32
49/69	5.66	5.66	4.32	4.32	4.32	4.32
52	5.69	5.69	4.34	4.34	4.34	4.34
53/50	5.43	5.43	4.15	4.15	4.15	4.15
54	5.04	5.04	3.85	3.85	3.85	3.85
55	6.07	6.07	4.63	4.63	4.63	4.63
56	6.13	6.13	4.68	4.68	4.68	4.68
57	5.98	5.98	4.57	4.57	4.57	4.57
58	6.01	6.01	4.59	4.59	4.59	4.59
59/62/75	5.78	5.78	4.42	4.42	4.42	4.42
60	6.12	6.12	4.68	4.68	4.68	4.68
63	6.02	6.02	4.60	4.60	4.60	4.60
64	5.82	5.82	4.44	4.44	4.44	4.44
66	6.10	6.10	4.66	4.66	4.66	4.66

Table D-1 continued

Sample ID	GL-CP2-P-033111	GL-WP2-P-033111	GL-CP2-P-051911	GL-JP2-P-051911	GL-NP2-P-051911	GL-PP2-P-051911
Deployment Date	**2/18/2011**	**2/18/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**
Collection Date	**3/31/2011**	**3/31/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**
67	6.05	6.05	4.62	4.62	4.62	4.62
68	5.94	5.94	4.54	4.54	4.54	4.54
70	6.10	6.10	4.66	4.66	4.66	4.66
71/40/41	5.80	5.80	4.43	4.43	4.43	4.43
72	5.96	5.96	4.55	4.55	4.55	4.55
73	5.68	5.68	4.34	4.34	4.34	4.34
77	6.43	6.43	4.91	4.91	4.91	4.91
78	6.28	6.28	4.79	4.79	4.79	4.79
79	6.27	6.27	4.79	4.79	4.79	4.79
80	6.11	6.11	4.66	4.66	4.66	4.66
81	6.33	6.33	4.83	4.83	4.83	4.83
82	6.03	6.03	4.61	4.61	4.61	4.61
84	5.75	5.75	4.39	4.39	4.39	4.39
85/116/117	6.02	6.02	4.60	4.60	4.60	4.60
87/86/97/108/109/125	6.03	6.03	4.60	4.60	4.60	4.60
89	5.72	5.72	4.37	4.37	4.37	4.37
91/88	5.71	5.71	4.36	4.36	4.36	4.36
92	5.96	5.96	4.55	4.55	4.55	4.55
94	5.68	5.68	4.33	4.33	4.33	4.33
95/93/98/100/102	5.76	5.76	4.40	4.40	4.40	4.40
96	5.36	5.36	4.09	4.09	4.09	4.09
99/83	6.00	6.00	4.58	4.58	4.58	4.58
101/90/113	6.00	6.00	4.58	4.58	4.58	4.58
103	5.66	5.66	4.32	4.32	4.32	4.32
104	5.25	5.25	4.01	4.01	4.01	4.01
105	6.47	6.47	4.94	4.94	4.94	4.94
106	6.31	6.31	4.82	4.82	4.82	4.82
109	6.03	6.03	4.60	4.60	4.60	4.60
110/115	6.14	6.14	4.69	4.69	4.69	4.69
111	6.25	6.25	4.77	4.77	4.77	4.77
112	6.02	6.02	4.60	4.60	4.60	4.60
114	6.36	6.36	4.86	4.86	4.86	4.86
118	6.47	6.47	4.94	4.94	4.94	4.94
119	6.07	6.07	4.64	4.64	4.64	4.64
120	6.29	6.29	4.81	4.81	4.81	4.81
121	5.93	5.93	4.53	4.53	4.53	4.53
122	6.39	6.39	4.88	4.88	4.88	4.88
123	6.36	6.36	4.86	4.86	4.86	4.86
124/107	6.36	6.36	4.86	4.86	4.86	4.86
126	6.71	6.71	5.12	5.12	5.12	5.12
127	6.55	6.55	5.00	5.00	5.00	5.00
130	6.29	6.29	4.80	4.80	4.80	4.80
131	6.00	6.00	4.58	4.58	4.58	4.58
132	6.05	6.05	4.62	4.62	4.62	4.62
133	6.24	6.24	4.77	4.77	4.77	4.77
134/143	5.99	5.99	4.57	4.57	4.57	4.57
136	5.66	5.66	4.32	4.32	4.32	4.32
137	6.25	6.25	4.77	4.77	4.77	4.77
138/129/160/163	6.36	6.36	4.86	4.86	4.86	4.86
139/140	5.97	5.97	4.56	4.56	4.56	4.56
141	6.26	6.26	4.78	4.78	4.78	4.78
142	5.87	5.87	4.48	4.48	4.48	4.48
144	6.00	6.00	4.58	4.58	4.58	4.58
145	5.56	5.56	4.25	4.25	4.25	4.25

Table D-1 continued

Sample ID	GL-CP2-P-033111	GL-WP2-P-033111	GL-CP2-P-051911	GL-JP2-P-051911	GL-NP2-P-051911	GL-PP2-P-051911
Deployment Date	**2/18/2011**	**2/18/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**
Collection Date	**3/31/2011**	**3/31/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**
146	6.29	6.29	4.80	4.80	4.80	4.80
148	6.00	6.00	4.58	4.58	4.58	4.58
149/147	6.06	6.06	4.63	4.63	4.63	4.63
150	6.29	6.29	4.80	4.80	4.80	4.80
151/135/154	5.99	5.99	4.57	4.57	4.57	4.57
152	5.57	5.57	4.25	4.25	4.25	4.25
153/168	6.35	6.35	4.85	4.85	4.85	4.85
155	5.50	5.50	4.20	4.20	4.20	4.20
156/157	6.72	6.72	5.13	5.13	5.13	5.13
158	6.42	6.42	4.90	4.90	4.90	4.90
159	6.59	6.59	5.03	5.03	5.03	5.03
161	6.29	6.29	4.81	4.81	4.81	4.81
162	6.64	6.64	5.07	5.07	5.07	5.07
164	6.40	6.40	4.89	4.89	4.89	4.89
165	6.28	6.28	4.80	4.80	4.80	4.80
167	6.72	6.72	5.13	5.13	5.13	5.13
169	6.98	6.98	5.33	5.33	5.33	5.33
170	6.63	6.63	5.07	5.07	5.07	5.07
171/173	6.32	6.32	4.83	4.83	4.83	4.83
172/192	6.58	6.58	5.03	5.03	5.03	5.03
174	6.33	6.33	4.83	4.83	4.83	4.83
175	6.29	6.29	4.80	4.80	4.80	4.80
176	5.92	5.92	4.52	4.52	4.52	4.52
177	6.32	6.32	4.82	4.82	4.82	4.82
178	6.28	6.28	4.80	4.80	4.80	4.80
179	5.92	5.92	4.52	4.52	4.52	4.52
180/193	6.63	6.63	5.07	5.07	5.07	5.07
181	6.24	6.24	4.76	4.76	4.76	4.76
182	6.27	6.27	4.78	4.78	4.78	4.78
183/185	6.34	6.34	4.84	4.84	4.84	4.84
184	5.86	5.86	4.47	4.47	4.47	4.47
186	5.81	5.81	4.44	4.44	4.44	4.44
187	6.32	6.32	4.82	4.82	4.82	4.82
188	5.84	5.84	4.46	4.46	4.46	4.46
189	6.33	6.33	4.84	4.84	4.84	4.84
190	6.69	6.69	5.11	5.11	5.11	5.11
191	6.70	6.70	5.12	5.12	5.12	5.12
192	6.57	6.57	5.02	5.02	5.02	5.02
194	6.93	6.93	5.29	5.29	5.29	5.29
195	6.60	6.60	5.04	5.04	5.04	5.04
196	6.63	6.63	5.07	5.07	5.07	5.07
197/200	6.21	6.21	4.74	4.74	4.74	4.74
198/199	6.57	6.57	5.01	5.01	5.01	5.01
201	6.61	6.61	5.05	5.05	5.05	5.05
202	6.20	6.20	4.74	4.74	4.74	4.74
203	6.61	6.61	5.05	5.05	5.05	5.05
205	6.98	6.98	5.33	5.33	5.33	5.33
206	6.90	6.90	5.27	5.27	5.27	5.27
207	6.49	6.49	4.95	4.95	4.95	4.95
208	6.47	6.47	4.94	4.94	4.94	4.94
209	6.77	6.77	5.17	5.17	5.17	5.17

Table D-1 continued

Sample ID	GL-SP2-P-051911	GL-WP2-P-051911	GL-DC2-P-052311	GL-HC2-P-052311	GL-AU2-P-051711	GL-BR2-P-051711
Deployment Date	**3/31/2011**	**3/31/2011**	**4/4/2011**	**4/4/2011**	**4/5/2011**	**4/5/2011**
Collection Date	**5/19/2011**	**5/19/2011**	**5/23/2011**	**5/23/2011**	**5/17/2011**	**5/17/2011**
1	4.00	4.00	4.09	4.09	3.87	3.87
2	4.15	4.15	4.25	4.25	4.02	4.02
3	4.16	4.16	4.26	4.26	4.03	4.03
4	3.92	3.92	4.02	4.02	3.80	3.80
5	4.20	4.20	4.30	4.30	4.07	4.07
6	4.17	4.17	4.27	4.27	4.04	4.04
7	4.14	4.14	4.24	4.24	4.01	4.01
8	4.20	4.20	4.30	4.30	4.06	4.06
9	3.97	3.97	4.07	4.07	3.84	3.84
10	3.97	3.97	4.07	4.07	3.84	3.84
11	4.33	4.33	4.44	4.44	4.20	4.20
12/13	4.35	4.35	4.46	4.46	4.22	4.22
15	4.41	4.41	4.52	4.52	4.27	4.27
16	4.19	4.19	4.29	4.29	4.06	4.06
17	4.10	4.10	4.20	4.20	3.97	3.97
18/30	4.13	4.13	4.23	4.23	4.00	4.00
19	3.92	3.92	4.02	4.02	3.80	3.80
21	4.38	4.38	4.48	4.48	4.24	4.24
22	4.46	4.46	4.57	4.57	4.32	4.32
23	4.13	4.13	4.23	4.23	4.00	4.00
24	4.20	4.20	4.30	4.30	4.07	4.07
25	4.39	4.39	4.49	4.49	4.25	4.25
26	4.39	4.39	4.50	4.50	4.26	4.26
27	4.19	4.19	4.29	4.29	4.06	4.06
28/20	4.41	4.41	4.52	4.52	4.27	4.27
31	4.42	4.42	4.53	4.53	4.28	4.28
32	4.19	4.19	4.29	4.29	4.06	4.06
33	4.41	4.41	4.52	4.52	4.27	4.27
34	4.19	4.19	4.29	4.29	4.06	4.06
35	4.40	4.40	4.50	4.50	4.26	4.26
36	4.49	4.49	4.60	4.60	4.35	4.35
37	4.66	4.66	4.77	4.77	4.51	4.51
38	4.52	4.52	4.62	4.62	4.37	4.37
39	4.53	4.53	4.64	4.64	4.38	4.38
42	4.35	4.35	4.46	4.46	4.21	4.21
43	4.35	4.35	4.46	4.46	4.21	4.21
44/47/65	4.37	4.37	4.48	4.48	4.23	4.23
45/51	4.14	4.14	4.24	4.24	4.01	4.01
46	4.15	4.15	4.25	4.25	4.02	4.02
48	4.32	4.32	4.43	4.43	4.19	4.19
49/69	4.32	4.32	4.43	4.43	4.19	4.19
52	4.34	4.34	4.45	4.45	4.21	4.21
53/50	4.15	4.15	4.25	4.25	4.02	4.02
54	3.85	3.85	3.94	3.94	3.72	3.72
55	4.63	4.63	4.74	4.74	4.48	4.48
56	4.68	4.68	4.79	4.79	4.53	4.53
57	4.57	4.57	4.68	4.68	4.42	4.42
58	4.59	4.59	4.70	4.70	4.44	4.44
59/62/75	4.42	4.42	4.52	4.52	4.28	4.28
60	4.68	4.68	4.79	4.79	4.53	4.53
63	4.60	4.60	4.71	4.71	4.45	4.45
64	4.44	4.44	4.55	4.55	4.30	4.30
66	4.66	4.66	4.77	4.77	4.51	4.51

Table D-1 continued

Sample ID	GL-SP2-P-051911	GL-WP2-P-051911	GL-DC2-P-052311	GL-HC2-P-052311	GL-AU2-P-051711	GL-BR2-P-051711
Deployment Date	**3/31/2011**	**3/31/2011**	**4/4/2011**	**4/4/2011**	**4/5/2011**	**4/5/2011**
Collection Date	**5/19/2011**	**5/19/2011**	**5/23/2011**	**5/23/2011**	**5/17/2011**	**5/17/2011**
1	4.00	4.00	4.09	4.09	3.87	3.87
2	4.15	4.15	4.25	4.25	4.02	4.02
3	4.16	4.16	4.26	4.26	4.03	4.03
4	3.92	3.92	4.02	4.02	3.80	3.80
5	4.20	4.20	4.30	4.30	4.07	4.07
6	4.17	4.17	4.27	4.27	4.04	4.04
7	4.14	4.14	4.24	4.24	4.01	4.01
8	4.20	4.20	4.30	4.30	4.06	4.06
9	3.97	3.97	4.07	4.07	3.84	3.84
10	3.97	3.97	4.07	4.07	3.84	3.84
11	4.33	4.33	4.44	4.44	4.20	4.20
12/13	4.35	4.35	4.46	4.46	4.22	4.22
15	4.41	4.41	4.52	4.52	4.27	4.27
16	4.19	4.19	4.29	4.29	4.06	4.06
17	4.10	4.10	4.20	4.20	3.97	3.97
18/30	4.13	4.13	4.23	4.23	4.00	4.00
19	3.92	3.92	4.02	4.02	3.80	3.80
21	4.38	4.38	4.48	4.48	4.24	4.24
22	4.46	4.46	4.57	4.57	4.32	4.32
23	4.13	4.13	4.23	4.23	4.00	4.00
24	4.20	4.20	4.30	4.30	4.07	4.07
25	4.39	4.39	4.49	4.49	4.25	4.25
26	4.39	4.39	4.50	4.50	4.26	4.26
27	4.19	4.19	4.29	4.29	4.06	4.06
28/20	4.41	4.41	4.52	4.52	4.27	4.27
31	4.42	4.42	4.53	4.53	4.28	4.28
32	4.19	4.19	4.29	4.29	4.06	4.06
33	4.41	4.41	4.52	4.52	4.27	4.27
34	4.19	4.19	4.29	4.29	4.06	4.06
35	4.40	4.40	4.50	4.50	4.26	4.26
36	4.49	4.49	4.60	4.60	4.35	4.35
37	4.66	4.66	4.77	4.77	4.51	4.51
38	4.52	4.52	4.62	4.62	4.37	4.37
39	4.53	4.53	4.64	4.64	4.38	4.38
42	4.35	4.35	4.46	4.46	4.21	4.21
43	4.35	4.35	4.46	4.46	4.21	4.21
44/47/65	4.37	4.37	4.48	4.48	4.23	4.23
45/51	4.14	4.14	4.24	4.24	4.01	4.01
46	4.15	4.15	4.25	4.25	4.02	4.02
48	4.32	4.32	4.43	4.43	4.19	4.19
49/69	4.32	4.32	4.43	4.43	4.19	4.19
52	4.34	4.34	4.45	4.45	4.21	4.21
53/50	4.15	4.15	4.25	4.25	4.02	4.02
54	3.85	3.85	3.94	3.94	3.72	3.72
55	4.63	4.63	4.74	4.74	4.48	4.48
56	4.68	4.68	4.79	4.79	4.53	4.53
57	4.57	4.57	4.68	4.68	4.42	4.42
58	4.59	4.59	4.70	4.70	4.44	4.44
59/62/75	4.42	4.42	4.52	4.52	4.28	4.28
60	4.68	4.68	4.79	4.79	4.53	4.53
63	4.60	4.60	4.71	4.71	4.45	4.45
64	4.44	4.44	4.55	4.55	4.30	4.30
66	4.66	4.66	4.77	4.77	4.51	4.51

Table D-1 continued

Sample ID	GL-SP2-P-051911	GL-WP2-P-051911	GL-DC2-P-052311	GL-HC2-P-052311	GL-AU2-P-051711	GL-BR2-P-051711
Deployment Date	**3/31/2011**	**3/31/2011**	**4/4/2011**	**4/4/2011**	**4/5/2011**	**4/5/2011**
Collection Date	**5/19/2011**	**5/19/2011**	**5/23/2011**	**5/23/2011**	**5/17/2011**	**5/17/2011**
67	4.62	4.62	4.73	4.73	4.48	4.48
68	4.54	4.54	4.65	4.65	4.40	4.40
70	4.66	4.66	4.77	4.77	4.51	4.51
71/40/41	4.43	4.43	4.53	4.53	4.29	4.29
72	4.55	4.55	4.66	4.66	4.40	4.40
73	4.34	4.34	4.44	4.44	4.20	4.20
77	4.91	4.91	5.03	5.03	4.76	4.76
78	4.79	4.79	4.91	4.91	4.64	4.64
79	4.79	4.79	4.90	4.90	4.64	4.64
80	4.66	4.66	4.78	4.78	4.52	4.52
81	4.83	4.83	4.95	4.95	4.68	4.68
82	4.61	4.61	4.72	4.72	4.46	4.46
84	4.39	4.39	4.50	4.50	4.25	4.25
85/116/117	4.60	4.60	4.71	4.71	4.45	4.45
87/86/97/108/109/125	4.60	4.60	4.71	4.71	4.46	4.46
89	4.37	4.37	4.47	4.47	4.23	4.23
91/88	4.36	4.36	4.47	4.47	4.23	4.23
92	4.55	4.55	4.66	4.66	4.41	4.41
94	4.33	4.33	4.44	4.44	4.20	4.20
95/93/98/100/102	4.40	4.40	4.50	4.50	4.26	4.26
96	4.09	4.09	4.19	4.19	3.96	3.96
99/83	4.58	4.58	4.69	4.69	4.44	4.44
101/90/113	4.58	4.58	4.69	4.69	4.44	4.44
103	4.32	4.32	4.43	4.43	4.19	4.19
104	4.01	4.01	4.10	4.10	3.88	3.88
105	4.94	4.94	5.06	5.06	4.79	4.79
106	4.82	4.82	4.93	4.93	4.67	4.67
109	4.60	4.60	4.71	4.71	4.46	4.46
110/115	4.69	4.69	4.80	4.80	4.54	4.54
111	4.77	4.77	4.88	4.88	4.62	4.62
112	4.60	4.60	4.71	4.71	4.45	4.45
114	4.86	4.86	4.97	4.97	4.70	4.70
118	4.94	4.94	5.06	5.06	4.78	4.78
119	4.64	4.64	4.75	4.75	4.49	4.49
120	4.81	4.81	4.92	4.92	4.65	4.65
121	4.53	4.53	4.64	4.64	4.38	4.38
122	4.88	4.88	5.00	5.00	4.73	4.73
123	4.86	4.86	4.98	4.98	4.71	4.71
124/107	4.86	4.86	4.98	4.98	4.71	4.71
126	5.12	5.12	5.24	5.24	4.96	4.96
127	5.00	5.00	5.12	5.12	4.84	4.84
130	4.80	4.80	4.92	4.92	4.65	4.65
131	4.58	4.58	4.69	4.69	4.43	4.43
132	4.62	4.62	4.73	4.73	4.47	4.47
133	4.77	4.77	4.88	4.88	4.62	4.62
134/143	4.57	4.57	4.68	4.68	4.43	4.43
136	4.32	4.32	4.42	4.42	4.18	4.18
137	4.77	4.77	4.89	4.89	4.62	4.62
138/129/160/163	4.86	4.86	4.97	4.97	4.70	4.70
139/140	4.56	4.56	4.66	4.66	4.41	4.41
141	4.78	4.78	4.90	4.90	4.63	4.63
142	4.48	4.48	4.59	4.59	4.34	4.34
144	4.58	4.58	4.69	4.69	4.43	4.43
145	4.25	4.25	4.35	4.35	4.11	4.11

Table D-1 continued

Sample ID	GL-SP2-P-051911	GL-WP2-P-051911	GL-DC2-P-052311	GL-HC2-P-052311	GL-AU2-P-051711	GL-BR2-P-051711
Deployment Date	**3/31/2011**	**3/31/2011**	**4/4/2011**	**4/4/2011**	**4/5/2011**	**4/5/2011**
Collection Date	**5/19/2011**	**5/19/2011**	**5/23/2011**	**5/23/2011**	**5/17/2011**	**5/17/2011**
146	4.80	4.80	4.92	4.92	4.65	4.65
148	4.58	4.58	4.69	4.69	4.43	4.43
149/147	4.63	4.63	4.74	4.74	4.48	4.48
150	4.80	4.80	4.92	4.92	4.65	4.65
151/135/154	4.57	4.57	4.68	4.68	4.43	4.43
152	4.25	4.25	4.36	4.36	4.12	4.12
153/168	4.85	4.85	4.96	4.96	4.69	4.69
155	4.20	4.20	4.30	4.30	4.07	4.07
156/157	5.13	5.13	5.25	5.25	4.97	4.97
158	4.90	4.90	5.02	5.02	4.75	4.75
159	5.03	5.03	5.15	5.15	4.87	4.87
161	4.81	4.81	4.92	4.92	4.65	4.65
162	5.07	5.07	5.19	5.19	4.91	4.91
164	4.89	4.89	5.00	5.00	4.73	4.73
165	4.80	4.80	4.91	4.91	4.65	4.65
167	5.13	5.13	5.25	5.25	4.97	4.97
169	5.33	5.33	5.46	5.46	5.16	5.16
170	5.07	5.07	5.19	5.19	4.90	4.90
171/173	4.83	4.83	4.94	4.94	4.67	4.67
172/192	5.03	5.03	5.15	5.15	4.87	4.87
174	4.83	4.83	4.95	4.95	4.68	4.68
175	4.80	4.80	4.92	4.92	4.65	4.65
176	4.52	4.52	4.63	4.63	4.38	4.38
177	4.82	4.82	4.94	4.94	4.67	4.67
178	4.80	4.80	4.91	4.91	4.64	4.64
179	4.52	4.52	4.63	4.63	4.38	4.38
180/193	5.07	5.07	5.19	5.19	4.90	4.90
181	4.76	4.76	4.88	4.88	4.61	4.61
182	4.78	4.78	4.90	4.90	4.63	4.63
183/185	4.84	4.84	4.96	4.96	4.69	4.69
184	4.47	4.47	4.58	4.58	4.33	4.33
186	4.44	4.44	4.54	4.54	4.30	4.30
187	4.82	4.82	4.94	4.94	4.67	4.67
188	4.46	4.46	4.57	4.57	4.32	4.32
189	4.84	4.84	4.95	4.95	4.68	4.68
190	5.11	5.11	5.23	5.23	4.95	4.95
191	5.12	5.12	5.24	5.24	4.95	4.95
192	5.02	5.02	5.14	5.14	4.86	4.86
194	5.29	5.29	5.42	5.42	5.12	5.12
195	5.04	5.04	5.16	5.16	4.88	4.88
196	5.07	5.07	5.19	5.19	4.90	4.90
197/200	4.74	4.74	4.85	4.85	4.59	4.59
198/199	5.01	5.01	5.13	5.13	4.85	4.85
201	5.05	5.05	5.17	5.17	4.89	4.89
202	4.74	4.74	4.85	4.85	4.59	4.59
203	5.05	5.05	5.17	5.17	4.89	4.89
205	5.33	5.33	5.46	5.46	5.16	5.16
206	5.27	5.27	5.40	5.40	5.11	5.11
207	4.95	4.95	5.07	5.07	4.80	4.80
208	4.94	4.94	5.06	5.06	4.78	4.78
209	5.17	5.17	5.30	5.30	5.01	5.01

Table D-1 continued

Sample ID	GL-DP2-P-051811	GL-JL2-P-051711	GL-LM2-P-051611	GL-MC2-P-051911	GL-NB2-P-051811	GL-PE2-P-051711
Deployment Date	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**
Collection Date	**5/18/2011**	**5/17/2011**	**5/16/2011**	**5/19/2011**	**5/18/2011**	**5/17/2011**
1	3.93	3.87	3.89	4.01	3.93	3.87
2	4.08	4.02	4.05	4.16	4.08	4.02
3	4.10	4.03	4.06	4.17	4.10	4.03
4	3.86	3.80	3.82	3.93	3.86	3.80
5	4.13	4.07	4.09	4.21	4.13	4.07
6	4.10	4.04	4.06	4.18	4.10	4.04
7	4.07	4.01	4.03	4.15	4.07	4.01
8	4.13	4.06	4.09	4.21	4.13	4.06
9	3.90	3.84	3.87	3.98	3.90	3.84
10	3.90	3.84	3.87	3.98	3.90	3.84
11	4.26	4.20	4.22	4.34	4.26	4.20
12/13	4.28	4.22	4.24	4.36	4.28	4.22
15	4.34	4.27	4.30	4.42	4.34	4.27
16	4.12	4.06	4.08	4.20	4.12	4.06
17	4.03	3.97	3.99	4.11	4.03	3.97
18/30	4.06	4.00	4.03	4.14	4.06	4.00
19	3.86	3.80	3.82	3.93	3.86	3.80
21	4.30	4.24	4.26	4.39	4.30	4.24
22	4.39	4.32	4.34	4.47	4.39	4.32
23	4.06	4.00	4.03	4.14	4.06	4.00
24	4.13	4.07	4.09	4.21	4.13	4.07
25	4.31	4.25	4.27	4.40	4.31	4.25
26	4.32	4.26	4.28	4.41	4.32	4.26
27	4.12	4.06	4.08	4.20	4.12	4.06
28/20	4.34	4.27	4.30	4.42	4.34	4.27
31	4.35	4.28	4.31	4.43	4.35	4.28
32	4.12	4.06	4.08	4.20	4.12	4.06
33	4.34	4.27	4.30	4.43	4.34	4.27
34	4.12	4.06	4.08	4.20	4.12	4.06
35	4.33	4.26	4.28	4.41	4.33	4.26
36	4.42	4.35	4.37	4.50	4.42	4.35
37	4.59	4.51	4.54	4.67	4.59	4.51
38	4.44	4.37	4.40	4.53	4.44	4.37
39	4.45	4.38	4.41	4.54	4.45	4.38
42	4.28	4.21	4.24	4.36	4.28	4.21
43	4.28	4.21	4.24	4.36	4.28	4.21
44/47/65	4.30	4.23	4.26	4.38	4.30	4.23
45/51	4.07	4.01	4.04	4.15	4.07	4.01
46	4.09	4.02	4.05	4.16	4.09	4.02
48	4.25	4.19	4.21	4.33	4.25	4.19
49/69	4.25	4.19	4.21	4.33	4.25	4.19
52	4.27	4.21	4.23	4.35	4.27	4.21
53/50	4.08	4.02	4.04	4.16	4.08	4.02
54	3.78	3.72	3.75	3.86	3.78	3.72
55	4.55	4.48	4.51	4.64	4.55	4.48
56	4.60	4.53	4.56	4.69	4.60	4.53
57	4.49	4.42	4.45	4.58	4.49	4.42
58	4.51	4.44	4.47	4.60	4.51	4.44
59/62/75	4.34	4.28	4.30	4.43	4.34	4.28
60	4.60	4.53	4.55	4.69	4.60	4.53
63	4.52	4.45	4.48	4.61	4.52	4.45
64	4.37	4.30	4.33	4.45	4.37	4.30
66	4.58	4.51	4.54	4.67	4.58	4.51

Table D-1 continued

Sample ID	GL-DP2-P-051811	GL-JL2-P-051711	GL-LM2-P-051611	GL-MC2-P-051911	GL-NB2-P-051811	GL-PE2-P-051711
Deployment Date	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**
Collection Date	**5/18/2011**	**5/17/2011**	**5/16/2011**	**5/19/2011**	**5/18/2011**	**5/17/2011**
67	4.54	4.48	4.50	4.63	4.54	4.48
68	4.46	4.40	4.42	4.55	4.46	4.40
70	4.58	4.51	4.54	4.67	4.58	4.51
71/40/41	4.35	4.29	4.31	4.44	4.35	4.29
72	4.47	4.40	4.43	4.56	4.47	4.40
73	4.26	4.20	4.22	4.35	4.26	4.20
77	4.83	4.76	4.78	4.92	4.83	4.76
78	4.71	4.64	4.67	4.81	4.71	4.64
79	4.71	4.64	4.66	4.80	4.71	4.64
80	4.59	4.52	4.54	4.68	4.59	4.52
81	4.75	4.68	4.71	4.84	4.75	4.68
82	4.53	4.46	4.49	4.62	4.53	4.46
84	4.32	4.25	4.28	4.40	4.32	4.25
85/116/117	4.52	4.45	4.48	4.61	4.52	4.45
87/86/97/108/109/125	4.52	4.46	4.48	4.61	4.52	4.46
89	4.29	4.23	4.25	4.38	4.29	4.23
91/88	4.29	4.23	4.25	4.37	4.29	4.23
92	4.48	4.41	4.43	4.56	4.48	4.41
94	4.26	4.20	4.22	4.34	4.26	4.20
95/93/98/100/102	4.32	4.26	4.28	4.41	4.32	4.26
96	4.03	3.96	3.99	4.10	4.03	3.96
99/83	4.51	4.44	4.46	4.59	4.51	4.44
101/90/113	4.51	4.44	4.46	4.59	4.51	4.44
103	4.25	4.19	4.21	4.33	4.25	4.19
104	3.94	3.88	3.90	4.02	3.94	3.88
105	4.86	4.79	4.82	4.96	4.86	4.79
106	4.74	4.67	4.69	4.83	4.74	4.67
109	4.53	4.46	4.48	4.61	4.53	4.46
110/115	4.61	4.54	4.57	4.70	4.61	4.54
111	4.69	4.62	4.65	4.78	4.69	4.62
112	4.52	4.45	4.48	4.61	4.52	4.45
114	4.78	4.70	4.73	4.87	4.78	4.70
118	4.86	4.78	4.81	4.95	4.86	4.78
119	4.56	4.49	4.51	4.65	4.56	4.49
120	4.73	4.65	4.68	4.82	4.73	4.65
121	4.45	4.38	4.41	4.54	4.45	4.38
122	4.80	4.73	4.76	4.89	4.80	4.73
123	4.78	4.71	4.73	4.87	4.78	4.71
124/107	4.78	4.71	4.73	4.87	4.78	4.71
126	5.04	4.96	4.99	5.13	5.04	4.96
127	4.92	4.84	4.87	5.01	4.92	4.84
130	4.72	4.65	4.68	4.81	4.72	4.65
131	4.50	4.43	4.46	4.59	4.50	4.43
132	4.54	4.47	4.50	4.63	4.54	4.47
133	4.69	4.62	4.64	4.78	4.69	4.62
134/143	4.50	4.43	4.45	4.59	4.50	4.43
136	4.25	4.18	4.21	4.33	4.25	4.18
137	4.69	4.62	4.65	4.78	4.69	4.62
138/129/160/163	4.77	4.70	4.73	4.87	4.77	4.70
139/140	4.48	4.41	4.44	4.57	4.48	4.41
141	4.70	4.63	4.66	4.79	4.70	4.63
142	4.41	4.34	4.36	4.49	4.41	4.34
144	4.50	4.43	4.46	4.59	4.50	4.43
145	4.18	4.11	4.14	4.26	4.18	4.11

Table D-1 continued

Sample ID	GL-DP2-P-051811	GL-JL2-P-051711	GL-LM2-P-051611	GL-MC2-P-051911	GL-NB2-P-051811	GL-PE2-P-051711
Deployment Date	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**
Collection Date	**5/18/2011**	**5/17/2011**	**5/16/2011**	**5/19/2011**	**5/18/2011**	**5/17/2011**
146	4.72	4.65	4.68	4.81	4.72	4.65
148	4.50	4.43	4.46	4.59	4.50	4.43
149/147	4.55	4.48	4.51	4.64	4.55	4.48
150	4.72	4.65	4.68	4.81	4.72	4.65
151/135/154	4.50	4.43	4.45	4.58	4.50	4.43
152	4.18	4.12	4.14	4.26	4.18	4.12
153/168	4.77	4.69	4.72	4.86	4.77	4.69
155	4.13	4.07	4.09	4.21	4.13	4.07
156/157	5.05	4.97	5.00	5.14	5.05	4.97
158	4.82	4.75	4.77	4.91	4.82	4.75
159	4.95	4.87	4.90	5.04	4.95	4.87
161	4.73	4.65	4.68	4.82	4.73	4.65
162	4.99	4.91	4.94	5.08	4.99	4.91
164	4.81	4.73	4.76	4.90	4.81	4.73
165	4.72	4.65	4.67	4.81	4.72	4.65
167	5.04	4.97	4.99	5.14	5.04	4.97
169	5.24	5.16	5.19	5.34	5.24	5.16
170	4.98	4.90	4.93	5.08	4.98	4.90
171/173	4.75	4.67	4.70	4.84	4.75	4.67
172/192	4.94	4.87	4.90	5.04	4.94	4.87
174	4.75	4.68	4.71	4.84	4.75	4.68
175	4.72	4.65	4.68	4.81	4.72	4.65
176	4.45	4.38	4.40	4.53	4.45	4.38
177	4.74	4.67	4.70	4.84	4.74	4.67
178	4.72	4.64	4.67	4.81	4.72	4.64
179	4.45	4.38	4.41	4.53	4.45	4.38
180/193	4.98	4.90	4.93	5.08	4.98	4.90
181	4.68	4.61	4.64	4.77	4.68	4.61
182	4.71	4.63	4.66	4.80	4.71	4.63
183/185	4.76	4.69	4.71	4.85	4.76	4.69
184	4.40	4.33	4.35	4.48	4.40	4.33
186	4.36	4.30	4.32	4.45	4.36	4.30
187	4.74	4.67	4.70	4.83	4.74	4.67
188	4.39	4.32	4.35	4.47	4.39	4.32
189	4.75	4.68	4.71	4.85	4.75	4.68
190	5.02	4.95	4.97	5.12	5.02	4.95
191	5.03	4.95	4.98	5.13	5.03	4.95
192	4.93	4.86	4.89	5.03	4.93	4.86
194	5.20	5.12	5.15	5.30	5.20	5.12
195	4.96	4.88	4.91	5.05	4.96	4.88
196	4.98	4.90	4.93	5.08	4.98	4.90
197/200	4.66	4.59	4.62	4.75	4.66	4.59
198/199	4.93	4.85	4.88	5.03	4.93	4.85
201	4.97	4.89	4.92	5.06	4.97	4.89
202	4.66	4.59	4.61	4.75	4.66	4.59
203	4.97	4.89	4.92	5.06	4.97	4.89
205	5.24	5.16	5.19	5.35	5.24	5.16
206	5.18	5.11	5.13	5.28	5.18	5.11
207	4.87	4.80	4.82	4.97	4.87	4.80
208	4.86	4.78	4.81	4.95	4.86	4.78
209	5.09	5.01	5.04	5.19	5.09	5.01

Table D-1 continued

Sample ID	GL-SC2-P-052411	GL-SM2-P-051611	GL-ZI2-P-051811	GL-NV2-P-051811	GL-WH2-P-052211	GL-CA2-P-051111
Deployment Date	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/6/2011**	**4/6/2011**	**4/11/2011**
Collection Date	**5/24/2011**	**5/16/2011**	**5/18/2011**	**5/18/2011**	**5/22/2011**	**5/11/2011**
1	4.10	3.89	3.93	3.89	4.10	4.15
2	4.26	4.05	4.08	4.04	4.26	4.31
3	4.28	4.06	4.10	4.05	4.27	4.32
4	4.03	3.82	3.86	3.82	4.02	4.07
5	4.31	4.09	4.13	4.08	4.30	4.36
6	4.28	4.06	4.10	4.06	4.27	4.33
7	4.25	4.03	4.07	4.03	4.24	4.30
8	4.31	4.09	4.13	4.08	4.30	4.36
9	4.08	3.87	3.90	3.86	4.07	4.12
10	4.08	3.87	3.90	3.86	4.07	4.12
11	4.45	4.22	4.26	4.22	4.44	4.50
12/13	4.47	4.24	4.28	4.24	4.46	4.52
15	4.53	4.30	4.34	4.29	4.52	4.58
16	4.30	4.08	4.12	4.08	4.29	4.35
17	4.21	3.99	4.03	3.99	4.20	4.26
18/30	4.24	4.03	4.06	4.02	4.24	4.29
19	4.03	3.82	3.86	3.82	4.02	4.07
21	4.49	4.26	4.30	4.26	4.49	4.54
22	4.58	4.34	4.39	4.34	4.57	4.63
23	4.24	4.03	4.06	4.02	4.24	4.29
24	4.31	4.09	4.13	4.09	4.30	4.36
25	4.50	4.27	4.31	4.27	4.49	4.55
26	4.51	4.28	4.32	4.28	4.50	4.56
27	4.30	4.08	4.12	4.08	4.29	4.35
28/20	4.53	4.30	4.34	4.29	4.52	4.58
31	4.54	4.31	4.35	4.30	4.53	4.59
32	4.30	4.08	4.12	4.08	4.29	4.35
33	4.53	4.30	4.34	4.30	4.52	4.58
34	4.30	4.08	4.12	4.08	4.29	4.35
35	4.52	4.28	4.33	4.28	4.51	4.57
36	4.61	4.37	4.42	4.37	4.60	4.66
37	4.79	4.54	4.59	4.54	4.78	4.84
38	4.64	4.40	4.44	4.39	4.63	4.69
39	4.65	4.41	4.45	4.40	4.64	4.70
42	4.47	4.24	4.28	4.23	4.46	4.52
43	4.47	4.24	4.28	4.23	4.46	4.52
44/47/65	4.49	4.26	4.30	4.25	4.48	4.54
45/51	4.25	4.04	4.07	4.03	4.25	4.30
46	4.26	4.05	4.09	4.04	4.26	4.31
48	4.44	4.21	4.25	4.21	4.43	4.49
49/69	4.44	4.21	4.25	4.21	4.43	4.49
52	4.46	4.23	4.27	4.23	4.45	4.51
53/50	4.26	4.04	4.08	4.03	4.25	4.31
54	3.95	3.75	3.78	3.74	3.94	3.99
55	4.75	4.51	4.55	4.51	4.75	4.81
56	4.80	4.56	4.60	4.55	4.79	4.86
57	4.69	4.45	4.49	4.45	4.68	4.74
58	4.71	4.47	4.51	4.46	4.70	4.76
59/62/75	4.53	4.30	4.34	4.30	4.53	4.59
60	4.80	4.55	4.60	4.55	4.79	4.85
63	4.72	4.48	4.52	4.47	4.71	4.77
64	4.56	4.33	4.37	4.32	4.55	4.61
66	4.78	4.54	4.58	4.53	4.77	4.83

Table D-1 continued

Sample ID	GL-SC2-P-052411	GL-SM2-P-051611	GL-ZI2-P-051811	GL-NV2-P-051811	GL-WH2-P-052211	GL-CA2-P-051111
Deployment Date	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/6/2011**	**4/6/2011**	**4/11/2011**
Collection Date	**5/24/2011**	**5/16/2011**	**5/18/2011**	**5/18/2011**	**5/22/2011**	**5/11/2011**
67	4.74	4.50	4.54	4.50	4.74	4.80
68	4.66	4.42	4.46	4.42	4.65	4.71
70	4.78	4.54	4.58	4.53	4.77	4.84
71/40/41	4.54	4.31	4.35	4.31	4.54	4.60
72	4.67	4.43	4.47	4.43	4.66	4.72
73	4.45	4.22	4.26	4.22	4.44	4.50
77	5.04	4.78	4.83	4.78	5.04	5.10
78	4.92	4.67	4.71	4.66	4.91	4.98
79	4.91	4.66	4.71	4.66	4.91	4.97
80	4.79	4.54	4.59	4.54	4.78	4.84
81	4.96	4.71	4.75	4.70	4.95	5.02
82	4.73	4.49	4.53	4.48	4.72	4.78
84	4.51	4.28	4.32	4.27	4.50	4.56
85/116/117	4.72	4.48	4.52	4.47	4.71	4.77
87/86/97/108/109/125	4.72	4.48	4.52	4.48	4.72	4.78
89	4.48	4.25	4.29	4.25	4.47	4.53
91/88	4.48	4.25	4.29	4.25	4.47	4.53
92	4.67	4.43	4.48	4.43	4.66	4.73
94	4.45	4.22	4.26	4.22	4.44	4.50
95/93/98/100/102	4.51	4.28	4.32	4.28	4.51	4.57
96	4.20	3.99	4.03	3.98	4.20	4.25
99/83	4.70	4.46	4.51	4.46	4.70	4.76
101/90/113	4.70	4.46	4.51	4.46	4.70	4.76
103	4.44	4.21	4.25	4.21	4.43	4.49
104	4.11	3.90	3.94	3.90	4.11	4.16
105	5.08	4.82	4.86	4.81	5.07	5.13
106	4.95	4.69	4.74	4.69	4.94	5.00
109	4.73	4.48	4.53	4.48	4.72	4.78
110/115	4.81	4.57	4.61	4.56	4.81	4.87
111	4.90	4.65	4.69	4.64	4.89	4.95
112	4.72	4.48	4.52	4.48	4.71	4.78
114	4.99	4.73	4.78	4.73	4.98	5.04
118	5.07	4.81	4.86	4.80	5.06	5.13
119	4.76	4.51	4.56	4.51	4.75	4.81
120	4.93	4.68	4.73	4.68	4.93	4.99
121	4.65	4.41	4.45	4.41	4.64	4.70
122	5.01	4.76	4.80	4.75	5.00	5.07
123	4.99	4.73	4.78	4.73	4.98	5.05
124/107	4.99	4.73	4.78	4.73	4.98	5.05
126	5.26	4.99	5.04	4.98	5.25	5.32
127	5.13	4.87	4.92	4.87	5.13	5.19
130	4.93	4.68	4.72	4.67	4.92	4.99
131	4.70	4.46	4.50	4.45	4.69	4.75
132	4.74	4.50	4.54	4.49	4.73	4.80
133	4.89	4.64	4.69	4.64	4.89	4.95
134/143	4.70	4.45	4.50	4.45	4.69	4.75
136	4.43	4.21	4.25	4.20	4.43	4.49
137	4.90	4.65	4.69	4.64	4.89	4.96
138/129/160/163	4.98	4.73	4.77	4.72	4.98	5.04
139/140	4.68	4.44	4.48	4.43	4.67	4.73
141	4.91	4.66	4.70	4.65	4.90	4.97
142	4.60	4.36	4.41	4.36	4.59	4.65
144	4.70	4.46	4.50	4.46	4.69	4.75
145	4.36	4.14	4.18	4.13	4.35	4.41

Table D-1 continued

Sample ID	GL-SC2-P-052411	GL-SM2-P-051611	GL-ZI2-P-051811	GL-NV2-P-051811	GL-WH2-P-052211	GL-CA2-P-051111
Deployment Date	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/6/2011**	**4/6/2011**	**4/11/2011**
Collection Date	**5/24/2011**	**5/16/2011**	**5/18/2011**	**5/18/2011**	**5/22/2011**	**5/11/2011**
146	4.93	4.68	4.72	4.67	4.92	4.99
148	4.70	4.46	4.50	4.46	4.69	4.75
149/147	4.75	4.51	4.55	4.51	4.75	4.81
150	4.93	4.68	4.72	4.67	4.92	4.99
151/135/154	4.69	4.45	4.50	4.45	4.69	4.75
152	4.37	4.14	4.18	4.14	4.36	4.42
153/168	4.98	4.72	4.77	4.72	4.97	5.03
155	4.31	4.09	4.13	4.09	4.30	4.36
156/157	5.27	5.00	5.05	4.99	5.26	5.33
158	5.03	4.77	4.82	4.77	5.02	5.09
159	5.17	4.90	4.95	4.90	5.16	5.23
161	4.93	4.68	4.73	4.68	4.93	4.99
162	5.21	4.94	4.99	4.93	5.20	5.27
164	5.02	4.76	4.81	4.75	5.01	5.07
165	4.93	4.67	4.72	4.67	4.92	4.98
167	5.26	4.99	5.04	4.99	5.26	5.33
169	5.47	5.19	5.24	5.19	5.46	5.53
170	5.20	4.93	4.98	4.93	5.19	5.26
171/173	4.96	4.70	4.75	4.70	4.95	5.01
172/192	5.16	4.90	4.94	4.89	5.15	5.22
174	4.96	4.71	4.75	4.70	4.95	5.02
175	4.93	4.68	4.72	4.67	4.92	4.98
176	4.64	4.40	4.45	4.40	4.63	4.70
177	4.95	4.70	4.74	4.69	4.94	5.01
178	4.92	4.67	4.72	4.67	4.91	4.98
179	4.64	4.41	4.45	4.40	4.64	4.70
180/193	5.20	4.93	4.98	4.93	5.19	5.26
181	4.89	4.64	4.68	4.63	4.88	4.94
182	4.91	4.66	4.71	4.66	4.90	4.97
183/185	4.97	4.71	4.76	4.71	4.96	5.03
184	4.59	4.35	4.40	4.35	4.58	4.64
186	4.55	4.32	4.36	4.32	4.55	4.61
187	4.95	4.70	4.74	4.69	4.94	5.01
188	4.58	4.35	4.39	4.34	4.57	4.63
189	4.96	4.71	4.75	4.70	4.96	5.02
190	5.24	4.97	5.02	4.97	5.23	5.30
191	5.25	4.98	5.03	4.98	5.24	5.31
192	5.15	4.89	4.93	4.88	5.14	5.21
194	5.43	5.15	5.20	5.15	5.42	5.49
195	5.17	4.91	4.96	4.90	5.17	5.23
196	5.20	4.93	4.98	4.93	5.19	5.26
197/200	4.87	4.62	4.66	4.61	4.86	4.92
198/199	5.15	4.88	4.93	4.88	5.14	5.21
201	5.18	4.92	4.97	4.91	5.18	5.24
202	4.86	4.61	4.66	4.61	4.86	4.92
203	5.18	4.92	4.97	4.91	5.18	5.24
205	5.47	5.19	5.24	5.19	5.47	5.54
206	5.41	5.13	5.18	5.13	5.40	5.47
207	5.08	4.82	4.87	4.82	5.08	5.14
208	5.07	4.81	4.86	4.81	5.06	5.13
209	5.31	5.04	5.09	5.03	5.30	5.37

Table D-1 continued

Sample ID	GL-LM2-P-070811	GL-CA2-P-070511	GL-IT2-P-071611	GL-CP2-P-070111	GL-JP2-P-070111	GL-NP2-P-070111
Deployment Date	**5/4/2011**	**5/11/2011**	**5/16/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**
Collection Date	**7/8/2011**	**7/5/2011**	**7/16/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**
1	4.69	4.59	4.86	4.62	4.62	4.62
2	4.87	4.76	5.05	4.80	4.80	4.80
3	4.89	4.78	5.07	4.81	4.81	4.81
4	4.60	4.50	4.77	4.53	4.53	4.53
5	4.92	4.82	5.11	4.85	4.85	4.85
6	4.89	4.78	5.07	4.82	4.82	4.82
7	4.86	4.75	5.04	4.78	4.78	4.78
8	4.92	4.81	5.10	4.85	4.85	4.85
9	4.66	4.55	4.83	4.59	4.59	4.59
10	4.66	4.55	4.83	4.59	4.59	4.59
11	5.08	4.97	5.27	5.01	5.01	5.01
12/13	5.11	4.99	5.30	5.03	5.03	5.03
15	5.18	5.06	5.37	5.10	5.10	5.10
16	4.92	4.81	5.10	4.84	4.84	4.84
17	4.81	4.70	4.99	4.74	4.74	4.74
18/30	4.85	4.74	5.03	4.78	4.78	4.78
19	4.60	4.50	4.77	4.53	4.53	4.53
21	5.13	5.02	5.32	5.06	5.06	5.06
22	5.23	5.12	5.43	5.15	5.15	5.15
23	4.85	4.74	5.03	4.78	4.78	4.78
24	4.93	4.82	5.11	4.85	4.85	4.85
25	5.14	5.03	5.34	5.07	5.07	5.07
26	5.16	5.04	5.35	5.08	5.08	5.08
27	4.92	4.81	5.10	4.84	4.84	4.84
28/20	5.17	5.06	5.37	5.10	5.10	5.10
31	5.19	5.07	5.38	5.11	5.11	5.11
32	4.92	4.81	5.10	4.84	4.84	4.84
33	5.18	5.06	5.37	5.10	5.10	5.10
34	4.92	4.81	5.10	4.84	4.84	4.84
35	5.16	5.05	5.35	5.08	5.08	5.08
36	5.27	5.15	5.46	5.19	5.19	5.19
37	5.47	5.35	5.67	5.39	5.39	5.39
38	5.30	5.18	5.49	5.22	5.22	5.22
39	5.31	5.19	5.51	5.23	5.23	5.23
42	5.11	4.99	5.30	5.03	5.03	5.03
43	5.11	4.99	5.30	5.03	5.03	5.03
44/47/65	5.13	5.02	5.32	5.05	5.05	5.05
45/51	4.86	4.75	5.04	4.79	4.79	4.79
46	4.87	4.77	5.05	4.80	4.80	4.80
48	5.07	4.96	5.26	5.00	5.00	5.00
49/69	5.07	4.96	5.26	5.00	5.00	5.00
52	5.10	4.98	5.28	5.02	5.02	5.02
53/50	4.86	4.76	5.04	4.79	4.79	4.79
54	4.51	4.41	4.68	4.44	4.44	4.44
55	5.43	5.31	5.64	5.35	5.35	5.35
56	5.49	5.37	5.69	5.41	5.41	5.41
57	5.36	5.24	5.56	5.28	5.28	5.28
58	5.38	5.26	5.58	5.30	5.30	5.30
59/62/75	5.18	5.07	5.37	5.10	5.10	5.10
60	5.48	5.36	5.69	5.40	5.40	5.40
63	5.39	5.27	5.59	5.31	5.31	5.31
64	5.21	5.10	5.41	5.14	5.14	5.14
66	5.46	5.34	5.67	5.38	5.38	5.38

Table D-1 continued

Sample ID	GL-LM2-P-070811	GL-CA2-P-070511	GL-IT2-P-071611	GL-CP2-P-070111	GL-JP2-P-070111	GL-NP2-P-070111
Deployment Date	**5/4/2011**	**5/11/2011**	**5/16/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**
Collection Date	**7/8/2011**	**7/5/2011**	**7/16/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**
67	5.42	5.30	5.62	5.34	5.34	5.34
68	5.32	5.21	5.52	5.25	5.25	5.25
70	5.46	5.34	5.67	5.38	5.38	5.38
71/40/41	5.19	5.08	5.38	5.11	5.11	5.11
72	5.34	5.22	5.53	5.26	5.26	5.26
73	5.09	4.97	5.28	5.01	5.01	5.01
77	5.76	5.64	5.98	5.68	5.68	5.68
78	5.62	5.50	5.83	5.54	5.54	5.54
79	5.62	5.49	5.82	5.53	5.53	5.53
80	5.47	5.35	5.67	5.39	5.39	5.39
81	5.67	5.54	5.88	5.58	5.58	5.58
82	5.40	5.28	5.60	5.32	5.32	5.32
84	5.15	5.04	5.34	5.07	5.07	5.07
85/116/117	5.39	5.27	5.59	5.31	5.31	5.31
87/86/97/108/109/125	5.40	5.28	5.60	5.32	5.32	5.32
89	5.12	5.01	5.31	5.05	5.05	5.05
91/88	5.12	5.01	5.31	5.04	5.04	5.04
92	5.34	5.22	5.54	5.26	5.26	5.26
94	5.08	4.97	5.27	5.01	5.01	5.01
95/93/98/100/102	5.16	5.04	5.35	5.08	5.08	5.08
96	4.80	4.70	4.98	4.73	4.73	4.73
99/83	5.38	5.26	5.58	5.30	5.30	5.30
101/90/113	5.37	5.26	5.57	5.29	5.29	5.29
103	5.07	4.96	5.26	5.00	5.00	5.00
104	4.70	4.60	4.88	4.63	4.63	4.63
105	5.80	5.67	6.02	5.71	5.71	5.71
106	5.65	5.53	5.86	5.57	5.57	5.57
109	5.40	5.28	5.60	5.32	5.32	5.32
110/115	5.50	5.38	5.71	5.42	5.42	5.42
111	5.60	5.47	5.80	5.51	5.51	5.51
112	5.40	5.28	5.60	5.32	5.32	5.32
114	5.70	5.57	5.91	5.61	5.61	5.61
118	5.79	5.66	6.01	5.71	5.71	5.71
119	5.44	5.32	5.64	5.36	5.36	5.36
120	5.64	5.51	5.85	5.55	5.55	5.55
121	5.31	5.19	5.51	5.23	5.23	5.23
122	5.73	5.60	5.94	5.64	5.64	5.64
123	5.70	5.57	5.91	5.62	5.62	5.62
124/107	5.70	5.57	5.91	5.62	5.62	5.62
126	6.01	5.87	6.23	5.92	5.92	5.92
127	5.87	5.74	6.08	5.78	5.78	5.78
130	5.63	5.51	5.84	5.55	5.55	5.55
131	5.37	5.25	5.57	5.29	5.29	5.29
132	5.42	5.30	5.62	5.34	5.34	5.34
133	5.59	5.47	5.80	5.51	5.51	5.51
134/143	5.37	5.25	5.57	5.29	5.29	5.29
136	5.07	4.96	5.26	4.99	4.99	4.99
137	5.60	5.47	5.81	5.52	5.52	5.52
138/129/160/163	5.70	5.57	5.91	5.61	5.61	5.61
139/140	5.34	5.23	5.54	5.26	5.26	5.26
141	5.61	5.49	5.82	5.53	5.53	5.53
142	5.26	5.14	5.45	5.18	5.18	5.18
144	5.37	5.25	5.57	5.29	5.29	5.29
145	4.98	4.87	5.17	4.91	4.91	4.91

Table D-1 continued

Sample ID	GL-LM2-P-070811	GL-CA2-P-070511	GL-IT2-P-071611	GL-CP2-P-070111	GL-JP2-P-070111	GL-NP2-P-070111
Deployment Date	**5/4/2011**	**5/11/2011**	**5/16/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**
Collection Date	**7/8/2011**	**7/5/2011**	**7/16/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**
146	5.63	5.51	5.84	5.55	5.55	5.55
148	5.37	5.25	5.57	5.29	5.29	5.29
149/147	5.43	5.31	5.63	5.35	5.35	5.35
150	5.63	5.51	5.84	5.55	5.55	5.55
151/135/154	5.37	5.25	5.56	5.29	5.29	5.29
152	4.99	4.88	5.18	4.92	4.92	4.92
153/168	5.69	5.56	5.90	5.60	5.60	5.60
155	4.93	4.82	5.11	4.85	4.85	4.85
156/157	6.02	5.89	6.24	5.93	5.93	5.93
158	5.75	5.62	5.96	5.66	5.66	5.66
159	5.90	5.77	6.12	5.82	5.82	5.82
161	5.64	5.51	5.85	5.55	5.55	5.55
162	5.95	5.82	6.17	5.86	5.86	5.86
164	5.73	5.60	5.94	5.65	5.65	5.65
165	5.63	5.50	5.84	5.55	5.55	5.55
167	6.02	5.88	6.24	5.93	5.93	5.93
169	6.25	6.11	6.48	6.16	6.16	6.16
170	5.94	5.81	6.16	5.85	5.85	5.85
171/173	5.66	5.54	5.87	5.58	5.58	5.58
172/192	5.90	5.77	6.12	5.81	5.81	5.81
174	5.67	5.54	5.88	5.58	5.58	5.58
175	5.63	5.51	5.84	5.55	5.55	5.55
176	5.31	5.19	5.50	5.23	5.23	5.23
177	5.66	5.53	5.87	5.58	5.58	5.58
178	5.63	5.50	5.83	5.54	5.54	5.54
179	5.31	5.19	5.50	5.23	5.23	5.23
180/193	5.94	5.81	6.16	5.85	5.85	5.85
181	5.59	5.46	5.79	5.50	5.50	5.50
182	5.61	5.49	5.82	5.53	5.53	5.53
183/185	5.68	5.55	5.89	5.59	5.59	5.59
184	5.25	5.13	5.44	5.17	5.17	5.17
186	5.21	5.09	5.40	5.13	5.13	5.13
187	5.66	5.53	5.87	5.57	5.57	5.57
188	5.24	5.12	5.43	5.16	5.16	5.16
189	5.67	5.55	5.88	5.59	5.59	5.59
190	5.99	5.86	6.21	5.90	5.90	5.90
191	6.00	5.87	6.22	5.91	5.91	5.91
192	5.89	5.76	6.11	5.80	5.80	5.80
194	6.21	6.07	6.44	6.11	6.11	6.11
195	5.91	5.78	6.13	5.83	5.83	5.83
196	5.94	5.81	6.16	5.85	5.85	5.85
197/200	5.56	5.44	5.77	5.48	5.48	5.48
198/199	5.88	5.75	6.10	5.79	5.79	5.79
201	5.92	5.79	6.14	5.84	5.84	5.84
202	5.56	5.43	5.76	5.47	5.47	5.47
203	5.92	5.79	6.14	5.84	5.84	5.84
205	6.26	6.12	6.49	6.16	6.16	6.16
206	6.18	6.05	6.41	6.09	6.09	6.09
207	5.81	5.68	6.03	5.72	5.72	5.72
208	5.80	5.67	6.01	5.71	5.71	5.71
209	6.07	5.93	6.29	5.98	5.98	5.98

Table D-1 continued

Sample ID	GL-PP2-P-070111	GL-SP2-P-070111	GL-WP2-P-070111	GL-DC2-P-062911	GL-HC2-P-062911	GL-DP2-P-070511
Deployment Date	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/23/2011**	**5/23/2011**	**5/24/2011**
Collection Date	**7/1/2011**	**7/1/2011**	**7/1/2011**	**6/29/2011**	**6/29/2011**	**7/6/2011**
1	4.62	4.62	4.62	4.67	4.67	4.74
2	4.80	4.80	4.80	4.85	4.85	4.92
3	4.81	4.81	4.81	4.86	4.86	4.93
4	4.53	4.53	4.53	4.58	4.58	4.65
5	4.85	4.85	4.85	4.90	4.90	4.97
6	4.82	4.82	4.82	4.87	4.87	4.94
7	4.78	4.78	4.78	4.83	4.83	4.90
8	4.85	4.85	4.85	4.90	4.90	4.97
9	4.59	4.59	4.59	4.63	4.63	4.70
10	4.59	4.59	4.59	4.63	4.63	4.70
11	5.01	5.01	5.01	5.06	5.06	5.13
12/13	5.03	5.03	5.03	5.08	5.08	5.16
15	5.10	5.10	5.10	5.15	5.15	5.23
16	4.84	4.84	4.84	4.89	4.89	4.96
17	4.74	4.74	4.74	4.78	4.78	4.86
18/30	4.78	4.78	4.78	4.82	4.82	4.90
19	4.53	4.53	4.53	4.58	4.58	4.65
21	5.06	5.06	5.06	5.11	5.11	5.18
22	5.15	5.15	5.15	5.20	5.20	5.28
23	4.78	4.78	4.78	4.82	4.82	4.90
24	4.85	4.85	4.85	4.90	4.90	4.98
25	5.07	5.07	5.07	5.12	5.12	5.20
26	5.08	5.08	5.08	5.13	5.13	5.21
27	4.84	4.84	4.84	4.89	4.89	4.96
28/20	5.10	5.10	5.10	5.15	5.15	5.23
31	5.11	5.11	5.11	5.16	5.16	5.24
32	4.84	4.84	4.84	4.89	4.89	4.96
33	5.10	5.10	5.10	5.15	5.15	5.23
34	4.84	4.84	4.84	4.89	4.89	4.96
35	5.08	5.08	5.08	5.13	5.13	5.21
36	5.19	5.19	5.19	5.24	5.24	5.32
37	5.39	5.39	5.39	5.44	5.44	5.52
38	5.22	5.22	5.22	5.27	5.27	5.35
39	5.23	5.23	5.23	5.28	5.28	5.36
42	5.03	5.03	5.03	5.08	5.08	5.16
43	5.03	5.03	5.03	5.08	5.08	5.16
44/47/65	5.05	5.05	5.05	5.10	5.10	5.18
45/51	4.79	4.79	4.79	4.83	4.83	4.91
46	4.80	4.80	4.80	4.85	4.85	4.92
48	5.00	5.00	5.00	5.04	5.04	5.12
49/69	5.00	5.00	5.00	5.05	5.05	5.12
52	5.02	5.02	5.02	5.07	5.07	5.15
53/50	4.79	4.79	4.79	4.84	4.84	4.91
54	4.44	4.44	4.44	4.49	4.49	4.56
55	5.35	5.35	5.35	5.40	5.40	5.49
56	5.41	5.41	5.41	5.46	5.46	5.54
57	5.28	5.28	5.28	5.33	5.33	5.41
58	5.30	5.30	5.30	5.35	5.35	5.44
59/62/75	5.10	5.10	5.10	5.15	5.15	5.23
60	5.40	5.40	5.40	5.46	5.46	5.54
63	5.31	5.31	5.31	5.36	5.36	5.44
64	5.14	5.14	5.14	5.19	5.19	5.26
66	5.38	5.38	5.38	5.43	5.43	5.52

Table D-1 continued

Sample ID	GL-PP2-P-070111	GL-SP2-P-070111	GL-WP2-P-070111	GL-DC2-P-062911	GL-HC2-P-062911	GL-DP2-P-070511
Deployment Date	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/23/2011**	**5/23/2011**	**5/24/2011**
Collection Date	**7/1/2011**	**7/1/2011**	**7/1/2011**	**6/29/2011**	**6/29/2011**	**7/6/2011**
67	5.34	5.34	5.34	5.39	5.39	5.47
68	5.25	5.25	5.25	5.30	5.30	5.38
70	5.38	5.38	5.38	5.43	5.43	5.52
71/40/41	5.11	5.11	5.11	5.16	5.16	5.24
72	5.26	5.26	5.26	5.31	5.31	5.39
73	5.01	5.01	5.01	5.06	5.06	5.14
77	5.68	5.68	5.68	5.73	5.73	5.82
78	5.54	5.54	5.54	5.59	5.59	5.68
79	5.53	5.53	5.53	5.59	5.59	5.67
80	5.39	5.39	5.39	5.44	5.44	5.52
81	5.58	5.58	5.58	5.64	5.64	5.72
82	5.32	5.32	5.32	5.37	5.37	5.46
84	5.07	5.07	5.07	5.12	5.12	5.20
85/116/117	5.31	5.31	5.31	5.36	5.36	5.44
87/86/97/108/109/125	5.32	5.32	5.32	5.37	5.37	5.45
89	5.05	5.05	5.05	5.09	5.09	5.17
91/88	5.04	5.04	5.04	5.09	5.09	5.17
92	5.26	5.26	5.26	5.31	5.31	5.39
94	5.01	5.01	5.01	5.06	5.06	5.13
95/93/98/100/102	5.08	5.08	5.08	5.13	5.13	5.21
96	4.73	4.73	4.73	4.78	4.78	4.85
99/83	5.30	5.30	5.30	5.35	5.35	5.43
101/90/113	5.29	5.29	5.29	5.35	5.35	5.43
103	5.00	5.00	5.00	5.04	5.04	5.12
104	4.63	4.63	4.63	4.68	4.68	4.75
105	5.71	5.71	5.71	5.77	5.77	5.86
106	5.57	5.57	5.57	5.62	5.62	5.71
109	5.32	5.32	5.32	5.37	5.37	5.45
110/115	5.42	5.42	5.42	5.47	5.47	5.56
111	5.51	5.51	5.51	5.57	5.57	5.65
112	5.32	5.32	5.32	5.37	5.37	5.45
114	5.61	5.61	5.61	5.67	5.67	5.75
118	5.71	5.71	5.71	5.76	5.76	5.85
119	5.36	5.36	5.36	5.41	5.41	5.49
120	5.55	5.55	5.55	5.61	5.61	5.69
121	5.23	5.23	5.23	5.28	5.28	5.36
122	5.64	5.64	5.64	5.70	5.70	5.78
123	5.62	5.62	5.62	5.67	5.67	5.76
124/107	5.62	5.62	5.62	5.67	5.67	5.76
126	5.92	5.92	5.92	5.98	5.98	6.07
127	5.78	5.78	5.78	5.84	5.84	5.92
130	5.55	5.55	5.55	5.60	5.60	5.69
131	5.29	5.29	5.29	5.34	5.34	5.42
132	5.34	5.34	5.34	5.39	5.39	5.47
133	5.51	5.51	5.51	5.56	5.56	5.65
134/143	5.29	5.29	5.29	5.34	5.34	5.42
136	4.99	4.99	4.99	5.04	5.04	5.12
137	5.52	5.52	5.52	5.57	5.57	5.65
138/129/160/163	5.61	5.61	5.61	5.67	5.67	5.75
139/140	5.26	5.26	5.26	5.32	5.32	5.40
141	5.53	5.53	5.53	5.58	5.58	5.67
142	5.18	5.18	5.18	5.23	5.23	5.31
144	5.29	5.29	5.29	5.34	5.34	5.43
145	4.91	4.91	4.91	4.96	4.96	5.03

Table D-1 continued

Sample ID	GL-PP2-P-070111	GL-SP2-P-070111	GL-WP2-P-070111	GL-DC2-P-062911	GL-HC2-P-062911	GL-DP2-P-070511
Deployment Date	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/23/2011**	**5/23/2011**	**5/24/2011**
Collection Date	**7/1/2011**	**7/1/2011**	**7/1/2011**	**6/29/2011**	**6/29/2011**	**7/6/2011**
146	5.55	5.55	5.55	5.60	5.60	5.69
148	5.29	5.29	5.29	5.34	5.34	5.43
149/147	5.35	5.35	5.35	5.40	5.40	5.49
150	5.55	5.55	5.55	5.60	5.60	5.69
151/135/154	5.29	5.29	5.29	5.34	5.34	5.42
152	4.92	4.92	4.92	4.96	4.96	5.04
153/168	5.60	5.60	5.60	5.66	5.66	5.74
155	4.85	4.85	4.85	4.90	4.90	4.97
156/157	5.93	5.93	5.93	5.99	5.99	6.08
158	5.66	5.66	5.66	5.72	5.72	5.81
159	5.82	5.82	5.82	5.87	5.87	5.96
161	5.55	5.55	5.55	5.61	5.61	5.69
162	5.86	5.86	5.86	5.92	5.92	6.01
164	5.65	5.65	5.65	5.70	5.70	5.79
165	5.55	5.55	5.55	5.60	5.60	5.68
167	5.93	5.93	5.93	5.98	5.98	6.08
169	6.16	6.16	6.16	6.22	6.22	6.31
170	5.85	5.85	5.85	5.91	5.91	6.00
171/173	5.58	5.58	5.58	5.63	5.63	5.72
172/192	5.81	5.81	5.81	5.87	5.87	5.95
174	5.58	5.58	5.58	5.64	5.64	5.72
175	5.55	5.55	5.55	5.60	5.60	5.69
176	5.23	5.23	5.23	5.28	5.28	5.36
177	5.58	5.58	5.58	5.63	5.63	5.72
178	5.54	5.54	5.54	5.60	5.60	5.68
179	5.23	5.23	5.23	5.28	5.28	5.36
180/193	5.85	5.85	5.85	5.91	5.91	6.00
181	5.50	5.50	5.50	5.56	5.56	5.64
182	5.53	5.53	5.53	5.58	5.58	5.67
183/185	5.59	5.59	5.59	5.65	5.65	5.73
184	5.17	5.17	5.17	5.22	5.22	5.30
186	5.13	5.13	5.13	5.18	5.18	5.26
187	5.57	5.57	5.57	5.63	5.63	5.71
188	5.16	5.16	5.16	5.21	5.21	5.29
189	5.59	5.59	5.59	5.64	5.64	5.73
190	5.90	5.90	5.90	5.96	5.96	6.05
191	5.91	5.91	5.91	5.97	5.97	6.06
192	5.80	5.80	5.80	5.86	5.86	5.94
194	6.11	6.11	6.11	6.17	6.17	6.27
195	5.83	5.83	5.83	5.88	5.88	5.97
196	5.85	5.85	5.85	5.91	5.91	6.00
197/200	5.48	5.48	5.48	5.53	5.53	5.61
198/199	5.79	5.79	5.79	5.85	5.85	5.94
201	5.84	5.84	5.84	5.89	5.89	5.98
202	5.47	5.47	5.47	5.53	5.53	5.61
203	5.84	5.84	5.84	5.89	5.89	5.98
205	6.16	6.16	6.16	6.22	6.22	6.32
206	6.09	6.09	6.09	6.15	6.15	6.25
207	5.72	5.72	5.72	5.78	5.78	5.87
208	5.71	5.71	5.71	5.77	5.77	5.85
209	5.98	5.98	5.98	6.04	6.04	6.13

Table D-1 continued

Sample ID	GL-JL2-P-070511	GL-MC2-P-070811	GL-PE2-P-070511	GL-SM2-P-070511	GL-ZI2-P-070511	GL-AU2-P-070511
Deployment Date	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/25/2011**
Collection Date	**7/5/2011**	**7/8/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**
1	4.72	4.79	4.72	4.72	4.72	4.72
2	4.91	4.97	4.91	4.91	4.91	4.90
3	4.92	4.99	4.92	4.92	4.92	4.92
4	4.63	4.70	4.63	4.63	4.63	4.63
5	4.96	5.03	4.96	4.96	4.96	4.96
6	4.93	4.99	4.93	4.93	4.93	4.92
7	4.89	4.96	4.89	4.89	4.89	4.89
8	4.96	5.02	4.96	4.96	4.96	4.95
9	4.69	4.75	4.69	4.69	4.69	4.69
10	4.69	4.75	4.69	4.69	4.69	4.69
11	5.12	5.19	5.12	5.12	5.12	5.12
12/13	5.15	5.21	5.15	5.15	5.15	5.14
15	5.21	5.28	5.21	5.21	5.21	5.21
16	4.95	5.02	4.95	4.95	4.95	4.95
17	4.85	4.91	4.85	4.85	4.85	4.84
18/30	4.88	4.95	4.88	4.88	4.88	4.88
19	4.64	4.70	4.64	4.64	4.64	4.63
21	5.17	5.24	5.17	5.17	5.17	5.17
22	5.27	5.34	5.27	5.27	5.27	5.27
23	4.88	4.95	4.88	4.88	4.88	4.88
24	4.96	5.03	4.96	4.96	4.96	4.96
25	5.18	5.25	5.18	5.18	5.18	5.18
26	5.19	5.26	5.19	5.19	5.19	5.19
27	4.95	5.02	4.95	4.95	4.95	4.95
28/20	5.21	5.28	5.21	5.21	5.21	5.21
31	5.23	5.29	5.23	5.23	5.23	5.22
32	4.95	5.02	4.95	4.95	4.95	4.95
33	5.22	5.29	5.22	5.22	5.22	5.21
34	4.95	5.02	4.95	4.95	4.95	4.95
35	5.20	5.27	5.20	5.20	5.20	5.19
36	5.31	5.38	5.31	5.31	5.31	5.30
37	5.51	5.58	5.51	5.51	5.51	5.50
38	5.34	5.41	5.34	5.34	5.34	5.33
39	5.35	5.42	5.35	5.35	5.35	5.34
42	5.14	5.21	5.14	5.14	5.14	5.14
43	5.14	5.21	5.14	5.14	5.14	5.14
44/47/65	5.17	5.24	5.17	5.17	5.17	5.16
45/51	4.90	4.96	4.90	4.90	4.90	4.89
46	4.91	4.97	4.91	4.91	4.91	4.90
48	5.11	5.18	5.11	5.11	5.11	5.10
49/69	5.11	5.18	5.11	5.11	5.11	5.11
52	5.13	5.20	5.13	5.13	5.13	5.13
53/50	4.90	4.96	4.90	4.90	4.90	4.90
54	4.55	4.61	4.55	4.55	4.55	4.54
55	5.47	5.55	5.47	5.47	5.47	5.47
56	5.53	5.60	5.53	5.53	5.53	5.52
57	5.40	5.47	5.40	5.40	5.40	5.39
58	5.42	5.49	5.42	5.42	5.42	5.42
59/62/75	5.22	5.29	5.22	5.22	5.22	5.21
60	5.52	5.60	5.52	5.52	5.52	5.52
63	5.43	5.50	5.43	5.43	5.43	5.43
64	5.25	5.32	5.25	5.25	5.25	5.25
66	5.50	5.58	5.50	5.50	5.50	5.50

Table D-1 continued

Sample ID	GL-JL2-P-070511	GL-MC2-P-070811	GL-PE2-P-070511	GL-SM2-P-070511	GL-ZI2-P-070511	GL-AU2-P-070511
Deployment Date	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/25/2011**
Collection Date	**7/5/2011**	**7/8/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**
67	5.46	5.53	5.46	5.46	5.46	5.46
68	5.36	5.43	5.36	5.36	5.36	5.36
70	5.50	5.58	5.50	5.50	5.50	5.50
71/40/41	5.23	5.30	5.23	5.23	5.23	5.23
72	5.38	5.45	5.38	5.38	5.38	5.37
73	5.12	5.19	5.12	5.12	5.12	5.12
77	5.81	5.88	5.81	5.81	5.81	5.80
78	5.67	5.74	5.67	5.67	5.67	5.66
79	5.66	5.73	5.66	5.66	5.66	5.65
80	5.51	5.58	5.51	5.51	5.51	5.51
81	5.71	5.78	5.71	5.71	5.71	5.70
82	5.44	5.52	5.44	5.44	5.44	5.44
84	5.19	5.26	5.19	5.19	5.19	5.18
85/116/117	5.43	5.50	5.43	5.43	5.43	5.43
87/86/97/108/109/125	5.44	5.51	5.44	5.44	5.44	5.43
89	5.16	5.23	5.16	5.16	5.16	5.15
91/88	5.16	5.22	5.16	5.16	5.16	5.15
92	5.38	5.45	5.38	5.38	5.38	5.37
94	5.12	5.19	5.12	5.12	5.12	5.12
95/93/98/100/102	5.20	5.27	5.20	5.20	5.20	5.19
96	4.84	4.90	4.84	4.84	4.84	4.83
99/83	5.42	5.49	5.42	5.42	5.42	5.41
101/90/113	5.41	5.49	5.41	5.41	5.41	5.41
103	5.11	5.18	5.11	5.11	5.11	5.10
104	4.74	4.80	4.74	4.74	4.74	4.73
105	5.84	5.92	5.84	5.84	5.84	5.84
106	5.69	5.77	5.69	5.69	5.69	5.69
109	5.44	5.51	5.44	5.44	5.44	5.43
110/115	5.54	5.61	5.54	5.54	5.54	5.54
111	5.64	5.71	5.64	5.64	5.64	5.63
112	5.44	5.51	5.44	5.44	5.44	5.43
114	5.74	5.82	5.74	5.74	5.74	5.74
118	5.83	5.91	5.83	5.83	5.83	5.83
119	5.48	5.55	5.48	5.48	5.48	5.47
120	5.68	5.75	5.68	5.68	5.68	5.67
121	5.35	5.42	5.35	5.35	5.35	5.35
122	5.77	5.85	5.77	5.77	5.77	5.76
123	5.74	5.82	5.74	5.74	5.74	5.74
124/107	5.74	5.82	5.74	5.74	5.74	5.74
126	6.05	6.13	6.05	6.05	6.05	6.05
127	5.91	5.99	5.91	5.91	5.91	5.90
130	5.68	5.75	5.68	5.68	5.68	5.67
131	5.41	5.48	5.41	5.41	5.41	5.40
132	5.46	5.53	5.46	5.46	5.46	5.45
133	5.63	5.71	5.63	5.63	5.63	5.63
134/143	5.41	5.48	5.41	5.41	5.41	5.40
136	5.11	5.17	5.11	5.11	5.11	5.10
137	5.64	5.71	5.64	5.64	5.64	5.63
138/129/160/163	5.74	5.81	5.74	5.74	5.74	5.73
139/140	5.38	5.45	5.38	5.38	5.38	5.38
141	5.65	5.73	5.65	5.65	5.65	5.65
142	5.29	5.36	5.29	5.29	5.29	5.29
144	5.41	5.48	5.41	5.41	5.41	5.41
145	5.02	5.09	5.02	5.02	5.02	5.02

Table D-1 continued

Sample ID	GL-JL2-P-070511	GL-MC2-P-070811	GL-PE2-P-070511	GL-SM2-P-070511	GL-ZI2-P-070511	GL-AU2-P-070511
Deployment Date	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/25/2011**
Collection Date	**7/5/2011**	**7/8/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**
146	5.68	5.75	5.68	5.68	5.68	5.67
148	5.41	5.48	5.41	5.41	5.41	5.41
149/147	5.47	5.54	5.47	5.47	5.47	5.47
150	5.68	5.75	5.68	5.68	5.68	5.67
151/135/154	5.40	5.48	5.40	5.40	5.40	5.40
152	5.03	5.09	5.03	5.03	5.03	5.02
153/168	5.73	5.81	5.73	5.73	5.73	5.72
155	4.96	5.03	4.96	4.96	4.96	4.96
156/157	6.06	6.14	6.06	6.06	6.06	6.06
158	5.79	5.87	5.79	5.79	5.79	5.79
159	5.95	6.03	5.95	5.95	5.95	5.94
161	5.68	5.76	5.68	5.68	5.68	5.67
162	5.99	6.07	5.99	5.99	5.99	5.99
164	5.77	5.85	5.77	5.77	5.77	5.77
165	5.67	5.75	5.67	5.67	5.67	5.67
167	6.06	6.14	6.06	6.06	6.06	6.06
169	6.30	6.38	6.30	6.30	6.30	6.29
170	5.99	6.07	5.99	5.99	5.99	5.98
171/173	5.71	5.78	5.71	5.71	5.71	5.70
172/192	5.94	6.02	5.94	5.94	5.94	5.93
174	5.71	5.79	5.71	5.71	5.71	5.71
175	5.67	5.75	5.67	5.67	5.67	5.67
176	5.34	5.41	5.34	5.34	5.34	5.34
177	5.70	5.78	5.70	5.70	5.70	5.70
178	5.67	5.74	5.67	5.67	5.67	5.66
179	5.35	5.42	5.35	5.35	5.35	5.34
180/193	5.99	6.07	5.99	5.99	5.99	5.98
181	5.63	5.70	5.63	5.63	5.63	5.62
182	5.65	5.73	5.65	5.65	5.65	5.65
183/185	5.72	5.79	5.72	5.72	5.72	5.71
184	5.28	5.35	5.28	5.28	5.28	5.28
186	5.24	5.31	5.24	5.24	5.24	5.24
187	5.70	5.77	5.70	5.70	5.70	5.69
188	5.27	5.34	5.27	5.27	5.27	5.27
189	5.71	5.79	5.71	5.71	5.71	5.71
190	6.04	6.12	6.04	6.04	6.04	6.03
191	6.05	6.13	6.05	6.05	6.05	6.04
192	5.93	6.01	5.93	5.93	5.93	5.92
194	6.25	6.33	6.25	6.25	6.25	6.25
195	5.96	6.04	5.96	5.96	5.96	5.95
196	5.99	6.07	5.99	5.99	5.99	5.98
197/200	5.60	5.68	5.60	5.60	5.60	5.60
198/199	5.92	6.00	5.92	5.92	5.92	5.92
201	5.97	6.05	5.97	5.97	5.97	5.96
202	5.60	5.67	5.60	5.60	5.60	5.59
203	5.97	6.05	5.97	5.97	5.97	5.96
205	6.30	6.39	6.30	6.30	6.30	6.30
206	6.23	6.31	6.23	6.23	6.23	6.22
207	5.85	5.93	5.85	5.85	5.85	5.85
208	5.84	5.92	5.84	5.84	5.84	5.83
209	6.11	6.19	6.11	6.11	6.11	6.11

Table D-1 continued

Sample ID	GL-BR2-P-070511	GL-NB2-P-070511	GL-NV2-P-070511	GL-DC2-P-080911	GL-HC2-P-080911	GL-CP2-P-082311
Deployment Date	**5/25/2011**	**5/25/2011**	**5/25/2011**	**6/30/2011**	**6/30/2011**	**7/1/2011**
Collection Date	**7/5/2011**	**7/5/2011**	**7/5/2011**	**8/8/2011**	**8/8/2011**	**8/23/2011**
1	4.72	4.72	4.72	5.03	5.03	5.07
2	4.90	4.90	4.90	5.23	5.23	5.26
3	4.92	4.92	4.92	5.24	5.24	5.28
4	4.63	4.63	4.63	4.94	4.94	4.97
5	4.96	4.96	4.96	5.28	5.28	5.32
6	4.92	4.92	4.92	5.25	5.25	5.28
7	4.89	4.89	4.89	5.21	5.21	5.24
8	4.95	4.95	4.95	5.28	5.28	5.32
9	4.69	4.69	4.69	5.00	5.00	5.03
10	4.69	4.69	4.69	5.00	5.00	5.03
11	5.12	5.12	5.12	5.45	5.45	5.49
12/13	5.14	5.14	5.14	5.48	5.48	5.52
15	5.21	5.21	5.21	5.55	5.55	5.59
16	4.95	4.95	4.95	5.27	5.27	5.31
17	4.84	4.84	4.84	5.16	5.16	5.19
18/30	4.88	4.88	4.88	5.20	5.20	5.24
19	4.63	4.63	4.63	4.94	4.94	4.97
21	5.17	5.17	5.17	5.51	5.51	5.54
22	5.27	5.27	5.27	5.61	5.61	5.65
23	4.88	4.88	4.88	5.20	5.20	5.24
24	4.96	4.96	4.96	5.29	5.29	5.32
25	5.18	5.18	5.18	5.52	5.52	5.56
26	5.19	5.19	5.19	5.53	5.53	5.57
27	4.95	4.95	4.95	5.27	5.27	5.31
28/20	5.21	5.21	5.21	5.55	5.55	5.59
31	5.22	5.22	5.22	5.57	5.57	5.60
32	4.95	4.95	4.95	5.27	5.27	5.31
33	5.21	5.21	5.21	5.56	5.56	5.59
34	4.95	4.95	4.95	5.27	5.27	5.31
35	5.19	5.19	5.19	5.54	5.54	5.57
36	5.30	5.30	5.30	5.65	5.65	5.69
37	5.50	5.50	5.50	5.87	5.87	5.91
38	5.33	5.33	5.33	5.68	5.68	5.72
39	5.34	5.34	5.34	5.70	5.70	5.74
42	5.14	5.14	5.14	5.48	5.48	5.51
43	5.14	5.14	5.14	5.48	5.48	5.51
44/47/65	5.16	5.16	5.16	5.50	5.50	5.54
45/51	4.89	4.89	4.89	5.21	5.21	5.25
46	4.90	4.90	4.90	5.23	5.23	5.26
48	5.10	5.10	5.10	5.44	5.44	5.48
49/69	5.11	5.11	5.11	5.44	5.44	5.48
52	5.13	5.13	5.13	5.47	5.47	5.50
53/50	4.90	4.90	4.90	5.22	5.22	5.25
54	4.54	4.54	4.54	4.84	4.84	4.87
55	5.47	5.47	5.47	5.83	5.83	5.87
56	5.52	5.52	5.52	5.89	5.89	5.93
57	5.39	5.39	5.39	5.75	5.75	5.79
58	5.42	5.42	5.42	5.78	5.78	5.81
59/62/75	5.21	5.21	5.21	5.56	5.56	5.60
60	5.52	5.52	5.52	5.88	5.88	5.92
63	5.43	5.43	5.43	5.78	5.78	5.82
64	5.25	5.25	5.25	5.59	5.59	5.63
66	5.50	5.50	5.50	5.86	5.86	5.90

Table D-1 continued

Sample ID	GL-BR2-P-070511	GL-NB2-P-070511	GL-NV2-P-070511	GL-DC2-P-080911	GL-HC2-P-080911	GL-CP2-P-082311
Deployment Date	**5/25/2011**	**5/25/2011**	**5/25/2011**	**6/30/2011**	**6/30/2011**	**7/1/2011**
Collection Date	**7/5/2011**	**7/5/2011**	**7/5/2011**	**8/8/2011**	**8/8/2011**	**8/23/2011**
67	5.46	5.46	5.46	5.82	5.82	5.86
68	5.36	5.36	5.36	5.71	5.71	5.75
70	5.50	5.50	5.50	5.86	5.86	5.90
71/40/41	5.23	5.23	5.23	5.57	5.57	5.61
72	5.37	5.37	5.37	5.73	5.73	5.76
73	5.12	5.12	5.12	5.46	5.46	5.49
77	5.80	5.80	5.80	6.18	6.18	6.22
78	5.66	5.66	5.66	6.03	6.03	6.07
79	5.65	5.65	5.65	6.03	6.03	6.07
80	5.51	5.51	5.51	5.87	5.87	5.91
81	5.70	5.70	5.70	6.08	6.08	6.12
82	5.44	5.44	5.44	5.80	5.80	5.84
84	5.18	5.18	5.18	5.53	5.53	5.56
85/116/117	5.43	5.43	5.43	5.78	5.78	5.82
87/86/97/108/109/125	5.43	5.43	5.43	5.79	5.79	5.83
89	5.15	5.15	5.15	5.50	5.50	5.53
91/88	5.15	5.15	5.15	5.49	5.49	5.53
92	5.37	5.37	5.37	5.73	5.73	5.77
94	5.12	5.12	5.12	5.45	5.45	5.49
95/93/98/100/102	5.19	5.19	5.19	5.53	5.53	5.57
96	4.83	4.83	4.83	5.15	5.15	5.19
99/83	5.41	5.41	5.41	5.77	5.77	5.81
101/90/113	5.41	5.41	5.41	5.77	5.77	5.81
103	5.10	5.10	5.10	5.44	5.44	5.48
104	4.73	4.73	4.73	5.04	5.04	5.08
105	5.84	5.84	5.84	6.22	6.22	6.26
106	5.69	5.69	5.69	6.06	6.06	6.11
109	5.43	5.43	5.43	5.79	5.79	5.83
110/115	5.54	5.54	5.54	5.90	5.90	5.94
111	5.63	5.63	5.63	6.00	6.00	6.04
112	5.43	5.43	5.43	5.79	5.79	5.83
114	5.74	5.74	5.74	6.11	6.11	6.15
118	5.83	5.83	5.83	6.21	6.21	6.26
119	5.47	5.47	5.47	5.83	5.83	5.87
120	5.67	5.67	5.67	6.05	6.05	6.09
121	5.35	5.35	5.35	5.70	5.70	5.74
122	5.76	5.76	5.76	6.15	6.15	6.19
123	5.74	5.74	5.74	6.12	6.12	6.16
124/107	5.74	5.74	5.74	6.12	6.12	6.16
126	6.05	6.05	6.05	6.45	6.45	6.49
127	5.90	5.90	5.90	6.29	6.29	6.34
130	5.67	5.67	5.67	6.04	6.04	6.08
131	5.40	5.40	5.40	5.76	5.76	5.80
132	5.45	5.45	5.45	5.81	5.81	5.85
133	5.63	5.63	5.63	6.00	6.00	6.04
134/143	5.40	5.40	5.40	5.76	5.76	5.80
136	5.10	5.10	5.10	5.44	5.44	5.47
137	5.63	5.63	5.63	6.01	6.01	6.05
138/129/160/163	5.73	5.73	5.73	6.11	6.11	6.15
139/140	5.38	5.38	5.38	5.73	5.73	5.77
141	5.65	5.65	5.65	6.02	6.02	6.06
142	5.29	5.29	5.29	5.64	5.64	5.68
144	5.41	5.41	5.41	5.76	5.76	5.80
145	5.02	5.02	5.02	5.35	5.35	5.38

Table D-1 continued

Sample ID	GL-BR2-P-070511	GL-NB2-P-070511	GL-NV2-P-070511	GL-DC2-P-080911	GL-HC2-P-080911	GL-CP2-P-082311
Deployment Date	**5/25/2011**	**5/25/2011**	**5/25/2011**	**6/30/2011**	**6/30/2011**	**7/1/2011**
Collection Date	**7/5/2011**	**7/5/2011**	**7/5/2011**	**8/8/2011**	**8/8/2011**	**8/23/2011**
146	5.67	5.67	5.67	6.04	6.04	6.08
148	5.41	5.41	5.41	5.76	5.76	5.80
149/147	5.47	5.47	5.47	5.83	5.83	5.87
150	5.67	5.67	5.67	6.04	6.04	6.08
151/135/154	5.40	5.40	5.40	5.76	5.76	5.80
152	5.02	5.02	5.02	5.35	5.35	5.39
153/168	5.72	5.72	5.72	6.10	6.10	6.14
155	4.96	4.96	4.96	5.28	5.28	5.32
156/157	6.06	6.06	6.06	6.46	6.46	6.50
158	5.79	5.79	5.79	6.17	6.17	6.21
159	5.94	5.94	5.94	6.33	6.33	6.38
161	5.67	5.67	5.67	6.05	6.05	6.09
162	5.99	5.99	5.99	6.38	6.38	6.43
164	5.77	5.77	5.77	6.15	6.15	6.19
165	5.67	5.67	5.67	6.04	6.04	6.08
167	6.06	6.06	6.06	6.46	6.46	6.50
169	6.29	6.29	6.29	6.71	6.71	6.75
170	5.98	5.98	5.98	6.38	6.38	6.42
171/173	5.70	5.70	5.70	6.08	6.08	6.12
172/192	5.93	5.93	5.93	6.33	6.33	6.37
174	5.71	5.71	5.71	6.08	6.08	6.12
175	5.67	5.67	5.67	6.04	6.04	6.08
176	5.34	5.34	5.34	5.69	5.69	5.73
177	5.70	5.70	5.70	6.07	6.07	6.11
178	5.66	5.66	5.66	6.04	6.04	6.08
179	5.34	5.34	5.34	5.69	5.69	5.73
180/193	5.98	5.98	5.98	6.38	6.38	6.42
181	5.62	5.62	5.62	5.99	5.99	6.03
182	5.65	5.65	5.65	6.02	6.02	6.06
183/185	5.71	5.71	5.71	6.09	6.09	6.13
184	5.28	5.28	5.28	5.63	5.63	5.67
186	5.24	5.24	5.24	5.59	5.59	5.62
187	5.69	5.69	5.69	6.07	6.07	6.11
188	5.27	5.27	5.27	5.62	5.62	5.65
189	5.71	5.71	5.71	6.09	6.09	6.13
190	6.03	6.03	6.03	6.43	6.43	6.47
191	6.04	6.04	6.04	6.44	6.44	6.48
192	5.92	5.92	5.92	6.32	6.32	6.36
194	6.25	6.25	6.25	6.66	6.66	6.70
195	5.95	5.95	5.95	6.34	6.34	6.39
196	5.98	5.98	5.98	6.38	6.38	6.42
197/200	5.60	5.60	5.60	5.97	5.97	6.01
198/199	5.92	5.92	5.92	6.31	6.31	6.35
201	5.96	5.96	5.96	6.36	6.36	6.40
202	5.59	5.59	5.59	5.96	5.96	6.00
203	5.96	5.96	5.96	6.36	6.36	6.40
205	6.30	6.30	6.30	6.71	6.71	6.76
206	6.22	6.22	6.22	6.64	6.64	6.68
207	5.85	5.85	5.85	6.23	6.23	6.28
208	5.83	5.83	5.83	6.22	6.22	6.26
209	6.11	6.11	6.11	6.51	6.51	6.55

Table D-1 continued

Sample ID	GL-JP2-P-082311	GL-NP2-P-082311	GL-PP2-P-082311	GL-SP2-P-082311	GL-WP2-P-090611	GL-IT2-P-090611
Deployment Date	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/19/2011**
Collection Date	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**9/6/2011**	**9/6/2011**
1	5.07	5.07	5.07	5.07	5.07	5.04
2	5.26	5.26	5.26	5.26	5.27	5.24
3	5.28	5.28	5.28	5.28	5.28	5.25
4	4.97	4.97	4.97	4.97	4.98	4.95
5	5.32	5.32	5.32	5.32	5.33	5.29
6	5.28	5.28	5.28	5.28	5.29	5.26
7	5.24	5.24	5.24	5.24	5.25	5.22
8	5.32	5.32	5.32	5.32	5.32	5.29
9	5.03	5.03	5.03	5.03	5.04	5.01
10	5.03	5.03	5.03	5.03	5.04	5.01
11	5.49	5.49	5.49	5.49	5.50	5.47
12/13	5.52	5.52	5.52	5.52	5.52	5.49
15	5.59	5.59	5.59	5.59	5.60	5.57
16	5.31	5.31	5.31	5.31	5.32	5.28
17	5.19	5.19	5.19	5.19	5.20	5.17
18/30	5.24	5.24	5.24	5.24	5.24	5.21
19	4.97	4.97	4.97	4.97	4.98	4.95
21	5.54	5.54	5.54	5.54	5.55	5.52
22	5.65	5.65	5.65	5.65	5.66	5.63
23	5.24	5.24	5.24	5.24	5.24	5.21
24	5.32	5.32	5.32	5.32	5.33	5.30
25	5.56	5.56	5.56	5.56	5.56	5.53
26	5.57	5.57	5.57	5.57	5.58	5.54
27	5.31	5.31	5.31	5.31	5.32	5.28
28/20	5.59	5.59	5.59	5.59	5.60	5.56
31	5.60	5.60	5.60	5.60	5.61	5.58
32	5.31	5.31	5.31	5.31	5.32	5.28
33	5.59	5.59	5.59	5.59	5.60	5.57
34	5.31	5.31	5.31	5.31	5.32	5.28
35	5.57	5.57	5.57	5.57	5.58	5.55
36	5.69	5.69	5.69	5.69	5.70	5.67
37	5.91	5.91	5.91	5.91	5.92	5.88
38	5.72	5.72	5.72	5.72	5.73	5.70
39	5.74	5.74	5.74	5.74	5.74	5.71
42	5.51	5.51	5.51	5.51	5.52	5.49
43	5.51	5.51	5.51	5.51	5.52	5.49
44/47/65	5.54	5.54	5.54	5.54	5.55	5.51
45/51	5.25	5.25	5.25	5.25	5.26	5.23
46	5.26	5.26	5.26	5.26	5.27	5.24
48	5.48	5.48	5.48	5.48	5.48	5.45
49/69	5.48	5.48	5.48	5.48	5.49	5.45
52	5.50	5.50	5.50	5.50	5.51	5.48
53/50	5.25	5.25	5.25	5.25	5.26	5.23
54	4.87	4.87	4.87	4.87	4.88	4.85
55	5.87	5.87	5.87	5.87	5.88	5.84
56	5.93	5.93	5.93	5.93	5.93	5.90
57	5.79	5.79	5.79	5.79	5.80	5.76
58	5.81	5.81	5.81	5.81	5.82	5.79
59/62/75	5.60	5.60	5.60	5.60	5.60	5.57
60	5.92	5.92	5.92	5.92	5.93	5.90
63	5.82	5.82	5.82	5.82	5.83	5.80
64	5.63	5.63	5.63	5.63	5.64	5.60
66	5.90	5.90	5.90	5.90	5.91	5.87

Table D-1 continued

Sample ID	GL-JP2-P-082311	GL-NP2-P-082311	GL-PP2-P-082311	GL-SP2-P-082311	GL-WP2-P-090611	GL-IT2-P-090611
Deployment Date	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/19/2011**
Collection Date	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**9/6/2011**	**9/6/2011**
67	5.86	5.86	5.86	5.86	5.86	5.83
68	5.75	5.75	5.75	5.75	5.76	5.72
70	5.90	5.90	5.90	5.90	5.91	5.87
71/40/41	5.61	5.61	5.61	5.61	5.62	5.58
72	5.76	5.76	5.76	5.76	5.77	5.74
73	5.49	5.49	5.49	5.49	5.50	5.47
77	6.22	6.22	6.22	6.22	6.23	6.20
78	6.07	6.07	6.07	6.07	6.08	6.05
79	6.07	6.07	6.07	6.07	6.07	6.04
80	5.91	5.91	5.91	5.91	5.92	5.88
81	6.12	6.12	6.12	6.12	6.13	6.09
82	5.84	5.84	5.84	5.84	5.84	5.81
84	5.56	5.56	5.56	5.56	5.57	5.54
85/116/117	5.82	5.82	5.82	5.82	5.83	5.80
87/86/97/108/109/125	5.83	5.83	5.83	5.83	5.84	5.80
89	5.53	5.53	5.53	5.53	5.54	5.51
91/88	5.53	5.53	5.53	5.53	5.54	5.50
92	5.77	5.77	5.77	5.77	5.77	5.74
94	5.49	5.49	5.49	5.49	5.50	5.47
95/93/98/100/102	5.57	5.57	5.57	5.57	5.58	5.55
96	5.19	5.19	5.19	5.19	5.19	5.16
99/83	5.81	5.81	5.81	5.81	5.82	5.78
101/90/113	5.81	5.81	5.81	5.81	5.81	5.78
103	5.48	5.48	5.48	5.48	5.49	5.45
104	5.08	5.08	5.08	5.08	5.08	5.05
105	6.26	6.26	6.26	6.26	6.27	6.24
106	6.11	6.11	6.11	6.11	6.11	6.08
109	5.83	5.83	5.83	5.83	5.84	5.81
110/115	5.94	5.94	5.94	5.94	5.95	5.91
111	6.04	6.04	6.04	6.04	6.05	6.02
112	5.83	5.83	5.83	5.83	5.84	5.80
114	6.15	6.15	6.15	6.15	6.16	6.13
118	6.26	6.26	6.26	6.26	6.26	6.23
119	5.87	5.87	5.87	5.87	5.88	5.85
120	6.09	6.09	6.09	6.09	6.10	6.06
121	5.74	5.74	5.74	5.74	5.75	5.71
122	6.19	6.19	6.19	6.19	6.20	6.16
123	6.16	6.16	6.16	6.16	6.17	6.13
124/107	6.16	6.16	6.16	6.16	6.17	6.13
126	6.49	6.49	6.49	6.49	6.50	6.46
127	6.34	6.34	6.34	6.34	6.35	6.31
130	6.08	6.08	6.08	6.08	6.09	6.06
131	5.80	5.80	5.80	5.80	5.81	5.77
132	5.85	5.85	5.85	5.85	5.86	5.83
133	6.04	6.04	6.04	6.04	6.05	6.01
134/143	5.80	5.80	5.80	5.80	5.80	5.77
136	5.47	5.47	5.47	5.47	5.48	5.45
137	6.05	6.05	6.05	6.05	6.06	6.02
138/129/160/163	6.15	6.15	6.15	6.15	6.16	6.12
139/140	5.77	5.77	5.77	5.77	5.78	5.74
141	6.06	6.06	6.06	6.06	6.07	6.03
142	5.68	5.68	5.68	5.68	5.68	5.65
144	5.80	5.80	5.80	5.80	5.81	5.78
145	5.38	5.38	5.38	5.38	5.39	5.36

Table D-1 continued

Sample ID	GL-JP2-P-082311	GL-NP2-P-082311	GL-PP2-P-082311	GL-SP2-P-082311	GL-WP2-P-090611	GL-IT2-P-090611
Deployment Date	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/19/2011**
Collection Date	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**9/6/2011**	**9/6/2011**
146	6.08	6.08	6.08	6.08	6.09	6.06
148	5.80	5.80	5.80	5.80	5.81	5.78
149/147	5.87	5.87	5.87	5.87	5.88	5.84
150	6.08	6.08	6.08	6.08	6.09	6.06
151/135/154	5.80	5.80	5.80	5.80	5.80	5.77
152	5.39	5.39	5.39	5.39	5.40	5.37
153/168	6.14	6.14	6.14	6.14	6.15	6.11
155	5.32	5.32	5.32	5.32	5.33	5.30
156/157	6.50	6.50	6.50	6.50	6.51	6.47
158	6.21	6.21	6.21	6.21	6.22	6.18
159	6.38	6.38	6.38	6.38	6.38	6.35
161	6.09	6.09	6.09	6.09	6.10	6.06
162	6.43	6.43	6.43	6.43	6.43	6.40
164	6.19	6.19	6.19	6.19	6.20	6.16
165	6.08	6.08	6.08	6.08	6.09	6.05
167	6.50	6.50	6.50	6.50	6.51	6.47
169	6.75	6.75	6.75	6.75	6.76	6.72
170	6.42	6.42	6.42	6.42	6.43	6.39
171/173	6.12	6.12	6.12	6.12	6.13	6.09
172/192	6.37	6.37	6.37	6.37	6.38	6.34
174	6.12	6.12	6.12	6.12	6.13	6.09
175	6.08	6.08	6.08	6.08	6.09	6.05
176	5.73	5.73	5.73	5.73	5.74	5.70
177	6.11	6.11	6.11	6.11	6.12	6.08
178	6.08	6.08	6.08	6.08	6.08	6.05
179	5.73	5.73	5.73	5.73	5.74	5.71
180/193	6.42	6.42	6.42	6.42	6.43	6.39
181	6.03	6.03	6.03	6.03	6.04	6.01
182	6.06	6.06	6.06	6.06	6.07	6.03
183/185	6.13	6.13	6.13	6.13	6.14	6.10
184	5.67	5.67	5.67	5.67	5.67	5.64
186	5.62	5.62	5.62	5.62	5.63	5.60
187	6.11	6.11	6.11	6.11	6.12	6.08
188	5.65	5.65	5.65	5.65	5.66	5.63
189	6.13	6.13	6.13	6.13	6.13	6.10
190	6.47	6.47	6.47	6.47	6.48	6.44
191	6.48	6.48	6.48	6.48	6.49	6.45
192	6.36	6.36	6.36	6.36	6.37	6.33
194	6.70	6.70	6.70	6.70	6.71	6.67
195	6.39	6.39	6.39	6.39	6.40	6.36
196	6.42	6.42	6.42	6.42	6.43	6.39
197/200	6.01	6.01	6.01	6.01	6.01	5.98
198/199	6.35	6.35	6.35	6.35	6.36	6.32
201	6.40	6.40	6.40	6.40	6.41	6.37
202	6.00	6.00	6.00	6.00	6.01	5.97
203	6.40	6.40	6.40	6.40	6.41	6.37
205	6.76	6.76	6.76	6.76	6.77	6.73
206	6.68	6.68	6.68	6.68	6.69	6.65
207	6.28	6.28	6.28	6.28	6.28	6.25
208	6.26	6.26	6.26	6.26	6.27	6.23
209	6.55	6.55	6.55	6.55	6.56	6.52

Table D-1 continued

Sample ID	GL-DC2-P-092811	GL-HC2-P-092811	GL-JW2-P-100311	GL-JW4-P-100311	GL-WH2-P-101411	GL-CP2-P-092911
Deployment Date	**8/9/2011**	**8/9/2011**	**8/12/2011**	**8/12/2011**	**8/16/2011**	**8/23/2011**
Collection Date	**9/28/2011**	**9/28/2011**	**10/3/2011**	**10/3/2011**	**10/14/2011**	**9/29/2011**
1	5.17	5.17	5.16	5.16	5.20	5.13
2	5.37	5.37	5.36	5.36	5.40	5.33
3	5.38	5.38	5.38	5.38	5.42	5.35
4	5.07	5.07	5.06	5.06	5.10	5.03
5	5.43	5.43	5.42	5.42	5.46	5.39
6	5.39	5.39	5.38	5.38	5.42	5.35
7	5.35	5.35	5.34	5.34	5.38	5.31
8	5.42	5.42	5.42	5.42	5.46	5.38
9	5.13	5.13	5.13	5.13	5.16	5.10
10	5.13	5.13	5.13	5.13	5.16	5.10
11	5.60	5.60	5.59	5.59	5.64	5.56
12/13	5.63	5.63	5.62	5.62	5.66	5.59
15	5.70	5.70	5.70	5.70	5.74	5.66
16	5.42	5.42	5.41	5.41	5.45	5.38
17	5.30	5.30	5.29	5.29	5.33	5.26
18/30	5.34	5.34	5.34	5.34	5.37	5.30
19	5.07	5.07	5.07	5.07	5.10	5.04
21	5.66	5.66	5.65	5.65	5.69	5.62
22	5.77	5.77	5.76	5.76	5.80	5.72
23	5.34	5.34	5.34	5.34	5.37	5.30
24	5.43	5.43	5.42	5.42	5.46	5.39
25	5.67	5.67	5.66	5.66	5.70	5.63
26	5.68	5.68	5.67	5.67	5.72	5.64
27	5.42	5.42	5.41	5.41	5.45	5.38
28/20	5.70	5.70	5.69	5.69	5.74	5.66
31	5.72	5.72	5.71	5.71	5.75	5.67
32	5.42	5.42	5.41	5.41	5.45	5.38
33	5.71	5.71	5.70	5.70	5.74	5.67
34	5.42	5.42	5.41	5.41	5.45	5.38
35	5.69	5.69	5.68	5.68	5.72	5.65
36	5.81	5.81	5.80	5.80	5.84	5.76
37	6.03	6.03	6.02	6.02	6.06	5.98
38	5.84	5.84	5.83	5.83	5.87	5.80
39	5.85	5.85	5.84	5.84	5.89	5.81
42	5.63	5.63	5.62	5.62	5.66	5.59
43	5.63	5.63	5.62	5.62	5.66	5.59
44/47/65	5.65	5.65	5.64	5.64	5.69	5.61
45/51	5.36	5.36	5.35	5.35	5.39	5.32
46	5.37	5.37	5.36	5.36	5.40	5.33
48	5.59	5.59	5.58	5.58	5.62	5.55
49/69	5.59	5.59	5.58	5.58	5.62	5.55
52	5.61	5.61	5.61	5.61	5.65	5.57
53/50	5.36	5.36	5.35	5.35	5.39	5.32
54	4.97	4.97	4.97	4.97	5.00	4.94
55	5.99	5.99	5.98	5.98	6.02	5.94
56	6.05	6.05	6.04	6.04	6.08	6.00
57	5.91	5.91	5.90	5.90	5.94	5.86
58	5.93	5.93	5.92	5.92	5.97	5.89
59/62/75	5.71	5.71	5.70	5.70	5.74	5.67
60	6.04	6.04	6.04	6.04	6.08	6.00
63	5.94	5.94	5.93	5.93	5.98	5.90
64	5.74	5.74	5.74	5.74	5.78	5.70
66	6.02	6.02	6.01	6.01	6.06	5.98

Table D-1 continued

Sample ID	GL-DC2-P-092811	GL-HC2-P-092811	GL-JW2-P-100311	GL-JW4-P-100311	GL-WH2-P-101411	GL-CP2-P-092911
Deployment Date	**8/9/2011**	**8/9/2011**	**8/12/2011**	**8/12/2011**	**8/16/2011**	**8/23/2011**
Collection Date	**9/28/2011**	**9/28/2011**	**10/3/2011**	**10/3/2011**	**10/14/2011**	**9/29/2011**
67	5.97	5.97	5.97	5.97	6.01	5.93
68	5.87	5.87	5.86	5.86	5.90	5.83
70	6.02	6.02	6.01	6.01	6.06	5.98
71/40/41	5.72	5.72	5.71	5.71	5.76	5.68
72	5.88	5.88	5.87	5.87	5.92	5.84
73	5.61	5.61	5.60	5.60	5.64	5.57
77	6.35	6.35	6.34	6.34	6.39	6.31
78	6.20	6.20	6.19	6.19	6.23	6.15
79	6.19	6.19	6.18	6.18	6.23	6.14
80	6.03	6.03	6.02	6.02	6.07	5.99
81	6.24	6.24	6.24	6.24	6.28	6.20
82	5.95	5.95	5.95	5.95	5.99	5.91
84	5.67	5.67	5.67	5.67	5.71	5.63
85/116/117	5.94	5.94	5.93	5.93	5.98	5.90
87/86/97/108/109/125	5.95	5.95	5.94	5.94	5.98	5.91
89	5.64	5.64	5.64	5.64	5.68	5.60
91/88	5.64	5.64	5.63	5.63	5.67	5.60
92	5.88	5.88	5.88	5.88	5.92	5.84
94	5.60	5.60	5.59	5.59	5.64	5.56
95/93/98/100/102	5.68	5.68	5.68	5.68	5.72	5.64
96	5.29	5.29	5.28	5.28	5.32	5.25
99/83	5.92	5.92	5.92	5.92	5.96	5.88
101/90/113	5.92	5.92	5.91	5.91	5.96	5.88
103	5.59	5.59	5.58	5.58	5.62	5.55
104	5.18	5.18	5.17	5.17	5.21	5.14
105	6.39	6.39	6.38	6.38	6.43	6.35
106	6.23	6.23	6.22	6.22	6.27	6.18
109	5.95	5.95	5.94	5.94	5.99	5.91
110/115	6.06	6.06	6.05	6.05	6.10	6.02
111	6.17	6.17	6.16	6.16	6.20	6.12
112	5.95	5.95	5.94	5.94	5.98	5.90
114	6.28	6.28	6.27	6.27	6.32	6.23
118	6.38	6.38	6.37	6.37	6.42	6.34
119	5.99	5.99	5.98	5.98	6.03	5.95
120	6.21	6.21	6.20	6.20	6.25	6.17
121	5.85	5.85	5.85	5.85	5.89	5.81
122	6.31	6.31	6.30	6.30	6.35	6.27
123	6.28	6.28	6.27	6.27	6.32	6.24
124/107	6.28	6.28	6.27	6.27	6.32	6.24
126	6.62	6.62	6.61	6.61	6.66	6.57
127	6.46	6.46	6.46	6.46	6.50	6.42
130	6.21	6.21	6.20	6.20	6.25	6.16
131	5.92	5.92	5.91	5.91	5.95	5.88
132	5.97	5.97	5.96	5.96	6.01	5.93
133	6.16	6.16	6.15	6.15	6.20	6.12
134/143	5.91	5.91	5.91	5.91	5.95	5.87
136	5.58	5.58	5.58	5.58	5.62	5.54
137	6.17	6.17	6.16	6.16	6.21	6.13
138/129/160/163	6.28	6.28	6.27	6.27	6.31	6.23
139/140	5.89	5.89	5.88	5.88	5.92	5.85
141	6.18	6.18	6.17	6.17	6.22	6.14
142	5.79	5.79	5.78	5.78	5.83	5.75
144	5.92	5.92	5.91	5.91	5.96	5.88
145	5.49	5.49	5.48	5.48	5.52	5.45

Table D-1 continued

Sample ID	GL-DC2-P-092811	GL-HC2-P-092811	GL-JW2-P-100311	GL-JW4-P-100311	GL-WH2-P-101411	GL-CP2-P-092911
Deployment Date	**8/9/2011**	**8/9/2011**	**8/12/2011**	**8/12/2011**	**8/16/2011**	**8/23/2011**
Collection Date	**9/28/2011**	**9/28/2011**	**10/3/2011**	**10/3/2011**	**10/14/2011**	**9/29/2011**
146	6.21	6.21	6.20	6.20	6.25	6.16
148	5.92	5.92	5.91	5.91	5.96	5.88
149/147	5.99	5.99	5.98	5.98	6.02	5.94
150	6.21	6.21	6.20	6.20	6.25	6.16
151/135/154	5.91	5.91	5.90	5.90	5.95	5.87
152	5.50	5.50	5.49	5.49	5.53	5.46
153/168	6.27	6.27	6.26	6.26	6.31	6.22
155	5.43	5.43	5.42	5.42	5.46	5.39
156/157	6.63	6.63	6.62	6.62	6.67	6.59
158	6.34	6.34	6.33	6.33	6.37	6.29
159	6.50	6.50	6.50	6.50	6.54	6.46
161	6.21	6.21	6.21	6.21	6.25	6.17
162	6.55	6.55	6.55	6.55	6.59	6.51
164	6.32	6.32	6.31	6.31	6.35	6.27
165	6.20	6.20	6.20	6.20	6.24	6.16
167	6.63	6.63	6.62	6.62	6.67	6.58
169	6.89	6.89	6.88	6.88	6.93	6.84
170	6.55	6.55	6.54	6.54	6.59	6.50
171/173	6.24	6.24	6.23	6.23	6.28	6.20
172/192	6.50	6.50	6.49	6.49	6.54	6.45
174	6.25	6.25	6.24	6.24	6.28	6.20
175	6.21	6.21	6.20	6.20	6.24	6.16
176	5.85	5.85	5.84	5.84	5.88	5.80
177	6.24	6.24	6.23	6.23	6.27	6.19
178	6.20	6.20	6.19	6.19	6.24	6.15
179	5.85	5.85	5.84	5.84	5.88	5.81
180/193	6.55	6.55	6.54	6.54	6.59	6.50
181	6.16	6.16	6.15	6.15	6.19	6.11
182	6.18	6.18	6.18	6.18	6.22	6.14
183/185	6.26	6.26	6.25	6.25	6.29	6.21
184	5.78	5.78	5.77	5.77	5.81	5.74
186	5.74	5.74	5.73	5.73	5.77	5.69
187	6.23	6.23	6.23	6.23	6.27	6.19
188	5.77	5.77	5.76	5.76	5.80	5.73
189	6.25	6.25	6.24	6.24	6.29	6.21
190	6.60	6.60	6.59	6.59	6.64	6.56
191	6.61	6.61	6.60	6.60	6.65	6.57
192	6.49	6.49	6.48	6.48	6.53	6.44
194	6.84	6.84	6.83	6.83	6.88	6.79
195	6.52	6.52	6.51	6.51	6.56	6.47
196	6.55	6.55	6.54	6.54	6.59	6.50
197/200	6.13	6.13	6.12	6.12	6.16	6.08
198/199	6.48	6.48	6.47	6.47	6.52	6.43
201	6.53	6.53	6.52	6.52	6.57	6.48
202	6.12	6.12	6.12	6.12	6.16	6.08
203	6.53	6.53	6.52	6.52	6.57	6.48
205	6.89	6.89	6.89	6.89	6.94	6.84
206	6.81	6.81	6.81	6.81	6.86	6.77
207	6.40	6.40	6.39	6.39	6.44	6.36
208	6.39	6.39	6.38	6.38	6.43	6.34
209	6.69	6.69	6.68	6.68	6.73	6.64

Table D-1 continued

Sample ID	GL-JP2-P-092911	GL-NP2-P-092911	GL-PP2-P-092911	GL-SP2-P-092911	GL-IT2-P-101111	GL-WP2-P-092911
Deployment Date	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**9/6/2011**	**9/6/2011**
Collection Date	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**10/11/2011**	**9/29/2011**
1	5.13	5.13	5.13	5.13	5.26	5.21
2	5.33	5.33	5.33	5.33	5.47	5.41
3	5.35	5.35	5.35	5.35	5.48	5.43
4	5.03	5.03	5.03	5.03	5.16	5.11
5	5.39	5.39	5.39	5.39	5.53	5.47
6	5.35	5.35	5.35	5.35	5.49	5.43
7	5.31	5.31	5.31	5.31	5.45	5.39
8	5.38	5.38	5.38	5.38	5.52	5.47
9	5.10	5.10	5.10	5.10	5.23	5.17
10	5.10	5.10	5.10	5.10	5.23	5.17
11	5.56	5.56	5.56	5.56	5.70	5.65
12/13	5.59	5.59	5.59	5.59	5.73	5.67
15	5.66	5.66	5.66	5.66	5.81	5.75
16	5.38	5.38	5.38	5.38	5.52	5.46
17	5.26	5.26	5.26	5.26	5.40	5.34
18/30	5.30	5.30	5.30	5.30	5.44	5.38
19	5.04	5.04	5.04	5.04	5.17	5.11
21	5.62	5.62	5.62	5.62	5.76	5.70
22	5.72	5.72	5.72	5.72	5.87	5.81
23	5.30	5.30	5.30	5.30	5.44	5.38
24	5.39	5.39	5.39	5.39	5.53	5.47
25	5.63	5.63	5.63	5.63	5.77	5.71
26	5.64	5.64	5.64	5.64	5.79	5.73
27	5.38	5.38	5.38	5.38	5.52	5.46
28/20	5.66	5.66	5.66	5.66	5.81	5.75
31	5.67	5.67	5.67	5.67	5.82	5.76
32	5.38	5.38	5.38	5.38	5.52	5.46
33	5.67	5.67	5.67	5.67	5.81	5.75
34	5.38	5.38	5.38	5.38	5.52	5.46
35	5.65	5.65	5.65	5.65	5.79	5.73
36	5.76	5.76	5.76	5.76	5.91	5.85
37	5.98	5.98	5.98	5.98	6.14	6.07
38	5.80	5.80	5.80	5.80	5.94	5.88
39	5.81	5.81	5.81	5.81	5.96	5.90
42	5.59	5.59	5.59	5.59	5.73	5.67
43	5.59	5.59	5.59	5.59	5.73	5.67
44/47/65	5.61	5.61	5.61	5.61	5.76	5.70
45/51	5.32	5.32	5.32	5.32	5.45	5.40
46	5.33	5.33	5.33	5.33	5.47	5.41
48	5.55	5.55	5.55	5.55	5.69	5.63
49/69	5.55	5.55	5.55	5.55	5.69	5.63
52	5.57	5.57	5.57	5.57	5.72	5.66
53/50	5.32	5.32	5.32	5.32	5.46	5.40
54	4.94	4.94	4.94	4.94	5.06	5.01
55	5.94	5.94	5.94	5.94	6.10	6.03
56	6.00	6.00	6.00	6.00	6.16	6.09
57	5.86	5.86	5.86	5.86	6.02	5.95
58	5.89	5.89	5.89	5.89	6.04	5.98
59/62/75	5.67	5.67	5.67	5.67	5.81	5.75
60	6.00	6.00	6.00	6.00	6.15	6.09
63	5.90	5.90	5.90	5.90	6.05	5.99
64	5.70	5.70	5.70	5.70	5.85	5.79
66	5.98	5.98	5.98	5.98	6.13	6.07

Table D-1 continued

Sample ID	GL-JP2-P-092911	GL-NP2-P-092911	GL-PP2-P-092911	GL-SP2-P-092911	GL-IT2-P-101111	GL-WP2-P-092911
Deployment Date	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**9/6/2011**	**9/6/2011**
Collection Date	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**10/11/2011**	**9/29/2011**
67	5.93	5.93	5.93	5.93	6.08	6.02
68	5.83	5.83	5.83	5.83	5.98	5.91
70	5.98	5.98	5.98	5.98	6.13	6.07
71/40/41	5.68	5.68	5.68	5.68	5.83	5.77
72	5.84	5.84	5.84	5.84	5.99	5.93
73	5.57	5.57	5.57	5.57	5.71	5.65
77	6.31	6.31	6.31	6.31	6.47	6.40
78	6.15	6.15	6.15	6.15	6.31	6.24
79	6.14	6.14	6.14	6.14	6.30	6.24
80	5.99	5.99	5.99	5.99	6.14	6.08
81	6.20	6.20	6.20	6.20	6.36	6.29
82	5.91	5.91	5.91	5.91	6.06	6.00
84	5.63	5.63	5.63	5.63	5.78	5.72
85/116/117	5.90	5.90	5.90	5.90	6.05	5.99
87/86/97/108/109/125	5.91	5.91	5.91	5.91	6.06	5.99
89	5.60	5.60	5.60	5.60	5.75	5.69
91/88	5.60	5.60	5.60	5.60	5.74	5.68
92	5.84	5.84	5.84	5.84	5.99	5.93
94	5.56	5.56	5.56	5.56	5.71	5.65
95/93/98/100/102	5.64	5.64	5.64	5.64	5.79	5.73
96	5.25	5.25	5.25	5.25	5.39	5.33
99/83	5.88	5.88	5.88	5.88	6.03	5.97
101/90/113	5.88	5.88	5.88	5.88	6.03	5.97
103	5.55	5.55	5.55	5.55	5.69	5.63
104	5.14	5.14	5.14	5.14	5.28	5.22
105	6.35	6.35	6.35	6.35	6.51	6.44
106	6.18	6.18	6.18	6.18	6.34	6.28
109	5.91	5.91	5.91	5.91	6.06	6.00
110/115	6.02	6.02	6.02	6.02	6.17	6.11
111	6.12	6.12	6.12	6.12	6.28	6.21
112	5.90	5.90	5.90	5.90	6.06	5.99
114	6.23	6.23	6.23	6.23	6.40	6.33
118	6.34	6.34	6.34	6.34	6.50	6.43
119	5.95	5.95	5.95	5.95	6.10	6.04
120	6.17	6.17	6.17	6.17	6.33	6.26
121	5.81	5.81	5.81	5.81	5.96	5.90
122	6.27	6.27	6.27	6.27	6.43	6.36
123	6.24	6.24	6.24	6.24	6.40	6.33
124/107	6.24	6.24	6.24	6.24	6.40	6.33
126	6.57	6.57	6.57	6.57	6.74	6.67
127	6.42	6.42	6.42	6.42	6.58	6.51
130	6.16	6.16	6.16	6.16	6.32	6.26
131	5.88	5.88	5.88	5.88	6.03	5.96
132	5.93	5.93	5.93	5.93	6.08	6.02
133	6.12	6.12	6.12	6.12	6.28	6.21
134/143	5.87	5.87	5.87	5.87	6.02	5.96
136	5.54	5.54	5.54	5.54	5.69	5.63
137	6.13	6.13	6.13	6.13	6.28	6.22
138/129/160/163	6.23	6.23	6.23	6.23	6.39	6.32
139/140	5.85	5.85	5.85	5.85	6.00	5.93
141	6.14	6.14	6.14	6.14	6.30	6.23
142	5.75	5.75	5.75	5.75	5.90	5.84
144	5.88	5.88	5.88	5.88	6.03	5.97
145	5.45	5.45	5.45	5.45	5.59	5.53

Table D-1 continued

Sample ID	GL-JP2-P-092911	GL-NP2-P-092911	GL-PP2-P-092911	GL-SP2-P-092911	GL-IT2-P-101111	GL-WP2-P-092911
Deployment Date	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**9/6/2011**	**9/6/2011**
Collection Date	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**10/11/2011**	**9/29/2011**
146	6.16	6.16	6.16	6.16	6.32	6.26
148	5.88	5.88	5.88	5.88	6.03	5.97
149/147	5.94	5.94	5.94	5.94	6.10	6.03
150	6.16	6.16	6.16	6.16	6.32	6.26
151/135/154	5.87	5.87	5.87	5.87	6.02	5.96
152	5.46	5.46	5.46	5.46	5.60	5.54
153/168	6.22	6.22	6.22	6.22	6.38	6.32
155	5.39	5.39	5.39	5.39	5.53	5.47
156/157	6.59	6.59	6.59	6.59	6.75	6.68
158	6.29	6.29	6.29	6.29	6.45	6.38
159	6.46	6.46	6.46	6.46	6.62	6.56
161	6.17	6.17	6.17	6.17	6.33	6.26
162	6.51	6.51	6.51	6.51	6.68	6.61
164	6.27	6.27	6.27	6.27	6.43	6.37
165	6.16	6.16	6.16	6.16	6.32	6.25
167	6.58	6.58	6.58	6.58	6.75	6.68
169	6.84	6.84	6.84	6.84	7.02	6.94
170	6.50	6.50	6.50	6.50	6.67	6.60
171/173	6.20	6.20	6.20	6.20	6.36	6.29
172/192	6.45	6.45	6.45	6.45	6.62	6.55
174	6.20	6.20	6.20	6.20	6.36	6.30
175	6.16	6.16	6.16	6.16	6.32	6.25
176	5.80	5.80	5.80	5.80	5.95	5.89
177	6.19	6.19	6.19	6.19	6.35	6.28
178	6.15	6.15	6.15	6.15	6.31	6.25
179	5.81	5.81	5.81	5.81	5.96	5.89
180/193	6.50	6.50	6.50	6.50	6.67	6.60
181	6.11	6.11	6.11	6.11	6.27	6.20
182	6.14	6.14	6.14	6.14	6.30	6.23
183/185	6.21	6.21	6.21	6.21	6.37	6.30
184	5.74	5.74	5.74	5.74	5.89	5.82
186	5.69	5.69	5.69	5.69	5.84	5.78
187	6.19	6.19	6.19	6.19	6.35	6.28
188	5.73	5.73	5.73	5.73	5.88	5.81
189	6.21	6.21	6.21	6.21	6.37	6.30
190	6.56	6.56	6.56	6.56	6.72	6.65
191	6.57	6.57	6.57	6.57	6.74	6.66
192	6.44	6.44	6.44	6.44	6.61	6.54
194	6.79	6.79	6.79	6.79	6.96	6.89
195	6.47	6.47	6.47	6.47	6.64	6.57
196	6.50	6.50	6.50	6.50	6.67	6.60
197/200	6.08	6.08	6.08	6.08	6.24	6.17
198/199	6.43	6.43	6.43	6.43	6.60	6.53
201	6.48	6.48	6.48	6.48	6.65	6.58
202	6.08	6.08	6.08	6.08	6.24	6.17
203	6.48	6.48	6.48	6.48	6.65	6.58
205	6.84	6.84	6.84	6.84	7.02	6.95
206	6.77	6.77	6.77	6.77	6.94	6.87
207	6.36	6.36	6.36	6.36	6.52	6.45
208	6.34	6.34	6.34	6.34	6.50	6.44
209	6.64	6.64	6.64	6.64	6.81	6.74

Table D-1 continued

Sample ID	GL-DC2-P-102811	GL-HC2-P-102811	GL-CP2-P-110411	GL-JP2-P-110411	GL-NP2-P-110411	GL-PP2-P-110411
Deployment Date	**9/28/2011**	**9/28/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**
Collection Date	**10/28/2011**	**10/28/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**
1	5.21	5.21	5.18	5.18	5.18	5.18
2	5.41	5.41	5.38	5.38	5.38	5.38
3	5.43	5.43	5.39	5.39	5.39	5.39
4	5.11	5.11	5.08	5.08	5.08	5.08
5	5.47	5.47	5.44	5.44	5.44	5.44
6	5.43	5.43	5.40	5.40	5.40	5.40
7	5.39	5.39	5.36	5.36	5.36	5.36
8	5.47	5.47	5.43	5.43	5.43	5.43
9	5.17	5.17	5.14	5.14	5.14	5.14
10	5.17	5.17	5.14	5.14	5.14	5.14
11	5.65	5.65	5.61	5.61	5.61	5.61
12/13	5.67	5.67	5.64	5.64	5.64	5.64
15	5.75	5.75	5.71	5.71	5.71	5.71
16	5.46	5.46	5.43	5.43	5.43	5.43
17	5.34	5.34	5.31	5.31	5.31	5.31
18/30	5.38	5.38	5.35	5.35	5.35	5.35
19	5.11	5.11	5.08	5.08	5.08	5.08
21	5.70	5.70	5.67	5.67	5.67	5.67
22	5.81	5.81	5.78	5.78	5.78	5.78
23	5.38	5.38	5.35	5.35	5.35	5.35
24	5.47	5.47	5.44	5.44	5.44	5.44
25	5.71	5.71	5.68	5.68	5.68	5.68
26	5.73	5.73	5.69	5.69	5.69	5.69
27	5.46	5.46	5.43	5.43	5.43	5.43
28/20	5.75	5.75	5.71	5.71	5.71	5.71
31	5.76	5.76	5.72	5.72	5.72	5.72
32	5.46	5.46	5.43	5.43	5.43	5.43
33	5.75	5.75	5.72	5.72	5.72	5.72
34	5.46	5.46	5.43	5.43	5.43	5.43
35	5.73	5.73	5.70	5.70	5.70	5.70
36	5.85	5.85	5.82	5.82	5.82	5.82
37	6.07	6.07	6.04	6.04	6.04	6.04
38	5.88	5.88	5.85	5.85	5.85	5.85
39	5.90	5.90	5.86	5.86	5.86	5.86
42	5.67	5.67	5.64	5.64	5.64	5.64
43	5.67	5.67	5.64	5.64	5.64	5.64
44/47/65	5.70	5.70	5.66	5.66	5.66	5.66
45/51	5.40	5.40	5.36	5.36	5.36	5.36
46	5.41	5.41	5.38	5.38	5.38	5.38
48	5.63	5.63	5.60	5.60	5.60	5.60
49/69	5.63	5.63	5.60	5.60	5.60	5.60
52	5.66	5.66	5.62	5.62	5.62	5.62
53/50	5.40	5.40	5.37	5.37	5.37	5.37
54	5.01	5.01	4.98	4.98	4.98	4.98
55	6.03	6.03	6.00	6.00	6.00	6.00
56	6.09	6.09	6.06	6.06	6.06	6.06
57	5.95	5.95	5.92	5.92	5.92	5.92
58	5.98	5.98	5.94	5.94	5.94	5.94
59/62/75	5.75	5.75	5.72	5.72	5.72	5.72
60	6.09	6.09	6.05	6.05	6.05	6.05
63	5.99	5.99	5.95	5.95	5.95	5.95
64	5.79	5.79	5.75	5.75	5.75	5.75
66	6.07	6.07	6.03	6.03	6.03	6.03

Table D-1 continued

Sample ID	GL-DC2-P-102811	GL-HC2-P-102811	GL-CP2-P-110411	GL-JP2-P-110411	GL-NP2-P-110411	GL-PP2-P-110411
Deployment Date	**9/28/2011**	**9/28/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**
Collection Date	**10/28/2011**	**10/28/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**
67	6.02	6.02	5.98	5.98	5.98	5.98
68	5.91	5.91	5.88	5.88	5.88	5.88
70	6.07	6.07	6.03	6.03	6.03	6.03
71/40/41	5.77	5.77	5.73	5.73	5.73	5.73
72	5.93	5.93	5.89	5.89	5.89	5.89
73	5.65	5.65	5.62	5.62	5.62	5.62
77	6.40	6.40	6.36	6.36	6.36	6.36
78	6.24	6.24	6.21	6.21	6.21	6.21
79	6.24	6.24	6.20	6.20	6.20	6.20
80	6.08	6.08	6.04	6.04	6.04	6.04
81	6.29	6.29	6.26	6.26	6.26	6.26
82	6.00	6.00	5.96	5.96	5.96	5.96
84	5.72	5.72	5.68	5.68	5.68	5.68
85/116/117	5.99	5.99	5.95	5.95	5.95	5.95
87/86/97/108/109/125	5.99	5.99	5.96	5.96	5.96	5.96
89	5.69	5.69	5.65	5.65	5.65	5.65
91/88	5.68	5.68	5.65	5.65	5.65	5.65
92	5.93	5.93	5.89	5.89	5.89	5.89
94	5.65	5.65	5.61	5.61	5.61	5.61
95/93/98/100/102	5.73	5.73	5.69	5.69	5.69	5.69
96	5.33	5.33	5.30	5.30	5.30	5.30
99/83	5.97	5.97	5.93	5.93	5.93	5.93
101/90/113	5.97	5.97	5.93	5.93	5.93	5.93
103	5.63	5.63	5.60	5.60	5.60	5.60
104	5.22	5.22	5.19	5.19	5.19	5.19
105	6.44	6.44	6.40	6.40	6.40	6.40
106	6.28	6.28	6.24	6.24	6.24	6.24
109	6.00	6.00	5.96	5.96	5.96	5.96
110/115	6.11	6.11	6.07	6.07	6.07	6.07
111	6.21	6.21	6.18	6.18	6.18	6.18
112	5.99	5.99	5.96	5.96	5.96	5.96
114	6.33	6.33	6.29	6.29	6.29	6.29
118	6.43	6.43	6.39	6.39	6.39	6.39
119	6.04	6.04	6.00	6.00	6.00	6.00
120	6.26	6.26	6.22	6.22	6.22	6.22
121	5.90	5.90	5.86	5.86	5.86	5.86
122	6.36	6.36	6.32	6.32	6.32	6.32
123	6.33	6.33	6.29	6.29	6.29	6.29
124/107	6.33	6.33	6.29	6.29	6.29	6.29
126	6.67	6.67	6.63	6.63	6.63	6.63
127	6.51	6.51	6.48	6.48	6.48	6.48
130	6.26	6.26	6.22	6.22	6.22	6.22
131	5.96	5.96	5.93	5.93	5.93	5.93
132	6.02	6.02	5.98	5.98	5.98	5.98
133	6.21	6.21	6.17	6.17	6.17	6.17
134/143	5.96	5.96	5.92	5.92	5.92	5.92
136	5.63	5.63	5.59	5.59	5.59	5.59
137	6.22	6.22	6.18	6.18	6.18	6.18
138/129/160/163	6.33	6.33	6.29	6.29	6.29	6.29
139/140	5.93	5.93	5.90	5.90	5.90	5.90
141	6.23	6.23	6.19	6.19	6.19	6.19
142	5.84	5.84	5.80	5.80	5.80	5.80
144	5.97	5.97	5.93	5.93	5.93	5.93
145	5.53	5.53	5.50	5.50	5.50	5.50

Table D-1 continued

Sample ID	GL-DC2-P-102811	GL-HC2-P-102811	GL-CP2-P-110411	GL-JP2-P-110411	GL-NP2-P-110411	GL-PP2-P-110411
Deployment Date	**9/28/2011**	**9/28/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**
Collection Date	**10/28/2011**	**10/28/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**
146	6.26	6.26	6.22	6.22	6.22	6.22
148	5.97	5.97	5.93	5.93	5.93	5.93
149/147	6.03	6.03	6.00	6.00	6.00	6.00
150	6.26	6.26	6.22	6.22	6.22	6.22
151/135/154	5.96	5.96	5.92	5.92	5.92	5.92
152	5.54	5.54	5.51	5.51	5.51	5.51
153/168	6.32	6.32	6.28	6.28	6.28	6.28
155	5.47	5.47	5.44	5.44	5.44	5.44
156/157	6.68	6.68	6.64	6.64	6.64	6.64
158	6.38	6.38	6.35	6.35	6.35	6.35
159	6.56	6.56	6.52	6.52	6.52	6.52
161	6.26	6.26	6.22	6.22	6.22	6.22
162	6.61	6.61	6.57	6.57	6.57	6.57
164	6.37	6.37	6.33	6.33	6.33	6.33
165	6.25	6.25	6.21	6.21	6.21	6.21
167	6.68	6.68	6.64	6.64	6.64	6.64
169	6.94	6.94	6.90	6.90	6.90	6.90
170	6.60	6.60	6.56	6.56	6.56	6.56
171/173	6.29	6.29	6.25	6.25	6.25	6.25
172/192	6.55	6.55	6.51	6.51	6.51	6.51
174	6.30	6.30	6.26	6.26	6.26	6.26
175	6.25	6.25	6.22	6.22	6.22	6.22
176	5.89	5.89	5.86	5.86	5.86	5.86
177	6.29	6.29	6.25	6.25	6.25	6.25
178	6.25	6.25	6.21	6.21	6.21	6.21
179	5.89	5.89	5.86	5.86	5.86	5.86
180/193	6.60	6.60	6.56	6.56	6.56	6.56
181	6.20	6.20	6.17	6.17	6.17	6.17
182	6.23	6.23	6.19	6.19	6.19	6.19
183/185	6.30	6.30	6.27	6.27	6.27	6.27
184	5.82	5.82	5.79	5.79	5.79	5.79
186	5.78	5.78	5.75	5.75	5.75	5.75
187	6.28	6.28	6.24	6.24	6.24	6.24
188	5.81	5.81	5.78	5.78	5.78	5.78
189	6.30	6.30	6.26	6.26	6.26	6.26
190	6.65	6.65	6.61	6.61	6.61	6.61
191	6.66	6.66	6.62	6.62	6.62	6.62
192	6.54	6.54	6.50	6.50	6.50	6.50
194	6.89	6.89	6.85	6.85	6.85	6.85
195	6.57	6.57	6.53	6.53	6.53	6.53
196	6.60	6.60	6.56	6.56	6.56	6.56
197/200	6.17	6.17	6.14	6.14	6.14	6.14
198/199	6.53	6.53	6.49	6.49	6.49	6.49
201	6.58	6.58	6.54	6.54	6.54	6.54
202	6.17	6.17	6.13	6.13	6.13	6.13
203	6.58	6.58	6.54	6.54	6.54	6.54
205	6.95	6.95	6.91	6.91	6.91	6.91
206	6.87	6.87	6.83	6.83	6.83	6.83
207	6.45	6.45	6.41	6.41	6.41	6.41
208	6.44	6.44	6.40	6.40	6.40	6.40
209	6.74	6.74	6.70	6.70	6.70	6.70

Table D-1 continued

Sample ID	GL-SP2-P-110411	GL-WP2-P-110411	GL-IT2-P-101111	GL-WH2-P-111711	GL-CP2-P-121711	GL-JP2-P-121611
Deployment Date	**9/29/2011**	**9/29/2011**	**9/30/2011**	**10/14/2011**	**11/4/2011**	**11/4/2011**
Collection Date	**11/4/2011**	**11/4/2011**	**10/11/2011**	**11/17/2011**	**12/17/2011**	**12/16/2011**
1	5.18	5.18	5.24	4.72	4.58	4.48
2	5.38	5.38	5.44	4.91	4.76	4.66
3	5.39	5.39	5.46	4.92	4.77	4.67
4	5.08	5.08	5.14	4.63	4.49	4.40
5	5.44	5.44	5.50	4.96	4.81	4.71
6	5.40	5.40	5.46	4.93	4.78	4.68
7	5.36	5.36	5.42	4.89	4.74	4.64
8	5.43	5.43	5.50	4.96	4.81	4.70
9	5.14	5.14	5.20	4.69	4.55	4.45
10	5.14	5.14	5.20	4.69	4.55	4.45
11	5.61	5.61	5.68	5.12	4.97	4.86
12/13	5.64	5.64	5.71	5.14	4.99	4.88
15	5.71	5.71	5.78	5.21	5.06	4.95
16	5.43	5.43	5.49	4.95	4.80	4.70
17	5.31	5.31	5.37	4.84	4.70	4.60
18/30	5.35	5.35	5.42	4.88	4.74	4.63
19	5.08	5.08	5.14	4.63	4.50	4.40
21	5.67	5.67	5.73	5.17	5.01	4.91
22	5.78	5.78	5.84	5.27	5.11	5.00
23	5.35	5.35	5.42	4.88	4.74	4.63
24	5.44	5.44	5.50	4.96	4.81	4.71
25	5.68	5.68	5.75	5.18	5.02	4.92
26	5.69	5.69	5.76	5.19	5.04	4.93
27	5.43	5.43	5.49	4.95	4.80	4.70
28/20	5.71	5.71	5.78	5.21	5.05	4.95
31	5.72	5.72	5.79	5.22	5.07	4.96
32	5.43	5.43	5.49	4.95	4.80	4.70
33	5.72	5.72	5.78	5.21	5.06	4.95
34	5.43	5.43	5.49	4.95	4.80	4.70
35	5.70	5.70	5.77	5.20	5.04	4.93
36	5.82	5.82	5.89	5.31	5.15	5.04
37	6.04	6.04	6.11	5.51	5.34	5.23
38	5.85	5.85	5.92	5.33	5.17	5.06
39	5.86	5.86	5.93	5.35	5.19	5.08
42	5.64	5.64	5.70	5.14	4.99	4.88
43	5.64	5.64	5.70	5.14	4.99	4.88
44/47/65	5.66	5.66	5.73	5.16	5.01	4.90
45/51	5.36	5.36	5.43	4.89	4.75	4.65
46	5.38	5.38	5.44	4.91	4.76	4.66
48	5.60	5.60	5.66	5.11	4.95	4.85
49/69	5.60	5.60	5.67	5.11	4.95	4.85
52	5.62	5.62	5.69	5.13	4.98	4.87
53/50	5.37	5.37	5.43	4.90	4.75	4.65
54	4.98	4.98	5.04	4.54	4.41	4.31
55	6.00	6.00	6.07	5.47	5.31	5.19
56	6.06	6.06	6.13	5.52	5.36	5.24
57	5.92	5.92	5.99	5.40	5.24	5.12
58	5.94	5.94	6.01	5.42	5.26	5.15
59/62/75	5.72	5.72	5.79	5.22	5.06	4.95
60	6.05	6.05	6.13	5.52	5.36	5.24
63	5.95	5.95	6.02	5.43	5.27	5.15
64	5.75	5.75	5.82	5.25	5.09	4.98
66	6.03	6.03	6.10	5.50	5.34	5.22

Table D-1 continued

Sample ID	GL-SP2-P-110411	GL-WP2-P-110411	GL-IT2-P-101111	GL-WH2-P-111711	GL-CP2-P-121711	GL-JP2-P-121611
Deployment Date	**9/29/2011**	**9/29/2011**	**9/30/2011**	**10/14/2011**	**11/4/2011**	**11/4/2011**
Collection Date	**11/4/2011**	**11/4/2011**	**10/11/2011**	**11/17/2011**	**12/17/2011**	**12/16/2011**
67	5.98	5.98	6.06	5.46	5.30	5.18
68	5.88	5.88	5.95	5.36	5.20	5.09
70	6.03	6.03	6.10	5.50	5.34	5.22
71/40/41	5.73	5.73	5.80	5.23	5.07	4.96
72	5.89	5.89	5.96	5.37	5.21	5.10
73	5.62	5.62	5.68	5.12	4.97	4.86
77	6.36	6.36	6.44	5.80	5.63	5.51
78	6.21	6.21	6.28	5.66	5.49	5.38
79	6.20	6.20	6.27	5.65	5.48	5.37
80	6.04	6.04	6.11	5.51	5.34	5.23
81	6.26	6.26	6.33	5.71	5.54	5.42
82	5.96	5.96	6.04	5.44	5.28	5.17
84	5.68	5.68	5.75	5.19	5.03	4.92
85/116/117	5.95	5.95	6.02	5.43	5.27	5.15
87/86/97/108/109/125	5.96	5.96	6.03	5.43	5.27	5.16
89	5.65	5.65	5.72	5.16	5.00	4.90
91/88	5.65	5.65	5.72	5.15	5.00	4.89
92	5.89	5.89	5.96	5.38	5.21	5.10
94	5.61	5.61	5.68	5.12	4.97	4.86
95/93/98/100/102	5.69	5.69	5.76	5.19	5.04	4.93
96	5.30	5.30	5.36	4.83	4.69	4.59
99/83	5.93	5.93	6.01	5.41	5.25	5.14
101/90/113	5.93	5.93	6.00	5.41	5.25	5.14
103	5.60	5.60	5.67	5.11	4.95	4.85
104	5.19	5.19	5.25	4.73	4.59	4.49
105	6.40	6.40	6.48	5.84	5.66	5.54
106	6.24	6.24	6.31	5.69	5.52	5.40
109	5.96	5.96	6.03	5.44	5.27	5.16
110/115	6.07	6.07	6.14	5.54	5.37	5.26
111	6.18	6.18	6.25	5.63	5.46	5.35
112	5.96	5.96	6.03	5.43	5.27	5.16
114	6.29	6.29	6.37	5.74	5.57	5.45
118	6.39	6.39	6.47	5.83	5.66	5.54
119	6.00	6.00	6.07	5.47	5.31	5.20
120	6.22	6.22	6.30	5.68	5.51	5.39
121	5.86	5.86	5.93	5.35	5.19	5.08
122	6.32	6.32	6.40	5.77	5.59	5.48
123	6.29	6.29	6.37	5.74	5.57	5.45
124/107	6.29	6.29	6.37	5.74	5.57	5.45
126	6.63	6.63	6.71	6.05	5.87	5.74
127	6.48	6.48	6.55	5.91	5.73	5.61
130	6.22	6.22	6.29	5.67	5.50	5.39
131	5.93	5.93	6.00	5.41	5.25	5.13
132	5.98	5.98	6.05	5.46	5.29	5.18
133	6.17	6.17	6.25	5.63	5.46	5.35
134/143	5.92	5.92	5.99	5.40	5.24	5.13
136	5.59	5.59	5.66	5.10	4.95	4.84
137	6.18	6.18	6.25	5.64	5.47	5.35
138/129/160/163	6.29	6.29	6.36	5.73	5.56	5.44
139/140	5.90	5.90	5.97	5.38	5.22	5.11
141	6.19	6.19	6.27	5.65	5.48	5.36
142	5.80	5.80	5.87	5.29	5.13	5.02
144	5.93	5.93	6.00	5.41	5.25	5.14
145	5.50	5.50	5.57	5.02	4.87	4.76

Table D-1 continued

Sample ID	GL-SP2-P-110411	GL-WP2-P-110411	GL-IT2-P-101111	GL-WH2-P-111711	GL-CP2-P-121711	GL-JP2-P-121611
Deployment Date	**9/29/2011**	**9/29/2011**	**9/30/2011**	**10/14/2011**	**11/4/2011**	**11/4/2011**
Collection Date	**11/4/2011**	**11/4/2011**	**10/11/2011**	**11/17/2011**	**12/17/2011**	**12/16/2011**
146	6.22	6.22	6.29	5.67	5.50	5.39
148	5.93	5.93	6.00	5.41	5.25	5.14
149/147	6.00	6.00	6.07	5.47	5.31	5.19
150	6.22	6.22	6.29	5.67	5.50	5.39
151/135/154	5.92	5.92	5.99	5.40	5.24	5.13
152	5.51	5.51	5.57	5.02	4.87	4.77
153/168	6.28	6.28	6.35	5.73	5.55	5.44
155	5.44	5.44	5.50	4.96	4.81	4.71
156/157	6.64	6.64	6.72	6.06	5.88	5.75
158	6.35	6.35	6.42	5.79	5.62	5.50
159	6.52	6.52	6.59	5.94	5.77	5.64
161	6.22	6.22	6.30	5.68	5.51	5.39
162	6.57	6.57	6.64	5.99	5.81	5.69
164	6.33	6.33	6.40	5.77	5.60	5.48
165	6.21	6.21	6.29	5.67	5.50	5.38
167	6.64	6.64	6.72	6.06	5.88	5.75
169	6.90	6.90	6.98	6.30	6.11	5.98
170	6.56	6.56	6.64	5.98	5.80	5.68
171/173	6.25	6.25	6.33	5.70	5.53	5.41
172/192	6.51	6.51	6.59	5.94	5.76	5.64
174	6.26	6.26	6.33	5.71	5.54	5.42
175	6.22	6.22	6.29	5.67	5.50	5.38
176	5.86	5.86	5.93	5.34	5.18	5.07
177	6.25	6.25	6.32	5.70	5.53	5.41
178	6.21	6.21	6.28	5.66	5.49	5.38
179	5.86	5.86	5.93	5.34	5.18	5.07
180/193	6.56	6.56	6.64	5.98	5.80	5.68
181	6.17	6.17	6.24	5.62	5.46	5.34
182	6.19	6.19	6.27	5.65	5.48	5.36
183/185	6.27	6.27	6.34	5.72	5.55	5.43
184	5.79	5.79	5.86	5.28	5.12	5.01
186	5.75	5.75	5.81	5.24	5.08	4.98
187	6.24	6.24	6.32	5.70	5.53	5.41
188	5.78	5.78	5.85	5.27	5.11	5.00
189	6.26	6.26	6.34	5.71	5.54	5.42
190	6.61	6.61	6.69	6.03	5.85	5.73
191	6.62	6.62	6.70	6.04	5.86	5.74
192	6.50	6.50	6.58	5.93	5.75	5.63
194	6.85	6.85	6.93	6.25	6.06	5.93
195	6.53	6.53	6.61	5.95	5.78	5.65
196	6.56	6.56	6.64	5.98	5.80	5.68
197/200	6.14	6.14	6.21	5.60	5.43	5.31
198/199	6.49	6.49	6.57	5.92	5.74	5.62
201	6.54	6.54	6.62	5.96	5.79	5.66
202	6.13	6.13	6.21	5.59	5.43	5.31
203	6.54	6.54	6.62	5.96	5.79	5.66
205	6.91	6.91	6.99	6.30	6.11	5.98
206	6.83	6.83	6.91	6.23	6.04	5.91
207	6.41	6.41	6.49	5.85	5.68	5.55
208	6.40	6.40	6.47	5.84	5.66	5.54
209	6.70	6.70	6.78	6.11	5.93	5.80

Table D-1 continued

Sample ID	GL-PP2-P-121611	GL-SP2-P-121711	GL-WP2-P-121911	GL-WH2-P-122811
Deployment Date	11/4/2011	11/4/2011	11/4/2011	11/17/2011
Collection Date	12/16/2011	12/17/2011	12/19/2011	12/28/2011
1	4.48	4.58	4.62	4.90
2	4.66	4.76	4.80	5.09
3	4.67	4.77	4.81	5.10
4	4.40	4.49	4.53	4.81
5	4.71	4.81	4.85	5.14
6	4.68	4.78	4.82	5.11
7	4.64	4.74	4.78	5.07
8	4.70	4.81	4.84	5.14
9	4.45	4.55	4.58	4.86
10	4.45	4.55	4.58	4.86
11	4.86	4.97	5.00	5.31
12/13	4.88	4.99	5.03	5.33
15	4.95	5.06	5.10	5.41
16	4.70	4.80	4.84	5.13
17	4.60	4.70	4.73	5.02
18/30	4.63	4.74	4.77	5.06
19	4.40	4.50	4.53	4.81
21	4.91	5.01	5.05	5.36
22	5.00	5.11	5.15	5.46
23	4.63	4.74	4.77	5.06
24	4.71	4.81	4.85	5.15
25	4.92	5.02	5.06	5.37
26	4.93	5.04	5.07	5.38
27	4.70	4.80	4.84	5.13
28/20	4.95	5.05	5.09	5.40
31	4.96	5.07	5.11	5.42
32	4.70	4.80	4.84	5.13
33	4.95	5.06	5.10	5.41
34	4.70	4.80	4.84	5.13
35	4.93	5.04	5.08	5.39
36	5.04	5.15	5.19	5.50
37	5.23	5.34	5.38	5.71
38	5.06	5.17	5.21	5.53
39	5.08	5.19	5.23	5.55
42	4.88	4.99	5.03	5.33
43	4.88	4.99	5.03	5.33
44/47/65	4.90	5.01	5.05	5.36
45/51	4.65	4.75	4.78	5.08
46	4.66	4.76	4.80	5.09
48	4.85	4.95	4.99	5.30
49/69	4.85	4.95	4.99	5.30
52	4.87	4.98	5.02	5.32
53/50	4.65	4.75	4.79	5.08
54	4.31	4.41	4.44	4.71
55	5.19	5.31	5.35	5.67
56	5.24	5.36	5.40	5.73
57	5.12	5.24	5.28	5.60
58	5.15	5.26	5.30	5.62
59/62/75	4.95	5.06	5.10	5.41
60	5.24	5.36	5.40	5.73
63	5.15	5.27	5.31	5.63
64	4.98	5.09	5.13	5.44
66	5.22	5.34	5.38	5.70

Table D-1 continued

Sample ID	GL-PP2-P-121611	GL-SP2-P-121711	GL-WP2-P-121911	GL-WH2-P-122811
Deployment Date	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/17/2011**
Collection Date	**12/16/2011**	**12/17/2011**	**12/19/2011**	**12/28/2011**
67	5.18	5.30	5.34	5.66
68	5.09	5.20	5.24	5.56
70	5.22	5.34	5.38	5.71
71/40/41	4.96	5.07	5.11	5.42
72	5.10	5.21	5.25	5.57
73	4.86	4.97	5.01	5.31
77	5.51	5.63	5.67	6.02
78	5.38	5.49	5.54	5.87
79	5.37	5.48	5.53	5.86
80	5.23	5.34	5.39	5.71
81	5.42	5.54	5.58	5.92
82	5.17	5.28	5.32	5.64
84	4.92	5.03	5.07	5.38
85/116/117	5.15	5.27	5.31	5.63
87/86/97/108/109/125	5.16	5.27	5.31	5.64
89	4.90	5.00	5.04	5.35
91/88	4.89	5.00	5.04	5.35
92	5.10	5.21	5.26	5.58
94	4.86	4.97	5.00	5.31
95/93/98/100/102	4.93	5.04	5.08	5.39
96	4.59	4.69	4.73	5.01
99/83	5.14	5.25	5.29	5.61
101/90/113	5.14	5.25	5.29	5.61
103	4.85	4.95	4.99	5.30
104	4.49	4.59	4.63	4.91
105	5.54	5.66	5.71	6.06
106	5.40	5.52	5.56	5.90
109	5.16	5.27	5.32	5.64
110/115	5.26	5.37	5.41	5.74
111	5.35	5.46	5.51	5.84
112	5.16	5.27	5.31	5.64
114	5.45	5.57	5.61	5.95
118	5.54	5.66	5.70	6.05
119	5.20	5.31	5.35	5.68
120	5.39	5.51	5.55	5.89
121	5.08	5.19	5.23	5.55
122	5.48	5.59	5.64	5.98
123	5.45	5.57	5.61	5.95
124/107	5.45	5.57	5.61	5.95
126	5.74	5.87	5.91	6.27
127	5.61	5.73	5.77	6.13
130	5.39	5.50	5.55	5.88
131	5.13	5.25	5.29	5.61
132	5.18	5.29	5.33	5.66
133	5.35	5.46	5.50	5.84
134/143	5.13	5.24	5.28	5.60
136	4.84	4.95	4.99	5.29
137	5.35	5.47	5.51	5.85
138/129/160/163	5.44	5.56	5.61	5.95
139/140	5.11	5.22	5.26	5.58
141	5.36	5.48	5.52	5.86
142	5.02	5.13	5.17	5.49
144	5.14	5.25	5.29	5.61
145	4.76	4.87	4.91	5.20

Table D-1 continued

Sample ID	GL-PP2-P-121611	GL-SP2-P-121711	GL-WP2-P-121911	GL-WH2-P-122811
Deployment Date	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/17/2011**
Collection Date	**12/16/2011**	**12/17/2011**	**12/19/2011**	**12/28/2011**
146	5.39	5.50	5.55	5.88
148	5.14	5.25	5.29	5.61
149/147	5.19	5.31	5.35	5.67
150	5.39	5.50	5.55	5.88
151/135/154	5.13	5.24	5.28	5.60
152	4.77	4.87	4.91	5.21
153/168	5.44	5.55	5.60	5.94
155	4.71	4.81	4.85	5.14
156/157	5.75	5.88	5.92	6.29
158	5.50	5.62	5.66	6.00
159	5.64	5.77	5.81	6.17
161	5.39	5.51	5.55	5.89
162	5.69	5.81	5.86	6.21
164	5.48	5.60	5.64	5.99
165	5.38	5.50	5.54	5.88
167	5.75	5.88	5.92	6.28
169	5.98	6.11	6.15	6.53
170	5.68	5.80	5.85	6.21
171/173	5.41	5.53	5.57	5.91
172/192	5.64	5.76	5.80	6.16
174	5.42	5.54	5.58	5.92
175	5.38	5.50	5.54	5.88
176	5.07	5.18	5.22	5.54
177	5.41	5.53	5.57	5.91
178	5.38	5.49	5.54	5.87
179	5.07	5.18	5.22	5.54
180/193	5.68	5.80	5.85	6.21
181	5.34	5.46	5.50	5.83
182	5.36	5.48	5.52	5.86
183/185	5.43	5.55	5.59	5.93
184	5.01	5.12	5.16	5.48
186	4.98	5.08	5.12	5.44
187	5.41	5.53	5.57	5.91
188	5.00	5.11	5.15	5.47
189	5.42	5.54	5.58	5.92
190	5.73	5.85	5.90	6.26
191	5.74	5.86	5.91	6.27
192	5.63	5.75	5.79	6.15
194	5.93	6.06	6.11	6.48
195	5.65	5.78	5.82	6.18
196	5.68	5.80	5.85	6.21
197/200	5.31	5.43	5.47	5.81
198/199	5.62	5.74	5.79	6.14
201	5.66	5.79	5.83	6.19
202	5.31	5.43	5.47	5.80
203	5.66	5.79	5.83	6.19
205	5.98	6.11	6.16	6.53
206	5.91	6.04	6.09	6.46
207	5.55	5.68	5.72	6.07
208	5.54	5.66	5.71	6.05
209	5.80	5.93	5.97	6.34

APPENDIX E: 2011 COMPOUND SPECFIC PAH, PESTICDE, AND BFR SAMPLING RATES

Table E-1: Average sampling rate of all PAHs for the 2011 PUF-PAS deployments.

Sample ID	GL-DC2-P-032911	GL-HC2-P-032911	GL-JP2-P-033111	GL-NP2-P-033111	GL-PP2-P-033111	GL-SP2-P-033111	GL-CP2-P-033111	GL-WP2-P-033111	GL-CP2-P-051911	GL-JP2-P-051911
Deployment Date	**2/9/2011**	**2/9/2011**	**2/10/2011**	**2/10/2011**	**2/10/2011**	**2/10/2011**	**2/18/2011**	**2/18/2011**	**3/31/2011**	**3/31/2011**
Collection Date	**3/29/2011**	**3/29/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**5/19/2011**	**5/19/2011**
fluorene	5.39	5.39	5.46	5.46	5.46	5.46	5.76	5.76	4.40	4.40
phenanthrene	5.91	5.91	5.98	5.98	5.98	5.98	6.31	6.31	4.82	4.82
anthracene	5.54	5.54	5.60	5.60	5.60	5.60	5.91	5.91	4.51	4.51
fluoranthene	6.72	6.72	6.80	6.80	6.80	6.80	7.17	7.17	5.47	5.47
pyrene	6.66	6.66	6.74	6.74	6.74	6.74	7.11	7.11	5.43	5.43
retene	6.34	6.34	6.42	6.42	6.42	6.42	6.77	6.77	5.17	5.17
benz[a]anthracene	6.66	6.66	6.74	6.74	6.74	6.74	7.10	7.10	5.43	5.43
chrysene	6.96	6.96	7.04	7.04	7.04	7.04	7.43	7.43	5.67	5.67
benzo[b]fluoranthene	7.41	7.41	7.50	7.50	7.50	7.50	7.91	7.91	6.04	6.04
benzo[k]fluoranthene	7.68	7.68	7.77	7.77	7.77	7.77	8.20	8.20	6.26	6.26
benzo[e]pyrene	8.12	8.12	8.22	8.22	8.22	8.22	8.67	8.67	6.62	6.62
benzo[a]pyrene	7.77	7.77	7.87	7.87	7.87	7.87	8.30	8.30	6.34	6.34
indeno[1,2,3-cd]pyrene	8.08	8.08	8.18	8.18	8.18	8.18	8.63	8.63	6.59	6.59
dibenz[a,h]anthracene	8.23	8.23	8.33	8.33	8.33	8.33	8.78	8.78	6.71	6.71
benzo[ghi]perylene	8.05	8.05	8.14	8.14	8.14	8.14	8.59	8.59	6.56	6.56
coronene	9.39	9.39	9.50	9.50	9.50	9.50	10.02	10.02	7.65	7.65

Table E-1 continued

Sample ID	GL-NP2-P-051911	GL-PP2-P-051911	GL-SP2-P-051911	GL-WP2-P-051911	GL-DC2-P-052311	GL-HC2-P-052311	GL-AU2-P-051711	GL-BR2-P-051711	GL-DP2-P-051811	GL-JL2-P-051711
Deployment Date	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**4/4/2011**	**4/4/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**
Collection Date	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/23/2011**	**5/23/2011**	**5/17/2011**	**5/17/2011**	**5/18/2011**	**5/17/2011**
fluorene	4.40	4.40	4.40	4.40	4.50	4.50	4.26	4.26	4.32	4.26
phenanthrene	4.82	4.82	4.82	4.82	4.93	4.93	4.66	4.66	4.74	4.66
anthracene	4.51	4.51	4.51	4.51	4.62	4.62	4.37	4.37	4.44	4.37
fluoranthene	5.47	5.47	5.47	5.47	5.61	5.61	5.30	5.30	5.38	5.30
pyrene	5.43	5.43	5.43	5.43	5.55	5.55	5.25	5.25	5.34	5.25
retene	5.17	5.17	5.17	5.17	5.29	5.29	5.01	5.01	5.08	5.01
benz[a]anthracene	5.43	5.43	5.43	5.43	5.55	5.55	5.25	5.25	5.34	5.25
chrysene	5.67	5.67	5.67	5.67	5.81	5.81	5.49	5.49	5.58	5.49
benzo[b]fluoranthene	6.04	6.04	6.04	6.04	6.18	6.18	5.85	5.85	5.94	5.85
benzo[k]fluoranthene	6.26	6.26	6.26	6.26	6.41	6.41	6.06	6.06	6.16	6.06
benzo[e]pyrene	6.62	6.62	6.62	6.62	6.78	6.78	6.41	6.41	6.51	6.41
benzo[a]pyrene	6.34	6.34	6.34	6.34	6.49	6.49	6.13	6.13	6.23	6.13
indeno[1,2,3-cd]pyrene	6.59	6.59	6.59	6.59	6.74	6.74	6.38	6.38	6.48	6.38
dibenz[a,h]anthracene	6.71	6.71	6.71	6.71	6.87	6.87	6.49	6.49	6.59	6.49
benzo[ghi]perylene	6.56	6.56	6.56	6.56	6.71	6.71	6.35	6.35	6.45	6.35
coronene	7.65	7.65	7.65	7.65	7.83	7.83	7.41	7.41	7.52	7.41

Table E-1 continued

Sample ID	GL-LM2-P-051611	GL-MC2-P-051911	GL-NB2-P-051811	GL-PE2-P-051711	GL-SC2-P-052411	GL-SM2-P-051611	GL-ZI2-P-051811	GL-NV2-P-051811	GL-WH2-P-052211	GL-CA2-P-051111
Deployment Date	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/6/2011**	**4/6/2011**	**4/11/2011**
Collection Date	**5/16/2011**	**5/19/2011**	**5/18/2011**	**5/17/2011**	**5/24/2011**	**5/16/2011**	**5/18/2011**	**5/18/2011**	**5/22/2011**	**5/11/2011**
fluorene	4.28	4.41	4.32	4.26	4.51	4.28	4.32	4.28	4.51	4.57
phenanthrene	4.69	4.83	4.74	4.66	4.94	4.69	4.74	4.69	4.94	5.00
anthracene	4.39	4.52	4.44	4.37	4.63	4.39	4.44	4.39	4.62	4.68
fluoranthene	5.33	5.49	5.38	5.30	5.62	5.33	5.38	5.33	5.61	5.68
pyrene	5.28	5.44	5.34	5.25	5.57	5.28	5.34	5.28	5.56	5.63
retene	5.04	5.18	5.08	5.01	5.31	5.04	5.08	5.03	5.30	5.37
benz[a]anthracene	5.28	5.44	5.34	5.25	5.57	5.28	5.34	5.28	5.56	5.63
chrysene	5.52	5.68	5.58	5.49	5.82	5.52	5.58	5.52	5.81	5.89
benzo[b]fluoranthene	5.88	6.05	5.94	5.85	6.20	5.88	5.94	5.87	6.19	6.27
benzo[k]fluoranthene	6.10	6.27	6.16	6.06	6.43	6.10	6.16	6.09	6.42	6.50
benzo[e]pyrene	6.45	6.64	6.51	6.41	6.80	6.45	6.51	6.44	6.79	6.87
benzo[a]pyrene	6.17	6.35	6.23	6.13	6.50	6.17	6.23	6.16	6.49	6.58
indeno[1,2,3-cd]pyrene	6.41	6.60	6.48	6.38	6.76	6.41	6.48	6.41	6.75	6.84
dibenz[a,h]anthracene	6.53	6.72	6.59	6.49	6.88	6.53	6.59	6.52	6.87	6.96
benzo[ghi]perylene	6.39	6.57	6.45	6.35	6.73	6.39	6.45	6.38	6.72	6.81
coronene	7.45	7.67	7.52	7.41	7.85	7.45	7.52	7.44	7.84	7.94

Table E-1 continued

Sample ID	GL-LM2-P-070811	GL-CA2-P-070511	GL-IT2-P-071611	GL-CP2-P-070111	GL-JP2-P-070111	GL-NP2-P-070111	GL-PP2-P-070111	GL-SP2-P-070111	GL-WP2-P-070111	GL-DC2-P-062911
Deployment Date	**5/4/2011**	**5/11/2011**	**5/16/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/23/2011**
Collection Date	**7/8/2011**	**7/5/2011**	**7/16/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**6/29/2011**
fluorene	5.16	5.04	5.35	5.08	5.08	5.08	5.08	5.08	5.08	5.13
phenanthrene	5.65	5.53	5.86	5.57	5.57	5.57	5.57	5.57	5.57	5.62
anthracene	5.29	5.18	5.49	5.21	5.21	5.21	5.21	5.21	5.21	5.26
fluoranthene	6.42	6.28	6.66	6.33	6.33	6.33	6.33	6.33	6.33	6.39
pyrene	6.36	6.22	6.60	6.27	6.27	6.27	6.27	6.27	6.27	6.33
retene	6.07	5.93	6.29	5.97	5.97	5.97	5.97	5.97	5.97	6.03
benz[a]anthracene	6.36	6.22	6.60	6.27	6.27	6.27	6.27	6.27	6.27	6.33
chrysene	6.65	6.50	6.90	6.55	6.55	6.55	6.55	6.55	6.55	6.62
benzo[b]fluoranthene	7.08	6.93	7.35	6.98	6.98	6.98	6.98	6.98	6.98	7.05
benzo[k]fluoranthene	7.34	7.18	7.62	7.23	7.23	7.23	7.23	7.23	7.23	7.30
benzo[e]pyrene	7.77	7.60	8.06	7.65	7.65	7.65	7.65	7.65	7.65	7.73
benzo[a]pyrene	7.43	7.27	7.71	7.32	7.32	7.32	7.32	7.32	7.32	7.39
indeno[1,2,3-cd]pyrene	7.73	7.56	8.01	7.61	7.61	7.61	7.61	7.61	7.61	7.69
dibenz[a,h]anthracene	7.87	7.69	8.16	7.75	7.75	7.75	7.75	7.75	7.75	7.82
benzo[ghi]perylene	7.69	7.52	7.98	7.58	7.58	7.58	7.58	7.58	7.58	7.65
coronene	8.98	8.78	9.31	8.84	8.84	8.84	8.84	8.84	8.84	8.93

Table E-1 continued

Sample ID	GL-HC2-P-062911	GL-DP2-P-070511	GL-JL2-P-070511	GL-MC2-P-070811	GL-PE2-P-070511	GL-SM2-P-070511	GL-ZI2-P-070511	GL-AU2-P-070511	GL-BR2-P-070511	GL-NB2-P-070511
Deployment Date	**5/23/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/25/2011**	**5/25/2011**	**5/25/2011**
Collection Date	**6/29/2011**	**7/6/2011**	**7/5/2011**	**7/8/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**
fluorene	5.13	5.21	5.20	5.26	5.20	5.20	5.20	5.19	5.19	5.19
phenanthrene	5.62	5.71	5.69	5.77	5.69	5.69	5.69	5.69	5.69	5.69
anthracene	5.26	5.34	5.33	5.40	5.33	5.33	5.33	5.33	5.33	5.33
fluoranthene	6.39	6.49	6.47	6.56	6.47	6.47	6.47	6.46	6.46	6.46
pyrene	6.33	6.43	6.41	6.50	6.41	6.41	6.41	6.41	6.41	6.41
retene	6.03	6.12	6.11	6.19	6.11	6.11	6.11	6.10	6.10	6.10
benz[a]anthracene	6.33	6.43	6.41	6.50	6.41	6.41	6.41	6.40	6.40	6.40
chrysene	6.62	6.72	6.70	6.79	6.70	6.70	6.70	6.69	6.69	6.69
benzo[b]fluoranthene	7.05	7.15	7.14	7.23	7.14	7.14	7.14	7.13	7.13	7.13
benzo[k]fluoranthene	7.30	7.42	7.40	7.49	7.40	7.40	7.40	7.39	7.39	7.39
benzo[e]pyrene	7.73	7.84	7.82	7.93	7.82	7.82	7.82	7.82	7.82	7.82
benzo[a]pyrene	7.39	7.50	7.49	7.59	7.49	7.49	7.49	7.48	7.48	7.48
indeno[1,2,3-cd]pyrene	7.69	7.80	7.78	7.89	7.78	7.78	7.78	7.78	7.78	7.78
dibenz[a,h]anthracene	7.82	7.94	7.92	8.03	7.92	7.92	7.92	7.92	7.92	7.92
benzo[ghi]perylene	7.65	7.77	7.75	7.85	7.75	7.75	7.75	7.74	7.74	7.74
coronene	8.93	9.06	9.04	9.16	9.04	9.04	9.04	9.03	9.03	9.03

Table E-1 continued

Sample ID	GL-NV2-P-070511	GL-DC2-P-080911	GL-HC2-P-080911	GL-CP2-P-082311	GL-JP2-P-082311	GL-NP2-P-082311	GL-PP2-P-082311	GL-SP2-P-082311	GL-WP2-P-090611	GL-IT2-P-090611
Deployment Date	**5/25/2011**	**6/30/2011**	**6/30/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/19/2011**
Collection Date	**7/5/2011**	**8/8/2011**	**8/8/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**9/6/2011**	**9/6/2011**
fluorene	5.19	5.53	5.53	5.57	5.57	5.57	5.57	5.57	5.58	5.55
phenanthrene	5.69	6.06	6.06	6.10	6.10	6.10	6.10	6.10	6.11	6.08
anthracene	5.33	5.68	5.68	5.72	5.72	5.72	5.72	5.72	5.72	5.69
fluoranthene	6.46	6.89	6.89	6.94	6.94	6.94	6.94	6.94	6.95	6.90
pyrene	6.41	6.83	6.83	6.87	6.87	6.87	6.87	6.87	6.88	6.84
retene	6.10	6.51	6.51	6.55	6.55	6.55	6.55	6.55	6.56	6.52
benz[a]anthracene	6.40	6.83	6.83	6.87	6.87	6.87	6.87	6.87	6.88	6.84
chrysene	6.69	7.14	7.14	7.18	7.18	7.18	7.18	7.18	7.19	7.15
benzo[b]fluoranthene	7.13	7.60	7.60	7.65	7.65	7.65	7.65	7.65	7.66	7.62
benzo[k]fluoranthene	7.39	7.88	7.88	7.93	7.93	7.93	7.93	7.93	7.94	7.89
benzo[e]pyrene	7.82	8.33	8.33	8.39	8.39	8.39	8.39	8.39	8.40	8.35
benzo[a]pyrene	7.48	7.97	7.97	8.03	8.03	8.03	8.03	8.03	8.04	7.99
indeno[1,2,3-cd]pyrene	7.78	8.29	8.29	8.35	8.35	8.35	8.35	8.35	8.36	8.31
dibenz[a,h]anthracene	7.92	8.44	8.44	8.50	8.50	8.50	8.50	8.50	8.51	8.46
benzo[ghi]perylene	7.74	8.25	8.25	8.31	8.31	8.31	8.31	8.31	8.32	8.27
coronene	9.03	9.63	9.63	9.69	9.69	9.69	9.69	9.69	9.71	9.65

Table E-1 continued

Sample ID	GL-DC2-P-092811	GL-HC2-P-092811	GL-JW2-P-100311	GL-JW4-P-100311	GL-WH2-P-101411	GL-CP2-P-092911	GL-JP2-P-092911	GL-NP2-P-092911	GL-PP2-P-092911	GL-SP2-P-092911
Deployment Date	**8/9/2011**	**8/9/2011**	**8/12/2011**	**8/12/2011**	**8/16/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**
Collection Date	**9/28/2011**	**9/28/2011**	**10/3/2011**	**10/3/2011**	**10/14/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**
fluorene	5.68	5.68	5.68	5.68	5.72	5.64	5.64	5.64	5.64	5.64
phenanthrene	6.23	6.23	6.22	6.22	6.26	6.18	6.18	6.18	6.18	6.18
anthracene	5.83	5.83	5.82	5.82	5.87	5.79	5.79	5.79	5.79	5.79
fluoranthene	7.08	7.08	7.07	7.07	7.12	7.03	7.03	7.03	7.03	7.03
pyrene	7.01	7.01	7.00	7.00	7.06	6.96	6.96	6.96	6.96	6.96
retene	6.68	6.68	6.67	6.67	6.72	6.64	6.64	6.64	6.64	6.64
benz[a]anthracene	7.01	7.01	7.00	7.00	7.06	6.96	6.96	6.96	6.96	6.96
chrysene	7.33	7.33	7.32	7.32	7.37	7.28	7.28	7.28	7.28	7.28
benzo[b]fluoranthene	7.80	7.80	7.79	7.79	7.85	7.75	7.75	7.75	7.75	7.75
benzo[k]fluoranthene	8.09	8.09	8.08	8.08	8.14	8.03	8.03	8.03	8.03	8.03
benzo[e]pyrene	8.56	8.56	8.55	8.55	8.61	8.50	8.50	8.50	8.50	8.50
benzo[a]pyrene	8.19	8.19	8.18	8.18	8.24	8.13	8.13	8.13	8.13	8.13
indeno[1,2,3-cd]pyrene	8.51	8.51	8.50	8.50	8.57	8.45	8.45	8.45	8.45	8.45
dibenz[a,h]anthracene	8.67	8.67	8.66	8.66	8.72	8.61	8.61	8.61	8.61	8.61
benzo[ghi]perylene	8.48	8.48	8.47	8.47	8.53	8.42	8.42	8.42	8.42	8.42
coronene	9.89	9.89	9.88	9.88	9.95	9.82	9.82	9.82	9.82	9.82

Table E-1 continued

Sample ID	GL-IT2-P-101111	GL-WP2-P-092911	GL-DC2-P-102811	GL-HC2-P-102811	GL-CP2-P-110411	GL-JP2-P-110411	GL-NP2-P-110411	GL-PP2-P-110411	GL-SP2-P-110411	GL-WP2-P-110411
Deployment Date	**9/6/2011**	**9/6/2011**	**9/28/2011**	**9/28/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**
Collection Date	**10/11/2011**	**9/29/2011**	**10/28/2011**	**10/28/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**
fluorene	5.79	5.73	5.73	5.73	5.69	5.69	5.69	5.69	5.69	5.69
phenanthrene	6.34	6.28	6.28	6.28	6.24	6.24	6.24	6.24	6.24	6.24
anthracene	5.94	5.88	5.88	5.88	5.84	5.84	5.84	5.84	5.84	5.84
fluoranthene	7.21	7.13	7.13	7.13	7.09	7.09	7.09	7.09	7.09	7.09
pyrene	7.14	7.07	7.07	7.07	7.02	7.02	7.02	7.02	7.02	7.02
retene	6.81	6.74	6.74	6.74	6.69	6.69	6.69	6.69	6.69	6.69
benz[a]anthracene	7.14	7.07	7.07	7.07	7.02	7.02	7.02	7.02	7.02	7.02
chrysene	7.46	7.39	7.39	7.39	7.34	7.34	7.34	7.34	7.34	7.34
benzo[b]fluoranthene	7.95	7.87	7.87	7.87	7.82	7.82	7.82	7.82	7.82	7.82
benzo[k]fluoranthene	8.24	8.15	8.15	8.15	8.10	8.10	8.10	8.10	8.10	8.10
benzo[e]pyrene	8.72	8.63	8.63	8.63	8.57	8.57	8.57	8.57	8.57	8.57
benzo[a]pyrene	8.34	8.25	8.25	8.25	8.20	8.20	8.20	8.20	8.20	8.20
indeno[1,2,3-cd]pyrene	8.67	8.58	8.58	8.58	8.53	8.53	8.53	8.53	8.53	8.53
dibenz[a,h]anthracene	8.83	8.74	8.74	8.74	8.68	8.68	8.68	8.68	8.68	8.68
benzo[ghi]perylene	8.63	8.54	8.54	8.54	8.49	8.49	8.49	8.49	8.49	8.49
coronene	10.07	9.97	9.97	9.97	9.91	9.91	9.91	9.91	9.91	9.91

Table E-1 continued

Sample ID	GL-IT2-P-101111	GL-WH2-P-111711	GL-CP2-P-121711	GL-JP2-P-121611	GL-PP2-P-121611	GL-SP2-P-121711	GL-WP2-P-121911	GL-WH2-P-122811
Deployment Date	**9/30/2011**	**10/14/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/17/2011**
Collection Date	**10/11/2011**	**11/17/2011**	**12/17/2011**	**12/16/2011**	**12/16/2011**	**12/17/2011**	**12/19/2011**	**12/28/2011**
fluorene	5.76	5.19	5.04	4.93	4.93	5.04	5.08	5.39
phenanthrene	6.31	5.69	5.52	5.40	5.40	5.52	5.56	5.90
anthracene	5.91	5.33	5.17	5.06	5.06	5.17	5.21	5.53
fluoranthene	7.17	6.47	6.27	6.14	6.14	6.27	6.32	6.71
pyrene	7.11	6.41	6.22	6.08	6.08	6.22	6.26	6.65
retene	6.77	6.11	5.92	5.80	5.80	5.92	5.97	6.33
benz[a]anthracene	7.11	6.41	6.22	6.08	6.08	6.22	6.26	6.65
chrysene	7.43	6.70	6.50	6.36	6.36	6.50	6.55	6.95
benzo[b]fluoranthene	7.91	7.13	6.92	6.77	6.77	6.92	6.97	7.40
benzo[k]fluoranthene	8.20	7.39	7.17	7.02	7.02	7.17	7.23	7.67
benzo[e]pyrene	8.68	7.82	7.59	7.42	7.42	7.59	7.65	8.11
benzo[a]pyrene	8.30	7.48	7.26	7.10	7.10	7.26	7.32	7.76
indeno[1,2,3-cd]pyrene	8.63	7.78	7.55	7.39	7.39	7.55	7.60	8.07
dibenz[a,h]anthracene	8.79	7.92	7.68	7.52	7.52	7.68	7.74	8.21
benzo[ghi]perylene	8.59	7.75	7.51	7.35	7.35	7.51	7.57	8.03
coronene	10.03	9.04	8.77	8.58	8.58	8.77	8.83	9.37

Table E-2: Average sampling rate for all pesticides for the 2011 PUF-PAS deployments.

Sample ID	GL-DC2-P-032911	GL-HC2-P-032911	GL-JP2-P-033111	GL-NP2-P-033111	GL-PP2-P-033111	GL-SP2-P-033111	GL-CP2-P-033111	GL-WP2-P-033111	GL-CP2-P-051911	GL-JP2-P-051911
Deployment Date	**2/9/2011**	**2/9/2011**	**2/10/2011**	**2/10/2011**	**2/10/2011**	**2/10/2011**	**2/18/2011**	**2/18/2011**	**3/31/2011**	**3/31/2011**
Collection Date	**3/29/2011**	**3/29/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**5/19/2011**	**5/19/2011**
A-HCH	5.25	5.25	5.32	5.32	5.32	5.32	5.61	5.61	4.28	4.28
B-HCH	6.13	6.13	6.20	6.20	6.20	6.20	6.54	6.54	5.00	5.00
G-HCH	5.42	5.42	5.48	5.48	5.48	5.48	5.79	5.79	4.42	4.42
D-HCH	6.10	6.10	6.18	6.18	6.18	6.18	6.51	6.51	4.97	4.97
Heptachlor Epoxide	5.17	5.17	5.23	5.23	5.23	5.23	5.52	5.52	4.22	4.22
Oxychlordane	6.08	6.08	6.15	6.15	6.15	6.15	6.49	6.49	4.95	4.95
G-Chlordane	6.05	6.05	6.12	6.12	6.12	6.12	6.45	6.45	4.93	4.93
Endosulfan I	5.49	5.49	5.55	5.55	5.55	5.55	5.86	5.86	4.47	4.47
A-Chlordane	5.65	5.65	5.72	5.72	5.72	5.72	6.03	6.03	4.61	4.61
T-Nona	5.80	5.80	5.87	5.87	5.87	5.87	6.19	6.19	4.73	4.73
Dieldrin	5.74	5.74	5.81	5.81	5.81	5.81	6.13	6.13	4.68	4.68
O,P'-DDD	6.30	6.30	6.38	6.38	6.38	6.38	6.73	6.73	5.14	5.14
Endrin	5.25	5.25	5.31	5.31	5.31	5.31	5.60	5.60	4.28	4.28
Endosulfan II	4.07	4.07	4.12	4.12	4.12	4.12	4.34	4.34	3.32	3.32
O,P'-DDT	6.21	6.21	6.28	6.28	6.28	6.28	6.63	6.63	5.06	5.06
P,P'-DDD	6.81	6.81	6.89	6.89	6.89	6.89	7.27	7.27	5.55	5.55
Endosulfan Sulfate	5.37	5.37	5.43	5.43	5.43	5.43	5.73	5.73	4.38	4.38
P,P'-DDT	6.45	6.45	6.53	6.53	6.53	6.53	6.89	6.89	5.26	5.26
Methoxychlor	6.72	6.72	6.80	6.80	6.80	6.80	7.17	7.17	5.48	5.48
p,p-DDE	6.54	6.54	6.62	6.62	6.62	6.62	6.98	6.98	5.33	5.33
HCB	4.78	4.78	4.84	4.84	4.84	4.84	5.10	5.10	3.90	3.90
aldrin	5.27	5.27	5.33	5.33	5.33	5.33	5.63	5.63	4.30	4.30
octachlorostyrene	6.13	6.13	6.20	6.20	6.20	6.20	6.54	6.54	5.00	5.00

Table E-2 continued

Sample ID	GL-NP2-P-051911	GL-PP2-P-051911	GL-SP2-P-051911	GL-WP2-P-051911	GL-DC2-P-052311	GL-HC2-P-052311	GL-AU2-P-051711	GL-BR2-P-051711	GL-DP2-P-051811	GL-JL2-P-051711
Deployment Date	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**4/4/2011**	**4/4/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**
Collection Date	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/23/2011**	**5/23/2011**	**5/17/2011**	**5/17/2011**	**5/18/2011**	**5/17/2011**
A-HCH	4.28	4.28	4.28	4.28	4.38	4.38	4.15	4.15	4.21	4.15
B-HCH	5.00	5.00	5.00	5.00	5.12	5.12	4.84	4.84	4.91	4.84
G-HCH	4.42	4.42	4.42	4.42	4.52	4.52	4.28	4.28	4.34	4.28
D-HCH	4.97	4.97	4.97	4.97	5.09	5.09	4.82	4.82	4.89	4.82
Heptachlor Epoxide	4.22	4.22	4.22	4.22	4.32	4.32	4.08	4.08	4.15	4.08
Oxychlordane	4.95	4.95	4.95	4.95	5.07	5.07	4.80	4.80	4.87	4.80
G-Chlordane	4.93	4.93	4.93	4.93	5.05	5.05	4.77	4.77	4.85	4.77
Endosulfan I	4.47	4.47	4.47	4.47	4.58	4.58	4.33	4.33	4.40	4.33
A-Chlordane	4.61	4.61	4.61	4.61	4.72	4.72	4.46	4.46	4.53	4.46
T-Nona	4.73	4.73	4.73	4.73	4.84	4.84	4.58	4.58	4.65	4.58
Dieldrin	4.68	4.68	4.68	4.68	4.79	4.79	4.53	4.53	4.60	4.53
O,P'-DDD	5.14	5.14	5.14	5.14	5.26	5.26	4.98	4.98	5.05	4.98
Endrin	4.28	4.28	4.28	4.28	4.38	4.38	4.14	4.14	4.21	4.14
Endosulfan II	3.32	3.32	3.32	3.32	3.40	3.40	3.21	3.21	3.26	3.21
O,P'-DDT	5.06	5.06	5.06	5.06	5.18	5.18	4.90	4.90	4.98	4.90
P,P'-DDD	5.55	5.55	5.55	5.55	5.68	5.68	5.37	5.37	5.46	5.37
Endosulfan Sulfate	4.38	4.38	4.38	4.38	4.48	4.48	4.24	4.24	4.30	4.24
P,P'-DDT	5.26	5.26	5.26	5.26	5.38	5.38	5.09	5.09	5.17	5.09
Methoxychlor	5.48	5.48	5.48	5.48	5.61	5.61	5.30	5.30	5.38	5.30
p,p-DDE	5.33	5.33	5.33	5.33	5.46	5.46	5.16	5.16	5.24	5.16
HCB	3.90	3.90	3.90	3.90	3.99	3.99	3.77	3.77	3.83	3.77
aldrin	4.30	4.30	4.30	4.30	4.40	4.40	4.16	4.16	4.23	4.16
octachlorostyrene	5.00	5.00	5.00	5.00	5.12	5.12	4.84	4.84	4.91	4.84

Table E-2 continued

Sample ID	GL-LM2-P-051611	GL-MC2-P-051911	GL-NB2-P-051811	GL-PE2-P-051711	GL-SC2-P-052411	GL-SM2-P-051611	GL-ZI2-P-051811	GL-NV2-P-051811	GL-WH2-P-052211	GL-CA2-P-051111
Deployment Date	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/6/2011**	**4/6/2011**	**4/11/2011**
Collection Date	**5/16/2011**	**5/19/2011**	**5/18/2011**	**5/17/2011**	**5/24/2011**	**5/16/2011**	**5/18/2011**	**5/18/2011**	**5/22/2011**	**5/11/2011**
A-HCH	4.17	4.29	4.21	4.15	4.40	4.17	4.21	4.17	4.39	4.45
B-HCH	4.87	5.01	4.91	4.84	5.13	4.87	4.91	4.86	5.12	5.19
G-HCH	4.30	4.43	4.34	4.28	4.53	4.30	4.34	4.30	4.53	4.59
D-HCH	4.84	4.99	4.89	4.82	5.11	4.84	4.89	4.84	5.10	5.17
Heptachlor Epoxide	4.11	4.23	4.15	4.08	4.33	4.11	4.15	4.10	4.32	4.38
Oxychlordane	4.83	4.97	4.87	4.80	5.09	4.83	4.87	4.82	5.08	5.14
G-Chlordane	4.80	4.94	4.85	4.77	5.06	4.80	4.85	4.79	5.05	5.12
Endosulfan I	4.35	4.48	4.40	4.33	4.59	4.35	4.40	4.35	4.58	4.64
A-Chlordane	4.49	4.62	4.53	4.46	4.73	4.49	4.53	4.48	4.72	4.78
T-Nona	4.61	4.74	4.65	4.58	4.85	4.61	4.65	4.60	4.85	4.91
Dieldrin	4.56	4.69	4.60	4.53	4.81	4.56	4.60	4.56	4.80	4.86
O,P'-DDD	5.00	5.15	5.05	4.98	5.27	5.00	5.05	5.00	5.27	5.34
Endrin	4.17	4.29	4.21	4.14	4.39	4.17	4.21	4.16	4.38	4.44
Endosulfan II	3.23	3.33	3.26	3.21	3.41	3.23	3.26	3.23	3.40	3.44
O,P'-DDT	4.93	5.07	4.98	4.90	5.19	4.93	4.98	4.92	5.19	5.25
P,P'-DDD	5.41	5.56	5.46	5.37	5.70	5.41	5.46	5.40	5.69	5.76
Endosulfan Sulfate	4.26	4.39	4.30	4.24	4.49	4.26	4.30	4.26	4.49	4.54
P,P'-DDT	5.12	5.27	5.17	5.09	5.40	5.12	5.17	5.12	5.39	5.46
Methoxychlor	5.33	5.49	5.38	5.30	5.62	5.33	5.38	5.33	5.61	5.69
p,p-DDE	5.19	5.34	5.24	5.16	5.47	5.19	5.24	5.18	5.46	5.53
HCB	3.80	3.91	3.83	3.77	4.00	3.80	3.83	3.79	3.99	4.05
aldrin	4.18	4.31	4.23	4.16	4.41	4.18	4.23	4.18	4.40	4.46
octachlorostyrene	4.87	5.01	4.91	4.84	5.13	4.87	4.91	4.86	5.12	5.19

Table E-1 continued

Sample ID	GL-LM2-P-070811	GL-CA2-P-070511	GL-IT2-P-071611	GL-CP2-P-070111	GL-JP2-P-070111	GL-NP2-P-070111	GL-PP2-P-070111	GL-SP2-P-070111	GL-WP2-P-070111	GL-DC2-P-062911
Deployment Date	**5/4/2011**	**5/11/2011**	**5/16/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/23/2011**
Collection Date	**7/8/2011**	**7/5/2011**	**7/16/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**6/29/2011**
A-HCH	5.02	4.91	5.21	4.95	4.95	4.95	4.95	4.95	4.95	5.00
B-HCH	5.86	5.73	6.08	5.77	5.77	5.77	5.77	5.77	5.77	5.83
G-HCH	5.18	5.07	5.37	5.10	5.10	5.10	5.10	5.10	5.10	5.15
D-HCH	5.84	5.71	6.05	5.75	5.75	5.75	5.75	5.75	5.75	5.80
Heptachlor Epoxide	4.95	4.84	5.13	4.87	4.87	4.87	4.87	4.87	4.87	4.92
Oxychlordane	5.81	5.68	6.03	5.73	5.73	5.73	5.73	5.73	5.73	5.78
G-Chlordane	5.78	5.65	6.00	5.69	5.69	5.69	5.69	5.69	5.69	5.75
Endosulfan I	5.25	5.13	5.44	5.17	5.17	5.17	5.17	5.17	5.17	5.22
A-Chlordane	5.41	5.29	5.61	5.32	5.32	5.32	5.32	5.32	5.32	5.38
T-Nona	5.55	5.42	5.75	5.46	5.46	5.46	5.46	5.46	5.46	5.52
Dieldrin	5.49	5.37	5.70	5.41	5.41	5.41	5.41	5.41	5.41	5.46
O,P'-DDD	6.03	5.89	6.25	5.94	5.94	5.94	5.94	5.94	5.94	6.00
Endrin	5.02	4.91	5.20	4.94	4.94	4.94	4.94	4.94	4.94	4.99
Endosulfan II	3.89	3.81	4.04	3.83	3.83	3.83	3.83	3.83	3.83	3.87
O,P'-DDT	5.94	5.80	6.16	5.85	5.85	5.85	5.85	5.85	5.85	5.90
P,P'-DDD	6.51	6.37	6.75	6.41	6.41	6.41	6.41	6.41	6.41	6.48
Endosulfan Sulfate	5.13	5.02	5.33	5.06	5.06	5.06	5.06	5.06	5.06	5.11
P,P'-DDT	6.17	6.03	6.40	6.08	6.08	6.08	6.08	6.08	6.08	6.14
Methoxychlor	6.42	6.28	6.66	6.33	6.33	6.33	6.33	6.33	6.33	6.39
p,p-DDE	6.25	6.11	6.48	6.16	6.16	6.16	6.16	6.16	6.16	6.22
HCB	4.57	4.47	4.74	4.50	4.50	4.50	4.50	4.50	4.50	4.55
aldrin	5.04	4.93	5.23	4.97	4.97	4.97	4.97	4.97	4.97	5.01
octachlorostyrene	5.86	5.73	6.08	5.77	5.77	5.77	5.77	5.77	5.77	5.83

Table E-2 continued

Sample ID	GL-HC2-P-062911	GL-DP2-P-070511	GL-JL2-P-070511	GL-MC2-P-070811	GL-PE2-P-070511	GL-SM2-P-070511	GL-ZI2-P-070511	GL-AU2-P-070511	GL-BR2-P-070511	GL-NB2-P-070511
Deployment Date	**5/23/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/25/2011**	**5/25/2011**	**5/25/2011**
Collection Date	**6/29/2011**	**7/6/2011**	**7/5/2011**	**7/8/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**
A-HCH	5.00	5.07	5.06	5.13	5.06	5.06	5.06	5.06	5.06	5.06
B-HCH	5.83	5.92	5.91	5.98	5.91	5.91	5.91	5.90	5.90	5.90
G-HCH	5.15	5.23	5.22	5.29	5.22	5.22	5.22	5.22	5.22	5.22
D-HCH	5.80	5.89	5.88	5.96	5.88	5.88	5.88	5.87	5.87	5.87
Heptachlor Epoxide	4.92	4.99	4.98	5.05	4.98	4.98	4.98	4.98	4.98	4.98
Oxychlordane	5.78	5.87	5.85	5.93	5.85	5.85	5.85	5.85	5.85	5.85
G-Chlordane	5.75	5.84	5.82	5.90	5.82	5.82	5.82	5.82	5.82	5.82
Endosulfan I	5.22	5.30	5.28	5.35	5.28	5.28	5.28	5.28	5.28	5.28
A-Chlordane	5.38	5.46	5.44	5.52	5.44	5.44	5.44	5.44	5.44	5.44
T-Nona	5.52	5.60	5.59	5.66	5.59	5.59	5.59	5.58	5.58	5.58
Dieldrin	5.46	5.55	5.53	5.61	5.53	5.53	5.53	5.53	5.53	5.53
O,P'-DDD	6.00	6.09	6.07	6.15	6.07	6.07	6.07	6.07	6.07	6.07
Endrin	4.99	5.07	5.05	5.12	5.05	5.05	5.05	5.05	5.05	5.05
Endosulfan II	3.87	3.93	3.92	3.97	3.92	3.92	3.92	3.92	3.92	3.92
O,P'-DDT	5.90	5.99	5.98	6.06	5.98	5.98	5.98	5.97	5.97	5.97
P,P'-DDD	6.48	6.58	6.56	6.65	6.56	6.56	6.56	6.55	6.55	6.55
Endosulfan Sulfate	5.11	5.18	5.17	5.24	5.17	5.17	5.17	5.17	5.17	5.17
P,P'-DDT	6.14	6.23	6.21	6.30	6.21	6.21	6.21	6.21	6.21	6.21
Methoxychlor	6.39	6.49	6.47	6.56	6.47	6.47	6.47	6.46	6.46	6.46
p,p-DDE	6.22	6.31	6.30	6.38	6.30	6.30	6.30	6.29	6.29	6.29
HCB	4.55	4.62	4.61	4.67	4.61	4.61	4.61	4.60	4.60	4.60
aldrin	5.01	5.09	5.08	5.14	5.08	5.08	5.08	5.07	5.07	5.07
octachlorostyrene	5.83	5.92	5.90	5.98	5.90	5.90	5.90	5.90	5.90	5.90

Table E-2 continued

Sample ID	GL-NV2-P-070511	GL-DC2-P-080911	GL-HC2-P-080911	GL-CP2-P-082311	GL-JP2-P-082311	GL-NP2-P-082311	GL-PP2-P-082311	GL-SP2-P-082311	GL-WP2-P-090611	GL-IT2-P-090611
Deployment Date	**5/25/2011**	**6/30/2011**	**6/30/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/19/2011**
Collection Date	**7/5/2011**	**8/8/2011**	**8/8/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**9/6/2011**	**9/6/2011**
A-HCH	5.06	5.39	5.39	5.43	5.43	5.43	5.43	5.43	5.43	5.40
B-HCH	5.90	6.29	6.29	6.33	6.33	6.33	6.33	6.33	6.34	6.30
G-HCH	5.22	5.56	5.56	5.60	5.60	5.60	5.60	5.60	5.61	5.57
D-HCH	5.87	6.26	6.26	6.30	6.30	6.30	6.30	6.30	6.31	6.27
Heptachlor Epoxide	4.98	5.31	5.31	5.34	5.34	5.34	5.34	5.34	5.35	5.32
Oxychlordane	5.85	6.24	6.24	6.28	6.28	6.28	6.28	6.28	6.29	6.25
G-Chlordane	5.82	6.20	6.20	6.24	6.24	6.24	6.24	6.24	6.25	6.21
Endosulfan I	5.28	5.63	5.63	5.66	5.66	5.66	5.66	5.66	5.67	5.64
A-Chlordane	5.44	5.80	5.80	5.84	5.84	5.84	5.84	5.84	5.85	5.81
T-Nona	5.58	5.95	5.95	5.99	5.99	5.99	5.99	5.99	6.00	5.96
Dieldrin	5.53	5.89	5.89	5.93	5.93	5.93	5.93	5.93	5.94	5.91
O,P'-DDD	6.07	6.47	6.47	6.51	6.51	6.51	6.51	6.51	6.52	6.48
Endrin	5.05	5.38	5.38	5.42	5.42	5.42	5.42	5.42	5.43	5.39
Endosulfan II	3.92	4.18	4.18	4.20	4.20	4.20	4.20	4.20	4.21	4.18
O,P'-DDT	5.97	6.37	6.37	6.41	6.41	6.41	6.41	6.41	6.42	6.38
P,P'-DDD	6.55	6.99	6.99	7.03	7.03	7.03	7.03	7.03	7.04	7.00
Endosulfan Sulfate	5.17	5.51	5.51	5.55	5.55	5.55	5.55	5.55	5.55	5.52
P,P'-DDT	6.21	6.62	6.62	6.66	6.66	6.66	6.66	6.66	6.67	6.63
Methoxychlor	6.46	6.89	6.89	6.94	6.94	6.94	6.94	6.94	6.95	6.91
p,p-DDE	6.29	6.71	6.71	6.75	6.75	6.75	6.75	6.75	6.76	6.72
HCB	4.60	4.91	4.91	4.94	4.94	4.94	4.94	4.94	4.95	4.92
aldrin	5.07	5.41	5.41	5.44	5.44	5.44	5.44	5.44	5.45	5.42
octachlorostyrene	5.90	6.29	6.29	6.33	6.33	6.33	6.33	6.33	6.34	6.30

Table E-2 continued

Sample ID	GL-DC2-P-092811	GL-HC2-P-092811	GL-JW2-P-100311	GL-JW4-P-100311	GL-WH2-P-101411	GL-CP2-P-092911	GL-JP2-P-092911	GL-NP2-P-092911	GL-PP2-P-092911	GL-SP2-P-092911
Deployment Date	**8/9/2011**	**8/9/2011**	**8/12/2011**	**8/12/2011**	**8/16/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**
Collection Date	**9/28/2011**	**9/28/2011**	**10/3/2011**	**10/3/2011**	**10/14/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**
A-HCH	5.54	5.54	5.53	5.53	5.57	5.50	5.50	5.50	5.50	5.50
B-HCH	6.46	6.46	6.45	6.45	6.50	6.41	6.41	6.41	6.41	6.41
G-HCH	5.71	5.71	5.70	5.70	5.74	5.67	5.67	5.67	5.67	5.67
D-HCH	6.43	6.43	6.42	6.42	6.47	6.38	6.38	6.38	6.38	6.38
Heptachlor Epoxide	5.45	5.45	5.44	5.44	5.48	5.41	5.41	5.41	5.41	5.41
Oxychlordane	6.40	6.40	6.40	6.40	6.44	6.36	6.36	6.36	6.36	6.36
G-Chlordane	6.37	6.37	6.36	6.36	6.41	6.32	6.32	6.32	6.32	6.32
Endosulfan I	5.78	5.78	5.77	5.77	5.81	5.74	5.74	5.74	5.74	5.74
A-Chlordane	5.96	5.96	5.95	5.95	5.99	5.91	5.91	5.91	5.91	5.91
T-Nona	6.11	6.11	6.11	6.11	6.15	6.07	6.07	6.07	6.07	6.07
Dieldrin	6.05	6.05	6.04	6.04	6.09	6.01	6.01	6.01	6.01	6.01
O,P'-DDD	6.64	6.64	6.63	6.63	6.68	6.59	6.59	6.59	6.59	6.59
Endrin	5.53	5.53	5.52	5.52	5.56	5.49	5.49	5.49	5.49	5.49
Endosulfan II	4.29	4.29	4.28	4.28	4.31	4.26	4.26	4.26	4.26	4.26
O,P'-DDT	6.54	6.54	6.53	6.53	6.58	6.49	6.49	6.49	6.49	6.49
P,P'-DDD	7.17	7.17	7.17	7.17	7.22	7.12	7.12	7.12	7.12	7.12
Endosulfan Sulfate	5.66	5.66	5.65	5.65	5.69	5.62	5.62	5.62	5.62	5.62
P,P'-DDT	6.80	6.80	6.79	6.79	6.84	6.75	6.75	6.75	6.75	6.75
Methoxychlor	7.08	7.08	7.07	7.07	7.12	7.03	7.03	7.03	7.03	7.03
p,p-DDE	6.89	6.89	6.88	6.88	6.93	6.84	6.84	6.84	6.84	6.84
HCB	5.04	5.04	5.03	5.03	5.07	5.00	5.00	5.00	5.00	5.00
aldrin	5.55	5.55	5.55	5.55	5.59	5.51	5.51	5.51	5.51	5.51
octachlorostyrene	6.46	6.46	6.45	6.45	6.50	6.41	6.41	6.41	6.41	6.41

Table E-2 continued

Sample ID	GL-IT2-P-101111	GL-WP2-P-092911	GL-DC2-P-102811	GL-HC2-P-102811	GL-CP2-P-110411	GL-JP2-P-110411	GL-NP2-P-110411	GL-PP2-P-110411	GL-SP2-P-110411	GL-WP2-P-110411
Deployment Date	**9/6/2011**	**9/6/2011**	**9/28/2011**	**9/28/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**
Collection Date	**10/11/2011**	**9/29/2011**	**10/28/2011**	**10/28/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**
A-HCH	5.64	5.58	5.58	5.58	5.55	5.55	5.55	5.55	5.55	5.55
B-HCH	6.58	6.51	6.51	6.51	6.47	6.47	6.47	6.47	6.47	6.47
G-HCH	5.82	5.75	5.75	5.75	5.72	5.72	5.72	5.72	5.72	5.72
D-HCH	6.55	6.48	6.48	6.48	6.44	6.44	6.44	6.44	6.44	6.44
Heptachlor Epoxide	5.55	5.49	5.49	5.49	5.46	5.46	5.46	5.46	5.46	5.46
Oxychlordane	6.52	6.45	6.45	6.45	6.42	6.42	6.42	6.42	6.42	6.42
G-Chlordane	6.49	6.42	6.42	6.42	6.38	6.38	6.38	6.38	6.38	6.38
Endosulfan I	5.89	5.82	5.82	5.82	5.79	5.79	5.79	5.79	5.79	5.79
A-Chlordane	6.07	6.00	6.00	6.00	5.97	5.97	5.97	5.97	5.97	5.97
T-Nona	6.23	6.16	6.16	6.16	6.12	6.12	6.12	6.12	6.12	6.12
Dieldrin	6.16	6.10	6.10	6.10	6.06	6.06	6.06	6.06	6.06	6.06
O,P'-DDD	6.76	6.69	6.69	6.69	6.65	6.65	6.65	6.65	6.65	6.65
Endrin	5.63	5.57	5.57	5.57	5.54	5.54	5.54	5.54	5.54	5.54
Endosulfan II	4.37	4.32	4.32	4.32	4.29	4.29	4.29	4.29	4.29	4.29
O,P'-DDT	6.66	6.59	6.59	6.59	6.55	6.55	6.55	6.55	6.55	6.55
P,P'-DDD	7.31	7.23	7.23	7.23	7.19	7.19	7.19	7.19	7.19	7.19
Endosulfan Sulfate	5.76	5.70	5.70	5.70	5.67	5.67	5.67	5.67	5.67	5.67
P,P'-DDT	6.92	6.85	6.85	6.85	6.81	6.81	6.81	6.81	6.81	6.81
Methoxychlor	7.21	7.13	7.13	7.13	7.09	7.09	7.09	7.09	7.09	7.09
p,p-DDE	7.01	6.94	6.94	6.94	6.90	6.90	6.90	6.90	6.90	6.90
HCB	5.13	5.08	5.08	5.08	5.05	5.05	5.05	5.05	5.05	5.05
aldrin	5.66	5.60	5.60	5.60	5.56	5.56	5.56	5.56	5.56	5.56
octachlorostyrene	6.58	6.51	6.51	6.51	6.47	6.47	6.47	6.47	6.47	6.47

Table E-2 continued

Sample ID	GL-IT2-P-101111	GL-WH2-P-111711	GL-CP2-P-121711	GL-JP2-P-121611	GL-PP2-P-121611	GL-SP2-P-121711	GL-WP2-P-121911	GL-WH2-P-122811
Deployment Date	**9/30/2011**	**10/14/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/17/2011**
Collection Date	**10/11/2011**	**11/17/2011**	**12/17/2011**	**12/16/2011**	**12/16/2011**	**12/17/2011**	**12/19/2011**	**12/28/2011**
A-HCH	5.61	5.06	4.91	4.80	4.80	4.91	4.94	5.25
B-HCH	6.55	5.90	5.73	5.60	5.60	5.73	5.77	6.12
G-HCH	5.79	5.22	5.06	4.95	4.95	5.06	5.10	5.41
D-HCH	6.52	5.88	5.70	5.58	5.58	5.70	5.74	6.09
Heptachlor Epoxide	5.52	4.98	4.83	4.73	4.73	4.83	4.87	5.16
Oxychlordane	6.49	5.85	5.68	5.56	5.56	5.68	5.72	6.07
G-Chlordane	6.46	5.82	5.65	5.53	5.53	5.65	5.69	6.04
Endosulfan I	5.86	5.28	5.12	5.01	5.01	5.12	5.16	5.48
A-Chlordane	6.04	5.44	5.28	5.17	5.17	5.28	5.32	5.64
T-Nona	6.20	5.59	5.42	5.30	5.30	5.42	5.46	5.79
Dieldrin	6.14	5.53	5.36	5.25	5.25	5.36	5.41	5.74
O,P'-DDD	6.73	6.07	5.89	5.76	5.76	5.89	5.93	6.29
Endrin	5.60	5.05	4.90	4.80	4.80	4.90	4.94	5.24
Endosulfan II	4.35	3.92	3.80	3.72	3.72	3.80	3.83	4.06
O,P'-DDT	6.63	5.98	5.80	5.67	5.67	5.80	5.84	6.20
P,P'-DDD	7.27	6.56	6.36	6.22	6.22	6.36	6.41	6.80
Endosulfan Sulfate	5.74	5.17	5.01	4.91	4.91	5.01	5.05	5.36
P,P'-DDT	6.89	6.21	6.02	5.90	5.90	6.02	6.07	6.44
Methoxychlor	7.17	6.47	6.27	6.14	6.14	6.27	6.32	6.71
p,p-DDE	6.98	6.29	6.10	5.97	5.97	6.10	6.15	6.53
HCB	5.11	4.60	4.47	4.37	4.37	4.47	4.50	4.77
aldrin	5.63	5.07	4.92	4.82	4.82	4.92	4.96	5.26
octachlorostyrene	6.55	5.90	5.72	5.60	5.60	5.72	5.77	6.12

Table E-3: Average sampling rate for all BFRs for the 2011 PUF-PAS deployments.

Sample ID	GL-DC2-P-032911	GL-HC2-P-032911	GL-JP2-P-033111	GL-NP2-P-033111	GL-PP2-P-033111	GL-SP2-P-033111	GL-CP2-P-033111	GL-WP2-P-033111	GL-CP2-P-051911	GL-JP2-P-051911
Deployment Date	**2/9/2011**	**2/9/2011**	**2/10/2011**	**2/10/2011**	**2/10/2011**	**2/10/2011**	**2/18/2011**	**2/18/2011**	**3/31/2011**	**3/31/2011**
Collection Date	**3/29/2011**	**3/29/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**5/19/2011**	**5/19/2011**
BDE-10	5.43	5.43	5.50	5.50	5.50	5.50	5.80	5.80	4.43	4.43
BDE-7	5.43	5.43	5.50	5.50	5.50	5.50	5.80	5.80	4.43	4.43
BDE-15	5.43	5.43	5.50	5.50	5.50	5.50	5.80	5.80	4.43	4.43
pTBX	5.55	5.55	5.62	5.62	5.62	5.62	5.92	5.92	4.52	4.52
PBBZ	5.56	5.56	5.63	5.63	5.63	5.63	5.94	5.94	4.54	4.54
BDE-30	5.97	5.97	6.04	6.04	6.04	6.04	6.37	6.37	4.86	4.86
BDE-17	5.90	5.90	5.98	5.98	5.98	5.98	6.30	6.30	4.81	4.81
BDE-28	6.03	6.03	6.10	6.10	6.10	6.10	6.44	6.44	4.92	4.92
PBEB	5.97	5.97	6.04	6.04	6.04	6.04	6.37	6.37	4.86	4.86
HBB	5.83	5.83	5.90	5.90	5.90	5.90	6.22	6.22	4.75	4.75
BDE-49	6.49	6.49	6.57	6.57	6.57	6.57	6.93	6.93	5.29	5.29
BDE-71	6.49	6.49	6.57	6.57	6.57	6.57	6.93	6.93	5.29	5.29
BDE-47	6.40	6.40	6.47	6.47	6.47	6.47	6.83	6.83	5.21	5.21
BDE-66	6.57	6.57	6.65	6.65	6.65	6.65	7.01	7.01	5.36	5.36
BDE-100	6.51	6.51	6.59	6.59	6.59	6.59	6.95	6.95	5.31	5.31
BDE-119	7.01	7.01	7.09	7.09	7.09	7.09	7.48	7.48	5.71	5.71
BDE-99	6.62	6.62	6.69	6.69	6.69	6.69	7.06	7.06	5.39	5.39
EHTBB	4.59	4.59	4.65	4.65	4.65	4.65	4.90	4.90	3.74	3.74
BDE-85	6.82	6.82	6.90	6.90	6.90	6.90	7.28	7.28	5.56	5.56
BDE-126	7.00	7.00	7.09	7.09	7.09	7.09	7.47	7.47	5.71	5.71
BDE-153	6.69	6.69	6.77	6.77	6.77	6.77	7.14	7.14	5.45	5.45
BDE-154	6.75	6.75	6.83	6.83	6.83	6.83	7.20	7.20	5.50	5.50
BDE-139	7.51	7.51	7.60	7.60	7.60	7.60	8.02	8.02	6.12	6.12
HBCD	6.74	6.74	6.82	6.82	6.82	6.82	7.19	7.19	5.49	5.49
BDE-140	7.51	7.51	7.60	7.60	7.60	7.60	8.02	8.02	6.12	6.12
BDE-138	7.51	7.51	7.60	7.60	7.60	7.60	8.02	8.02	6.12	6.12
BDE-156	6.78	6.78	6.86	6.86	6.86	6.86	7.23	7.23	5.52	5.52

Table E-3 continued

Sample ID	GL-DC2-P-032911	GL-HC2-P-032911	GL-JP2-P-033111	GL-NP2-P-033111	GL-PP2-P-033111	GL-SP2-P-033111	GL-CP2-P-033111	GL-WP2-P-033111	GL-CP2-P-051911	GL-JP2-P-051911
Deployment Date	**2/9/2011**	**2/9/2011**	**2/10/2011**	**2/10/2011**	**2/10/2011**	**2/10/2011**	**2/18/2011**	**2/18/2011**	**3/31/2011**	**3/31/2011**
Collection Date	**3/29/2011**	**3/29/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**5/19/2011**	**5/19/2011**
BDE-10	5.43	5.43	5.50	5.50	5.50	5.50	5.80	5.80	4.43	4.43
BDE-191	8.00	8.00	8.10	8.10	8.10	8.10	8.54	8.54	6.52	6.52
TBE	8.35	8.35	8.45	8.45	8.45	8.45	8.92	8.92	6.81	6.81
BEHTBP	9.79	9.79	9.91	9.91	9.91	9.91	10.45	10.45	7.98	7.98
DP	8.34	8.34	8.44	8.44	8.44	8.44	8.90	8.90	6.80	6.80
BDE-203	5.99	5.99	6.06	6.06	6.06	6.06	6.39	6.39	4.88	4.88
BDE209	8.20	8.20	8.30	8.30	8.30	8.30	8.75	8.75	6.68	6.68
DBDPE	9.60	9.60	9.72	9.72	9.72	9.72	10.25	10.25	7.83	7.83

Table E-3 continued

Sample ID	GL-NP2-P-051911	GL-PP2-P-051911	GL-SP2-P-051911	GL-WP2-P-051911	GL-DC2-P-052311	GL-HC2-P-052311	GL-AU2-P-051711	GL-BR2-P-051711	GL-DP2-P-051811	GL-JL2-P-051711
Deployment Date	**3/31/2011**	**3/31/2011**	**3/31/2011**	**3/31/2011**	**4/4/2011**	**4/4/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**
Collection Date	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/23/2011**	**5/23/2011**	**5/17/2011**	**5/17/2011**	**5/18/2011**	**5/17/2011**
BDE-10	4.43	4.43	4.43	4.43	4.54	4.54	4.29	4.29	4.36	4.29
BDE-7	4.43	4.43	4.43	4.43	4.54	4.54	4.29	4.29	4.36	4.29
BDE-15	4.43	4.43	4.43	4.43	4.54	4.54	4.29	4.29	4.36	4.29
pTBX	4.52	4.52	4.52	4.52	4.63	4.63	4.38	4.38	4.45	4.38
PBBZ	4.54	4.54	4.54	4.54	4.64	4.64	4.39	4.39	4.46	4.39
BDE-30	4.86	4.86	4.86	4.86	4.98	4.98	4.71	4.71	4.78	4.71
BDE-17	4.81	4.81	4.81	4.81	4.93	4.93	4.66	4.66	4.73	4.66
BDE-28	4.92	4.92	4.92	4.92	5.03	5.03	4.76	4.76	4.83	4.76
PBEB	4.86	4.86	4.86	4.86	4.98	4.98	4.71	4.71	4.78	4.71
HBB	4.75	4.75	4.75	4.75	4.86	4.86	4.60	4.60	4.67	4.60
BDE-49	5.29	5.29	5.29	5.29	5.42	5.42	5.12	5.12	5.20	5.12
BDE-71	5.29	5.29	5.29	5.29	5.42	5.42	5.12	5.12	5.20	5.12
BDE-47	5.21	5.21	5.21	5.21	5.34	5.34	5.05	5.05	5.13	5.05
BDE-66	5.36	5.36	5.36	5.36	5.48	5.48	5.19	5.19	5.27	5.19
BDE-100	5.31	5.31	5.31	5.31	5.43	5.43	5.14	5.14	5.22	5.14
BDE-119	5.71	5.71	5.71	5.71	5.85	5.85	5.53	5.53	5.62	5.53
BDE-99	5.39	5.39	5.39	5.39	5.52	5.52	5.22	5.22	5.30	5.22
EHTBB	3.74	3.74	3.74	3.74	3.83	3.83	3.62	3.62	3.68	3.62
BDE-85	5.56	5.56	5.56	5.56	5.69	5.69	5.38	5.38	5.47	5.38
BDE-126	5.71	5.71	5.71	5.71	5.84	5.84	5.53	5.53	5.61	5.53
BDE-153	5.45	5.45	5.45	5.45	5.58	5.58	5.28	5.28	5.36	5.28
BDE-154	5.50	5.50	5.50	5.50	5.63	5.63	5.33	5.33	5.41	5.33
BDE-139	6.12	6.12	6.12	6.12	6.27	6.27	5.93	5.93	6.02	5.93
HBCD	5.49	5.49	5.49	5.49	5.62	5.62	5.32	5.32	5.40	5.32
BDE-140	6.12	6.12	6.12	6.12	6.27	6.27	5.93	5.93	6.02	5.93
BDE-138	6.12	6.12	6.12	6.12	6.27	6.27	5.93	5.93	6.02	5.93
BDE-156	5.52	5.52	5.52	5.52	5.65	5.65	5.35	5.35	5.43	5.35
BDE-191	6.52	6.52	6.52	6.52	6.68	6.68	6.32	6.32	6.42	6.32
TBE	6.81	6.81	6.81	6.81	6.97	6.97	6.59	6.59	6.69	6.59
BEHTBP	7.98	7.98	7.98	7.98	8.17	8.17	7.73	7.73	7.85	7.73
DP	6.80	6.80	6.80	6.80	6.96	6.96	6.58	6.58	6.68	6.58
BDE-203	4.88	4.88	4.88	4.88	5.00	5.00	4.73	4.73	4.80	4.73
BDE209	6.68	6.68	6.68	6.68	6.84	6.84	6.47	6.47	6.57	6.47
DBDPE	7.83	7.83	7.83	7.83	8.01	8.01	7.58	7.58	7.70	7.58

Table E-3 continued

Sample ID	GL-LM2-P-051611	GL-MC2-P-051911	GL-NB2-P-051811	GL-PE2-P-051711	GL-SC2-P-052411	GL-SM2-P-051611	GL-ZI2-P-051811	GL-NV2-P-051811	GL-WH2-P-052211	GL-CA2-P-051111
Deployment Date	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/5/2011**	**4/6/2011**	**4/6/2011**	**4/11/2011**
Collection Date	**5/16/2011**	**5/19/2011**	**5/18/2011**	**5/17/2011**	**5/24/2011**	**5/16/2011**	**5/18/2011**	**5/18/2011**	**5/22/2011**	**5/11/2011**
BDE-10	4.31	4.44	4.36	4.29	4.55	4.31	4.36	4.31	4.54	4.60
BDE-7	4.31	4.44	4.36	4.29	4.55	4.31	4.36	4.31	4.54	4.60
BDE-15	4.31	4.44	4.36	4.29	4.55	4.31	4.36	4.31	4.54	4.60
pTBX	4.41	4.53	4.45	4.38	4.64	4.41	4.45	4.40	4.64	4.70
PBBZ	4.42	4.55	4.46	4.39	4.66	4.42	4.46	4.41	4.65	4.71
BDE-30	4.74	4.88	4.78	4.71	4.99	4.74	4.78	4.73	4.99	5.05
BDE-17	4.69	4.82	4.73	4.66	4.94	4.69	4.73	4.68	4.93	5.00
BDE-28	4.79	4.93	4.83	4.76	5.05	4.79	4.83	4.78	5.04	5.10
PBEB	4.74	4.88	4.78	4.71	4.99	4.74	4.78	4.73	4.98	5.05
HBB	4.63	4.76	4.67	4.60	4.88	4.63	4.67	4.62	4.87	4.93
BDE-49	5.15	5.30	5.20	5.12	5.43	5.15	5.20	5.15	5.42	5.49
BDE-71	5.15	5.30	5.20	5.12	5.43	5.15	5.20	5.15	5.42	5.49
BDE-47	5.08	5.23	5.13	5.05	5.35	5.08	5.13	5.07	5.34	5.41
BDE-66	5.22	5.37	5.27	5.19	5.50	5.22	5.27	5.21	5.49	5.56
BDE-100	5.17	5.32	5.22	5.14	5.45	5.17	5.22	5.16	5.44	5.51
BDE-119	5.56	5.73	5.62	5.53	5.86	5.56	5.62	5.56	5.85	5.93
BDE-99	5.25	5.40	5.30	5.22	5.53	5.25	5.30	5.25	5.53	5.60
EHTBB	3.65	3.75	3.68	3.62	3.84	3.65	3.68	3.64	3.84	3.89
BDE-85	5.41	5.57	5.47	5.38	5.71	5.41	5.47	5.41	5.70	5.77
BDE-126	5.56	5.72	5.61	5.53	5.86	5.56	5.61	5.55	5.85	5.93
BDE-153	5.31	5.47	5.36	5.28	5.60	5.31	5.36	5.31	5.59	5.66
BDE-154	5.36	5.51	5.41	5.33	5.65	5.36	5.41	5.35	5.64	5.71
BDE-139	5.96	6.14	6.02	5.93	6.29	5.96	6.02	5.96	6.28	6.36
HBCD	5.35	5.50	5.40	5.32	5.64	5.35	5.40	5.34	5.63	5.70
BDE-140	5.96	6.14	6.02	5.93	6.29	5.96	6.02	5.96	6.28	6.36
BDE-138	5.96	6.14	6.02	5.93	6.29	5.96	6.02	5.96	6.28	6.36
BDE-156	5.38	5.54	5.43	5.35	5.67	5.38	5.43	5.37	5.66	5.73
BDE-191	6.35	6.54	6.42	6.32	6.70	6.35	6.42	6.35	6.69	6.77
TBE	6.63	6.82	6.69	6.59	6.99	6.63	6.69	6.62	6.98	7.07
BEHTBP	7.77	8.00	7.85	7.73	8.19	7.77	7.85	7.77	8.18	8.29
DP	6.62	6.81	6.68	6.58	6.98	6.62	6.68	6.61	6.97	7.06
BDE-203	4.75	4.89	4.80	4.73	5.01	4.75	4.80	4.75	5.00	5.07
BDE209	6.51	6.70	6.57	6.47	6.86	6.51	6.57	6.50	6.85	6.94
DBDPE	7.62	7.85	7.70	7.58	8.04	7.62	7.70	7.62	8.02	8.13

Table E-3 continued

Sample ID	GL-LM2-P-070811	GL-CA2-P-070511	GL-IT2-P-071611	GL-CP2-P-070111	GL-JP2-P-070111	GL-NP2-P-070111	GL-PP2-P-070111	GL-SP2-P-070111	GL-WP2-P-070111	GL-DC2-P-062911
Deployment Date	**5/4/2011**	**5/11/2011**	**5/16/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/19/2011**	**5/23/2011**
Collection Date	**7/8/2011**	**7/5/2011**	**7/16/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**6/29/2011**
BDE-10	5.20	5.08	5.39	5.12	5.12	5.12	5.12	5.12	5.12	5.17
BDE-7	5.20	5.08	5.39	5.12	5.12	5.12	5.12	5.12	5.12	5.17
BDE-15	5.20	5.08	5.39	5.12	5.12	5.12	5.12	5.12	5.12	5.17
pTBX	5.31	5.19	5.50	5.23	5.23	5.23	5.23	5.23	5.23	5.28
PBBZ	5.32	5.20	5.52	5.24	5.24	5.24	5.24	5.24	5.24	5.29
BDE-30	5.71	5.58	5.92	5.62	5.62	5.62	5.62	5.62	5.62	5.68
BDE-17	5.65	5.52	5.86	5.56	5.56	5.56	5.56	5.56	5.56	5.62
BDE-28	5.77	5.64	5.98	5.68	5.68	5.68	5.68	5.68	5.68	5.74
PBEB	5.71	5.58	5.92	5.62	5.62	5.62	5.62	5.62	5.62	5.68
HBB	5.57	5.45	5.78	5.49	5.49	5.49	5.49	5.49	5.49	5.54
BDE-49	6.21	6.07	6.44	6.12	6.12	6.12	6.12	6.12	6.12	6.17
BDE-71	6.21	6.07	6.44	6.12	6.12	6.12	6.12	6.12	6.12	6.17
BDE-47	6.12	5.98	6.34	6.02	6.02	6.02	6.02	6.02	6.02	6.08
BDE-66	6.28	6.14	6.52	6.19	6.19	6.19	6.19	6.19	6.19	6.25
BDE-100	6.22	6.09	6.46	6.13	6.13	6.13	6.13	6.13	6.13	6.19
BDE-119	6.70	6.55	6.95	6.60	6.60	6.60	6.60	6.60	6.60	6.66
BDE-99	6.33	6.19	6.56	6.23	6.23	6.23	6.23	6.23	6.23	6.29
EHTBB	4.39	4.29	4.55	4.33	4.33	4.33	4.33	4.33	4.33	4.37
BDE-85	6.52	6.38	6.76	6.42	6.42	6.42	6.42	6.42	6.42	6.49
BDE-126	6.69	6.55	6.94	6.59	6.59	6.59	6.59	6.59	6.59	6.66
BDE-153	6.40	6.26	6.64	6.30	6.30	6.30	6.30	6.30	6.30	6.36
BDE-154	6.45	6.31	6.69	6.36	6.36	6.36	6.36	6.36	6.36	6.42
BDE-139	7.18	7.02	7.45	7.08	7.08	7.08	7.08	7.08	7.08	7.14
HBCD	6.44	6.30	6.68	6.34	6.34	6.34	6.34	6.34	6.34	6.41
BDE-140	7.18	7.02	7.45	7.08	7.08	7.08	7.08	7.08	7.08	7.14
BDE-138	7.18	7.02	7.45	7.08	7.08	7.08	7.08	7.08	7.08	7.14
BDE-156	6.48	6.34	6.72	6.38	6.38	6.38	6.38	6.38	6.38	6.44
BDE-191	7.65	7.48	7.94	7.54	7.54	7.54	7.54	7.54	7.54	7.61
TBE	7.99	7.81	8.28	7.87	7.87	7.87	7.87	7.87	7.87	7.94
BEHTBP	9.36	9.16	9.71	9.22	9.22	9.22	9.22	9.22	9.22	9.31
DP	7.97	7.80	8.27	7.86	7.86	7.86	7.86	7.86	7.86	7.93
BDE-203	5.73	5.60	5.94	5.64	5.64	5.64	5.64	5.64	5.64	5.69
BDE209	7.84	7.67	8.13	7.72	7.72	7.72	7.72	7.72	7.72	7.80
DBDPE	9.18	8.98	9.52	9.05	9.05	9.05	9.05	9.05	9.05	9.13

Table E-3 continued

Sample ID	GL-HC2-P-062911	GL-DP2-P-070511	GL-JL2-P-070511	GL-MC2-P-070811	GL-PE2-P-070511	GL-SM2-P-070511	GL-ZI2-P-070511	GL-AU2-P-070511	GL-BR2-P-070511	GL-NB2-P-070511
Deployment Date	**5/23/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/24/2011**	**5/25/2011**	**5/25/2011**	**5/25/2011**
Collection Date	**6/29/2011**	**7/6/2011**	**7/5/2011**	**7/8/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**	**7/5/2011**
BDE-10	5.17	5.25	5.23	5.30	5.23	5.23	5.23	5.23	5.23	5.23
BDE-7	5.17	5.25	5.23	5.30	5.23	5.23	5.23	5.23	5.23	5.23
BDE-15	5.17	5.25	5.23	5.30	5.23	5.23	5.23	5.23	5.23	5.23
pTBX	5.28	5.36	5.35	5.42	5.35	5.35	5.35	5.34	5.34	5.34
PBBZ	5.29	5.37	5.36	5.43	5.36	5.36	5.36	5.35	5.35	5.35
BDE-30	5.68	5.76	5.75	5.82	5.75	5.75	5.75	5.74	5.74	5.74
BDE-17	5.62	5.70	5.69	5.76	5.69	5.69	5.69	5.68	5.68	5.68
BDE-28	5.74	5.82	5.81	5.89	5.81	5.81	5.81	5.80	5.80	5.80
PBEB	5.68	5.76	5.75	5.82	5.75	5.75	5.75	5.74	5.74	5.74
HBB	5.54	5.63	5.61	5.69	5.61	5.61	5.61	5.61	5.61	5.61
BDE-49	6.17	6.27	6.25	6.34	6.25	6.25	6.25	6.25	6.25	6.25
BDE-71	6.17	6.27	6.25	6.34	6.25	6.25	6.25	6.25	6.25	6.25
BDE-47	6.08	6.18	6.16	6.24	6.16	6.16	6.16	6.15	6.15	6.15
BDE-66	6.25	6.35	6.33	6.41	6.33	6.33	6.33	6.32	6.32	6.32
BDE-100	6.19	6.29	6.27	6.35	6.27	6.27	6.27	6.26	6.26	6.26
BDE-119	6.66	6.77	6.75	6.84	6.75	6.75	6.75	6.74	6.74	6.74
BDE-99	6.29	6.39	6.37	6.46	6.37	6.37	6.37	6.37	6.37	6.37
EHTBB	4.37	4.43	4.42	4.48	4.42	4.42	4.42	4.42	4.42	4.42
BDE-85	6.49	6.59	6.57	6.66	6.57	6.57	6.57	6.56	6.56	6.56
BDE-126	6.66	6.76	6.74	6.83	6.74	6.74	6.74	6.74	6.74	6.74
BDE-153	6.36	6.46	6.44	6.53	6.44	6.44	6.44	6.44	6.44	6.44
BDE-154	6.42	6.52	6.50	6.59	6.50	6.50	6.50	6.49	6.49	6.49
BDE-139	7.14	7.25	7.24	7.33	7.24	7.24	7.24	7.23	7.23	7.23
HBCD	6.41	6.50	6.49	6.57	6.49	6.49	6.49	6.48	6.48	6.48
BDE-140	7.14	7.25	7.24	7.33	7.24	7.24	7.24	7.23	7.23	7.23
BDE-138	7.14	7.25	7.24	7.33	7.24	7.24	7.24	7.23	7.23	7.23
BDE-156	6.44	6.54	6.53	6.61	6.53	6.53	6.53	6.52	6.52	6.52
BDE-191	7.61	7.73	7.71	7.81	7.71	7.71	7.71	7.70	7.70	7.70
TBE	7.94	8.06	8.04	8.15	8.04	8.04	8.04	8.04	8.04	8.04
BEHTBP	9.31	9.45	9.43	9.56	9.43	9.43	9.43	9.42	9.42	9.42
DP	7.93	8.05	8.03	8.14	8.03	8.03	8.03	8.03	8.03	8.03
BDE-203	5.69	5.78	5.77	5.84	5.77	5.77	5.77	5.76	5.76	5.76
BDE209	7.80	7.92	7.90	8.00	7.90	7.90	7.90	7.89	7.89	7.89
DBDPE	9.13	9.27	9.25	9.37	9.25	9.25	9.25	9.24	9.24	9.24

Table E-3 continued

Sample ID	GL-NV2-P-070511	GL-DC2-P-080911	GL-HC2-P-080911	GL-CP2-P-082311	GL-JP2-P-082311	GL-NP2-P-082311	GL-PP2-P-082311	GL-SP2-P-082311	GL-WP2-P-090611	GL-IT2-P-090611
Deployment Date	**5/25/2011**	**6/30/2011**	**6/30/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/19/2011**
Collection Date	**7/5/2011**	**8/8/2011**	**8/8/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**9/6/2011**	**9/6/2011**
BDE-10	5.23	5.58	5.58	5.61	5.61	5.61	5.61	5.61	5.62	5.59
BDE-7	5.23	5.58	5.58	5.61	5.61	5.61	5.61	5.61	5.62	5.59
BDE-15	5.23	5.58	5.58	5.61	5.61	5.61	5.61	5.61	5.62	5.59
pTBX	5.34	5.69	5.69	5.73	5.73	5.73	5.73	5.73	5.74	5.70
PBBZ	5.35	5.71	5.71	5.75	5.75	5.75	5.75	5.75	5.75	5.72
BDE-30	5.74	6.12	6.12	6.16	6.16	6.16	6.16	6.16	6.17	6.14
BDE-17	5.68	6.06	6.06	6.10	6.10	6.10	6.10	6.10	6.11	6.07
BDE-28	5.80	6.19	6.19	6.23	6.23	6.23	6.23	6.23	6.24	6.20
PBEB	5.74	6.12	6.12	6.16	6.16	6.16	6.16	6.16	6.17	6.13
HBB	5.61	5.98	5.98	6.02	6.02	6.02	6.02	6.02	6.03	5.99
BDE-49	6.25	6.66	6.66	6.70	6.70	6.70	6.70	6.70	6.71	6.67
BDE-71	6.25	6.66	6.66	6.70	6.70	6.70	6.70	6.70	6.71	6.67
BDE-47	6.15	6.56	6.56	6.60	6.60	6.60	6.60	6.60	6.61	6.57
BDE-66	6.32	6.74	6.74	6.79	6.79	6.79	6.79	6.79	6.80	6.76
BDE-100	6.26	6.68	6.68	6.72	6.72	6.72	6.72	6.72	6.73	6.69
BDE-119	6.74	7.19	7.19	7.24	7.24	7.24	7.24	7.24	7.25	7.20
BDE-99	6.37	6.79	6.79	6.83	6.83	6.83	6.83	6.83	6.84	6.80
EHTBB	4.42	4.71	4.71	4.74	4.74	4.74	4.74	4.74	4.75	4.72
BDE-85	6.56	7.00	7.00	7.04	7.04	7.04	7.04	7.04	7.05	7.01
BDE-126	6.74	7.18	7.18	7.23	7.23	7.23	7.23	7.23	7.24	7.20
BDE-153	6.44	6.86	6.86	6.91	6.91	6.91	6.91	6.91	6.92	6.88
BDE-154	6.49	6.92	6.92	6.97	6.97	6.97	6.97	6.97	6.98	6.94
BDE-139	7.23	7.71	7.71	7.76	7.76	7.76	7.76	7.76	7.77	7.72
HBCD	6.48	6.91	6.91	6.96	6.96	6.96	6.96	6.96	6.97	6.92
BDE-140	7.23	7.71	7.71	7.76	7.76	7.76	7.76	7.76	7.77	7.72
BDE-138	7.23	7.71	7.71	7.76	7.76	7.76	7.76	7.76	7.77	7.72
BDE-156	6.52	6.95	6.95	7.00	7.00	7.00	7.00	7.00	7.01	6.97
BDE-191	7.70	8.21	8.21	8.27	8.27	8.27	8.27	8.27	8.28	8.23
TBE	8.04	8.57	8.57	8.63	8.63	8.63	8.63	8.63	8.64	8.59
BEHTBP	9.42	10.05	10.05	10.11	10.11	10.11	10.11	10.11	10.13	10.07
DP	8.03	8.56	8.56	8.61	8.61	8.61	8.61	8.61	8.62	8.57
BDE-203	5.76	6.14	6.14	6.18	6.18	6.18	6.18	6.18	6.19	6.16
BDE209	7.89	8.41	8.41	8.47	8.47	8.47	8.47	8.47	8.48	8.43
DBDPE	9.24	9.85	9.85	9.92	9.92	9.92	9.92	9.92	9.93	9.87

Table E-3 continued

Sample ID	GL-DC2-P-092811	GL-HC2-P-092811	GL-JW2-P-100311	GL-JW4-P-100311	GL-WH2-P-101411	GL-CP2-P-092911	GL-JP2-P-092911	GL-NP2-P-092911	GL-PP2-P-092911	GL-SP2-P-092911
Deployment Date	**8/9/2011**	**8/9/2011**	**8/12/2011**	**8/12/2011**	**8/16/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**	**8/23/2011**
Collection Date	**9/28/2011**	**9/28/2011**	**10/3/2011**	**10/3/2011**	**10/14/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**
BDE-10	5.73	5.73	5.72	5.72	5.76	5.68	5.68	5.68	5.68	5.68
BDE-7	5.73	5.73	5.72	5.72	5.76	5.68	5.68	5.68	5.68	5.68
BDE-15	5.73	5.73	5.72	5.72	5.76	5.68	5.68	5.68	5.68	5.68
pTBX	5.85	5.85	5.84	5.84	5.88	5.80	5.80	5.80	5.80	5.80
PBBZ	5.86	5.86	5.86	5.86	5.90	5.82	5.82	5.82	5.82	5.82
BDE-30	6.29	6.29	6.28	6.28	6.33	6.24	6.24	6.24	6.24	6.24
BDE-17	6.22	6.22	6.21	6.21	6.26	6.18	6.18	6.18	6.18	6.18
BDE-28	6.35	6.35	6.35	6.35	6.39	6.31	6.31	6.31	6.31	6.31
PBEB	6.29	6.29	6.28	6.28	6.33	6.24	6.24	6.24	6.24	6.24
HBB	6.14	6.14	6.13	6.13	6.18	6.10	6.10	6.10	6.10	6.10
BDE-49	6.84	6.84	6.83	6.83	6.88	6.79	6.79	6.79	6.79	6.79
BDE-71	6.84	6.84	6.83	6.83	6.88	6.79	6.79	6.79	6.79	6.79
BDE-47	6.74	6.74	6.73	6.73	6.78	6.69	6.69	6.69	6.69	6.69
BDE-66	6.92	6.92	6.91	6.91	6.97	6.87	6.87	6.87	6.87	6.87
BDE-100	6.86	6.86	6.85	6.85	6.90	6.81	6.81	6.81	6.81	6.81
BDE-119	7.38	7.38	7.37	7.37	7.43	7.33	7.33	7.33	7.33	7.33
BDE-99	6.97	6.97	6.96	6.96	7.01	6.92	6.92	6.92	6.92	6.92
EHTBB	4.84	4.84	4.83	4.83	4.87	4.80	4.80	4.80	4.80	4.80
BDE-85	7.19	7.19	7.18	7.18	7.23	7.13	7.13	7.13	7.13	7.13
BDE-126	7.38	7.38	7.37	7.37	7.42	7.32	7.32	7.32	7.32	7.32
BDE-153	7.05	7.05	7.04	7.04	7.09	7.00	7.00	7.00	7.00	7.00
BDE-154	7.11	7.11	7.10	7.10	7.15	7.06	7.06	7.06	7.06	7.06
BDE-139	7.91	7.91	7.90	7.90	7.96	7.86	7.86	7.86	7.86	7.86
HBCD	7.10	7.10	7.09	7.09	7.14	7.05	7.05	7.05	7.05	7.05
BDE-140	7.91	7.91	7.90	7.90	7.96	7.86	7.86	7.86	7.86	7.86
BDE-138	7.91	7.91	7.90	7.90	7.96	7.86	7.86	7.86	7.86	7.86
BDE-156	7.14	7.14	7.13	7.13	7.18	7.09	7.09	7.09	7.09	7.09
BDE-191	8.43	8.43	8.42	8.42	8.48	8.37	8.37	8.37	8.37	8.37
TBE	8.80	8.80	8.79	8.79	8.85	8.74	8.74	8.74	8.74	8.74
BEHTBP	10.32	10.32	10.30	10.30	10.38	10.24	10.24	10.24	10.24	10.24
DP	8.79	8.79	8.78	8.78	8.84	8.72	8.72	8.72	8.72	8.72
BDE-203	6.31	6.31	6.30	6.30	6.35	6.26	6.26	6.26	6.26	6.26
BDE209	8.64	8.64	8.63	8.63	8.69	8.58	8.58	8.58	8.58	8.58
DBDPE	10.12	10.12	10.11	10.11	10.18	10.05	10.05	10.05	10.05	10.05

Table E-3 continued

Sample ID	GL-IT2-P-101111	GL-WP2-P-092911	GL-DC2-P-102811	GL-HC2-P-102811	GL-CP2-P-110411	GL-JP2-P-110411	GL-NP2-P-110411	GL-PP2-P-110411	GL-SP2-P-110411	GL-WP2-P-110411
Deployment Date	**9/6/2011**	**9/6/2011**	**9/28/2011**	**9/28/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**	**9/29/2011**
Collection Date	**10/11/2011**	**9/29/2011**	**10/28/2011**	**10/28/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**
BDE-10	5.83	5.77	5.77	5.77	5.74	5.74	5.74	5.74	5.74	5.74
BDE-7	5.83	5.77	5.77	5.77	5.74	5.74	5.74	5.74	5.74	5.74
BDE-15	5.83	5.77	5.77	5.77	5.74	5.74	5.74	5.74	5.74	5.74
pTBX	5.95	5.89	5.89	5.89	5.86	5.86	5.86	5.86	5.86	5.86
PBBZ	5.97	5.91	5.91	5.91	5.87	5.87	5.87	5.87	5.87	5.87
BDE-30	6.40	6.34	6.34	6.34	6.30	6.30	6.30	6.30	6.30	6.30
BDE-17	6.34	6.27	6.27	6.27	6.23	6.23	6.23	6.23	6.23	6.23
BDE-28	6.47	6.40	6.40	6.40	6.37	6.37	6.37	6.37	6.37	6.37
PBEB	6.40	6.34	6.34	6.34	6.30	6.30	6.30	6.30	6.30	6.30
HBB	6.25	6.19	6.19	6.19	6.15	6.15	6.15	6.15	6.15	6.15
BDE-49	6.97	6.89	6.89	6.89	6.85	6.85	6.85	6.85	6.85	6.85
BDE-71	6.97	6.89	6.89	6.89	6.85	6.85	6.85	6.85	6.85	6.85
BDE-47	6.86	6.79	6.79	6.79	6.75	6.75	6.75	6.75	6.75	6.75
BDE-66	7.05	6.98	6.98	6.98	6.94	6.94	6.94	6.94	6.94	6.94
BDE-100	6.99	6.91	6.91	6.91	6.87	6.87	6.87	6.87	6.87	6.87
BDE-119	7.52	7.44	7.44	7.44	7.39	7.39	7.39	7.39	7.39	7.39
BDE-99	7.10	7.02	7.02	7.02	6.98	6.98	6.98	6.98	6.98	6.98
EHTBB	4.93	4.88	4.88	4.88	4.85	4.85	4.85	4.85	4.85	4.85
BDE-85	7.32	7.24	7.24	7.24	7.20	7.20	7.20	7.20	7.20	7.20
BDE-126	7.51	7.43	7.43	7.43	7.39	7.39	7.39	7.39	7.39	7.39
BDE-153	7.18	7.10	7.10	7.10	7.06	7.06	7.06	7.06	7.06	7.06
BDE-154	7.24	7.16	7.16	7.16	7.12	7.12	7.12	7.12	7.12	7.12
BDE-139	8.06	7.98	7.98	7.98	7.93	7.93	7.93	7.93	7.93	7.93
HBCD	7.23	7.15	7.15	7.15	7.11	7.11	7.11	7.11	7.11	7.11
BDE-140	8.06	7.98	7.98	7.98	7.93	7.93	7.93	7.93	7.93	7.93
BDE-138	8.06	7.98	7.98	7.98	7.93	7.93	7.93	7.93	7.93	7.93
BDE-156	7.27	7.19	7.19	7.19	7.15	7.15	7.15	7.15	7.15	7.15
BDE-191	8.59	8.50	8.50	8.50	8.45	8.45	8.45	8.45	8.45	8.45
TBE	8.96	8.87	8.87	8.87	8.81	8.81	8.81	8.81	8.81	8.81
BEHTBP	10.51	10.40	10.40	10.40	10.33	10.33	10.33	10.33	10.33	10.33
DP	8.95	8.86	8.86	8.86	8.80	8.80	8.80	8.80	8.80	8.80
BDE-203	6.42	6.36	6.36	6.36	6.32	6.32	6.32	6.32	6.32	6.32
BDE209	8.80	8.71	8.71	8.71	8.65	8.65	8.65	8.65	8.65	8.65
DBDPE	10.31	10.20	10.20	10.20	10.14	10.14	10.14	10.14	10.14	10.14

Table E-3 continued

Sample ID	GL-IT2-P-101111	GL-WH2-P-111711	GL-CP2-P-121711	GL-JP2-P-121611	GL-PP2-P-121611	GL-SP2-P-121711	GL-WP2-P-121911	GL-WH2-P-122811
Deployment Date	**9/30/2011**	**10/14/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/4/2011**	**11/17/2011**
Collection Date	**10/11/2011**	**11/17/2011**	**12/17/2011**	**12/16/2011**	**12/16/2011**	**12/17/2011**	**12/19/2011**	**12/28/2011**
BDE-10	5.80	5.23	5.07	4.97	4.97	5.07	5.11	5.43
BDE-7	5.80	5.23	5.07	4.97	4.97	5.07	5.11	5.43
BDE-15	5.80	5.23	5.07	4.97	4.97	5.07	5.11	5.43
pTBX	5.93	5.34	5.18	5.07	5.07	5.18	5.22	5.54
PBBZ	5.94	5.36	5.20	5.09	5.09	5.20	5.24	5.56
BDE-30	6.37	5.75	5.57	5.45	5.45	5.57	5.62	5.96
BDE-17	6.31	5.68	5.51	5.40	5.40	5.51	5.56	5.90
BDE-28	6.44	5.81	5.63	5.51	5.51	5.63	5.68	6.02
PBEB	6.37	5.74	5.57	5.45	5.45	5.57	5.62	5.96
HBB	6.22	5.61	5.44	5.33	5.33	5.44	5.48	5.82
BDE-49	6.93	6.25	6.06	5.93	5.93	6.06	6.11	6.48
BDE-71	6.93	6.25	6.06	5.93	5.93	6.06	6.11	6.48
BDE-47	6.83	6.16	5.97	5.85	5.85	5.97	6.02	6.39
BDE-66	7.02	6.33	6.14	6.01	6.01	6.14	6.18	6.56
BDE-100	6.95	6.27	6.08	5.95	5.95	6.08	6.13	6.50
BDE-119	7.48	6.75	6.54	6.40	6.40	6.54	6.59	7.00
BDE-99	7.07	6.37	6.18	6.05	6.05	6.18	6.23	6.61
EHTBB	4.91	4.42	4.29	4.20	4.20	4.29	4.32	4.59
BDE-85	7.28	6.57	6.37	6.23	6.23	6.37	6.42	6.81
BDE-126	7.48	6.74	6.54	6.40	6.40	6.54	6.59	6.99
BDE-153	7.15	6.44	6.25	6.12	6.12	6.25	6.30	6.68
BDE-154	7.21	6.50	6.30	6.17	6.17	6.30	6.35	6.74
BDE-139	8.02	7.23	7.01	6.87	6.87	7.01	7.07	7.50
HBCD	7.19	6.48	6.29	6.16	6.16	6.29	6.34	6.73
BDE-140	8.02	7.23	7.01	6.87	6.87	7.01	7.07	7.50
BDE-138	8.02	7.23	7.01	6.87	6.87	7.01	7.07	7.50
BDE-156	7.24	6.52	6.33	6.19	6.19	6.33	6.38	6.77
BDE-191	8.55	7.71	7.47	7.32	7.32	7.47	7.53	7.99
TBE	8.92	8.04	7.80	7.63	7.63	7.80	7.86	8.34
BEHTBP	10.46	9.43	9.14	8.95	8.95	9.14	9.22	9.78
DP	8.91	8.03	7.79	7.62	7.62	7.79	7.85	8.33
BDE-203	6.39	5.76	5.59	5.47	5.47	5.59	5.63	5.98
BDE209	8.76	7.89	7.66	7.49	7.49	7.66	7.72	8.19
DBDPE	10.26	9.25	8.97	8.78	8.78	8.97	9.04	9.59

APPENDIX F: MODEL TO HI-VOLUME COMPARISON FOR ANALYTE AIR CONCENTRATION

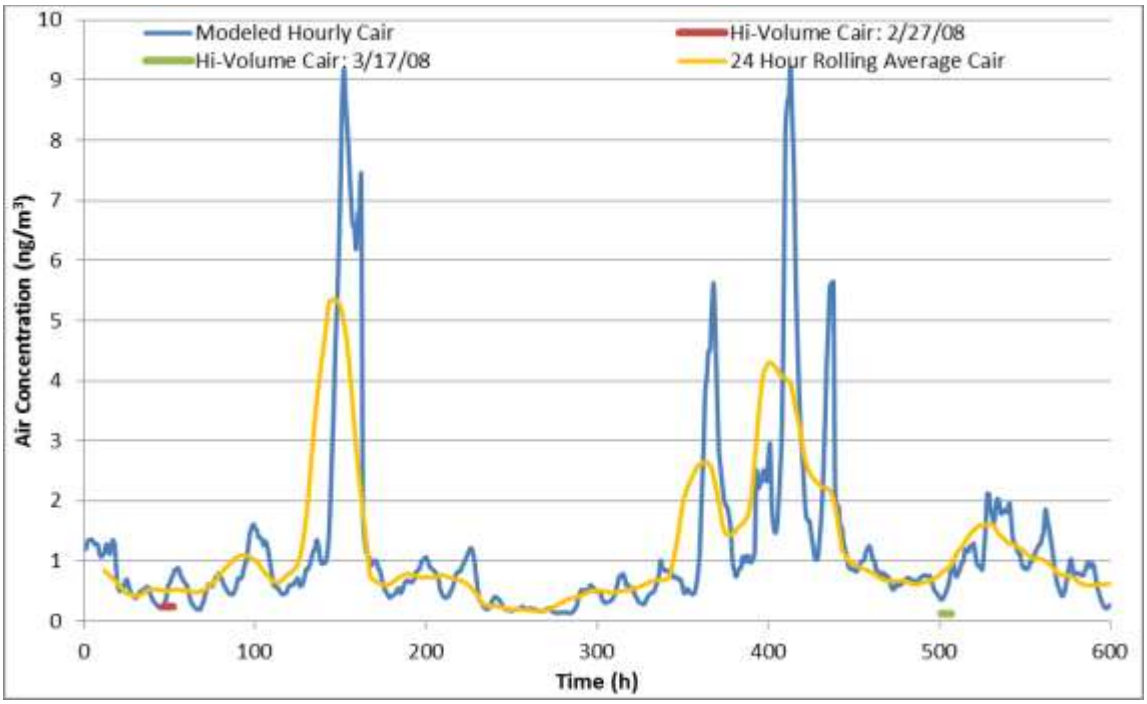

Figure F-1: Comparison between modeled hourly, Hi-volume, and twenty-four hour rolling average analyte air concentration at the St. Procopius sampling site in late February and mid-March of 2008.

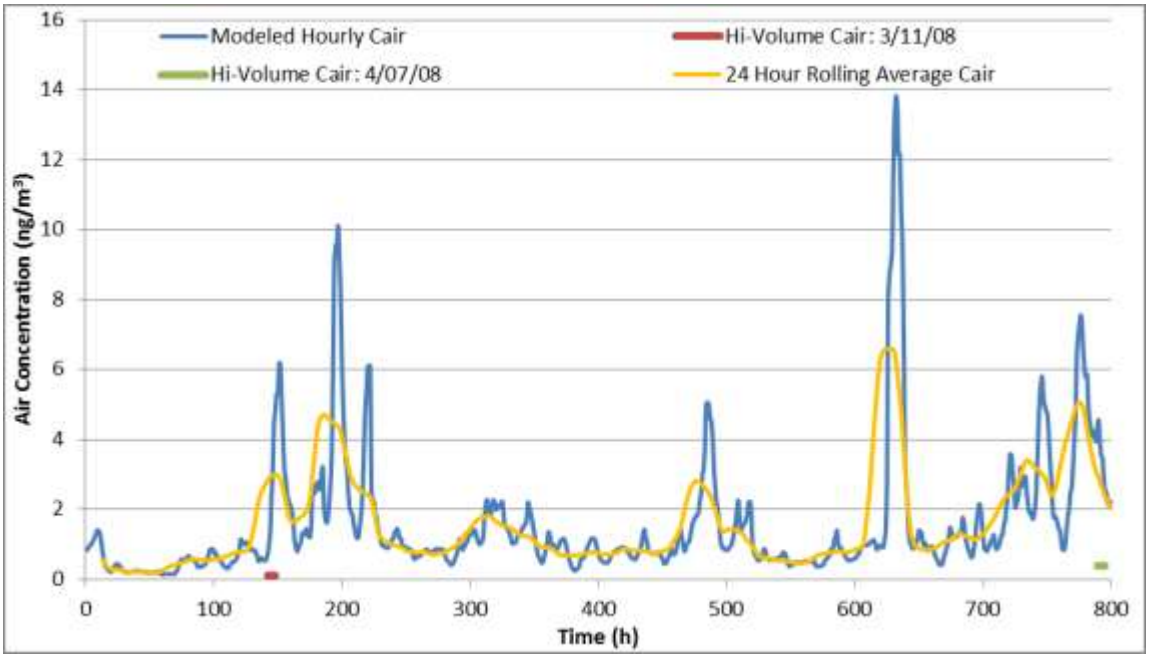

Figure F-2: Comparison between modeled hourly, Hi-volume, and twenty-four hour rolling average analyte air concentration at the Metcalfe sampling site in mid-March and early April of 2008.

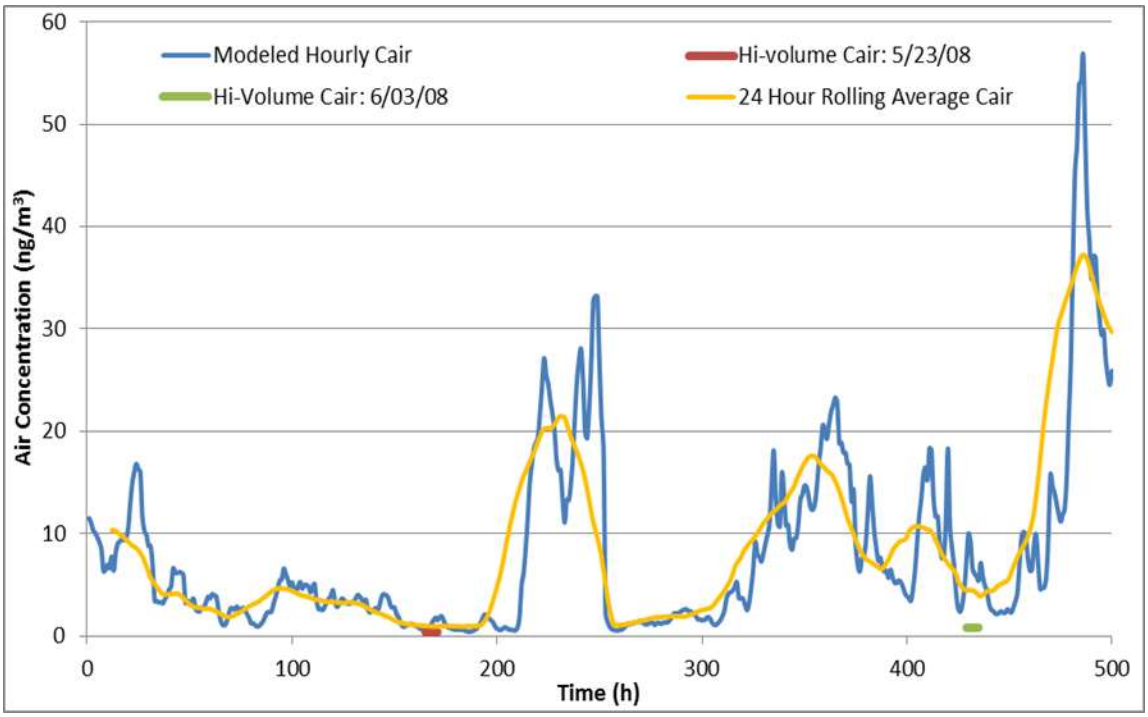

Figure F-3: Comparison between modeled hourly, Hi-volume, and twenty-four hour rolling average analyte air concentration at the Metcalfe sampling site in late May and early June of 2008.

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