2019-07-01

Impacts of Glacial Meltwater on Geochemistry and Discharge of Alpine Proglacial Streams in the Wind River Range, Wyoming, USA

Natalie Shepherd Barkdull
Brigham Young University

Impacts of Glacial Meltwater on Geochemistry and Discharge of Alpine Proglacial Streams in the Wind River Range, Wyoming, USA

Natalie Shepherd Barkdull

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of

Master of Science

Gregory T. Carling, Chair
Barry R. Bickmore
Stephen T. Nelson

Department of Geological Sciences

Brigham Young University

ABSTRACT

Impacts of Glacial Meltwater on Geochemistry and Discharge of Alpine Proglacial Streams in the Wind River Range, Wyoming, USA

Natalie Shepherd Barkdull
Department of Geological Sciences, BYU
Master of Science

Shrinking alpine glaciers alter the geochemistry of sensitive mountain streams by exposing reactive freshly-weathered bedrock and releasing decades of atmospherically-deposited trace elements from glacier ice. Changes in the timing and quantity of glacial melt also affect discharge and temperature of alpine streams. To investigate the effects of glacier ice melt on the geochemistry and hydrology of proglacial streams in the arid Intermountain West, we sampled supraglacial meltwaters and proglacial streams in the Dinwoody Creek watershed in the Wind River Range, Wyoming during late summer 2015, when the contributions of glacier meltwater were highest. Supraglacial meltwater was enriched in 8 trace elements (Cd, Co, Cu, MeHg, Mn, Pb, THg, Zn) relative to proglacial meltwaters. Concentrations of major ions (Mg^{2+}, K^{+}, Na^{+}, Ca^{2+}, SO_4^{2-}) and the remaining 30+ analyzed trace elements were enriched in proglacial streams relative to supraglacial meltwater. To evaluate the diurnal effects of glacial meltwater on the chemistry and hydrology of proglacial streams, we collected hourly water samples of Dinwoody Creek and deployed loggers to monitor water depth, temperature, and specific conductance (SPC) at 15-min intervals over a 1-week period. The influx of glacial meltwater between 10:00 and 20:00 diluted solute concentrations and affected the relative enrichment/depletion of highly soluble elements (major ions, alkaline earth elements), less than REEs. Stable isotopes of H and O (δD, $\delta^{18}O$) in Dinwoody Creek were more depleted during peak runoff (10:00 – 20:00) than base flow, reflecting contributions from isotopically depleted glacial meltwaters. Looping hysteresis patterns were observed between water depth versus DO, pH, temperature and SPC in glaciated streams. Hysteresis patterns were affected by changes in weather and varied depending on the type of stream (glaciated versus non-glaciated) and the distance to glacier toe. Combination of multiple hydrologic tracers (solute concentrations, high frequency logger data, stable isotopes) shows strong potential to improve estimates of glacial meltwater contributions to Dinwoody Creek. Our results suggest that elevated concentrations of heavy metals in glacier ice melt across the Intermountain West may negatively impact sensitive alpine streams.

Keywords: glacier meltwater, geochemistry, diel cycle, trace metals, heavy metals, supraglacial meltwater, proglacial streams

TABLE OF CONTENTS

LIST OF FIGURES

SUPPLEMENTARY MATERIAL

Supplementary Figures

Supplementary Tables

1. Introduction

Alpine glaciers are an important source of water to mountain streams (Milner et al., 2010), particularly in arid regions during late summer base flow (Kaser et al., 2010). Alpine glaciers worldwide are shrinking in response to climate change (Lemke et al., 2007). Glaciers in the conterminous United States receded between 24 and 66 percent over the past century (McCabe and Fountain, 2013) and some models predict that many glaciers in the Intermountain West will shrink and disappear by 2100 (Hall and Fagre, 2003; Marston et al., 1991; Vanlooy et al., 2014). Glacier retreat in the Western US is driven by rising temperatures and changes in precipitation. Over the past century average temperatures in the region increased, causing more snowmelt to fall as rain and spring runoff to occur earlier in the year (Dettinger, 2005; Hall et al., 2015; Stewart et al., 2004). Changes in the timing and distribution of snowmelt may have devastating consequences for arid regions of the Western United States where up to 75% of freshwater supplies are derived from snowmelt (Dettinger, 2005). Shrinking glaciers are a serious concern for agriculture across the West. Glacier ice melt supplies up to 50% of late-season streamflow in some streams (late August/September) – a critical period of the growing season (Bell et al., 2011; Cable et al., 2011; DeVisser and Fountain, 2015; Vandeberg and VanLooy, 2016). In Wyoming, 90% of irrigation water and 98% of the total water supply comes from surface water (Boughton et al., 2006; Maupin et al., 2014).

Glacier retreat may release harmful trace metals stored in accumulated glacier ice and alter the geochemistry of alpine streams. Retreating glaciers also expose reactive freshly weathered bedrock and glacial till which may contribute elevated trace element concentrations to proglacial streams (Tranter, 2003). Trace elements are deposited on the surface of glaciers through wet and dry deposition in precipitation, atmospheric dust, or aerosols (Schwikowski and Eichler, 2010).

Over centuries, trace metals accumulate in layers of glacier ice and archive the geochemistry of past precipitation and atmospheric deposition (Barbante et al., 2004; Schuster et al., 2002). Since the industrial revolution (post 1840), the rate of atmospheric heavy metal deposition (Hg, Pb, Cd, Zn, Cu, Mn, Co) in glacier ice worldwide has increased in response to anthropogenic activities like mining, smelting, and burning coal (Barbante et al., 2004; Boutron et al., 1994; Schuster et al., 2002; Schwikowski and Eichler, 2010). In the Western United States, studies of glacial ice cores show that windblown dust is also a significant source of trace elements to snowpack (Aarons et al., 2016). As glaciers shrink, centuries of accumulated metals and nutrients enter sensitive glacial rivers and high elevation lakes (Huang et al., 2012; Mast et al., 2010; Reynolds et al., 2010; Spaulding et al., 2015). For example, glacier ice melt in the Teton Range, WY contributed elevated concentrations of six heavy metals (Hg, Mn, Cd, Zn, Co, and Pb) to proglacial streams (Carling et al., 2017).

Glaciated alpine streams exhibit distinctive patterns in discharge, temperature, and solute concentrations based on the relative contributions of snowmelt, glacial ice melt, and groundwater. Early in the melt season (May-June) snow covers glaciated watersheds and moderates changes in water temperature, solutes, and discharge (Milner et al., 2010). During mid-late summer (July – September) snowmelt exposes glacier ice and supraglacial, englacial, and subglacial drainages develop on the glacier surface, interior, and bottom respectively (Fountain and Walder, 1998). Glacial drainage pathways alter water temperature, solute concentrations, and timing of meltwater discharge. Supraglacial meltwaters entrain solutes from atmospheric dust and debris on the glacier before quickly flowing into proglacial streams or the glacier interior (Tranter, 2003). Meltwaters traveling through englacial/subglacial passages interact with reactive freshly-weathered rock that contributes suspended sediments and dissolved ions (Brown et al., 1996; Tranter et al., 2002). During late summer (September) glacier ice melt creates strong diurnal discharge variations in proglacial streams, characterized by an influx of "quick" dilute supraglacial ice melt followed by less-dilute discharge from subglacial drainages and shallow groundwater (Brown, 2002; Milner et al., 2010; Swift et al., 2005). Glacial meltwater contributions are highest during late summer near the toe of the glacier and decrease downstream as streams mix with groundwater (Brown et al., 2006; Malard et al., 1999). Seasonal and diurnal changes in temperature, suspended sediments, and solute concentrations control the biodiversity of glaciated streams (Brown et al., 2003; Fortner et al., 2013).

The purpose of our study is to examine how melting glaciers affect the chemistry and discharge of mountain streams in the Wind River Range, WY. While many studies quantify glacier ice loss (Cheesbrough et al., 2009; DeVisser and Fountain, 2015; Hall et al., 2015; Hall et al., 2012; Maloof et al., 2014; Marston et al., 1991; McCabe and Fountain, 2013; Thompson et al., 2011; VanLooy et al., 2013; Vanlooy et al., 2017), the effects of melting glacier ice on stream chemistry and discharge in the Wind River Range have not been studied extensively. Specific objectives are to: 1) identify geochemical differences between supraglacial ice melt and proglacial streams; 2) evaluate diel cycling of major and trace elements in a proglacial stream; 3) characterize the effects of glacier ice melt on the timing and magnitude of stream temperature, solute concentrations, and depth as a function of distance from the glacier toe; 4) compare geochemistry and daily discharge patterns of proglacial streams to a non-glacial stream; and 5) evaluate the effectiveness of high frequency conductivity/depth loggers to capture hydrological responses to glacial ice and snowmelt in proglacial streams.

2. Methods

2.1 Study Area

The Wind River Range (Fig. 1) was selected for this study because it is the most glaciated area of the American Rocky Mountains and forms the headwaters for three major river systems in the Western United States: the Green-Colorado Rivers, the Wind-Missouri Rivers, and the Snake-Columbia Rivers (Marston et al., 1991). Of the 63 glaciers in the Wind River Range, we selected Gannett Glacier and Dinwoody Glacier as the focus of our study (Fig. 1). These glaciers were selected because of their accessibility, size, and lack of significant proglacial lakes. Gannett Glacier extends from 4084 m - 3370 m above sea level with an average slope of 29% and a maximum length of 2735 m. The glacier feeds Gannett Creek, which flows into Dinwoody Creek. Dinwoody Glacier is less steep (15% slope) with a maximum length of 2619 m and extends from 4080 m – 3330 m ASL. It feeds the headwaters of Dinwoody Creek, with is a tributary of the Wind River. The bedrock geology beneath Gannett and Dinwoody laciers is composed of migmatitic gneiss and weakly metamorphosed granite, with an age of approximately 2.67 Ga (Frost et al., 2000). The toe of both glaciers are located ~400 m higher (3350 m ASL) than the nearest snowpack telemetry (SNOTEL) station - Cold Springs (2940 m ASL), and 350 m higher than the Gunsight Pass station (2990 m ASL) (Fig. 2).

To investigate differences in trace metal chemistry and isotopic variations between supraglacial meltwater and proglacial streams in the Wind River Range (Supplementary Material Fig. S1), we collected water samples across longitudinal transects of Gannett Glacier/Gannett Creek and Dinwoody Glacier/Dinwoody Creek between 27 August and 4 September 2015 (Fig. 1). Samples were collected in late season when most snow covering the glacial ice had melted and the estimated contributions from glacial ice melt to proglacial streams were largest. Snowpack depth measurements from nearby snow telemetry (SNOTEL) sites at Cold Springs, New Fork Lake, and Gunsight Pass (Figs 1-2) indicated that snow cover melted from lower elevations (2540 m) by early May and higher elevations (2990 m) by early June. Precipitation accumulation for the 2015 water year (Oct 2014 – Sep 2015) across the study area was slightly lower than the 30-year normal, ranging from 93% (New Fork Lake) to 96% (Gunsight Pass). The maximum snow water equivalent was slightly lower than the 30-year normal, ranging from 90% (Gunsight Pass) to 96% (Cold Springs). Snowmelt also began ~2 weeks earlier than normal at each of the 3 SNOTEL sites. Average monthly temperatures at Gunsight Pass in July and August (11 – 12.5 ºC) were 0.5 – 1.5 ºC lower than the 30-yr average. Weather conditions during the period of study were rain-free during sample collection, but light rain was recorded on 27 August from 14:00 – 16:00 and heavy rain was recorded on 30 August from 1:30 – 3:30 with a short hailstorm at 14:00.

Water samples were classified as supraglacial meltwater (streams flowing over the surface of the glacial ice), moraine meltwater (streams flowing through terminal moraines of the glaciers), and proglacial streams (Fig. S1). The Dinwoody Glacier transect included 14 samples sites including 7 supraglacial meltwater samples on Dinwoody Glacier, 3 moraine meltwater samples, and 4 proglacial samples of Dinwoody Creek (Fig. 1). The Gannett Glacier transect included 9 samples including 5 supraglacial meltwater samples on Gannett Glacier and 4 proglacial samples from Gannett Creek. An additional proglacial sample was taken downstream of the confluence between Gannett Creek and Dinwoody Creek. Samples were collected every hr at this location for 24 hrs beginning at 10:00 on 2 September (Fig. 1) to measure diurnal variations from glacial meltwater. Clear Creek, a non-glacial stream in the watershed was also sampled to compare water chemistry between glacial to non-glacial streams.

2.2 Sample data collection

At each site, water samples were collected in an acid-washed (10% HCl) 1 L LDPE bottle and carried back to camp for filtering the same day. We followed EPA 'Clean hands, dirty hands' methods during all steps of sampling and filtering to avoid contamination (USEPA, 1996). A filtering station was set up within the tent using clean chamber bags. Unfiltered sample water was poured directly into a 30 mL amber bottle for stable isotopes of H (δD) and O ($\delta^{18}O$). Isotope samples were sealed with a polyseal cap and wrapped in parafilm. The remaining water was filtered using clean disposable vacuum filters (<0.45 μm). Water was filtered first for Hg (250 mL FLPE acidified to 1% HCl), then for cations/trace metals (60 mL acid-washed LDPE acidified to 2.4% HNO_3, then for anions (30 mL LDPE), then for DOC (60 mL acid washed amber glass vials acidified with a few drops of HCl to pH 3). The remaining 250 mL unfiltered water was stored in a vacuum filter base (and capped) for turbidity measurements in the lab.

Field parameters (specific conductance, pH, temperature, dissolved oxygen) were measured in-situ at each site using a YSI Quattro multiparameter probe which was calibrated prior to sampling each day. We used a 100.0 μS/cm conductivity standard to calibrate for low conductivity waters in the sampling area. Alkalinity was measured in-situ with HACH Low-Range Alkalinity test kits. Results were below detection limit (< 10 mg/L) so bicarbonate concentrations were set using the charge balance. Turbidity was measured in-situ with a Micro TPW Turbidimeter Field Portable Unit in the lab from unfiltered sample volume. Samples were inverted three times to resupended the sediment prior to turbidity measurements.

To evaluate diel cycling in proglacial streams, water samples were collected hourly over a 24-hr period at Dinwoody Creek below the confluence of Gannett Creek (Fig. 1) beginning at 10:00 on 2 September 2015. Stable isotope (δD and $\delta^{18}O$) samples were collected directly from the stream in 30 mL polyseal amber vials every hr. Complete water sampling was conducted every other hr in a 1 L LDPE bottle following the sampling instructions above. The YSI probe was left near the sample site over 48 hrs (1 September – 2 September) to collect field parameters at 15-min intervals. As a quality control two field blanks were collected during 24-hrsampling period by pouring and filtering Milli-Q from a clean 1 L LDPE bottle in a similar manner as field samples. One field blank was collected at the beginning of the 24-hr period, and the other at the end.

We evaluated differences in the timing and magnitude of changes in water temperature, specific conductance (SPC), and water depth between four locations along Dinwoody/Gannett Creek by deploying high frequency pressure transducer/conductivity loggers. Loggers were placed in upper Dinwoody Creek, Gannett Creek, Clear Creek (a non-glacial stream), and lower Dinwoody Creek below the confluence of Gannett and Dinwoody Creeks (Fig. 1). Each logger pair consisted of a HOBO U20 water level logger and a HOBO U24 low-range conductivity logger set to take measurements at 15-min intervals. Each logger was protected by a PVC housing with 0.5 cm holes to allow water flow. Loggers were placed in the main stream channel and secured to large rocks. A HOBO U20 pressure transducer was also hung in a tree near camp to collect barometric pressure and air temperature measurements over the period of study.

Logger data were read out using optical shuttles and post-processed using HOBO software. Absolute pressure measurements were converted to relative water depth using the HOBOware "Barometric Compensation Assistant". Fluid density was calculated for freshwater according to water temperature. To correct for changes in barometric pressure, air pressure and temperature measurements from a HOBO U24 logger hanging in a tree were imported into the Compensation Assistant software. A reference water level was not measured so each logger recorded absolute depth below water. Absolute conductivity measurements were converted to specific conductivity at 25 ºC (SPC) using the “low range” data option in the HOBOware conductivity assistant for values < 1000 µS/cm and the “Non-linear, Natural water Compensation per EN27888” temperature compensation method for freshwater lakes and streams. Each logger was calibrated to a starting value taken by YSI handheld which adjusts all readings up or down by a fixed value from the calibration point.

2.3 Lab analyses

Trace element and major cation concentrations were measured using an Agilent 7500cc quadrupole inductively coupled plasma mass spectrometer (ICP-MS) with a collision cell, a double-pass spray chamber with perfluoroalkoxy (PFA) nebulizer (0.1 mL/min), a quartz torch, and platinum cones. Concentrations were measured for the following 43 elements: Ag, Al, As, B, Ba, Be, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Eu, Fe, Gd, Ho, K, La, Li, Lu, Mg, Mn, Mo, Na, Nd, Ni, Pb, Rb, Sb, Se, Sm, Sr, Tb, Th, Ti, Tl, U, V, Y, Yb, Zn. A calibration solution containing all the elements reported was prepared gravimetrically using 1000 mg/L single-element standards (Inorganic Ventures, Inc.). This solution was used to prepare a calibration curve with six points plus a blank. Al, Ca, Cr, Fe, K, Mn, Na, Sc, and V were determined using a 4 mL He/min in the collision cell; As and Se were determined using 4 mL He/min plus 2.5 mL H_2/min; and the other 34 elements were determined using Ar as the carrier gas. Detection limit (DL) was determined as three times the standard deviation of all blanks analyzed throughout each run. A U.S. Geological Survey (USGS) standard reference sample (T-205) and National Institute of Standards and Technology (NIST) standard reference material (SRM 1643e) were analyzed multiple times in each run together with the samples as a continuing calibration verification, with results accurate within ± 10% for most elements in each sample run (Table S1).

Hg concentrations were measured on filtered sample aliquots using a Brooks Rand MERX-T cold vapor atomic fluorescence spectrometer (CVAFS) after BrCl oxidation following Environmental Protection Agency (EPA) Method 1631e (USEPA, 2002). As a quality control, matrix spikes were made at least every 10 samples with recoveries between 74 and 94%. Filtered MeHg samples were prepared by direct ethylation (Mansfield and Black, 2015) and analyzed on a Brooks Rand MERX-M system. As a quality control, a 1 ng/L matrix spike was made for every sample with recoveries typically between 101 and 122%. Method blanks were analyzed at the beginning of each run to calculate the DL, which typically fell below 0.2 ng/L for THg, and 0.02 ng/L for MeHg.

Unfiltered water samples were analyzed for δD and $\delta^{18}O$ using cavity ringdown spectroscopy. The instrument was calibrated with each set of samples using standards traceable to Vienna Standard Mean Ocean Water (VSMOW) with an analytical precision of ±0.4‰ for $\delta^{18}O$ and ± 1 ‰ for δD. Major anions (Cl^-, NO_3^-, and SO_4^{2-}) were analyzed on filtered aliquots using a Dionex ICS-90 Ion Chromatography System (IC).

2.4 Quality control

For quality control, field blanks (n=4) were collected during sampling by pouring and filtering Milli-Q water from clean 1 L LDPE bottles in a similar manner as field samples. All field blanks showed low background concentrations for major ions and trace elements that were < DL in almost all samples (Supplementary Material Table S1). Some elements were detected in field blanks including Mg, Al, Ca, Cr, Mn, Fe, Mo, Sb, La, and Ce but concentrations were negligible relative to those of field samples. Other elements had concentrations < DL in the field blanks and a majority of samples including Ag, Be, B, Cs, F, DOC and were removed from statistical analysis. For other elements, any values <DL were set as ½ DL. Two samples taken during 24-hr

sampling showed minor contamination. Concentrations of Pb, Ni, and Zn were 2 – 3 standard deviations higher in the 08:00 sample relative to other 24-hr samples so they were removed from analysis. Concentrations of trace elements, (excluding MeHg, THg, and major elements) were also 2-3 standard deviations higher in the 00:00 sample relative to other 24-hr samples and removed from analysis.

Charge balances were calculated and used to set HCO_3^- concentrations because concentrations were too low (< 10 mg/L) to be measured in the field (Supplementary Material Table S2). Charge balances incorporated cation (K^+, Na^+, Ca^{2+}, Mg^{2+}) concentrations from the ICP-MS, and anion (Cl^-, NO_3^-, SO_4^{2-}) concentrations from the IC. HCO_3^- concentrations were calculated to yield a charge balance of 0 with values between 0.1 - 4.2 mg/L and a mean value of 2.0.

2.5 Statistical Analysis

2.5.1 Data normalization

To compare water depth recorded by HOBO loggers, data from each logger were normalized between 0 (least depth) and 1 (highest depth) representing the "relative depth" of each stream. Normalized depth (D_N) was calculated using equation 1 where D_{min} and D_{max} are the maximum and minimum water depth recorded on the logger over the period of study.

Eqn. 1 $$Normalized\ Depth\ D_N = \frac{D - D_{min}}{D_{max} - D_{min}}$$

We explored relationships between the variability of trace elements concentrations in Dinwoody Creek over a 24-hr period by normalizing element concentrations at time t (C_t) to initial concentrations (C_i) at 10:00 with equation 2. We normalized element concentrations to initial values to show changes (positive or negative) over the 24-hr period from a start point.

Eqn. 2 $$C_{Norm} = \frac{C_t}{C_i}$$

We evaluated the relative abundance or REEs in sample waters by normalizing REE concentrations to chondrite meteorites. For each REE and water type (Dinwoody supraglacial, Dinwoody moraine, Dinwoody proglacial, Gannett supraglacial, Gannett proglacial, Clear Creek) the median element concentration (C_{med}), rather than the mean, was used to reduce the effect of high or low outliers. Median REE concentrations from each sample type (C_{med}) were normalized to the composition of chondrite meteorites (Anders and Grevesse, 1989) ($C_{chondrite}$) with equation 3.

Eqn. 3 $$C_{Norm} = \frac{C_{med}}{C_{chondrite}}$$

We compared the enrichment/depletion of trace elements and major ions in glacier-influenced waters relative to a non-glacial stream by creating a spider diagram of element enrichment patterns. Median element concentrations from each sample type (C_{med}) were normalized to element concentrations in Clear Creek (C_{CC}) with equation 4. Spider diagrams were arranged in order of most enriched to least enriched in Dinwoody supraglacial meltwaters and Dinwoody proglacial meltwaters relative to Clear Creek. This element configuration was used because it highlights geochemical differences between supraglacial ice melt and proglacial streams relative to non-glacial waters. Many elements from Gannett supraglacial meltwaters were < DL and these elements were removed from the spider diagram.

Eqn. 4 $$C_{Norm} = \frac{C_{med}}{C_{cc}}$$

2.5.2 Nonmetric multidimensional scaling analysis

We used nonmetric multidimensional scaling (NMS) to explore relationships between water chemistry of supraglacial meltwater, moraine meltwater, and proglacial streams from Gannett and Dinwoody Glaciers. NMS is an ordination technique that simplifies data dimensionality to explain similarities and differences between groups of samples. While NMS is similar to principal component analysis (PCA), it makes fewer assumptions (e.g., does not assume linear relationships between variables) and is suited for a wide variety of ecological datasets (McCune and Mefford, 1999). We used NMS to characterize water sample chemistry through 47 parameters from the complete dataset including: specific conductivity (SPC), pH, turbidity, major cations (Na^+, K^+, Mg^{2+}, Ca^{2+}), major anions (Cl^-, NO_3^-, SO_4^{2-}), and 37 trace elements (Al, As, Ba, Cd, Ce, Co, Cr, Cu, Dy, Eu, Fe, Gd, Ho, La, Li, Lu, MeHg, Mn, Mo, Nd, Ni, Pb, Rb, Se, Sm, Sr, Tb, Th, THg, Ti, Tl, U, V, Y, Yb, Zn). Raw data used in the NMS ordination are provided in the Supplementary material (Table S3).

PC-ORD (McCune and Mefford, 1999) was used for the NMS ordination. Data were log generalized prior to performing the NMS analysis with equation 5 where x_{min} is the minimum concentration of each element. Euclidean distance was used to assign the samples in ordination space. The analyses were run 250 times and compare to randomized data in a Monte Carlo test run with 250 iterations. The final model had a stable 2D solution with a low stress value of 5.19 which is a measure of the goodness of fit for the model. Elements that were below detection limit (DL) in most samples were not used in NMS (Ag, B, Be, Cs, F^-, and DOC). For other elements, values below detection limit were set as ½ the detection limit (DL). The model results are provided as a 2-D Graph with data from each site contained by closed polygons.

Eqn. 5 $$b = \log(x + x_{min}) - \log(x_{min})$$

2.5.3 Hystericity analysis

To quantify the hydrological response to daily snow/glacier ice melt between 4 locations in the watershed, we analyzed daily looping patterns between relative water depth (*D*) and a dependent variable (SPC, water temperature, DO, and pH) using hystericity analysis. Hysteresis loops were classified into 8 categories based on form (shape) and magnitude (size) using numerical integration following the methods in (Zuecco et al., 2016). Each hysteresis loop began at daily minimum runoff (D_{min}) so that $D(0)= 0$.

Hystericity between water depth versus SPC, DO, pH, and temperature was measured over a 48-hrperiod (1 September – 2 September) in lower Dinwoody Creek below the confluence of Gannett and Dinwoody Creeks (Fig. 1). We used water depth data from the HOBO logger pair in lower Dinwoody Creek (Supplementary Material Table S4). We used SPC, DO, pH and temperature data from the YSI Quattro probe (Supplementary Material Table S4). Both datasets were collected at 15-min intervals over the 48-hr period.

Hystericity between water depth versus SPC and temperature was measured over a 6-day period (28 August – 2 September) at four locations in the study area (Fig. 1). We used temperature and relative water depth data from HOBO pressure transducers, and SPC data from HOBO conductivity loggers (Supplementary Material Table S4). Logger data was collected at 15-min intervals over the period of study.

3. Results

3.1 Stable isotopes from supraglacial and proglacial samples were distinct

Stable isotopes of H (δD) and O ($\delta^{18}O$) show differences between supraglacial and proglacial meltwaters from Dinwoody and Gannett Glaciers (Fig. 3A). Samples from Gannett Glacier, particularly the supraglacial samples, were more isotopically depleted than those from Dinwoody Glacier even though they were collected at similar elevations. Most samples fell on or near the local meteoric water line (LMWL) for Wyoming (Benjamin et al., 2005). Supraglacial and proglacial melt samples from Gannett Glacier plotted along a linear trend slightly below the LMWL. In contrast, samples from Dinwoody Glacier plotted in a cluster straddling the LMWL. Most supraglacial samples plotted below the LMWL while samples flowing through glacial moraines plotted on or slightly above the LMWL. Proglacial samples plotted furthest above the LMWL.

3.2 Supraglacial and proglacial meltwaters contained different trace element concentrations

Element concentrations showed two opposing trends: either higher in proglacial streams relative to supraglacial ice melt or higher in supraglacial melt relative to proglacial streams (Figs. 4-5).

Major ions (Ca^{2+}, Mg^{2+}, Na^{+}, K^{+}, Cl^{-}, NO_3^{-}, SO_4^{2-}) showed increasing concentrations from upstream supraglacial ice melt samples to downstream proglacial melt samples (Fig. 4). Concentrations of nearly all trace metals (Ba, Ce, Cr, Dy, Eu, Gd, Ho, La, Li, Lu, Mo, Nd, Ni, Rb, Sb, Se, Sm, Sr, Tb, Ti, U, V, Y, Yb) were also higher in proglacial meltwaters relative to supraglacial ice melt. For example, Ca concentrations were 6 -12 times higher in proglacial streams relative to supraglacial streams increasing from < 0.07 mg/L on Gannett Glacier and <0.2 mg/L on Dinwoody Glacier, to 0.3 mg/L and 1.3 mg/L (Supplementary Material Fig. S2).

Solute concentrations of most major ions and trace metals were higher in supraglacial melt from Dinwoody Glacier relative to Gannett Glacier. For example, average U and Rb concentrations in supraglacial meltwater from Gannett Glacier were almost 10 times lower than those of Dinwoody Glacier (U = 0.0067 and 0.0595 µg/L Rb = 0.0262 and 0.2617 µg/L respectively) (Supplementary material Fig. S2). Downstream of the confluence between Gannett and

Dinwoody Creek, solute concentrations were intermediate, reflecting a mixture of low concentrations in Gannett Creek, and higher ones in Dinwoody Creek. For example, the mean concentration of Cl^-, which is considered a conservative tracer, was 0.12 mg/L in Dinwoody Creek, 0.05 mg/L in Gannett Creek, and 0.09 mg/L below the confluence of each stream.

Concentrations of Cd, Co, Cu, MeHg, Mn, Pb, THg and Zn were higher in supraglacial ice melt relative to proglacial streams (Fig. 5). Pb concentrations decreased the most dramatically from > 0.2 µg/L in supraglacial meltwater to 0.02 µg/L in proglacial streams – a 90% overall decrease. Cd, Co, and Mn concentrations decreased approximately 70% from supraglacial ice melt upstream to proglacial melt downstream while Zn, THg, and MeHg concentrations decreased 40%. Cu concentrations experienced the least change, decreasing 25% from supraglacial ice melt upstream to proglacial melt downstream.

Major and trace element concentrations are provided in the Supplementary Material (Table S1).

3.3 Multivariate statistics show distinct geochemical groupings by sample type

The NMS ordination results showed that the supraglacial meltwater, moraine meltwater, and proglacial streams from Dinwoody and Gannett Glaciers are geochemically distinct (Fig 6). The NMS model that best described the dataset was a two-dimensional solution that explained 98.5% of the total variance with a final stress of 5.19, where solutions with stress values less than 10 are typically considered stable and reliable (McCune and Mefford, 1999). In the NMS model, axis 1 explains 93.5% of the variability in the data set, and axis two explains an additional 5.0%. Axis one is primarily controlled by ten trace elements to the left (Pb, Cd, Co, Mn, Zn, MeHg, THg, Cu, As, Tl) and major ions (Ca^{2+} Mg^{2+}, K^+, SO_4^{2-}, Na^+) to the right. Thus, samples with higher concentrations of major elements plot on the right side of axis 1 while samples with higher concentrations of the selected trace elements plot on the left side of axis 1. Rare earth elements (REEs) plot to the middle-right of the diagram.

Samples are grouped with polygons called "convex hulls" which show geochemical differences between groups of samples. The seven groupings are: Gannet supraglacial meltwater, Gannet proglacial meltwater, Dinwoody supraglacial meltwater, Dinwoody moraine meltwater, Dinwoody proglacial meltwater, samples below the confluence of Dinwoody and Gannett Creek, and Clear Creek (a non-glacial stream). The NMS plot shows changes in water chemistry from supraglacial meltwaters, which are characterized by relatively low concentrations of major elements and REEs (Ca^{2+}, Mg^{2+}, K^{+}, SO_4^{2-}, Na^{+}, La) to proglacial streams which contain higher concentrations of these elements. Notably, supraglacial samples contained higher concentrations of several trace metals (Pb, Cd, Co, Mn, Zn, MeHg, THg, Cu) relative to proglacial samples. Samples below the confluence of Dinwoody and Gannett Creeks plot between the Gannett proglacial and Dinwoody proglacial samples, showing that these samples are a mixture of both Gannett and Dinwoody Creeks (Supplementary Material Fig. S3).

3.4 Trace element geochemistry of glacier-influenced streams differed from a non-glacial stream

Spider diagrams of the median composition of each water type (Dinwoody supraglacial, Dinwoody moraine, Dinwoody proglacial, Gannett supraglacial, Gannett proglacial) show element enrichment/depletion patterns between glacier-influenced streams and non-glacial streams (Fig. 7). Elements to the left side of the x-axis (Mn, Pb, Th, Co, Cd, Tl, MeHg, Ni, Fe) were enriched in supraglacial meltwater from Dinwoody Glacier relative to a non-glacial stream. Elements to the right side of the x-axis (REEs+Y, major elements, V, Sr, Mo) were depleted in Dinwoody supraglacial meltwaters. Elements in the middle of the x-axis (Cu, Zn, Al, Rb, As, Ba, Cr, Ti, NO_3, U, Sb, Se) had similar concentrations between Dinwoody supraglacial meltwaters and Clear Creek. Supraglacial meltwaters from Gannett Glacier were more depleted than those from Dinwoody Glacier. Spider diagrams from both glaciers show depletion of the major elements and REES+Y to the right, and enrichment of Mn, Pb, Co, and Cd on the left. Mn and Pb concentrations in supraglacial meltwaters were both 10-30 times higher than the non-glacial stream. Co and Cd concentrations were moderately enriched relative to the non-glacial stream (2 – 10 times higher).

Median REE concentrations in each water type were normalized to the composition of chondrite meteorites and plotted on spider diagrams to compare the enrichment/depletion of REES in each water type to relative to chondrite meteorites (Anders and Grevesse, 1989) (Fig. 8). As expected, REE concentrations from streams in the study area were several orders of magnitude lower than chondrite meteorites and 1 order of magnitude lower than the mean REE composition of global rivers (Gaillardet et al., 2003). Each spider diagram had a relatively smooth slope from light REEs (La, Ce, Pr, Nd) to heavy REEs (Tb-Lu). There was a negative Eu anomaly in all sample types except Gannett supraglacial meltwaters, where Eu was below detection limit. REE concentrations were highest in Clear Creek, a non-glacial stream, and lowest in supraglacial meltwaters from Gannett and Dinwoody Glaciers.

3.5 Variations in proglacial stream chemistry over a 24-hour period

3.5.1 Isotopic composition of Dinwoody Creek changed over 24-hour period

Stable isotopes of H (δD) and O ($\delta^{18}O$) in Dinwoody Creek below the confluence with Gannett Creek change over a 24-hr period (Fig. 9). δD and $\delta^{18}O$ and were less depleted during early morning base flow, relative to later in the day. Maximum isotopic depletion occurred 2-3 hrs after peak flow between 17:00 and 18:00. As flow in Dinwoody Creek decreased approaching sundown (indicated by opaque grey area) δD and $\delta^{18}O$ become less depleted. During the decrease to base flow between 00:00 and 06:00, isotopic compositions were variable. Isotope concentrations (δD and $\delta^{18}O$) collected during 24-hr sampling in lower Dinwoody Creek plotted near Gannett proglacial meltwaters, Dinwoody supraglacial meltwaters, Dinwoody moraine meltwaters, and Clear Creek (Fig. 3A-B).

3.5.2 Proglacial streams exhibited diel cycling and hysteresis patterns

Water parameters (temperature, DO, pH, and SPC) in Dinwoody Creek below the confluence with Gannett Creek varied over 24-hr diel cycles (Fig. 10). Figure 10A shows changes in water parameters over a 48-hr period, with the relative depth of Dinwoody Creek shown in blue, and nighttime periods (20:30 – 5:45) shown in dark gray. Figure 10 B shows 24-hrs of hysteresis relationships between water depth and other variables in lower Dinwoody Creek. Similar hysteresis loops were observed over both days but only one day is shown for simplicity. Hystericity was classified according to two hysteresis indices that factor in form (shape), magnitude (size), and direction (Zuecco et al., 2016).

Water temperature increased with depth in Dinwoody Creek while DO, pH, and SPC each decreased as depth increased. Water temperature varied between 3.5 and 7 ºC with a mean value of 4.9. Minimum temperature occurred during early morning base flow (8:00) and reached daily maximum 2-3 hours before peak flow (15:00). Like most steep alpine streams, Dinwoody Creek was saturated with respect to dissolved oxygen (Brown et al., 2003). The highest DO values (9.8 mg/L) occurred during early morning baseflow when water temperatures were lowest (8:00). pH was slightly acidic during peak flow (5.5) and higher (6.1) during early morning base flow with a mean value of 5.8. SPC levels in Dinwoody Creek were highest during early morning base flow (13 µS/cm) and lowest during peak flow (7 µS/cm) with a mean value of 10.4.

3.5.3 Solute concentrations varied over 24-hour period

Solute concentrations in Dinwoody Creek below the confluence with Gannett Creek varied over a 24-hr period exhibiting diel cycles (Fig. 11). Elements either followed the behavior of major ions (Ca^{2+}, Mg^{2+}, Na^{+}, K^{+}, Cl^{-}, NO_3^{-}, SO_4^{2-}) (Fig.11A), or REEs+Y (La, Ce, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Yb, Lu, Y) (Fig.11B). Elements that behaved similar to major ions (U, Ba, Sb, Mo, Sr, Rb, Se, Ni, Li) showed significant (p<0.05) negative correlation to water depth (r^2=-0.85), temperature (r^2=-0.74), and turbidity (r^2=-0.65), and positive correlation to SPC (r^2=0.88), pH (r^2=0.82), and DO (r^2=0.75). Many of these elements are soluble ions with +1 or +2 charges. Elements that followed the behavior of REEs (Th, Y) also showed significant (p<0.05), but less strong correlations to water depth (r^2=-0.29), turbidity (r^2=-0.033), and pH (r^2=0.25), but lacked significant correlation to water temperature, DO, or SPC. Concentrations of both groups of elements decreased from baseflow at 10:00 to daily minimum at 18:00. However, the variability of REEs was greater than major ions and merited a distinct sub-group. After sundown (indicated by shaded gray area), concentrations of many REEs decrease slightly, while major ions (except Cl^{-}) continue to increase. As Dinwoody Creek decreased to base flow conditions, concentrations of both groups of elements rose.

A third subset of elements did not follow major elements or REEs+Y (Al, As, Cr, Cu, Fe, Mn, Pb, THg, MeHg, V, Zn) (Fig. 11 C). All of these elements are transition metals and metalloids, capable of exhibiting multiple valence states. Concentrations of Mn and MeHg, two of the elements enriched in supraglacial meltwater (Fig. 5), increased in response to daily runoff.

3.6 Timing and magnitude of daily water parameter fluctuation varied between glacial and non-glacial streams

Time series of relative depth, water temperature, and specific conductance (SPC) showed differences in timing and magnitude between glaciated and non-glaciated streams (Fig. 12). Base flow in glaciated and non-glaciated streams occurred in the morning and peaked in late afternoon. On average, flow in Gannett Creek (0.5 km from Dinwoody Glacier) peaked 1.5 hrs before upper Dinwoody Creek (3.5 km from Dinwoody Glacier) and > 2 hrs before lower Dinwoody Creek (3.5 km from Gannett Glacier and 6 km from Dinwoody Glacier). Water depth in glaciated streams increased faster on the rising limb of the hydrograph than the falling limb. In contrast, the hydrograph from Clear Creek (a non-glacial stream) was more even and rounded. Although SPC only varied by < 10 μS/cm, it showed strong diurnal variations in glaciated streams that were absent in the non-glaciated stream. Maximum SPC occurred during early morning base flow in glaciated streams but showed no relation to water depth in Clear Creek. In contrast, minimum water temperature across all streams occurred just after sunrise and peaked in early-late afternoon. Water temperature variability was highest in upper Dinwoody Creek (1.5 - 9.5 ºC) and lowest in Gannett Creek, 0.5 km from Gannett Glacier (1.1 - 5.1 ºC). Water temperatures were highest in nonglacial Clear Creek (3.6 - 11.2 ºC).

4. Discussion

4.1 Trace element contributions from atmospheric deposition and local weathering

Three groups of elements emerged by comparing supraglacial meltwaters to proglacial streams: 1) elements that were enriched in supraglacial ice melt from proglacial streams (THg, MeHg, Mn, Cd, Co, Cu, Zn, Tl, Pb); 2) elements that were enriched in proglacial streams relative to supraglacial ice melt (Ca, Na, Mg, K, SO_4, NO_3, Li, Ti, V, Cr, Ni, Se, Rb, Sr, Y, Mo, Sb, Ba, REEs, U); and 3) elements with similar concentrations between samples (Al, As, Lu). Notably, the three groups of elements are visible in averaged boxplots of data (Fig. 4-5), multivariate statistical analysis (Fig. 6), and spider diagrams of element enrichment/depletion (Fig. 7). The element groupings do not completely describe supraglacial meltwaters from Gannett Glacier and proglacial Gannett Creek because these samples were likely diluted by snowmelt. Gannett samples were more depleted in δD and $\delta^{18}O$ (Fig. 3), major elements (Fig. 6), and most trace elements (Fig. 6) relative to Dinwoody samples. δD and $\delta^{18}O$ values from supraglacial meltwaters on Gannett Glacier resembled a mixture of ice and snowmelt (Cable et al., 2011) suggesting that meltwaters from Gannett Glacier contain more snowmelt than those from Dinwoody Glacier.

Elements in group 1 that are enriched in supraglacial meltwaters relative to proglacial streams probably originate at distal anthropogenic sources. Supraglacial meltwaters primarily interact with glacial ice and atmospheric dust and debris on the glacier surface with limited water-rock interaction (Tranter, 2003). Therefore, the trace metals in group 1 (THg, MeHg, Mn, Cd, Co, Cu, Zn, Tl, Pb) are likely deposited on glacial ice with aerosols, dust, or snowfall (Aarons et al., 2016; Schuster et al., 2008). Many of the elements in group 1 are among the least mobile in erosion and transport (Pb, Co, Zn) so it is unlikely that they are weathered from the bedrock (Gaillardet et al., 2003). Further, concentrations of group 1 elements decrease downstream of the glacier toe, suggesting that their contributions from rock weathering products are minimal compared with atmospheric deposition.

Wind-blown dust, aerosols, and ash are significant sources of nutrients and trace metals to sensitive alpine watersheds in the Intermountain West (Aarons et al., 2016; Carling et al., 2012). Over the past 5000 years, human activities have increased dust production in the region, shifting dust deposition from long-range to local sources (Aarons et al., 2016). The main local dust source to the Wind River Range is the Green River Basin (Dahms and Rawlins, 1996). Although concentrations of major elements (Ca, Mg, K) are similar between atmospheric dust and continental crust, many trace elements and heavy metals are enriched in dust (Lawrence and Neff, 2009). Pb, Cr, Co, Ni, Cu, and Mn are enriched in 1.2 – 4.8 times more in atmospheric dust than global continental crust. Other trace metals like Hg undergo long-range atmospheric transport and are preferentially deposited at high elevations/latitudes like the Wind River Range (Schuster et al., 2008). Over the past 100 years, anthropogenic sources contributed 70% of THg input to glacial ice in the upper Fremont Glacier, WY. Heavy metal deposition from atmospheric dust across the Intermountain West may be widespread; supraglacial meltwaters ~ 150 km to the northwest in the Grand Tetons, WY were similarly enriched in Mn, Hg, Zn, Cd, Co, and Pb relative to proglacial meltwaters (Carling et al., 2012).

Elements in group 2 with relatively higher concentrations in proglacial meltwaters are derived from rock-water and weathering reactions with the local bedrock. Many group 2 elements are highly soluble alkaline and alkaline earth elements with +1 or +2 charges (Li, Na, Mg, K, Ca, Rb, Sr, Ba) or soluble cations (Cl, NO_3, SO_4). These elements are more susceptible to erosion and transport than less soluble ions and are preferentially leached out of freshly weathered glacial flour as it comes in contact with proglacial meltwaters (Gaillardet et al., 2003; Tranter, 2003). Group 2 elements also included insoluble REEs that were likely transported with small colloidal particles that passed through our 0.45 μm filters (> 0.2 μm - < 0.45 μm) (Deberdt et al., 2002). REE spider diagrams showed relatively smooth downward slopes from light REEs (La) to heavy REEs (Lu), similar to global mean river water (Fig. 8) (Gaillardet et al., 2003). These similarities suggest that REE partitioning during weathering, erosion, and transport in glacial watersheds is similar to global processes and that these elements are derived from rock-weathering products or atmospheric dust (Fig. 6).

4.2 Causes and effects of diel cycling in Dinwoody Creek

Daily changes in solar radiation create diel (24-hr) cycles in water temperature, and other water parameters (pH, DO, SPC) of rivers and streams (Nimick et al., 2011). During the day, sunlight stimulates photosynthesis, plants consume CO_2, and pH rises. At night cellular respiration produces CO_2 and pH falls. Biogeochemical diel cycling is limited in proglacial streams because the cold, turbid, and nutrient-poor waters are a poor habitat for many organisms. For example, pH and DO decreased in Dinwoody Creek during the day and rose at night in contrast to typical biogeochemical cycles (Fig. 10). The influx of daily snow and glacier-ice melt caused diel cycling in Dinwoody Creek. From 10:00 – 20:00, snow and glacier-ice melt diluted solute concentrations by 30 -70% (Fig. 11A), decreased pH from 6 to 5.5 (Fig. 10), decreased SPC (Fig. 12), and depleted the isotopic composition of Dinwoody Creek relative to baseflow conditions (Fig. 9). To our knowledge, this is the first study of trace element diel cycling in an alpine proglacial stream. There is a significant gap in literature about diel cycling in waters with low solute concentrations and lack of biogeochemical stimuli (i.e., lack of acid mine drainage or photosynthesis) (Nimick et al., 2011).

Diel cycling of water depth, temperature, DO, pH, and SPC affected groups of elements differently (Fig. 11). Elements that followed the behavior of major ions (Ca, Na, Mg, K, Cl, SO_4, NO_3, U, Ba, Sb, Mo, Sr, Rb, Se, Ni, Li) were enriched in proglacial streams relative to a non-glacial stream (Fig. 7B) and diluted by runoff in Dinwoody Creek (Fig. 11A). In contrast, elements that followed the behavior of REEs (La, Ce, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Yb, Lu, Th, Y) were depleted in proglacial streams relative to a non-glacial stream (Fig. 7B) and their response to runoff was more variable (Fig. 11B). This suggests that different mechanisms control diel cycling of major elements and REEs. Diel cycling of major ions was controlled by dilution from snowmelt while diel cycling of REEs was likely influenced by changing colloid concentrations and adsorption conditions (pH, temperature).

REE diel cycling was decoupled from soluble major ions in Dinwoody Creek because REEs are insoluble and apparent "dissolved" concentrations include elements transported with small colloidal particles (<0.2 µm - >0.45 µm) (Buffle and Van Leeuwen, 1992). For example, snow cover on Gannett Glacier (Fig. 3) diluted major ion concentrations in Gannett Creek relative to Dinwoody Creek (Fig. 7B) while REE concentrations between both streams were nearly identical. Between 10:00 and 12:00 on 2 September 2015, REE concentrations in Dinwoody Creek increased, reflecting an increase in colloidal materials flushed during runoff, while major ions were diluted by runoff (Fig. 11A-B). DOC was not detected in our samples; therefore, the colloid pool is likely inorganic particles like hydrous aluminum or iron hydroxides. LREEs and HREEs were fractionated during diel cycling processes. The slope of the REE profile from LREEs to HREEs increased with increasing flow in Dinwoody Creek, indicating preferential enrichment of LREES relative to HREEs during high flows (Fig. 11B). REE adsorption is highly sensitive to changes in temperature or pH (Nimick et al., 2003). As temperature and pH increase, REE adsorption, particularly HREE adsorption to hydrous iron or aluminum oxides increases (Quinn et al., 2007). Therefore, HREE concentrations may not increase as much as LREEs relative to initial values because they are preferentially removed/adsorbed from the colloidal pool. However, at 16:00 decreasing water temperature and pH may have released HREEs from adsorbed particles, resulting in HREE enrichment.

Several transition metals and metalloids with multiple valence states did not follow diel cycling patterns of major elements or REEs (Al, As, Cr, Cu, Fe, Mn, Pb, Ti, THg, MeHg, V, Zn) (Fig. 11C). Many of these elements (Cu, Mn, Pb, THg, MeHg, Zn) were enriched in supraglacial ice melt relative to proglacial streams but concentrations were diluted or adsorbed before reaching lower Dinwoody Creek. Only Mn and MeHg exhibited diel cycling. Concentrations of Mn and MeHg increased between baseflow at 10:00 and peak flow at 16:00, in contrast to the other 45 elements. Mn diel cycling may be caused by an influx of supraglacial ice melt with enriched Mn concentrations. Although THg diel cycling was not observed, photomethylation may drive MeHg diel cycling. MeHg concentrations in Dinwoody Creek peaked in early afternoon, similar to other studies (Nimick et al., 2007; Siciliano et al., 2002). Clear diel cycling patterns were not observed for Al, As, Cr, Cu, Fe, Pb, Ti, THg, V, or Zn. Insoluble elements (Fe, Al, Pb, Ti, THg) indicate colloidal "contamination" of the "dissolved" phase. Diel cycling for Cu, V, and Pb is not reported in literature. Further work is needed to assess trace metal diel cycling in glacial watersheds particularly at low concentrations.

4.3 High frequency temperature, SPC, and depth loggers characterized differences between the timing and magnitude of runoff in glaciated and non-glaciated streams

Conductivity, temperature, and water depth measurements from loggers deployed across the study area provided helpful data to quantify hydrologic responses to daily snow/glacier ice melt. The three glacial loggers (Gannett Creek, upper Dinwoody Creek, lower Dinwoody Creek) showed strong diurnal variations in relative water depth, water temperature, and SPC in response to daily snow/glacier ice melt while the non-glacier logger (Clear Creek) only showed strong diurnal variation in temperature (Fig. 12). The high temporal resolution of the loggers (15-min intervals) helped capture rapid changes in SPC and temperature on the rising limb of the hydrograph as “quick-melt” (characterized by limited water rock interaction from meltwaters that flow over glacier ice and bare rock) entered glacial streams and increased water levels from base flow to peak in just 4 hrs. The falling limb of the hydrograph changed more slowly than the rising limb as “delayed melt” (characterized by increased solute concentrations and water-rock interaction in sub-glacial drainages and moraines) slowly reached the stream (Brown, 2002). Differences in solute concentrations between quick melt and delayed melt were small (SPC across the study area was <15 μS/cm) but the loggers were still able to capture a sharp fall in SPC as quick-melt diluted solute concentrations in the glacial streams (Fig. 12).

From the time series data alone (Fig. 12), it is difficult to see that relationships between water depth versus temperature and SPC are not linear, but rather directed hysteresis loops (Fig. 13). Hysteresis is non-linear looping behavior that forms between two variables when the present state of a system depends on the history of the system (O Kane, 2005). Hysteretic relationships challenge predictive models because the looping patterns cannot be represented with a function or simple linear regression (Gharari and Razavi, 2018). In this case, the relationship between water depth and the dependent variable (water temperature, SPC, DO, pH) is different on the rising limb of the hydrograph than the falling limb. We used a hysterecity index to quantitatively examine the response of SPC, temperature, DO, and pH to daily glacier snow and ice-melt. Hystericity was classified according to two hysteresis indices that factor in form (shape), magnitude (size), and direction (Zuecco et al., 2016). The hysteresis loop type (I-VIII) indicates the direction, shape, and initial slope of hysteresis loops. The hysteresis index (*h*) indicates loop width or “fatness”. *h* values approaching -1 or 1 indicate the widest loops while values close to 0 indicate weak hystericity or figure 8 patterns.

Hysteresis analysis accurately classified logger data from each day and identified relationships between water depth, water sources, and solute concentrations. Hysteretic relationships between water depth and water temperature were clockwise at all logger locations because each location received snow and/or glacier ice melt from solar radiation during the day regardless of base-flow conditions (Fig. 13) (Supplementary Material Table S5). In contrast, hysteretic relationships between water depth and SPC varied between logger locations and between days, suggesting that the solute contributions of daily meltwater differ spatially and temporally (Fig. 13) (Table S5). Gannett Creek and Clear Creek both had weak-nonexistent SPC hysteresis. The relationship between SPC and water depth in Gannett Creek is best described by two endmembers: proglacial base flow and daily ice-melt so that $SPC_{PgBase} > SPC_{melt}$. Contributions of soil water or groundwater were minimal at upper Gannett Creek because it was only 0.5 km from the toe of the glacier and did not receive as much delayed melt as other locations. The relationship between water depth and SPC in Clear Creek was practically a flat line on most days, suggesting that there was little-to-no relationship between water depth and SPC. Loggers placed 1 km apart recorded clockwise hysteresis in upper Dinwoody Creek, and counter-clockwise in lower Dinwoody Creek due to changes in the timing of runoff (Figs 1, 12, 13). Clockwise loops indicated that initial meltwaters in Dinwoody Creek had a SPC similar, or higher than baseflow. SPC decreased as dilute meltwaters entered Dinwoody Creek so that $SPC_{base} > SPC_{delayed\text{-}melt} > SPC_{quickmelt.}$ Dilute meltwaters from Gannett Glacer influenced lower Dinwoody Creek, creating counter-clockwise figure-8 patterns. Initial flow in lower Dinwoody Creek was more dilute than baseflow. However, as less-dilute meltwaters from upper Dinwoody Creek reached lower Dinwoody Creek, SPC began to increases even as depth increased so that $SPC_{base} >$

$SPC_{Dinwoody}$> $SPC_{Gannett}$. Thus, hysteresis loops differentiate the effects of different water sources on solute concentrations.

4.4 Implications for future studies

Hysteretic relationships recorded by high-frequency loggers could be used to calibrate better hydrologic models in glaciated watersheds, particularly in remote areas with limited data or watersheds where concentrations of chemical/isotopic tracers overlap between water sources (Frenierre and Mark, 2014). The combination of multiple tracers (δD, $\delta^{18}O$, Cl^- SPC, temperature) may be used to differentiate between glacial meltwaters, snowmelt, and groundwater than a single tracer (Abbott et al., 2016). Water temperature was not a useful tracer because it was highly responsive to solar radiation (Figs. 12-13). However it could be used to predict the presence and behavior of aquatic organism in different reaches of glacial streams (Füreder et al., 2001; Johnstone and Rahel, 2003). Stable isotopes of water (δD, $\delta^{18}O$) were a good indicator of water source (Fig. 3), but limited in spatial and temporal resolution because the isotopic composition of source waters changed spatially from one glacier to another, and temporally over seasons and years (Klaus and McDonnell, 2013). For example, we found that many of our samples did not plot within the proposed endmembers of a detailed multi-year study of isotopic mixing in Dinwoody Creek (Cable et al., 2011). Solutes (SPC and Cl^-) as end-member tracers were also limited because concentrations in each water source were low (< 0.2 mg/L Cl^- and < 15 µS/cm) (Figs. 4, 12). However, unlike stable isotope samples (which must be collected and analyzed in a laboratory), Cl^- and SPC can be measured in-situ with probes and provided better temporal resolution to quantify solute concentrations of changing water sources (Fig. 11A). High-frequency water depth and SPC data could also improve precipitation estimates in remote areas without weather stations. In our study, the form and magnitude of hysteresis relationships between water depth versus SPC and temperature changed in response to heavy rainfall and a cold front between 30 – 31 August 2015 (Fig. 13). Future studies could calibrate models to reproduce hysteretic relationships in glaciated watersheds.

5. Conclusions

Melting glaciers in the Wind River Range, Wyoming affect solute concentrations and runoff patterns in alpine streams. We sampled meltwaters from Dinwoody Glacier and Gannett Glacier to evaluate differences in trace metal concentrations between supraglacial ice melt and proglacial streams. Proglacial meltwaters, which interact with highly-reactive crushed rock at the base of the glacier, were enriched in major ions, REEs, and most other elements relative to supraglacial ice melt. Notably, soluble ions with +1 or +2 charges were enriched in proglacial streams relative to a non-glacial stream due to water-rock interactions with freshly-weathered reactive debris at the base of the glacier. Supraglacial ice melt, which interacts with glacier ice and debris on the glacier surface, was enriched in 8 atmospherically-deposited trace elements relative to proglacial streams (Cd, Co, Cu, MeHg, Mn, Pb, THg, Zn). These results suggest that glaciers in the Wind River Range are reservoirs of atmospheric heavy metals. Atmospheric deposition of heavy metals in glacier ice across the Intermountain West may be widespread. Many elements (Mn, Hg, Zn, Cd, Co, and Pb) were also enriched in supraglacial ice melt from glaciers in the Teton Range, 150 km to the northwest (Carling et al., 2017).

Diel cycling patterns in the Wind River Range are heavily influenced by glacier ice melt during late season base-flow. Flow in Dinwoody Creek increased from baseflow to peak in just four hrs as glacial meltwaters entered the stream and doubled water temperature, decreased pH from 6.0 to 5.6, diluted solutes by 60%, and depleted stable isotope compositions. Dilution controlled diel cycling of major elements and many trace elements. Diel cycling of REEs and other insoluble elements was affected by colloid concentrations in Dinwoody Creek and changing adsorption/desorption conditions (pH and temperature) that caused preferential LREE enrichment and HREE depletion during peak flow. Several metals and metalloids did not show diel cycling (Fe, Al, Cr, Cu, THg, Pb, V, Zn). To our knowledge, this is the first study of trace element and REE diel cycling in an alpine proglacial stream without significant mineralization or acid mine drainage. Further work is needed to explore REE and heavy metal partitioning between the truly dissolved (<0.2 µm) and particulate phases at low concentrations.

High frequency water depth, temperature, and SPC loggers may provide useful data to improve hydrologic models of glacier ice melt in the future. Glacial ice melt increased water temperature and diluted solute concentrations from base flow conditions. Changes were smallest and occurred first near the toe of the glacier, and increased in magnitude and timing farther from the glacier. Non-glacial streams had higher water temperatures and more consistent solute concentrations than glacial streams. This suggests that glacial retreat may lead to increased water temperatures, lower stream flow, and more consistent solute concentrations during late summer base flow when snow cover is gone. These changes would affect macroinvertebrate communities in proglacial streams. Logger data also identified hysteretic relationships (looping patterns) between water depth versus SPC, temperature, DO, and pH in glaciated streams caused by changing contributions of source waters (glacial ice melt, ground water, soil water) with different solute concentrations. This data could help calibrate models and improve hydrograph separation techniques but further study is needed.

References

Aarons, S., Aciego, S., Gabrielli, P., Delmonte, B., Koornneef, J., Uglietti, C., Wegner, A., Blakowski, M., and Bouman, C., 2016, Ice core record of dust sources in the western United States over the last 300 years: Chemical Geology, v. 442, p. 160-173.

Abbott, B. W., Baranov, V., Mendoza-Lera, C., Nikolakopoulou, M., Harjung, A., Kolbe, T., Balasubramanian, M. N., Vaessen, T. N., Ciocca, F., and Campeau, A., 2016, Using multi-tracer inference to move beyond single-catchment ecohydrology: Earth-Science Reviews, v. 160, p. 19-42.

Anders, E., and Grevesse, N., 1989, Abundances of the elements: Meteoritic and solar: Geochimica et Cosmochimica acta, v. 53, no. 1, p. 197-214.

Barbante, C., Schwikowski, M., Döring, T., Gäggeler, H. W., Schotterer, U., Tobler, L., Van de Velde, K., Ferrari, C., Cozzi, G., and Turetta, A., 2004, Historical record of European emissions of heavy metals to the atmosphere since the 1650s from Alpine snow/ice cores drilled near Monte Rosa: Environmental Science & Technology, v. 38, no. 15, p. 4085-4090.

Bell, J., Tootle, G., Pochop, L., Kerr, G., and Sivanpillai, R., 2011, Glacier impacts on summer streamflow in the Wind River Range, Wyoming: Journal of Hydrologic Engineering, v. 17, no. 4, p. 521-527.

Benjamin, L., Knobel, L. L., Hall, L., Cecil, L., and Green, J. R., 2005, Development of a local meteoric water line for southeastern Idaho, western Wyoming, and south-central Montana.

Boughton, G. K., Remley, K. R., and Bartos, T. T., 2006, Estimated water use in Wyoming during 2000: US Geological Survey, 2327-6932.

Boutron, C. F., Candelone, J.-P., and Hong, S., 1994, Past and recent changes in the large-scale tropospheric cycles of lead and other heavy metals as documented in Antarctic and Greenland snow and ice: a review: Geochimica et Cosmochimica Acta, v. 58, no. 15, p. 3217-3225.

Brown, G. H., 2002, Glacier meltwater hydrochemistry: Applied Geochemistry, v. 17, no. 7, p. 855-883.

Brown, G. H., Tranter, M., and Sharp, M., 1996, Experimental investigations of the weathering of suspended sediment by alpine glacial meltwater: Hydrological Processes, v. 10, no. 4, p. 579-597.

Brown, L., Hannah, D., and Milner, A., 2003, Alpine stream habitat classification: an alternative approach incorporating the role of dynamic water source contributions: Arctic, Antarctic, and Alpine Research, v. 35, no. 3, p. 313-322.

Brown, L. E., Hannah, D. M., Milner, A. M., Soulsby, C., Hodson, A. J., and Brewer, M. J., 2006, Water source dynamics in a glacierized alpine river basin (Taillon-Gabiétous, French Pyrénées): Water Resources Research, v. 42, no. 8.

Buffle, J., and Van Leeuwen, H., 1992, Environmental particles. Vol. 1.(IUPAC Environmental analytical and physical chemistry series).

Cable, J., Ogle, K., and Williams, D., 2011, Contribution of glacier meltwater to streamflow in the Wind River Range, Wyoming, inferred via a Bayesian mixing model applied to isotopic measurements: Hydrological Processes, v. 25, no. 14, p. 2228-2236.

Carling, G., Rupper, S., Fernandez, D., Tingey, D., and Harrison, C., 2017, Effect of atmospheric deposition and weathering on trace element concentrations in glacial meltwater at Grand Teton National Park, Wyoming, USA: Arctic, antarctic, and alpine research, v. 49, no. 3, p. 427-440.

Carling, G. T., Fernandez, D. P., and Johnson, W. P., 2012, Dust-mediated loading of trace and major elements to Wasatch Mountain snowpack: Science of the Total Environment, v. 432, p. 65-77.

Cheesbrough, K., Edmunds, J., Tootle, G., Kerr, G., and Pochop, L., 2009, Estimated Wind River Range (Wyoming, USA) Glacier Melt Water Contributions to Agriculture: Remote Sensing, v. 1, no. 4, p. 818-828.

Dahms, D., and Rawlins, C., 1996, A two-year record of eolian sedimentation in the Wind River Range, Wyoming, USA: Arctic and Alpine Research, v. 28, no. 2, p. 210-216.

Deberdt, S., Viers, J., and Dupré, B., 2002, New insights about the rare earth elements (REE) mobility in river waters: Bulletin de la Société Géologique de France, v. 173, no. 2, p. 147-160.

Dettinger, M., 2005, Changes in streamflow timing in the western United States in recent decades... from the National Streamflow Information Program: Geological Survey (US), 2327-6932.

DeVisser, M. H., and Fountain, A. G., 2015, A century of glacier change in the Wind River Range, WY: Geomorphology, v. 232, p. 103-116.

Fortner, S. K., Lyons, W. B., and Munk, L., 2013, diel stream geochemistry, Taylor Valley, Antarctica: Hydrological Processes, v. 27, no. 3, p. 394-404.

Fountain, A. G., and Walder, J. S., 1998, Water flow through temperate glaciers: Reviews of Geophysics, v. 36, no. 3, p. 299-328.

Frenierre, J. L., and Mark, B. G., 2014, A review of methods for estimating the contribution of glacial meltwater to total watershed discharge: Progress in Physical Geography, v. 38, no. 2, p. 173-200.

Frost, R. B., Frost, C. D., Hulsebosch, T. P., and Swapp, S. M., 2000, Origin of the charnockites of the Louis lake Batholith, wind River Range, Wyoming: Journal of Petrology, v. 41, no. 12, p. 1759-1776.

Füreder, L., Schütz, C., Wallinger, M., and Burger, R., 2001, Physico-chemistry and aquatic insects of a glacier-fed and a spring-fed alpine stream: Freshwater Biology, v. 46, no. 12, p. 1673-1690.

Gaillardet, J., Viers, J., and Dupré, B., 2003, Trace elements in river waters: Treatise on geochemistry, v. 5, p. 605.

Gharari, S., and Razavi, S., 2018, Hysteresis in Hydrology and Hydrological Modeling: Memory, Path-Dependency, or Missing Physics?: Journal of hydrology.

Hall, D. K., Crawford, C. J., DiGirolamo, N. E., Riggs, G. A., and Foster, J. L., 2015, Detection of earlier snowmelt in the Wind River Range, Wyoming, using Landsat imagery, 1972–2013: Remote Sensing of Environment, v. 162, p. 45-54.

Hall, D. K., Foster, J. L., DiGirolamo, N. E., and Riggs, G. A., 2012, Snow cover, snowmelt timing and stream power in the Wind River Range, Wyoming: Geomorphology, v. 137, no. 1, p. 87-93.

Hall, M. H., and Fagre, D. B., 2003, Modeled climate-induced glacier change in Glacier National Park, 1850–2100: BioScience, v. 53, no. 2, p. 131-140.

Huang, J., Kang, S., Zhang, Q., Jenkins, M. G., Guo, J., Zhang, G., and Wang, K., 2012, Spatial distribution and magnification processes of mercury in snow from high-elevation glaciers in the Tibetan Plateau: Atmospheric Environment, v. 46, p. 140-146.

Johnstone, H. C., and Rahel, F. J., 2003, Assessing temperature tolerance of Bonneville cutthroat trout based on constant and cycling thermal regimes: Transactions of the American Fisheries Society, v. 132, no. 1, p. 92-99.

Kaser, G., Großhauser, M., and Marzeion, B., 2010, Contribution potential of glaciers to water availability in different climate regimes: Proceedings of the National Academy of Sciences, v. 107, no. 47, p. 20223-20227.

Klaus, J., and McDonnell, J., 2013, Hydrograph separation using stable isotopes: Review and evaluation: Journal of Hydrology, v. 505, p. 47-64.

Lawrence, C. R., and Neff, J. C., 2009, The contemporary physical and chemical flux of aeolian dust: A synthesis of direct measurements of dust deposition: Chemical Geology, v. 267, no. 1-2, p. 46-63.

Lemke, P., Ren, J., Alley, R. B., Allison, I., Carrasco, J., Flato, G., Fujii, Y., Kaser, G., Mote, P., and Thomas, R. H., 2007, Observations: changes in snow, ice and frozen ground.

Malard, F., Tockner, K., and Ward, J., 1999, Shifting dominance of subcatchment water sources and flow paths in a glacial floodplain, Val Roseg, Switzerland: Arctic, Antarctic, and Alpine Research, v. 31, no. 2, p. 135-150.

Maloof, A., Piburn, J., Tootle, G., and Kerr, G., 2014, Recent Alpine Glacier Variability: Wind River Range, Wyoming, USA: Geosciences, v. 4, no. 3, p. 191-201.

Mansfield, C. R., and Black, F. J., 2015, Quantification of monomethylmercury in natural waters by direct ethylation: Interference characterization and method optimization: Limnology and Oceanography: Methods, v. 13, no. 2, p. 81-91.

Marston, R. A., Pochop, L. O., Kerr, G. L., Varuska, M. L., and Veryzer, D. J., 1991, Recent glacier changes in the Wind River Range, Wyoming: Physical Geography, v. 12, no. 2, p. 115-123.

Mast, M. A., Manthorne, D. J., and Roth, D. A., 2010, Historical deposition of mercury and selected trace elements to high-elevation National Parks in the Western U.S. inferred from lake-sediment cores: Atmospheric Environment, v. 44, no. 21-22, p. 2577-2586.

Maupin, M. A., Kenny, J. F., Hutson, S. S., Lovelace, J. K., Barber, N. L., and Linsey, K. S., 2014, Estimated use of water in the United States in 2010: US Geological Survey, 2330-5703.

McCabe, G. J., and Fountain, A. G., 2013, Glacier variability in the conterminous United States during the twentieth century: Climatic change, v. 116, no. 3-4, p. 565-577.

McCune, B., and Mefford, M., 1999, PC-ORD: multivariate analysis of ecological data; Version 4 for Windows;[User's Guide], MjM software design.

Milner, A., Brittain, J., Brown, L., and Hannah, D., 2010, Water sources and habitat of alpine streams, Alpine Waters, Springer, p. 175-191.

Nimick, D. A., Gammons, C. H., Cleasby, T. E., Madison, J. P., Skaar, D., and Brick, C. M., 2003, Diel cycles in dissolved metal concentrations in streams: occurrence and possible causes: Water Resources Research, v. 39, no. 9.

Nimick, D. A., Gammons, C. H., and Parker, S. R., 2011, Diel biogeochemical processes and their effect on the aqueous chemistry of streams: A review: Chemical Geology, v. 283, no. 1-2, p. 3-17.

Nimick, D. A., McCleskey, B. R., Gammons, C. H., Cleasby, T. E., and Parker, S. R., 2007, Diel mercury-concentration variations in streams affected by mining and geothermal discharge: Science of the total environment, v. 373, no. 1, p. 344-355.

O Kane, J. P., 2005, Hysteresis in hydrology: Acta Geophysica Polonica, v. 53, no. 4, p. 373.

Quinn, K. A., Byrne, R. H., and Schijf, J., 2007, Sorption of yttrium and rare earth elements by amorphous ferric hydroxide: influence of temperature: Environmental science & technology, v. 41, no. 2, p. 541-546.

Reynolds, R. L., Mordecai, J. S., Rosenbaum, J. G., Ketterer, M. E., Walsh, M. K., and Moser, K. A., 2010, Compositional changes in sediments of subalpine lakes, Uinta Mountains (Utah): evidence for the effects of human activity on atmospheric dust inputs: Journal of Paleolimnology, v. 44, no. 1, p. 161-175.

Schuster, P., Shanley, J., Marvin-Dipasquale, M., Reddy, M., Aiken, G., Roth, D., Taylor, H., Krabbenhoft, D., and DeWild, J., 2008, Mercury and organic carbon dynamics during runoff episodes from a northeastern USA watershed: Water, Air, and Soil Pollution, v. 187, no. 1-4, p. 89-108.

Schuster, P. F., Krabbenhoft, D. P., Naftz, D. L., Cecil, L. D., Olson, M. L., Dewild, J. F., Susong, D. D., Green, J. R., and Abbott, M. L., 2002, Atmospheric mercury deposition during the last 270 years: a glacial ice core record of natural and anthropogenic sources: Environmental science & technology, v. 36, no. 11, p. 2303-2310.

Schwikowski, M., and Eichler, A., 2010, Alpine glaciers as archives of atmospheric deposition, Alpine waters, Springer, p. 141-150.

Siciliano, S. D., O'Driscoll, N. J., and Lean, D., 2002, Microbial reduction and oxidation of mercury in freshwater lakes: Environmental science & technology, v. 36, no. 14, p. 3064-3068.

Spaulding, S. A., Otu, M. K., Wolfe, A. P., and Baron, J. S., 2015, Paleolimnological records of nitrogen deposition in shallow, high-elevation lakes of Grand Teton National Park, Wyoming, USA: Arctic, antarctic, and alpine research, v. 47, no. 4, p. 703-717.

Stewart, I. T., Cayan, D. R., and Dettinger, M. D., 2004, Changes in snowmelt runoff timing in western North America under abusiness as usual'climate change scenario: Climatic Change, v. 62, no. 1-3, p. 217-232.

Swift, D. A., Nienow, P. W., Hoey, T. B., and Mair, D. W., 2005, Seasonal evolution of runoff from Haut Glacier d'Arolla, Switzerland and implications for glacial geomorphic processes: Journal of Hydrology, v. 309, no. 1-4, p. 133-148.

Thompson, D., Tootle, G., Kerr, G., Sivanpillai, R., and Pochop, L., 2011, Glacier Variability in the Wind River Range, Wyoming: Journal of Hydrologic Engineering, v. 16, no. 10, p. 798-805.

Tranter, M., 2003, Geochemical weathering in glacial and proglacial environments: Treatise on geochemistry, v. 5, p. 605.

Tranter, M., Sharp, M., Lamb, H., Brown, G., Hubbard, B., and Willis, I., 2002, Geochemical weathering at the bed of Haut Glacier d'Arolla, Switzerland—a new model: Hydrological processes, v. 16, no. 5, p. 959-993.

USEPA, 1996, Method 1669: sampling ambient water for trace metals at EPA water quality criteria levels: Washington, D.C.: U.S. Environmental Protection Agency., p. 33.

-, 2002, Method 1631, Revision E: mercury in water by oxidation, purge and trap, and cold vapor atomic fluorescence spectrometry: Washington, D.C. U.S. Environmental Protection Agency

p. 38.

Vandeberg, G. S., and VanLooy, J. A., 2016, Continental Glacier meltwater contributions to late summer stream flow and water quality in the northern Wind River Range, Wyoming, USA: Environmental Earth Sciences, v. 75, no. 5.

VanLooy, J. A., Forster, R. R., Barta, D., and Turrin, J., 2013, Spatially variable surface elevation changes and estimated melt water contribution of Continental Glacier in the Wind River Range, Wyoming, USA: 1966–2011: Geocarto International, v. 28, no. 2, p. 98-113.

Vanlooy, J. A., Miège, C., Vandeberg, G. S., and Forster, R. R., 2014, Ice volume estimation inferred from ice thickness and surface measurements for Continental Glacier, Wind River Range, Wyoming, USA: Journal of Glaciology, v. 60, no. 221, p. 478-488.

Vanlooy, J. A., Miège, C., Vandeberg, G. S., and Forster, R. R., 2017, Ice volume estimation inferred from ice thickness and surface measurements for Continental Glacier, Wind River Range, Wyoming, USA: Journal of Glaciology, v. 60, no. 221, p. 478-488.

Zuecco, G., Penna, D., Borga, M., and van Meerveld, H., 2016, A versatile index to characterize hysteresis between hydrological variables at the runoff event timescale: Hydrological Processes, v. 30, no. 9, p. 1449-1466.

Figures

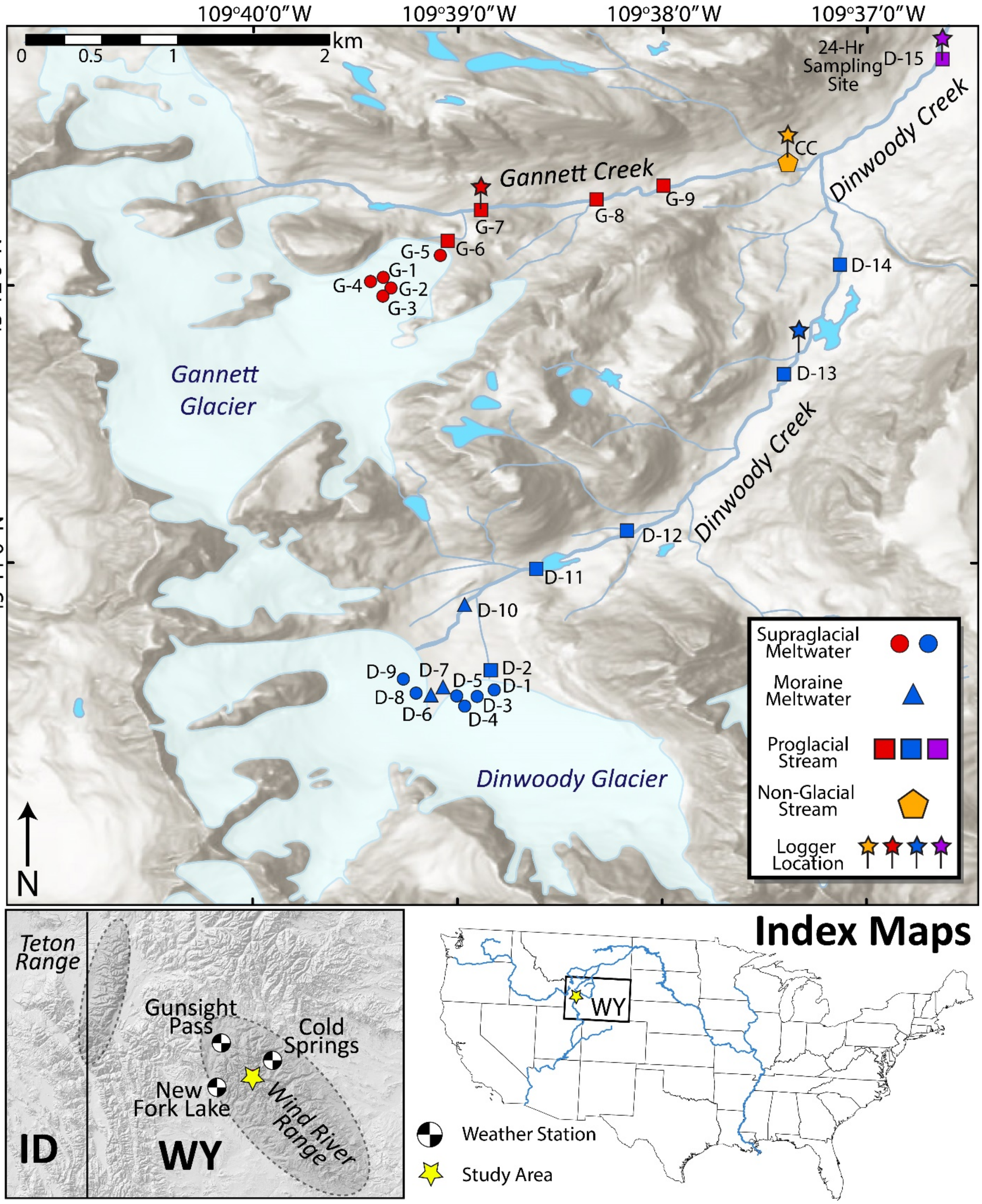

Figure 1. Map of Gannett Glacier and Dinwoody Glacier watersheds in the Wind River Range, Wyoming, U.S.A. Sample sites are shown with different symbols for supraglacial meltwater, moraine meltwater, proglacial stream, and non-glacial streams. Conductivity/temperature loggers

were installed at sites indicated by pin markers. Gannett glacier has an average slope of 29% and a maximum length of 2735 m. The glacier feeds Gannett Creek, which flows into Dinwoody Creek. Dinwoody glacier is less steep (15%) with a max length of 2619 m. It feeds the headwaters of Dinwoody Creek which flows down out of the Wind River mountains to the Wind River. Weather stations used to gather climate data shown in black/white circles.

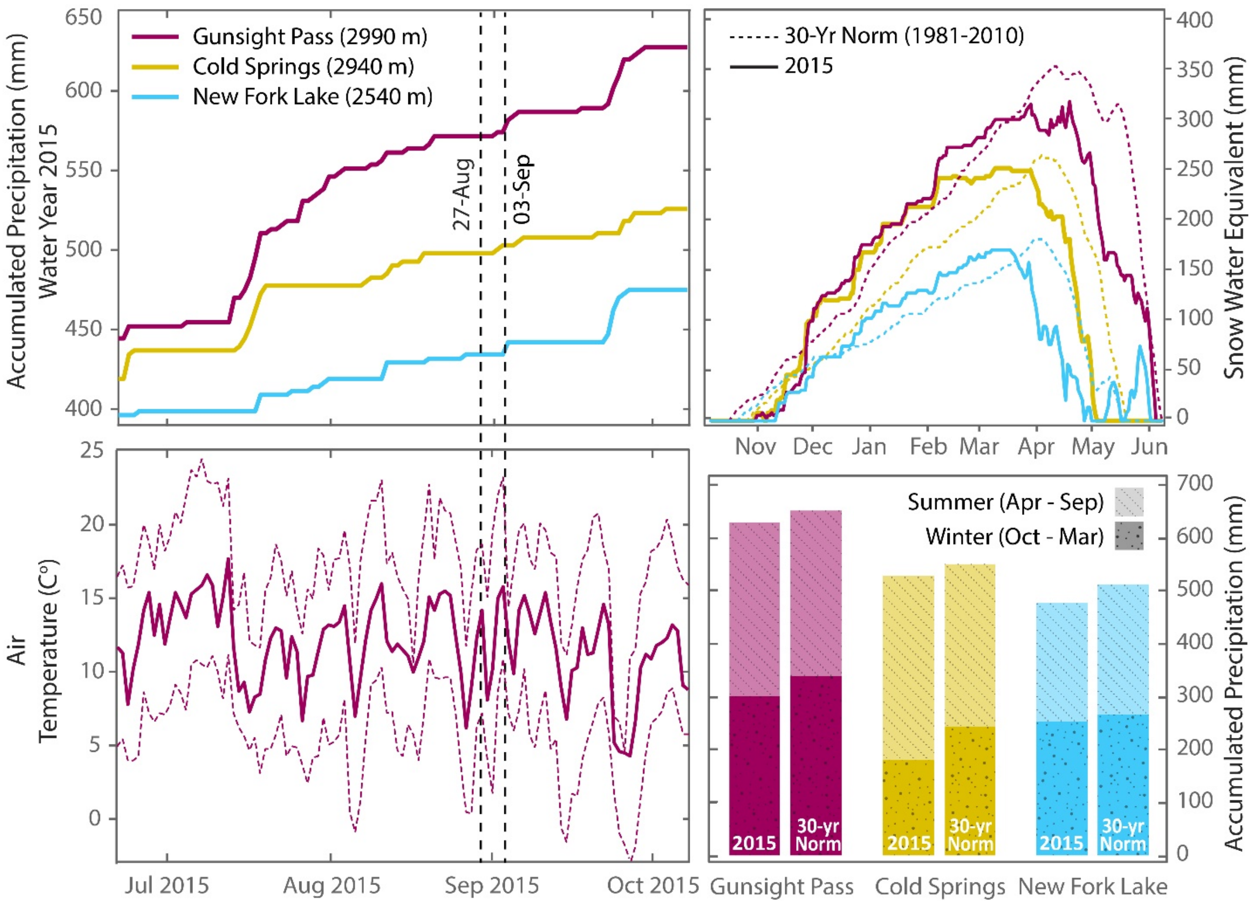

Figure 2. Accumulated precipitation, air temperature, and snow water equivalent data for the Wind River Range during summer 2015 with historic 30-yr normals (1981 – 2010) provided for comparison. Sampling dates are marked by vertical dashed lines. Precipitation data from nearest SNOTEL stations – Gunsight Pass, Cold Springs, New Fork Lake – located 30 km NW, 20 km NE, and 25 km SW from the study area, respectively (Fig. 1). The highest SNOTEL site (Gunsight Pass) is ~350 m lower than the toe of Gannett and Dinwoody Glaciers (3350 m ASL). Air temperature data are from the Gunsight Pass location. Average daily temperature is marked with a solid line and daily maximum and minimum temperatures are marked with dashed lines. (Data retrieved from the NRCS National Water and Climate Center at https://www.wcc.nrcs.usda.gov/index.html on 14 May 2019)

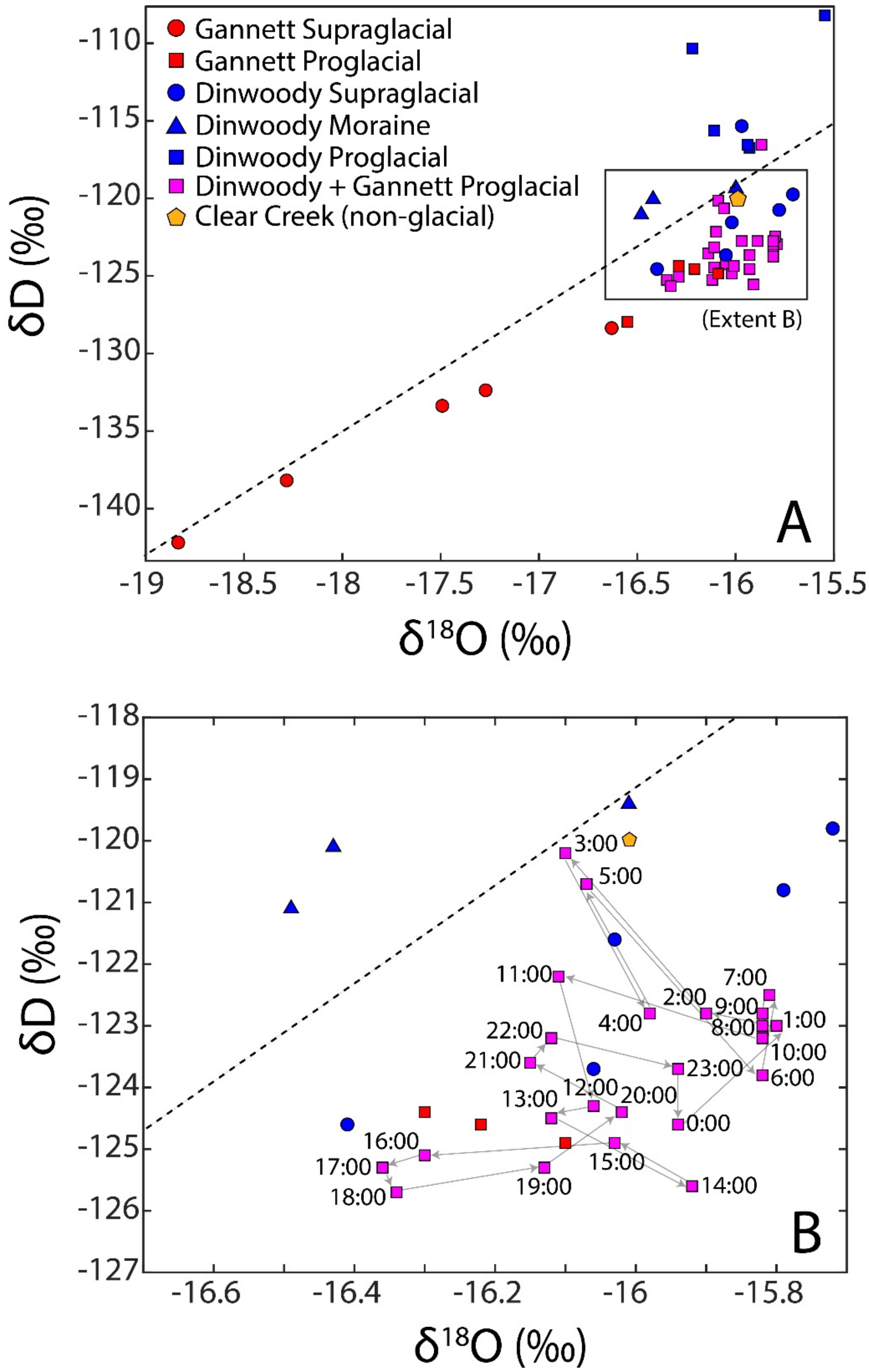

Figure 3. Stable isotopes of H (δD) and O ($\delta^{18}O$) for water samples collected from supraglacial meltwaters (circle), moraine meltwaters (triangle), and proglacial streams (square) of Gannett and Dinwoody Glaciers and non-glacial Clear Creek during late August and early September 2015. Isotopic values are reported relative to Vienna Standard Mean Ocean Water (VSMOW). The dashed line is the local meteoric water line (LMWL) for western Wyoming ($\delta D = 7.95\ \delta^{18}O + 8.09$) (Benjamin et al., 2005).

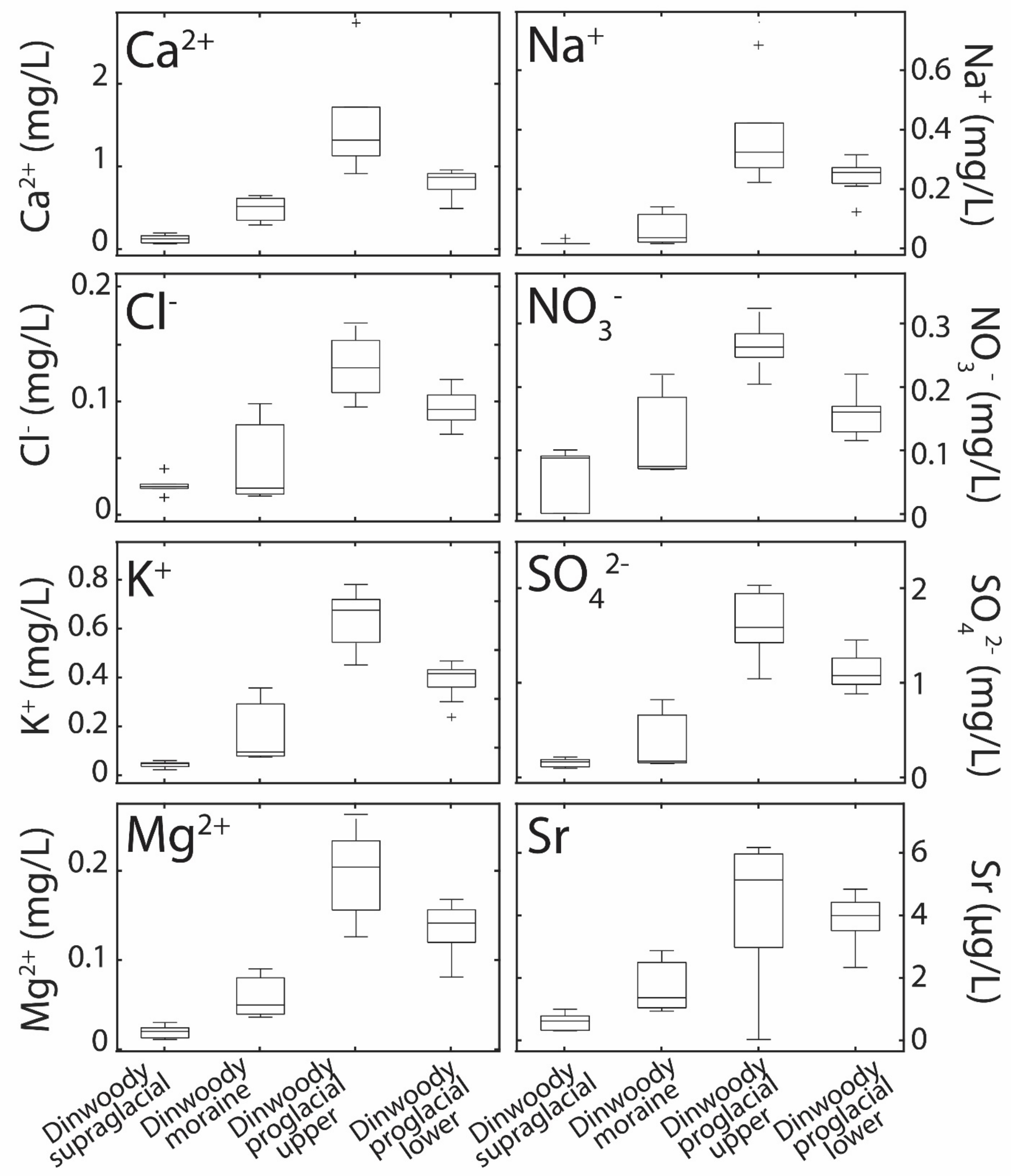

Figure 4 Box plots of selected element concentrations in supraglacial meltwaters from Dinwoody Glacier (n = 6), Dinwoody Glacier moraine meltwaters (n = 3), upper Dinwoody Creek (n = 5), and lower Dinwoody Creek (n = 13) collected between late August and early September 2015. The selected elements showed increasing concentrations from supraglacial meltwater to proglacial streams and are representative of the trend seen in almost all major ions and trace elements. Outliers indicated by +.

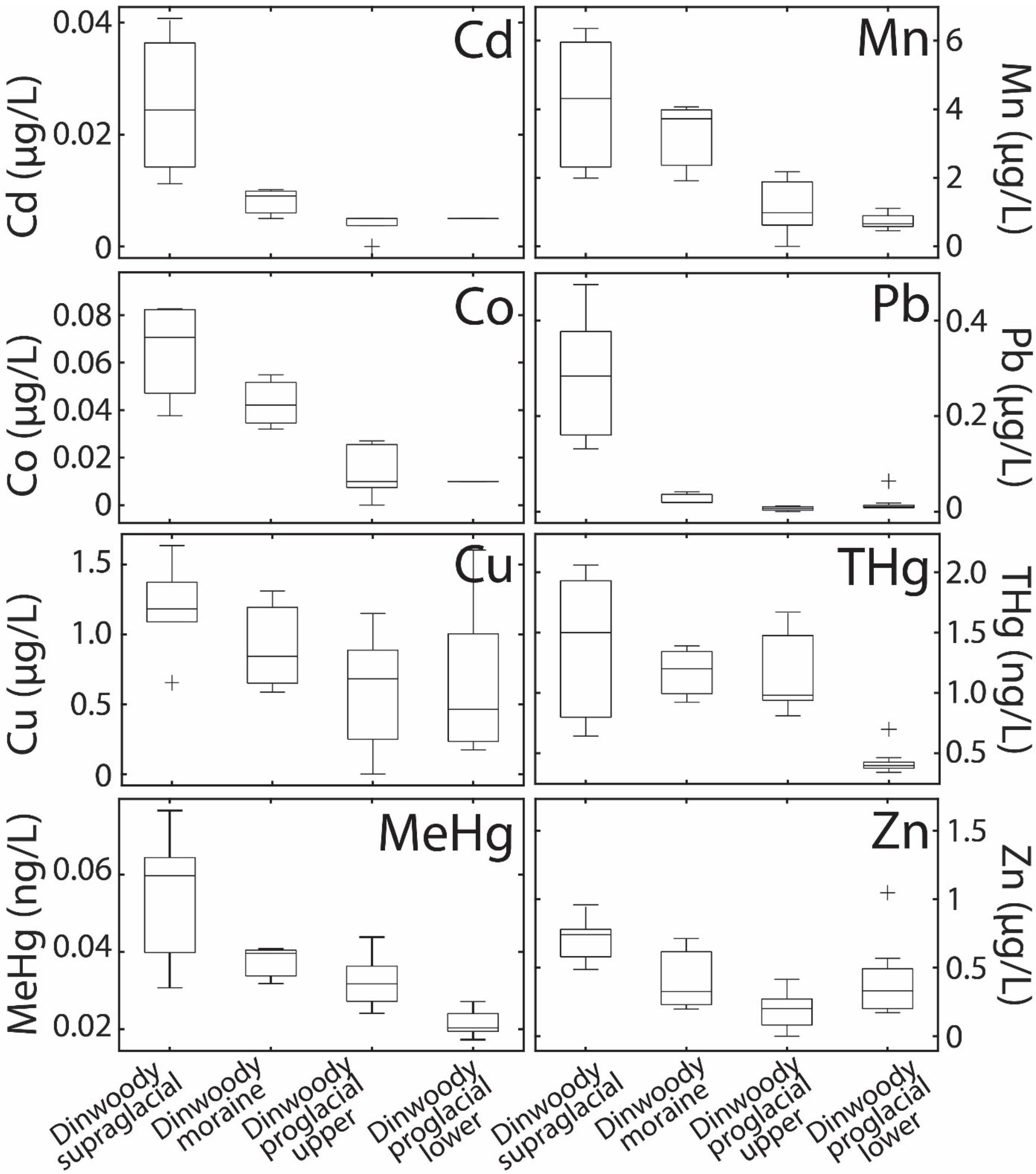

Figure 5. Box plots of selected element concentrations in supraglacial meltwaters from Dinwoody Glacier (n = 6), Dinwoody Glacier moraine meltwaters (n = 3), upper Dinwoody Creek (n = 5), and lower Dinwoody Creek (n = 13) collected between late August and early September 2015. The selected elements showed decreasing concentrations from supraglacial meltwater to proglacial streams. Outliers indicated by +.

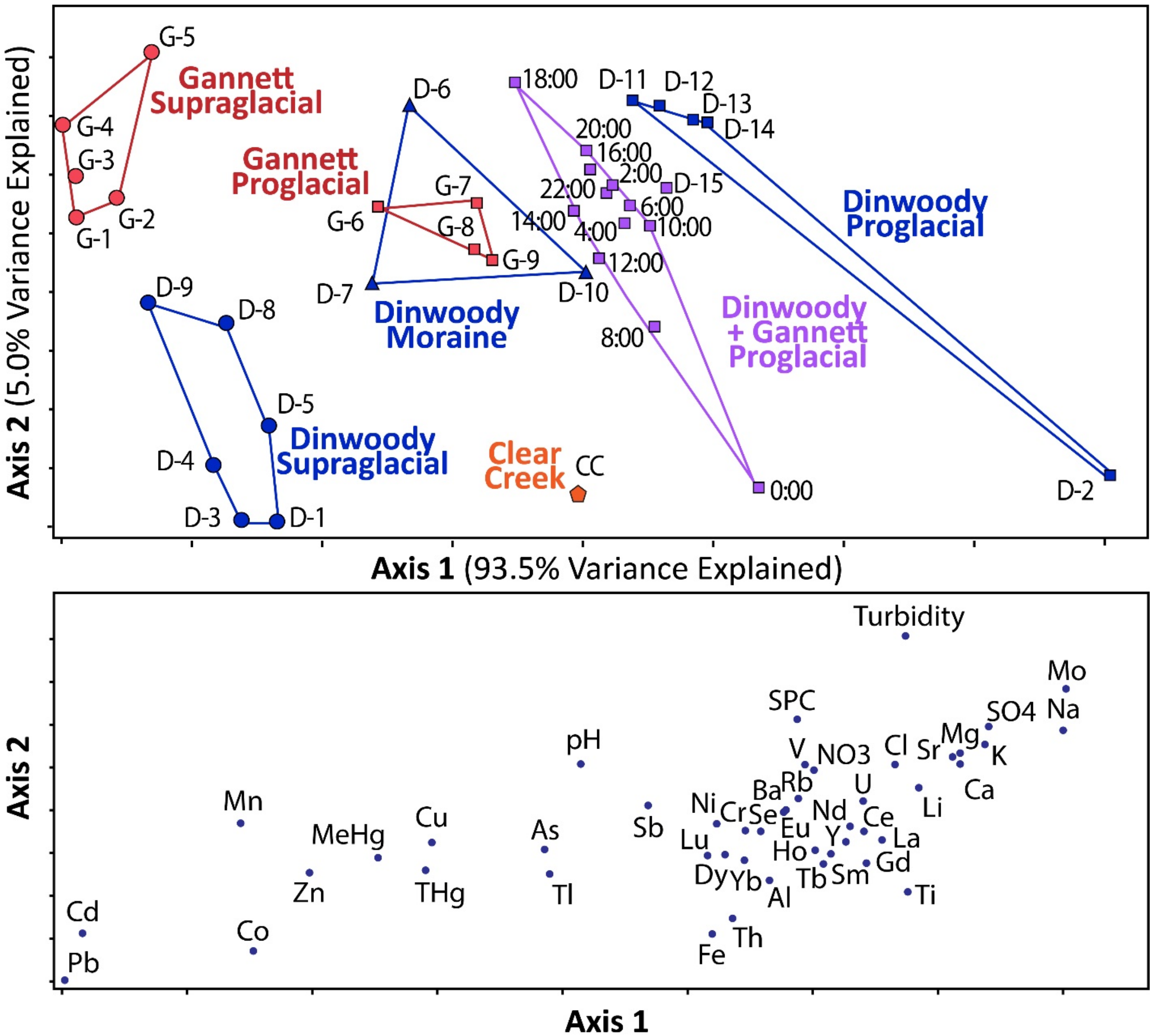

Figure 6. NMS (nonmetric dimensional scaling) results for supraglacial meltwater, moraine meltwater, and proglacial streams collected from Gannett and Dinwoody Glaciers between late August and early September 2015. Axis 1 explains 93.5% of the variance in the data set while axis 2 explains an additional 5.0%. Final stress for the two axis model is 5.19. Raw data for each sample are provided in the Supplementary Material (Table S3)

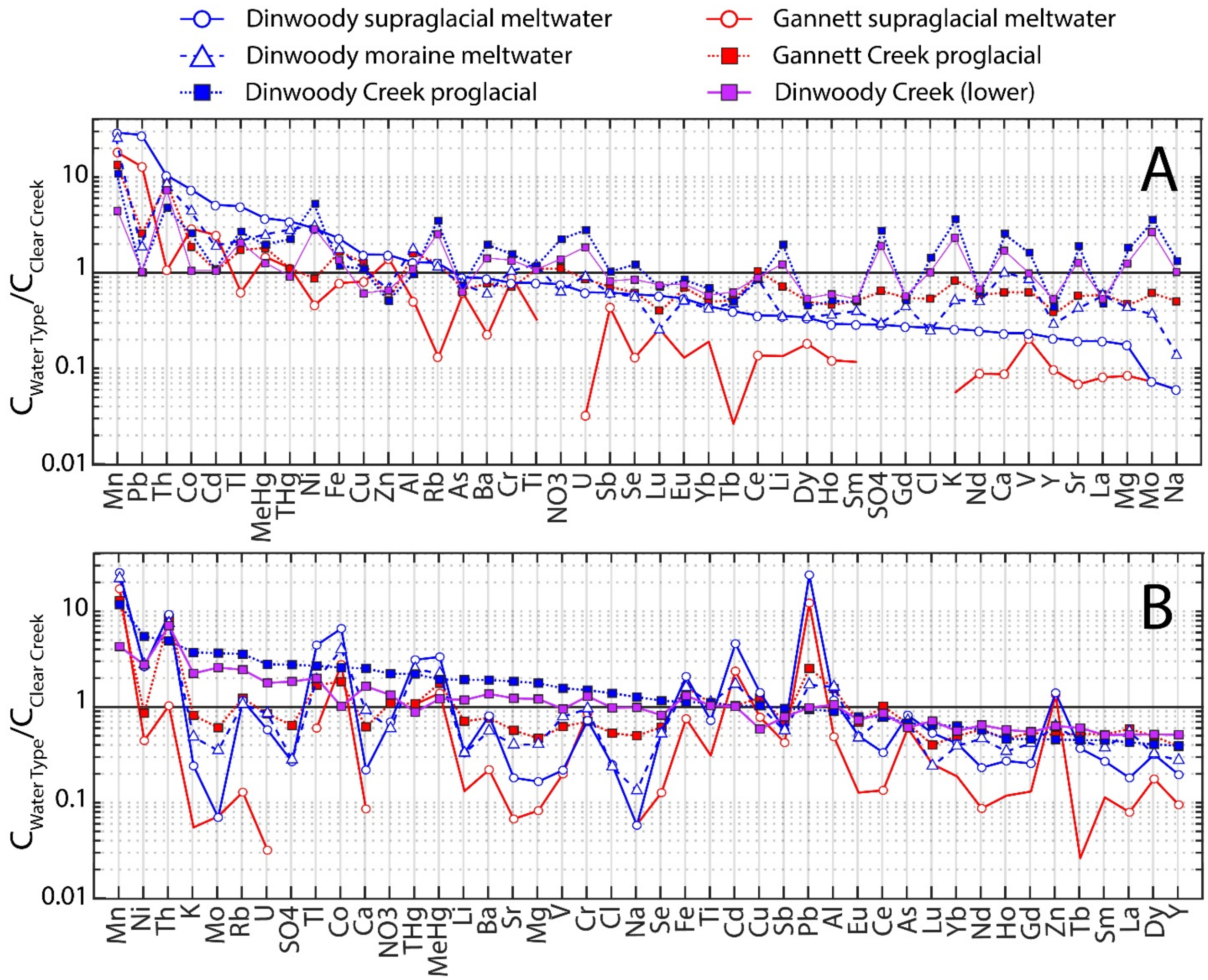

Figure 7 Spider diagram of median element concentrations in each sample water type (Dinwoody supraglacial meltwater, Dinwoody moraine meltwater, Dinwoody Creek proglacial, Gannett supraglacial meltwater, Gannett Creek proglacial, Dinwoody Creek (lower) normalized to the composition of Clear Creek, a non-glacial stream. Elements with majority of sample type below DL removed. A) Elements ordered according to the relative enrichment/depletion in Dinwoody supraglacial samples. B) Elements ordered according to the relative enrichment/depletion in upper Dinwoody Creek.

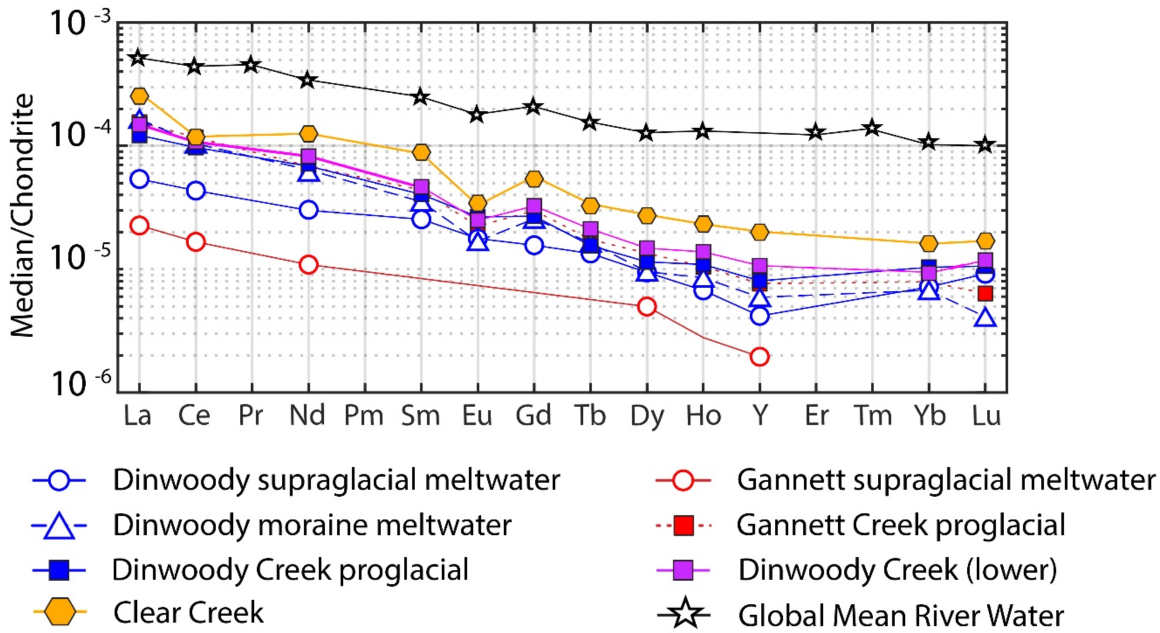

Figure 8. Spider diagram of median element concentrations in each sample water type (Dinwoody supraglacial meltwater, Dinwoody moraine meltwater, Dinwoody Creek proglacial, Gannett supraglacial meltwater, Gannett Creek proglacial, Dinwoody Creek (lower) normalized to the composition of Clear Creek, a non-glacial stream. Elements with majority of sample type below DL removed. A) Elements ordered according to the relative enrichment/depletion in Dinwoody supraglacial samples. B) Elements ordered according to the relative enrichment/depletion in upper Dinwoody Creek.

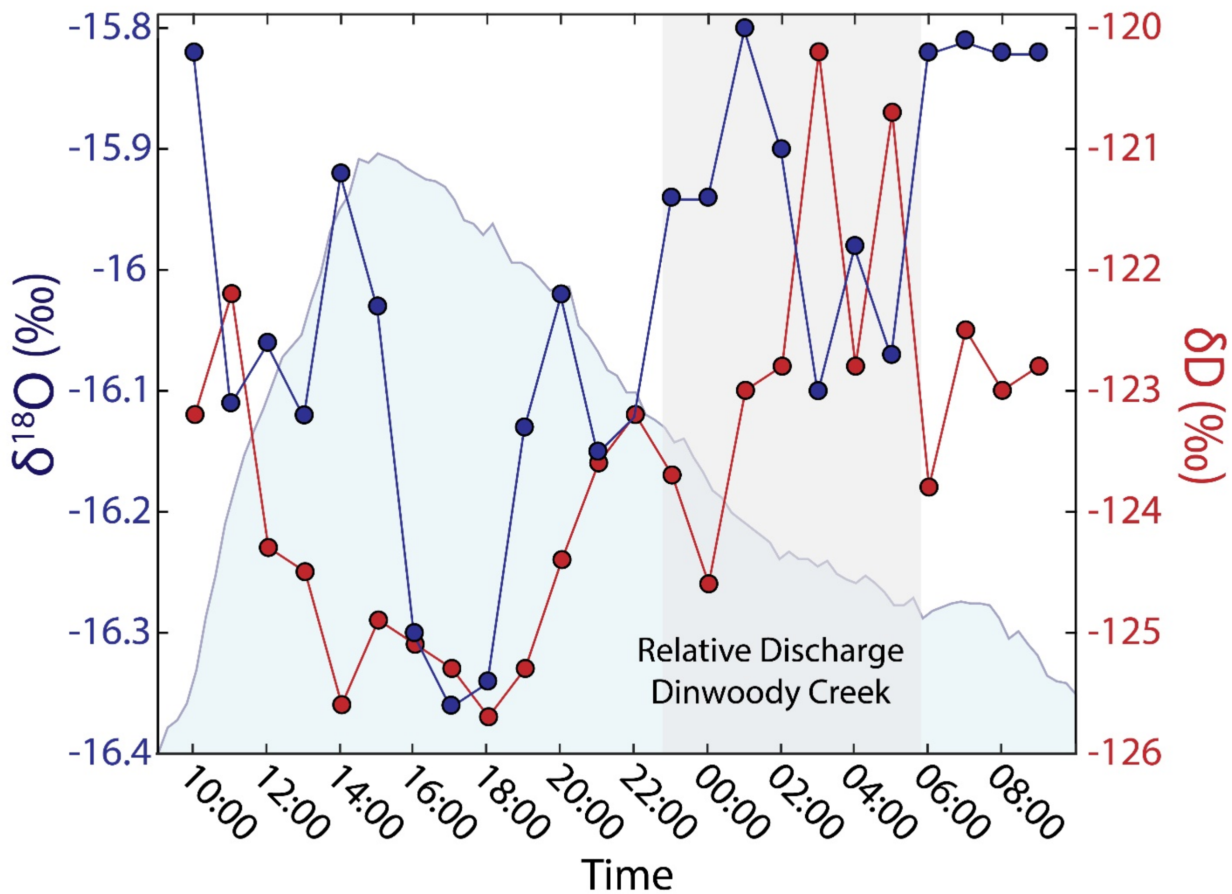

Figure 9. Stable isotopes of H (δD) and O ($\delta^{18}O$) for water samples collected hourly over a 24-hour period in lower Dinwoody Creek starting at 10:00 on 2 September 2015. Relative depth of Dinwoody Creek (scaled between 0 and 1) shown shaded blue. Shaded gray area represents hours of darkness between 20:40 and 5:45. Isotopic values are reported relative to Vienna Standard Mean Ocean Water (VSMOW).

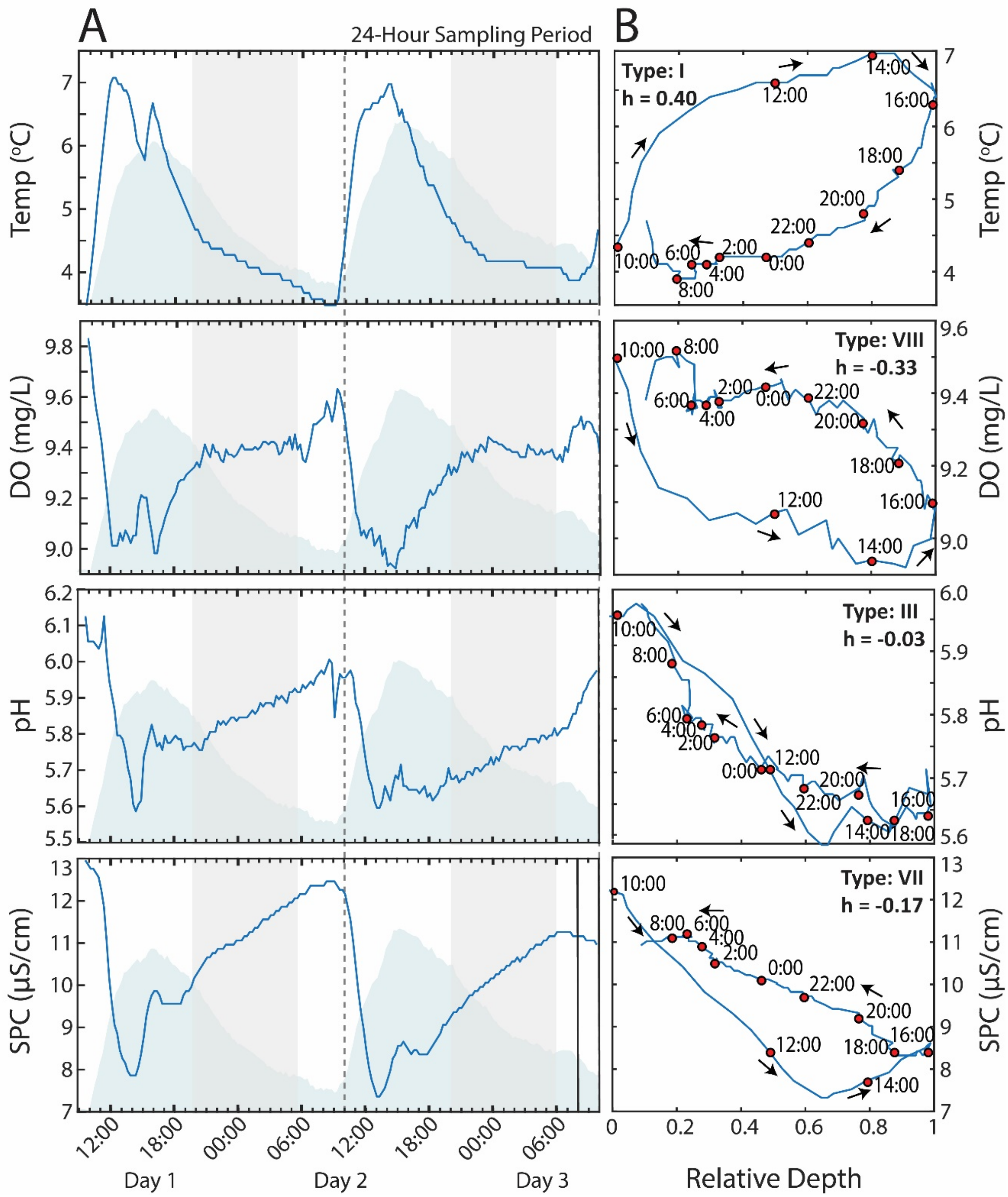

Figure 10. A) 48 hrs of temperature (ºC), dissolved oxygen (DO), pH, and specific conductance (SPC) diel cycling in lower Dinwoody Creek below the confluence with Gannett Creek. Relative depth of Dinwoody Creek indicated in solid blue, scaled between 0 and 1. Periods of darkness between 20:40 and 5:45 indicated in gray. Duration of 24-hr sampling indicated by dashed lines. B) Hysteresis loops of temperature, (ºC), dissolved oxygen (DO), pH, and specific conductance (SPC) in Dinwoody Creek over a 24-hr period starting at 10:00 on 2 September 2015. Hysteresis loops only shown for the 24-hr sampling period for clarity. Hysteresis loop type (I-VIII) and hysteresis index (*h*) calculated according to (Zuecco et al., 2016).

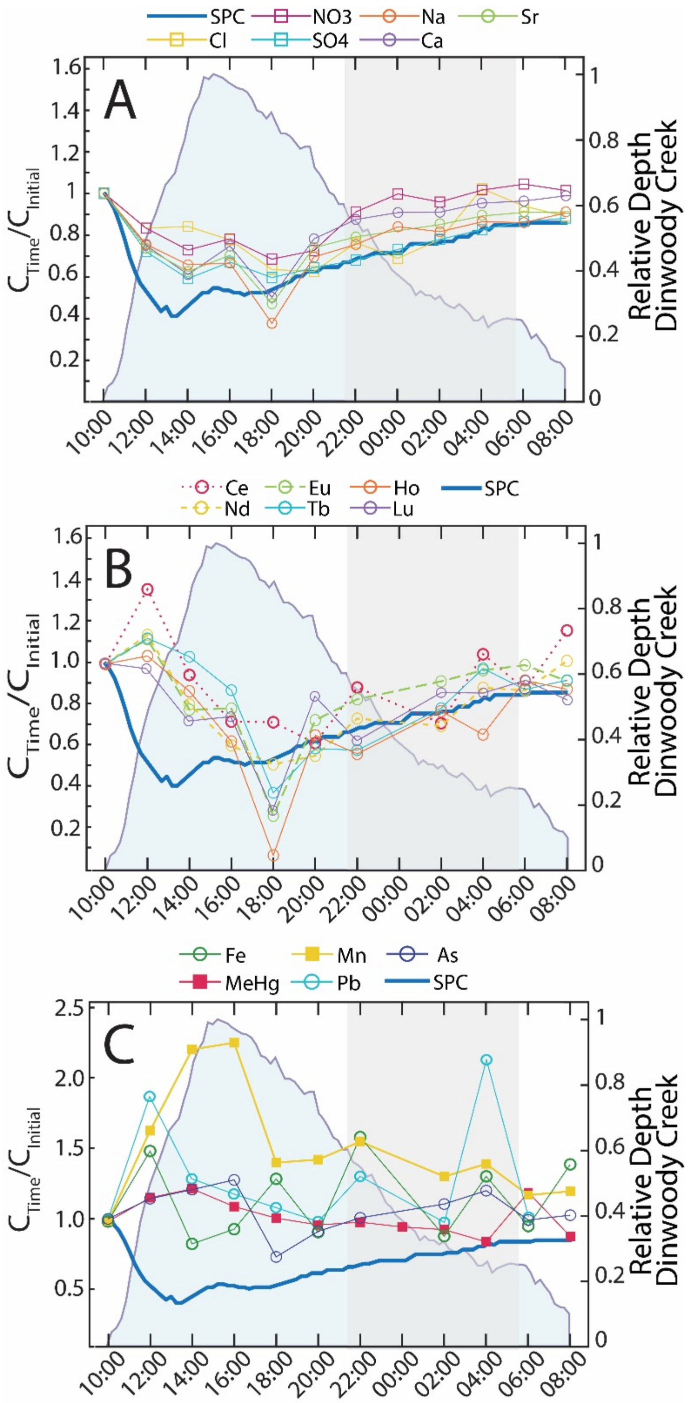

Figure 11. Normalized element concentrations (normalized to starting concentration at 10:00) of samples collected in lower Dinwoody Creek every two hours starting at 10:00 on 2 September 2015 (Table S1). Shaded blue area represents the relative discharge of Dinwoody Creek (scaled between 0 and 1). Shaded gray area indicates time of darkness from 20:40 through 5:45. Element concentrations followed one of three trends indicated in parts A-C. A) Major element concentrations. U, Ba, Sb, Mo, Sr, Rb, Se, Ni, Li followed similar trend. B) Rare earth elements (REEs). Y, Th and Tl followed similar trend. C) Many elements did not follow the trend of major elements or REEs.

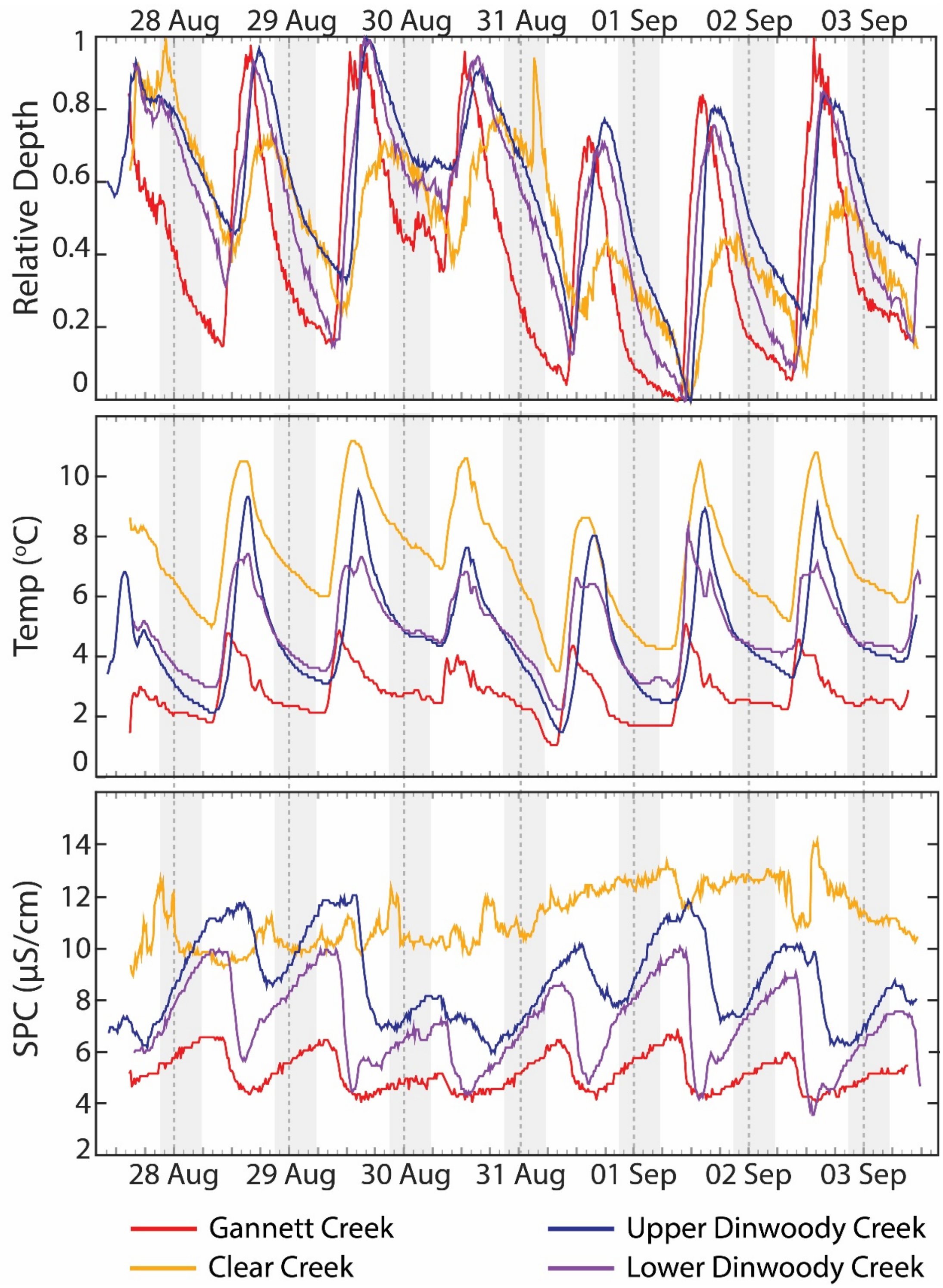

Figure 12. Temperature, relative depth, and SPC data collected from HOBO conductivity/pressure loggers placed in Gannett Creek, Clear Creek, upper Dinwoody Creek, and lower Dinwoody Creek between 27 August 2015 and 3 September 2015 (Fig. 1). Relative depth of each stream scaled between 0 (lowest depth) and 1 (highest depth). Dashed lines mark the start of each day. Shaded gray areas indicate periods of darkness (20:40 -5:45).

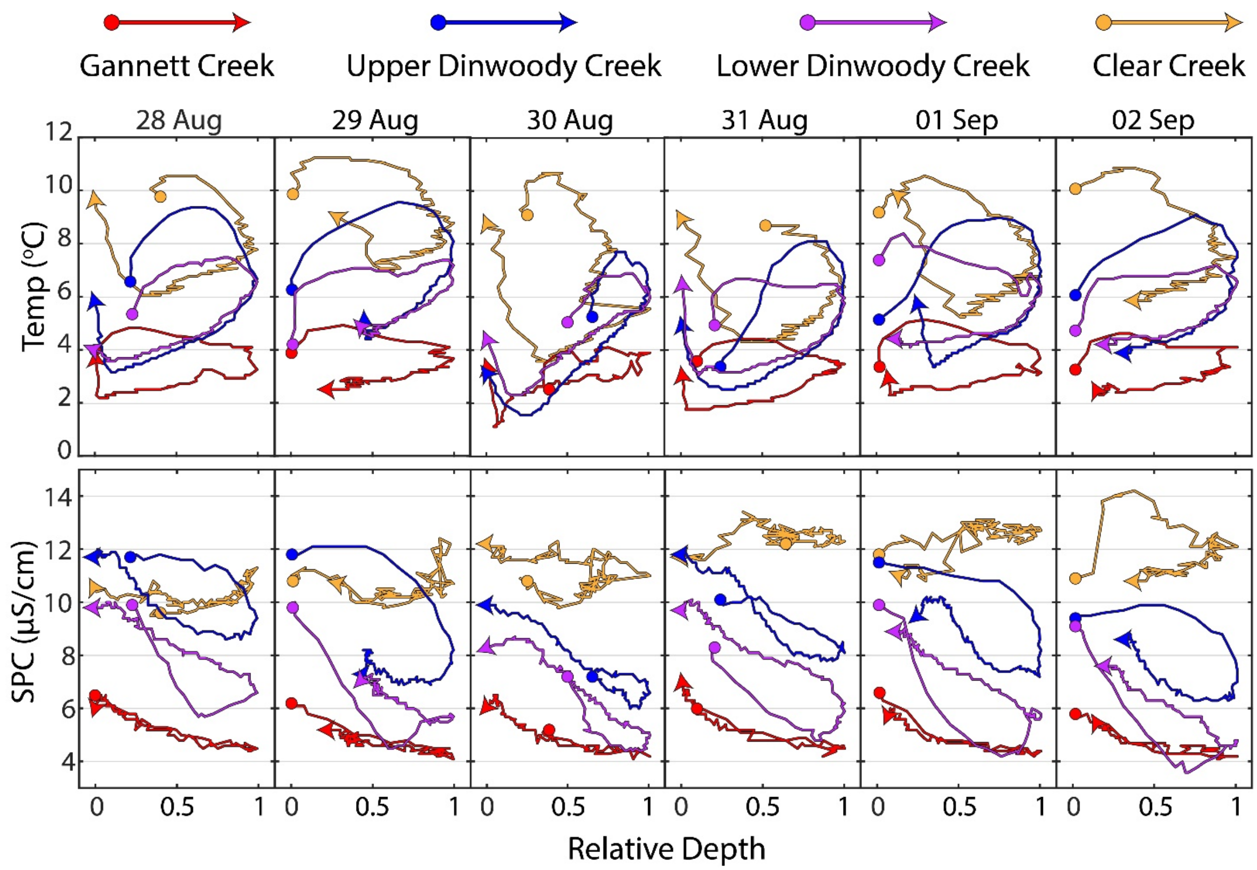

Figure 13. Hysteretic relationships between water depth versus water temperature and water depth versus SPC were observed over the 6-day study period at 4 locations in the study area (Fig. 1).

SUPPLEMENTARY MATERIAL

SUPPLEMENTARY FIGURES

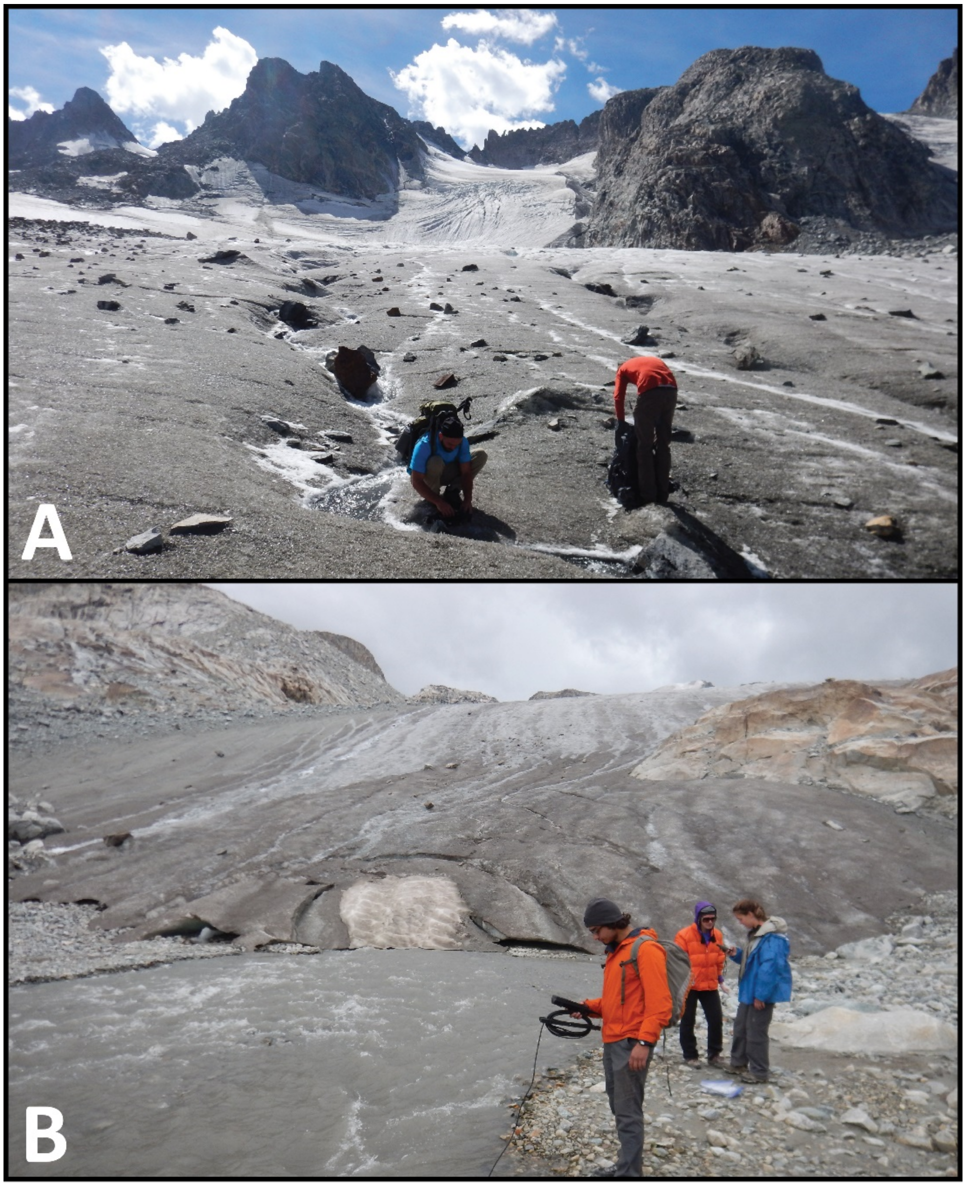

Figure S1.A) Supraglacial meltwater runs over the surface of Dinwoody Glacier on a sunny day in late August 2015. Supraglacial meltwaters interact with glacier ice and debris on the surface of the glacier and typically contain low concentrations of suspended sediments and solutes. B) Proglacial meltwaters emerge from the toe of Gannett Glacier. Proglacial meltwaters interact with freshly weathered bedrock and “glacial flour” as they travel beneath the glacier.

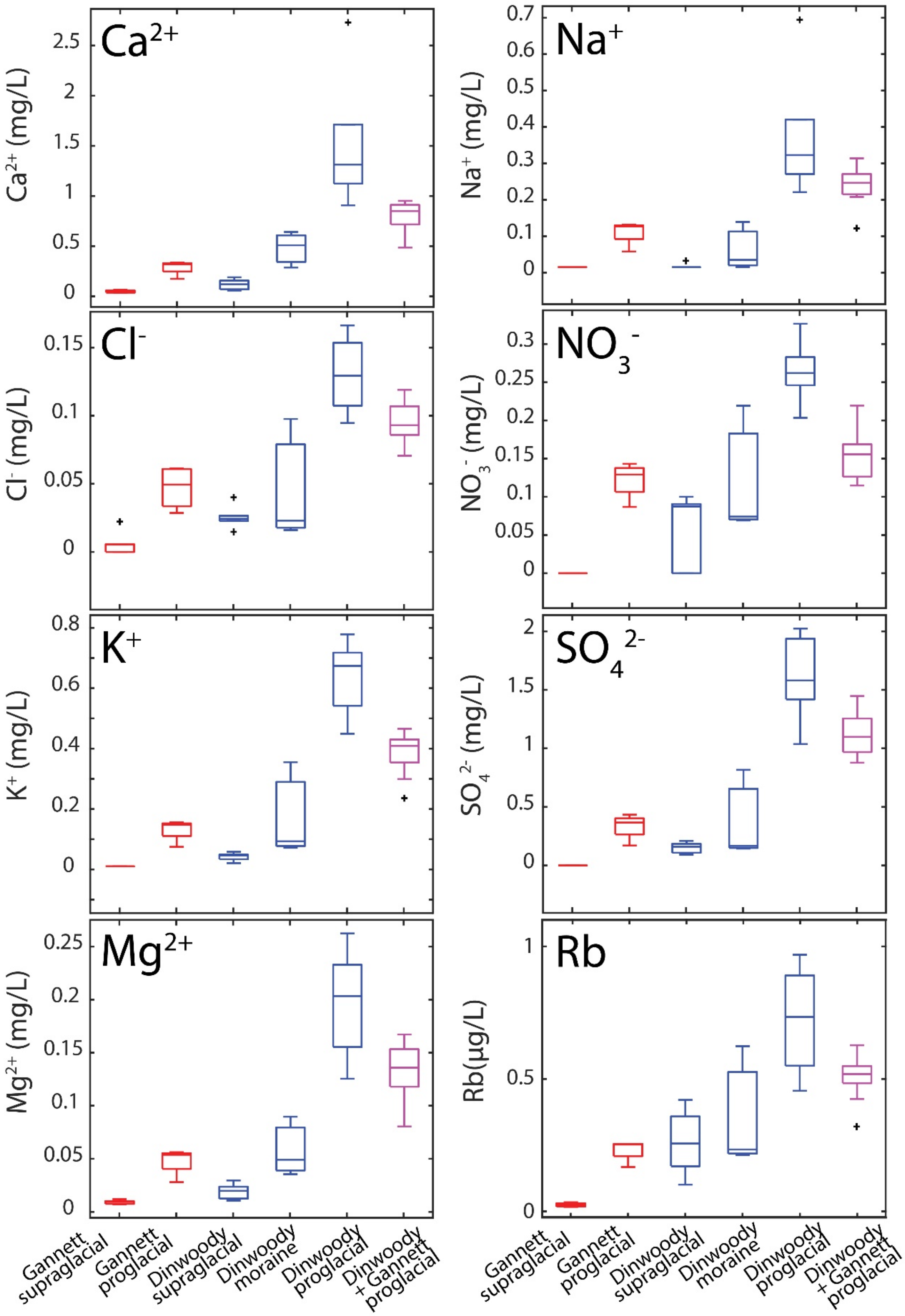

Figure S2. Box plots of selected element concentrations in supraglacial meltwaters from Gannett Glacier (n=5), Gannett Creek (n=4), Dinwoody Glacier (n = 6), Dinwoody Glacier moraine meltwaters (n = 3), upper Dinwoody Creek (n = 5), and lower Dinwoody Creek (n = 13) collected between late August and early September 2015. The selected elements showed increasing concentrations from supraglacial meltwater to proglacial streams and are representative of the trend seen in almost all major ions and trace elements. Outliers indicated by +.

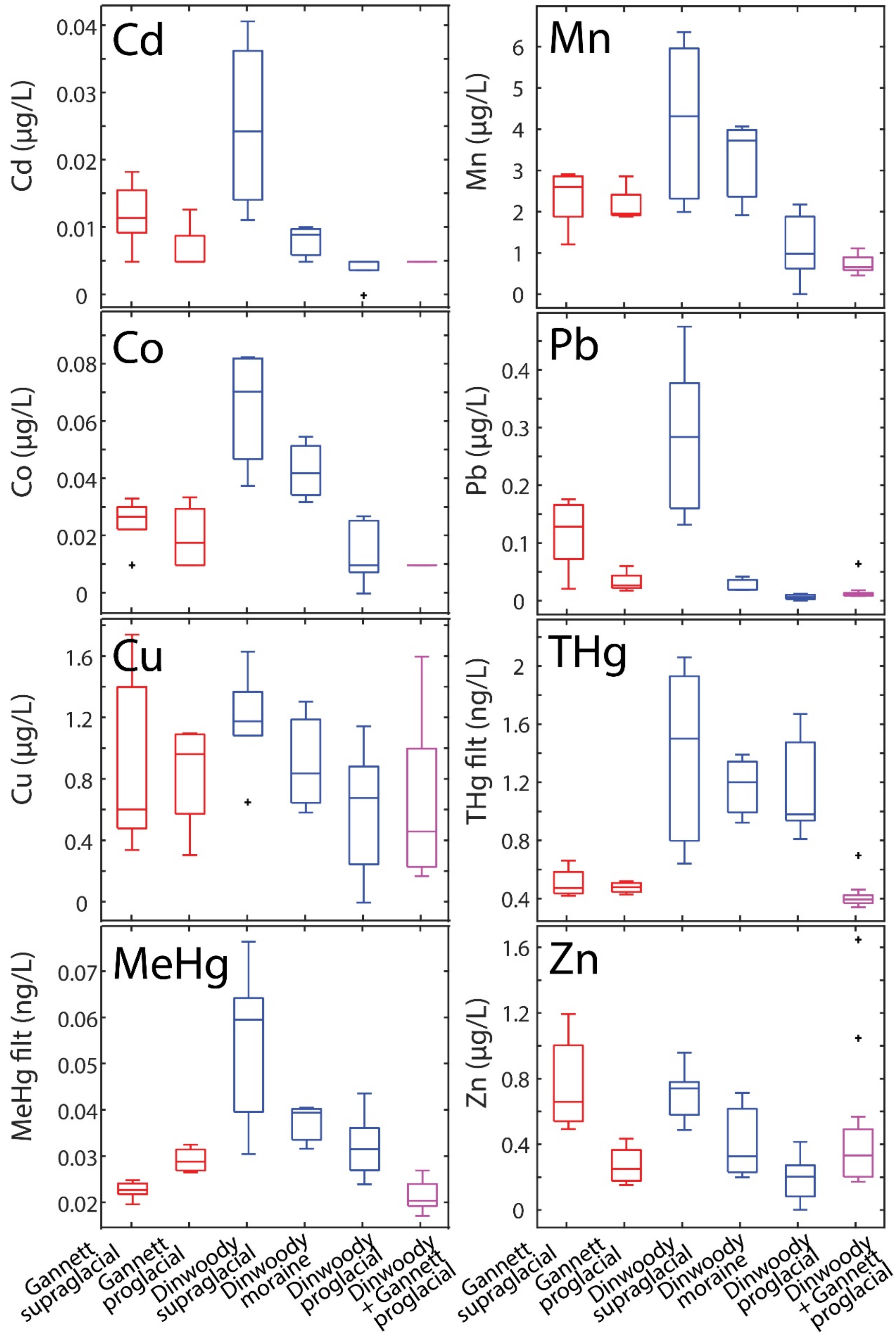
Cd
Cd (μg/L)
0
0.01
0.02
0.03
0.04
Mn
Mn (μg/L)
0
1
2
3
4
5
6
Co
Co (μg/L)
0
0.02
0.04
0.06
0.08
Pb
Pb (μg/L)
0
0.1
0.2
0.3
0.4
Cu
Cu (μg/L)
0
0.4
0.8
1.2
1.6
THg
THg filt (ng/L)
0.4
0.8
1.2
1.6
2
MeHg
MeHg filt (ng/L)
0.02
0.03
0.04
0.05
0.06
0.07
Zn
Zn (μg/L)
0
0.4
0.8
1.2
1.6
Gannett supraglacial
Gannett proglacial
Dinwoody supraglacial
Dinwoody moraine
Dinwoody proglacial
Dinwoody + Gannett proglacial

Figure S3. Box plots of selected element concentrations in supraglacial meltwaters from Gannett Glacier (n=5), Gannett Creek (n=4), Dinwoody Glacier (n = 6), Dinwoody Glacier moraine meltwaters (n = 3), upper Dinwoody Creek (n = 5), and lower Dinwoody Creek (n = 13) collected between late August and early September 2015. The selected elements showed decreasing concentrations from supraglacial meltwater to proglacial streams. Outliers indicated by +.

SUPPLEMENTARY TABLES

Table S1. Complete dataset

Sample Name	Lab ID	Sample Type	Zone	E	N	Sample date	Time
Dinwoody 1	12188	Supraglacial	12T	610996	4781266	8/28/2015	11:45
Dinwoody 2	12189	Proglacial	12T	610996	4781320	8/28/2015	12:00
Dinwoody 3	12190	Supraglacial	12T	610948	4781263	8/28/2015	12:20
Dinwoody 4	12191	Supraglacial	12T	610844	4781181	8/28/2015	12:45
Dinwoody 5	12192	Supraglacial	12T	610812	4781222	8/28/2015	13:00
Dinwoody 6	12193	Moraine	12T	610775	4781253	8/28/2015	13:45
Dinwoody 7	12194	Moraine	12T	610736	4781253	8/28/2015	14:05
Dinwoody 8	12195	Supraglacial	12T	610680	4781256	8/28/2015	14:20
Dinwoody 9	12196	Supraglacial	12T	610608	4781318	8/28/2015	14:35
Dinwood 10	12197	Moraine	12T	610879	4781851	8/28/2015	15:30
Dinwoody 11	12198	Proglacial	12T	611202	4782071	8/28/2015	15:50
Dinwoody 12	12199	Proglacial	12T	611645	4782328	8/28/2015	16:25
Dinwoody 13	12200	Proglacial	12T	612369	4783365	8/28/2015	17:00
Dinwoody 14	12201	Proglacial	12T	612611	4784086	8/28/2015	17:20
Dinwoody 15	12202	Proglacial	12T	613112	4785502	8/28/2015	18:10
Gannett 1	12204	Supraglacial	12T	610458	4783916	8/30/2015	12:15
Gannett 2	12205	Supraglacial	12T	610449	4783886	8/30/2015	12:23
Gannett 3	12206	Supraglacial	12T	610456	4783961	8/30/2015	12:30
Gannett 4	12207	Supraglacial	12T	610382	4783942	8/30/2015	12:40
Gannett 5	12208	Supraglacial	12T	610738	4784159	8/30/2015	13:25
Gannett 6	12209	Proglacial	12T	610745	4784231	8/30/2015	13:40
Gannett 7	12210	Proglacial	12T	610907	4784429	8/30/2015	14:10
Gannett 8	12211	Proglacial	12T	611471	4784507	8/30/2015	14:40
Gannett 9	12212	Proglacial	12T	611776	4784628	8/30/2015	15:00
Clear Creek	12228	Non-Glacial	12T	612386	4784768	8/30/2015	15:45
Dinwoody Field Blank 1	12203	Field Blank	-	-	-	-	-
Gannett Field Blank 2	12213	Field Blank	-	-	-	-	-
Dinwoody 15 10:00	12214	Proglacial	12T	613112	4785502	9/2/2015	10:00
Dinwoody 15 12:00	12215	Proglacial	12T	613112	4785502	9/2/2015	12:00
Dinwoody 15 14:00	12216	Proglacial	12T	613112	4785502	9/2/2015	14:00
Dinwoody 15 16:00	12217	Proglacial	12T	613112	4785502	9/2/2015	16:00
Dinwoody 15 18:00	12218	Proglacial	12T	613112	4785502	9/2/2015	18:00
Dinwoody 15 20:00	12219	Proglacial	12T	613112	4785502	9/2/2015	20:00
Dinwoody 15 22:00	12220	Proglacial	12T	613112	4785502	9/2/2015	22:00
Dinwoody 15 0:00	12221	Proglacial	12T	613112	4785502	9/3/2015	00:00
Dinwoody 15 2:00	12222	Proglacial	12T	613112	4785502	9/3/2015	02:00

Dinwoody 15 4:00	12223	Proglacial	12T	613112	4785502	9/3/2015	00:01
Dinwoody 15 6:00	12224	Proglacial	12T	613112	4785502	9/3/2015	02:01
Dinwoody 15 8:00	12225	Proglacial	12T	613112	4785502	9/3/2015	00:02
Dinwoody 15 11:00	12229	Proglacial	12T	613112	4785502	9/2/2015	11:00
Dinwoody 15 13:00	12230	Proglacial	12T	613112	4785502	9/2/2015	13:00
Dinwoody 15 15:00	12231	Proglacial	12T	613112	4785502	9/2/2015	15:00
Dinwoody 15 17:00	12232	Proglacial	12T	613112	4785502	9/2/2015	17:00
Dinwoody 15 19:00	12233	Proglacial	12T	613112	4785502	9/2/2015	19:00
Dinwoody 15 21:00	12234	Proglacial	12T	613112	4785502	9/2/2015	21:00
Dinwoody 15 23:00	12235	Proglacial	12T	613112	4785502	9/2/2015	23:00
Dinwoody 15 1:00	12236	Proglacial	12T	613112	4785502	9/3/2015	01:00
Dinwoody 15 3:00	12237	Proglacial	12T	613112	4785502	9/3/2015	03:00
Dinwoody 15 5:00	12238	Proglacial	12T	613112	4785502	9/3/2015	05:00
Dinwoody 15 7:00	12239	Proglacial	12T	613112	4785502	9/3/2015	07:00
Dinwoody 15 9:00	12240	Proglacial	12T	613112	4785502	9/3/2015	09:00
Dinwoody 15 Field Blank 3	12226	Field Blank	-	-	-	-	-
Dinwoody 15 Field Blank 4	12227	Field Blank	-	-	-	-	-

Table S1. cont…

Sample Name	Temp (deg. C)	Baro. (mmHg)	DO (%)	DO (mg/L)	SPC (µS/cm)	pH	ORP (mV)	Turbidity (NTU)
Dinwoody 1	-0.2	510.5	68.6	10.1	1.7	4.67	154.6	0.63
Dinwoody 2	0.1	511.3	69.2	10.1	9.0	6.90	126.7	1570.4
Dinwoody 3	-0.2	510.6	68.6	10.1	1.0	4.03	221.8	0.62
Dinwoody 4	-0.2	510.3	68.4	10.1	1.6	3.71	230.4	0.6
Dinwoody 5	-0.2	510.8	69.0	10.1	1.8	3.64	237.9	2.56
Dinwoody 6	0.2	510.7	68.5	10.0	1.5	4.60	185.0	108.5
Dinwoody 7	0.1	510.4	69.7	10.1	1.5	4.82	210.2	23.98
Dinwoody 8	-0.2	510.8	69.3	10.2	0.9	3.64	281.0	2.2
Dinwoody 9	-0.2	511.0	69.0	10.2	0.9	3.58	283.3	1.39
Dinwood 10	2.2	513.7	71.0	9.8	4.7	5.05	275.2	43.68
Dinwoody 11	4.3	517.7	71.7	9.3	6.3	5.29	282.6	250.2
Dinwoody 12	4.1	519.7	71.7	9.4	8.5	5.57	273.8	163.7
Dinwoody 13	5.8	524.8	73.1	9.2	10.1	5.81	271.8	133
Dinwoody 14	6.5	528.1	74.8	8.9	10.9	5.87	270.7	108.7
Dinwoody 15	5.8	538.0	75.0	9.4	7.3	6.01	222.2	97.79
Gannett 1	0	502.6	72.2	11.2	2.6	4.67	77.2	3.43
Gannett 2	0	502.1	76.4	11.1	2.6	4.34	102.4	7.61
Gannett 3	0	502.2	75.7	11.1	2.4	4.45	121.7	7.06
Gannett 4	0	502.4	74.6	10.9	2.4	4.39	141.8	5.37
Gannett 5	0	509.1	78.3	11.5	2.3	4.22	108.7	7.37
Gannett 6	0.3	510.3	78.4	11.3	3.2	4.68	118.2	86.9

Gannett 7	2.8	513.3	79.6	10.8	4.4	4.92	102.0	42.21
Gannett 8	2.9	521.2	79.7	10.8	4.3	5.04	85.0	40.45
Gannett 9	3.2	524.5	81.6	10.9	4.6	4.86	97.0	38.1
Clear Creek	8.9	529.7	79.4	9.18	9.6	5.42	67.5	0.89
Dinwoody Field Blank 1	-	-	-	-	-	-	-	0.62
Gannett Field Blank 2	-	-	-	-	-	-	-	-
Dinwoody 15 10:00	4.2	534.5	73.2	9.5	7.4	5.96	179.1	23.96
Dinwoody 15 12:00	6.6	534.6	73.7	9.0	5.8	5.76	183.5	20.31
Dinwoody 15 14:00	6.8	534.0	73.7	9.0	4.9	5.65	173.3	38.49
Dinwoody 15 16:00	6.3	533.4	73.8	9.1	5.5	5.66	182.1	78.84
Dinwoody 15 18:00	5.4	533.2	73.1	9.2	5.3	5.64	185.4	71.65
Dinwoody 15 20:00	4.9	533.2	72.6	9.3	5.7	5.65	189.0	59.48
Dinwoody 15 22:00	4.5	533.5	72.2	9.4	5.9	5.69	192.2	55.6
Dinwoody 15 0:00	4.2	533.3	72.4	9.4	6.1	5.74	193.7	42.67
Dinwoody 15 2:00	4.2	533.0	72.0	9.4	6.4	5.76	194.0	42.22
Dinwoody 15 4:00	4.1	532.6	71.7	9.4	6.6	5.79	193.5	30.07
Dinwoody 15 6:00	4.1	532.9	71.6	9.4	6.8	5.81	193.0	28.61
Dinwoody 15 8:00	3.9	532.9	72.3	9.5	6.7	5.87	189.9	25.75
Dinwoody 15 11:00	5.8	534.5	73.6	9.19	7.2	5.93	179.08	-
Dinwoody 15 13:00	6.7	534.4	73.8	9.02	5	5.64	183.6	-
Dinwoody 15 15:00	6.7	533.6	73.5	8.98	5.5	5.71	176.7	-
Dinwoody 15 17:00	5.9	533.2	73.2	9.14	5.4	5.67	182.9	-
Dinwoody 15 19:00	5.2	533.2	72.7	9.25	5.5	5.64	187.8	-
Dinwoody 15 21:00	4.6	533.6	72.6	9.37	5.8	5.67	191.6	-
Dinwoody 15 23:00	4.3	533.6	72.2	9.39	6	5.72	192.8	-
Dinwoody 15 1:00	4.2	533.3	72.2	9.41	6.3	5.75	192.6	-
Dinwoody 15 3:00	4.2	532.7	71.6	9.34	6.4	5.78	193.6	-
Dinwoody 15 5:00	4.1	533	71.8	9.39	6.7	5.8	193	-
Dinwoody 15 7:00	4	532.8	71.6	9.39	6.8	5.81	193.3	-
Dinwoody 15 9:00	4.1	533	72.5	9.49	6.7	5.93	185.3	-
Dinwoody 15 Field Blank 3	-	-	-	-	-	-	-	-
Dinwoody 15 Field Blank 4	-	-	-	-	-	-	-	-

Table S1. cont…

Sample Name	**δ18O (‰)**	**δ18O Error (±‰)**	**δD (‰)**	**δD Error (±‰)**	**F (mg/L)**	**Cl (mg/L)**	**NO3 (mg/L)**
Dinwoody 1	-15.72	0.20	-119.8	1.0	-	0.04	0.10
Dinwoody 2	-15.51	0.20	-108.2	1.0	0.02	0.17	0.33
Dinwoody 3	-15.79	0.20	-120.8	1.0	-	0.02	0.09
Dinwoody 4	-16.03	0.20	-121.6	1.0	-	0.02	0.09
Dinwoody 5	-15.98	0.20	-115.4	1.0	-	0.02	0.09
Dinwoody 6	-16.01	0.20	-119.4	1.0	-	0.02	0.07

Dinwoody 7	-16.49	0.20	-121.1	1.0	-	0.02	0.07
Dinwoody 8	-16.06	0.20	-123.7	1.0	-	0.01	-
Dinwoody 9	-16.41	0.20	-124.6	1.0	-	0.03	-
Dinwood 10	-16.43	0.20	-120.1	1.0	-	0.10	0.22
Dinwoody 11	-15.94	0.20	-116.8	1.0	-	0.09	0.20
Dinwoody 12	-16.12	0.20	-115.7	1.0	0.01	0.11	0.26
Dinwoody 13	-15.95	0.20	-116.6	1.0	-	0.13	0.26
Dinwoody 14	-16.23	0.20	-110.4	1.0	-	0.15	0.27
Dinwoody 15	-15.88	0.20	-116.6	1.0	-	0.12	0.22
Gannett 1	-17.50	0.20	-133.4	1.0	-	-	-
Gannett 2	-16.64	0.20	-128.4	1.0	-	0.02	-
Gannett 3	-18.29	0.20	-138.2	1.0	-	-	-
Gannett 4	-17.28	0.20	-132.4	1.0	-	-	-
Gannett 5	-18.84	0.20	-142.2	1.0	-	-	-
Gannett 6	-16.56	0.20	-128.0	1.0	-	0.03	0.09
Gannett 7	-16.30	0.20	-124.4	1.0	-	0.06	0.14
Gannett 8	-16.10	0.20	-124.9	1.0	-	0.04	0.13
Gannett 9	-16.22	0.20	-124.6	1.0	-	0.06	0.13
Clear Creek	-16.01	0.20	-120.0	1.0	0.01	0.10	0.12
Dinwoody Field Blank 1	-	-	-	-	-	-	-
Gannett Field Blank 2	-	-	-	-	-	-	-
Dinwoody 15 10:00	-15.82	0.20	-123.2	1.0	-	0.11	0.1666
Dinwoody 15 12:00	-16.06	0.20	-124.3	1.0	-	0.0925	0.1392
Dinwoody 15 14:00	-15.92	0.20	-125.6	1.0	-	0.0934	0.122
Dinwoody 15 16:00	-16.30	0.20	-125.1	1.0	-	0.0866	0.1308
Dinwoody 15 18:00	-16.34	0.20	-125.7	1.0	-	0.0716	0.1149
Dinwoody 15 20:00	-16.02	0.20	-124.4	1.0	-	0.0706	0.1216
Dinwoody 15 22:00	-16.12	0.20	-123.2	1.0	0.0094	0.0851	0.1519
Dinwoody 15 0:00	-15.94	0.20	-124.6	1.0	-	0.0773	0.1659
Dinwoody 15 2:00	-15.90	0.20	-122.8	1.0	-	0.0868	0.1596
Dinwoody 15 4:00	-15.98	0.20	-122.8	1.0	0.0106	0.1125	0.1689
Dinwoody 15 6:00	-15.82	0.20	-123.8	1.0	0.0111	0.1037	0.1736
Dinwoody 15 8:00	-15.82	0.20	-123.0	1.0	0.0117	0.0985	0.1686
Dinwoody 15 11:00	-16.11	0.20	-122.2	1.0	-	-	-
Dinwoody 15 13:00	-16.12	0.20	-124.5	1.0	-	-	-
Dinwoody 15 15:00	-16.03	0.20	-124.9	1.0	-	-	-
Dinwoody 15 17:00	-16.36	0.20	-125.3	1.0	-	-	-
Dinwoody 15 19:00	-16.13	0.20	-125.3	1.0	-	-	-
Dinwoody 15 21:00	-16.15	0.20	-123.6	1.0	-	-	-
Dinwoody 15 23:00	-15.94	0.20	-123.7	1.0	-	-	-
Dinwoody 15 1:00	-15.80	0.20	-123.0	1.0	-	-	-
Dinwoody 15 3:00	-16.10	0.20	-120.2	1.0	-	-	-
Dinwoody 15 5:00	-16.07	0.20	-120.7	1.0	-	-	-
Dinwoody 15 7:00	-15.81	0.20	-122.5	1.0	-	-	-

Dinwoody 15 9:00	-15.82	0.20	-122.8	1.0	-	-	-
Dinwoody 15 Field Blank 3	-	-	-	-	-	-	-
Dinwoody 15 Field Blank 4	-	-	-	-	-	-	-

Table S1. cont…

Sample Name	SO4 (mg/L)	HCO3 (mg/L)	DOC (mg/L)	THg filt (ng/L)	MeHg filt (ng/L)	Li (µg/L)	Be (µg/L)
Dinwoody 1	0.21	0.4	2.0	1.93	0.0766	4.91E-02	1.39E-03
Dinwoody 2	1.55	10.1	1.2	1.67	0.0438	2.86E-01	1.39E-03
Dinwoody 3	0.18	0.3	1.9	1.5	0.0644	4.41E-02	1.39E-03
Dinwoody 4	0.15	0.2	1.3	2.06	0.0614	2.47E-02	1.39E-03
Dinwoody 5	0.17	0.3	1.7	1.5	0.058	2.78E-02	1.39E-03
Dinwoody 6	0.17	1.7	0.4	1.39	0.0396	2.62E-02	1.39E-03
Dinwoody 7	0.14	0.9	0.2	1.2	0.0407	2.46E-02	1.39E-03
Dinwoody 8	0.09	0.3	0.2	0.798	0.0307	2.37E-02	1.39E-03
Dinwoody 9	0.11	0.1	0.1	0.641	0.0398	1.00E-02	1.39E-03
Dinwood 10	0.82	1.9	-	0.923	0.0318	7.34E-02	1.39E-03
Dinwoody 11	1.04	3.0	0.1	0.98	0.0317	1.19E-01	1.39E-03
Dinwoody 12	1.58	3.6	0.5	0.98	0.0338	1.41E-01	1.39E-03
Dinwoody 13	1.91	4.2	-	1.41	0.0282	1.46E-01	1.39E-03
Dinwoody 14	2.02	4.0	0.2	0.81	0.0241	1.50E-01	1.39E-03
Dinwoody 15	1.25	2.9	-	0.697	0.0271	1.13E-01	1.39E-03
Gannett 1	-	0.2	-	0.662	0.0229	1.00E-02	1.39E-03
Gannett 2	-	0.2	-	0.558	0.025	1.00E-02	1.39E-03
Gannett 3	-	0.2	-	0.473	0.0241	1.00E-02	1.39E-03
Gannett 4	-	0.2	-	0.441	0.0227	1.00E-02	1.39E-03
Gannett 5	-	0.3	-	0.42	0.0198	1.00E-02	1.39E-03
Gannett 6	0.17	0.6	-	0.519	0.0327	4.76E-02	1.39E-03
Gannett 7	0.43	1.1	-	0.496	0.0306	5.43E-02	1.39E-03
Gannett 8	0.36	1.2	-	0.429	0.0275	5.52E-02	1.39E-03
Gannett 9	0.37	1.1	-	0.462	0.0267	5.34E-02	1.39E-03
Clear Creek	0.59	2.1	-	0.456	0.0169	7.81E-02	1.39E-03
Dinwoody Field Blank 1	-	0.1	-	0.293	0.0116	1.00E-02	1.39E-03
Gannett Field Blank 2	-	0.1	-	0.0749	0.0113	1.00E-02	1.39E-03
Dinwoody 15 10:00	1.4466	3.1	-	0.462	0.0203	9.69E-02	3.00E-03
Dinwoody 15 12:00	1.0568	2.3	-	0.433	0.0238	7.78E-02	3.00E-03
Dinwoody 15 14:00	0.8773	1.9	-	0.38	0.0251	7.40E-02	3.00E-03
Dinwoody 15 16:00	0.9876	2.3	-	0.409	0.0225	8.62E-02	3.00E-03
Dinwoody 15 18:00	0.8842	1.2	-	0.414	0.0208	5.61E-02	3.00E-03
Dinwoody 15 20:00	0.9498	2.6	-	0.357	0.0198	8.77E-02	3.00E-03
Dinwoody 15 22:00	1.0006	2.9	-	0.383	0.0202	9.21E-02	3.00E-03
Dinwoody 15 0:00	1.0713	3.1	-	0.422	0.0195	1.11E-01	3.00E-03

Dinwoody 15 2:00	1.1385	2.9	-	0.391	0.0191	9.03E-02	3.00E-03
Dinwoody 15 4:00	1.2028	3.0	-	0.351	0.0173	9.69E-02	3.00E-03
Dinwoody 15 6:00	1.2574	2.9	-	0.34	0.0246	9.31E-02	3.00E-03
Dinwoody 15 8:00	1.2793	3.1	-	0.397	0.0181	9.54E-02	3.00E-03
Dinwoody 15 11:00	-	-	-	-	-	-	-
Dinwoody 15 13:00	-	-	-	-	-	-	-
Dinwoody 15 15:00	-	-	-	-	-	-	-
Dinwoody 15 17:00	-	-	-	-	-	-	-
Dinwoody 15 19:00	-	-	-	-	-	-	-
Dinwoody 15 21:00	-	-	-	-	-	-	-
Dinwoody 15 23:00	-	-	-	-	-	-	-
Dinwoody 15 1:00	-	-	-	-	-	-	-
Dinwoody 15 3:00	-	-	-	-	-	-	-
Dinwoody 15 5:00	-	-	-	-	-	-	-
Dinwoody 15 7:00	-	-	-	-	-	-	-
Dinwoody 15 9:00	-	-	-	-	-	-	-
Dinwoody 15 Field Blank 3	-	0.1	-	0.143	0.0107	1.00E-02	3.00E-03
Dinwoody 15 Field Blank 4	-	0.1	-	0.158	0.0102	1.00E-02	3.00E-03

Table S1. cont…

Sample Name	B (µg/L)	Na (mg/L)	Mg (mg/L)	Al (µg/L)	K (mg/L)	Ca (mg/L)
Dinwoody 1	8.14E-01	1.50E-02	2.96E-02	5.90E+00	5.79E-02	1.89E-01
Dinwoody 2	1.46E+00	6.94E-01	2.62E-01	1.14E+02	7.79E-01	2.73E+00
Dinwoody 3	5.19E-01	1.50E-02	2.37E-02	5.39E+00	4.87E-02	1.56E-01
Dinwoody 4	2.50E-01	1.50E-02	1.85E-02	5.00E+00	3.35E-02	1.11E-01
Dinwoody 5	2.50E-01	1.50E-02	2.10E-02	4.99E+00	4.81E-02	1.26E-01
Dinwoody 6	2.50E-01	3.50E-02	4.92E-02	4.65E+01	9.30E-02	5.09E-01
Dinwoody 7	2.50E-01	1.50E-02	3.56E-02	6.89E+00	7.15E-02	2.87E-01
Dinwoody 8	2.50E-01	3.25E-02	1.25E-02	3.36E+00	4.37E-02	6.87E-02
Dinwoody 9	2.50E-01	1.50E-02	1.07E-02	2.78E+00	2.07E-02	5.78E-02
Dinwood 10	2.50E-01	1.39E-01	8.97E-02	5.58E+00	3.55E-01	6.41E-01
Dinwoody 11	2.50E-01	2.21E-01	1.25E-01	6.03E+00	4.49E-01	9.08E-01
Dinwoody 12	2.50E-01	2.87E-01	1.65E-01	3.58E+00	5.73E-01	1.20E+00
Dinwoody 13	2.50E-01	3.23E-01	2.03E-01	3.46E+00	6.74E-01	1.37E+00
Dinwoody 14	2.50E-01	3.29E-01	2.23E-01	2.36E+00	6.97E-01	1.31E+00
Dinwoody 15	2.50E-01	2.55E-01	1.57E-01	4.43E+00	4.45E-01	9.00E-01
Gannett 1	2.50E-01	1.50E-02	9.43E-03	1.93E+00	1.00E-02	3.66E-02
Gannett 2	2.50E-01	1.50E-02	1.20E-02	1.87E+00	1.00E-02	5.47E-02
Gannett 3	2.50E-01	1.50E-02	9.54E-03	2.29E+00	1.00E-02	3.50E-02
Gannett 4	2.50E-01	1.50E-02	7.63E-03	1.76E+00	1.00E-02	4.45E-02
Gannett 5	2.50E-01	1.50E-02	7.18E-03	3.81E+00	1.00E-02	6.59E-02
Gannett 6	2.50E-01	5.78E-02	2.80E-02	6.68E+00	7.45E-02	1.74E-01

Gannett 7	2.50E-01	1.32E-01	5.62E-02	4.51E+00	1.55E-01	3.35E-01
Gannett 8	2.50E-01	1.26E-01	5.31E-02	6.21E+00	1.47E-01	3.22E-01
Gannett 9	2.50E-01	1.27E-01	5.45E-02	6.16E+00	1.49E-01	3.19E-01
Clear Creek	2.50E-01	2.61E-01	1.18E-01	4.08E+00	1.87E-01	5.33E-01
Dinwoody Field Blank 1	2.50E-01	1.50E-02	5.00E-04	4.00E-01	1.00E-02	6.95E-03
Gannett Field Blank 2	2.50E-01	1.50E-02	5.00E-04	8.61E-01	1.00E-02	5.79E-03
Dinwoody 15 10:00	2.50E-01	3.14E-01	1.67E-01	4.20E+00	4.66E-01	9.51E-01
Dinwoody 15 12:00	2.50E-01	2.38E-01	1.20E-01	5.41E+00	3.44E-01	7.18E-01
Dinwoody 15 14:00	2.50E-01	2.08E-01	1.02E-01	3.60E+00	2.99E-01	5.87E-01
Dinwoody 15 16:00	2.50E-01	2.11E-01	1.15E-01	3.69E+00	3.64E-01	7.15E-01
Dinwoody 15 18:00	2.50E-01	1.22E-01	8.04E-02	4.32E+00	2.36E-01	4.86E-01
Dinwoody 15 20:00	2.50E-01	2.20E-01	1.22E-01	3.63E+00	3.87E-01	7.47E-01
Dinwoody 15 22:00	2.50E-01	2.38E-01	1.31E-01	5.11E+00	4.05E-01	8.33E-01
Dinwoody 15 0:00	2.50E-01	2.64E-01	1.55E-01	3.46E+01	4.29E-01	8.64E-01
Dinwoody 15 2:00	2.50E-01	2.57E-01	1.41E-01	3.36E+00	4.14E-01	8.66E-01
Dinwoody 15 4:00	2.50E-01	2.71E-01	1.48E-01	4.81E+00	4.31E-01	9.07E-01
Dinwoody 15 6:00	2.50E-01	2.70E-01	1.49E-01	3.92E+00	4.30E-01	9.16E-01
Dinwoody 15 8:00	2.50E-01	2.85E-01	1.64E-01	5.29E+00	4.22E-01	9.39E-01
Dinwoody 15 11:00	-	-	-	-	-	-
Dinwoody 15 13:00	-	-	-	-	-	-
Dinwoody 15 15:00	-	-	-	-	-	-
Dinwoody 15 17:00	-	-	-	-	-	-
Dinwoody 15 19:00	-	-	-	-	-	-
Dinwoody 15 21:00	-	-	-	-	-	-
Dinwoody 15 23:00	-	-	-	-	-	-
Dinwoody 15 1:00	-	-	-	-	-	-
Dinwoody 15 3:00	-	-	-	-	-	-
Dinwoody 15 5:00	-	-	-	-	-	-
Dinwoody 15 7:00	-	-	-	-	-	-
Dinwoody 15 9:00	-	-	-	-	-	-
Dinwoody 15 Field Blank 3	2.50E-01	1.50E-02	2.47E-03	8.94E-01	1.00E-02	2.02E-02
Dinwoody 15 Field Blank 4	2.50E-01	1.50E-02	2.00E-03	4.00E-01	1.00E-02	2.50E-03

Table S1. cont…

Sample Name	Ti (μg/L)	V (μg/L)	Cr (μg/L)	Mn (μg/L)	Fe (μg/L)	Co (μg/L)
Dinwoody 1	1.33E-01	4.04E-02	4.05E-02	6.35E+00	4.29E+00	8.27E-02
Dinwoody 2	3.56E+00	1.25E+00	8.15E-01	1.78E+00	7.56E+01	8.03E-02
Dinwoody 3	1.24E-01	2.65E-02	6.47E-02	5.96E+00	4.41E+00	8.23E-02
Dinwoody 4	1.11E-01	2.93E-02	3.17E-02	4.04E+00	4.26E+00	6.97E-02
Dinwoody 5	1.24E-01	3.39E-02	2.49E-02	4.58E+00	5.64E+00	7.15E-02
Dinwoody 6	1.09E-01	1.15E-01	4.80E-02	4.07E+00	2.74E+00	3.21E-02
Dinwoody 7	1.92E-01	1.03E-01	6.44E-02	3.72E+00	5.02E+00	5.49E-02

Dinwoody 8	1.24E-01	2.18E-02	7.30E-02	1.99E+00	2.82E+00	4.71E-02
Dinwoody 9	5.00E-02	2.50E-02	2.23E-02	2.32E+00	2.57E+00	3.77E-02
Dinwood 10	1.92E-01	8.61E-02	3.69E-02	1.91E+00	3.27E+00	4.21E-02
Dinwoody 11	2.29E-01	2.22E-01	7.06E-02	2.18E+00	4.24E+00	2.50E-02
Dinwoody 12	1.73E-01	1.89E-01	7.39E-02	1.78E+00	2.14E+00	2.71E-02
Dinwoody 13	1.79E-01	1.92E-01	6.78E-02	9.80E-01	1.79E+00	1.00E-02
Dinwoody 14	1.28E-01	1.88E-01	6.56E-02	8.25E-01	8.57E-01	1.00E-02
Dinwoody 15	1.91E-01	1.48E-01	8.51E-02	1.11E+00	3.02E+00	1.00E-02
Gannett 1	5.00E-02	2.44E-02	3.59E-02	2.91E+00	1.43E+00	3.33E-02
Gannett 2	5.00E-02	3.59E-02	4.44E-02	2.10E+00	1.27E+00	2.69E-02
Gannett 3	5.00E-02	2.63E-02	5.00E-02	2.60E+00	2.00E+00	2.93E-02
Gannett 4	5.00E-02	4.00E-03	3.87E-02	2.84E+00	1.05E+00	2.67E-02
Gannett 5	5.00E-02	1.74E-02	4.02E-02	1.21E+00	1.97E+00	1.00E-02
Gannett 6	1.75E-01	6.19E-02	4.39E-02	2.86E+00	2.96E+00	3.37E-02
Gannett 7	1.56E-01	8.01E-02	1.55E-02	1.96E+00	2.03E+00	1.00E-02
Gannett 8	2.04E-01	7.39E-02	3.32E-02	1.94E+00	3.23E+00	2.57E-02
Gannett 9	1.77E-01	7.85E-02	3.29E-02	1.88E+00	3.22E+00	1.00E-02
Clear Creek	1.66E-01	1.26E-01	4.84E-02	1.56E-01	1.96E+00	1.00E-02
Dinwoody Field Blank 1	5.00E-02	4.00E-03	1.76E-02	1.89E-02	3.50E-02	1.00E-02
Gannett Field Blank 2	5.00E-02	4.00E-03	1.93E-02	1.00E-02	9.97E-02	1.00E-02
Dinwoody 15 10:00	1.79E-01	1.30E-01	6.08E-02	4.58E-01	2.20E+00	1.00E-02
Dinwoody 15 12:00	1.93E-01	1.09E-01	6.27E-02	7.59E-01	3.32E+00	1.00E-02
Dinwoody 15 14:00	1.30E-01	1.34E-01	4.62E-02	1.03E+00	1.84E+00	1.00E-02
Dinwoody 15 16:00	1.41E-01	1.31E-01	7.21E-02	1.05E+00	2.08E+00	1.00E-02
Dinwoody 15 18:00	1.24E-01	1.04E-01	3.22E-02	6.53E-01	2.88E+00	1.00E-02
Dinwoody 15 20:00	1.32E-01	1.28E-01	3.65E-02	6.63E-01	2.03E+00	1.00E-02
Dinwoody 15 22:00	2.03E-01	1.22E-01	9.73E-02	7.22E-01	3.54E+00	1.00E-02
Dinwoody 15 0:00	1.14E+00	1.69E-01	2.06E-01	8.75E-01	2.55E+01	2.72E-02
Dinwoody 15 2:00	1.36E-01	1.15E-01	5.77E-02	6.07E-01	1.97E+00	1.00E-02
Dinwoody 15 4:00	1.71E-01	1.06E-01	7.31E-02	6.49E-01	2.92E+00	1.00E-02
Dinwoody 15 6:00	1.66E-01	1.04E-01	5.50E-02	5.45E-01	2.13E+00	1.00E-02
Dinwoody 15 8:00	2.54E-01	1.07E-01	6.27E-02	5.58E-01	3.11E+00	1.00E-02
Dinwoody 15 11:00	-	-	-	-	-	-
Dinwoody 15 13:00	-	-	-	-	-	-
Dinwoody 15 15:00	-	-	-	-	-	-
Dinwoody 15 17:00	-	-	-	-	-	-
Dinwoody 15 19:00	-	-	-	-	-	-
Dinwoody 15 21:00	-	-	-	-	-	-
Dinwoody 15 23:00	-	-	-	-	-	-
Dinwoody 15 1:00	-	-	-	-	-	-
Dinwoody 15 3:00	-	-	-	-	-	-
Dinwoody 15 5:00	-	-	-	-	-	-
Dinwoody 15 7:00	-	-	-	-	-	-
Dinwoody 15 9:00	-	-	-	-	-	-

Dinwoody 15 Field Blank 3	5.00E-02	4.00E-03	4.46E-02	1.00E-02	2.04E-01	1.00E-02
Dinwoody 15 Field Blank 4	5.00E-02	4.00E-03	4.37E-02	2.50E-02	1.47E-01	1.00E-02

Table S1. cont…

Sample Name	Ni (µg/L)	Cu (µg/L)	Zn (µg/L)	As (µg/L)	Se (µg/L)	Rb (µg/L)
Dinwoody 1	9.69E-02	1.64E+00	7.60E-01	1.23E-01	2.93E-02	4.22E-01
Dinwoody 2	3.08E-01	1.70E+00	6.79E-01	1.80E-01	8.70E-02	4.56E-01
Dinwoody 3	1.13E-01	1.24E+00	9.58E-01	1.31E-01	3.27E-02	3.60E-01
Dinwoody 4	1.98E-01	1.37E+00	7.79E-01	9.54E-02	2.57E-02	2.54E-01
Dinwoody 5	1.60E-01	1.12E+00	7.22E-01	9.26E-02	2.00E-02	2.60E-01
Dinwoody 6	1.38E-01	1.31E+00	3.27E-01	8.18E-02	2.18E-02	2.35E-01
Dinwoody 7	1.26E-01	5.88E-01	7.13E-01	8.51E-02	1.93E-02	2.14E-01
Dinwoody 8	1.51E-01	6.55E-01	5.79E-01	5.10E-02	1.55E-02	1.72E-01
Dinwoody 9	6.47E-02	1.09E+00	4.87E-01	4.40E-02	1.53E-02	1.02E-01
Dinwood 10	3.17E-01	8.44E-01	1.98E-01	6.76E-02	3.25E-02	6.25E-01
Dinwoody 11	2.06E-01	6.83E-01	1.09E-01	7.28E-02	3.71E-02	5.83E-01
Dinwoody 12	2.59E-01	1.15E+00	4.15E-01	6.94E-02	4.52E-02	7.36E-01
Dinwoody 13	2.52E-01	3.34E-01	2.24E-01	7.27E-02	5.68E-02	8.66E-01
Dinwoody 14	2.42E-01	8.01E-01	2.02E-01	7.09E-02	4.58E-02	9.70E-01
Dinwoody 15	1.65E-01	1.10E+00	3.48E-01	7.93E-02	4.11E-02	6.28E-01
Gannett 1	2.58E-02	3.45E-01	9.39E-01	6.94E-02	1.20E-02	2.00E-02
Gannett 2	2.59E-02	1.75E+00	4.93E-01	6.98E-02	1.55E-02	3.05E-02
Gannett 3	2.05E-02	6.08E-01	1.19E+00	6.41E-02	5.00E-03	2.65E-02
Gannett 4	5.00E-03	1.29E+00	5.56E-01	3.07E-02	5.00E-03	1.83E-02
Gannett 5	5.00E-03	5.33E-01	6.59E-01	1.67E-02	5.00E-03	3.56E-02
Gannett 6	4.63E-02	1.10E+00	4.34E-01	7.11E-02	1.61E-02	1.68E-01
Gannett 7	3.41E-02	1.09E+00	1.52E-01	6.63E-02	2.48E-02	2.56E-01
Gannett 8	4.31E-02	3.12E-01	2.97E-01	7.29E-02	2.61E-02	2.56E-01
Gannett 9	3.62E-02	8.47E-01	2.02E-01	7.59E-02	2.36E-02	2.51E-01
Clear Creek	4.74E-02	8.02E-01	5.06E-01	1.11E-01	4.06E-02	2.12E-01
Dinwoody Field Blank 1	5.00E-03	5.00E-02	1.57E-01	1.00E-03	5.00E-03	2.00E-03
Gannett Field Blank 2	5.00E-03	2.51E-01	1.91E-01	1.00E-03	5.00E-03	2.00E-03
Dinwoody 15 10:00	1.49E-01	5.60E-01	3.79E-01	6.24E-02	3.92E-02	5.77E-01
Dinwoody 15 12:00	9.35E-02	1.35E+00	3.16E-01	7.14E-02	3.16E-02	4.79E-01
Dinwoody 15 14:00	7.58E-02	2.01E-01	1.05E+00	7.54E-02	3.33E-02	4.26E-01
Dinwoody 15 16:00	1.00E-01	8.90E-01	2.21E-01	7.97E-02	2.95E-02	4.88E-01
Dinwoody 15 18:00	6.98E-02	3.13E-01	1.78E-01	4.56E-02	5.00E-03	3.21E-01
Dinwoody 15 20:00	1.19E-01	1.60E+00	1.83E-01	5.69E-02	3.22E-02	4.87E-01
Dinwoody 15 22:00	1.29E-01	3.69E-01	5.68E-01	6.29E-02	3.40E-02	5.06E-01
Dinwoody 15 0:00	1.93E-01	2.36E+00	6.75E-01	7.19E-02	3.48E-02	5.66E-01
Dinwoody 15 2:00	1.37E-01	9.06E-01	2.73E-01	6.90E-02	3.18E-02	5.19E-01
Dinwoody 15 4:00	1.52E-01	2.15E-01	4.16E-01	7.49E-02	2.82E-02	5.43E-01

Dinwoody 15 6:00	1.47E-01	1.75E-01	1.71E-01	6.20E-02	4.79E-02	5.44E-01
Dinwoody 15 8:00	7.81E-01	2.54E-01	1.65E+00	6.41E-02	3.84E-02	5.29E-01
Dinwoody 15 11:00	-	-	-	-	-	-
Dinwoody 15 13:00	-	-	-	-	-	-
Dinwoody 15 15:00	-	-	-	-	-	-
Dinwoody 15 17:00	-	-	-	-	-	-
Dinwoody 15 19:00	-	-	-	-	-	-
Dinwoody 15 21:00	-	-	-	-	-	-
Dinwoody 15 23:00	-	-	-	-	-	-
Dinwoody 15 1:00	-	-	-	-	-	-
Dinwoody 15 3:00	-	-	-	-	-	-
Dinwoody 15 5:00	-	-	-	-	-	-
Dinwoody 15 7:00	-	-	-	-	-	-
Dinwoody 15 9:00	-	-	-	-	-	-
Dinwoody 15 Field Blank 3	5.00E-03	9.01E-01	2.20E-01	1.00E-03	5.00E-03	2.00E-03
Dinwoody 15 Field Blank 4	5.00E-03	7.43E-01	3.83E-01	1.00E-03	5.00E-03	2.00E-03

Table S1. cont…

Sample Name	Sr (μg/L)	Y (μg/L)	Mo (μg/L)	Ag (μg/L)	Cd (μg/L)	Sb (μg/L)
Dinwoody 1	9.78E-01	1.00E-02	1.00E-02	1.50E-03	3.63E-02	1.12E-02
Dinwoody 2	9.30E+00	6.61E-02	3.83E-01	1.50E-03	5.00E-03	2.28E-02
Dinwoody 3	7.62E-01	8.33E-03	1.00E-02	1.50E-03	4.07E-02	1.14E-02
Dinwoody 4	5.41E-01	6.30E-03	1.00E-02	3.46E-03	2.49E-02	1.05E-02
Dinwoody 5	6.60E-01	6.76E-03	1.00E-02	1.50E-03	2.38E-02	1.03E-02
Dinwoody 6	1.34E+00	8.90E-03	5.13E-02	1.50E-03	5.00E-03	1.02E-02
Dinwoody 7	9.18E-01	9.24E-03	4.10E-02	1.50E-03	1.02E-02	9.34E-03
Dinwoody 8	3.03E-01	5.01E-03	1.97E-02	1.50E-03	1.12E-02	8.46E-03
Dinwoody 9	2.93E-01	3.65E-03	2.51E-02	3.68E-03	1.42E-02	8.11E-03
Dinwood 10	2.85E+00	1.36E-02	3.33E-01	1.50E-03	9.03E-03	1.11E-02
Dinwoody 11	3.93E+00	1.12E-02	3.32E-01	1.50E-03	5.00E-03	1.38E-02
Dinwoody 12	5.11E+00	1.07E-02	5.11E-01	1.50E-03	5.00E-03	1.55E-02
Dinwoody 13	5.87E+00	1.26E-02	6.14E-01	1.50E-03	5.00E-03	1.65E-02
Dinwoody 14	6.15E+00	1.59E-02	6.40E-01	1.50E-03	5.00E-03	1.72E-02
Dinwoody 15	4.49E+00	1.88E-02	3.95E-01	1.50E-03	5.00E-03	1.58E-02
Gannett 1	1.81E-01	3.04E-03	1.00E-02	1.50E-03	1.47E-02	7.25E-03
Gannett 2	2.78E-01	4.68E-03	1.00E-02	1.50E-03	1.84E-02	9.09E-03
Gannett 3	2.14E-01	2.49E-03	1.00E-02	3.53E-03	1.15E-02	8.80E-03
Gannett 4	2.13E-01	3.39E-03	1.00E-02	1.50E-03	1.07E-02	6.26E-03
Gannett 5	2.60E-01	2.83E-03	1.00E-02	1.50E-03	5.00E-03	3.96E-03
Gannett 6	8.14E-01	8.17E-03	5.27E-02	1.50E-03	1.27E-02	1.03E-02
Gannett 7	2.02E+00	1.10E-02	8.65E-02	1.50E-03	5.00E-03	1.26E-02
Gannett 8	1.84E+00	1.36E-02	8.28E-02	1.50E-03	5.00E-03	1.35E-02

Gannett 9	1.78E+00	1.45E-02	9.12E-02	1.50E-03	5.00E-03	1.17E-02
Clear Creek	3.27E+00	3.29E-02	1.44E-01	1.50E-03	5.00E-03	1.76E-02
Dinwoody Field Blank 1	1.00E-02	5.00E-04	1.00E-02	1.50E-03	5.00E-03	1.50E-03
Gannett Field Blank 2	1.00E-02	5.00E-04	2.83E-02	1.50E-03	5.00E-03	1.50E-03
Dinwoody 15 10:00	4.82E+00	2.12E-02	4.78E-01	1.50E-03	5.00E-03	1.52E-02
Dinwoody 15 12:00	3.57E+00	2.01E-02	3.32E-01	1.50E-03	5.00E-03	1.42E-02
Dinwoody 15 14:00	3.04E+00	1.66E-02	2.78E-01	1.50E-03	5.00E-03	1.18E-02
Dinwoody 15 16:00	3.41E+00	1.38E-02	3.27E-01	1.50E-03	5.00E-03	1.26E-02
Dinwoody 15 18:00	2.32E+00	9.55E-03	2.05E-01	1.50E-03	5.00E-03	6.86E-03
Dinwoody 15 20:00	3.58E+00	1.20E-02	3.22E-01	1.50E-03	5.00E-03	1.29E-02
Dinwoody 15 22:00	3.83E+00	1.40E-02	3.49E-01	1.50E-03	5.00E-03	1.38E-02
Dinwoody 15 0:00	4.18E+00	3.87E-02	3.73E-01	1.50E-03	5.00E-03	1.88E-02
Dinwoody 15 2:00	4.12E+00	1.51E-02	3.82E-01	1.50E-03	5.00E-03	1.36E-02
Dinwoody 15 4:00	4.32E+00	1.83E-02	3.95E-01	1.50E-03	5.00E-03	1.36E-02
Dinwoody 15 6:00	4.40E+00	1.67E-02	3.98E-01	1.50E-03	5.00E-03	1.59E-02
Dinwoody 15 8:00	4.39E+00	2.07E-02	4.17E-01	1.50E-03	5.00E-03	1.38E-02
Dinwoody 15 11:00	-	-	-	-	-	-
Dinwoody 15 13:00	-	-	-	-	-	-
Dinwoody 15 15:00	-	-	-	-	-	-
Dinwoody 15 17:00	-	-	-	-	-	-
Dinwoody 15 19:00	-	-	-	-	-	-
Dinwoody 15 21:00	-	-	-	-	-	-
Dinwoody 15 23:00	-	-	-	-	-	-
Dinwoody 15 1:00	-	-	-	-	-	-
Dinwoody 15 3:00	-	-	-	-	-	-
Dinwoody 15 5:00	-	-	-	-	-	-
Dinwoody 15 7:00	-	-	-	-	-	-
Dinwoody 15 9:00	-	-	-	-	-	-
Dinwoody 15 Field Blank 3	1.00E-02	5.00E-04	1.00E-02	1.50E-03	5.00E-03	6.46E-03
Dinwoody 15 Field Blank 4	1.00E-02	5.00E-04	1.00E-02	1.50E-03	5.00E-03	3.59E-03

Table S1. cont…

Sample Name	Cs (µg/L)	Ba (µg/L)	La (µg/L)	Ce (µg/L)	Nd (µg/L)	Sm (µg/L)
Dinwoody 1	2.50E-03	2.21E+00	1.65E-02	3.36E-02	1.81E-02	4.81E-03
Dinwoody 2	2.50E-03	3.96E+00	4.36E-01	7.86E-01	2.85E-01	4.33E-02
Dinwoody 3	2.50E-03	2.01E+00	1.23E-02	2.78E-02	1.51E-02	3.98E-03
Dinwoody 4	2.50E-03	1.52E+00	1.08E-02	2.45E-02	1.24E-02	3.18E-03
Dinwoody 5	2.50E-03	1.75E+00	1.69E-02	3.21E-02	1.77E-02	3.77E-03
Dinwoody 6	2.50E-03	1.03E+00	1.99E-02	4.14E-02	2.03E-02	5.19E-03
Dinwoody 7	2.50E-03	1.13E+00	3.88E-02	6.29E-02	2.80E-02	4.68E-03
Dinwoody 8	2.50E-03	6.60E-01	1.30E-02	2.30E-02	1.11E-02	3.15E-03
Dinwoody 9	2.50E-03	6.70E-01	5.79E-03	1.21E-02	4.48E-03	3.71E-03
Dinwood 10	2.50E-03	2.39E+00	6.34E-02	9.92E-02	4.52E-02	1.01E-02

Dinwoody 11	2.50E-03	2.35E+00	3.68E-02	7.12E-02	3.16E-02	5.95E-03
Dinwoody 12	2.50E-03	3.21E+00	2.43E-02	5.28E-02	2.89E-02	5.46E-03
Dinwoody 13	2.50E-03	3.64E+00	2.86E-02	5.68E-02	3.25E-02	5.46E-03
Dinwoody 14	2.50E-03	3.80E+00	2.79E-02	5.86E-02	3.72E-02	6.70E-03
Dinwoody 15	2.50E-03	3.00E+00	3.82E-02	7.58E-02	4.03E-02	8.02E-03
Gannett 1	2.50E-03	3.86E-01	4.46E-03	8.98E-03	4.20E-03	1.50E-03
Gannett 2	2.50E-03	4.70E-01	7.14E-03	1.45E-02	6.49E-03	1.50E-03
Gannett 3	2.50E-03	4.20E-01	3.82E-03	6.86E-03	2.57E-03	1.50E-03
Gannett 4	2.50E-03	4.20E-01	5.31E-03	1.00E-02	4.93E-03	1.50E-03
Gannett 5	2.50E-03	2.83E-01	1.41E-02	2.65E-02	1.09E-02	2.95E-03
Gannett 6	2.50E-03	7.66E-01	2.85E-02	5.77E-02	2.26E-02	6.34E-03
Gannett 7	2.50E-03	1.60E+00	3.18E-02	6.24E-02	2.59E-02	6.02E-03
Gannett 8	2.50E-03	1.52E+00	4.69E-02	8.95E-02	4.01E-02	7.28E-03
Gannett 9	2.50E-03	1.40E+00	5.33E-02	1.00E-01	4.29E-02	7.93E-03
Clear Creek	2.50E-03	1.96E+00	6.89E-02	7.70E-02	5.84E-02	1.36E-02
Dinwoody Field Blank 1	2.50E-03	5.00E-03	2.25E-04	5.00E-04	1.00E-03	1.50E-03
Gannett Field Blank 2	2.50E-03	5.00E-03	2.25E-04	5.00E-04	1.00E-03	1.50E-03
Dinwoody 15 10:00	2.50E-03	3.07E+00	4.14E-02	7.05E-02	4.37E-02	8.63E-03
Dinwoody 15 12:00	2.50E-03	2.39E+00	5.44E-02	9.34E-02	4.92E-02	9.84E-03
Dinwoody 15 14:00	2.50E-03	1.87E+00	3.48E-02	6.71E-02	3.60E-02	6.64E-03
Dinwoody 15 16:00	2.50E-03	2.19E+00	2.72E-02	5.28E-02	2.82E-02	6.10E-03
Dinwoody 15 18:00	2.50E-03	1.46E+00	2.84E-02	5.26E-02	2.46E-02	3.34E-03
Dinwoody 15 20:00	2.50E-03	2.23E+00	2.48E-02	4.62E-02	2.62E-02	5.44E-03
Dinwoody 15 22:00	2.50E-03	2.51E+00	3.40E-02	6.33E-02	3.33E-02	5.67E-03
Dinwoody 15 0:00	2.50E-03	2.99E+00	1.93E-01	3.36E-01	1.40E-01	2.23E-02
Dinwoody 15 2:00	2.50E-03	2.78E+00	2.86E-02	5.23E-02	3.19E-02	6.35E-03
Dinwoody 15 4:00	2.50E-03	2.94E+00	4.15E-02	7.35E-02	3.92E-02	7.15E-03
Dinwoody 15 6:00	2.50E-03	2.95E+00	3.52E-02	6.28E-02	3.86E-02	7.06E-03
Dinwoody 15 8:00	2.50E-03	2.86E+00	4.71E-02	8.08E-02	4.43E-02	7.67E-03
Dinwoody 15 11:00	-	-	-	-	-	-
Dinwoody 15 13:00	-	-	-	-	-	-
Dinwoody 15 15:00	-	-	-	-	-	-
Dinwoody 15 17:00	-	-	-	-	-	-
Dinwoody 15 19:00	-	-	-	-	-	-
Dinwoody 15 21:00	-	-	-	-	-	-
Dinwoody 15 23:00	-	-	-	-	-	-
Dinwoody 15 1:00	-	-	-	-	-	-
Dinwoody 15 3:00	-	-	-	-	-	-
Dinwoody 15 5:00	-	-	-	-	-	-
Dinwoody 15 7:00	-	-	-	-	-	-
Dinwoody 15 9:00	-	-	-	-	-	-
Dinwoody 15 Field Blank 3	2.50E-03	5.00E-03	5.87E-04	1.06E-03	1.00E-03	1.50E-03
Dinwoody 15 Field Blank 4	2.50E-03	5.00E-03	2.25E-04	5.00E-04	1.00E-03	1.50E-03

Table S1. cont…

Sample Name	Eu (µg/L)	Gd (µg/L)	Tb (µg/L)	Dy (µg/L)	Ho (µg/L)	Yb (µg/L)
Dinwoody 1	1.22E-03	4.51E-03	5.22E-04	3.19E-03	4.66E-04	1.59E-03
Dinwoody 2	5.44E-03	3.68E-02	3.53E-03	1.53E-02	2.57E-03	4.92E-03
Dinwoody 3	1.11E-03	3.01E-03	5.06E-04	2.18E-03	3.45E-04	1.14E-03
Dinwoody 4	9.90E-04	3.14E-03	3.83E-04	2.39E-03	3.13E-04	1.19E-03
Dinwoody 5	9.50E-04	4.38E-03	4.76E-04	2.55E-03	4.04E-04	1.62E-03
Dinwoody 6	9.44E-04	4.20E-03	4.20E-04	2.06E-03	4.73E-04	1.06E-03
Dinwoody 7	8.28E-04	5.04E-03	5.94E-04	2.32E-03	4.08E-04	1.10E-03
Dinwoody 8	9.97E-04	2.65E-03	4.98E-04	1.96E-03	4.74E-04	9.30E-04
Dinwoody 9	5.06E-04	1.50E-03	1.75E-04	1.69E-03	3.34E-04	5.00E-04
Dinwood 10	1.42E-03	9.36E-03	8.41E-04	3.13E-03	5.45E-04	1.15E-03
Dinwoody 11	1.31E-03	4.39E-03	5.39E-04	2.78E-03	6.07E-04	1.62E-03
Dinwoody 12	1.37E-03	4.87E-03	5.52E-04	2.06E-03	4.76E-04	1.69E-03
Dinwoody 13	1.76E-03	5.85E-03	5.65E-04	2.94E-03	6.10E-04	9.73E-04
Dinwoody 14	1.49E-03	5.30E-03	6.41E-04	2.62E-03	5.52E-04	1.99E-03
Dinwoody 15	1.40E-03	8.19E-03	8.48E-04	3.88E-03	8.01E-04	1.62E-03
Gannett 1	2.40E-04	1.50E-03	1.75E-04	1.34E-03	3.25E-04	5.00E-04
Gannett 2	5.60E-04	1.50E-03	1.75E-04	1.41E-03	1.55E-04	5.00E-04
Gannett 3	2.40E-04	1.50E-03	1.75E-04	5.00E-04	1.55E-04	5.00E-04
Gannett 4	2.40E-04	1.50E-03	1.75E-04	1.20E-03	3.66E-04	9.27E-04
Gannett 5	4.97E-04	1.50E-03	1.75E-04	1.21E-03	1.55E-04	5.00E-04
Gannett 6	9.34E-04	4.87E-03	5.83E-04	3.00E-03	3.51E-04	1.08E-03
Gannett 7	1.25E-03	5.98E-03	5.34E-04	3.21E-03	5.58E-04	1.05E-03
Gannett 8	1.39E-03	6.57E-03	7.36E-04	3.88E-03	7.62E-04	1.57E-03
Gannett 9	1.36E-03	6.41E-03	1.07E-03	3.59E-03	6.53E-04	2.09E-03
Clear Creek	1.94E-03	1.18E-02	1.29E-03	7.06E-03	1.35E-03	2.74E-03
Dinwoody Field Blank 1	2.40E-04	1.50E-03	1.75E-04	5.00E-04	1.55E-04	5.00E-04
Gannett Field Blank 2	2.40E-04	1.50E-03	1.75E-04	5.00E-04	1.55E-04	5.00E-04
Dinwoody 15 10:00	1.51E-03	8.26E-03	8.46E-04	4.40E-03	9.28E-04	1.99E-03
Dinwoody 15 12:00	1.67E-03	8.13E-03	9.40E-04	4.26E-03	9.60E-04	1.53E-03
Dinwoody 15 14:00	1.21E-03	6.53E-03	8.72E-04	3.59E-03	8.17E-04	1.36E-03
Dinwoody 15 16:00	1.22E-03	4.42E-03	7.49E-04	3.02E-03	6.15E-04	1.38E-03
Dinwoody 15 18:00	5.12E-04	2.88E-03	3.71E-04	1.66E-03	1.55E-04	5.00E-04
Dinwoody 15 20:00	1.14E-03	3.34E-03	5.34E-04	2.39E-03	6.40E-04	1.48E-03
Dinwoody 15 22:00	1.28E-03	5.87E-03	5.28E-04	3.38E-03	5.64E-04	1.20E-03
Dinwoody 15 0:00	3.20E-03	1.95E-02	1.93E-03	8.79E-03	1.67E-03	3.27E-03
Dinwoody 15 2:00	1.40E-03	5.60E-03	6.83E-04	3.13E-03	7.37E-04	1.49E-03
Dinwoody 15 4:00	1.47E-03	7.82E-03	8.29E-04	4.04E-03	6.43E-04	1.59E-03
Dinwoody 15 6:00	1.50E-03	6.30E-03	7.51E-04	3.60E-03	8.61E-04	1.53E-03
Dinwoody 15 8:00	1.40E-03	7.72E-03	7.86E-04	4.38E-03	8.25E-04	2.18E-03
Dinwoody 15 11:00	-	-	-	-	-	-
Dinwoody 15 13:00	-	-	-	-	-	-
Dinwoody 15 15:00	-	-	-	-	-	-

Dinwoody 15 17:00	-	-	-	-	-	-
Dinwoody 15 19:00	-	-	-	-	-	-
Dinwoody 15 21:00	-	-	-	-	-	-
Dinwoody 15 23:00	-	-	-	-	-	-
Dinwoody 15 1:00	-	-	-	-	-	-
Dinwoody 15 3:00	-	-	-	-	-	-
Dinwoody 15 5:00	-	-	-	-	-	-
Dinwoody 15 7:00	-	-	-	-	-	-
Dinwoody 15 9:00	-	-	-	-	-	-
Dinwoody 15 Field Blank 3	2.40E-04	1.50E-03	1.75E-04	5.00E-04	1.55E-04	5.00E-04
Dinwoody 15 Field Blank 4	2.40E-04	1.50E-03	1.75E-04	5.00E-04	1.55E-04	5.00E-04

Table S1. cont…

Sample Name	Lu (μg/L)	Tl (μg/L)	Pb (μg/L)	Th (μg/L)	U (μg/L)
Dinwoody 1	1.05E-04	7.61E-03	3.26E-01	2.08E-02	1.03E-01
Dinwoody 2	6.46E-04	2.45E-03	1.25E-01	1.57E-01	1.17E+00
Dinwoody 3	2.55E-04	7.02E-03	4.75E-01	2.04E-02	7.57E-02
Dinwoody 4	2.24E-04	5.08E-03	3.77E-01	8.77E-03	4.39E-02
Dinwoody 5	2.23E-04	4.97E-03	2.41E-01	1.72E-02	9.02E-02
Dinwoody 6	1.05E-04	2.14E-03	1.93E-02	1.04E-02	8.85E-02
Dinwoody 7	2.38E-04	2.09E-03	4.19E-02	1.32E-02	6.64E-02
Dinwoody 8	2.80E-04	2.96E-03	1.32E-01	8.26E-03	2.95E-02
Dinwoody 9	1.05E-04	1.95E-03	1.60E-01	5.36E-03	1.49E-02
Dinwood 10	1.05E-04	3.29E-03	1.89E-02	9.23E-03	1.69E-01
Dinwoody 11	2.95E-04	2.66E-03	9.93E-03	7.99E-03	1.85E-01
Dinwoody 12	1.05E-04	2.79E-03	1.22E-02	6.22E-03	2.28E-01
Dinwoody 13	2.57E-04	3.18E-03	6.47E-03	5.88E-03	2.73E-01
Dinwoody 14	2.23E-04	3.60E-03	3.97E-03	5.62E-03	2.97E-01
Dinwoody 15	2.41E-04	2.75E-03	1.09E-02	1.02E-02	2.21E-01
Gannett 1	2.13E-04	7.21E-04	1.63E-01	2.50E-03	2.35E-03
Gannett 2	1.05E-04	1.13E-03	1.76E-01	2.50E-03	3.11E-03
Gannett 3	1.05E-04	6.23E-04	1.28E-01	2.50E-03	2.99E-03
Gannett 4	1.05E-04	5.00E-04	8.96E-02	2.50E-03	3.26E-03
Gannett 5	1.05E-04	5.00E-04	2.07E-02	6.91E-03	2.18E-02
Gannett 6	2.17E-04	1.89E-03	6.02E-02	1.11E-02	6.98E-02
Gannett 7	1.05E-04	1.62E-03	1.78E-02	7.86E-03	7.70E-02
Gannett 8	1.05E-04	1.57E-03	2.71E-02	1.04E-02	8.85E-02
Gannett 9	2.87E-04	1.96E-03	2.62E-02	1.46E-02	9.51E-02
Clear Creek	4.08E-04	1.07E-03	1.08E-02	2.50E-03	1.01E-01
Dinwoody Field Blank 1	1.05E-04	5.00E-04	1.50E-03	2.50E-03	1.00E-03
Gannett Field Blank 2	1.05E-04	5.00E-04	1.50E-03	2.50E-03	1.00E-03
Dinwoody 15 10:00	3.47E-04	2.10E-03	8.52E-03	8.81E-03	2.16E-01
Dinwoody 15 12:00	3.37E-04	2.19E-03	1.60E-02	1.06E-02	1.71E-01

Dinwoody 15 14:00	2.50E-04	1.81E-03	1.10E-02	9.13E-03	1.51E-01
Dinwoody 15 16:00	2.57E-04	2.19E-03	1.01E-02	7.08E-03	1.63E-01
Dinwoody 15 18:00	1.05E-04	1.03E-03	9.29E-03	6.11E-03	1.13E-01
Dinwoody 15 20:00	2.91E-04	1.98E-03	8.45E-03	7.01E-03	1.54E-01
Dinwoody 15 22:00	2.17E-04	2.10E-03	1.12E-02	9.08E-03	1.71E-01
Dinwoody 15 0:00	5.69E-04	2.35E-03	6.15E-02	4.59E-02	1.90E-01
Dinwoody 15 2:00	2.97E-04	2.12E-03	8.40E-03	9.06E-03	1.83E-01
Dinwoody 15 4:00	2.96E-04	2.09E-03	1.82E-02	9.09E-03	1.92E-01
Dinwoody 15 6:00	3.18E-04	2.25E-03	8.71E-03	8.89E-03	1.90E-01
Dinwoody 15 8:00	2.84E-04	1.92E-03	6.40E-02	9.95E-03	2.02E-01
Dinwoody 15 11:00	-	-	-	-	-
Dinwoody 15 13:00	-	-	-	-	-
Dinwoody 15 15:00	-	-	-	-	-
Dinwoody 15 17:00	-	-	-	-	-
Dinwoody 15 19:00	-	-	-	-	-
Dinwoody 15 21:00	-	-	-	-	-
Dinwoody 15 23:00	-	-	-	-	-
Dinwoody 15 1:00	-	-	-	-	-
Dinwoody 15 3:00	-	-	-	-	-
Dinwoody 15 5:00	-	-	-	-	-
Dinwoody 15 7:00	-	-	-	-	-
Dinwoody 15 9:00	-	-	-	-	-
Dinwoody 15 Field Blank 3	1.05E-04	5.00E-04	7.18E-03	2.50E-03	1.00E-03
Dinwoody 15 Field Blank 4	1.05E-04	5.00E-04	1.50E-03	2.50E-03	1.00E-03

Table S2. Charge balance calculated for each sample. HCO^{3} concentrations set by charge balance

Sample Name	Lab ID	Na (mg/L)	Mg (mg/L)	K (mg/L)	Ca (mg/L)	HCO3 (mg/L)
Dinwoody 1	12188	0.015	0.030	0.058	0.189	0.430
Dinwoody 2	12189	0.694	0.262	0.779	2.730	10.050
Dinwoody 3	12190	0.015	0.024	0.049	0.156	0.347
Dinwoody 4	12191	0.015	0.018	0.033	0.111	0.209
Dinwoody 5	12192	0.015	0.021	0.048	0.126	0.256
Dinwoody 6	12193	0.035	0.049	0.093	0.509	1.721
Dinwoody 7	12194	0.015	0.036	0.072	0.287	0.913
Dinwoody 8	12195	0.033	0.012	0.044	0.069	0.285
Dinwoody 9	12196	0.015	0.011	0.021	0.058	0.118
Dinwood 10	12197	0.139	0.090	0.355	0.641	1.903
Dinwoody 11	12198	0.221	0.125	0.449	0.908	3.000
Dinwoody 12	12199	0.287	0.165	0.573	1.195	3.628
Dinwoody 13	12200	0.323	0.203	0.674	1.373	4.200
Dinwoody 14	12201	0.329	0.223	0.697	1.313	3.995
Dinwoody 15	12202	0.255	0.157	0.445	0.900	2.887

Gannett 1	12204	0.015	0.009	0.010	0.037	0.215
Gannett 2	12205	0.015	0.012	0.010	0.055	0.244
Gannett 3	12206	0.015	0.010	0.010	0.035	0.210
Gannett 4	12207	0.015	0.008	0.010	0.044	0.229
Gannett 5	12208	0.015	0.007	0.010	0.066	0.292
Gannett 6	12209	0.058	0.028	0.075	0.174	0.590
Gannett 7	12210	0.132	0.056	0.155	0.335	1.096
Gannett 8	12211	0.126	0.053	0.147	0.322	1.164
Gannett 9	12212	0.127	0.055	0.149	0.319	1.114
Clear Creek	12228	0.261	0.118	0.187	0.533	2.131
Dinwoody Field Blank 1	12203	0.015	0.001	0.010	0.007	0.079
Gannett Field Blank 2	12213	0.015	0.001	0.010	0.006	0.076
Dinwoody 15 10:00	12214	0.314	0.167	0.466	0.951	3.100
Dinwoody 15 12:00	12215	0.238	0.120	0.344	0.718	2.325
Dinwoody 15 14:00	12216	0.208	0.102	0.299	0.587	1.920
Dinwoody 15 16:00	12217	0.211	0.115	0.364	0.715	2.350
Dinwoody 15 18:00	12218	0.122	0.080	0.236	0.486	1.212
Dinwoody 15 20:00	12219	0.220	0.122	0.387	0.747	2.619
Dinwoody 15 22:00	12220	0.238	0.131	0.405	0.833	2.859
Dinwoody 15 0:00	12221	0.264	0.155	0.429	0.864	3.121
Dinwoody 15 2:00	12222	0.257	0.141	0.414	0.866	2.919
Dinwoody 15 4:00	12223	0.271	0.148	0.431	0.907	2.970
Dinwoody 15 6:00	12224	0.270	0.149	0.430	0.916	2.940
Dinwoody 15 8:00	12225	0.285	0.164	0.422	0.939	3.100
Dinwoody 15 Field Blank 3	12226	0.015	0.002	0.010	0.020	0.129
Dinwoody 15 Field Blank 4	12227	0.015	0.001	0.010	0.003	0.065

Table S2. cont…

Sample Name	F (mg/L)	Cl (mg/L)	NO3 (mg/L)	SO4 (mg/L)	Na (meq)	Mg (meq)
Dinwoody 1	0.000	0.035	0.100	0.208	0.00065	0.00244
Dinwoody 2	0.019	0.166	0.327	1.546	0.03021	0.02159
Dinwoody 3	0.000	0.023	0.091	0.185	0.00065	0.00195
Dinwoody 4	0.000	0.024	0.088	0.148	0.00065	0.00152
Dinwoody 5	0.000	0.025	0.087	0.173	0.00065	0.00173
Dinwoody 6	0.000	0.016	0.074	0.168	0.00152	0.00405
Dinwoody 7	0.000	0.023	0.069	0.144	0.00065	0.00293
Dinwoody 8	0.000	0.015		0.092	0.00141	0.00103
Dinwoody 9	0.000	0.027		0.108	0.00065	0.00088
Dinwood 10	0.000	0.098	0.219	0.816	0.00604	0.00738
Dinwoody 11	0.000	0.095	0.204	1.037	0.00961	0.01032
Dinwoody 12	0.011	0.112	0.260	1.580	0.01247	0.01361
Dinwoody 13	0.000	0.129	0.262	1.908	0.01404	0.01673
Dinwoody 14	0.000	0.149	0.269	2.023	0.01433	0.01835

Dinwoody 15	0.000	0.119	0.220	1.254	0.01108	0.01293
Gannett 1	0.000	0.000	0.000	0.000	0.00065	0.00078
Gannett 2	0.000	0.022	0.000	0.000	0.00065	0.00099
Gannett 3	0.000	0.000	0.000	0.000	0.00065	0.00078
Gannett 4	0.000	0.000	0.000	0.000	0.00065	0.00063
Gannett 5	0.000	0.000	0.000	0.000	0.00065	0.00059
Gannett 6	0.000	0.029	0.087	0.170	0.00252	0.0023
Gannett 7	0.000	0.061	0.143	0.433	0.00573	0.00462
Gannett 8	0.000	0.039	0.126	0.361	0.0055	0.00437
Gannett 9	0.000	0.060	0.132	0.371	0.00555	0.00449
Clear Creek	0.011	0.096	0.121	0.588	0.01137	0.0097
Dinwoody Field Blank 1	0.000	0.000	0.000	0.000	0.00065	0.00004
Gannett Field Blank 2	0.000	0.000	0.000	0.000	0.00065	0.00004
Dinwoody 15 10:00	0.000	0.110	0.167	1.447	0.01365	0.01376
Dinwoody 15 12:00	0.000	0.093	0.139	1.057	0.01037	0.00991
Dinwoody 15 14:00	0.000	0.093	0.122	0.877	0.00906	0.00837
Dinwoody 15 16:00	0.000	0.087	0.131	0.988	0.00916	0.0095
Dinwoody 15 18:00	0.000	0.072	0.115	0.884	0.0053	0.00662
Dinwoody 15 20:00	0.000	0.071	0.122	0.950	0.00955	0.01
Dinwoody 15 22:00	0.009	0.085	0.152	1.001	0.01035	0.01077
Dinwoody 15 0:00	0.000	0.077	0.166	1.071	0.01149	0.01277
Dinwoody 15 2:00	0.000	0.087	0.160	1.139	0.01117	0.01158
Dinwoody 15 4:00	0.011	0.113	0.169	1.203	0.01181	0.01217
Dinwoody 15 6:00	0.011	0.104	0.174	1.257	0.01176	0.01229
Dinwoody 15 8:00	0.012	0.099	0.169	1.279	0.01238	0.01352
Dinwoody 15 Field Blank 3	0.000	0.000	0.000	0.000	0.00065	0.0002
Dinwoody 15 Field Blank 4	0.000	0.000	0.000	0.000	0.00065	0.00004

Table S2. cont…

Sample Name	K (meq)	Ca (meq)	HCO3 (meq)	F (meq)	Cl (meq)	NO3 (meq)
Dinwoody 1	0.00148	0.00942	0.00705	0	0.001	0.00161
Dinwoody 2	0.01992	0.13625	0.16472	0.00099	0.00469	0.00527
Dinwoody 3	0.00125	0.00778	0.00569	0	0.00064	0.00146
Dinwoody 4	0.00086	0.00556	0.00343	0	0.00067	0.00141
Dinwoody 5	0.00123	0.00628	0.0042	0	0.0007	0.0014
Dinwoody 6	0.00238	0.02541	0.02821	0	0.00045	0.0012
Dinwoody 7	0.00183	0.0143	0.01496	0	0.00065	0.00111
Dinwoody 8	0.00112	0.00343	0.00466	0	0.00041	0
Dinwoody 9	0.00053	0.00288	0.00194	0	0.00075	0
Dinwood 10	0.00908	0.03197	0.03118	0	0.00275	0.00354
Dinwoody 11	0.01149	0.04529	0.04917	0	0.00267	0.00328
Dinwoody 12	0.01465	0.05964	0.05947	0.00057	0.00315	0.0042
Dinwoody 13	0.01724	0.06852	0.06884	0	0.00365	0.00423

Dinwoody 14	0.01784	0.06553	0.06548	0	0.00421	0.00433
Dinwoody 15	0.01138	0.04489	0.04732	0	0.00336	0.00354
Gannett 1	0.00026	0.00183	0.00352	0	0	0
Gannett 2	0.00026	0.00273	0.004	0	0.00063	0
Gannett 3	0.00026	0.00175	0.00344	0	0	0
Gannett 4	0.00026	0.00222	0.00376	0	0	0
Gannett 5	0.00026	0.00329	0.00479	0	0	0
Gannett 6	0.00191	0.00869	0.00967	0	0.00081	0.0014
Gannett 7	0.00397	0.0167	0.01796	0	0.00173	0.00231
Gannett 8	0.00377	0.01607	0.01907	0	0.00109	0.00203
Gannett 9	0.00382	0.01593	0.01826	0	0.0017	0.00213
Clear Creek	0.00478	0.0266	0.03492	0.0006	0.0027	0.00196
Dinwoody Field Blank 1	0.00026	0.00035	0.0013	0	0	0
Gannett Field Blank 2	0.00026	0.00029	0.00124	0	0	0
Dinwoody 15 10:00	0.01191	0.04747	0.05081	0	0.0031	0.00269
Dinwoody 15 12:00	0.00879	0.03583	0.0381	0	0.00261	0.00225
Dinwoody 15 14:00	0.00764	0.02931	0.03147	0	0.00263	0.00197
Dinwoody 15 16:00	0.00932	0.03567	0.03851	0	0.00244	0.00211
Dinwoody 15 18:00	0.00603	0.02423	0.01986	0	0.00202	0.00185
Dinwoody 15 20:00	0.00989	0.03726	0.04292	0	0.00199	0.00196
Dinwoody 15 22:00	0.01036	0.04158	0.04686	0.00049	0.0024	0.00245
Dinwoody 15 0:00	0.01098	0.04312	0.05115	0	0.00218	0.00268
Dinwoody 15 2:00	0.01058	0.04321	0.04784	0	0.00245	0.00257
Dinwoody 15 4:00	0.01102	0.04524	0.04868	0.00056	0.00317	0.00272
Dinwoody 15 6:00	0.011	0.04569	0.04819	0.00058	0.00293	0.0028
Dinwoody 15 8:00	0.01079	0.04686	0.05081	0.00062	0.00278	0.00272
Dinwoody 15 Field Blank 3	0.00026	0.00101	0.00212	0	0	0
Dinwoody 15 Field Blank 4	0.00026	0.00012	0.00107	0	0	0

Table S2. cont…

Sample Name	SO4 (meq)	sum cations (meq)	sum anions (meq)	percent error
Dinwoody 1	0.00434	0.01399	0.014	0
Dinwoody 2	0.03219	0.20797	0.20786	0
Dinwoody 3	0.00385	0.01163	0.01164	0
Dinwoody 4	0.00308	0.00859	0.00859	0
Dinwoody 5	0.00359	0.00989	0.00989	0
Dinwoody 6	0.00349	0.03336	0.03335	0
Dinwoody 7	0.00299	0.01971	0.01971	0
Dinwoody 8	0.00192	0.00699	0.00699	0
Dinwoody 9	0.00225	0.00494	0.00494	0
Dinwood 10	0.01699	0.05447	0.05446	0
Dinwoody 11	0.02158	0.07671	0.0767	0
Dinwoody 12	0.0329	0.10037	0.10029	0

Dinwoody 13	0.03973	0.11653	0.11645	0
Dinwoody 14	0.04213	0.11605	0.11615	0
Dinwoody 15	0.0261	0.08028	0.08032	0
Gannett 1	0	0.00352	0.00352	0
Gannett 2	0	0.00463	0.00463	0
Gannett 3	0	0.00344	0.00344	0
Gannett 4	0	0.00376	0.00376	0
Gannett 5	0	0.00479	0.00479	0
Gannett 6	0.00353	0.01542	0.01541	0
Gannett 7	0.00902	0.03102	0.03102	0
Gannett 8	0.00752	0.02971	0.02971	0
Gannett 9	0.00772	0.02979	0.02981	0
Clear Creek	0.01224	0.05245	0.05242	0
Dinwoody Field Blank 1	0	0.0013	0.0013	0
Gannett Field Blank 2	0	0.00124	0.00124	0
Dinwoody 15 10:00	0.03012	0.08679	0.08672	0
Dinwoody 15 12:00	0.022	0.0649	0.06496	0
Dinwoody 15 14:00	0.01827	0.05438	0.05434	0
Dinwoody 15 16:00	0.02056	0.06365	0.06362	0
Dinwoody 15 18:00	0.01841	0.04218	0.04214	0
Dinwoody 15 20:00	0.01977	0.0667	0.06664	0
Dinwoody 15 22:00	0.02083	0.07306	0.07303	0
Dinwoody 15 0:00	0.0223	0.07836	0.07831	0
Dinwoody 15 2:00	0.0237	0.07654	0.07656	0
Dinwoody 15 4:00	0.02504	0.08024	0.08017	0
Dinwoody 15 6:00	0.02618	0.08074	0.08068	0
Dinwoody 15 8:00	0.02664	0.08355	0.08357	0
Dinwoody 15 Field Blank 3	0	0.00212	0.00212	0
Dinwoody 15 Field Blank 4	0	0.00107	0.00107	0

Table S3. Log generalized data used in NMS ordination

Short ID	Group	Cond	pH	Turbidity	Cl	NO3	SO4	THg
D-1	1	0.460731	0.362571	0.311754	0.656098	0.477411	0.512606	0.824547
D-2	3	1.041393	0.466478	3.418025	1.246252	0.876795	1.248748	0.771717
D-3	1	0.324511	0.327502	0.308209	0.514548	0.448706	0.476965	0.733339
D-4	1	0.443697	0.308845	0.30103	0.52763	0.439648	0.41472	0.848732
D-5	1	0.477121	0.304654	0.721536	0.541579	0.437751	0.457574	0.733339
D-6	2	0.425969	0.35887	2.259674	0.414973	0.394802	0.449134	0.706567
D-7	2	0.425969	0.370396	1.612431	0.518514	0.376942	0.407056	0.656042
D-8	1	0.30103	0.304654	0.669007	0.392697	0.30103	0.30103	0.524663
D-9	1	0.30103	0.30103	0.520702	0.562293	0.30103	0.336009	0.46019
D-10	2	0.793946	0.382128	1.868056	1.031812	0.731266	0.992701	0.569924
D-11	3	0.90309	0.394041	2.621176	1.019532	0.705179	1.08706	0.589095

D-12	3	1.018885	0.407538	2.437486	1.084576	0.792532	1.257668	0.589095
D-13	3	1.08715	0.418783	2.347655	1.143951	0.795185	1.33551	0.711559
D-14	3	1.117639	0.421549	2.260469	1.201943	0.804139	1.359782	0.529219
D-15	4	0.959571	0.427936	2.2148	1.11059	0.731589	1.163438	0.4843
G-1	5	0.589826	0.362571	0.827154	0.30103	0.30103	0.318533	0.469389
G-2	5	0.589826	0.344842	1.136192	0.507856	0.30103	0.318533	0.421797
G-3	5	0.564271	0.350833	1.106078	0.30103	0.30103	0.318533	0.378612
G-4	5	0.564271	0.347575	0.997823	0.30103	0.30103	0.318533	0.361172
G-5	5	0.550907	0.338212	1.123307	0.30103	0.30103	0.318533	0.349335
G-6	6	0.658541	0.363097	2.163857	0.586587	0.437433	0.452795	0.402514
G-7	6	0.770033	0.375536	1.853394	0.85309	0.586812	0.755066	0.390727
G-8	6	0.761761	0.381624	1.835162	0.685742	0.546543	0.69081	0.354447
G-9	6	0.78612	0.372459	1.80956	0.846955	0.561578	0.700097	0.372695
D-15-1000	7	0.964836	0.425665	1.612077	1.079181	0.636688	1.221567	0.372695
D-15-1200	7	0.871832	0.416464	1.542203	1.010724	0.577951	1.094724	0.356701
D-15-1400	7	0.809185	0.411319	1.813914	1.014521	0.536558	1.020965	0.325854
D-15-1600	7	0.851937	0.411789	2.121888	0.984977	0.558228	1.067752	0.343003
D-15-1800	7	0.838149	0.410848	2.080687	0.91169	0.518251	1.024045	0.345892
D-15-2000	7	0.865301	0.411319	2.000579	0.906335	0.535547	1.052279	0.311754
D-15-2200	7	0.878266	0.413197	1.971585	0.978181	0.606166	1.072948	0.327659
D-15-0000	7	0.890856	0.415533	1.858036	0.941014	0.635283	1.100169	0.350476
D-15-0200	7	0.90908	0.416464	1.853495	0.985875	0.622421	1.124551	0.332438
D-15-0400	7	0.920819	0.417857	1.708563	1.088136	0.641276	1.146665	0.307999
D-15-0600	7	0.932248	0.418783	1.68738	1.05576	0.650502	1.164597	0.30103
D-15-0800	7	0.926571	0.421549	1.642629	1.03543	0.64068	1.171587	0.335989
CC	8	1.066947	0.400359	0.395035	1.024486	0.534787	0.866965	0.369434

Table S3. cont…

Short ID	MeHg	Li	Na	Mg	Al	K	Ca
D-1	0.742925	0.771613	0.30103	0.709728	0.639659	0.831877	0.805503
D-2	0.555302	1.471775	1.674832	1.574203	1.818224	1.896842	1.897406
D-3	0.682204	0.732825	0.30103	0.633528	0.609769	0.76862	0.736485
D-4	0.665875	0.540849	0.30103	0.552993	0.585164	0.638419	0.621131
D-5	0.646595	0.577795	0.30103	0.594017	0.584155	0.764536	0.661898
D-6	0.524162	0.558927	0.52249	0.894844	1.43906	1.01266	1.191387
D-7	0.532536	0.539469	0.30103	0.774987	0.692428	0.911411	0.963075
D-8	0.44972	0.527907	0.500807	0.436813	0.463988	0.729666	0.471511
D-9	0.525696	0.30103	0.30103	0.394938	0.4123	0.487346	0.423116
D-10	0.459642	0.92133	1.011311	1.1297	0.620965	1.56247	1.285365
D-11	0.45875	1.110425	1.19664	1.266164	0.646861	1.6621	1.430032
D-12	0.477121	1.177784	1.303583	1.380483	0.482565	1.765589	1.545646
D-13	0.42629	1.193302	1.352519	1.466878	0.472549	1.834924	1.604282
D-14	0.384897	1.205305	1.360884	1.505608	0.3697	1.849584	1.585403

D-15	0.415566	1.088425	1.25483	1.359307	0.547143	1.657995	1.426319
G-1	0.371996	0.30103	0.30103	0.364092	0.322383	0.30103	0.310714
G-2	0.394327	0.30103	0.30103	0.426786	0.314339	0.30103	0.40866
G-3	0.384897	0.30103	0.30103	0.366854	0.362748	0.30103	0.30103
G-4	0.369808	0.30103	0.30103	0.314234	0.30103	0.30103	0.356025
G-5	0.336779	0.30103	0.30103	0.30103	0.501114	0.30103	0.459764
G-6	0.467595	0.760409	0.6863	0.68983	0.68145	0.92698	0.776104
G-7	0.448807	0.807957	0.990344	0.945555	0.552255	1.217685	1.023448
G-8	0.419496	0.814427	0.9744	0.924019	0.656821	1.196545	1.008293
G-9	0.4116	0.802365	0.9777	0.934009	0.654185	1.20264	1.005012
D-15-1000	0.342656	1.02882	1.340908	1.385177	0.530455	1.677342	1.44968
D-15-1200	0.381708	0.943288	1.227831	1.24958	0.610681	1.548413	1.332482
D-15-1400	0.395363	0.924157	1.172645	1.180748	0.484597	1.489757	1.249673
D-15-1600	0.36761	0.983356	1.177204	1.232381	0.491537	1.573098	1.330672
D-15-1800	0.348455	0.820466	0.959814	1.086066	0.538743	1.390522	1.172184
D-15-2000	0.336779	0.989792	1.194292	1.253373	0.487071	1.598569	1.348699
D-15-2200	0.341487	1.008856	1.22703	1.283828	0.592061	1.617857	1.394343
D-15-0000	0.333215	1.08279	1.269783	1.354181	1.316416	1.642571	1.409511
D-15-0200	0.328416	1.001158	1.258305	1.313683	0.463972	1.627012	1.410317
D-15-0400	0.306139	1.028816	1.280984	1.33431	0.572482	1.644151	1.429486
D-15-0600	0.390161	1.013317	1.279296	1.338264	0.509818	1.643418	1.433676
D-15-0800	0.316181	1.022893	1.300426	1.377852	0.603254	1.63513	1.444275
CC	0.30103	0.944876	1.265454	1.240793	0.521457	1.294172	1.210002

Table S3. cont…

Short ID	Ti	V	Cr	Mn	Fe	Co	Ni
D-1	0.56331	1.045099	0.557879	1.621644	0.778904	0.966934	1.30903
D-2	1.858475	2.495813	1.729433	1.095724	1.950126	0.955758	1.797263
D-3	0.542799	0.882227	0.713708	1.594224	0.788619	0.965199	1.371499
D-4	0.507762	0.920988	0.484033	1.431213	0.776275	0.901542	1.608179
D-5	0.540529	0.976407	0.415686	1.483738	0.879482	0.911392	1.519776
D-6	0.501242	1.472744	0.612461	1.433665	0.623306	0.623862	1.457148
D-7	0.684043	1.427917	0.712617	1.396523	0.836264	0.812074	1.418632
D-8	0.540549	0.80979	0.756862	1.140198	0.632161	0.756789	1.492866
D-9	0.30103	0.860875	0.386808	1.201198	0.601936	0.678396	1.14403
D-10	0.684651	1.352691	0.529189	1.123954	0.682452	0.717062	1.809371
D-11	0.746054	1.752342	0.744665	1.175728	0.773985	0.544637	1.625436
D-12	0.64905	1.682829	0.761226	1.095291	0.543898	0.568928	1.722243
D-13	0.660502	1.690308	0.730687	0.863085	0.489217	0.30103	1.71141
D-14	0.551512	1.680264	0.71906	0.799584	0.30103	0.30103	1.6944
D-15	0.683156	1.580918	0.812331	0.910413	0.655069	0.30103	1.531522
G-1	0.30103	0.851142	0.520513	1.293979	0.426422	0.636079	0.78979
G-2	0.30103	0.998374	0.587151	1.161449	0.395358	0.567193	0.790974

G-3	0.30103	0.879115	0.625974	1.247876	0.52232	0.5948	0.707411
G-4	0.30103	0.30103	0.543687	1.28509	0.348011	0.56493	0.30103
G-5	0.30103	0.727529	0.555693	0.943305	0.518248	0.30103	0.30103
G-6	0.653825	1.216928	0.583883	1.287172	0.648646	0.640368	1.011059
G-7	0.615911	1.322953	0.30103	1.133565	0.528032	0.30103	0.893655
G-8	0.705365	1.289693	0.497158	1.12967	0.677859	0.55305	0.982889
G-9	0.657317	1.314585	0.494525	1.116639	0.676794	0.30103	0.915856
D-15-1000	0.6609	1.524803	0.692264	0.595637	0.552107	0.30103	1.488244
D-15-1200	0.687458	1.452274	0.703127	0.769122	0.687909	0.30103	1.294587
D-15-1400	0.556624	1.538729	0.599955	0.881149	0.498317	0.30103	1.208244
D-15-1600	0.581647	1.529202	0.752181	0.889329	0.534375	0.30103	1.323104
D-15-1800	0.542367	1.432571	0.487866	0.715576	0.639225	0.30103	1.174721
D-15-2000	0.561528	1.519722	0.525759	0.721095	0.52737	0.30103	1.393052
D-15-2200	0.704814	1.498929	0.86228	0.75152	0.710449	0.30103	1.428958
D-15-0000	1.375745	1.635191	1.156125	0.820946	1.487573	0.570364	1.598212
D-15-0200	0.570282	1.472713	0.674177	0.690173	0.517676	0.30103	1.453058
D-15-0400	0.645985	1.438123	0.757142	0.713424	0.643876	0.30103	1.497648
D-15-0600	0.636153	1.429429	0.657815	0.653464	0.541652	0.30103	1.482419
D-15-0800	0.783221	1.443161	0.702786	0.661431	0.665332	0.30103	2.196465
CC	0.635069	1.512178	0.615023	0.30103	0.516329	0.30103	1.020651

Table S3. cont…

Short ID	Cu	Zn	As	Se	Rb	Sr	Y
D-1	1.015259	0.902187	0.922949	0.836527	1.380874	0.806278	0.701247
D-2	1.029684	0.85971	1.069999	1.264656	1.413659	1.718928	1.439772
D-3	0.908637	0.991309	0.947219	0.87744	1.314746	0.716626	0.638059
D-4	0.947222	0.911643	0.826164	0.788362	1.172596	0.600508	0.547447
D-5	0.870832	0.882468	0.815437	0.69911	1.181675	0.666866	0.569853
D-6	0.929312	0.601962	0.770166	0.728978	1.140431	0.925344	0.660321
D-7	0.639695	0.877846	0.784548	0.686454	1.104101	0.783304	0.673061
D-8	0.676551	0.800718	0.607235	0.613723	1.016333	0.427321	0.478745
D-9	0.85936	0.738553	0.55979	0.607672	0.818622	0.417759	0.391956
D-10	0.765381	0.450413	0.702747	0.875258	1.545685	1.224193	0.81156
D-11	0.690844	0.30103	0.728524	0.9249	1.515936	1.356441	0.740665
D-12	0.879738	0.682394	0.711626	1.001336	1.614473	1.465839	0.722858
D-13	0.463782	0.485813	0.728115	1.091683	1.683732	1.524326	0.781185
D-14	0.746594	0.455704	0.719283	1.006483	1.731993	1.543917	0.86734
D-15	0.863713	0.622635	0.758818	0.964288	1.547935	1.412052	0.932415
G-1	0.473165	0.983332	0.711951	0.532433	0.320811	0.30103	0.346477
G-2	1.041032	0.742403	0.713909	0.61314	0.425394	0.403649	0.459506
G-3	0.650909	1.078188	0.683998	0.30103	0.388421	0.339108	0.30103
G-4	0.923723	0.785737	0.45278	0.30103	0.30103	0.33751	0.373139
G-5	0.607107	0.848234	0.30103	0.30103	0.469192	0.38718	0.330039

G-6	0.863925	0.69741	0.720391	0.625555	1.008372	0.740089	0.631327
G-7	0.859648	0.379982	0.695811	0.775077	1.175822	1.084511	0.732833
G-8	0.444938	0.571504	0.729187	0.793854	1.175256	1.047885	0.810306
G-9	0.766778	0.455882	0.743196	0.756926	1.167999	1.035618	0.833118
D-15-1000	0.623653	0.651145	0.67515	0.946603	1.512284	1.441111	0.978622
D-15-1200	0.940893	0.591077	0.721613	0.865088	1.433826	1.316833	0.957032
D-15-1400	0.332785	1.025961	0.740996	0.884462	1.384579	1.25046	0.88475
D-15-1600	0.784715	0.481284	0.760835	0.839278	1.441391	1.297527	0.815869
D-15-1800	0.445953	0.420434	0.571249	0.30103	1.268306	1.139599	0.684357
D-15-2000	1.007491	0.427593	0.643694	0.871499	1.441052	1.317806	0.764241
D-15-2200	0.493027	0.793728	0.677665	0.892486	1.457112	1.345062	0.821883
D-15-0000	1.160582	0.857288	0.724303	0.901007	1.5037	1.38195	1.218221
D-15-0200	0.791307	0.54477	0.709795	0.866897	1.467699	1.37611	0.848986
D-15-0400	0.348461	0.682897	0.738802	0.82224	1.486499	1.395201	0.920846
D-15-0600	0.30103	0.410549	0.672502	1.024467	1.487543	1.403173	0.887428
D-15-0800	0.39013	1.207445	0.683976	0.938605	1.475095	1.40254	0.969878
CC	0.747045	0.75171	0.881623	0.959538	1.099644	1.280191	1.153169

Table S3. cont…

Short ID	Mo	Cd	Sb	Ba	La	Ce	Nd
D-1	0.30103	0.917488	0.58283	0.945033	0.727111	0.769986	0.906367
D-2	1.594092	0.30103	0.829324	1.17493	2.062089	2.062465	2.049358
D-3	0.30103	0.961309	0.588098	0.908573	0.626976	0.703641	0.838006
D-4	0.30103	0.776963	0.563181	0.803213	0.582617	0.660484	0.764726
D-5	0.30103	0.761113	0.555104	0.856485	0.733986	0.754004	0.897967
D-6	0.787461	0.30103	0.553849	0.666466	0.792876	0.84712	0.949685
D-7	0.707908	0.481509	0.52598	0.697052	1.048037	1.007252	1.075217
D-8	0.472134	0.510836	0.49632	0.522563	0.642916	0.638693	0.726565
D-9	0.545818	0.584477	0.483986	0.526956	0.401142	0.440498	0.438351
D-10	1.535284	0.448162	0.578613	0.974882	1.245904	1.188914	1.26945
D-11	1.5337	0.30103	0.651574	0.967974	1.026686	1.05571	1.123917
D-12	1.716626	0.30103	0.691043	1.091166	0.866823	0.939055	1.088855
D-13	1.794947	0.30103	0.713857	1.141456	0.929319	0.967406	1.134976
D-14	1.813002	0.30103	0.727914	1.158377	0.919853	0.979704	1.190009
D-15	1.607455	0.30103	0.697587	1.063418	1.041405	1.080617	1.223178
G-1	0.30103	0.596458	0.451832	0.373116	0.336354	0.36317	0.421132
G-2	0.30103	0.6696	0.517801	0.424925	0.458032	0.492118	0.54773
G-3	0.30103	0.518614	0.508091	0.394878	0.30103	0.30103	0.30103
G-4	0.30103	0.498287	0.4117	0.394549	0.378721	0.391549	0.465412
G-5	0.30103	0.30103	0.30103	0.30103	0.672118	0.686842	0.720815
G-6	0.796922	0.550167	0.555489	0.568589	0.928511	0.973627	0.991004
G-7	0.984739	0.30103	0.620489	0.822014	0.969722	1.003689	1.045686
G-8	0.967629	0.30103	0.644099	0.802556	1.123889	1.14732	1.220522

G-9	1.005315	0.30103	0.595824	0.772715	1.175527	1.192342	1.24854
D-15-1000	1.688831	0.30103	0.684464	1.072589	1.073461	1.052085	1.255773
D-15-1200	1.534511	0.30103	0.66057	0.974458	1.183788	1.164708	1.304584
D-15-1400	1.459604	0.30103	0.599353	0.881008	1.005075	1.032507	1.176679
D-15-1600	1.528191	0.30103	0.621818	0.940545	0.909388	0.939206	1.0783
D-15-1800	1.333399	0.30103	0.436542	0.789337	0.927151	0.937856	1.024462
D-15-2000	1.520579	0.30103	0.628244	0.947156	0.875528	0.88833	1.049543
D-15-2200	1.555472	0.30103	0.65244	0.99348	0.995818	1.009469	1.145264
D-15-0000	1.583247	0.30103	0.758519	1.06228	1.712047	1.699038	1.743755
D-15-0200	1.593826	0.30103	0.646307	1.033656	0.92949	0.935699	1.127908
D-15-0400	1.607049	0.30103	0.646301	1.055409	1.074642	1.068384	1.21101
D-15-0600	1.61059	0.30103	0.699588	1.057528	1.009117	1.00609	1.205554
D-15-0800	1.630476	0.30103	0.65202	1.04529	1.125404	1.106086	1.261149
CC	1.186389	0.30103	0.736311	0.898082	1.280286	1.086812	1.375513

Table S3. cont…

Short ID	Sm	Eu	Gd	Tb	Dy	Ho
D-1	0.623723	0.783687	0.602753	0.609352	0.867496	0.613617
D-2	1.475037	1.374111	1.40677	1.337757	1.500659	1.258663
D-3	0.562812	0.751422	0.478548	0.599756	0.729604	0.518485
D-4	0.494531	0.709724	0.490536	0.512623	0.762661	0.489389
D-5	0.545798	0.695309	0.593085	0.579719	0.78499	0.567382
D-6	0.649498	0.692979	0.579704	0.540037	0.709278	0.618682
D-7	0.615104	0.648412	0.639695	0.652464	0.751569	0.570551
D-8	0.491367	0.712325	0.442141	0.594584	0.692835	0.6192
D-9	0.540713	0.492468	0.30103	0.30103	0.641741	0.508737
D-10	0.888978	0.840613	0.859721	0.774148	0.860617	0.665644
D-11	0.696171	0.809376	0.593745	0.620099	0.817287	0.703257
D-12	0.666604	0.826803	0.628157	0.627827	0.708653	0.620724
D-13	0.666575	0.920815	0.690388	0.635653	0.837264	0.704487
D-14	0.737522	0.857769	0.656288	0.678574	0.795163	0.670105
D-15	0.802512	0.835775	0.810201	0.777245	0.942993	0.80199
G-1	0.30103	0.30103	0.30103	0.30103	0.566396	0.500634
G-2	0.30103	0.522785	0.30103	0.30103	0.582303	0.30103
G-3	0.30103	0.30103	0.30103	0.30103	0.30103	0.30103
G-4	0.30103	0.30103	0.30103	0.30103	0.531875	0.53695
G-5	0.472493	0.487044	0.30103	0.30103	0.533687	0.30103
G-6	0.71807	0.689309	0.627852	0.64655	0.845049	0.523891
G-7	0.6999	0.793767	0.697614	0.617217	0.870454	0.67416
G-8	0.767505	0.832638	0.730632	0.726828	0.942789	0.783836
G-9	0.798331	0.824569	0.722173	0.863225	0.912694	0.72843
D-15-1000	0.829583	0.863149	0.813214	0.776328	0.991029	0.856469
D-15-1200	0.878688	0.90167	0.807446	0.814941	0.978345	0.869073

D-15-1400	0.734372	0.781212	0.728832	0.787548	0.912374	0.809549
D-15-1600	0.704966	0.783533	0.595993	0.732851	0.847737	0.707528
D-15-1800	0.508846	0.496257	0.465391	0.502845	0.634903	0.30103
D-15-2000	0.664964	0.760046	0.508434	0.617254	0.762005	0.721283
D-15-2200	0.679338	0.801306	0.691304	0.613488	0.889895	0.677797
D-15-0000	1.201219	1.155927	1.147025	1.091192	1.268966	1.08415
D-15-0200	0.718678	0.833687	0.675424	0.700259	0.861481	0.77203
D-15-0400	0.760915	0.852725	0.793147	0.769077	0.957852	0.722979
D-15-0600	0.756269	0.861085	0.715745	0.733989	0.914288	0.828765
D-15-0800	0.786073	0.834266	0.788772	0.749947	0.989676	0.813043
CC	1.003765	0.958589	0.948411	0.934708	1.179402	1.000528

Table S3. cont…

Short ID	Yb	Lu	Tl	Pb	Th	U
D-1	0.620991	0.30103	1.209856	1.920038	0.969231	1.649817
D-2	1.034717	0.872889	0.770863	1.509756	1.804104	2.699732
D-3	0.515872	0.550746	1.177479	2.081328	0.960985	1.521126
D-4	0.530007	0.510288	1.047316	1.981908	0.654048	1.293622
D-5	0.626931	0.508997	1.039343	1.79048	0.895601	1.595495
D-6	0.493544	0.30103	0.723034	0.767751	0.713332	1.587506
D-7	0.504372	0.52876	0.715086	1.062138	0.798006	1.466475
D-8	0.45641	0.580201	0.840558	1.533389	0.633943	1.132082
D-9	0.30103	0.30103	0.689513	1.616838	0.49754	0.865922
D-10	0.519692	0.30103	0.87924	0.759742	0.671408	1.863749
D-11	0.628277	0.597046	0.800931	0.543957	0.622643	1.901562
D-12	0.640966	0.30103	0.817891	0.608436	0.542396	1.991639
D-13	0.469282	0.552923	0.866721	0.419798	0.525111	2.068288
D-14	0.696673	0.508818	0.913578	0.30103	0.511603	2.10578
D-15	0.627964	0.533145	0.813578	0.573529	0.707534	1.977964
G-1	0.30103	0.495009	0.387842	1.623605	0.30103	0.30103
G-2	0.30103	0.30103	0.512018	1.656502	0.30103	0.366044
G-3	0.30103	0.30103	0.351311	1.522583	0.30103	0.356177
G-4	0.455515	0.30103	0.30103	1.371975	0.30103	0.378183
G-5	0.30103	0.30103	0.30103	0.792875	0.575485	1.012071
G-6	0.499339	0.501732	0.679524	1.208571	0.734004	1.487162
G-7	0.492011	0.30103	0.62638	0.73865	0.617542	1.528485
G-8	0.617459	0.30103	0.616028	0.893059	0.713485	1.587423
G-9	0.714765	0.587671	0.691915	0.880716	0.834429	1.617571
D-15-1000	0.697293	0.64985	0.715581	0.497563	0.655506	1.968667
D-15-1200	0.608754	0.640505	0.731091	0.701489	0.719438	1.867281
D-15-1400	0.57122	0.543516	0.663843	0.577201	0.667677	1.814202
D-15-1600	0.574847	0.552323	0.730593	0.549784	0.583322	1.846452
D-15-1800	0.30103	0.30103	0.484568	0.523617	0.536861	1.689247

D-15-2000	0.597667	0.592147	0.696112	0.495245	0.580263	1.824187
D-15-2200	0.530968	0.500424	0.715821	0.581368	0.665583	1.867964
D-15-0000	0.877061	0.825148	0.756534	1.216881	1.286475	1.913286
D-15-0200	0.599859	0.598869	0.719483	0.493523	0.664866	1.895979
D-15-0400	0.621913	0.598185	0.713512	0.747257	0.666226	1.917244
D-15-0600	0.608486	0.620803	0.74001	0.504129	0.658728	1.913529
D-15-0800	0.729828	0.58486	0.685316	1.233315	0.697138	1.938395
CC	0.811834	0.706233	0.496021	0.571544	0.30103	1.641567

Table S4. Logger data from HOBO conductivity/pressure loggers and YSI handheld

Gannett Creek Logger				Clear Creek Logger			
Date/Time	Temp (oC)	SPC (µS/cm)	Relative Depth	Date/Time	Temp (oC)	SPC (µS/cm)	Relative Depth
8/27/2015 14:30	1.86	5.2	0.85	8/27/2015 14:45	8.99	9.4	0.64
8/27/2015 14:45	2.12	5.3	0.82	8/27/2015 15:00	8.88	9.1	0.66
8/27/2015 15:00	2.89	4.7	0.73	8/27/2015 15:15	8.86	9	0.68
8/27/2015 15:15	3.19	4.8	0.72	8/27/2015 15:30	8.88	9.3	0.71
8/27/2015 15:30	3.27	5	0.70	8/27/2015 15:45	8.92	9.7	0.82
8/27/2015 15:45	3.27	4.8	0.65	8/27/2015 16:00	8.88	9.4	0.90
8/27/2015 16:00	3.21	5	0.65	8/27/2015 16:15	8.73	9.7	0.91
8/27/2015 16:15	3.15	5	0.61	8/27/2015 16:30	8.74	9.9	0.93
8/27/2015 16:30	3.39	4.9	0.66	8/27/2015 16:45	8.91	10.1	0.91
8/27/2015 16:45	3.58	5.1	0.58	8/27/2015 17:00	8.94	9.8	0.89
8/27/2015 17:00	3.48	5.1	0.58	8/27/2015 17:15	8.91	10.4	0.89
8/27/2015 17:15	3.42	5.1	0.59	8/27/2015 17:30	8.92	11.1	0.83
8/27/2015 17:30	3.47	5.1	0.58	8/27/2015 17:45	8.91	10.8	0.89
8/27/2015 17:45	3.42	5.1	0.62	8/27/2015 18:00	8.82	10.9	0.85
8/27/2015 18:00	3.33	5.1	0.60	8/27/2015 18:15	8.78	9.9	0.84
8/27/2015 18:15	3.23	5.1	0.55	8/27/2015 18:30	8.69	10	0.89
8/27/2015 18:30	3.17	5.2	0.58	8/27/2015 18:45	8.59	10.1	0.87
8/27/2015 18:45	3.13	5.2	0.54	8/27/2015 19:00	8.53	9.9	0.83
8/27/2015 19:00	3.09	5.2	0.56	8/27/2015 19:15	8.49	10.2	0.87
8/27/2015 19:15	3.10	5.2	0.53	8/27/2015 19:30	8.45	10.5	0.83
8/27/2015 19:30	3.14	5.2	0.57	8/27/2015 19:45	8.38	11.7	0.82
8/27/2015 19:45	3.10	5.2	0.51	8/27/2015 20:00	8.31	11.9	0.86
8/27/2015 20:00	3.17	5.2	0.54	8/27/2015 20:15	8.18	12.1	0.85
8/27/2015 20:15	3.19	5.2	0.49	8/27/2015 20:30	7.95	12.4	0.91
8/27/2015 20:30	2.97	5.2	0.54	8/27/2015 20:45	7.72	12.2	0.87
8/27/2015 20:45	2.90	5.6	0.54	8/27/2015 21:00	7.61	12.7	0.86
8/27/2015 21:00	2.89	5.6	0.57	8/27/2015 21:15	7.56	12.4	0.89
8/27/2015 21:15	2.92	5.6	0.54	8/27/2015 21:30	7.56	12.6	0.91
8/27/2015 21:30	2.98	5.6	0.55	8/27/2015 21:45	7.52	11.5	0.96
8/27/2015 21:45	2.99	5.6	0.55	8/27/2015 22:00	7.44	11.3	0.96

8/27/2015 22:00	2.94	5.4	0.53	8/27/2015 22:15	7.37	11.4	1.00
8/27/2015 22:15	2.83	5.6	0.48	8/27/2015 22:30	7.32	11	0.94
8/27/2015 22:30	2.76	5.6	0.47	8/27/2015 22:45	7.29	11.3	0.92
8/27/2015 22:45	2.74	5.6	0.45	8/27/2015 23:00	7.28	11.3	0.93
8/27/2015 23:00	2.70	5.6	0.49	8/27/2015 23:15	7.25	11.3	0.90
8/27/2015 23:15	2.66	5.6	0.45	8/27/2015 23:30	7.24	12.1	0.88
8/27/2015 23:30	2.64	5.8	0.42	8/27/2015 23:45	7.16	12.2	0.89
8/27/2015 23:45	2.60	5.8	0.43	8/28/2015 0:00	7.08	10.6	0.89
8/28/2015 0:00	2.61	5.8	0.41	8/28/2015 0:15	7.02	10.5	0.86
8/28/2015 0:15	2.65	6	0.39	8/28/2015 0:30	6.98	10.3	0.84
8/28/2015 0:30	2.66	5.8	0.42	8/28/2015 0:45	6.92	10.3	0.81
8/28/2015 0:45	2.65	6	0.37	8/28/2015 1:00	6.86	9.9	0.80
8/28/2015 1:00	2.65	6.2	0.37	8/28/2015 1:15	6.80	9.9	0.79
8/28/2015 1:15	2.66	5.8	0.34	8/28/2015 1:30	6.73	9.9	0.79
8/28/2015 1:30	2.66	6.2	0.33	8/28/2015 1:45	6.67	10	0.78
8/28/2015 1:45	2.66	6	0.33	8/28/2015 2:00	6.60	9.8	0.78
8/28/2015 2:00	2.65	6.2	0.30	8/28/2015 2:15	6.57	10	0.78
8/28/2015 2:15	2.63	6.2	0.33	8/28/2015 2:30	6.52	10.1	0.75
8/28/2015 2:30	2.64	6.2	0.31	8/28/2015 2:45	6.45	10.2	0.75
8/28/2015 2:45	2.61	6.2	0.29	8/28/2015 3:00	6.37	10	0.74
8/28/2015 3:00	2.60	6.2	0.29	8/28/2015 3:15	6.29	10.2	0.70
8/28/2015 3:15	2.59	6.2	0.28	8/28/2015 3:30	6.25	10.1	0.72
8/28/2015 3:30	2.56	6.2	0.29	8/28/2015 3:45	6.20	9.9	0.69
8/28/2015 3:45	2.54	6.4	0.27	8/28/2015 4:00	6.13	10.1	0.71
8/28/2015 4:00	2.54	6.4	0.26	8/28/2015 4:15	6.08	9.8	0.72
8/28/2015 4:15	2.52	6.4	0.26	8/28/2015 4:30	6.03	9.8	0.68
8/28/2015 4:30	2.51	6.4	0.26	8/28/2015 4:45	5.99	10	0.70
8/28/2015 4:45	2.51	6.4	0.24	8/28/2015 5:00	5.96	9.8	0.68
8/28/2015 5:00	2.51	6.4	0.24	8/28/2015 5:15	5.92	9.8	0.68
8/28/2015 5:15	2.49	6.6	0.24	8/28/2015 5:30	5.91	9.8	0.63
8/28/2015 5:30	2.47	6.6	0.25	8/28/2015 5:45	5.88	9.9	0.67
8/28/2015 5:45	2.46	6.6	0.23	8/28/2015 6:00	5.87	9.9	0.67
8/28/2015 6:00	2.45	6.6	0.22	8/28/2015 6:15	5.83	9.9	0.62
8/28/2015 6:15	2.44	6.6	0.24	8/28/2015 6:30	5.77	9.9	0.61
8/28/2015 6:30	2.40	6.6	0.20	8/28/2015 6:45	5.72	9.9	0.62
8/28/2015 6:45	2.37	6.6	0.21	8/28/2015 7:00	5.67	9.9	0.61
8/28/2015 7:00	2.35	6.6	0.22	8/28/2015 7:15	5.63	9.9	0.60
8/28/2015 7:15	2.34	6.6	0.19	8/28/2015 7:30	5.60	9.9	0.58
8/28/2015 7:30	2.30	6.6	0.23	8/28/2015 7:45	5.59	9.6	0.60
8/28/2015 7:45	2.32	6.6	0.18	8/28/2015 8:00	5.63	9.8	0.59
8/28/2015 8:00	2.34	6.6	0.17	8/28/2015 8:15	5.69	9.6	0.57
8/28/2015 8:15	2.49	6.6	0.20	8/28/2015 8:30	5.84	9.5	0.54
8/28/2015 8:30	2.64	6.5	0.16	8/28/2015 8:45	6.08	9.6	0.53
8/28/2015 8:45	2.78	6.6	0.17	8/28/2015 9:00	6.27	9.4	0.51

8/28/2015 9:00	2.97	6.6	0.18	8/28/2015 9:15	6.57	9.4	0.52
8/28/2015 9:15	3.21	6.5	0.17	8/28/2015 9:30	6.93	9.4	0.50
8/28/2015 9:30	3.50	6.6	0.17	8/28/2015 9:45	7.29	9.5	0.47
8/28/2015 9:45	3.79	6.5	0.16	8/28/2015 10:00	7.61	9.4	0.47
8/28/2015 10:00	4.13	6.6	0.15	8/28/2015 10:15	7.97	9.3	0.45
8/28/2015 10:15	4.49	6.5	0.15	8/28/2015 10:30	8.35	9.4	0.46
8/28/2015 10:30	4.81	6.4	0.20	8/28/2015 10:45	8.74	9.4	0.44
8/28/2015 10:45	5.10	6.1	0.24	8/28/2015 11:00	9.10	9.4	0.45
8/28/2015 11:00	5.30	5.8	0.33	8/28/2015 11:15	9.43	9.4	0.46
8/28/2015 11:15	5.35	5.8	0.36	8/28/2015 11:30	9.72	9.5	0.43
8/28/2015 11:30	5.32	5.4	0.38	8/28/2015 11:45	9.96	9.6	0.43
8/28/2015 11:45	5.24	5.3	0.46	8/28/2015 12:00	10.20	9.8	0.38
8/28/2015 12:00	5.11	5.3	0.51	8/28/2015 12:15	10.43	9.6	0.44
8/28/2015 12:15	5.03	5.2	0.57	8/28/2015 12:30	10.59	9.7	0.42
8/28/2015 12:30	4.97	5	0.59	8/28/2015 12:45	10.72	9.5	0.41
8/28/2015 12:45	4.84	4.9	0.69	8/28/2015 13:00	10.85	9.5	0.43
8/28/2015 13:00	4.78	4.9	0.69	8/28/2015 13:15	10.97	9.6	0.45
8/28/2015 13:15	4.73	4.8	0.74	8/28/2015 13:30	11.05	9.6	0.44
8/28/2015 13:30	4.69	4.6	0.74	8/28/2015 13:45	11.13	9.6	0.46
8/28/2015 13:45	4.66	4.8	0.84	8/28/2015 14:00	11.20	9.6	0.46
8/28/2015 14:00	4.63	4.6	0.86	8/28/2015 14:15	11.14	9.6	0.50
8/28/2015 14:15	4.59	4.7	0.87	8/28/2015 14:30	11.16	9.7	0.50
8/28/2015 14:30	4.63	4.6	0.89	8/28/2015 14:45	11.12	9.7	0.50
8/28/2015 14:45	4.59	4.5	0.92	8/28/2015 15:00	11.13	9.6	0.52
8/28/2015 15:00	4.54	4.5	0.95	8/28/2015 15:15	11.10	9.7	0.55
8/28/2015 15:15	4.47	4.5	0.92	8/28/2015 15:30	11.02	9.8	0.56
8/28/2015 15:30	4.40	4.4	0.95	8/28/2015 15:45	10.89	9.8	0.57
8/28/2015 15:45	4.05	4.4	0.94	8/28/2015 16:00	10.57	9.9	0.61
8/28/2015 16:00	3.66	4.5	0.98	8/28/2015 16:15	10.15	10	0.64
8/28/2015 16:15	3.51	4.6	0.94	8/28/2015 16:30	9.84	9.9	0.66
8/28/2015 16:30	3.50	4.7	0.92	8/28/2015 16:45	9.66	10.1	0.68
8/28/2015 16:45	3.46	4.6	0.92	8/28/2015 17:00	9.47	10.3	0.69
8/28/2015 17:00	3.46	4.6	0.82	8/28/2015 17:15	9.36	10.7	0.67
8/28/2015 17:15	3.52	4.6	0.81	8/28/2015 17:30	9.24	10.7	0.71
8/28/2015 17:30	3.68	4.5	0.78	8/28/2015 17:45	9.16	10.8	0.69
8/28/2015 17:45	3.76	4.7	0.75	8/28/2015 18:00	9.07	10.7	0.68
8/28/2015 18:00	3.70	4.5	0.71	8/28/2015 18:15	8.94	10.8	0.69
8/28/2015 18:15	3.57	4.6	0.69	8/28/2015 18:30	8.80	10.4	0.70
8/28/2015 18:30	3.43	4.8	0.67	8/28/2015 18:45	8.73	10.7	0.72
8/28/2015 18:45	3.32	4.8	0.67	8/28/2015 19:00	8.66	10.8	0.71
8/28/2015 19:00	3.26	5	0.63	8/28/2015 19:15	8.59	11.2	0.71
8/28/2015 19:15	3.21	4.8	0.60	8/28/2015 19:30	8.57	11.1	0.72
8/28/2015 19:30	3.15	4.8	0.58	8/28/2015 19:45	8.47	11	0.70
8/28/2015 19:45	3.12	5	0.56	8/28/2015 20:00	8.38	11.1	0.70

8/28/2015 20:00	3.08	5	0.52
8/28/2015 20:15	3.04	5.2	0.54
8/28/2015 20:30	3.03	5.2	0.49
8/28/2015 20:45	3.03	5.2	0.47
8/28/2015 21:00	3.03	5.2	0.45
8/28/2015 21:15	3.02	5.2	0.47
8/28/2015 21:30	3.03	5.2	0.42
8/28/2015 21:45	3.02	5.4	0.43
8/28/2015 22:00	2.99	5.6	0.39
8/28/2015 22:15	2.98	5.4	0.39
8/28/2015 22:30	2.95	5.2	0.36
8/28/2015 22:45	2.94	5.6	0.37
8/28/2015 23:00	2.93	5.6	0.34
8/28/2015 23:15	2.93	5.6	0.36
8/28/2015 23:30	2.93	5.6	0.31
8/28/2015 23:45	2.93	5.6	0.32
8/29/2015 0:00	2.90	5.6	0.33
8/29/2015 0:15	2.89	5.6	0.31
8/29/2015 0:30	2.89	5.7	0.30
8/29/2015 0:45	2.88	5.8	0.31
8/29/2015 1:00	2.88	5.8	0.27
8/29/2015 1:15	2.86	5.8	0.28
8/29/2015 1:30	2.86	5.8	0.28
8/29/2015 1:45	2.85	5.9	0.28
8/29/2015 2:00	2.85	5.9	0.25
8/29/2015 2:15	2.83	6.1	0.24
8/29/2015 2:30	2.80	5.9	0.26
8/29/2015 2:45	2.79	6	0.24
8/29/2015 3:00	2.76	6.1	0.25
8/29/2015 3:15	2.78	6.1	0.22
8/29/2015 3:30	2.78	6.1	0.21
8/29/2015 3:45	2.75	6.1	0.23
8/29/2015 4:00	2.73	6.1	0.22
8/29/2015 4:15	2.71	6.3	0.22
8/29/2015 4:30	2.71	6.1	0.22
8/29/2015 4:45	2.71	6.1	0.22
8/29/2015 5:00	2.69	6.2	0.21
8/29/2015 5:15	2.68	6.2	0.22
8/29/2015 5:30	2.68	6.3	0.21
8/29/2015 5:45	2.68	6.3	0.20
8/29/2015 6:00	2.66	6.3	0.20
8/29/2015 6:15	2.64	6.5	0.21
8/29/2015 6:30	2.63	6.3	0.21
8/29/2015 6:45	2.63	6.3	0.20
8/28/2015 20:15	8.29	11.3	0.74
8/28/2015 20:30	8.22	10.9	0.71
8/28/2015 20:45	8.17	10.6	0.72
8/28/2015 21:00	8.10	10.3	0.70
8/28/2015 21:15	8.06	10.3	0.69
8/28/2015 21:30	8.01	10.4	0.68
8/28/2015 21:45	7.95	10.2	0.68
8/28/2015 22:00	7.90	10.4	0.66
8/28/2015 22:15	7.83	10.4	0.67
8/28/2015 22:30	7.78	10.3	0.66
8/28/2015 22:45	7.73	10.1	0.64
8/28/2015 23:00	7.69	10.1	0.61
8/28/2015 23:15	7.65	10.1	0.64
8/28/2015 23:30	7.60	10.2	0.64
8/28/2015 23:45	7.56	10	0.68
8/29/2015 0:00	7.52	10	0.61
8/29/2015 0:15	7.48	10	0.59
8/29/2015 0:30	7.42	9.9	0.59
8/29/2015 0:45	7.41	10.1	0.60
8/29/2015 1:00	7.40	9.9	0.58
8/29/2015 1:15	7.36	10.1	0.57
8/29/2015 1:30	7.33	9.9	0.55
8/29/2015 1:45	7.29	10.1	0.54
8/29/2015 2:00	7.25	10	0.53
8/29/2015 2:15	7.20	10	0.51
8/29/2015 2:30	7.14	9.8	0.51
8/29/2015 2:45	7.12	10	0.48
8/29/2015 3:00	7.08	10	0.48
8/29/2015 3:15	7.00	10	0.48
8/29/2015 3:30	6.94	9.9	0.48
8/29/2015 3:45	6.90	9.9	0.46
8/29/2015 4:00	6.88	9.9	0.46
8/29/2015 4:15	6.86	9.9	0.51
8/29/2015 4:30	6.84	10.1	0.49
8/29/2015 4:45	6.81	10.1	0.46
8/29/2015 5:00	6.80	10.1	0.46
8/29/2015 5:15	6.77	10.2	0.47
8/29/2015 5:30	6.73	10.1	0.47
8/29/2015 5:45	6.70	10.3	0.46
8/29/2015 6:00	6.67	10.4	0.41
8/29/2015 6:15	6.63	10.4	0.42
8/29/2015 6:30	6.59	10.6	0.43
8/29/2015 6:45	6.55	10.8	0.42
8/29/2015 7:00	6.55	10.4	0.40

8/29/2015 7:00	2.63	6.3	0.18	8/29/2015 7:15	6.56	10.4	0.44
8/29/2015 7:15	2.64	6.5	0.18	8/29/2015 7:30	6.56	10.3	0.39
8/29/2015 7:30	2.69	6.5	0.17	8/29/2015 7:45	6.57	10	0.38
8/29/2015 7:45	2.75	6.5	0.16	8/29/2015 8:00	6.59	10.4	0.42
8/29/2015 8:00	2.81	6.5	0.16	8/29/2015 8:15	6.63	10.3	0.38
8/29/2015 8:15	2.99	6.4	0.17	8/29/2015 8:30	6.73	10.2	0.38
8/29/2015 8:30	3.33	6.3	0.17	8/29/2015 8:45	7.14	10.3	0.34
8/29/2015 8:45	3.65	6.2	0.16	8/29/2015 9:00	7.45	10.2	0.31
8/29/2015 9:00	3.97	6.1	0.16	8/29/2015 9:15	7.77	10.1	0.31
8/29/2015 9:15	4.25	6.2	0.17	8/29/2015 9:30	8.10	10.2	0.29
8/29/2015 9:30	4.55	6.1	0.18	8/29/2015 9:45	8.46	10.2	0.29
8/29/2015 9:45	4.84	6.1	0.23	8/29/2015 10:00	8.80	10.4	0.27
8/29/2015 10:00	5.11	5.8	0.25	8/29/2015 10:15	9.16	10.3	0.28
8/29/2015 10:15	5.32	5.6	0.35	8/29/2015 10:30	9.51	10.5	0.27
8/29/2015 10:30	5.41	5.3	0.43	8/29/2015 10:45	9.88	10.4	0.24
8/29/2015 10:45	5.30	5	0.49	8/29/2015 11:00	10.15	10.5	0.24
8/29/2015 11:00	5.11	5	0.56	8/29/2015 11:15	10.47	10.8	0.25
8/29/2015 11:15	5.01	4.9	0.60	8/29/2015 11:30	10.75	10.9	0.27
8/29/2015 11:30	4.87	4.7	0.66	8/29/2015 11:45	11.01	11.1	0.27
8/29/2015 11:45	4.83	4.8	0.75	8/29/2015 12:00	11.28	11	0.25
8/29/2015 12:00	4.78	4.6	0.79	8/29/2015 12:15	11.50	11.3	0.29
8/29/2015 12:15	4.74	4.6	0.82	8/29/2015 12:30	11.65	11.2	0.28
8/29/2015 12:30	4.66	4.5	0.89	8/29/2015 12:45	11.77	11.2	0.30
8/29/2015 12:45	4.57	4.5	0.96	8/29/2015 13:00	11.82	11.2	0.32
8/29/2015 13:00	4.52	4.5	0.92	8/29/2015 13:15	11.86	10.9	0.36
8/29/2015 13:15	4.45	4.4	0.89	8/29/2015 13:30	11.85	11	0.38
8/29/2015 13:30	4.43	4.4	0.86	8/29/2015 13:45	11.82	10.5	0.42
8/29/2015 13:45	4.34	4.4	0.94	8/29/2015 14:00	11.77	10.1	0.42
8/29/2015 14:00	4.33	4.2	0.91	8/29/2015 14:15	11.72	10	0.43
8/29/2015 14:15	4.38	4.4	0.86	8/29/2015 14:30	11.69	10	0.46
8/29/2015 14:30	4.38	4.4	0.89	8/29/2015 14:45	11.66	9.9	0.52
8/29/2015 14:45	4.25	4.4	0.88	8/29/2015 15:00	11.56	9.8	0.51
8/29/2015 15:00	4.15	4.1	0.98	8/29/2015 15:15	11.41	9.9	0.56
8/29/2015 15:15	4.06	4.3	0.97	8/29/2015 15:30	11.26	10	0.59
8/29/2015 15:30	4.05	4.3	0.95	8/29/2015 15:45	11.13	10	0.59
8/29/2015 15:45	3.86	4.2	0.91	8/29/2015 16:00	10.96	10.2	0.61
8/29/2015 16:00	3.84	4.5	0.92	8/29/2015 16:15	10.82	10.2	0.62
8/29/2015 16:15	3.85	4.3	0.96	8/29/2015 16:30	10.64	10.4	0.61
8/29/2015 16:30	3.80	4.2	0.90	8/29/2015 16:45	10.49	10.4	0.64
8/29/2015 16:45	3.72	4.4	0.89	8/29/2015 17:00	10.36	10.6	0.62
8/29/2015 17:00	3.70	4.4	0.90	8/29/2015 17:15	10.25	10.5	0.63
8/29/2015 17:15	3.77	4.3	0.86	8/29/2015 17:30	10.20	10.5	0.65
8/29/2015 17:30	3.75	4.3	0.81	8/29/2015 17:45	10.12	10.8	0.65
8/29/2015 17:45	3.67	4.5	0.86	8/29/2015 18:00	10.01	10.7	0.66

8/29/2015 18:00	3.62	4.4	0.77	8/29/2015 18:15	9.91	11.1	0.61
8/29/2015 18:15	3.65	4.5	0.78	8/29/2015 18:30	9.79	11	0.64
8/29/2015 18:30	3.52	4.6	0.76	8/29/2015 18:45	9.71	11.3	0.68
8/29/2015 18:45	3.43	4.6	0.74	8/29/2015 19:00	9.64	10.8	0.64
8/29/2015 19:00	3.38	4.4	0.74	8/29/2015 19:15	9.52	10.7	0.70
8/29/2015 19:15	3.36	4.6	0.67	8/29/2015 19:30	9.44	10.6	0.69
8/29/2015 19:30	3.41	4.6	0.66	8/29/2015 19:45	9.36	10.7	0.71
8/29/2015 19:45	3.39	4.6	0.67	8/29/2015 20:00	9.30	10.7	0.71
8/29/2015 20:00	3.36	4.6	0.63	8/29/2015 20:15	9.22	10.8	0.71
8/29/2015 20:15	3.36	4.6	0.62	8/29/2015 20:30	9.16	10.8	0.69
8/29/2015 20:30	3.33	4.8	0.63	8/29/2015 20:45	9.12	11.5	0.68
8/29/2015 20:45	3.32	4.6	0.64	8/29/2015 21:00	9.08	11.8	0.68
8/29/2015 21:00	3.29	4.6	0.58	8/29/2015 21:15	9.07	12.4	0.68
8/29/2015 21:15	3.27	4.8	0.54	8/29/2015 21:30	9.04	12.2	0.71
8/29/2015 21:30	3.24	4.8	0.56	8/29/2015 21:45	9.03	11.8	0.69
8/29/2015 21:45	3.29	4.8	0.55	8/29/2015 22:00	8.99	11.8	0.66
8/29/2015 22:00	3.29	4.6	0.49	8/29/2015 22:15	8.92	11.7	0.68
8/29/2015 22:15	3.31	4.6	0.49	8/29/2015 22:30	8.86	12.1	0.68
8/29/2015 22:30	3.26	4.6	0.53	8/29/2015 22:45	8.80	12	0.65
8/29/2015 22:45	3.21	4.8	0.46	8/29/2015 23:00	8.74	11.3	0.68
8/29/2015 23:00	3.22	5	0.47	8/29/2015 23:15	8.67	10.2	0.68
8/29/2015 23:15	3.19	4.8	0.50	8/29/2015 23:30	8.61	10.3	0.69
8/29/2015 23:30	3.21	4.8	0.46	8/29/2015 23:45	8.57	10.2	0.68
8/29/2015 23:45	3.24	4.8	0.44	8/30/2015 0:00	8.55	10.5	0.67
8/30/2015 0:00	3.28	4.8	0.44	8/30/2015 0:15	8.53	10.4	0.68
8/30/2015 0:15	3.29	5	0.45	8/30/2015 0:30	8.47	10.5	0.68
8/30/2015 0:30	3.27	5	0.46	8/30/2015 0:45	8.42	10.5	0.68
8/30/2015 0:45	3.29	5	0.44	8/30/2015 1:00	8.35	10.6	0.65
8/30/2015 1:00	3.31	4.6	0.45	8/30/2015 1:15	8.30	10.3	0.64
8/30/2015 1:15	3.28	5	0.45	8/30/2015 1:30	8.25	10.3	0.63
8/30/2015 1:30	3.28	5	0.43	8/30/2015 1:45	8.22	10.3	0.65
8/30/2015 1:45	3.29	5	0.44	8/30/2015 2:00	8.23	10.1	0.59
8/30/2015 2:00	3.36	4.9	0.42	8/30/2015 2:15	8.27	10.3	0.64
8/30/2015 2:15	3.41	4.9	0.45	8/30/2015 2:30	8.29	10.3	0.64
8/30/2015 2:30	3.42	5.1	0.50	8/30/2015 2:45	8.27	10.3	0.61
8/30/2015 2:45	3.38	4.9	0.47	8/30/2015 3:00	8.26	10.3	0.65
8/30/2015 3:00	3.37	4.8	0.52	8/30/2015 3:15	8.22	10.3	0.60
8/30/2015 3:15	3.34	4.8	0.48	8/30/2015 3:30	8.18	10.5	0.61
8/30/2015 3:30	3.27	4.8	0.48	8/30/2015 3:45	8.13	10.5	0.63
8/30/2015 3:45	3.14	5	0.49	8/30/2015 4:00	8.09	10.3	0.62
8/30/2015 4:00	3.09	4.8	0.51	8/30/2015 4:15	8.05	10.2	0.59
8/30/2015 4:15	3.09	4.8	0.50	8/30/2015 4:30	8.02	10.2	0.58
8/30/2015 4:30	3.13	4.7	0.46	8/30/2015 4:45	7.99	10.2	0.56
8/30/2015 4:45	3.17	4.6	0.46	8/30/2015 5:00	7.98	10.2	0.58

8/30/2015 5:00	3.15	5	0.47	8/30/2015 5:15	7.94	10.2	0.52
8/30/2015 5:15	3.19	5	0.48	8/30/2015 5:30	7.89	10.1	0.51
8/30/2015 5:30	3.18	5	0.46	8/30/2015 5:45	7.82	10.3	0.49
8/30/2015 5:45	3.13	5	0.44	8/30/2015 6:00	7.75	10.4	0.53
8/30/2015 6:00	3.08	5	0.45	8/30/2015 6:15	7.70	10.3	0.55
8/30/2015 6:15	3.02	5	0.45	8/30/2015 6:30	7.65	10.3	0.56
8/30/2015 6:30	2.99	5.2	0.45	8/30/2015 6:45	7.61	10.2	0.50
8/30/2015 6:45	3.00	5	0.41	8/30/2015 7:00	7.58	10.3	0.53
8/30/2015 7:00	3.00	5.2	0.41	8/30/2015 7:15	7.56	10.3	0.54
8/30/2015 7:15	3.00	5.2	0.40	8/30/2015 7:30	7.53	10.5	0.50
8/30/2015 7:30	2.97	5.2	0.36	8/30/2015 7:45	7.52	10.5	0.54
8/30/2015 7:45	2.95	5.2	0.39	8/30/2015 8:00	7.53	10.5	0.50
8/30/2015 8:00	3.02	5.2	0.37	8/30/2015 8:15	7.58	10.3	0.50
8/30/2015 8:15	3.53	5.1	0.36	8/30/2015 8:30	7.78	10.1	0.49
8/30/2015 8:30	3.97	5	0.37	8/30/2015 8:45	8.19	10	0.46
8/30/2015 8:45	4.31	4.9	0.43	8/30/2015 9:00	8.59	10.1	0.46
8/30/2015 9:00	4.45	4.8	0.51	8/30/2015 9:15	8.92	10.1	0.48
8/30/2015 9:15	4.30	4.7	0.53	8/30/2015 9:30	9.18	10.1	0.45
8/30/2015 9:30	4.09	4.6	0.57	8/30/2015 9:45	9.35	10.6	0.41
8/30/2015 9:45	3.99	4.5	0.62	8/30/2015 10:00	9.58	10.7	0.39
8/30/2015 10:00	4.09	4.4	0.60	8/30/2015 10:15	9.68	10.8	0.42
8/30/2015 10:15	4.05	4.4	0.64	8/30/2015 10:30	9.87	10.9	0.39
8/30/2015 10:30	4.09	4.6	0.67	8/30/2015 10:45	10.11	10.7	0.42
8/30/2015 10:45	4.28	4.4	0.67	8/30/2015 11:00	10.45	10.9	0.42
8/30/2015 11:00	4.53	4.3	0.65	8/30/2015 11:15	10.75	10.8	0.41
8/30/2015 11:15	4.57	4.3	0.73	8/30/2015 11:30	10.90	10.5	0.42
8/30/2015 11:30	4.39	4.4	0.81	8/30/2015 11:45	10.98	10.7	0.45
8/30/2015 11:45	4.24	4.4	0.84	8/30/2015 12:00	11.09	10.4	0.46
8/30/2015 12:00	4.34	4.4	0.85	8/30/2015 12:15	11.10	10	0.49
8/30/2015 12:15	4.30	4.4	0.90	8/30/2015 12:30	11.13	10.4	0.47
8/30/2015 12:30	4.35	4.4	0.90	8/30/2015 12:45	11.21	10.1	0.57
8/30/2015 12:45	4.38	4.2	0.96	8/30/2015 13:00	11.26	10.1	0.48
8/30/2015 13:00	4.21	4.4	0.91	8/30/2015 13:15	11.18	9.9	0.55
8/30/2015 13:15	4.08	4.3	0.89	8/30/2015 13:30	11.00	9.8	0.56
8/30/2015 13:30	3.92	4.5	0.90	8/30/2015 13:45	10.72	9.8	0.55
8/30/2015 13:45	3.68	4.4	0.92	8/30/2015 14:00	10.39	10	0.64
8/30/2015 14:00	3.53	4.4	0.90	8/30/2015 14:15	10.24	10.1	0.65
8/30/2015 14:15	3.92	4.1	0.87	8/30/2015 14:30	10.44	10.4	0.67
8/30/2015 14:30	4.02	4.3	0.86	8/30/2015 14:45	10.39	10.3	0.64
8/30/2015 14:45	3.80	4.5	0.85	8/30/2015 15:00	10.15	10.2	0.64
8/30/2015 15:00	3.62	4.4	0.83	8/30/2015 15:15	9.93	10.3	0.62
8/30/2015 15:15	3.53	4.4	0.82	8/30/2015 15:30	9.70	10.2	0.65
8/30/2015 15:30	3.46	4.4	0.81	8/30/2015 15:45	9.54	10.2	0.69
8/30/2015 15:45	3.47	4.6	0.76	8/30/2015 16:00	9.38	10.9	0.71

8/30/2015 16:00	3.44	4.6	0.79	8/30/2015 16:15	9.22	10.8	0.69
8/30/2015 16:15	3.37	4.4	0.76	8/30/2015 16:30	9.06	11.5	0.69
8/30/2015 16:30	3.29	4.6	0.73	8/30/2015 16:45	9.02	11.8	0.70
8/30/2015 16:45	3.31	4.4	0.70	8/30/2015 17:00	9.02	12	0.70
8/30/2015 17:00	3.37	4.4	0.67	8/30/2015 17:15	9.06	11.7	0.69
8/30/2015 17:15	3.51	4.6	0.67	8/30/2015 17:30	9.03	12	0.71
8/30/2015 17:30	3.57	4.6	0.62	8/30/2015 17:45	8.98	11.8	0.74
8/30/2015 17:45	3.57	4.6	0.61	8/30/2015 18:00	8.91	11.7	0.76
8/30/2015 18:00	3.51	4.4	0.61	8/30/2015 18:15	8.78	11.7	0.75
8/30/2015 18:15	3.43	4.6	0.58	8/30/2015 18:30	8.67	11.9	0.77
8/30/2015 18:30	3.37	4.6	0.58	8/30/2015 18:45	8.61	11.8	0.78
8/30/2015 18:45	3.33	4.6	0.56	8/30/2015 19:00	8.55	11.4	0.75
8/30/2015 19:00	3.36	4.6	0.50	8/30/2015 19:15	8.53	10.9	0.75
8/30/2015 19:15	3.34	4.6	0.53	8/30/2015 19:30	8.46	11	0.78
8/30/2015 19:30	3.29	4.6	0.51	8/30/2015 19:45	8.41	10.7	0.76
8/30/2015 19:45	3.26	4.6	0.50	8/30/2015 20:00	8.35	10.7	0.77
8/30/2015 20:00	3.23	4.6	0.47	8/30/2015 20:15	8.26	11	0.80
8/30/2015 20:15	3.23	4.6	0.49	8/30/2015 20:30	8.25	11	0.78
8/30/2015 20:30	3.24	4.6	0.45	8/30/2015 20:45	8.22	10.7	0.76
8/30/2015 20:45	3.27	4.6	0.45	8/30/2015 21:00	8.21	10.9	0.77
8/30/2015 21:00	3.27	4.8	0.43	8/30/2015 21:15	8.18	10.7	0.76
8/30/2015 21:15	3.24	4.8	0.42	8/30/2015 21:30	8.09	10.5	0.73
8/30/2015 21:30	3.22	4.8	0.41	8/30/2015 21:45	8.02	10.5	0.73
8/30/2015 21:45	3.19	5	0.41	8/30/2015 22:00	7.94	10.7	0.71
8/30/2015 22:00	3.15	4.8	0.39	8/30/2015 22:15	7.85	10.8	0.72
8/30/2015 22:15	3.12	4.8	0.38	8/30/2015 22:30	7.75	10.9	0.72
8/30/2015 22:30	3.10	5	0.33	8/30/2015 22:45	7.65	10.9	0.71
8/30/2015 22:45	3.08	5	0.35	8/30/2015 23:00	7.54	10.9	0.69
8/30/2015 23:00	3.04	4.7	0.33	8/30/2015 23:15	7.38	11	0.75
8/30/2015 23:15	2.98	5.2	0.31	8/30/2015 23:30	7.25	11.2	0.72
8/30/2015 23:30	2.92	5.2	0.30	8/30/2015 23:45	7.16	11	0.73
8/30/2015 23:45	2.88	5.2	0.29	8/31/2015 0:00	7.09	10.8	0.72
8/31/2015 0:00	2.86	5.2	0.30	8/31/2015 0:15	7.02	10.5	0.67
8/31/2015 0:15	2.85	5.2	0.26	8/31/2015 0:30	6.94	10.5	0.73
8/31/2015 0:30	2.83	5.2	0.25	8/31/2015 0:45	6.86	10.7	0.71
8/31/2015 0:45	2.79	5.3	0.25	8/31/2015 1:00	6.78	10.4	0.68
8/31/2015 1:00	2.76	5.3	0.22	8/31/2015 1:15	6.70	10.6	0.71
8/31/2015 1:15	2.75	5.4	0.26	8/31/2015 1:30	6.64	10.4	0.71
8/31/2015 1:30	2.74	5.4	0.23	8/31/2015 1:45	6.57	10.6	0.68
8/31/2015 1:45	2.73	5.4	0.20	8/31/2015 2:00	6.51	10.6	0.65
8/31/2015 2:00	2.75	5.6	0.19	8/31/2015 2:15	6.48	10.5	0.65
8/31/2015 2:15	2.75	5.6	0.20	8/31/2015 2:30	6.44	10.5	0.68
8/31/2015 2:30	2.76	5.6	0.18	8/31/2015 2:45	6.35	10.7	0.64
8/31/2015 2:45	2.73	5.6	0.18	8/31/2015 3:00	6.24	10.7	0.66

8/31/2015 3:00	2.66	5.6	0.18	8/31/2015 3:15	6.08	11	0.95
8/31/2015 3:15	2.63	5.6	0.19	8/31/2015 3:30	5.96	11.1	0.93
8/31/2015 3:30	2.56	5.7	0.16	8/31/2015 3:45	5.87	11.1	0.89
8/31/2015 3:45	2.50	5.7	0.15	8/31/2015 4:00	5.68	11.5	0.85
8/31/2015 4:00	2.41	5.7	0.15	8/31/2015 4:15	5.54	11.5	0.82
8/31/2015 4:15	2.31	5.7	0.14	8/31/2015 4:30	5.40	11.7	0.79
8/31/2015 4:30	2.23	5.8	0.14	8/31/2015 4:45	5.26	11.6	0.73
8/31/2015 4:45	2.16	5.8	0.13	8/31/2015 5:00	5.14	11.7	0.68
8/31/2015 5:00	2.06	5.8	0.13	8/31/2015 5:15	4.99	11.5	0.67
8/31/2015 5:15	1.97	5.8	0.12	8/31/2015 5:30	4.83	11.4	0.70
8/31/2015 5:30	1.89	5.9	0.13	8/31/2015 5:45	4.68	11.5	0.63
8/31/2015 5:45	1.83	6.2	0.12	8/31/2015 6:00	4.58	11.5	0.58
8/31/2015 6:00	1.77	6.3	0.10	8/31/2015 6:15	4.49	11.6	0.59
8/31/2015 6:15	1.70	6.1	0.11	8/31/2015 6:30	4.41	11.6	0.56
8/31/2015 6:30	1.65	6.1	0.10	8/31/2015 6:45	4.33	12.3	0.55
8/31/2015 6:45	1.62	6.3	0.09	8/31/2015 7:00	4.27	12.1	0.51
8/31/2015 7:00	1.59	6.3	0.09	8/31/2015 7:15	4.19	12	0.51
8/31/2015 7:15	1.57	6.3	0.08	8/31/2015 7:30	4.13	11.8	0.54
8/31/2015 7:30	1.55	6.3	0.10	8/31/2015 7:45	4.07	11.7	0.51
8/31/2015 7:45	1.54	6.3	0.10	8/31/2015 8:00	4.06	11.7	0.46
8/31/2015 8:00	1.53	6.5	0.08	8/31/2015 8:15	4.03	11.9	0.52
8/31/2015 8:15	1.60	6.5	0.10	8/31/2015 8:30	4.05	11.7	0.50
8/31/2015 8:30	1.83	6.4	0.10	8/31/2015 8:45	4.30	11.6	0.44
8/31/2015 8:45	2.07	6.5	0.09	8/31/2015 9:00	4.62	11.5	0.46
8/31/2015 9:00	2.32	6.3	0.08	8/31/2015 9:15	4.94	11.6	0.41
8/31/2015 9:15	2.56	6.2	0.07	8/31/2015 9:30	5.32	11.6	0.36
8/31/2015 9:30	2.83	6.3	0.06	8/31/2015 9:45	5.69	11.6	0.33
8/31/2015 9:45	3.10	6.2	0.06	8/31/2015 10:00	6.12	11.7	0.34
8/31/2015 10:00	3.39	6.1	0.05	8/31/2015 10:15	6.55	11.5	0.30
8/31/2015 10:15	3.66	6	0.07	8/31/2015 10:30	6.94	11.7	0.29
8/31/2015 10:30	3.99	6	0.09	8/31/2015 10:45	7.34	12	0.32
8/31/2015 10:45	4.42	5.8	0.14	8/31/2015 11:00	7.68	11.8	0.31
8/31/2015 11:00	4.81	5.6	0.20	8/31/2015 11:15	8.03	11.7	0.31
8/31/2015 11:15	4.91	5.1	0.26	8/31/2015 11:30	8.35	11.7	0.26
8/31/2015 11:30	4.88	5.1	0.36	8/31/2015 11:45	8.61	12.1	0.29
8/31/2015 11:45	4.76	4.9	0.42	8/31/2015 12:00	8.80	11.9	0.30
8/31/2015 12:00	4.57	4.8	0.47	8/31/2015 12:15	8.95	12	0.31
8/31/2015 12:15	4.40	4.9	0.53	8/31/2015 12:30	9.06	12.1	0.31
8/31/2015 12:30	4.29	4.9	0.55	8/31/2015 12:45	9.08	12.1	0.25
8/31/2015 12:45	4.21	4.6	0.60	8/31/2015 13:00	9.12	12.2	0.25
8/31/2015 13:00	4.16	4.6	0.62	8/31/2015 13:15	9.18	12.2	0.25
8/31/2015 13:15	4.13	4.8	0.63	8/31/2015 13:30	9.20	12.2	0.29
8/31/2015 13:30	4.08	4.6	0.68	8/31/2015 13:45	9.23	12.2	0.23
8/31/2015 13:45	4.04	4.6	0.70	8/31/2015 14:00	9.23	12.5	0.29

8/31/2015 14:00	4.02	4.5	0.69	8/31/2015 14:15	9.23	12.5	0.22
8/31/2015 14:15	4.00	4.5	0.66	8/31/2015 14:30	9.23	12	0.29
8/31/2015 14:30	3.97	4.6	0.73	8/31/2015 14:45	9.18	12.5	0.32
8/31/2015 14:45	3.95	4.5	0.73	8/31/2015 15:00	9.11	12.5	0.31
8/31/2015 15:00	3.92	4.5	0.72	8/31/2015 15:15	9.03	12.5	0.30
8/31/2015 15:15	3.89	4.5	0.69	8/31/2015 15:30	8.92	12.3	0.28
8/31/2015 15:30	3.84	4.5	0.71	8/31/2015 15:45	8.78	12.3	0.37
8/31/2015 15:45	3.76	4.5	0.69	8/31/2015 16:00	8.61	12.2	0.37
8/31/2015 16:00	3.70	4.4	0.67	8/31/2015 16:15	8.43	12.1	0.36
8/31/2015 16:15	3.65	4.2	0.63	8/31/2015 16:30	8.25	12.2	0.40
8/31/2015 16:30	3.60	4.4	0.69	8/31/2015 16:45	8.07	12.1	0.39
8/31/2015 16:45	3.52	4.6	0.60	8/31/2015 17:00	7.93	12.3	0.40
8/31/2015 17:00	3.46	4.6	0.59	8/31/2015 17:15	7.74	12.2	0.40
8/31/2015 17:15	3.39	4.6	0.59	8/31/2015 17:30	7.56	12.4	0.42
8/31/2015 17:30	3.29	4.6	0.56	8/31/2015 17:45	7.44	12.3	0.41
8/31/2015 17:45	3.19	4.6	0.55	8/31/2015 18:00	7.22	12.5	0.43
8/31/2015 18:00	3.07	4.7	0.54	8/31/2015 18:15	7.04	12.3	0.43
8/31/2015 18:15	2.94	4.5	0.52	8/31/2015 18:30	6.86	12.3	0.45
8/31/2015 18:30	2.74	4.8	0.47	8/31/2015 18:45	6.73	12.2	0.43
8/31/2015 18:45	2.64	4.8	0.40	8/31/2015 19:00	6.63	12.3	0.41
8/31/2015 19:00	2.60	4.8	0.41	8/31/2015 19:15	6.57	12.3	0.42
8/31/2015 19:15	2.56	4.8	0.36	8/31/2015 19:30	6.51	12.5	0.42
8/31/2015 19:30	2.54	4.8	0.34	8/31/2015 19:45	6.43	12.5	0.40
8/31/2015 19:45	2.52	4.8	0.30	8/31/2015 20:00	6.36	12.4	0.41
8/31/2015 20:00	2.50	5.2	0.32	8/31/2015 20:15	6.27	12.7	0.41
8/31/2015 20:15	2.47	5.2	0.29	8/31/2015 20:30	6.16	12.7	0.39
8/31/2015 20:30	2.44	5.2	0.27	8/31/2015 20:45	6.07	12.8	0.38
8/31/2015 20:45	2.42	5.2	0.24	8/31/2015 21:00	5.96	12.8	0.38
8/31/2015 21:00	2.39	5.2	0.24	8/31/2015 21:15	5.88	12.7	0.39
8/31/2015 21:15	2.36	5.2	0.20	8/31/2015 21:30	5.83	12.7	0.38
8/31/2015 21:30	2.35	5.4	0.19	8/31/2015 21:45	5.77	12.6	0.39
8/31/2015 21:45	2.34	5.4	0.20	8/31/2015 22:00	5.71	12.6	0.35
8/31/2015 22:00	2.32	5.2	0.17	8/31/2015 22:15	5.63	12.8	0.36
8/31/2015 22:15	2.30	5.6	0.15	8/31/2015 22:30	5.58	12.6	0.34
8/31/2015 22:30	2.28	5.4	0.14	8/31/2015 22:45	5.54	12.5	0.36
8/31/2015 22:45	2.28	5.4	0.14	8/31/2015 23:00	5.51	12.7	0.34
8/31/2015 23:00	2.27	5.6	0.12	8/31/2015 23:15	5.48	12.7	0.33
8/31/2015 23:15	2.27	5.6	0.11	8/31/2015 23:30	5.44	12.7	0.35
8/31/2015 23:30	2.27	5.6	0.12	8/31/2015 23:45	5.38	12.5	0.28
8/31/2015 23:45	2.27	5.6	0.10	9/1/2015 0:00	5.34	12.4	0.32
9/1/2015 0:00	2.26	5.8	0.10	9/1/2015 0:15	5.30	12.4	0.31
9/1/2015 0:15	2.25	5.8	0.09	9/1/2015 0:30	5.24	12.3	0.30
9/1/2015 0:30	2.23	5.8	0.09	9/1/2015 0:45	5.20	12.6	0.29
9/1/2015 0:45	2.22	5.8	0.09	9/1/2015 1:00	5.15	12.8	0.28

9/1/2015 1:00	2.20	5.8	0.08	9/1/2015 1:15	5.11	12.6	0.28
9/1/2015 1:15	2.18	5.8	0.08	9/1/2015 1:30	5.07	12.5	0.32
9/1/2015 1:30	2.17	5.8	0.09	9/1/2015 1:45	5.03	12.7	0.26
9/1/2015 1:45	2.17	5.8	0.08	9/1/2015 2:00	5.00	12.5	0.29
9/1/2015 2:00	2.16	6	0.07	9/1/2015 2:15	4.95	12.7	0.28
9/1/2015 2:15	2.16	5.8	0.07	9/1/2015 2:30	4.94	12.9	0.27
9/1/2015 2:30	2.16	5.8	0.07	9/1/2015 2:45	4.90	12.7	0.31
9/1/2015 2:45	2.15	5.8	0.06	9/1/2015 3:00	4.90	12.5	0.26
9/1/2015 3:00	2.16	6	0.05	9/1/2015 3:15	4.87	12.7	0.26
9/1/2015 3:15	2.17	6	0.05	9/1/2015 3:30	4.86	12.6	0.28
9/1/2015 3:30	2.16	6.3	0.05	9/1/2015 3:45	4.86	12.6	0.24
9/1/2015 3:45	2.17	6.1	0.05	9/1/2015 4:00	4.84	12.9	0.25
9/1/2015 4:00	2.17	6.1	0.05	9/1/2015 4:15	4.84	12.7	0.25
9/1/2015 4:15	2.17	6.3	0.04	9/1/2015 4:30	4.83	12.7	0.26
9/1/2015 4:30	2.17	6.3	0.05	9/1/2015 4:45	4.83	12.7	0.25
9/1/2015 4:45	2.16	6.3	0.04	9/1/2015 5:00	4.82	12.9	0.21
9/1/2015 5:00	2.16	6.3	0.03	9/1/2015 5:15	4.79	13.1	0.24
9/1/2015 5:15	2.15	6.3	0.04	9/1/2015 5:30	4.76	12.9	0.21
9/1/2015 5:30	2.15	6.3	0.04	9/1/2015 5:45	4.76	13.1	0.21
9/1/2015 5:45	2.15	6.3	0.03	9/1/2015 6:00	4.75	13.1	0.21
9/1/2015 6:00	2.15	6.3	0.03	9/1/2015 6:15	4.75	13.1	0.18
9/1/2015 6:15	2.13	6.3	0.02	9/1/2015 6:30	4.76	13.1	0.23
9/1/2015 6:30	2.13	6.5	0.02	9/1/2015 6:45	4.75	13.1	0.21
9/1/2015 6:45	2.12	6.5	0.03	9/1/2015 7:00	4.75	13.4	0.17
9/1/2015 7:00	2.11	6.7	0.02	9/1/2015 7:15	4.76	13.2	0.20
9/1/2015 7:15	2.12	6.7	0.02	9/1/2015 7:30	4.78	13.1	0.18
9/1/2015 7:30	2.13	6.7	0.03	9/1/2015 7:45	4.80	13.1	0.16
9/1/2015 7:45	2.15	6.5	0.02	9/1/2015 8:00	4.83	13.1	0.19
9/1/2015 8:00	2.17	6.7	0.01	9/1/2015 8:15	4.84	13.1	0.19
9/1/2015 8:15	2.21	6.6	0.02	9/1/2015 8:30	4.87	12.9	0.16
9/1/2015 8:30	2.35	6.6	0.01	9/1/2015 8:45	4.91	13	0.17
9/1/2015 8:45	2.59	6.5	0.00	9/1/2015 9:00	5.24	12.6	0.14
9/1/2015 9:00	2.86	6.6	0.01	9/1/2015 9:15	5.58	12.5	0.10
9/1/2015 9:15	3.17	6.9	0.00	9/1/2015 9:30	6.04	12.2	0.13
9/1/2015 9:30	3.46	6.6	0.01	9/1/2015 9:45	6.48	12	0.09
9/1/2015 9:45	3.75	6.4	0.01	9/1/2015 10:00	6.90	12	0.09
9/1/2015 10:00	4.04	6.6	0.01	9/1/2015 10:15	7.34	11.6	0.06
9/1/2015 10:15	4.38	6.3	0.03	9/1/2015 10:30	7.72	11.6	0.04
9/1/2015 10:30	4.79	6.1	0.09	9/1/2015 10:45	8.11	11.8	0.06
9/1/2015 10:45	5.25	5.9	0.15	9/1/2015 11:00	8.50	11.7	0.01
9/1/2015 11:00	5.56	5.1	0.24	9/1/2015 11:15	8.86	11.7	0.04
9/1/2015 11:15	5.46	4.8	0.33	9/1/2015 11:30	9.20	11.6	0.05
9/1/2015 11:30	5.32	4.8	0.43	9/1/2015 11:45	9.50	11.7	0.01
9/1/2015 11:45	5.12	4.7	0.50	9/1/2015 12:00	9.80	11.7	0.00

9/1/2015 12:00	4.97	4.7	0.57	9/1/2015 12:15	10.08	11.8	0.02
9/1/2015 12:15	4.88	4.4	0.58	9/1/2015 12:30	10.32	12	0.04
9/1/2015 12:30	4.79	4.6	0.63	9/1/2015 12:45	10.48	12.1	0.04
9/1/2015 12:45	4.71	4.5	0.68	9/1/2015 13:00	10.64	12.2	0.06
9/1/2015 13:00	4.67	4.5	0.73	9/1/2015 13:15	10.80	12.3	0.10
9/1/2015 13:15	4.66	4.5	0.77	9/1/2015 13:30	10.94	12.5	0.08
9/1/2015 13:30	4.63	4.3	0.79	9/1/2015 13:45	11.06	12.2	0.13
9/1/2015 13:45	4.47	4.3	0.82	9/1/2015 14:00	11.13	12	0.14
9/1/2015 14:00	4.14	4.4	0.84	9/1/2015 14:15	11.05	12.6	0.17
9/1/2015 14:15	3.81	4.3	0.80	9/1/2015 14:30	10.84	12.3	0.19
9/1/2015 14:30	3.63	4.4	0.84	9/1/2015 14:45	10.51	12.8	0.26
9/1/2015 14:45	3.57	4.4	0.82	9/1/2015 15:00	10.21	12.7	0.28
9/1/2015 15:00	3.66	4.4	0.83	9/1/2015 15:15	10.01	12.8	0.30
9/1/2015 15:15	3.58	4.2	0.81	9/1/2015 15:30	9.81	12.8	0.31
9/1/2015 15:30	3.71	4.4	0.77	9/1/2015 15:45	9.66	12.5	0.32
9/1/2015 15:45	3.89	4.3	0.72	9/1/2015 16:00	9.62	12.5	0.35
9/1/2015 16:00	3.94	4.3	0.73	9/1/2015 16:15	9.59	12.4	0.32
9/1/2015 16:15	3.76	4.3	0.76	9/1/2015 16:30	9.52	12.5	0.38
9/1/2015 16:30	3.55	4.6	0.73	9/1/2015 16:45	9.35	12.3	0.37
9/1/2015 16:45	3.53	4.4	0.69	9/1/2015 17:00	9.20	12.5	0.38
9/1/2015 17:00	3.55	4.4	0.65	9/1/2015 17:15	9.08	12.4	0.41
9/1/2015 17:15	3.48	4.4	0.68	9/1/2015 17:30	8.94	12.3	0.39
9/1/2015 17:30	3.44	4.4	0.64	9/1/2015 17:45	8.84	12.3	0.40
9/1/2015 17:45	3.42	4.4	0.61	9/1/2015 18:00	8.74	12.2	0.40
9/1/2015 18:00	3.37	4.4	0.58	9/1/2015 18:15	8.61	12.4	0.44
9/1/2015 18:15	3.32	4.4	0.55	9/1/2015 18:30	8.45	12.4	0.43
9/1/2015 18:30	3.29	4.6	0.56	9/1/2015 18:45	8.31	12.5	0.44
9/1/2015 18:45	3.24	4.6	0.52	9/1/2015 19:00	8.18	12.7	0.44
9/1/2015 19:00	3.18	4.6	0.48	9/1/2015 19:15	8.06	12.5	0.45
9/1/2015 19:15	3.13	4.7	0.48	9/1/2015 19:30	7.98	12.6	0.43
9/1/2015 19:30	3.09	4.7	0.42	9/1/2015 19:45	7.90	12.6	0.44
9/1/2015 19:45	3.05	4.7	0.42	9/1/2015 20:00	7.78	12.6	0.43
9/1/2015 20:00	3.03	4.7	0.38	9/1/2015 20:15	7.66	12.7	0.45
9/1/2015 20:15	3.00	4.7	0.36	9/1/2015 20:30	7.58	12.9	0.43
9/1/2015 20:30	2.99	4.7	0.36	9/1/2015 20:45	7.49	12.7	0.42
9/1/2015 20:45	2.98	4.9	0.33	9/1/2015 21:00	7.41	12.8	0.41
9/1/2015 21:00	3.00	4.7	0.31	9/1/2015 21:15	7.36	12.8	0.43
9/1/2015 21:15	3.03	4.9	0.30	9/1/2015 21:30	7.32	12.6	0.39
9/1/2015 21:30	3.04	5	0.28	9/1/2015 21:45	7.26	12.7	0.46
9/1/2015 21:45	3.05	4.8	0.27	9/1/2015 22:00	7.24	12.8	0.46
9/1/2015 22:00	3.05	4.8	0.26	9/1/2015 22:15	7.20	12.8	0.45
9/1/2015 22:15	3.04	4.9	0.24	9/1/2015 22:30	7.17	12.8	0.41
9/1/2015 22:30	3.05	5	0.23	9/1/2015 22:45	7.13	12.9	0.39
9/1/2015 22:45	3.07	5	0.22	9/1/2015 23:00	7.10	12.9	0.40

9/1/2015 23:00	3.07	5.2	0.20	9/1/2015 23:15	7.08	12.6	0.39
9/1/2015 23:15	3.05	5.2	0.20	9/1/2015 23:30	7.04	12.6	0.41
9/1/2015 23:30	3.05	5.2	0.19	9/1/2015 23:45	7.00	12.9	0.39
9/1/2015 23:45	3.07	5.2	0.18	9/2/2015 0:00	6.94	12.9	0.36
9/2/2015 0:00	3.05	5.2	0.18	9/2/2015 0:15	6.88	12.8	0.38
9/2/2015 0:15	3.03	5.2	0.17	9/2/2015 0:30	6.81	12.8	0.39
9/2/2015 0:30	2.98	5.2	0.18	9/2/2015 0:45	6.76	12.7	0.39
9/2/2015 0:45	2.95	5.2	0.17	9/2/2015 1:00	6.70	12.7	0.39
9/2/2015 1:00	2.93	5.2	0.17	9/2/2015 1:15	6.68	12.6	0.36
9/2/2015 1:15	2.93	5.2	0.16	9/2/2015 1:30	6.65	12.7	0.36
9/2/2015 1:30	2.92	5.4	0.16	9/2/2015 1:45	6.63	12.7	0.35
9/2/2015 1:45	2.90	5.2	0.15	9/2/2015 2:00	6.61	12.7	0.35
9/2/2015 2:00	2.90	5.4	0.16	9/2/2015 2:15	6.61	12.6	0.33
9/2/2015 2:15	2.92	5.4	0.15	9/2/2015 2:30	6.61	12.7	0.35
9/2/2015 2:30	2.94	5.4	0.15	9/2/2015 2:45	6.60	12.7	0.34
9/2/2015 2:45	2.98	5.4	0.14	9/2/2015 3:00	6.59	12.7	0.36
9/2/2015 3:00	2.97	5.6	0.15	9/2/2015 3:15	6.57	12.7	0.36
9/2/2015 3:15	2.95	5.6	0.14	9/2/2015 3:30	6.56	12.8	0.32
9/2/2015 3:30	2.95	5.6	0.13	9/2/2015 3:45	6.56	12.9	0.34
9/2/2015 3:45	2.95	5.6	0.13	9/2/2015 4:00	6.55	13.1	0.29
9/2/2015 4:00	2.94	5.6	0.12	9/2/2015 4:15	6.51	13.1	0.33
9/2/2015 4:15	2.93	5.6	0.12	9/2/2015 4:30	6.45	12.9	0.32
9/2/2015 4:30	2.93	5.6	0.12	9/2/2015 4:45	6.43	13	0.35
9/2/2015 4:45	2.92	5.6	0.13	9/2/2015 5:00	6.37	12.8	0.32
9/2/2015 5:00	2.90	5.6	0.12	9/2/2015 5:15	6.32	12.8	0.32
9/2/2015 5:15	2.90	5.6	0.13	9/2/2015 5:30	6.28	12.9	0.26
9/2/2015 5:30	2.88	5.6	0.11	9/2/2015 5:45	6.23	12.7	0.30
9/2/2015 5:45	2.85	5.8	0.12	9/2/2015 6:00	6.16	12.9	0.30
9/2/2015 6:00	2.84	5.6	0.11	9/2/2015 6:15	6.09	12.9	0.28
9/2/2015 6:15	2.83	5.6	0.11	9/2/2015 6:30	6.04	12.5	0.29
9/2/2015 6:30	2.80	5.6	0.10	9/2/2015 6:45	5.99	13	0.27
9/2/2015 6:45	2.79	5.6	0.09	9/2/2015 7:00	5.95	12.8	0.29
9/2/2015 7:00	2.76	5.6	0.09	9/2/2015 7:15	5.91	13	0.29
9/2/2015 7:15	2.75	5.8	0.09	9/2/2015 7:30	5.85	13	0.25
9/2/2015 7:30	2.71	5.8	0.08	9/2/2015 7:45	5.81	12.2	0.30
9/2/2015 7:45	2.70	6	0.08	9/2/2015 8:00	5.80	11.9	0.25
9/2/2015 8:00	2.69	5.8	0.06	9/2/2015 8:15	5.79	12.6	0.24
9/2/2015 8:15	2.68	6	0.07	9/2/2015 8:30	5.75	12.9	0.25
9/2/2015 8:30	2.73	6	0.07	9/2/2015 8:45	5.73	12.7	0.24
9/2/2015 8:45	2.92	5.9	0.06	9/2/2015 9:00	5.91	12.2	0.22
9/2/2015 9:00	3.18	5.8	0.06	9/2/2015 9:15	6.19	11.5	0.20
9/2/2015 9:15	3.51	5.8	0.06	9/2/2015 9:30	6.63	11.2	0.22
9/2/2015 9:30	3.82	5.7	0.09	9/2/2015 9:45	7.04	11.1	0.17
9/2/2015 9:45	4.10	5.8	0.13	9/2/2015 10:00	7.44	11	0.13

9/2/2015 10:00	4.29	5.5	0.15	9/2/2015 10:15	7.86	10.8	0.15
9/2/2015 10:15	4.77	5.4	0.25	9/2/2015 10:30	8.26	11	0.15
9/2/2015 10:30	5.08	5	0.31	9/2/2015 10:45	8.65	11.2	0.13
9/2/2015 10:45	5.06	4.7	0.38	9/2/2015 11:00	9.00	11	0.14
9/2/2015 11:00	4.91	4.6	0.47	9/2/2015 11:15	9.30	11.4	0.13
9/2/2015 11:15	4.78	4.4	0.51	9/2/2015 11:30	9.58	11.4	0.09
9/2/2015 11:30	4.69	4.3	0.58	9/2/2015 11:45	9.87	11.1	0.11
9/2/2015 11:45	4.63	4.3	0.59	9/2/2015 12:00	10.16	10.9	0.10
9/2/2015 12:00	4.59	4.3	0.67	9/2/2015 12:15	10.44	11	0.08
9/2/2015 12:15	4.58	4.3	0.69	9/2/2015 12:30	10.65	10.9	0.11
9/2/2015 12:30	4.59	4.3	0.77	9/2/2015 12:45	10.82	11	0.14
9/2/2015 12:45	4.63	4.3	0.74	9/2/2015 13:00	10.98	11.1	0.16
9/2/2015 13:00	4.58	4.3	0.76	9/2/2015 13:15	11.16	13.5	0.19
9/2/2015 13:15	4.55	4.3	0.79	9/2/2015 13:30	11.26	13.8	0.19
9/2/2015 13:30	4.59	4.2	0.84	9/2/2015 13:45	11.32	14.1	0.25
9/2/2015 13:45	4.59	4.2	1.00	9/2/2015 14:00	11.42	14	0.25
9/2/2015 14:00	4.53	4.2	0.93	9/2/2015 14:15	11.46	14	0.22
9/2/2015 14:15	4.33	4.1	0.88	9/2/2015 14:30	11.41	14.2	0.29
9/2/2015 14:30	4.24	4.1	0.90	9/2/2015 14:45	11.22	13.8	0.34
9/2/2015 14:45	3.86	4.2	0.90	9/2/2015 15:00	10.97	13.2	0.36
9/2/2015 15:00	3.80	4.2	0.96	9/2/2015 15:15	10.60	13.2	0.34
9/2/2015 15:15	3.73	4.2	0.87	9/2/2015 15:30	10.40	13.1	0.37
9/2/2015 15:30	3.81	4.3	0.92	9/2/2015 15:45	10.24	13.1	0.38
9/2/2015 15:45	3.60	4.4	0.88	9/2/2015 16:00	10.04	12.8	0.39
9/2/2015 16:00	3.48	4.4	0.80	9/2/2015 16:15	9.76	12.9	0.43
9/2/2015 16:15	3.67	4.4	0.88	9/2/2015 16:30	9.64	12.6	0.47
9/2/2015 16:30	3.67	4.5	0.82	9/2/2015 16:45	9.58	12.1	0.45
9/2/2015 16:45	3.66	4.5	0.89	9/2/2015 17:00	9.40	12.1	0.49
9/2/2015 17:00	3.60	4.4	0.79	9/2/2015 17:15	9.22	12.6	0.53
9/2/2015 17:15	3.36	4.6	0.81	9/2/2015 17:30	9.08	12.5	0.52
9/2/2015 17:30	3.33	4.6	0.80	9/2/2015 17:45	8.92	12.3	0.52
9/2/2015 17:45	3.34	4.6	0.71	9/2/2015 18:00	8.83	12	0.51
9/2/2015 18:00	3.37	4.6	0.67	9/2/2015 18:15	8.73	12.2	0.53
9/2/2015 18:15	3.27	4.5	0.72	9/2/2015 18:30	8.62	12.4	0.50
9/2/2015 18:30	3.19	4.3	0.67	9/2/2015 18:45	8.57	12.1	0.55
9/2/2015 18:45	3.15	4.3	0.62	9/2/2015 19:00	8.54	12.1	0.51
9/2/2015 19:00	3.17	4.3	0.59	9/2/2015 19:15	8.47	12.4	0.51
9/2/2015 19:15	3.17	4.6	0.60	9/2/2015 19:30	8.41	12.1	0.53
9/2/2015 19:30	3.18	4.6	0.58	9/2/2015 19:45	8.31	12.2	0.51
9/2/2015 19:45	3.15	4.7	0.58	9/2/2015 20:00	8.22	12.5	0.53
9/2/2015 20:00	3.07	4.7	0.54	9/2/2015 20:15	8.11	12.4	0.54
9/2/2015 20:15	3.02	4.5	0.51	9/2/2015 20:30	7.99	12.1	0.59
9/2/2015 20:30	2.99	4.7	0.52	9/2/2015 20:45	7.89	12	0.53
9/2/2015 20:45	2.99	4.7	0.49	9/2/2015 21:00	7.79	12	0.52

9/2/2015 21:00	3.00	4.7	0.45	9/2/2015 21:15	7.72	11.6	0.54
9/2/2015 21:15	3.00	4.7	0.41	9/2/2015 21:30	7.68	11.6	0.53
9/2/2015 21:30	3.03	4.7	0.41	9/2/2015 21:45	7.61	11.8	0.52
9/2/2015 21:45	3.04	4.7	0.40	9/2/2015 22:00	7.52	11.7	0.50
9/2/2015 22:00	2.99	4.7	0.37	9/2/2015 22:15	7.42	11.9	0.50
9/2/2015 22:15	2.90	4.9	0.35	9/2/2015 22:30	7.32	11.7	0.54
9/2/2015 22:30	2.85	4.7	0.35	9/2/2015 22:45	7.24	11.8	0.51
9/2/2015 22:45	2.86	4.7	0.33	9/2/2015 23:00	7.20	11.5	0.48
9/2/2015 23:00	2.88	4.9	0.31	9/2/2015 23:15	7.16	11.3	0.50
9/2/2015 23:15	2.89	4.9	0.30	9/2/2015 23:30	7.13	11.5	0.50
9/2/2015 23:30	2.92	4.9	0.31	9/2/2015 23:45	7.13	11.3	0.50
9/2/2015 23:45	2.95	4.9	0.31	9/3/2015 0:00	7.10	11.4	0.48
9/3/2015 0:00	2.99	5	0.31	9/3/2015 0:15	7.09	11.5	0.46
9/3/2015 0:15	3.00	4.9	0.31	9/3/2015 0:30	7.08	11.4	0.42
9/3/2015 0:30	3.05	5	0.28	9/3/2015 0:45	7.06	11.4	0.46
9/3/2015 0:45	3.08	5	0.28	9/3/2015 1:00	7.04	11.2	0.43
9/3/2015 1:00	3.08	5	0.27	9/3/2015 1:15	7.04	11.1	0.40
9/3/2015 1:15	3.08	5.2	0.25	9/3/2015 1:30	7.01	11.2	0.43
9/3/2015 1:30	3.12	5.2	0.28	9/3/2015 1:45	7.00	11.1	0.41
9/3/2015 1:45	3.13	5.2	0.25	9/3/2015 2:00	7.00	11.1	0.44
9/3/2015 2:00	3.09	5.2	0.28	9/3/2015 2:15	6.96	11.1	0.39
9/3/2015 2:15	3.10	5.2	0.25	9/3/2015 2:30	6.93	11.1	0.39
9/3/2015 2:30	3.05	5.2	0.27	9/3/2015 2:45	6.89	11	0.41
9/3/2015 2:45	3.02	5.2	0.26	9/3/2015 3:00	6.85	11.1	0.41
9/3/2015 3:00	3.02	5.2	0.26	9/3/2015 3:15	6.81	11	0.44
9/3/2015 3:15	2.99	5.2	0.25	9/3/2015 3:30	6.81	11.1	0.39
9/3/2015 3:30	3.00	5.2	0.26	9/3/2015 3:45	6.78	11.1	0.40
9/3/2015 3:45	2.99	5.2	0.25	9/3/2015 4:00	6.77	11.2	0.38
9/3/2015 4:00	2.98	5.4	0.25	9/3/2015 4:15	6.74	11	0.35
9/3/2015 4:15	3.00	5.2	0.23	9/3/2015 4:30	6.73	11.2	0.40
9/3/2015 4:30	3.05	5.2	0.25	9/3/2015 4:45	6.72	11.2	0.37
9/3/2015 4:45	3.08	5.2	0.24	9/3/2015 5:00	6.70	11.3	0.32
9/3/2015 5:00	3.09	5.2	0.24	9/3/2015 5:15	6.70	11.2	0.31
9/3/2015 5:15	3.09	5.4	0.23	9/3/2015 5:30	6.68	11	0.33
9/3/2015 5:30	3.09	5.2	0.22	9/3/2015 5:45	6.64	11.2	0.36
9/3/2015 5:45	3.07	5.2	0.25	9/3/2015 6:00	6.63	11.2	0.30
9/3/2015 6:00	3.07	5.2	0.24	9/3/2015 6:15	6.60	11.2	0.33
9/3/2015 6:15	3.04	5.2	0.24	9/3/2015 6:30	6.57	11.2	0.35
9/3/2015 6:30	3.00	5.2	0.24	9/3/2015 6:45	6.53	11.2	0.32
9/3/2015 6:45	2.94	5.2	0.23	9/3/2015 7:00	6.48	11.2	0.32
9/3/2015 7:00	2.89	5.2	0.24	9/3/2015 7:15	6.41	11.1	0.32
9/3/2015 7:15	2.84	5.2	0.24	9/3/2015 7:30	6.37	11.1	0.33
9/3/2015 7:30	2.79	5.3	0.22	9/3/2015 7:45	6.35	10.8	0.32
9/3/2015 7:45	2.76	5.3	0.22	9/3/2015 8:00	6.33	10.8	0.32

9/3/2015 8:00	2.78	5.3	0.20	9/3/2015 8:15	6.33	10.8	0.29
9/3/2015 8:15	2.80	5.4	0.19	9/3/2015 8:30	6.35	10.7	0.30
9/3/2015 8:30	2.85	5.2	0.20	9/3/2015 8:45	6.37	10.8	0.29
9/3/2015 8:45	2.93	5.4	0.19	9/3/2015 9:00	6.41	10.6	0.29
9/3/2015 9:00	3.04	5.5	0.17	9/3/2015 9:15	6.49	10.6	0.26
9/3/2015 9:15	3.18	5.5	0.18	9/3/2015 9:30	6.59	10.7	0.23
9/3/2015 9:30	3.36	5.5	0.17	9/3/2015 9:45	6.74	10.7	0.21

Table S4. cont…

Upper Dinwoody Creek Logger				**Lower Dinwoody Creek Logger**			
Date/Time	Temp (oC)	SPC (μS/cm)	Relative Depth	Date/Time	Temp (oC)	SPC (μS/cm)	Relative Depth
8/27/2015 10:00	3.99	6.8	0.61	8/27/2015 15:30	5.54	6	0.93
8/27/2015 10:15	4.15	6.8	0.60	8/27/2015 15:45	5.63	6.1	0.92
8/27/2015 10:30	4.34	7	0.59	8/27/2015 16:00	5.58	6.1	0.91
8/27/2015 10:45	4.38	7	0.59	8/27/2015 16:15	5.51	6.1	0.92
8/27/2015 11:00	4.41	7	0.58	8/27/2015 16:30	5.50	6.1	0.92
8/27/2015 11:15	4.55	6.9	0.58	8/27/2015 16:45	5.60	6.1	0.88
8/27/2015 11:30	4.79	6.9	0.56	8/27/2015 17:00	5.70	6.2	0.86
8/27/2015 11:45	5.23	6.9	0.57	8/27/2015 17:15	5.79	6.2	0.84
8/27/2015 12:00	5.66	6.8	0.57	8/27/2015 17:30	5.82	6	0.83
8/27/2015 12:15	6.16	7.1	0.59	8/27/2015 17:45	5.80	6	0.84
8/27/2015 12:30	6.60	7	0.60	8/27/2015 18:00	5.76	6.1	0.80
8/27/2015 12:45	7.05	7.1	0.62	8/27/2015 18:15	5.70	6.1	0.80
8/27/2015 13:00	7.25	7.3	0.65	8/27/2015 18:30	5.59	6.1	0.81
8/27/2015 13:15	7.39	7.4	0.67	8/27/2015 18:45	5.50	6.1	0.80
8/27/2015 13:30	7.49	7.3	0.67	8/27/2015 19:00	5.42	6.2	0.79
8/27/2015 13:45	7.48	7.3	0.69	8/27/2015 19:15	5.35	6.2	0.80
8/27/2015 14:00	7.34	7.4	0.72	8/27/2015 19:30	5.31	6.4	0.77
8/27/2015 14:15	7.15	7.3	0.73	8/27/2015 19:45	5.27	6.6	0.78
8/27/2015 14:30	6.75	7.2	0.77	8/27/2015 20:00	5.24	6.6	0.78
8/27/2015 14:45	6.43	7.2	0.85	8/27/2015 20:15	5.20	6.6	0.78
8/27/2015 15:00	6.13	7.1	0.89	8/27/2015 20:30	5.15	6.8	0.79
8/27/2015 15:15	5.66	6.8	0.88	8/27/2015 20:45	5.07	6.8	0.80
8/27/2015 15:30	5.32	6.8	0.89	8/27/2015 21:00	4.96	6.7	0.83
8/27/2015 15:45	5.17	6.7	0.91	8/27/2015 21:15	4.84	6.7	0.83
8/27/2015 16:00	5.02	6.8	0.94	8/27/2015 21:30	4.77	6.8	0.83
8/27/2015 16:15	4.96	6.7	0.92	8/27/2015 21:45	4.75	6.9	0.81
8/27/2015 16:30	5.14	6.6	0.92	8/27/2015 22:00	4.73	7.3	0.80
8/27/2015 16:45	5.30	6.5	0.91	8/27/2015 22:15	4.71	7.1	0.79
8/27/2015 17:00	5.30	6.5	0.88	8/27/2015 22:30	4.65	7.3	0.80
8/27/2015 17:15	5.40	6.3	0.87	8/27/2015 22:45	4.59	7.3	0.78
8/27/2015 17:30	5.45	6.3	0.86	8/27/2015 23:00	4.53	7.5	0.80

8/27/2015 17:45	5.41	6.3	0.86	8/27/2015 23:15	4.48	7.7	0.78
8/27/2015 18:00	5.34	6.3	0.84	8/27/2015 23:30	4.41	7.7	0.76
8/27/2015 18:15	5.26	6.2	0.83	8/27/2015 23:45	4.35	7.8	0.75
8/27/2015 18:30	5.18	6.6	0.83	8/28/2015 0:00	4.31	7.9	0.75
8/27/2015 18:45	5.09	6.6	0.83	8/28/2015 0:15	4.27	8	0.74
8/27/2015 19:00	5.01	6.7	0.82	8/28/2015 0:30	4.23	8.1	0.73
8/27/2015 19:15	4.94	6.9	0.83	8/28/2015 0:45	4.20	8.2	0.73
8/27/2015 19:30	4.87	7.1	0.83	8/28/2015 1:00	4.17	8.3	0.71
8/27/2015 19:45	4.77	7.1	0.83	8/28/2015 1:15	4.15	8.3	0.71
8/27/2015 20:00	4.72	7.1	0.83	8/28/2015 1:30	4.12	8.4	0.70
8/27/2015 20:15	4.66	7.2	0.83	8/28/2015 1:45	4.09	8.4	0.68
8/27/2015 20:30	4.56	7.2	0.84	8/28/2015 2:00	4.05	8.4	0.66
8/27/2015 20:45	4.49	7.2	0.84	8/28/2015 2:15	4.04	8.6	0.66
8/27/2015 21:00	4.39	7.3	0.84	8/28/2015 2:30	4.01	8.7	0.65
8/27/2015 21:15	4.33	7.3	0.84	8/28/2015 2:45	3.98	8.8	0.64
8/27/2015 21:30	4.28	7.5	0.82	8/28/2015 3:00	3.96	8.9	0.62
8/27/2015 21:45	4.20	7.6	0.82	8/28/2015 3:15	3.93	8.9	0.62
8/27/2015 22:00	4.13	7.6	0.83	8/28/2015 3:30	3.92	9.1	0.61
8/27/2015 22:15	4.04	7.8	0.82	8/28/2015 3:45	3.89	9.1	0.60
8/27/2015 22:30	3.99	7.8	0.81	8/28/2015 4:00	3.85	9.1	0.60
8/27/2015 22:45	3.95	8	0.81	8/28/2015 4:15	3.82	9.3	0.60
8/27/2015 23:00	3.90	8.2	0.82	8/28/2015 4:30	3.81	9.3	0.59
8/27/2015 23:15	3.85	8.3	0.81	8/28/2015 4:45	3.80	9.3	0.57
8/27/2015 23:30	3.78	8.5	0.80	8/28/2015 5:00	3.77	9.4	0.58
8/27/2015 23:45	3.71	8.5	0.81	8/28/2015 5:15	3.74	9.5	0.56
8/28/2015 0:00	3.66	8.5	0.80	8/28/2015 5:30	3.73	9.5	0.55
8/28/2015 0:15	3.60	8.7	0.79	8/28/2015 5:45	3.70	9.7	0.55
8/28/2015 0:30	3.53	8.8	0.79	8/28/2015 6:00	3.69	9.7	0.54
8/28/2015 0:45	3.49	8.8	0.78	8/28/2015 6:15	3.66	9.7	0.52
8/28/2015 1:00	3.43	8.8	0.77	8/28/2015 6:30	3.65	9.8	0.52
8/28/2015 1:15	3.40	9	0.76	8/28/2015 6:45	3.61	9.8	0.51
8/28/2015 1:30	3.35	9.2	0.75	8/28/2015 7:00	3.60	9.8	0.52
8/28/2015 1:45	3.31	9.2	0.75	8/28/2015 7:15	3.58	9.8	0.49
8/28/2015 2:00	3.26	9.3	0.74	8/28/2015 7:30	3.57	10	0.48
8/28/2015 2:15	3.23	9.6	0.73	8/28/2015 7:45	3.57	10	0.47
8/28/2015 2:30	3.20	9.5	0.71	8/28/2015 8:00	3.58	10	0.47
8/28/2015 2:45	3.19	9.7	0.71	8/28/2015 8:15	3.60	9.9	0.45
8/28/2015 3:00	3.15	9.7	0.69	8/28/2015 8:30	3.62	9.8	0.44
8/28/2015 3:15	3.11	9.9	0.69	8/28/2015 8:45	3.68	9.9	0.44
8/28/2015 3:30	3.09	9.9	0.69	8/28/2015 9:00	3.72	9.9	0.41
8/28/2015 3:45	3.05	9.9	0.67	8/28/2015 9:15	3.80	10	0.43
8/28/2015 4:00	3.03	10.1	0.67	8/28/2015 9:30	4.06	9.9	0.40
8/28/2015 4:15	3.01	10.3	0.66	8/28/2015 9:45	4.29	9.9	0.38
8/28/2015 4:30	2.98	10.3	0.66	8/28/2015 10:00	4.55	9.8	0.36

8/28/2015 4:45	2.97	10.3	0.66	8/28/2015 10:15	4.92	9.9	0.34
8/28/2015 5:00	2.94	10.3	0.65	8/28/2015 10:30	5.30	9.9	0.33
8/28/2015 5:15	2.92	10.5	0.64	8/28/2015 10:45	5.66	9.9	0.32
8/28/2015 5:30	2.89	10.5	0.63	8/28/2015 11:00	6.01	9.9	0.33
8/28/2015 5:45	2.86	10.7	0.62	8/28/2015 11:15	6.35	9.7	0.35
8/28/2015 6:00	2.85	10.7	0.63	8/28/2015 11:30	6.66	9.4	0.37
8/28/2015 6:15	2.82	10.7	0.61	8/28/2015 11:45	6.96	9.1	0.39
8/28/2015 6:30	2.81	10.9	0.61	8/28/2015 12:00	7.22	8.4	0.44
8/28/2015 6:45	2.76	11.1	0.60	8/28/2015 12:15	7.42	8	0.46
8/28/2015 7:00	2.75	11.1	0.59	8/28/2015 12:30	7.56	7.7	0.51
8/28/2015 7:15	2.72	11.2	0.58	8/28/2015 12:45	7.68	7.3	0.52
8/28/2015 7:30	2.69	11.2	0.57	8/28/2015 13:00	7.77	6.8	0.55
8/28/2015 7:45	2.69	11.2	0.57	8/28/2015 13:15	7.82	6.5	0.58
8/28/2015 8:00	2.69	11.2	0.56	8/28/2015 13:30	7.85	6.2	0.61
8/28/2015 8:15	2.72	11.2	0.56	8/28/2015 13:45	7.87	5.9	0.63
8/28/2015 8:30	2.72	11.2	0.55	8/28/2015 14:00	7.88	5.8	0.65
8/28/2015 8:45	2.76	11.1	0.55	8/28/2015 14:15	7.89	5.7	0.65
8/28/2015 9:00	2.77	11.1	0.53	8/28/2015 14:30	7.84	5.8	0.67
8/28/2015 9:15	2.77	11.1	0.54	8/28/2015 14:45	7.97	5.7	0.69
8/28/2015 9:30	2.94	11.2	0.52	8/28/2015 15:00	8.04	5.8	0.73
8/28/2015 9:45	3.05	11.1	0.51	8/28/2015 15:15	8.09	6	0.78
8/28/2015 10:00	3.16	11.2	0.52	8/28/2015 15:30	8.12	6.1	0.80
8/28/2015 10:15	3.30	11.3	0.50	8/28/2015 15:45	7.89	6.2	0.84
8/28/2015 10:30	3.49	11.3	0.50	8/28/2015 16:00	7.68	6.3	0.88
8/28/2015 10:45	3.66	11.4	0.49	8/28/2015 16:15	7.37	6.5	0.91
8/28/2015 11:00	3.79	11.6	0.50	8/28/2015 16:30	7.09	6.6	0.94
8/28/2015 11:15	4.07	11.6	0.49	8/28/2015 16:45	6.90	6.7	0.93
8/28/2015 11:30	4.39	11.4	0.48	8/28/2015 17:00	6.83	6.9	0.92
8/28/2015 11:45	4.80	11.5	0.47	8/28/2015 17:15	6.75	6.9	0.91
8/28/2015 12:00	5.31	11.5	0.47	8/28/2015 17:30	6.69	7.1	0.90
8/28/2015 12:15	5.82	11.3	0.47	8/28/2015 17:45	6.65	7.3	0.90
8/28/2015 12:30	6.32	11.5	0.47	8/28/2015 18:00	6.62	7.3	0.88
8/28/2015 12:45	6.79	11.5	0.46	8/28/2015 18:15	6.58	7.3	0.88
8/28/2015 13:00	7.25	11.7	0.47	8/28/2015 18:30	6.46	7.2	0.86
8/28/2015 13:15	7.68	11.6	0.47	8/28/2015 18:45	6.33	7.2	0.86
8/28/2015 13:30	8.08	11.8	0.47	8/28/2015 19:00	6.14	7.3	0.84
8/28/2015 13:45	8.46	11.8	0.49	8/28/2015 19:15	5.99	7.4	0.82
8/28/2015 14:00	8.84	11.6	0.52	8/28/2015 19:30	5.88	7.4	0.79
8/28/2015 14:15	9.17	11.7	0.55	8/28/2015 19:45	5.78	7.5	0.77
8/28/2015 14:30	9.48	11.8	0.59	8/28/2015 20:00	5.68	7.5	0.76
8/28/2015 14:45	9.73	11.7	0.62	8/28/2015 20:15	5.59	7.7	0.76
8/28/2015 15:00	9.86	11.6	0.67	8/28/2015 20:30	5.51	7.7	0.74
8/28/2015 15:15	9.98	11.6	0.72	8/28/2015 20:45	5.42	7.8	0.72
8/28/2015 15:30	10.03	11.2	0.76	8/28/2015 21:00	5.35	7.8	0.71

8/28/2015 15:45	9.78	11.4	0.81	8/28/2015 21:15	5.30	7.8	0.73
8/28/2015 16:00	9.39	11.2	0.85	8/28/2015 21:30	5.24	7.9	0.69
8/28/2015 16:15	9.00	10.8	0.88	8/28/2015 21:45	5.19	7.9	0.68
8/28/2015 16:30	8.63	10.7	0.90	8/28/2015 22:00	5.12	7.9	0.66
8/28/2015 16:45	8.21	10.5	0.92	8/28/2015 22:15	5.08	8.1	0.65
8/28/2015 17:00	7.83	10.1	0.93	8/28/2015 22:30	5.03	8.1	0.62
8/28/2015 17:15	7.55	9.8	0.94	8/28/2015 22:45	4.97	8.1	0.61
8/28/2015 17:30	7.36	9.7	0.96	8/28/2015 23:00	4.93	8.1	0.58
8/28/2015 17:45	7.26	9.4	0.97	8/28/2015 23:15	4.89	8	0.58
8/28/2015 18:00	7.10	9.2	0.96	8/28/2015 23:30	4.87	8.2	0.58
8/28/2015 18:15	6.88	9.2	0.96	8/28/2015 23:45	4.83	8.2	0.57
8/28/2015 18:30	6.59	9	0.95	8/29/2015 0:00	4.79	8.4	0.53
8/28/2015 18:45	6.43	8.8	0.94	8/29/2015 0:15	4.76	8.4	0.52
8/28/2015 19:00	6.29	8.9	0.92	8/29/2015 0:30	4.71	8.4	0.52
8/28/2015 19:15	6.16	8.6	0.91	8/29/2015 0:45	4.67	8.6	0.50
8/28/2015 19:30	6.04	8.8	0.90	8/29/2015 1:00	4.65	8.6	0.47
8/28/2015 19:45	5.90	8.8	0.88	8/29/2015 1:15	4.63	8.6	0.46
8/28/2015 20:00	5.74	8.7	0.88	8/29/2015 1:30	4.57	8.6	0.44
8/28/2015 20:15	5.62	8.7	0.88	8/29/2015 1:45	4.55	8.8	0.43
8/28/2015 20:30	5.51	8.6	0.85	8/29/2015 2:00	4.51	9	0.43
8/28/2015 20:45	5.40	8.7	0.84	8/29/2015 2:15	4.49	9	0.42
8/28/2015 21:00	5.30	8.8	0.83	8/29/2015 2:30	4.47	9	0.42
8/28/2015 21:15	5.21	8.8	0.82	8/29/2015 2:45	4.43	9	0.38
8/28/2015 21:30	5.13	8.9	0.80	8/29/2015 3:00	4.40	9	0.37
8/28/2015 21:45	5.04	8.9	0.77	8/29/2015 3:15	4.39	9.1	0.35
8/28/2015 22:00	4.97	8.9	0.76	8/29/2015 3:30	4.35	9.1	0.36
8/28/2015 22:15	4.90	8.8	0.74	8/29/2015 3:45	4.33	9.4	0.36
8/28/2015 22:30	4.83	9	0.72	8/29/2015 4:00	4.31	9.3	0.34
8/28/2015 22:45	4.76	9.1	0.70	8/29/2015 4:15	4.32	9.4	0.36
8/28/2015 23:00	4.71	9.1	0.68	8/29/2015 4:30	4.31	9.3	0.31
8/28/2015 23:15	4.66	9.1	0.68	8/29/2015 4:45	4.31	9.4	0.32
8/28/2015 23:30	4.60	9.2	0.67	8/29/2015 5:00	4.29	9.4	0.31
8/28/2015 23:45	4.54	9.4	0.65	8/29/2015 5:15	4.29	9.4	0.29
8/29/2015 0:00	4.49	9.4	0.63	8/29/2015 5:30	4.29	9.4	0.29
8/29/2015 0:15	4.43	9.4	0.62	8/29/2015 5:45	4.27	9.6	0.30
8/29/2015 0:30	4.38	9.4	0.61	8/29/2015 6:00	4.24	9.8	0.27
8/29/2015 0:45	4.34	9.6	0.59	8/29/2015 6:15	4.23	9.8	0.26
8/29/2015 1:00	4.28	9.7	0.58	8/29/2015 6:30	4.21	10	0.25
8/29/2015 1:15	4.22	9.9	0.57	8/29/2015 6:45	4.20	9.8	0.25
8/29/2015 1:30	4.20	9.9	0.56	8/29/2015 7:00	4.19	9.8	0.24
8/29/2015 1:45	4.15	9.9	0.55	8/29/2015 7:15	4.19	9.8	0.23
8/29/2015 2:00	4.11	9.9	0.54	8/29/2015 7:30	4.19	10	0.23
8/29/2015 2:15	4.07	10.3	0.54	8/29/2015 7:45	4.20	10	0.21
8/29/2015 2:30	4.03	10.3	0.53	8/29/2015 8:00	4.23	10	0.23

8/29/2015 2:45	4.02	10.3	0.51	8/29/2015 8:15	4.28	9.9	0.21
8/29/2015 3:00	3.98	10.5	0.51	8/29/2015 8:30	4.40	9.9	0.19
8/29/2015 3:15	3.96	10.5	0.49	8/29/2015 8:45	4.49	9.8	0.19
8/29/2015 3:30	3.94	10.7	0.49	8/29/2015 9:00	4.56	9.8	0.15
8/29/2015 3:45	3.91	10.9	0.48	8/29/2015 9:15	4.63	9.8	0.16
8/29/2015 4:00	3.91	10.9	0.48	8/29/2015 9:30	4.77	9.8	0.15
8/29/2015 4:15	3.88	10.9	0.47	8/29/2015 9:45	5.15	10	0.17
8/29/2015 4:30	3.87	10.9	0.47	8/29/2015 10:00	5.63	9.9	0.17
8/29/2015 4:45	3.87	11.1	0.46	8/29/2015 10:15	6.21	9.6	0.17
8/29/2015 5:00	3.85	11.1	0.46	8/29/2015 10:30	6.75	9.5	0.17
8/29/2015 5:15	3.82	11.3	0.45	8/29/2015 10:45	6.97	9.1	0.22
8/29/2015 5:30	3.81	11.3	0.45	8/29/2015 11:00	7.18	8.6	0.29
8/29/2015 5:45	3.79	11.3	0.44	8/29/2015 11:15	7.42	7.9	0.35
8/29/2015 6:00	3.75	11.3	0.43	8/29/2015 11:30	7.58	6.9	0.42
8/29/2015 6:15	3.74	11.7	0.42	8/29/2015 11:45	7.64	6.4	0.48
8/29/2015 6:30	3.73	11.7	0.42	8/29/2015 12:00	7.65	6	0.50
8/29/2015 6:45	3.71	11.7	0.42	8/29/2015 12:15	7.65	5.5	0.56
8/29/2015 7:00	3.70	11.9	0.41	8/29/2015 12:30	7.61	5.1	0.59
8/29/2015 7:15	3.68	11.9	0.41	8/29/2015 12:45	7.58	4.8	0.63
8/29/2015 7:30	3.69	11.9	0.40	8/29/2015 13:00	7.53	4.5	0.66
8/29/2015 7:45	3.68	11.9	0.40	8/29/2015 13:15	7.48	4.5	0.68
8/29/2015 8:00	3.69	11.9	0.40	8/29/2015 13:30	7.33	4.6	0.71
8/29/2015 8:15	3.70	11.9	0.39	8/29/2015 13:45	7.44	4.6	0.74
8/29/2015 8:30	3.74	11.8	0.39	8/29/2015 14:00	7.52	4.8	0.76
8/29/2015 8:45	3.78	11.8	0.39	8/29/2015 14:15	7.65	5.1	0.81
8/29/2015 9:00	3.82	11.8	0.38	8/29/2015 14:30	7.84	5.5	0.83
8/29/2015 9:15	3.85	11.8	0.38	8/29/2015 14:45	7.96	5.6	0.89
8/29/2015 9:30	4.02	11.7	0.37	8/29/2015 15:00	7.97	5.7	0.94
8/29/2015 9:45	4.16	11.7	0.37	8/29/2015 15:15	7.96	5.7	0.98
8/29/2015 10:00	4.32	11.8	0.37	8/29/2015 15:30	7.87	5.8	0.98
8/29/2015 10:15	4.47	11.8	0.36	8/29/2015 15:45	7.72	5.7	1.00
8/29/2015 10:30	4.68	11.7	0.36	8/29/2015 16:00	7.62	5.7	0.99
8/29/2015 10:45	4.92	12	0.34	8/29/2015 16:15	7.50	5.7	0.98
8/29/2015 11:00	5.07	11.9	0.36	8/29/2015 16:30	7.32	5.8	0.98
8/29/2015 11:15	5.32	11.8	0.34	8/29/2015 16:45	7.20	5.7	1.00
8/29/2015 11:30	5.65	12	0.34	8/29/2015 17:00	7.05	5.6	0.99
8/29/2015 11:45	6.00	11.7	0.34	8/29/2015 17:15	6.96	5.5	0.97
8/29/2015 12:00	6.41	11.7	0.33	8/29/2015 17:30	6.87	5.5	0.97
8/29/2015 12:15	6.87	11.8	0.35	8/29/2015 17:45	6.82	5.5	0.96
8/29/2015 12:30	7.34	11.8	0.34	8/29/2015 18:00	6.74	5.5	0.93
8/29/2015 12:45	7.78	11.8	0.37	8/29/2015 18:15	6.63	5.6	0.91
8/29/2015 13:00	8.19	11.9	0.39	8/29/2015 18:30	6.54	5.5	0.90
8/29/2015 13:15	8.59	12.1	0.43	8/29/2015 18:45	6.47	5.5	0.89
8/29/2015 13:30	9.01	12.1	0.49	8/29/2015 19:00	6.38	5.5	0.87

8/29/2015 13:45	9.42	12.1	0.57	8/29/2015 19:15	6.30	5.4	0.88
8/29/2015 14:00	9.78	12.1	0.65	8/29/2015 19:30	6.22	5.7	0.84
8/29/2015 14:15	10.06	11.8	0.72	8/29/2015 19:45	6.15	5.8	0.82
8/29/2015 14:30	10.15	11.3	0.78	8/29/2015 20:00	6.09	5.9	0.82
8/29/2015 14:45	10.10	10.8	0.85	8/29/2015 20:15	6.03	6	0.79
8/29/2015 15:00	9.93	10.3	0.89	8/29/2015 20:30	5.98	6	0.77
8/29/2015 15:15	9.69	9.9	0.92	8/29/2015 20:45	5.95	6	0.76
8/29/2015 15:30	9.48	9.4	0.94	8/29/2015 21:00	5.90	6	0.75
8/29/2015 15:45	9.15	9	0.96	8/29/2015 21:15	5.86	6.2	0.75
8/29/2015 16:00	8.88	8.7	0.98	8/29/2015 21:30	5.82	6.2	0.74
8/29/2015 16:15	8.66	8.2	1.00	8/29/2015 21:45	5.80	6.2	0.73
8/29/2015 16:30	8.38	8.1	0.99	8/29/2015 22:00	5.79	6.2	0.71
8/29/2015 16:45	8.11	7.9	0.99	8/29/2015 22:15	5.72	6.4	0.68
8/29/2015 17:00	7.87	7.7	0.99	8/29/2015 22:30	5.71	6.4	0.71
8/29/2015 17:15	7.74	7.7	0.99	8/29/2015 22:45	5.67	6.2	0.71
8/29/2015 17:30	7.59	7.6	0.98	8/29/2015 23:00	5.64	6.4	0.69
8/29/2015 17:45	7.47	7.5	0.97	8/29/2015 23:15	5.59	6.4	0.69
8/29/2015 18:00	7.35	7.3	0.96	8/29/2015 23:30	5.56	6.4	0.67
8/29/2015 18:15	7.26	7.1	0.94	8/29/2015 23:45	5.55	6.4	0.64
8/29/2015 18:30	7.10	7.1	0.93	8/30/2015 0:00	5.54	6.5	0.65
8/29/2015 18:45	6.98	7.1	0.93	8/30/2015 0:15	5.54	6.6	0.63
8/29/2015 19:00	6.88	7	0.90	8/30/2015 0:30	5.51	6.6	0.62
8/29/2015 19:15	6.77	6.9	0.91	8/30/2015 0:45	5.50	6.8	0.62
8/29/2015 19:30	6.66	7	0.90	8/30/2015 1:00	5.47	6.6	0.62
8/29/2015 19:45	6.54	7	0.88	8/30/2015 1:15	5.43	6.7	0.60
8/29/2015 20:00	6.42	7.1	0.88	8/30/2015 1:30	5.43	6.7	0.60
8/29/2015 20:15	6.32	7.1	0.87	8/30/2015 1:45	5.43	6.7	0.60
8/29/2015 20:30	6.25	7	0.85	8/30/2015 2:00	5.44	7	0.58
8/29/2015 20:45	6.17	7.2	0.85	8/30/2015 2:15	5.46	6.6	0.60
8/29/2015 21:00	6.09	7.1	0.84	8/30/2015 2:30	5.52	6.9	0.61
8/29/2015 21:15	6.03	7.1	0.82	8/30/2015 2:45	5.54	6.9	0.57
8/29/2015 21:30	5.98	7	0.82	8/30/2015 3:00	5.52	6.9	0.60
8/29/2015 21:45	5.92	7	0.82	8/30/2015 3:15	5.51	6.6	0.61
8/29/2015 22:00	5.87	6.9	0.80	8/30/2015 3:30	5.46	6.5	0.61
8/29/2015 22:15	5.79	7.1	0.79	8/30/2015 3:45	5.42	6.5	0.61
8/29/2015 22:30	5.74	6.9	0.78	8/30/2015 4:00	5.38	6.5	0.62
8/29/2015 22:45	5.66	7.1	0.77	8/30/2015 4:15	5.35	6.5	0.60
8/29/2015 23:00	5.61	7	0.76	8/30/2015 4:30	5.30	6.5	0.59
8/29/2015 23:15	5.55	7	0.75	8/30/2015 4:45	5.31	6.5	0.58
8/29/2015 23:30	5.51	7.2	0.75	8/30/2015 5:00	5.32	6.7	0.58
8/29/2015 23:45	5.47	7.2	0.73	8/30/2015 5:15	5.32	6.7	0.59
8/30/2015 0:00	5.43	7.3	0.74	8/30/2015 5:30	5.32	6.7	0.58
8/30/2015 0:15	5.40	7.4	0.72	8/30/2015 5:45	5.31	7	0.59
8/30/2015 0:30	5.35	7.5	0.72	8/30/2015 6:00	5.26	7	0.60

8/30/2015 0:45	5.32	7.3	0.70	8/30/2015 6:15	5.22	7.1	0.61
8/30/2015 1:00	5.30	7.5	0.70	8/30/2015 6:30	5.16	7.1	0.61
8/30/2015 1:15	5.26	7.3	0.69	8/30/2015 6:45	5.14	7.1	0.57
8/30/2015 1:30	5.23	7.7	0.68	8/30/2015 7:00	5.14	7.1	0.57
8/30/2015 1:45	5.23	7.7	0.67	8/30/2015 7:15	5.12	7.1	0.58
8/30/2015 2:00	5.24	7.7	0.66	8/30/2015 7:30	5.12	7.1	0.57
8/30/2015 2:15	5.24	7.7	0.67	8/30/2015 7:45	5.12	7.3	0.58
8/30/2015 2:30	5.26	7.7	0.66	8/30/2015 8:00	5.16	7.1	0.53
8/30/2015 2:45	5.26	7.8	0.65	8/30/2015 8:15	5.26	7.2	0.54
8/30/2015 3:00	5.26	7.8	0.67	8/30/2015 8:30	5.32	7.2	0.54
8/30/2015 3:15	5.24	7.8	0.65	8/30/2015 8:45	5.47	7.1	0.52
8/30/2015 3:30	5.23	8	0.65	8/30/2015 9:00	5.70	7.2	0.53
8/30/2015 3:45	5.24	8	0.65	8/30/2015 9:15	5.96	6.8	0.55
8/30/2015 4:00	5.22	8	0.66	8/30/2015 9:30	6.25	6.3	0.60
8/30/2015 4:15	5.21	8	0.64	8/30/2015 9:45	6.43	6	0.62
8/30/2015 4:30	5.19	8.2	0.65	8/30/2015 10:00	6.55	5.6	0.61
8/30/2015 4:45	5.17	8.2	0.63	8/30/2015 10:15	6.55	5.5	0.63
8/30/2015 5:00	5.17	8.2	0.64	8/30/2015 10:30	6.65	5.4	0.64
8/30/2015 5:15	5.15	8.2	0.65	8/30/2015 10:45	6.74	5.2	0.65
8/30/2015 5:30	5.15	8.2	0.65	8/30/2015 11:00	6.96	5.2	0.62
8/30/2015 5:45	5.10	8.2	0.65	8/30/2015 11:15	7.16	5.1	0.66
8/30/2015 6:00	5.06	8.1	0.66	8/30/2015 11:30	7.29	5.1	0.67
8/30/2015 6:15	5.04	8.1	0.66	8/30/2015 11:45	7.38	5	0.71
8/30/2015 6:30	5.02	8.1	0.67	8/30/2015 12:00	7.34	4.6	0.75
8/30/2015 6:45	4.98	8.1	0.66	8/30/2015 12:15	7.33	4.6	0.77
8/30/2015 7:00	4.96	8.1	0.66	8/30/2015 12:30	7.38	4.6	0.80
8/30/2015 7:15	4.94	8.2	0.67	8/30/2015 12:45	7.44	4.4	0.83
8/30/2015 7:30	4.92	8.2	0.66	8/30/2015 13:00	7.48	4.5	0.85
8/30/2015 7:45	4.92	8.2	0.66	8/30/2015 13:15	7.48	4.4	0.86
8/30/2015 8:00	4.93	7.8	0.64	8/30/2015 13:30	7.28	4.5	0.88
8/30/2015 8:15	5.01	8	0.65	8/30/2015 13:45	6.98	4.4	0.90
8/30/2015 8:30	5.06	7.8	0.65	8/30/2015 14:00	6.75	4.5	0.93
8/30/2015 8:45	5.17	7.4	0.64	8/30/2015 14:15	6.79	4.5	0.93
8/30/2015 9:00	5.31	7.5	0.64	8/30/2015 14:30	6.91	4.6	0.92
8/30/2015 9:15	5.43	7.3	0.64	8/30/2015 14:45	6.98	4.7	0.94
8/30/2015 9:30	5.61	7.3	0.64	8/30/2015 15:00	6.89	4.9	0.93
8/30/2015 9:45	5.79	7.2	0.65	8/30/2015 15:15	6.70	4.9	0.95
8/30/2015 10:00	5.98	7.3	0.64	8/30/2015 15:30	6.49	5	0.95
8/30/2015 10:15	6.03	7.3	0.64	8/30/2015 15:45	6.37	5.1	0.95
8/30/2015 10:30	6.20	7.3	0.65	8/30/2015 16:00	6.25	5.1	0.93
8/30/2015 10:45	6.40	7.4	0.66	8/30/2015 16:15	6.15	5.1	0.91
8/30/2015 11:00	6.62	7.3	0.65	8/30/2015 16:30	6.09	5.1	0.92
8/30/2015 11:15	6.91	7.5	0.67	8/30/2015 16:45	6.02	5.2	0.91
8/30/2015 11:30	7.11	7.4	0.68	8/30/2015 17:00	5.99	5.3	0.89

8/30/2015 11:45	7.38	7.5	0.69	8/30/2015 17:15	5.99	5.3	0.86
8/30/2015 12:00	7.64	7.4	0.71	8/30/2015 17:30	6.03	5.3	0.85
8/30/2015 12:15	7.85	7.3	0.73	8/30/2015 17:45	6.05	5.5	0.83
8/30/2015 12:30	8.03	7.2	0.74	8/30/2015 18:00	6.05	5.3	0.82
8/30/2015 12:45	8.23	7.4	0.76	8/30/2015 18:15	6.01	5.5	0.84
8/30/2015 13:00	8.32	7.2	0.76	8/30/2015 18:30	5.94	5.4	0.81
8/30/2015 13:15	8.28	7.3	0.78	8/30/2015 18:45	5.86	5.5	0.79
8/30/2015 13:30	8.19	7.3	0.80	8/30/2015 19:00	5.82	5.6	0.78
8/30/2015 13:45	7.96	7.3	0.81	8/30/2015 19:15	5.76	5.6	0.77
8/30/2015 14:00	7.78	7.3	0.84	8/30/2015 19:30	5.70	5.6	0.76
8/30/2015 14:15	7.78	7.2	0.85	8/30/2015 19:45	5.67	5.6	0.76
8/30/2015 14:30	7.79	7	0.87	8/30/2015 20:00	5.62	5.6	0.74
8/30/2015 14:45	7.62	7.1	0.89	8/30/2015 20:15	5.58	5.8	0.74
8/30/2015 15:00	7.43	6.9	0.90	8/30/2015 20:30	5.55	5.8	0.73
8/30/2015 15:15	7.22	7	0.91	8/30/2015 20:45	5.51	6	0.72
8/30/2015 15:30	7.06	6.9	0.90	8/30/2015 21:00	5.47	6	0.72
8/30/2015 15:45	6.91	6.7	0.91	8/30/2015 21:15	5.44	6.2	0.70
8/30/2015 16:00	6.75	6.6	0.92	8/30/2015 21:30	5.42	6.2	0.70
8/30/2015 16:15	6.62	6.5	0.90	8/30/2015 21:45	5.36	6.2	0.69
8/30/2015 16:30	6.51	6.6	0.89	8/30/2015 22:00	5.34	6.2	0.69
8/30/2015 16:45	6.40	6.5	0.90	8/30/2015 22:15	5.28	6.2	0.67
8/30/2015 17:00	6.32	6.4	0.89	8/30/2015 22:30	5.24	6.2	0.67
8/30/2015 17:15	6.26	6.4	0.88	8/30/2015 22:45	5.19	6.4	0.67
8/30/2015 17:30	6.19	6.4	0.89	8/30/2015 23:00	5.12	6.3	0.64
8/30/2015 17:45	6.13	6.3	0.87	8/30/2015 23:15	5.06	6.5	0.65
8/30/2015 18:00	6.07	6.2	0.88	8/30/2015 23:30	5.00	6.5	0.62
8/30/2015 18:15	6.00	6	0.87	8/30/2015 23:45	4.93	6.5	0.62
8/30/2015 18:30	5.94	6.1	0.86	8/31/2015 0:00	4.89	6.7	0.61
8/30/2015 18:45	5.89	6.1	0.83	8/31/2015 0:15	4.81	6.7	0.58
8/30/2015 19:00	5.82	6	0.83	8/31/2015 0:30	4.75	6.8	0.59
8/30/2015 19:15	5.75	6.3	0.82	8/31/2015 0:45	4.71	6.8	0.57
8/30/2015 19:30	5.68	6.3	0.81	8/31/2015 1:00	4.65	7	0.56
8/30/2015 19:45	5.61	6.4	0.80	8/31/2015 1:15	4.61	7	0.57
8/30/2015 20:00	5.55	6.4	0.80	8/31/2015 1:30	4.57	7	0.55
8/30/2015 20:15	5.48	6.6	0.81	8/31/2015 1:45	4.53	7	0.55
8/30/2015 20:30	5.43	6.5	0.79	8/31/2015 2:00	4.52	7.4	0.54
8/30/2015 20:45	5.36	6.7	0.79	8/31/2015 2:15	4.48	7.4	0.54
8/30/2015 21:00	5.30	6.7	0.78	8/31/2015 2:30	4.44	7.4	0.50
8/30/2015 21:15	5.24	6.7	0.76	8/31/2015 2:45	4.40	7.4	0.50
8/30/2015 21:30	5.18	6.7	0.76	8/31/2015 3:00	4.35	7.4	0.48
8/30/2015 21:45	5.11	6.8	0.75	8/31/2015 3:15	4.28	7.6	0.49
8/30/2015 22:00	5.05	6.6	0.75	8/31/2015 3:30	4.23	7.5	0.50
8/30/2015 22:15	4.98	6.7	0.73	8/31/2015 3:45	4.20	7.5	0.48
8/30/2015 22:30	4.92	6.7	0.72	8/31/2015 4:00	4.13	7.4	0.48

8/30/2015 22:45	4.85	6.7	0.72
8/30/2015 23:00	4.77	6.8	0.71
8/30/2015 23:15	4.70	7	0.69
8/30/2015 23:30	4.63	6.9	0.70
8/30/2015 23:45	4.55	7.1	0.68
8/31/2015 0:00	4.49	7.1	0.69
8/31/2015 0:15	4.41	7.1	0.67
8/31/2015 0:30	4.34	7.2	0.67
8/31/2015 0:45	4.28	7.2	0.67
8/31/2015 1:00	4.21	7.4	0.65
8/31/2015 1:15	4.15	7.4	0.65
8/31/2015 1:30	4.09	7.5	0.65
8/31/2015 1:45	4.05	7.5	0.63
8/31/2015 2:00	4.02	7.5	0.62
8/31/2015 2:15	3.95	7.5	0.61
8/31/2015 2:30	3.91	7.7	0.59
8/31/2015 2:45	3.83	7.8	0.59
8/31/2015 3:00	3.77	7.8	0.58
8/31/2015 3:15	3.70	7.8	0.57
8/31/2015 3:30	3.64	7.9	0.56
8/31/2015 3:45	3.56	7.9	0.55
8/31/2015 4:00	3.48	8.1	0.55
8/31/2015 4:15	3.39	8.2	0.54
8/31/2015 4:30	3.30	8.2	0.52
8/31/2015 4:45	3.20	8.3	0.51
8/31/2015 5:00	3.11	8.5	0.50
8/31/2015 5:15	3.01	8.4	0.49
8/31/2015 5:30	2.93	8.6	0.49
8/31/2015 5:45	2.82	8.7	0.48
8/31/2015 6:00	2.73	8.7	0.46
8/31/2015 6:15	2.63	8.8	0.45
8/31/2015 6:30	2.54	8.8	0.45
8/31/2015 6:45	2.46	8.9	0.44
8/31/2015 7:00	2.38	9.1	0.43
8/31/2015 7:15	2.30	9.2	0.42
8/31/2015 7:30	2.22	9.2	0.41
8/31/2015 7:45	2.16	9.2	0.40
8/31/2015 8:00	2.12	9.3	0.38
8/31/2015 8:15	2.07	9.3	0.38
8/31/2015 8:30	2.03	9.3	0.37
8/31/2015 8:45	2.03	9.5	0.35
8/31/2015 9:00	1.99	9.4	0.33
8/31/2015 9:15	1.99	9.5	0.32
8/31/2015 9:30	2.09	9.6	0.31

8/31/2015 4:15	4.04	7.6	0.46
8/31/2015 4:30	3.96	7.6	0.45
8/31/2015 4:45	3.85	7.6	0.43
8/31/2015 5:00	3.74	7.9	0.40
8/31/2015 5:15	3.64	7.7	0.39
8/31/2015 5:30	3.53	8	0.41
8/31/2015 5:45	3.44	8.2	0.41
8/31/2015 6:00	3.34	8.2	0.39
8/31/2015 6:15	3.25	8.3	0.37
8/31/2015 6:30	3.17	8.5	0.35
8/31/2015 6:45	3.09	8.5	0.35
8/31/2015 7:00	3.01	8.5	0.32
8/31/2015 7:15	2.95	8.6	0.34
8/31/2015 7:30	2.91	8.6	0.32
8/31/2015 7:45	2.87	8.6	0.32
8/31/2015 8:00	2.85	8.6	0.29
8/31/2015 8:15	2.83	8.6	0.28
8/31/2015 8:30	2.82	8.6	0.27
8/31/2015 8:45	2.81	8.6	0.26
8/31/2015 9:00	2.79	8.7	0.26
8/31/2015 9:15	2.82	8.6	0.24
8/31/2015 9:30	2.98	8.6	0.22
8/31/2015 9:45	3.34	8.4	0.20
8/31/2015 10:00	3.68	8.4	0.18
8/31/2015 10:15	3.97	8.4	0.16
8/31/2015 10:30	4.33	8.3	0.12
8/31/2015 10:45	4.97	8.3	0.14
8/31/2015 11:00	5.48	8.2	0.14
8/31/2015 11:15	6.05	8.1	0.13
8/31/2015 11:30	6.41	7.8	0.13
8/31/2015 11:45	6.85	7.5	0.18
8/31/2015 12:00	6.98	7	0.23
8/31/2015 12:15	7.08	6.6	0.29
8/31/2015 12:30	7.06	5.9	0.37
8/31/2015 12:45	7.01	5.8	0.38
8/31/2015 13:00	6.96	5.6	0.45
8/31/2015 13:15	6.89	5.3	0.50
8/31/2015 13:30	6.90	5.2	0.53
8/31/2015 13:45	6.91	5.2	0.55
8/31/2015 14:00	6.94	5.2	0.58
8/31/2015 14:15	6.97	5	0.57
8/31/2015 14:30	7.00	4.8	0.58
8/31/2015 14:45	7.04	4.8	0.61
8/31/2015 15:00	7.06	5	0.60

8/31/2015 9:45	2.22	9.6	0.28	8/31/2015 15:15	7.06	5.1	0.62
8/31/2015 10:00	2.38	9.5	0.26	8/31/2015 15:30	7.06	5.1	0.65
8/31/2015 10:15	2.50	9.7	0.24	8/31/2015 15:45	7.05	5.3	0.68
8/31/2015 10:30	2.65	9.6	0.23	8/31/2015 16:00	7.01	5.3	0.67
8/31/2015 10:45	2.89	9.8	0.20	8/31/2015 16:15	6.96	5.5	0.69
8/31/2015 11:00	3.06	9.9	0.20	8/31/2015 16:30	6.89	5.5	0.69
8/31/2015 11:15	3.28	9.9	0.19	8/31/2015 16:45	6.83	5.5	0.68
8/31/2015 11:30	3.61	9.9	0.17	8/31/2015 17:00	6.73	5.7	0.68
8/31/2015 11:45	3.91	10.1	0.18	8/31/2015 17:15	6.63	5.7	0.69
8/31/2015 12:00	4.22	9.9	0.20	8/31/2015 17:30	6.53	5.9	0.71
8/31/2015 12:15	4.59	10	0.24	8/31/2015 17:45	6.39	6.1	0.70
8/31/2015 12:30	5.05	10	0.28	8/31/2015 18:00	6.25	6.2	0.71
8/31/2015 12:45	5.49	10.2	0.31	8/31/2015 18:15	6.11	6.2	0.70
8/31/2015 13:00	5.95	10.1	0.35	8/31/2015 18:30	5.94	6.3	0.70
8/31/2015 13:15	6.38	10.2	0.37	8/31/2015 18:45	5.75	6.5	0.68
8/31/2015 13:30	6.77	10.1	0.38	8/31/2015 19:00	5.55	6.6	0.66
8/31/2015 13:45	7.15	9.9	0.41	8/31/2015 19:15	5.34	7	0.65
8/31/2015 14:00	7.47	9.7	0.42	8/31/2015 19:30	5.18	7.1	0.64
8/31/2015 14:15	7.74	9.6	0.43	8/31/2015 19:45	5.06	7.1	0.61
8/31/2015 14:30	8.00	9.5	0.47	8/31/2015 20:00	4.93	7.2	0.62
8/31/2015 14:45	8.25	9.3	0.51	8/31/2015 20:15	4.83	7.2	0.60
8/31/2015 15:00	8.46	9.2	0.54	8/31/2015 20:30	4.75	7.3	0.57
8/31/2015 15:15	8.57	9.2	0.56	8/31/2015 20:45	4.65	7.5	0.55
8/31/2015 15:30	8.67	9	0.60	8/31/2015 21:00	4.57	7.5	0.55
8/31/2015 15:45	8.67	9	0.63	8/31/2015 21:15	4.49	7.5	0.54
8/31/2015 16:00	8.63	8.8	0.66	8/31/2015 21:30	4.43	7.7	0.50
8/31/2015 16:15	8.58	8.7	0.69	8/31/2015 21:45	4.36	7.7	0.49
8/31/2015 16:30	8.44	8.6	0.70	8/31/2015 22:00	4.31	7.8	0.46
8/31/2015 16:45	8.29	8.6	0.71	8/31/2015 22:15	4.24	7.6	0.45
8/31/2015 17:00	8.12	8.5	0.73	8/31/2015 22:30	4.19	7.8	0.42
8/31/2015 17:15	7.93	8.3	0.75	8/31/2015 22:45	4.15	7.8	0.41
8/31/2015 17:30	7.76	8.4	0.77	8/31/2015 23:00	4.10	7.9	0.39
8/31/2015 17:45	7.55	8.2	0.77	8/31/2015 23:15	4.06	7.9	0.37
8/31/2015 18:00	7.22	8.1	0.78	8/31/2015 23:30	4.01	7.9	0.35
8/31/2015 18:15	6.76	8.3	0.77	8/31/2015 23:45	3.98	8.1	0.34
8/31/2015 18:30	6.32	8.5	0.77	9/1/2015 0:00	3.93	8.1	0.32
8/31/2015 18:45	6.00	8.2	0.76	9/1/2015 0:15	3.89	8.1	0.31
8/31/2015 19:00	5.75	8.2	0.76	9/1/2015 0:30	3.84	8.1	0.29
8/31/2015 19:15	5.56	8.1	0.75	9/1/2015 0:45	3.80	8.3	0.27
8/31/2015 19:30	5.38	7.9	0.74	9/1/2015 1:00	3.77	8.2	0.26
8/31/2015 19:45	5.23	7.8	0.72	9/1/2015 1:15	3.70	8.4	0.25
8/31/2015 20:00	5.11	7.9	0.72	9/1/2015 1:30	3.72	8.4	0.24
8/31/2015 20:15	4.96	7.8	0.69	9/1/2015 1:45	3.69	8.6	0.21
8/31/2015 20:30	4.84	7.9	0.68	9/1/2015 2:00	3.66	8.6	0.22

8/31/2015 20:45	4.72	7.8	0.66
8/31/2015 21:00	4.62	8	0.66
8/31/2015 21:15	4.53	8	0.64
8/31/2015 21:30	4.43	7.9	0.61
8/31/2015 21:45	4.36	8	0.60
8/31/2015 22:00	4.26	8	0.58
8/31/2015 22:15	4.19	8.1	0.57
8/31/2015 22:30	4.11	8.1	0.54
8/31/2015 22:45	4.03	8	0.54
8/31/2015 23:00	3.98	8.2	0.51
8/31/2015 23:15	3.92	8.4	0.50
8/31/2015 23:30	3.86	8.4	0.48
8/31/2015 23:45	3.79	8.6	0.46
9/1/2015 0:00	3.74	8.7	0.45
9/1/2015 0:15	3.68	8.9	0.44
9/1/2015 0:30	3.62	8.9	0.43
9/1/2015 0:45	3.57	9.1	0.42
9/1/2015 1:00	3.52	9.1	0.40
9/1/2015 1:15	3.48	9.1	0.40
9/1/2015 1:30	3.43	9.3	0.40
9/1/2015 1:45	3.39	9.4	0.38
9/1/2015 2:00	3.33	9.6	0.37
9/1/2015 2:15	3.30	9.6	0.35
9/1/2015 2:30	3.24	9.6	0.35
9/1/2015 2:45	3.23	9.6	0.35
9/1/2015 3:00	3.20	10.2	0.33
9/1/2015 3:15	3.18	10.2	0.33
9/1/2015 3:30	3.15	10.2	0.31
9/1/2015 3:45	3.13	10.2	0.31
9/1/2015 4:00	3.11	10.4	0.30
9/1/2015 4:15	3.09	10.6	0.29
9/1/2015 4:30	3.10	10.6	0.29
9/1/2015 4:45	3.07	10.6	0.28
9/1/2015 5:00	3.06	10.6	0.27
9/1/2015 5:15	3.05	10.8	0.27
9/1/2015 5:30	3.03	10.8	0.26
9/1/2015 5:45	3.03	11	0.25
9/1/2015 6:00	3.02	11	0.24
9/1/2015 6:15	3.02	11	0.23
9/1/2015 6:30	2.99	11.2	0.22
9/1/2015 6:45	2.99	11.2	0.22
9/1/2015 7:00	3.01	11.3	0.22
9/1/2015 7:15	3.01	11.1	0.21
9/1/2015 7:30	3.01	11.3	0.21

9/1/2015 2:15	3.65	8.6	0.20
9/1/2015 2:30	3.65	8.7	0.18
9/1/2015 2:45	3.65	8.7	0.19
9/1/2015 3:00	3.65	8.9	0.18
9/1/2015 3:15	3.64	8.9	0.17
9/1/2015 3:30	3.64	9.1	0.16
9/1/2015 3:45	3.65	9.1	0.15
9/1/2015 4:00	3.70	9.1	0.14
9/1/2015 4:15	3.72	9	0.13
9/1/2015 4:30	3.73	9	0.14
9/1/2015 4:45	3.72	9.2	0.13
9/1/2015 5:00	3.72	9.2	0.10
9/1/2015 5:15	3.70	9.4	0.12
9/1/2015 5:30	3.69	9.2	0.12
9/1/2015 5:45	3.68	9.6	0.10
9/1/2015 6:00	3.65	9.4	0.10
9/1/2015 6:15	3.64	9.4	0.10
9/1/2015 6:30	3.62	9.4	0.11
9/1/2015 6:45	3.61	9.4	0.10
9/1/2015 7:00	3.60	9.6	0.09
9/1/2015 7:15	3.56	9.6	0.08
9/1/2015 7:30	3.52	9.7	0.08
9/1/2015 7:45	3.49	9.7	0.07
9/1/2015 8:00	3.45	9.7	0.07
9/1/2015 8:15	3.48	9.7	0.07
9/1/2015 8:30	3.48	10	0.07
9/1/2015 8:45	3.56	10	0.07
9/1/2015 9:00	3.62	9.9	0.05
9/1/2015 9:15	3.69	9.9	0.05
9/1/2015 9:30	3.77	9.9	0.03
9/1/2015 9:45	3.89	10.1	0.04
9/1/2015 10:00	4.21	10	0.02
9/1/2015 10:15	4.87	10	0.01
9/1/2015 10:30	5.62	9.7	0.01
9/1/2015 10:45	6.29	9.7	0.00
9/1/2015 11:00	6.96	9.9	0.00
9/1/2015 11:15	7.58	9.6	0.06
9/1/2015 11:30	7.78	9.4	0.12
9/1/2015 11:45	8.03	7.8	0.16
9/1/2015 12:00	8.08	6.6	0.23
9/1/2015 12:15	8.05	6.1	0.27
9/1/2015 12:30	7.96	5.4	0.34
9/1/2015 12:45	7.82	5	0.40
9/1/2015 13:00	7.74	4.6	0.46

9/1/2015 7:45	3.02	11.1	0.19	9/1/2015 13:15	7.68	4.5	0.50
9/1/2015 8:00	3.03	11.1	0.19	9/1/2015 13:30	7.65	4.3	0.55
9/1/2015 8:15	3.05	11.1	0.17	9/1/2015 13:45	7.58	4.2	0.58
9/1/2015 8:30	3.05	11.1	0.17	9/1/2015 14:00	7.42	4.3	0.61
9/1/2015 8:45	3.06	11.1	0.15	9/1/2015 14:15	7.09	4.4	0.65
9/1/2015 9:00	3.07	11.1	0.14	9/1/2015 14:30	6.82	4.3	0.65
9/1/2015 9:15	3.09	11.3	0.13	9/1/2015 14:45	6.70	4.5	0.67
9/1/2015 9:30	3.19	11.2	0.12	9/1/2015 15:00	6.62	4.7	0.68
9/1/2015 9:45	3.31	11.1	0.10	9/1/2015 15:15	6.63	5	0.70
9/1/2015 10:00	3.48	11.2	0.08	9/1/2015 15:30	6.97	5.5	0.71
9/1/2015 10:15	3.60	11.3	0.07	9/1/2015 15:45	7.26	5.7	0.69
9/1/2015 10:30	3.73	11.5	0.06	9/1/2015 16:00	7.45	5.8	0.71
9/1/2015 10:45	3.96	11.5	0.05	9/1/2015 16:15	7.28	6	0.72
9/1/2015 11:00	4.19	11.7	0.03	9/1/2015 16:30	7.13	5.9	0.74
9/1/2015 11:15	4.41	11.7	0.03	9/1/2015 16:45	6.89	5.8	0.76
9/1/2015 11:30	4.70	11.9	0.01	9/1/2015 17:00	6.71	5.7	0.76
9/1/2015 11:45	5.04	11.8	0.01	9/1/2015 17:15	6.59	5.6	0.75
9/1/2015 12:00	5.36	11.8	0.00	9/1/2015 17:30	6.47	5.6	0.73
9/1/2015 12:15	5.70	11.5	0.02	9/1/2015 17:45	6.38	5.8	0.73
9/1/2015 12:30	6.11	11.4	0.09	9/1/2015 18:00	6.30	5.7	0.71
9/1/2015 12:45	6.57	11.3	0.15	9/1/2015 18:15	6.19	5.7	0.73
9/1/2015 13:00	7.06	11.3	0.19	9/1/2015 18:30	6.11	5.8	0.70
9/1/2015 13:15	7.55	11.3	0.22	9/1/2015 18:45	6.02	5.8	0.69
9/1/2015 13:30	8.07	11.3	0.24	9/1/2015 19:00	5.91	6	0.68
9/1/2015 13:45	8.57	11.2	0.28	9/1/2015 19:15	5.80	6	0.67
9/1/2015 14:00	9.05	11.1	0.32	9/1/2015 19:30	5.71	6.1	0.65
9/1/2015 14:15	9.23	11	0.38	9/1/2015 19:45	5.60	6.1	0.65
9/1/2015 14:30	9.43	10.9	0.45	9/1/2015 20:00	5.51	6.3	0.64
9/1/2015 14:45	9.57	10.8	0.53	9/1/2015 20:15	5.43	6.3	0.63
9/1/2015 15:00	9.56	10.8	0.61	9/1/2015 20:30	5.35	6.5	0.60
9/1/2015 15:15	9.42	10.4	0.68	9/1/2015 20:45	5.31	6.5	0.59
9/1/2015 15:30	9.19	10	0.73	9/1/2015 21:00	5.26	6.6	0.57
9/1/2015 15:45	8.92	9.7	0.77	9/1/2015 21:15	5.23	6.7	0.57
9/1/2015 16:00	8.50	9.3	0.77	9/1/2015 21:30	5.22	6.7	0.53
9/1/2015 16:15	8.08	9	0.80	9/1/2015 21:45	5.20	6.9	0.51
9/1/2015 16:30	7.89	8.6	0.80	9/1/2015 22:00	5.19	6.9	0.50
9/1/2015 16:45	7.72	8.4	0.80	9/1/2015 22:15	5.16	7.1	0.48
9/1/2015 17:00	7.49	8.2	0.81	9/1/2015 22:30	5.15	7.1	0.46
9/1/2015 17:15	7.32	8	0.80	9/1/2015 22:45	5.12	7.1	0.44
9/1/2015 17:30	7.17	7.9	0.80	9/1/2015 23:00	5.10	7.3	0.42
9/1/2015 17:45	7.01	7.6	0.80	9/1/2015 23:15	5.08	7.3	0.40
9/1/2015 18:00	6.88	7.5	0.79	9/1/2015 23:30	5.08	7.3	0.39
9/1/2015 18:15	6.72	7.2	0.80	9/1/2015 23:45	5.06	7.3	0.37
9/1/2015 18:30	6.59	7.3	0.79	9/2/2015 0:00	5.03	7.5	0.37

9/1/2015 18:45	6.45	7.4	0.78	9/2/2015 0:15	5.00	7.5	0.34
9/1/2015 19:00	6.29	7.3	0.78	9/2/2015 0:30	4.97	7.5	0.33
9/1/2015 19:15	6.16	7.4	0.77	9/2/2015 0:45	4.95	7.5	0.31
9/1/2015 19:30	6.03	7.4	0.76	9/2/2015 1:00	4.91	7.5	0.31
9/1/2015 19:45	5.89	7.5	0.75	9/2/2015 1:15	4.88	7.5	0.31
9/1/2015 20:00	5.75	7.4	0.74	9/2/2015 1:30	4.85	7.7	0.30
9/1/2015 20:15	5.62	7.5	0.73	9/2/2015 1:45	4.85	7.7	0.29
9/1/2015 20:30	5.52	7.5	0.71	9/2/2015 2:00	4.84	7.7	0.28
9/1/2015 20:45	5.43	7.6	0.71	9/2/2015 2:15	4.83	7.9	0.27
9/1/2015 21:00	5.35	7.5	0.68	9/2/2015 2:30	4.83	7.9	0.26
9/1/2015 21:15	5.30	7.5	0.68	9/2/2015 2:45	4.83	8	0.25
9/1/2015 21:30	5.24	7.4	0.66	9/2/2015 3:00	4.81	8	0.24
9/1/2015 21:45	5.19	7.4	0.65	9/2/2015 3:15	4.81	8	0.23
9/1/2015 22:00	5.15	7.4	0.65	9/2/2015 3:30	4.83	8	0.21
9/1/2015 22:15	5.11	7.4	0.62	9/2/2015 3:45	4.83	8.2	0.21
9/1/2015 22:30	5.07	7.4	0.61	9/2/2015 4:00	4.80	8	0.20
9/1/2015 22:45	5.04	7.5	0.59	9/2/2015 4:15	4.77	8.2	0.19
9/1/2015 23:00	5.00	7.5	0.58	9/2/2015 4:30	4.73	8.2	0.18
9/1/2015 23:15	4.96	7.7	0.56	9/2/2015 4:45	4.69	8.4	0.19
9/1/2015 23:30	4.93	7.7	0.55	9/2/2015 5:00	4.67	8.3	0.17
9/1/2015 23:45	4.90	7.7	0.54	9/2/2015 5:15	4.65	8.3	0.19
9/2/2015 0:00	4.85	7.9	0.52	9/2/2015 5:30	4.63	8.4	0.16
9/2/2015 0:15	4.81	7.9	0.51	9/2/2015 5:45	4.60	8.5	0.16
9/2/2015 0:30	4.76	8.1	0.50	9/2/2015 6:00	4.57	8.5	0.17
9/2/2015 0:45	4.72	8.1	0.49	9/2/2015 6:15	4.56	8.5	0.16
9/2/2015 1:00	4.68	8.3	0.48	9/2/2015 6:30	4.55	8.5	0.16
9/2/2015 1:15	4.64	8.5	0.47	9/2/2015 6:45	4.55	8.6	0.16
9/2/2015 1:30	4.62	8.5	0.46	9/2/2015 7:00	4.53	8.7	0.15
9/2/2015 1:45	4.59	8.5	0.46	9/2/2015 7:15	4.53	8.8	0.15
9/2/2015 2:00	4.56	8.7	0.45	9/2/2015 7:30	4.53	8.7	0.12
9/2/2015 2:15	4.55	8.5	0.44	9/2/2015 7:45	4.56	9	0.12
9/2/2015 2:30	4.51	8.7	0.43	9/2/2015 8:00	4.60	8.8	0.10
9/2/2015 2:45	4.49	8.9	0.42	9/2/2015 8:15	4.63	8.9	0.10
9/2/2015 3:00	4.47	8.9	0.42	9/2/2015 8:30	4.64	8.9	0.11
9/2/2015 3:15	4.46	9.1	0.41	9/2/2015 8:45	4.63	8.9	0.10
9/2/2015 3:30	4.45	9.1	0.41	9/2/2015 9:00	4.63	8.9	0.11
9/2/2015 3:45	4.42	9.1	0.40	9/2/2015 9:15	4.63	8.9	0.10
9/2/2015 4:00	4.39	9.3	0.39	9/2/2015 9:30	4.61	8.9	0.10
9/2/2015 4:15	4.37	9.4	0.38	9/2/2015 9:45	4.69	8.9	0.09
9/2/2015 4:30	4.36	9.3	0.38	9/2/2015 10:00	5.00	9.1	0.09
9/2/2015 4:45	4.32	9.5	0.38	9/2/2015 10:15	5.48	8.9	0.13
9/2/2015 5:00	4.30	9.5	0.37	9/2/2015 10:30	5.95	8.6	0.14
9/2/2015 5:15	4.28	9.8	0.37	9/2/2015 10:45	6.53	8.2	0.16
9/2/2015 5:30	4.25	9.8	0.35	9/2/2015 11:00	7.06	7.6	0.20

9/2/2015 5:45	4.22	9.9	0.36	9/2/2015 11:15	7.16	6.9	0.27
9/2/2015 6:00	4.19	9.9	0.36	9/2/2015 11:30	7.30	6.1	0.32
9/2/2015 6:15	4.16	9.9	0.34	9/2/2015 11:45	7.36	5.5	0.38
9/2/2015 6:30	4.12	9.9	0.34	9/2/2015 12:00	7.36	5	0.43
9/2/2015 6:45	4.09	9.9	0.34	9/2/2015 12:15	7.36	4.7	0.47
9/2/2015 7:00	4.05	10.1	0.33	9/2/2015 12:30	7.36	4.4	0.50
9/2/2015 7:15	4.03	10.1	0.34	9/2/2015 12:45	7.38	4.1	0.53
9/2/2015 7:30	4.00	10.2	0.32	9/2/2015 13:00	7.42	3.8	0.56
9/2/2015 7:45	3.98	10.2	0.32	9/2/2015 13:15	7.45	4	0.60
9/2/2015 8:00	3.95	10	0.31	9/2/2015 13:30	7.48	3.6	0.61
9/2/2015 8:15	3.92	10.1	0.30	9/2/2015 13:45	7.49	3.6	0.62
9/2/2015 8:30	3.90	10.1	0.30	9/2/2015 14:00	7.60	3.8	0.67
9/2/2015 8:45	3.88	10.1	0.29	9/2/2015 14:15	7.66	4	0.70
9/2/2015 9:00	3.86	10.1	0.29	9/2/2015 14:30	7.69	4.2	0.76
9/2/2015 9:15	3.85	10.1	0.28	9/2/2015 14:45	7.48	4.4	0.78
9/2/2015 9:30	3.91	10.1	0.29	9/2/2015 15:00	7.42	4.6	0.80
9/2/2015 9:45	4.02	10	0.28	9/2/2015 15:15	7.21	4.6	0.85
9/2/2015 10:00	4.16	10.1	0.26	9/2/2015 15:30	7.21	4.8	0.84
9/2/2015 10:15	4.25	10.2	0.27	9/2/2015 15:45	7.10	4.8	0.85
9/2/2015 10:30	4.36	10.1	0.27	9/2/2015 16:00	7.05	4.7	0.85
9/2/2015 10:45	4.55	10	0.25	9/2/2015 16:15	6.97	4.7	0.85
9/2/2015 11:00	4.72	10.2	0.25	9/2/2015 16:30	6.81	4.6	0.84
9/2/2015 11:15	4.94	10.1	0.24	9/2/2015 16:45	6.71	4.6	0.83
9/2/2015 11:30	5.23	9.9	0.23	9/2/2015 17:00	6.59	4.5	0.82
9/2/2015 11:45	5.53	9.9	0.24	9/2/2015 17:15	6.45	4.6	0.82
9/2/2015 12:00	5.85	9.6	0.23	9/2/2015 17:30	6.38	4.6	0.81
9/2/2015 12:15	6.25	9.5	0.21	9/2/2015 17:45	6.25	4.6	0.80
9/2/2015 12:30	6.70	9.4	0.22	9/2/2015 18:00	6.21	4.6	0.77
9/2/2015 12:45	7.15	9.5	0.25	9/2/2015 18:15	6.18	4.7	0.77
9/2/2015 13:00	7.59	9.5	0.28	9/2/2015 18:30	6.15	4.8	0.75
9/2/2015 13:15	8.06	9.6	0.33	9/2/2015 18:45	6.03	4.9	0.77
9/2/2015 13:30	8.38	9.7	0.41	9/2/2015 19:00	5.94	5	0.74
9/2/2015 13:45	8.81	9.9	0.47	9/2/2015 19:15	5.86	5.1	0.72
9/2/2015 14:00	9.09	9.9	0.56	9/2/2015 19:30	5.79	5.3	0.72
9/2/2015 14:15	9.44	9.7	0.62	9/2/2015 19:45	5.71	5.3	0.71
9/2/2015 14:30	9.55	9.4	0.68	9/2/2015 20:00	5.66	5.5	0.69
9/2/2015 14:45	9.30	8.9	0.74	9/2/2015 20:15	5.59	5.5	0.68
9/2/2015 15:00	9.10	8.8	0.78	9/2/2015 20:30	5.54	5.5	0.69
9/2/2015 15:15	8.74	8.5	0.80	9/2/2015 20:45	5.47	5.7	0.69
9/2/2015 15:30	8.53	8	0.83	9/2/2015 21:00	5.43	5.7	0.64
9/2/2015 15:45	8.36	7.8	0.84	9/2/2015 21:15	5.36	5.7	0.62
9/2/2015 16:00	8.28	7.4	0.84	9/2/2015 21:30	5.31	5.7	0.60
9/2/2015 16:15	8.20	7.2	0.84	9/2/2015 21:45	5.27	5.9	0.58
9/2/2015 16:30	7.96	7	0.84	9/2/2015 22:00	5.23	5.9	0.57

9/2/2015 16:45	7.79	6.9	0.83	9/2/2015 22:15	5.18	6	0.55
9/2/2015 17:00	7.65	6.8	0.82	9/2/2015 22:30	5.14	6.1	0.55
9/2/2015 17:15	7.51	6.4	0.83	9/2/2015 22:45	5.10	6.1	0.52
9/2/2015 17:30	7.39	6.5	0.81	9/2/2015 23:00	5.07	6.2	0.52
9/2/2015 17:45	7.31	6.4	0.80	9/2/2015 23:15	5.04	6.3	0.51
9/2/2015 18:00	7.14	6.3	0.81	9/2/2015 23:30	5.03	6.3	0.49
9/2/2015 18:15	6.88	6.4	0.82	9/2/2015 23:45	5.00	6.3	0.49
9/2/2015 18:30	6.71	6.5	0.81	9/3/2015 0:00	5.01	6.3	0.47
9/2/2015 18:45	6.57	6.6	0.81	9/3/2015 0:15	5.01	6.3	0.45
9/2/2015 19:00	6.43	6.5	0.82	9/3/2015 0:30	5.03	6.3	0.43
9/2/2015 19:15	6.30	6.4	0.80	9/3/2015 0:45	5.03	6.5	0.42
9/2/2015 19:30	6.19	6.4	0.80	9/3/2015 1:00	5.03	6.7	0.40
9/2/2015 19:45	6.08	6.5	0.80	9/3/2015 1:15	5.01	6.7	0.39
9/2/2015 20:00	5.96	6.4	0.79	9/3/2015 1:30	5.01	6.7	0.38
9/2/2015 20:15	5.86	6.3	0.77	9/3/2015 1:45	5.03	6.7	0.37
9/2/2015 20:30	5.75	6.3	0.76	9/3/2015 2:00	5.00	6.7	0.36
9/2/2015 20:45	5.66	6.4	0.75	9/3/2015 2:15	5.01	6.7	0.34
9/2/2015 21:00	5.58	6.4	0.72	9/3/2015 2:30	4.99	6.8	0.35
9/2/2015 21:15	5.49	6.3	0.72	9/3/2015 2:45	4.97	6.8	0.34
9/2/2015 21:30	5.41	6.3	0.69	9/3/2015 3:00	4.95	6.8	0.34
9/2/2015 21:45	5.34	6.3	0.68	9/3/2015 3:15	4.95	7	0.33
9/2/2015 22:00	5.24	6.4	0.68	9/3/2015 3:30	4.92	7	0.34
9/2/2015 22:15	5.18	6.4	0.67	9/3/2015 3:45	4.91	7	0.32
9/2/2015 22:30	5.11	6.5	0.67	9/3/2015 4:00	4.88	7.2	0.31
9/2/2015 22:45	5.06	6.5	0.65	9/3/2015 4:15	4.89	7.2	0.31
9/2/2015 23:00	5.00	6.7	0.63	9/3/2015 4:30	4.89	7.4	0.32
9/2/2015 23:15	4.96	6.5	0.62	9/3/2015 4:45	4.91	7.3	0.31
9/2/2015 23:30	4.93	6.7	0.61	9/3/2015 5:00	4.91	7.5	0.30
9/2/2015 23:45	4.89	6.7	0.61	9/3/2015 5:15	4.92	7.5	0.28
9/3/2015 0:00	4.88	6.7	0.60	9/3/2015 5:30	4.91	7.5	0.28
9/3/2015 0:15	4.85	6.9	0.59	9/3/2015 5:45	4.91	7.5	0.29
9/3/2015 0:30	4.84	7.1	0.57	9/3/2015 6:00	4.91	7.5	0.27
9/3/2015 0:45	4.81	7.1	0.56	9/3/2015 6:15	4.88	7.5	0.27
9/3/2015 1:00	4.79	6.9	0.55	9/3/2015 6:30	4.84	7.5	0.28
9/3/2015 1:15	4.77	7.1	0.54	9/3/2015 6:45	4.81	7.6	0.28
9/3/2015 1:30	4.76	7.3	0.53	9/3/2015 7:00	4.76	7.6	0.29
9/3/2015 1:45	4.75	7.3	0.51	9/3/2015 7:15	4.75	7.6	0.28
9/3/2015 2:00	4.73	7.5	0.51	9/3/2015 7:30	4.72	7.6	0.28
9/3/2015 2:15	4.71	7.5	0.50	9/3/2015 7:45	4.72	7.6	0.28
9/3/2015 2:30	4.68	7.5	0.49	9/3/2015 8:00	4.72	7.6	0.27
9/3/2015 2:45	4.66	7.7	0.49	9/3/2015 8:15	4.76	7.6	0.24
9/3/2015 3:00	4.63	7.8	0.49	9/3/2015 8:30	4.80	7.6	0.25
9/3/2015 3:15	4.64	7.8	0.49	9/3/2015 8:45	4.88	7.5	0.23
9/3/2015 3:30	4.63	7.8	0.47	9/3/2015 9:00	4.96	7.5	0.22

9/3/2015 3:45	4.60	8	0.47	9/3/2015 9:15	5.03	7.5	0.19
9/3/2015 4:00	4.58	8	0.46	9/3/2015 9:30	5.08	7.4	0.19
9/3/2015 4:15	4.56	8.2	0.46	9/3/2015 9:45	5.26	7.5	0.18
9/3/2015 4:30	4.56	8.2	0.47	9/3/2015 10:00	5.58	7.4	0.17
9/3/2015 4:45	4.56	8.2	0.46	9/3/2015 10:15	5.98	7.4	0.17
9/3/2015 5:00	4.56	8.4	0.46	9/3/2015 10:30	6.58	7.1	0.16
9/3/2015 5:15	4.55	8.5	0.44	9/3/2015 10:45	6.94	7	0.20
9/3/2015 5:30	4.55	8.5	0.45	9/3/2015 11:00	7.16	6.9	0.28
9/3/2015 5:45	4.54	8.5	0.45	9/3/2015 11:15	7.30	6.3	0.35
9/3/2015 6:00	4.54	8.5	0.44	9/3/2015 11:30	7.41	5.5	0.38
9/3/2015 6:15	4.53	8.5	0.44	9/3/2015 11:45	7.22	5.1	0.43
9/3/2015 6:30	4.49	8.6	0.44	9/3/2015 12:00	7.05	4.7	0.45
9/3/2015 6:45	4.47	8.7	0.44				
9/3/2015 7:00	4.43	8.8	0.43				
9/3/2015 7:15	4.42	8.6	0.43				
9/3/2015 7:30	4.39	8.6	0.43				
9/3/2015 7:45	4.37	8.6	0.43				
9/3/2015 8:00	4.37	8.6	0.42				
9/3/2015 8:15	4.37	8.5	0.42				
9/3/2015 8:30	4.38	8.6	0.43				
9/3/2015 8:45	4.39	8.5	0.42				
9/3/2015 9:00	4.43	8.3	0.43				
9/3/2015 9:15	4.47	8.1	0.41				
9/3/2015 9:30	4.54	8	0.40				
9/3/2015 9:45	4.64	8	0.41				
9/3/2015 10:00	4.87	8	0.40				
9/3/2015 10:15	5.02	7.9	0.40				
9/3/2015 10:30	5.22	8	0.40				
9/3/2015 10:45	5.43	7.9	0.39				
9/3/2015 11:00	5.61	8	0.39				
9/3/2015 11:15	5.79	8	0.38				
9/3/2015 11:30	6.03	8.1	0.37				

Table S4. cont…

Upper Dinwoody Creek Logger				**Lower Dinwoody Creek Logger**			
Date/Time	Temp (oC)	SPC (µS/cm)	Relative Depth	Date/Time	Temp (oC)	SPC (µS/cm)	Relative Depth
8/27/2015 10:00	3.99	6.8	0.61	8/27/2015 15:30	5.54	6	0.93
8/27/2015 10:15	4.15	6.8	0.60	8/27/2015 15:45	5.63	6.1	0.92
8/27/2015 10:30	4.34	7	0.59	8/27/2015 16:00	5.58	6.1	0.91
8/27/2015 10:45	4.38	7	0.59	8/27/2015 16:15	5.51	6.1	0.92
8/27/2015 11:00	4.41	7	0.58	8/27/2015 16:30	5.50	6.1	0.92
8/27/2015 11:15	4.55	6.9	0.58	8/27/2015 16:45	5.60	6.1	0.88

8/27/2015 11:30	4.79	6.9	0.56	8/27/2015 17:00	5.70	6.2	0.86
8/27/2015 11:45	5.23	6.9	0.57	8/27/2015 17:15	5.79	6.2	0.84
8/27/2015 12:00	5.66	6.8	0.57	8/27/2015 17:30	5.82	6	0.83
8/27/2015 12:15	6.16	7.1	0.59	8/27/2015 17:45	5.80	6	0.84
8/27/2015 12:30	6.60	7	0.60	8/27/2015 18:00	5.76	6.1	0.80
8/27/2015 12:45	7.05	7.1	0.62	8/27/2015 18:15	5.70	6.1	0.80
8/27/2015 13:00	7.25	7.3	0.65	8/27/2015 18:30	5.59	6.1	0.81
8/27/2015 13:15	7.39	7.4	0.67	8/27/2015 18:45	5.50	6.1	0.80
8/27/2015 13:30	7.49	7.3	0.67	8/27/2015 19:00	5.42	6.2	0.79
8/27/2015 13:45	7.48	7.3	0.69	8/27/2015 19:15	5.35	6.2	0.80
8/27/2015 14:00	7.34	7.4	0.72	8/27/2015 19:30	5.31	6.4	0.77
8/27/2015 14:15	7.15	7.3	0.73	8/27/2015 19:45	5.27	6.6	0.78
8/27/2015 14:30	6.75	7.2	0.77	8/27/2015 20:00	5.24	6.6	0.78
8/27/2015 14:45	6.43	7.2	0.85	8/27/2015 20:15	5.20	6.6	0.78
8/27/2015 15:00	6.13	7.1	0.89	8/27/2015 20:30	5.15	6.8	0.79
8/27/2015 15:15	5.66	6.8	0.88	8/27/2015 20:45	5.07	6.8	0.80
8/27/2015 15:30	5.32	6.8	0.89	8/27/2015 21:00	4.96	6.7	0.83
8/27/2015 15:45	5.17	6.7	0.91	8/27/2015 21:15	4.84	6.7	0.83
8/27/2015 16:00	5.02	6.8	0.94	8/27/2015 21:30	4.77	6.8	0.83
8/27/2015 16:15	4.96	6.7	0.92	8/27/2015 21:45	4.75	6.9	0.81
8/27/2015 16:30	5.14	6.6	0.92	8/27/2015 22:00	4.73	7.3	0.80
8/27/2015 16:45	5.30	6.5	0.91	8/27/2015 22:15	4.71	7.1	0.79
8/27/2015 17:00	5.30	6.5	0.88	8/27/2015 22:30	4.65	7.3	0.80
8/27/2015 17:15	5.40	6.3	0.87	8/27/2015 22:45	4.59	7.3	0.78
8/27/2015 17:30	5.45	6.3	0.86	8/27/2015 23:00	4.53	7.5	0.80
8/27/2015 17:45	5.41	6.3	0.86	8/27/2015 23:15	4.48	7.7	0.78
8/27/2015 18:00	5.34	6.3	0.84	8/27/2015 23:30	4.41	7.7	0.76
8/27/2015 18:15	5.26	6.2	0.83	8/27/2015 23:45	4.35	7.8	0.75
8/27/2015 18:30	5.18	6.6	0.83	8/28/2015 0:00	4.31	7.9	0.75
8/27/2015 18:45	5.09	6.6	0.83	8/28/2015 0:15	4.27	8	0.74
8/27/2015 19:00	5.01	6.7	0.82	8/28/2015 0:30	4.23	8.1	0.73
8/27/2015 19:15	4.94	6.9	0.83	8/28/2015 0:45	4.20	8.2	0.73
8/27/2015 19:30	4.87	7.1	0.83	8/28/2015 1:00	4.17	8.3	0.71
8/27/2015 19:45	4.77	7.1	0.83	8/28/2015 1:15	4.15	8.3	0.71
8/27/2015 20:00	4.72	7.1	0.83	8/28/2015 1:30	4.12	8.4	0.70
8/27/2015 20:15	4.66	7.2	0.83	8/28/2015 1:45	4.09	8.4	0.68
8/27/2015 20:30	4.56	7.2	0.84	8/28/2015 2:00	4.05	8.4	0.66
8/27/2015 20:45	4.49	7.2	0.84	8/28/2015 2:15	4.04	8.6	0.66
8/27/2015 21:00	4.39	7.3	0.84	8/28/2015 2:30	4.01	8.7	0.65
8/27/2015 21:15	4.33	7.3	0.84	8/28/2015 2:45	3.98	8.8	0.64
8/27/2015 21:30	4.28	7.5	0.82	8/28/2015 3:00	3.96	8.9	0.62
8/27/2015 21:45	4.20	7.6	0.82	8/28/2015 3:15	3.93	8.9	0.62
8/27/2015 22:00	4.13	7.6	0.83	8/28/2015 3:30	3.92	9.1	0.61
8/27/2015 22:15	4.04	7.8	0.82	8/28/2015 3:45	3.89	9.1	0.60

8/27/2015 22:30	3.99	7.8	0.81	8/28/2015 4:00	3.85	9.1	0.60
8/27/2015 22:45	3.95	8	0.81	8/28/2015 4:15	3.82	9.3	0.60
8/27/2015 23:00	3.90	8.2	0.82	8/28/2015 4:30	3.81	9.3	0.59
8/27/2015 23:15	3.85	8.3	0.81	8/28/2015 4:45	3.80	9.3	0.57
8/27/2015 23:30	3.78	8.5	0.80	8/28/2015 5:00	3.77	9.4	0.58
8/27/2015 23:45	3.71	8.5	0.81	8/28/2015 5:15	3.74	9.5	0.56
8/28/2015 0:00	3.66	8.5	0.80	8/28/2015 5:30	3.73	9.5	0.55
8/28/2015 0:15	3.60	8.7	0.79	8/28/2015 5:45	3.70	9.7	0.55
8/28/2015 0:30	3.53	8.8	0.79	8/28/2015 6:00	3.69	9.7	0.54
8/28/2015 0:45	3.49	8.8	0.78	8/28/2015 6:15	3.66	9.7	0.52
8/28/2015 1:00	3.43	8.8	0.77	8/28/2015 6:30	3.65	9.8	0.52
8/28/2015 1:15	3.40	9	0.76	8/28/2015 6:45	3.61	9.8	0.51
8/28/2015 1:30	3.35	9.2	0.75	8/28/2015 7:00	3.60	9.8	0.52
8/28/2015 1:45	3.31	9.2	0.75	8/28/2015 7:15	3.58	9.8	0.49
8/28/2015 2:00	3.26	9.3	0.74	8/28/2015 7:30	3.57	10	0.48
8/28/2015 2:15	3.23	9.6	0.73	8/28/2015 7:45	3.57	10	0.47
8/28/2015 2:30	3.20	9.5	0.71	8/28/2015 8:00	3.58	10	0.47
8/28/2015 2:45	3.19	9.7	0.71	8/28/2015 8:15	3.60	9.9	0.45
8/28/2015 3:00	3.15	9.7	0.69	8/28/2015 8:30	3.62	9.8	0.44
8/28/2015 3:15	3.11	9.9	0.69	8/28/2015 8:45	3.68	9.9	0.44
8/28/2015 3:30	3.09	9.9	0.69	8/28/2015 9:00	3.72	9.9	0.41
8/28/2015 3:45	3.05	9.9	0.67	8/28/2015 9:15	3.80	10	0.43
8/28/2015 4:00	3.03	10.1	0.67	8/28/2015 9:30	4.06	9.9	0.40
8/28/2015 4:15	3.01	10.3	0.66	8/28/2015 9:45	4.29	9.9	0.38
8/28/2015 4:30	2.98	10.3	0.66	8/28/2015 10:00	4.55	9.8	0.36
8/28/2015 4:45	2.97	10.3	0.66	8/28/2015 10:15	4.92	9.9	0.34
8/28/2015 5:00	2.94	10.3	0.65	8/28/2015 10:30	5.30	9.9	0.33
8/28/2015 5:15	2.92	10.5	0.64	8/28/2015 10:45	5.66	9.9	0.32
8/28/2015 5:30	2.89	10.5	0.63	8/28/2015 11:00	6.01	9.9	0.33
8/28/2015 5:45	2.86	10.7	0.62	8/28/2015 11:15	6.35	9.7	0.35
8/28/2015 6:00	2.85	10.7	0.63	8/28/2015 11:30	6.66	9.4	0.37
8/28/2015 6:15	2.82	10.7	0.61	8/28/2015 11:45	6.96	9.1	0.39
8/28/2015 6:30	2.81	10.9	0.61	8/28/2015 12:00	7.22	8.4	0.44
8/28/2015 6:45	2.76	11.1	0.60	8/28/2015 12:15	7.42	8	0.46
8/28/2015 7:00	2.75	11.1	0.59	8/28/2015 12:30	7.56	7.7	0.51
8/28/2015 7:15	2.72	11.2	0.58	8/28/2015 12:45	7.68	7.3	0.52
8/28/2015 7:30	2.69	11.2	0.57	8/28/2015 13:00	7.77	6.8	0.55
8/28/2015 7:45	2.69	11.2	0.57	8/28/2015 13:15	7.82	6.5	0.58
8/28/2015 8:00	2.69	11.2	0.56	8/28/2015 13:30	7.85	6.2	0.61
8/28/2015 8:15	2.72	11.2	0.56	8/28/2015 13:45	7.87	5.9	0.63
8/28/2015 8:30	2.72	11.2	0.55	8/28/2015 14:00	7.88	5.8	0.65
8/28/2015 8:45	2.76	11.1	0.55	8/28/2015 14:15	7.89	5.7	0.65
8/28/2015 9:00	2.77	11.1	0.53	8/28/2015 14:30	7.84	5.8	0.67
8/28/2015 9:15	2.77	11.1	0.54	8/28/2015 14:45	7.97	5.7	0.69

8/28/2015 9:30	2.94	11.2	0.52	8/28/2015 15:00	8.04	5.8	0.73
8/28/2015 9:45	3.05	11.1	0.51	8/28/2015 15:15	8.09	6	0.78
8/28/2015 10:00	3.16	11.2	0.52	8/28/2015 15:30	8.12	6.1	0.80
8/28/2015 10:15	3.30	11.3	0.50	8/28/2015 15:45	7.89	6.2	0.84
8/28/2015 10:30	3.49	11.3	0.50	8/28/2015 16:00	7.68	6.3	0.88
8/28/2015 10:45	3.66	11.4	0.49	8/28/2015 16:15	7.37	6.5	0.91
8/28/2015 11:00	3.79	11.6	0.50	8/28/2015 16:30	7.09	6.6	0.94
8/28/2015 11:15	4.07	11.6	0.49	8/28/2015 16:45	6.90	6.7	0.93
8/28/2015 11:30	4.39	11.4	0.48	8/28/2015 17:00	6.83	6.9	0.92
8/28/2015 11:45	4.80	11.5	0.47	8/28/2015 17:15	6.75	6.9	0.91
8/28/2015 12:00	5.31	11.5	0.47	8/28/2015 17:30	6.69	7.1	0.90
8/28/2015 12:15	5.82	11.3	0.47	8/28/2015 17:45	6.65	7.3	0.90
8/28/2015 12:30	6.32	11.5	0.47	8/28/2015 18:00	6.62	7.3	0.88
8/28/2015 12:45	6.79	11.5	0.46	8/28/2015 18:15	6.58	7.3	0.88
8/28/2015 13:00	7.25	11.7	0.47	8/28/2015 18:30	6.46	7.2	0.86
8/28/2015 13:15	7.68	11.6	0.47	8/28/2015 18:45	6.33	7.2	0.86
8/28/2015 13:30	8.08	11.8	0.47	8/28/2015 19:00	6.14	7.3	0.84
8/28/2015 13:45	8.46	11.8	0.49	8/28/2015 19:15	5.99	7.4	0.82
8/28/2015 14:00	8.84	11.6	0.52	8/28/2015 19:30	5.88	7.4	0.79
8/28/2015 14:15	9.17	11.7	0.55	8/28/2015 19:45	5.78	7.5	0.77
8/28/2015 14:30	9.48	11.8	0.59	8/28/2015 20:00	5.68	7.5	0.76
8/28/2015 14:45	9.73	11.7	0.62	8/28/2015 20:15	5.59	7.7	0.76
8/28/2015 15:00	9.86	11.6	0.67	8/28/2015 20:30	5.51	7.7	0.74
8/28/2015 15:15	9.98	11.6	0.72	8/28/2015 20:45	5.42	7.8	0.72
8/28/2015 15:30	10.03	11.2	0.76	8/28/2015 21:00	5.35	7.8	0.71
8/28/2015 15:45	9.78	11.4	0.81	8/28/2015 21:15	5.30	7.8	0.73
8/28/2015 16:00	9.39	11.2	0.85	8/28/2015 21:30	5.24	7.9	0.69
8/28/2015 16:15	9.00	10.8	0.88	8/28/2015 21:45	5.19	7.9	0.68
8/28/2015 16:30	8.63	10.7	0.90	8/28/2015 22:00	5.12	7.9	0.66
8/28/2015 16:45	8.21	10.5	0.92	8/28/2015 22:15	5.08	8.1	0.65
8/28/2015 17:00	7.83	10.1	0.93	8/28/2015 22:30	5.03	8.1	0.62
8/28/2015 17:15	7.55	9.8	0.94	8/28/2015 22:45	4.97	8.1	0.61
8/28/2015 17:30	7.36	9.7	0.96	8/28/2015 23:00	4.93	8.1	0.58
8/28/2015 17:45	7.26	9.4	0.97	8/28/2015 23:15	4.89	8	0.58
8/28/2015 18:00	7.10	9.2	0.96	8/28/2015 23:30	4.87	8.2	0.58
8/28/2015 18:15	6.88	9.2	0.96	8/28/2015 23:45	4.83	8.2	0.57
8/28/2015 18:30	6.59	9	0.95	8/29/2015 0:00	4.79	8.4	0.53
8/28/2015 18:45	6.43	8.8	0.94	8/29/2015 0:15	4.76	8.4	0.52
8/28/2015 19:00	6.29	8.9	0.92	8/29/2015 0:30	4.71	8.4	0.52
8/28/2015 19:15	6.16	8.6	0.91	8/29/2015 0:45	4.67	8.6	0.50
8/28/2015 19:30	6.04	8.8	0.90	8/29/2015 1:00	4.65	8.6	0.47
8/28/2015 19:45	5.90	8.8	0.88	8/29/2015 1:15	4.63	8.6	0.46
8/28/2015 20:00	5.74	8.7	0.88	8/29/2015 1:30	4.57	8.6	0.44
8/28/2015 20:15	5.62	8.7	0.88	8/29/2015 1:45	4.55	8.8	0.43

8/28/2015 20:30	5.51	8.6	0.85
8/28/2015 20:45	5.40	8.7	0.84
8/28/2015 21:00	5.30	8.8	0.83
8/28/2015 21:15	5.21	8.8	0.82
8/28/2015 21:30	5.13	8.9	0.80
8/28/2015 21:45	5.04	8.9	0.77
8/28/2015 22:00	4.97	8.9	0.76
8/28/2015 22:15	4.90	8.8	0.74
8/28/2015 22:30	4.83	9	0.72
8/28/2015 22:45	4.76	9.1	0.70
8/28/2015 23:00	4.71	9.1	0.68
8/28/2015 23:15	4.66	9.1	0.68
8/28/2015 23:30	4.60	9.2	0.67
8/28/2015 23:45	4.54	9.4	0.65
8/29/2015 0:00	4.49	9.4	0.63
8/29/2015 0:15	4.43	9.4	0.62
8/29/2015 0:30	4.38	9.4	0.61
8/29/2015 0:45	4.34	9.6	0.59
8/29/2015 1:00	4.28	9.7	0.58
8/29/2015 1:15	4.22	9.9	0.57
8/29/2015 1:30	4.20	9.9	0.56
8/29/2015 1:45	4.15	9.9	0.55
8/29/2015 2:00	4.11	9.9	0.54
8/29/2015 2:15	4.07	10.3	0.54
8/29/2015 2:30	4.03	10.3	0.53
8/29/2015 2:45	4.02	10.3	0.51
8/29/2015 3:00	3.98	10.5	0.51
8/29/2015 3:15	3.96	10.5	0.49
8/29/2015 3:30	3.94	10.7	0.49
8/29/2015 3:45	3.91	10.9	0.48
8/29/2015 4:00	3.91	10.9	0.48
8/29/2015 4:15	3.88	10.9	0.47
8/29/2015 4:30	3.87	10.9	0.47
8/29/2015 4:45	3.87	11.1	0.46
8/29/2015 5:00	3.85	11.1	0.46
8/29/2015 5:15	3.82	11.3	0.45
8/29/2015 5:30	3.81	11.3	0.45
8/29/2015 5:45	3.79	11.3	0.44
8/29/2015 6:00	3.75	11.3	0.43
8/29/2015 6:15	3.74	11.7	0.42
8/29/2015 6:30	3.73	11.7	0.42
8/29/2015 6:45	3.71	11.7	0.42
8/29/2015 7:00	3.70	11.9	0.41
8/29/2015 7:15	3.68	11.9	0.41

8/29/2015 2:00	4.51	9	0.43
8/29/2015 2:15	4.49	9	0.42
8/29/2015 2:30	4.47	9	0.42
8/29/2015 2:45	4.43	9	0.38
8/29/2015 3:00	4.40	9	0.37
8/29/2015 3:15	4.39	9.1	0.35
8/29/2015 3:30	4.35	9.1	0.36
8/29/2015 3:45	4.33	9.4	0.36
8/29/2015 4:00	4.31	9.3	0.34
8/29/2015 4:15	4.32	9.4	0.36
8/29/2015 4:30	4.31	9.3	0.31
8/29/2015 4:45	4.31	9.4	0.32
8/29/2015 5:00	4.29	9.4	0.31
8/29/2015 5:15	4.29	9.4	0.29
8/29/2015 5:30	4.29	9.4	0.29
8/29/2015 5:45	4.27	9.6	0.30
8/29/2015 6:00	4.24	9.8	0.27
8/29/2015 6:15	4.23	9.8	0.26
8/29/2015 6:30	4.21	10	0.25
8/29/2015 6:45	4.20	9.8	0.25
8/29/2015 7:00	4.19	9.8	0.24
8/29/2015 7:15	4.19	9.8	0.23
8/29/2015 7:30	4.19	10	0.23
8/29/2015 7:45	4.20	10	0.21
8/29/2015 8:00	4.23	10	0.23
8/29/2015 8:15	4.28	9.9	0.21
8/29/2015 8:30	4.40	9.9	0.19
8/29/2015 8:45	4.49	9.8	0.19
8/29/2015 9:00	4.56	9.8	0.15
8/29/2015 9:15	4.63	9.8	0.16
8/29/2015 9:30	4.77	9.8	0.15
8/29/2015 9:45	5.15	10	0.17
8/29/2015 10:00	5.63	9.9	0.17
8/29/2015 10:15	6.21	9.6	0.17
8/29/2015 10:30	6.75	9.5	0.17
8/29/2015 10:45	6.97	9.1	0.22
8/29/2015 11:00	7.18	8.6	0.29
8/29/2015 11:15	7.42	7.9	0.35
8/29/2015 11:30	7.58	6.9	0.42
8/29/2015 11:45	7.64	6.4	0.48
8/29/2015 12:00	7.65	6	0.50
8/29/2015 12:15	7.65	5.5	0.56
8/29/2015 12:30	7.61	5.1	0.59
8/29/2015 12:45	7.58	4.8	0.63

8/29/2015 7:30	3.69	11.9	0.40	8/29/2015 13:00	7.53	4.5	0.66
8/29/2015 7:45	3.68	11.9	0.40	8/29/2015 13:15	7.48	4.5	0.68
8/29/2015 8:00	3.69	11.9	0.40	8/29/2015 13:30	7.33	4.6	0.71
8/29/2015 8:15	3.70	11.9	0.39	8/29/2015 13:45	7.44	4.6	0.74
8/29/2015 8:30	3.74	11.8	0.39	8/29/2015 14:00	7.52	4.8	0.76
8/29/2015 8:45	3.78	11.8	0.39	8/29/2015 14:15	7.65	5.1	0.81
8/29/2015 9:00	3.82	11.8	0.38	8/29/2015 14:30	7.84	5.5	0.83
8/29/2015 9:15	3.85	11.8	0.38	8/29/2015 14:45	7.96	5.6	0.89
8/29/2015 9:30	4.02	11.7	0.37	8/29/2015 15:00	7.97	5.7	0.94
8/29/2015 9:45	4.16	11.7	0.37	8/29/2015 15:15	7.96	5.7	0.98
8/29/2015 10:00	4.32	11.8	0.37	8/29/2015 15:30	7.87	5.8	0.98
8/29/2015 10:15	4.47	11.8	0.36	8/29/2015 15:45	7.72	5.7	1.00
8/29/2015 10:30	4.68	11.7	0.36	8/29/2015 16:00	7.62	5.7	0.99
8/29/2015 10:45	4.92	12	0.34	8/29/2015 16:15	7.50	5.7	0.98
8/29/2015 11:00	5.07	11.9	0.36	8/29/2015 16:30	7.32	5.8	0.98
8/29/2015 11:15	5.32	11.8	0.34	8/29/2015 16:45	7.20	5.7	1.00
8/29/2015 11:30	5.65	12	0.34	8/29/2015 17:00	7.05	5.6	0.99
8/29/2015 11:45	6.00	11.7	0.34	8/29/2015 17:15	6.96	5.5	0.97
8/29/2015 12:00	6.41	11.7	0.33	8/29/2015 17:30	6.87	5.5	0.97
8/29/2015 12:15	6.87	11.8	0.35	8/29/2015 17:45	6.82	5.5	0.96
8/29/2015 12:30	7.34	11.8	0.34	8/29/2015 18:00	6.74	5.5	0.93
8/29/2015 12:45	7.78	11.8	0.37	8/29/2015 18:15	6.63	5.6	0.91
8/29/2015 13:00	8.19	11.9	0.39	8/29/2015 18:30	6.54	5.5	0.90
8/29/2015 13:15	8.59	12.1	0.43	8/29/2015 18:45	6.47	5.5	0.89
8/29/2015 13:30	9.01	12.1	0.49	8/29/2015 19:00	6.38	5.5	0.87
8/29/2015 13:45	9.42	12.1	0.57	8/29/2015 19:15	6.30	5.4	0.88
8/29/2015 14:00	9.78	12.1	0.65	8/29/2015 19:30	6.22	5.7	0.84
8/29/2015 14:15	10.06	11.8	0.72	8/29/2015 19:45	6.15	5.8	0.82
8/29/2015 14:30	10.15	11.3	0.78	8/29/2015 20:00	6.09	5.9	0.82
8/29/2015 14:45	10.10	10.8	0.85	8/29/2015 20:15	6.03	6	0.79
8/29/2015 15:00	9.93	10.3	0.89	8/29/2015 20:30	5.98	6	0.77
8/29/2015 15:15	9.69	9.9	0.92	8/29/2015 20:45	5.95	6	0.76
8/29/2015 15:30	9.48	9.4	0.94	8/29/2015 21:00	5.90	6	0.75
8/29/2015 15:45	9.15	9	0.96	8/29/2015 21:15	5.86	6.2	0.75
8/29/2015 16:00	8.88	8.7	0.98	8/29/2015 21:30	5.82	6.2	0.74
8/29/2015 16:15	8.66	8.2	1.00	8/29/2015 21:45	5.80	6.2	0.73
8/29/2015 16:30	8.38	8.1	0.99	8/29/2015 22:00	5.79	6.2	0.71
8/29/2015 16:45	8.11	7.9	0.99	8/29/2015 22:15	5.72	6.4	0.68
8/29/2015 17:00	7.87	7.7	0.99	8/29/2015 22:30	5.71	6.4	0.71
8/29/2015 17:15	7.74	7.7	0.99	8/29/2015 22:45	5.67	6.2	0.71
8/29/2015 17:30	7.59	7.6	0.98	8/29/2015 23:00	5.64	6.4	0.69
8/29/2015 17:45	7.47	7.5	0.97	8/29/2015 23:15	5.59	6.4	0.69
8/29/2015 18:00	7.35	7.3	0.96	8/29/2015 23:30	5.56	6.4	0.67
8/29/2015 18:15	7.26	7.1	0.94	8/29/2015 23:45	5.55	6.4	0.64

8/29/2015 18:30	7.10	7.1	0.93	8/30/2015 0:00	5.54	6.5	0.65
8/29/2015 18:45	6.98	7.1	0.93	8/30/2015 0:15	5.54	6.6	0.63
8/29/2015 19:00	6.88	7	0.90	8/30/2015 0:30	5.51	6.6	0.62
8/29/2015 19:15	6.77	6.9	0.91	8/30/2015 0:45	5.50	6.8	0.62
8/29/2015 19:30	6.66	7	0.90	8/30/2015 1:00	5.47	6.6	0.62
8/29/2015 19:45	6.54	7	0.88	8/30/2015 1:15	5.43	6.7	0.60
8/29/2015 20:00	6.42	7.1	0.88	8/30/2015 1:30	5.43	6.7	0.60
8/29/2015 20:15	6.32	7.1	0.87	8/30/2015 1:45	5.43	6.7	0.60
8/29/2015 20:30	6.25	7	0.85	8/30/2015 2:00	5.44	7	0.58
8/29/2015 20:45	6.17	7.2	0.85	8/30/2015 2:15	5.46	6.6	0.60
8/29/2015 21:00	6.09	7.1	0.84	8/30/2015 2:30	5.52	6.9	0.61
8/29/2015 21:15	6.03	7.1	0.82	8/30/2015 2:45	5.54	6.9	0.57
8/29/2015 21:30	5.98	7	0.82	8/30/2015 3:00	5.52	6.9	0.60
8/29/2015 21:45	5.92	7	0.82	8/30/2015 3:15	5.51	6.6	0.61
8/29/2015 22:00	5.87	6.9	0.80	8/30/2015 3:30	5.46	6.5	0.61
8/29/2015 22:15	5.79	7.1	0.79	8/30/2015 3:45	5.42	6.5	0.61
8/29/2015 22:30	5.74	6.9	0.78	8/30/2015 4:00	5.38	6.5	0.62
8/29/2015 22:45	5.66	7.1	0.77	8/30/2015 4:15	5.35	6.5	0.60
8/29/2015 23:00	5.61	7	0.76	8/30/2015 4:30	5.30	6.5	0.59
8/29/2015 23:15	5.55	7	0.75	8/30/2015 4:45	5.31	6.5	0.58
8/29/2015 23:30	5.51	7.2	0.75	8/30/2015 5:00	5.32	6.7	0.58
8/29/2015 23:45	5.47	7.2	0.73	8/30/2015 5:15	5.32	6.7	0.59
8/30/2015 0:00	5.43	7.3	0.74	8/30/2015 5:30	5.32	6.7	0.58
8/30/2015 0:15	5.40	7.4	0.72	8/30/2015 5:45	5.31	7	0.59
8/30/2015 0:30	5.35	7.5	0.72	8/30/2015 6:00	5.26	7	0.60
8/30/2015 0:45	5.32	7.3	0.70	8/30/2015 6:15	5.22	7.1	0.61
8/30/2015 1:00	5.30	7.5	0.70	8/30/2015 6:30	5.16	7.1	0.61
8/30/2015 1:15	5.26	7.3	0.69	8/30/2015 6:45	5.14	7.1	0.57
8/30/2015 1:30	5.23	7.7	0.68	8/30/2015 7:00	5.14	7.1	0.57
8/30/2015 1:45	5.23	7.7	0.67	8/30/2015 7:15	5.12	7.1	0.58
8/30/2015 2:00	5.24	7.7	0.66	8/30/2015 7:30	5.12	7.1	0.57
8/30/2015 2:15	5.24	7.7	0.67	8/30/2015 7:45	5.12	7.3	0.58
8/30/2015 2:30	5.26	7.7	0.66	8/30/2015 8:00	5.16	7.1	0.53
8/30/2015 2:45	5.26	7.8	0.65	8/30/2015 8:15	5.26	7.2	0.54
8/30/2015 3:00	5.26	7.8	0.67	8/30/2015 8:30	5.32	7.2	0.54
8/30/2015 3:15	5.24	7.8	0.65	8/30/2015 8:45	5.47	7.1	0.52
8/30/2015 3:30	5.23	8	0.65	8/30/2015 9:00	5.70	7.2	0.53
8/30/2015 3:45	5.24	8	0.65	8/30/2015 9:15	5.96	6.8	0.55
8/30/2015 4:00	5.22	8	0.66	8/30/2015 9:30	6.25	6.3	0.60
8/30/2015 4:15	5.21	8	0.64	8/30/2015 9:45	6.43	6	0.62
8/30/2015 4:30	5.19	8.2	0.65	8/30/2015 10:00	6.55	5.6	0.61
8/30/2015 4:45	5.17	8.2	0.63	8/30/2015 10:15	6.55	5.5	0.63
8/30/2015 5:00	5.17	8.2	0.64	8/30/2015 10:30	6.65	5.4	0.64
8/30/2015 5:15	5.15	8.2	0.65	8/30/2015 10:45	6.74	5.2	0.65

8/30/2015 5:30	5.15	8.2	0.65	8/30/2015 11:00	6.96	5.2	0.62
8/30/2015 5:45	5.10	8.2	0.65	8/30/2015 11:15	7.16	5.1	0.66
8/30/2015 6:00	5.06	8.1	0.66	8/30/2015 11:30	7.29	5.1	0.67
8/30/2015 6:15	5.04	8.1	0.66	8/30/2015 11:45	7.38	5	0.71
8/30/2015 6:30	5.02	8.1	0.67	8/30/2015 12:00	7.34	4.6	0.75
8/30/2015 6:45	4.98	8.1	0.66	8/30/2015 12:15	7.33	4.6	0.77
8/30/2015 7:00	4.96	8.1	0.66	8/30/2015 12:30	7.38	4.6	0.80
8/30/2015 7:15	4.94	8.2	0.67	8/30/2015 12:45	7.44	4.4	0.83
8/30/2015 7:30	4.92	8.2	0.66	8/30/2015 13:00	7.48	4.5	0.85
8/30/2015 7:45	4.92	8.2	0.66	8/30/2015 13:15	7.48	4.4	0.86
8/30/2015 8:00	4.93	7.8	0.64	8/30/2015 13:30	7.28	4.5	0.88
8/30/2015 8:15	5.01	8	0.65	8/30/2015 13:45	6.98	4.4	0.90
8/30/2015 8:30	5.06	7.8	0.65	8/30/2015 14:00	6.75	4.5	0.93
8/30/2015 8:45	5.17	7.4	0.64	8/30/2015 14:15	6.79	4.5	0.93
8/30/2015 9:00	5.31	7.5	0.64	8/30/2015 14:30	6.91	4.6	0.92
8/30/2015 9:15	5.43	7.3	0.64	8/30/2015 14:45	6.98	4.7	0.94
8/30/2015 9:30	5.61	7.3	0.64	8/30/2015 15:00	6.89	4.9	0.93
8/30/2015 9:45	5.79	7.2	0.65	8/30/2015 15:15	6.70	4.9	0.95
8/30/2015 10:00	5.98	7.3	0.64	8/30/2015 15:30	6.49	5	0.95
8/30/2015 10:15	6.03	7.3	0.64	8/30/2015 15:45	6.37	5.1	0.95
8/30/2015 10:30	6.20	7.3	0.65	8/30/2015 16:00	6.25	5.1	0.93
8/30/2015 10:45	6.40	7.4	0.66	8/30/2015 16:15	6.15	5.1	0.91
8/30/2015 11:00	6.62	7.3	0.65	8/30/2015 16:30	6.09	5.1	0.92
8/30/2015 11:15	6.91	7.5	0.67	8/30/2015 16:45	6.02	5.2	0.91
8/30/2015 11:30	7.11	7.4	0.68	8/30/2015 17:00	5.99	5.3	0.89
8/30/2015 11:45	7.38	7.5	0.69	8/30/2015 17:15	5.99	5.3	0.86
8/30/2015 12:00	7.64	7.4	0.71	8/30/2015 17:30	6.03	5.3	0.85
8/30/2015 12:15	7.85	7.3	0.73	8/30/2015 17:45	6.05	5.5	0.83
8/30/2015 12:30	8.03	7.2	0.74	8/30/2015 18:00	6.05	5.3	0.82
8/30/2015 12:45	8.23	7.4	0.76	8/30/2015 18:15	6.01	5.5	0.84
8/30/2015 13:00	8.32	7.2	0.76	8/30/2015 18:30	5.94	5.4	0.81
8/30/2015 13:15	8.28	7.3	0.78	8/30/2015 18:45	5.86	5.5	0.79
8/30/2015 13:30	8.19	7.3	0.80	8/30/2015 19:00	5.82	5.6	0.78
8/30/2015 13:45	7.96	7.3	0.81	8/30/2015 19:15	5.76	5.6	0.77
8/30/2015 14:00	7.78	7.3	0.84	8/30/2015 19:30	5.70	5.6	0.76
8/30/2015 14:15	7.78	7.2	0.85	8/30/2015 19:45	5.67	5.6	0.76
8/30/2015 14:30	7.79	7	0.87	8/30/2015 20:00	5.62	5.6	0.74
8/30/2015 14:45	7.62	7.1	0.89	8/30/2015 20:15	5.58	5.8	0.74
8/30/2015 15:00	7.43	6.9	0.90	8/30/2015 20:30	5.55	5.8	0.73
8/30/2015 15:15	7.22	7	0.91	8/30/2015 20:45	5.51	6	0.72
8/30/2015 15:30	7.06	6.9	0.90	8/30/2015 21:00	5.47	6	0.72
8/30/2015 15:45	6.91	6.7	0.91	8/30/2015 21:15	5.44	6.2	0.70
8/30/2015 16:00	6.75	6.6	0.92	8/30/2015 21:30	5.42	6.2	0.70
8/30/2015 16:15	6.62	6.5	0.90	8/30/2015 21:45	5.36	6.2	0.69

8/30/2015 16:30	6.51	6.6	0.89
8/30/2015 16:45	6.40	6.5	0.90
8/30/2015 17:00	6.32	6.4	0.89
8/30/2015 17:15	6.26	6.4	0.88
8/30/2015 17:30	6.19	6.4	0.89
8/30/2015 17:45	6.13	6.3	0.87
8/30/2015 18:00	6.07	6.2	0.88
8/30/2015 18:15	6.00	6	0.87
8/30/2015 18:30	5.94	6.1	0.86
8/30/2015 18:45	5.89	6.1	0.83
8/30/2015 19:00	5.82	6	0.83
8/30/2015 19:15	5.75	6.3	0.82
8/30/2015 19:30	5.68	6.3	0.81
8/30/2015 19:45	5.61	6.4	0.80
8/30/2015 20:00	5.55	6.4	0.80
8/30/2015 20:15	5.48	6.6	0.81
8/30/2015 20:30	5.43	6.5	0.79
8/30/2015 20:45	5.36	6.7	0.79
8/30/2015 21:00	5.30	6.7	0.78
8/30/2015 21:15	5.24	6.7	0.76
8/30/2015 21:30	5.18	6.7	0.76
8/30/2015 21:45	5.11	6.8	0.75
8/30/2015 22:00	5.05	6.6	0.75
8/30/2015 22:15	4.98	6.7	0.73
8/30/2015 22:30	4.92	6.7	0.72
8/30/2015 22:45	4.85	6.7	0.72
8/30/2015 23:00	4.77	6.8	0.71
8/30/2015 23:15	4.70	7	0.69
8/30/2015 23:30	4.63	6.9	0.70
8/30/2015 23:45	4.55	7.1	0.68
8/31/2015 0:00	4.49	7.1	0.69
8/31/2015 0:15	4.41	7.1	0.67
8/31/2015 0:30	4.34	7.2	0.67
8/31/2015 0:45	4.28	7.2	0.67
8/31/2015 1:00	4.21	7.4	0.65
8/31/2015 1:15	4.15	7.4	0.65
8/31/2015 1:30	4.09	7.5	0.65
8/31/2015 1:45	4.05	7.5	0.63
8/31/2015 2:00	4.02	7.5	0.62
8/31/2015 2:15	3.95	7.5	0.61
8/31/2015 2:30	3.91	7.7	0.59
8/31/2015 2:45	3.83	7.8	0.59
8/31/2015 3:00	3.77	7.8	0.58
8/31/2015 3:15	3.70	7.8	0.57

8/30/2015 22:00	5.34	6.2	0.69
8/30/2015 22:15	5.28	6.2	0.67
8/30/2015 22:30	5.24	6.2	0.67
8/30/2015 22:45	5.19	6.4	0.67
8/30/2015 23:00	5.12	6.3	0.64
8/30/2015 23:15	5.06	6.5	0.65
8/30/2015 23:30	5.00	6.5	0.62
8/30/2015 23:45	4.93	6.5	0.62
8/31/2015 0:00	4.89	6.7	0.61
8/31/2015 0:15	4.81	6.7	0.58
8/31/2015 0:30	4.75	6.8	0.59
8/31/2015 0:45	4.71	6.8	0.57
8/31/2015 1:00	4.65	7	0.56
8/31/2015 1:15	4.61	7	0.57
8/31/2015 1:30	4.57	7	0.55
8/31/2015 1:45	4.53	7	0.55
8/31/2015 2:00	4.52	7.4	0.54
8/31/2015 2:15	4.48	7.4	0.54
8/31/2015 2:30	4.44	7.4	0.50
8/31/2015 2:45	4.40	7.4	0.50
8/31/2015 3:00	4.35	7.4	0.48
8/31/2015 3:15	4.28	7.6	0.49
8/31/2015 3:30	4.23	7.5	0.50
8/31/2015 3:45	4.20	7.5	0.48
8/31/2015 4:00	4.13	7.4	0.48
8/31/2015 4:15	4.04	7.6	0.46
8/31/2015 4:30	3.96	7.6	0.45
8/31/2015 4:45	3.85	7.6	0.43
8/31/2015 5:00	3.74	7.9	0.40
8/31/2015 5:15	3.64	7.7	0.39
8/31/2015 5:30	3.53	8	0.41
8/31/2015 5:45	3.44	8.2	0.41
8/31/2015 6:00	3.34	8.2	0.39
8/31/2015 6:15	3.25	8.3	0.37
8/31/2015 6:30	3.17	8.5	0.35
8/31/2015 6:45	3.09	8.5	0.35
8/31/2015 7:00	3.01	8.5	0.32
8/31/2015 7:15	2.95	8.6	0.34
8/31/2015 7:30	2.91	8.6	0.32
8/31/2015 7:45	2.87	8.6	0.32
8/31/2015 8:00	2.85	8.6	0.29
8/31/2015 8:15	2.83	8.6	0.28
8/31/2015 8:30	2.82	8.6	0.27
8/31/2015 8:45	2.81	8.6	0.26

8/31/2015 3:30	3.64	7.9	0.56	8/31/2015 9:00	2.79	8.7	0.26
8/31/2015 3:45	3.56	7.9	0.55	8/31/2015 9:15	2.82	8.6	0.24
8/31/2015 4:00	3.48	8.1	0.55	8/31/2015 9:30	2.98	8.6	0.22
8/31/2015 4:15	3.39	8.2	0.54	8/31/2015 9:45	3.34	8.4	0.20
8/31/2015 4:30	3.30	8.2	0.52	8/31/2015 10:00	3.68	8.4	0.18
8/31/2015 4:45	3.20	8.3	0.51	8/31/2015 10:15	3.97	8.4	0.16
8/31/2015 5:00	3.11	8.5	0.50	8/31/2015 10:30	4.33	8.3	0.12
8/31/2015 5:15	3.01	8.4	0.49	8/31/2015 10:45	4.97	8.3	0.14
8/31/2015 5:30	2.93	8.6	0.49	8/31/2015 11:00	5.48	8.2	0.14
8/31/2015 5:45	2.82	8.7	0.48	8/31/2015 11:15	6.05	8.1	0.13
8/31/2015 6:00	2.73	8.7	0.46	8/31/2015 11:30	6.41	7.8	0.13
8/31/2015 6:15	2.63	8.8	0.45	8/31/2015 11:45	6.85	7.5	0.18
8/31/2015 6:30	2.54	8.8	0.45	8/31/2015 12:00	6.98	7	0.23
8/31/2015 6:45	2.46	8.9	0.44	8/31/2015 12:15	7.08	6.6	0.29
8/31/2015 7:00	2.38	9.1	0.43	8/31/2015 12:30	7.06	5.9	0.37
8/31/2015 7:15	2.30	9.2	0.42	8/31/2015 12:45	7.01	5.8	0.38
8/31/2015 7:30	2.22	9.2	0.41	8/31/2015 13:00	6.96	5.6	0.45
8/31/2015 7:45	2.16	9.2	0.40	8/31/2015 13:15	6.89	5.3	0.50
8/31/2015 8:00	2.12	9.3	0.38	8/31/2015 13:30	6.90	5.2	0.53
8/31/2015 8:15	2.07	9.3	0.38	8/31/2015 13:45	6.91	5.2	0.55
8/31/2015 8:30	2.03	9.3	0.37	8/31/2015 14:00	6.94	5.2	0.58
8/31/2015 8:45	2.03	9.5	0.35	8/31/2015 14:15	6.97	5	0.57
8/31/2015 9:00	1.99	9.4	0.33	8/31/2015 14:30	7.00	4.8	0.58
8/31/2015 9:15	1.99	9.5	0.32	8/31/2015 14:45	7.04	4.8	0.61
8/31/2015 9:30	2.09	9.6	0.31	8/31/2015 15:00	7.06	5	0.60
8/31/2015 9:45	2.22	9.6	0.28	8/31/2015 15:15	7.06	5.1	0.62
8/31/2015 10:00	2.38	9.5	0.26	8/31/2015 15:30	7.06	5.1	0.65
8/31/2015 10:15	2.50	9.7	0.24	8/31/2015 15:45	7.05	5.3	0.68
8/31/2015 10:30	2.65	9.6	0.23	8/31/2015 16:00	7.01	5.3	0.67
8/31/2015 10:45	2.89	9.8	0.20	8/31/2015 16:15	6.96	5.5	0.69
8/31/2015 11:00	3.06	9.9	0.20	8/31/2015 16:30	6.89	5.5	0.69
8/31/2015 11:15	3.28	9.9	0.19	8/31/2015 16:45	6.83	5.5	0.68
8/31/2015 11:30	3.61	9.9	0.17	8/31/2015 17:00	6.73	5.7	0.68
8/31/2015 11:45	3.91	10.1	0.18	8/31/2015 17:15	6.63	5.7	0.69
8/31/2015 12:00	4.22	9.9	0.20	8/31/2015 17:30	6.53	5.9	0.71
8/31/2015 12:15	4.59	10	0.24	8/31/2015 17:45	6.39	6.1	0.70
8/31/2015 12:30	5.05	10	0.28	8/31/2015 18:00	6.25	6.2	0.71
8/31/2015 12:45	5.49	10.2	0.31	8/31/2015 18:15	6.11	6.2	0.70
8/31/2015 13:00	5.95	10.1	0.35	8/31/2015 18:30	5.94	6.3	0.70
8/31/2015 13:15	6.38	10.2	0.37	8/31/2015 18:45	5.75	6.5	0.68
8/31/2015 13:30	6.77	10.1	0.38	8/31/2015 19:00	5.55	6.6	0.66
8/31/2015 13:45	7.15	9.9	0.41	8/31/2015 19:15	5.34	7	0.65
8/31/2015 14:00	7.47	9.7	0.42	8/31/2015 19:30	5.18	7.1	0.64
8/31/2015 14:15	7.74	9.6	0.43	8/31/2015 19:45	5.06	7.1	0.61

8/31/2015 14:30	8.00	9.5	0.47	8/31/2015 20:00	4.93	7.2	0.62
8/31/2015 14:45	8.25	9.3	0.51	8/31/2015 20:15	4.83	7.2	0.60
8/31/2015 15:00	8.46	9.2	0.54	8/31/2015 20:30	4.75	7.3	0.57
8/31/2015 15:15	8.57	9.2	0.56	8/31/2015 20:45	4.65	7.5	0.55
8/31/2015 15:30	8.67	9	0.60	8/31/2015 21:00	4.57	7.5	0.55
8/31/2015 15:45	8.67	9	0.63	8/31/2015 21:15	4.49	7.5	0.54
8/31/2015 16:00	8.63	8.8	0.66	8/31/2015 21:30	4.43	7.7	0.50
8/31/2015 16:15	8.58	8.7	0.69	8/31/2015 21:45	4.36	7.7	0.49
8/31/2015 16:30	8.44	8.6	0.70	8/31/2015 22:00	4.31	7.8	0.46
8/31/2015 16:45	8.29	8.6	0.71	8/31/2015 22:15	4.24	7.6	0.45
8/31/2015 17:00	8.12	8.5	0.73	8/31/2015 22:30	4.19	7.8	0.42
8/31/2015 17:15	7.93	8.3	0.75	8/31/2015 22:45	4.15	7.8	0.41
8/31/2015 17:30	7.76	8.4	0.77	8/31/2015 23:00	4.10	7.9	0.39
8/31/2015 17:45	7.55	8.2	0.77	8/31/2015 23:15	4.06	7.9	0.37
8/31/2015 18:00	7.22	8.1	0.78	8/31/2015 23:30	4.01	7.9	0.35
8/31/2015 18:15	6.76	8.3	0.77	8/31/2015 23:45	3.98	8.1	0.34
8/31/2015 18:30	6.32	8.5	0.77	9/1/2015 0:00	3.93	8.1	0.32
8/31/2015 18:45	6.00	8.2	0.76	9/1/2015 0:15	3.89	8.1	0.31
8/31/2015 19:00	5.75	8.2	0.76	9/1/2015 0:30	3.84	8.1	0.29
8/31/2015 19:15	5.56	8.1	0.75	9/1/2015 0:45	3.80	8.3	0.27
8/31/2015 19:30	5.38	7.9	0.74	9/1/2015 1:00	3.77	8.2	0.26
8/31/2015 19:45	5.23	7.8	0.72	9/1/2015 1:15	3.70	8.4	0.25
8/31/2015 20:00	5.11	7.9	0.72	9/1/2015 1:30	3.72	8.4	0.24
8/31/2015 20:15	4.96	7.8	0.69	9/1/2015 1:45	3.69	8.6	0.21
8/31/2015 20:30	4.84	7.9	0.68	9/1/2015 2:00	3.66	8.6	0.22
8/31/2015 20:45	4.72	7.8	0.66	9/1/2015 2:15	3.65	8.6	0.20
8/31/2015 21:00	4.62	8	0.66	9/1/2015 2:30	3.65	8.7	0.18
8/31/2015 21:15	4.53	8	0.64	9/1/2015 2:45	3.65	8.7	0.19
8/31/2015 21:30	4.43	7.9	0.61	9/1/2015 3:00	3.65	8.9	0.18
8/31/2015 21:45	4.36	8	0.60	9/1/2015 3:15	3.64	8.9	0.17
8/31/2015 22:00	4.26	8	0.58	9/1/2015 3:30	3.64	9.1	0.16
8/31/2015 22:15	4.19	8.1	0.57	9/1/2015 3:45	3.65	9.1	0.15
8/31/2015 22:30	4.11	8.1	0.54	9/1/2015 4:00	3.70	9.1	0.14
8/31/2015 22:45	4.03	8	0.54	9/1/2015 4:15	3.72	9	0.13
8/31/2015 23:00	3.98	8.2	0.51	9/1/2015 4:30	3.73	9	0.14
8/31/2015 23:15	3.92	8.4	0.50	9/1/2015 4:45	3.72	9.2	0.13
8/31/2015 23:30	3.86	8.4	0.48	9/1/2015 5:00	3.72	9.2	0.10
8/31/2015 23:45	3.79	8.6	0.46	9/1/2015 5:15	3.70	9.4	0.12
9/1/2015 0:00	3.74	8.7	0.45	9/1/2015 5:30	3.69	9.2	0.12
9/1/2015 0:15	3.68	8.9	0.44	9/1/2015 5:45	3.68	9.6	0.10
9/1/2015 0:30	3.62	8.9	0.43	9/1/2015 6:00	3.65	9.4	0.10
9/1/2015 0:45	3.57	9.1	0.42	9/1/2015 6:15	3.64	9.4	0.10
9/1/2015 1:00	3.52	9.1	0.40	9/1/2015 6:30	3.62	9.4	0.11
9/1/2015 1:15	3.48	9.1	0.40	9/1/2015 6:45	3.61	9.4	0.10

9/1/2015 1:30	3.43	9.3	0.40	9/1/2015 7:00	3.60	9.6	0.09
9/1/2015 1:45	3.39	9.4	0.38	9/1/2015 7:15	3.56	9.6	0.08
9/1/2015 2:00	3.33	9.6	0.37	9/1/2015 7:30	3.52	9.7	0.08
9/1/2015 2:15	3.30	9.6	0.35	9/1/2015 7:45	3.49	9.7	0.07
9/1/2015 2:30	3.24	9.6	0.35	9/1/2015 8:00	3.45	9.7	0.07
9/1/2015 2:45	3.23	9.6	0.35	9/1/2015 8:15	3.48	9.7	0.07
9/1/2015 3:00	3.20	10.2	0.33	9/1/2015 8:30	3.48	10	0.07
9/1/2015 3:15	3.18	10.2	0.33	9/1/2015 8:45	3.56	10	0.07
9/1/2015 3:30	3.15	10.2	0.31	9/1/2015 9:00	3.62	9.9	0.05
9/1/2015 3:45	3.13	10.2	0.31	9/1/2015 9:15	3.69	9.9	0.05
9/1/2015 4:00	3.11	10.4	0.30	9/1/2015 9:30	3.77	9.9	0.03
9/1/2015 4:15	3.09	10.6	0.29	9/1/2015 9:45	3.89	10.1	0.04
9/1/2015 4:30	3.10	10.6	0.29	9/1/2015 10:00	4.21	10	0.02
9/1/2015 4:45	3.07	10.6	0.28	9/1/2015 10:15	4.87	10	0.01
9/1/2015 5:00	3.06	10.6	0.27	9/1/2015 10:30	5.62	9.7	0.01
9/1/2015 5:15	3.05	10.8	0.27	9/1/2015 10:45	6.29	9.7	0.00
9/1/2015 5:30	3.03	10.8	0.26	9/1/2015 11:00	6.96	9.9	0.00
9/1/2015 5:45	3.03	11	0.25	9/1/2015 11:15	7.58	9.6	0.06
9/1/2015 6:00	3.02	11	0.24	9/1/2015 11:30	7.78	9.4	0.12
9/1/2015 6:15	3.02	11	0.23	9/1/2015 11:45	8.03	7.8	0.16
9/1/2015 6:30	2.99	11.2	0.22	9/1/2015 12:00	8.08	6.6	0.23
9/1/2015 6:45	2.99	11.2	0.22	9/1/2015 12:15	8.05	6.1	0.27
9/1/2015 7:00	3.01	11.3	0.22	9/1/2015 12:30	7.96	5.4	0.34
9/1/2015 7:15	3.01	11.1	0.21	9/1/2015 12:45	7.82	5	0.40
9/1/2015 7:30	3.01	11.3	0.21	9/1/2015 13:00	7.74	4.6	0.46
9/1/2015 7:45	3.02	11.1	0.19	9/1/2015 13:15	7.68	4.5	0.50
9/1/2015 8:00	3.03	11.1	0.19	9/1/2015 13:30	7.65	4.3	0.55
9/1/2015 8:15	3.05	11.1	0.17	9/1/2015 13:45	7.58	4.2	0.58
9/1/2015 8:30	3.05	11.1	0.17	9/1/2015 14:00	7.42	4.3	0.61
9/1/2015 8:45	3.06	11.1	0.15	9/1/2015 14:15	7.09	4.4	0.65
9/1/2015 9:00	3.07	11.1	0.14	9/1/2015 14:30	6.82	4.3	0.65
9/1/2015 9:15	3.09	11.3	0.13	9/1/2015 14:45	6.70	4.5	0.67
9/1/2015 9:30	3.19	11.2	0.12	9/1/2015 15:00	6.62	4.7	0.68
9/1/2015 9:45	3.31	11.1	0.10	9/1/2015 15:15	6.63	5	0.70
9/1/2015 10:00	3.48	11.2	0.08	9/1/2015 15:30	6.97	5.5	0.71
9/1/2015 10:15	3.60	11.3	0.07	9/1/2015 15:45	7.26	5.7	0.69
9/1/2015 10:30	3.73	11.5	0.06	9/1/2015 16:00	7.45	5.8	0.71
9/1/2015 10:45	3.96	11.5	0.05	9/1/2015 16:15	7.28	6	0.72
9/1/2015 11:00	4.19	11.7	0.03	9/1/2015 16:30	7.13	5.9	0.74
9/1/2015 11:15	4.41	11.7	0.03	9/1/2015 16:45	6.89	5.8	0.76
9/1/2015 11:30	4.70	11.9	0.01	9/1/2015 17:00	6.71	5.7	0.76
9/1/2015 11:45	5.04	11.8	0.01	9/1/2015 17:15	6.59	5.6	0.75
9/1/2015 12:00	5.36	11.8	0.00	9/1/2015 17:30	6.47	5.6	0.73
9/1/2015 12:15	5.70	11.5	0.02	9/1/2015 17:45	6.38	5.8	0.73

9/1/2015 12:30	6.11	11.4	0.09	9/1/2015 18:00	6.30	5.7	0.71
9/1/2015 12:45	6.57	11.3	0.15	9/1/2015 18:15	6.19	5.7	0.73
9/1/2015 13:00	7.06	11.3	0.19	9/1/2015 18:30	6.11	5.8	0.70
9/1/2015 13:15	7.55	11.3	0.22	9/1/2015 18:45	6.02	5.8	0.69
9/1/2015 13:30	8.07	11.3	0.24	9/1/2015 19:00	5.91	6	0.68
9/1/2015 13:45	8.57	11.2	0.28	9/1/2015 19:15	5.80	6	0.67
9/1/2015 14:00	9.05	11.1	0.32	9/1/2015 19:30	5.71	6.1	0.65
9/1/2015 14:15	9.23	11	0.38	9/1/2015 19:45	5.60	6.1	0.65
9/1/2015 14:30	9.43	10.9	0.45	9/1/2015 20:00	5.51	6.3	0.64
9/1/2015 14:45	9.57	10.8	0.53	9/1/2015 20:15	5.43	6.3	0.63
9/1/2015 15:00	9.56	10.8	0.61	9/1/2015 20:30	5.35	6.5	0.60
9/1/2015 15:15	9.42	10.4	0.68	9/1/2015 20:45	5.31	6.5	0.59
9/1/2015 15:30	9.19	10	0.73	9/1/2015 21:00	5.26	6.6	0.57
9/1/2015 15:45	8.92	9.7	0.77	9/1/2015 21:15	5.23	6.7	0.57
9/1/2015 16:00	8.50	9.3	0.77	9/1/2015 21:30	5.22	6.7	0.53
9/1/2015 16:15	8.08	9	0.80	9/1/2015 21:45	5.20	6.9	0.51
9/1/2015 16:30	7.89	8.6	0.80	9/1/2015 22:00	5.19	6.9	0.50
9/1/2015 16:45	7.72	8.4	0.80	9/1/2015 22:15	5.16	7.1	0.48
9/1/2015 17:00	7.49	8.2	0.81	9/1/2015 22:30	5.15	7.1	0.46
9/1/2015 17:15	7.32	8	0.80	9/1/2015 22:45	5.12	7.1	0.44
9/1/2015 17:30	7.17	7.9	0.80	9/1/2015 23:00	5.10	7.3	0.42
9/1/2015 17:45	7.01	7.6	0.80	9/1/2015 23:15	5.08	7.3	0.40
9/1/2015 18:00	6.88	7.5	0.79	9/1/2015 23:30	5.08	7.3	0.39
9/1/2015 18:15	6.72	7.2	0.80	9/1/2015 23:45	5.06	7.3	0.37
9/1/2015 18:30	6.59	7.3	0.79	9/2/2015 0:00	5.03	7.5	0.37
9/1/2015 18:45	6.45	7.4	0.78	9/2/2015 0:15	5.00	7.5	0.34
9/1/2015 19:00	6.29	7.3	0.78	9/2/2015 0:30	4.97	7.5	0.33
9/1/2015 19:15	6.16	7.4	0.77	9/2/2015 0:45	4.95	7.5	0.31
9/1/2015 19:30	6.03	7.4	0.76	9/2/2015 1:00	4.91	7.5	0.31
9/1/2015 19:45	5.89	7.5	0.75	9/2/2015 1:15	4.88	7.5	0.31
9/1/2015 20:00	5.75	7.4	0.74	9/2/2015 1:30	4.85	7.7	0.30
9/1/2015 20:15	5.62	7.5	0.73	9/2/2015 1:45	4.85	7.7	0.29
9/1/2015 20:30	5.52	7.5	0.71	9/2/2015 2:00	4.84	7.7	0.28
9/1/2015 20:45	5.43	7.6	0.71	9/2/2015 2:15	4.83	7.9	0.27
9/1/2015 21:00	5.35	7.5	0.68	9/2/2015 2:30	4.83	7.9	0.26
9/1/2015 21:15	5.30	7.5	0.68	9/2/2015 2:45	4.83	8	0.25
9/1/2015 21:30	5.24	7.4	0.66	9/2/2015 3:00	4.81	8	0.24
9/1/2015 21:45	5.19	7.4	0.65	9/2/2015 3:15	4.81	8	0.23
9/1/2015 22:00	5.15	7.4	0.65	9/2/2015 3:30	4.83	8	0.21
9/1/2015 22:15	5.11	7.4	0.62	9/2/2015 3:45	4.83	8.2	0.21
9/1/2015 22:30	5.07	7.4	0.61	9/2/2015 4:00	4.80	8	0.20
9/1/2015 22:45	5.04	7.5	0.59	9/2/2015 4:15	4.77	8.2	0.19
9/1/2015 23:00	5.00	7.5	0.58	9/2/2015 4:30	4.73	8.2	0.18
9/1/2015 23:15	4.96	7.7	0.56	9/2/2015 4:45	4.69	8.4	0.19

9/1/2015 23:30	4.93	7.7	0.55	9/2/2015 5:00	4.67	8.3	0.17
9/1/2015 23:45	4.90	7.7	0.54	9/2/2015 5:15	4.65	8.3	0.19
9/2/2015 0:00	4.85	7.9	0.52	9/2/2015 5:30	4.63	8.4	0.16
9/2/2015 0:15	4.81	7.9	0.51	9/2/2015 5:45	4.60	8.5	0.16
9/2/2015 0:30	4.76	8.1	0.50	9/2/2015 6:00	4.57	8.5	0.17
9/2/2015 0:45	4.72	8.1	0.49	9/2/2015 6:15	4.56	8.5	0.16
9/2/2015 1:00	4.68	8.3	0.48	9/2/2015 6:30	4.55	8.5	0.16
9/2/2015 1:15	4.64	8.5	0.47	9/2/2015 6:45	4.55	8.6	0.16
9/2/2015 1:30	4.62	8.5	0.46	9/2/2015 7:00	4.53	8.7	0.15
9/2/2015 1:45	4.59	8.5	0.46	9/2/2015 7:15	4.53	8.8	0.15
9/2/2015 2:00	4.56	8.7	0.45	9/2/2015 7:30	4.53	8.7	0.12
9/2/2015 2:15	4.55	8.5	0.44	9/2/2015 7:45	4.56	9	0.12
9/2/2015 2:30	4.51	8.7	0.43	9/2/2015 8:00	4.60	8.8	0.10
9/2/2015 2:45	4.49	8.9	0.42	9/2/2015 8:15	4.63	8.9	0.10
9/2/2015 3:00	4.47	8.9	0.42	9/2/2015 8:30	4.64	8.9	0.11
9/2/2015 3:15	4.46	9.1	0.41	9/2/2015 8:45	4.63	8.9	0.10
9/2/2015 3:30	4.45	9.1	0.41	9/2/2015 9:00	4.63	8.9	0.11
9/2/2015 3:45	4.42	9.1	0.40	9/2/2015 9:15	4.63	8.9	0.10
9/2/2015 4:00	4.39	9.3	0.39	9/2/2015 9:30	4.61	8.9	0.10
9/2/2015 4:15	4.37	9.4	0.38	9/2/2015 9:45	4.69	8.9	0.09
9/2/2015 4:30	4.36	9.3	0.38	9/2/2015 10:00	5.00	9.1	0.09
9/2/2015 4:45	4.32	9.5	0.38	9/2/2015 10:15	5.48	8.9	0.13
9/2/2015 5:00	4.30	9.5	0.37	9/2/2015 10:30	5.95	8.6	0.14
9/2/2015 5:15	4.28	9.8	0.37	9/2/2015 10:45	6.53	8.2	0.16
9/2/2015 5:30	4.25	9.8	0.35	9/2/2015 11:00	7.06	7.6	0.20
9/2/2015 5:45	4.22	9.9	0.36	9/2/2015 11:15	7.16	6.9	0.27
9/2/2015 6:00	4.19	9.9	0.36	9/2/2015 11:30	7.30	6.1	0.32
9/2/2015 6:15	4.16	9.9	0.34	9/2/2015 11:45	7.36	5.5	0.38
9/2/2015 6:30	4.12	9.9	0.34	9/2/2015 12:00	7.36	5	0.43
9/2/2015 6:45	4.09	9.9	0.34	9/2/2015 12:15	7.36	4.7	0.47
9/2/2015 7:00	4.05	10.1	0.33	9/2/2015 12:30	7.36	4.4	0.50
9/2/2015 7:15	4.03	10.1	0.34	9/2/2015 12:45	7.38	4.1	0.53
9/2/2015 7:30	4.00	10.2	0.32	9/2/2015 13:00	7.42	3.8	0.56
9/2/2015 7:45	3.98	10.2	0.32	9/2/2015 13:15	7.45	4	0.60
9/2/2015 8:00	3.95	10	0.31	9/2/2015 13:30	7.48	3.6	0.61
9/2/2015 8:15	3.92	10.1	0.30	9/2/2015 13:45	7.49	3.6	0.62
9/2/2015 8:30	3.90	10.1	0.30	9/2/2015 14:00	7.60	3.8	0.67
9/2/2015 8:45	3.88	10.1	0.29	9/2/2015 14:15	7.66	4	0.70
9/2/2015 9:00	3.86	10.1	0.29	9/2/2015 14:30	7.69	4.2	0.76
9/2/2015 9:15	3.85	10.1	0.28	9/2/2015 14:45	7.48	4.4	0.78
9/2/2015 9:30	3.91	10.1	0.29	9/2/2015 15:00	7.42	4.6	0.80
9/2/2015 9:45	4.02	10	0.28	9/2/2015 15:15	7.21	4.6	0.85
9/2/2015 10:00	4.16	10.1	0.26	9/2/2015 15:30	7.21	4.8	0.84
9/2/2015 10:15	4.25	10.2	0.27	9/2/2015 15:45	7.10	4.8	0.85

9/2/2015 10:30	4.36	10.1	0.27	9/2/2015 16:00	7.05	4.7	0.85
9/2/2015 10:45	4.55	10	0.25	9/2/2015 16:15	6.97	4.7	0.85
9/2/2015 11:00	4.72	10.2	0.25	9/2/2015 16:30	6.81	4.6	0.84
9/2/2015 11:15	4.94	10.1	0.24	9/2/2015 16:45	6.71	4.6	0.83
9/2/2015 11:30	5.23	9.9	0.23	9/2/2015 17:00	6.59	4.5	0.82
9/2/2015 11:45	5.53	9.9	0.24	9/2/2015 17:15	6.45	4.6	0.82
9/2/2015 12:00	5.85	9.6	0.23	9/2/2015 17:30	6.38	4.6	0.81
9/2/2015 12:15	6.25	9.5	0.21	9/2/2015 17:45	6.25	4.6	0.80
9/2/2015 12:30	6.70	9.4	0.22	9/2/2015 18:00	6.21	4.6	0.77
9/2/2015 12:45	7.15	9.5	0.25	9/2/2015 18:15	6.18	4.7	0.77
9/2/2015 13:00	7.59	9.5	0.28	9/2/2015 18:30	6.15	4.8	0.75
9/2/2015 13:15	8.06	9.6	0.33	9/2/2015 18:45	6.03	4.9	0.77
9/2/2015 13:30	8.38	9.7	0.41	9/2/2015 19:00	5.94	5	0.74
9/2/2015 13:45	8.81	9.9	0.47	9/2/2015 19:15	5.86	5.1	0.72
9/2/2015 14:00	9.09	9.9	0.56	9/2/2015 19:30	5.79	5.3	0.72
9/2/2015 14:15	9.44	9.7	0.62	9/2/2015 19:45	5.71	5.3	0.71
9/2/2015 14:30	9.55	9.4	0.68	9/2/2015 20:00	5.66	5.5	0.69
9/2/2015 14:45	9.30	8.9	0.74	9/2/2015 20:15	5.59	5.5	0.68
9/2/2015 15:00	9.10	8.8	0.78	9/2/2015 20:30	5.54	5.5	0.69
9/2/2015 15:15	8.74	8.5	0.80	9/2/2015 20:45	5.47	5.7	0.69
9/2/2015 15:30	8.53	8	0.83	9/2/2015 21:00	5.43	5.7	0.64
9/2/2015 15:45	8.36	7.8	0.84	9/2/2015 21:15	5.36	5.7	0.62
9/2/2015 16:00	8.28	7.4	0.84	9/2/2015 21:30	5.31	5.7	0.60
9/2/2015 16:15	8.20	7.2	0.84	9/2/2015 21:45	5.27	5.9	0.58
9/2/2015 16:30	7.96	7	0.84	9/2/2015 22:00	5.23	5.9	0.57
9/2/2015 16:45	7.79	6.9	0.83	9/2/2015 22:15	5.18	6	0.55
9/2/2015 17:00	7.65	6.8	0.82	9/2/2015 22:30	5.14	6.1	0.55
9/2/2015 17:15	7.51	6.4	0.83	9/2/2015 22:45	5.10	6.1	0.52
9/2/2015 17:30	7.39	6.5	0.81	9/2/2015 23:00	5.07	6.2	0.52
9/2/2015 17:45	7.31	6.4	0.80	9/2/2015 23:15	5.04	6.3	0.51
9/2/2015 18:00	7.14	6.3	0.81	9/2/2015 23:30	5.03	6.3	0.49
9/2/2015 18:15	6.88	6.4	0.82	9/2/2015 23:45	5.00	6.3	0.49
9/2/2015 18:30	6.71	6.5	0.81	9/3/2015 0:00	5.01	6.3	0.47
9/2/2015 18:45	6.57	6.6	0.81	9/3/2015 0:15	5.01	6.3	0.45
9/2/2015 19:00	6.43	6.5	0.82	9/3/2015 0:30	5.03	6.3	0.43
9/2/2015 19:15	6.30	6.4	0.80	9/3/2015 0:45	5.03	6.5	0.42
9/2/2015 19:30	6.19	6.4	0.80	9/3/2015 1:00	5.03	6.7	0.40
9/2/2015 19:45	6.08	6.5	0.80	9/3/2015 1:15	5.01	6.7	0.39
9/2/2015 20:00	5.96	6.4	0.79	9/3/2015 1:30	5.01	6.7	0.38
9/2/2015 20:15	5.86	6.3	0.77	9/3/2015 1:45	5.03	6.7	0.37
9/2/2015 20:30	5.75	6.3	0.76	9/3/2015 2:00	5.00	6.7	0.36
9/2/2015 20:45	5.66	6.4	0.75	9/3/2015 2:15	5.01	6.7	0.34
9/2/2015 21:00	5.58	6.4	0.72	9/3/2015 2:30	4.99	6.8	0.35
9/2/2015 21:15	5.49	6.3	0.72	9/3/2015 2:45	4.97	6.8	0.34

9/2/2015 21:30	5.41	6.3	0.69
9/2/2015 21:45	5.34	6.3	0.68
9/2/2015 22:00	5.24	6.4	0.68
9/2/2015 22:15	5.18	6.4	0.67
9/2/2015 22:30	5.11	6.5	0.67
9/2/2015 22:45	5.06	6.5	0.65
9/2/2015 23:00	5.00	6.7	0.63
9/2/2015 23:15	4.96	6.5	0.62
9/2/2015 23:30	4.93	6.7	0.61
9/2/2015 23:45	4.89	6.7	0.61
9/3/2015 0:00	4.88	6.7	0.60
9/3/2015 0:15	4.85	6.9	0.59
9/3/2015 0:30	4.84	7.1	0.57
9/3/2015 0:45	4.81	7.1	0.56
9/3/2015 1:00	4.79	6.9	0.55
9/3/2015 1:15	4.77	7.1	0.54
9/3/2015 1:30	4.76	7.3	0.53
9/3/2015 1:45	4.75	7.3	0.51
9/3/2015 2:00	4.73	7.5	0.51
9/3/2015 2:15	4.71	7.5	0.50
9/3/2015 2:30	4.68	7.5	0.49
9/3/2015 2:45	4.66	7.7	0.49
9/3/2015 3:00	4.63	7.8	0.49
9/3/2015 3:15	4.64	7.8	0.49
9/3/2015 3:30	4.63	7.8	0.47
9/3/2015 3:45	4.60	8	0.47
9/3/2015 4:00	4.58	8	0.46
9/3/2015 4:15	4.56	8.2	0.46
9/3/2015 4:30	4.56	8.2	0.47
9/3/2015 4:45	4.56	8.2	0.46
9/3/2015 5:00	4.56	8.4	0.46
9/3/2015 5:15	4.55	8.5	0.44
9/3/2015 5:30	4.55	8.5	0.45
9/3/2015 5:45	4.54	8.5	0.45
9/3/2015 6:00	4.54	8.5	0.44
9/3/2015 6:15	4.53	8.5	0.44
9/3/2015 6:30	4.49	8.6	0.44
9/3/2015 6:45	4.47	8.7	0.44
9/3/2015 7:00	4.43	8.8	0.43
9/3/2015 7:15	4.42	8.6	0.43
9/3/2015 7:30	4.39	8.6	0.43
9/3/2015 7:45	4.37	8.6	0.43
9/3/2015 8:00	4.37	8.6	0.42
9/3/2015 8:15	4.37	8.5	0.42

9/3/2015 3:00	4.95	6.8	0.34
9/3/2015 3:15	4.95	7	0.33
9/3/2015 3:30	4.92	7	0.34
9/3/2015 3:45	4.91	7	0.32
9/3/2015 4:00	4.88	7.2	0.31
9/3/2015 4:15	4.89	7.2	0.31
9/3/2015 4:30	4.89	7.4	0.32
9/3/2015 4:45	4.91	7.3	0.31
9/3/2015 5:00	4.91	7.5	0.30
9/3/2015 5:15	4.92	7.5	0.28
9/3/2015 5:30	4.91	7.5	0.28
9/3/2015 5:45	4.91	7.5	0.29
9/3/2015 6:00	4.91	7.5	0.27
9/3/2015 6:15	4.88	7.5	0.27
9/3/2015 6:30	4.84	7.5	0.28
9/3/2015 6:45	4.81	7.6	0.28
9/3/2015 7:00	4.76	7.6	0.29
9/3/2015 7:15	4.75	7.6	0.28
9/3/2015 7:30	4.72	7.6	0.28
9/3/2015 7:45	4.72	7.6	0.28
9/3/2015 8:00	4.72	7.6	0.27
9/3/2015 8:15	4.76	7.6	0.24
9/3/2015 8:30	4.80	7.6	0.25
9/3/2015 8:45	4.88	7.5	0.23
9/3/2015 9:00	4.96	7.5	0.22
9/3/2015 9:15	5.03	7.5	0.19
9/3/2015 9:30	5.08	7.4	0.19
9/3/2015 9:45	5.26	7.5	0.18
9/3/2015 10:00	5.58	7.4	0.17
9/3/2015 10:15	5.98	7.4	0.17
9/3/2015 10:30	6.58	7.1	0.16
9/3/2015 10:45	6.94	7	0.20
9/3/2015 11:00	7.16	6.9	0.28
9/3/2015 11:15	7.30	6.3	0.35
9/3/2015 11:30	7.41	5.5	0.38
9/3/2015 11:45	7.22	5.1	0.43
9/3/2015 12:00	7.05	4.7	0.45

9/3/2015 8:30	4.38	8.6	0.43
9/3/2015 8:45	4.39	8.5	0.42
9/3/2015 9:00	4.43	8.3	0.43
9/3/2015 9:15	4.47	8.1	0.41
9/3/2015 9:30	4.54	8	0.40
9/3/2015 9:45	4.64	8	0.41
9/3/2015 10:00	4.87	8	0.40
9/3/2015 10:15	5.02	7.9	0.40
9/3/2015 10:30	5.22	8	0.40
9/3/2015 10:45	5.43	7.9	0.39
9/3/2015 11:00	5.61	8	0.39
9/3/2015 11:15	5.79	8	0.38
9/3/2015 11:30	6.03	8.1	0.37

Table S4. cont…

YSI Probe Data (Lower Dinwoody Creek)

Date Time	SPC (µS/cm)	DO (mg/L)	ORP (mV)	pH	Temp (oC)
9/1/2015 9:45	13	9.83	172.1	6.13	3.5
9/1/2015 10:00	12.9	9.75	170.6	6.06	3.8
9/1/2015 10:15	12.8	9.63	167.9	6.06	4.2
9/1/2015 10:30	12.8	9.55	166.8	6.06	4.6
9/1/2015 10:45	12.7	9.49	166.2	6.05	5.1
9/1/2015 11:00	12.6	9.42	165.9	6.04	5.5
9/1/2015 11:15	12.3	9.32	164.1	6.06	5.9
9/1/2015 11:30	11.9	9.22	158.4	6.13	6.3
9/1/2015 11:45	11.1	9.11	162.8	6.02	6.7
9/1/2015 12:00	10.2	9.01	164.6	5.95	7
9/1/2015 12:15	9.6	9.01	165.1	5.91	7.1
9/1/2015 12:30	9.1	9.01	166.3	5.87	7.1
9/1/2015 12:45	8.9	9.06	169.4	5.8	7
9/1/2015 13:00	8.5	9.03	168.8	5.8	7
9/1/2015 13:15	8.3	9.07	167.9	5.79	6.9
9/1/2015 13:30	8.2	9.05	168	5.76	6.9
9/1/2015 13:45	8	9.02	168.3	5.71	6.8
9/1/2015 14:00	7.9	9.05	169.7	5.68	6.6
9/1/2015 14:15	7.9	9.05	173.9	5.61	6.4
9/1/2015 14:30	7.9	9.17	175	5.59	6.1
9/1/2015 14:45	8.1	9.21	175.2	5.61	6
9/1/2015 15:00	8.4	9.2	175.2	5.62	5.9
9/1/2015 15:15	8.8	9.2	169.7	5.74	5.8
9/1/2015 15:30	9.3	9.12	169.1	5.77	6.2
9/1/2015 15:45	9.6	9.06	168.8	5.8	6.5

9/1/2015 16:00	9.8	8.98	167.4	5.83	6.7
9/1/2015 16:15	9.9	8.98	169.7	5.8	6.5
9/1/2015 16:30	9.9	9.05	171.8	5.77	6.4
9/1/2015 16:45	9.8	9.08	171.9	5.78	6.2
9/1/2015 17:00	9.6	9.12	173.2	5.76	6
9/1/2015 17:15	9.6	9.15	171.7	5.8	5.9
9/1/2015 17:30	9.6	9.18	173	5.78	5.7
9/1/2015 17:45	9.6	9.2	172.9	5.78	5.6
9/1/2015 18:00	9.6	9.22	172.7	5.79	5.5
9/1/2015 18:15	9.6	9.26	172.8	5.8	5.4
9/1/2015 18:30	9.6	9.27	173.6	5.79	5.3
9/1/2015 18:45	9.6	9.27	174.5	5.79	5.2
9/1/2015 19:00	9.8	9.29	175.8	5.76	5.1
9/1/2015 19:15	9.9	9.3	176	5.77	5
9/1/2015 19:30	9.9	9.31	176.9	5.77	4.9
9/1/2015 19:45	10	9.32	177.4	5.77	4.8
9/1/2015 20:00	10.2	9.34	178.1	5.78	4.7
9/1/2015 20:15	10.3	9.32	178.9	5.77	4.7
9/1/2015 20:30	10.4	9.36	180.8	5.76	4.6
9/1/2015 20:45	10.5	9.41	181.3	5.76	4.5
9/1/2015 21:00	10.6	9.38	180.5	5.79	4.5
9/1/2015 21:15	10.7	9.36	181	5.79	4.5
9/1/2015 21:30	10.7	9.41	180.5	5.81	4.4
9/1/2015 21:45	10.8	9.38	181.2	5.81	4.4
9/1/2015 22:00	10.8	9.38	181.4	5.81	4.4
9/1/2015 22:15	10.9	9.35	180.5	5.84	4.4
9/1/2015 22:30	10.9	9.34	181.2	5.83	4.4
9/1/2015 22:45	10.9	9.39	181.3	5.84	4.3
9/1/2015 23:00	11	9.37	181.9	5.83	4.3
9/1/2015 23:15	11	9.37	181.9	5.84	4.3
9/1/2015 23:30	11	9.36	181.6	5.85	4.3
9/1/2015 23:45	11	9.37	182.2	5.85	4.3
9/2/2015 0:00	11.1	9.39	182.8	5.84	4.2
9/2/2015 0:15	11.1	9.41	182.8	5.85	4.2
9/2/2015 0:30	11.1	9.39	183	5.85	4.2
9/2/2015 0:45	11.2	9.39	183	5.85	4.2
9/2/2015 1:00	11.2	9.39	183.7	5.85	4.1
9/2/2015 1:15	11.3	9.39	183.1	5.86	4.1
9/2/2015 1:30	11.3	9.4	183.4	5.87	4.1
9/2/2015 1:45	11.4	9.39	183.7	5.86	4.1
9/2/2015 2:00	11.4	9.4	183.5	5.87	4.1
9/2/2015 2:15	11.5	9.42	183	5.89	4
9/2/2015 2:30	11.6	9.42	183.8	5.88	4
9/2/2015 2:45	11.6	9.41	183.7	5.89	4

9/2/2015 3:00	11.6	9.42	183.6	5.89	4
9/2/2015 3:15	11.7	9.42	183.8	5.89	4
9/2/2015 3:30	11.7	9.41	184.4	5.88	4
9/2/2015 3:45	11.8	9.37	183.5	5.91	4
9/2/2015 4:00	11.8	9.38	184.1	5.9	4
9/2/2015 4:15	11.9	9.42	183.6	5.91	3.9
9/2/2015 4:30	11.9	9.41	184.4	5.9	3.9
9/2/2015 4:45	11.9	9.44	184.9	5.89	3.9
9/2/2015 5:00	12	9.39	183.5	5.92	3.9
9/2/2015 5:15	12	9.45	184.1	5.92	3.8
9/2/2015 5:30	12.1	9.39	183.7	5.93	3.8
9/2/2015 5:45	12.1	9.41	184.4	5.92	3.8
9/2/2015 6:00	12.2	9.35	184.7	5.92	3.8
9/2/2015 6:15	12.2	9.34	183.6	5.94	3.7
9/2/2015 6:30	12.2	9.38	184.3	5.93	3.7
9/2/2015 6:45	12.3	9.43	183.9	5.94	3.7
9/2/2015 7:00	12.4	9.49	183.2	5.95	3.6
9/2/2015 7:15	12.4	9.49	183.1	5.94	3.6
9/2/2015 7:30	12.4	9.5	181.9	5.96	3.6
9/2/2015 7:45	12.4	9.51	180.5	5.97	3.6
9/2/2015 8:00	12.4	9.52	179.7	5.98	3.6
9/2/2015 8:15	12.4	9.58	179.6	5.97	3.5
9/2/2015 8:30	12.5	9.55	178.3	5.99	3.5
9/2/2015 8:45	12.5	9.5	177.2	6.01	3.5
9/2/2015 9:00	12.5	9.55	177.3	6	3.5
9/2/2015 9:15	12.5	9.63	185	5.85	3.5
9/2/2015 9:30	12.4	9.61	182.1	5.92	3.6
9/2/2015 9:45	12.3	9.56	179.4	5.97	4
9/2/2015 10:00	12.3	9.5	180	5.96	4.3
9/2/2015 10:15	12.2	9.41	179.4	5.96	4.7
9/2/2015 10:30	11.9	9.34	178.9	5.97	5.1
9/2/2015 10:45	11.6	9.24	177.9	5.98	5.5
9/2/2015 11:00	11.1	9.14	178.8	5.96	5.9
9/2/2015 11:15	10.5	9.11	180.5	5.89	6.2
9/2/2015 11:30	9.9	9.05	180	5.87	6.4
9/2/2015 11:45	9.4	9.07	180.4	5.83	6.5
9/2/2015 12:00	9	9.04	182.2	5.77	6.6
9/2/2015 12:15	8.5	9.07	183.3	5.72	6.6
9/2/2015 12:30	8.1	9.08	183.5	5.68	6.6
9/2/2015 12:45	7.8	9.01	183	5.66	6.7
9/2/2015 13:00	7.6	9.03	184.1	5.62	6.7
9/2/2015 13:15	7.4	9.05	183.8	5.6	6.7
9/2/2015 13:30	7.4	8.97	182.2	5.6	6.8
9/2/2015 13:45	7.5	9	178.1	5.62	6.8

9/2/2015 14:00	7.6	8.93	173.2	5.66	6.9
9/2/2015 14:15	7.8	8.94	175.4	5.64	7
9/2/2015 14:30	8	8.93	178.6	5.62	7
9/2/2015 14:45	8.3	8.92	178.2	5.66	6.8
9/2/2015 15:00	8.4	8.98	177.6	5.69	6.7
9/2/2015 15:15	8.6	9	179.2	5.68	6.5
9/2/2015 15:30	8.6	9	177.8	5.72	6.6
9/2/2015 15:45	8.7	9.09	181.7	5.66	6.4
9/2/2015 16:00	8.6	9.08	182.1	5.66	6.4
9/2/2015 16:15	8.5	9.1	182.6	5.65	6.3
9/2/2015 16:30	8.4	9.12	182.8	5.65	6.1
9/2/2015 16:45	8.5	9.08	183.3	5.65	6
9/2/2015 17:00	8.5	9.15	183.6	5.65	5.8
9/2/2015 17:15	8.4	9.16	184.3	5.64	5.7
9/2/2015 17:30	8.4	9.16	184.7	5.65	5.7
9/2/2015 17:45	8.4	9.2	184.1	5.66	5.5
9/2/2015 18:00	8.4	9.23	186.2	5.63	5.4
9/2/2015 18:15	8.5	9.21	186	5.64	5.4
9/2/2015 18:30	8.6	9.22	188.1	5.62	5.4
9/2/2015 18:45	8.7	9.25	188.1	5.63	5.3
9/2/2015 19:00	8.8	9.25	188	5.64	5.2
9/2/2015 19:15	8.9	9.28	188.2	5.66	5.1
9/2/2015 19:30	9.1	9.29	188.8	5.66	5
9/2/2015 19:45	9.1	9.33	188.7	5.67	4.9
9/2/2015 20:00	9.2	9.29	189.3	5.71	4.9
9/2/2015 20:15	9.3	9.32	190.1	5.68	4.8
9/2/2015 20:30	9.4	9.3	190.4	5.68	4.8
9/2/2015 20:45	9.4	9.33	190.8	5.69	4.7
9/2/2015 21:00	9.5	9.38	192.2	5.67	4.6
9/2/2015 21:15	9.5	9.36	192.2	5.68	4.6
9/2/2015 21:30	9.6	9.38	192.8	5.68	4.5
9/2/2015 21:45	9.7	9.36	191.9	5.7	4.5
9/2/2015 22:00	9.8	9.34	192.5	5.7	4.5
9/2/2015 22:15	9.8	9.39	192.9	5.69	4.4
9/2/2015 22:30	9.9	9.38	192.8	5.71	4.4
9/2/2015 22:45	9.9	9.41	192.7	5.71	4.3
9/2/2015 23:00	10	9.4	193.3	5.7	4.3
9/2/2015 23:15	10	9.38	193.4	5.71	4.3
9/2/2015 23:30	10.1	9.44	193.8	5.72	4.2
9/2/2015 23:45	10.1	9.43	193.5	5.72	4.2
9/3/2015 0:00	10.2	9.42	193.1	5.74	4.2
9/3/2015 0:15	10.2	9.42	194.1	5.72	4.2
9/3/2015 0:30	10.3	9.41	193.5	5.74	4.2
9/3/2015 0:45	10.3	9.41	194.2	5.73	4.2

9/3/2015 1:00	10.4	9.4	193.2	5.75	4.2
9/3/2015 1:15	10.4	9.39	193.1	5.77	4.2
9/3/2015 1:30	10.5	9.39	192.6	5.77	4.2
9/3/2015 1:45	10.5	9.38	193.6	5.76	4.2
9/3/2015 2:00	10.6	9.38	193	5.77	4.2
9/3/2015 2:15	10.6	9.38	193	5.77	4.2
9/3/2015 2:30	10.7	9.36	193.1	5.77	4.2
9/3/2015 2:45	10.6	9.36	194.4	5.76	4.2
9/3/2015 3:00	10.7	9.36	194.5	5.77	4.2
9/3/2015 3:15	10.7	9.41	193.9	5.77	4.1
9/3/2015 3:30	10.8	9.39	193.2	5.79	4.1
9/3/2015 3:45	10.9	9.39	193.4	5.79	4.1
9/3/2015 4:00	10.9	9.37	193.4	5.79	4.1
9/3/2015 4:15	11	9.37	193.6	5.79	4.1
9/3/2015 4:30	11	9.39	193.8	5.78	4.1
9/3/2015 4:45	11	9.37	193.3	5.8	4.1
9/3/2015 5:00	11.1	9.38	193.3	5.8	4.1
9/3/2015 5:15	11.1	9.38	193.6	5.79	4.1
9/3/2015 5:30	11.2	9.39	193.4	5.8	4.1
9/3/2015 5:45	11.2	9.36	193.7	5.8	4.1
9/3/2015 6:00	11.2	9.35	192.6	5.82	4.1
9/3/2015 6:15	11.3	9.37	193.9	5.8	4.1
9/3/2015 6:30	11.3	9.34	193.6	5.81	4.1
9/3/2015 6:45	11.3	9.4	193	5.82	4
9/3/2015 7:00	11.3	9.38	192.8	5.82	4
9/3/2015 7:15	11.3	9.44	192.9	5.82	3.9
9/3/2015 7:30	11.3	9.48	191.5	5.84	3.9
9/3/2015 7:45	11.2	9.48	190.2	5.86	3.9
9/3/2015 8:00	11.2	9.49	189.8	5.86	3.9
9/3/2015 8:15	11.2	9.52	188	5.89	3.9
9/3/2015 8:30	11.2	9.47	188.2	5.89	4
9/3/2015 8:45	11.2	9.5	186.6	5.92	4
9/3/2015 9:00	11.1	9.5	186.3	5.93	4.1
9/3/2015 9:15	11.1	9.49	184.8	5.95	4.1
9/3/2015 9:30	11.1	9.46	184.1	5.96	4.2
9/3/2015 9:45	11.1	9.45	183.8	5.97	4.4
9/3/2015 10:00	11	9.38	182.9	5.98	4.7

Table S5. Hysteresis loop indices according to (Zuecco et al., 2016**)**

Logger	Variable	Temperature Hysteresis Loops					
		28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep

Gannett Creek	ΔAmin	0.02	0.01	0.01	0.01	0.01	0.01
	ΔAmax	0.04	0.05	0.02	0.05	0.04	0.05
	h Index	0.58	0.44	0.16	0.57	0.57	0.52
	Type	1	1	1	1	1	1
Clear Creek	ΔAmin	0.01	0.01	0.01	0.02	0.01	0.01
	ΔAmax	0.05	0.05	0.05	0.05	0.04	0.04
	h Index	0.42	0.41	0.43	0.26	0.45	0.29
	Type	1	1	1	1	1	1
Upper Dinwoody Creek	ΔAmin	0.01	0.02	0.01	0.01	0.02	0.03
	ΔAmax	0.04	0.04	0.02	0.04	0.04	0.04
	h Index	0.5	0.37	0.12	0.4	0.53	0.45
	Type	1	1	1	1	1	1
Lower Dinwoody Creek	ΔAmin	0.01	0.02	0.01	0.01	0.01	0.02
	ΔAmax	0.04	0.04	0.02	0.05	0.05	0.04
	h Index	0.43	0.27	0.15	0.57	0.5	0.53
	Type	1	1	1	1	1	1

Table S5. cont…

Logger	**Variable**	**SPC Hysteresis Loops**					
		28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep
Gannett Creek	ΔAmin	0	0	0	0	0	-0.01
	ΔAmax	0.01	0.01	0	0.01	0.01	0.01
	h Index	0.06	0.06	0	0.06	0.06	-0.04
	Type	6	6	0	6	6	7
Clear Creek	ΔAmin	-0.03	-0.01	-0.04	-0.02	-0.01	0.01
	ΔAmax	0.01	0.01	0	0	0.03	0.04
	h Index	-0.09	-0.03	-0.24	-0.08	0.09	0.23
	Type	3	3	8	4	2	1
Upper Dinwoody Creek	ΔAmin	0.02	0.02	0	-0.01	0.01	0.02
	ΔAmax	0.04	0.04	0.01	0.01	0.04	0.04
	h Index	0.44	0.35	0.05	0.08	0.37	0.44
	Type	5	5	2	6	5	5
Lower Dinwoody Creek	ΔAmin	-0.02	-0.02	-0.01	-0.02	-0.02	-0.02
	ΔAmax	0	0	0	-0.01	0	0
	h Index	-0.2	-0.1	-0.09	-0.27	-0.24	-0.18
	Type	7	7	7	8	7	7